
SERVICE MANUAL



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ZENITH RADIO CORPORATION

CHICAGO, U.S.A.

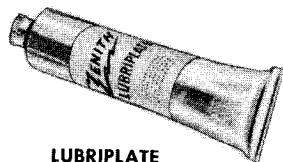
THESE **ZENITH** FACTORY APPROVED STANDARD AIDS WILL HELP YOU *Increase Your Radio Service Profits!*

YOUR NEAREST ZENITH DISTRIBUTOR HAS THEM IN STOCK FOR IMMEDIATE DELIVERY



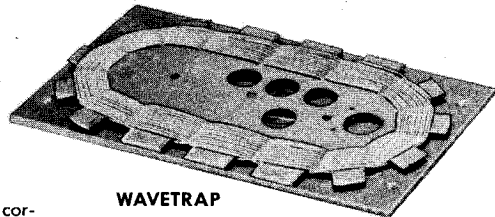
ZENITH LEATHERETTE BOUND SERVICE MANUAL

A bound, indexed, 618-page manual of service information on Zenith receivers manufactured since 1928 through 1940.



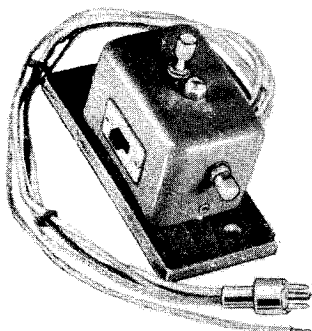
LUBRIPLATE

A conductive lubricant highly useful in correcting noisy contacts on switches, shafts or wherever moving contacts must also carry current. List Price \$.30 each.



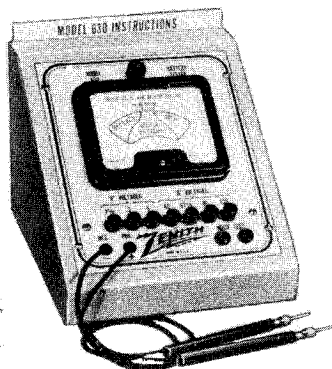
WAVETRAPP

An inductively coupled wavetrapp for use with loop antennas of all types. Two tuning ranges are available as follows—Type S8818, 500 k.c. to 1000 k.c.—Type S8325, 800 k.c. to 1600 k.c. List Price \$1.40 each



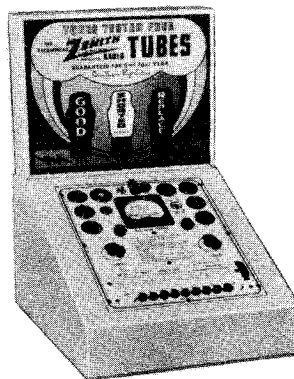
SIGNAL INPUT TRANSFORMER

A means of coupling an outside antenna to a receiver which has been designed for use with a wavemagnet. Highly useful on service bench or in special installations. Both inductance and distributed capacity of unit are adjustable. List Price \$3.85.



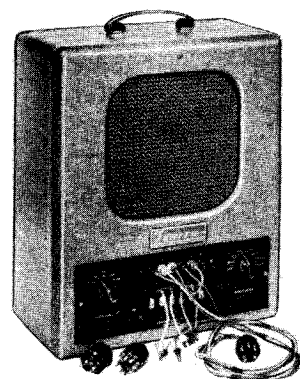
ZENITH DRY BATTERY TESTER

A new instrument developed to the standards of Zenith engineering for testing all makes of dry batteries. See your Zenith Distributor for price



ZENITH TRIUMPH TUBE CHECKER

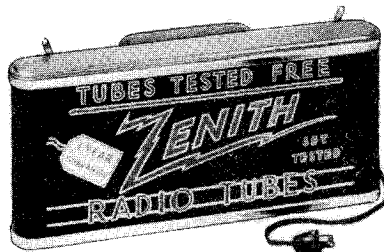
100% modern. Checks every tube made. Best of all merchandising tube checkers. Price \$59.95 F. O. B. Chicago.



UNIVERSAL PORTABLE TEST SPEAKER—Every service bench should be equipped with this instrument. Write for detailed literature. Price \$21.95 F. O. B. Chicago.

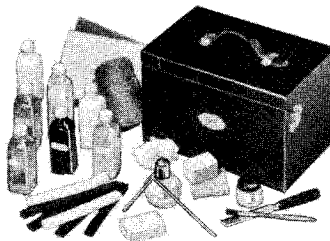
ZENITH GENUINE NEON SIGN

A beautiful and genuine neon sign in blue and chrome for window or counter display. Price \$13.30 each.



MERCHANDISING MATERIAL TO HELP YOU INCREASE YOUR SALES

See your nearest Zenith Distributor for the latest Zenith releases of Merchandising Helps for Expanding Your Sales and Profits.

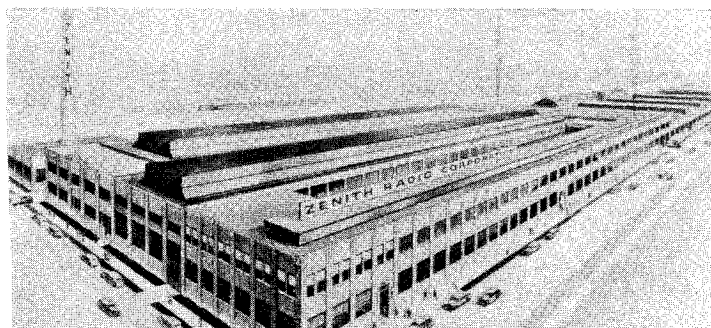


ZENITH REFINISHING KIT

This very complete Refinishing Kit, containing twenty different items for retouching and refinishing radio cabinets. Packed in a strong leatherette wooden case with carrying handles. Part Number S-5605, Dealers Net Price \$11.95.

ZENITH RADIO TUBES

Made to the highest standard of quality. Sold in tamper-proof can. Guaranteed to consumer for one year from date of sale. No shelf obsolescence.



ZENITH REPLACEMENT PARTS

Represent the last word in high engineering standards and precision manufacturing. Your nearest Zenith Distributor carries a complete line of Zenith parts for immediate delivery.

ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS

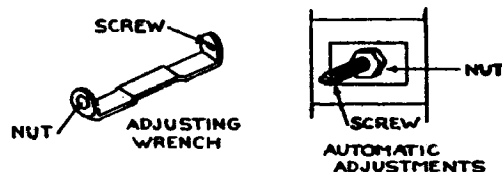
ALIGNMENT INSTRUCTIONS

The proper procedure for the correct alignment of each chassis is outlined on the page opposite each circuit diagram.

The signal generator should be connected to the antenna and ground terminals of the receiver with 10 ohms shunted across the output of the signal generator as a dummy antenna (unless otherwise specified).

The chassis drawing shows all trimmers which are lettered to correspond to the alignment chart. Corresponding letters are also shown adjacent to each trimmer on the circuit diagrams.

The use of a wavemagnet requires two adjustments for each automatic button. These adjustments are made with a special wrench (pat. No. 68-1) supplied with each receiver. The center or screw adjustment controls the oscillator circuit and the nut tunes the wavemagnet or antenna input—see illustration right.



WAVE MAGNET

The primary winding of the Wavemagnets used on 1941 models is of the high impedance type and the natural period of this winding is within the broadcast band. When an antenna is connected to the primary winding the additional capacity tunes it below broadcast frequencies which is very desirable for energy transfer.

However, this requires that the primary winding be short circuited whenever an external antenna is not attached in order to preserve the tuning characteristics of the loop winding. A shorting bar is provided for this purpose, and should always be in place when the receiver is operated on the Wavemagnet alone.

ZENITH MODEL AND CHASSIS NUMBERING SYSTEM

Dealers and service men are principally interested in receiver model numbers. However, it is necessary in production of chassis to also have a chassis numbering system. The present method used in designating Zenith chassis is quite simple, and is as follows:

The first numeral designates the number of tubes.

The letter designates the year, i.e.: A-1941, B-1942, C-1943, etc.

The last numeral designates the individual type of chassis. For instance, chassis No. 6A05 is the fifth 6-tube chassis engineered for the 1941 line.

The receiver model numbering system is similar inasmuch as

The voltages appearing on each socket contact are shown on the chassis drawings. Voltages are measured with a 20,000 ohm per volt meter and allowance should be made for variations in line voltage or if a voltmeter of different rating is used in making tests.

STAGE GAINS

Data on the average amplification of different portions of each type chassis is included for the use of service men equipped with vacuum tube voltmeters or similar voltage measuring equipment.

It is listed under the heading of *Stage Gains*.

The first numeral designates the number of tubes, the letter designates the type of chassis as shown below, and the last numeral is the number of the cabinet. Cabinets are numbered by years, i.e.: The 300 series was used in the 1939 line, the 400 series in the 1940 line, and the 500 series in the 1941 line.

The meanings of the letters are as follows:

A—all wave, B—6-volt, D—ACDC, F—2-volt, G—battery pack and 110 volt, J—6-volt and 110 volt, K—battery pack, L—long and standard wave, M—automotive, P—Police and standard wave, R—standard wave only, S—Short and standard wave, U—ultra short, short and standard wave, X—32-volt.

SERVICE NOTES

6A02-6A04

Noisy—right hand pilot light wiring may be pinched by automatic bracket.

Check for poor contact on manual push button.

Check for loose or poor contacts on pilot lights.

Oscillation on short wave band—Push black lead of automatic away from automatic adjustments. Keep white and green leads of automatic away from 7L7-7H7 socket.

7A02-7A04

Dead—480 mmfd. condenser on automatic may be grounded against automatic frame or latch bar.

Oscillation—Push leads of wave trap close to chassis keeping them away from antenna coil.

12A3

Hum—Change 6J5 in first audio socket.

All chassis

Weak short wave—Open R.F. choke in plate circuit of 1232 tube. Noisy—Dial rubbing against escutcheon. Stator lugs on braid of gang condenser rubbing against side of opening in chassis. Make sure all loktal type tubes are firmly seated in sockets.

Cannot be aligned—Check for open or rosin connection on primary winding of wavemagnet.

Overloads—Usually due to open resistor in A.V.C. circuit of first detector.

Phono Models

Distortion—Check for broken crystal in pickup.

Low Volume—Check for poor contact in phono switch and plug contacts—check shield on lead from crystal for poor ground.

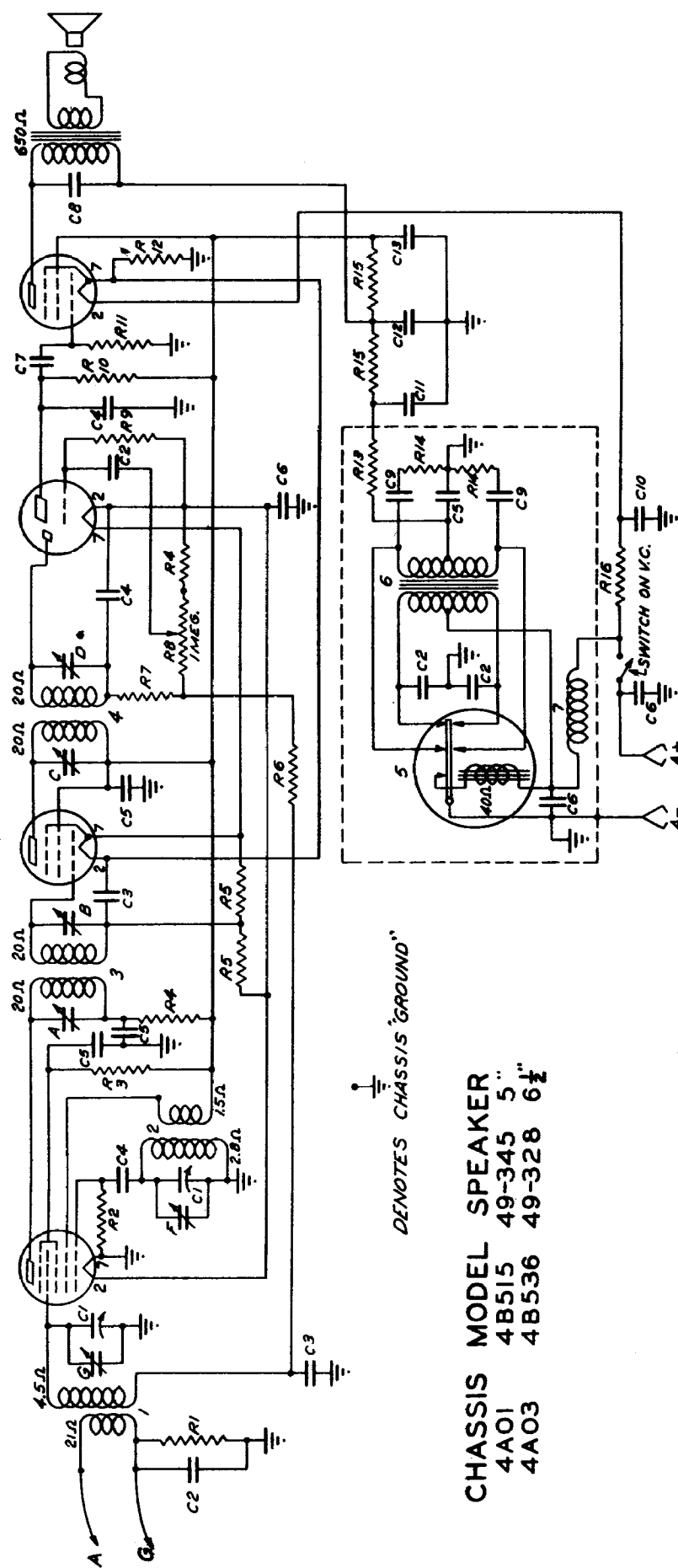
1A7G CONVERTER

1N5G I.F.

1H5G DET.-AMP.

1Q5G PWR. AMP.

SPEAKER



⊥
DENOTES CHASSIS "GROUND"

CHASSIS MODEL SPEAKER
4A01 4B515 49-345 5"
4A03 4B536 49-328 6½"

I.F. FREQUENCY 455 KC.
4 TUBE SUPERHETERODYNE
CHASSIS No 4A01 & 4A03-6V.-SINGLE BAND
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. No	PART No	DESCRIPTION	DIAG. No	PART No	DESCRIPTION	DIAG. No	PART No	DESCRIPTION
C1	22-695	TWO GANG VARIABLE	R2	63-595	100M OHM	1	22-708	ANTENNA COIL
C2	22-926	.01 MFD.	R3	63-594	68M OHM	2	56381	OSCILLATOR COIL ASSEMB
C3	22-929	.05 MFD.	R4	63-583	1000 OHM	3	95-589	1ST I.F. TRANS.
C4	22-162	.0001 MFD.	R5	63-296	220M OHM	4	95-590	2ND I.F. TRANS.
C5	22-828	.05 MFD.	R6	63-659	39 MEG OHM	5	190-17	VIBRATOR
C6	22-199	.5 MFD.	R7	63-598	47M OHM	6	55-636	POWER TRANSFORMER
C7	22-243	.01 MFD.	R8	63-1079	VOLUME CONTROL	7	55043	CHOME ASSEMBLY
C8	22-448	.004 MFD.	R9	63-976	15 MEG OHM			
C9	22-966	.04 MFD.	R10	63-271	1 MEG OHM			
C10	22-961	500MFD. ELECTROLYTIC	R11	63-600	2.2 MEG OHM			
C11	22-742	15MFD. ELECTROLYTIC	R12	63-1060	90 OHM WIREWOUND			
C12	22-742	15MFD. ELECTROLYTIC	R13	63-577	100 OHM			
C13	22-742	10MFD. ELECTROLYTIC	R14	63-577	100 OHM			
			R15	63-605	1000 OHM			
			R16	63-1061	7 OHM			
R1	63-597	470M OHM						

Models 4B515-4B536
Chassis No. 4A01-4A03

Models 4B515-4B536

Chassis No. 4A01-4A03

All voltages measured with a 1000 ohm per volt meter from chassis to socket contacts.

Voltage readings are all positive D.C. unless otherwise indicated.

Antenna disconnected volume control full on.

Battery voltage 6 volt.

Battery consumption—.4 ampere.

Power Output—370 milliwatts.

Stage Gains:

Ant. to conv. grid—4.9X at 1000 Kc.

Conv. grid to I. F. grid—50X at 455 Kc.

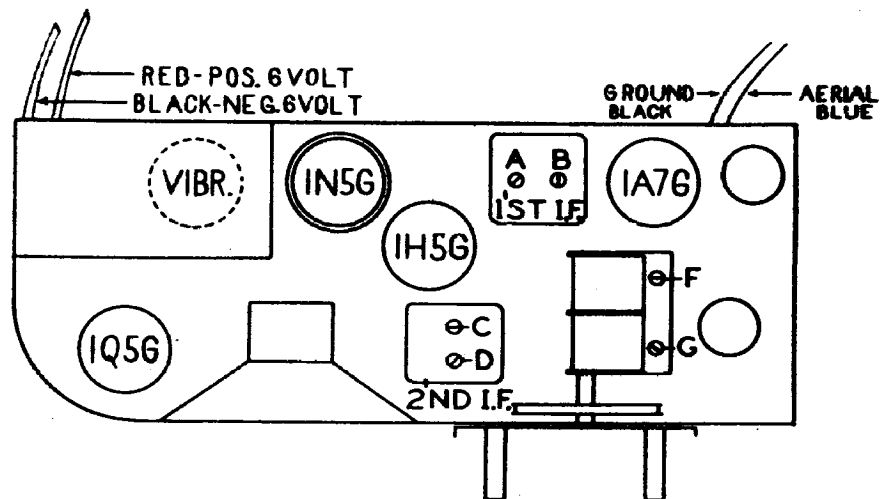
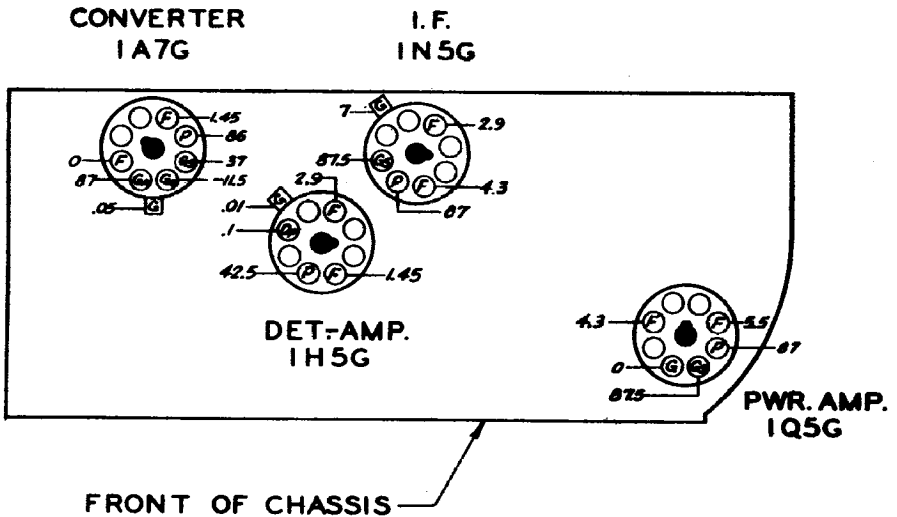
Overall audio—448 at .050 watt—400 cycles.

NOTE

Chassis 4A01 has attached speaker.

Chassis 4A03 has remote speaker.

Tuning range—540 Kc.—1740 Kc.



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	1A7 Grid	½ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	Antenna	200 Mmf.	1500 Kc.	Broadcast	1500 Kc.	F	Set Oscillator to Scale
3	Antenna	200 Mmf.	1400 Kc.	Broadcast	1400 Kc.	G	Alignment of Antenna

Models 4K515-4K535-4K570

Chassis No. 4A02-4A04

All voltages measured with a 1000 ohm per volt meter from chassis to socket contacts using a fresh Z28 battery pack.

Antenna disconnected — volume control full on.

Power output—300 milliwatts.

Stage Gains:

Ant. to conv. grid— $6.2\times$ at 1000 Kc.

Conv. grid to I. F. grid— $56\times$ at 455 Kc.

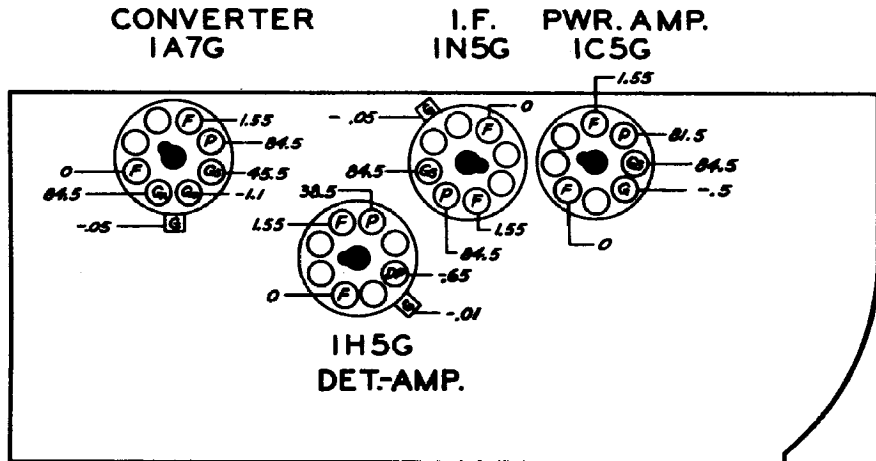
Overall audio—334 at .050 watt, 400 cycles.

NOTE

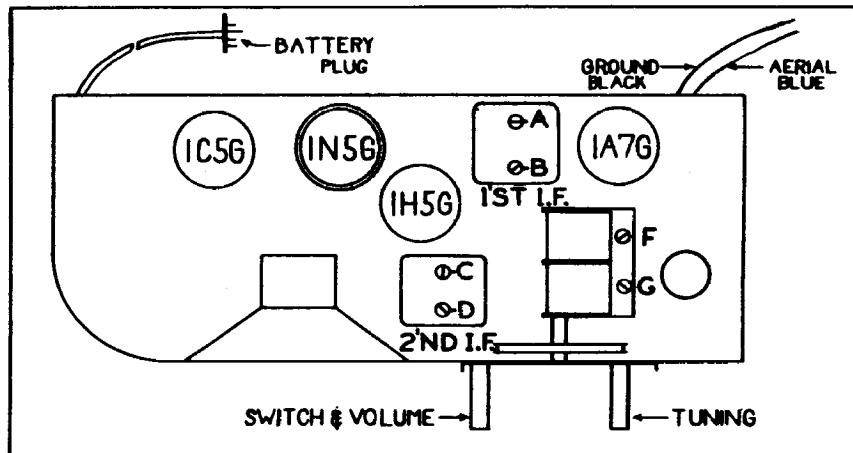
Chassis 4A02—attached speaker.

Chassis 4A04—remote speaker.

Tuning range—540 Kc.—1740 Kc.

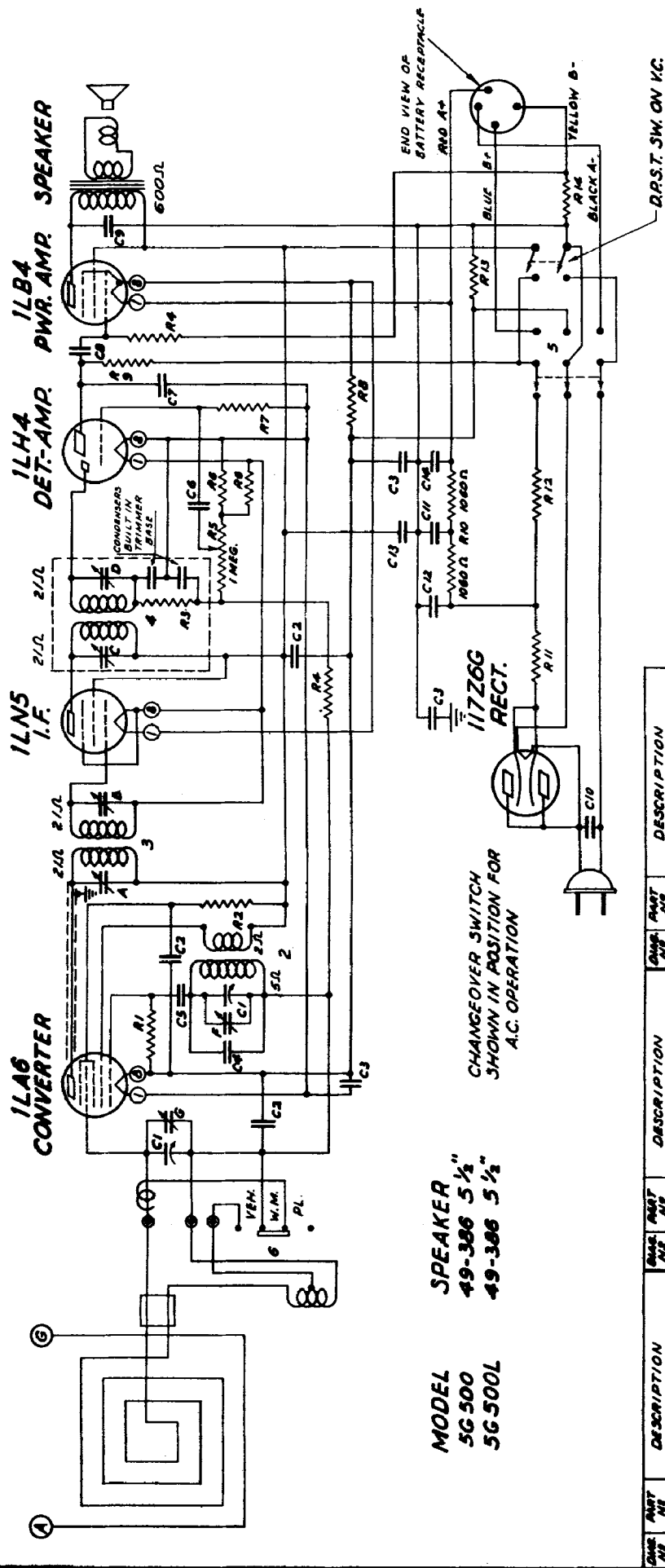


FRONT OF CHASSIS



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	1A7 Grid	$\frac{1}{2}$ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	Antenna	200 Mmf.	1500 Kc.	Broadcast	1500 Kc.	F	Set Oscillator to Scale
3	Antenna	200 Mmf.	1400 Kc.	Broadcast	1400 Kc.	G	Alignment of Scale



110 VOLT A.C.-BATTERY PACK
 UNIVERSAL PORTABLE
 I.F. FREQUENCY 455 KC.
 5 TUBE SUPERHETERODYNE
 CHASSIS NO 5A01
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

QWG NO	PART NO	DESCRIPTION	QWG NO	PART NO	DESCRIPTION
C1	23-024	2ND GANG VARIABLE	1	58386	WAVEMAGNET ASSEMBLY
C2	23-025	3RD GANG VARIABLE	2	58386	OSC. COIL ASSEMBLY
C3	23-027	1 MFD.	3	95-701	1ST I.F. TRANSFORMER
C4	23-028	20 MFD.	4	95-702	2ND I.F. TRANSFORMER
C5	23-029	500 MFD.	5	68-234	CHANGEOVER SWITCH
C6	23-030	100 MFD.	6	68-235	WAVEMAGNET SWITCH
C7	23-031	100 MFD.	A	18-1A	1ST I.F. TRANS. PRI.
C8	23-032	100 MFD.	B	18-1A	" " SEC.
C9	23-033	20 MFD.	C	25-1A	" " PRI.
C10	23-034	20 MFD.	D	25-1A	" " SEC.
C11	23-035	20 MFD.	E	68-236	BROADCAST OSC. (ON GANG)
C12	23-036	20 MFD.	F	68-237	BROADCAST AUT. (ON GANG)
C13	23-037	20 MFD.	G	68-238	BROADCAST AUT. (ON GANG)

Models 5G500
Chassis 5A01

Models 5G500

Chassis No. 5A01

All voltages measured from point indicated to Neg. B. using 20000 ohm per volt meter.

Antenna disconnected — volume control at minimum and condenser plates in full mesh.

Line voltage—117 v. A.C.

Power consumption—117 v.—20 watts.

Power consumption, battery—1.02 watts.

Power output—170 milliwatts.

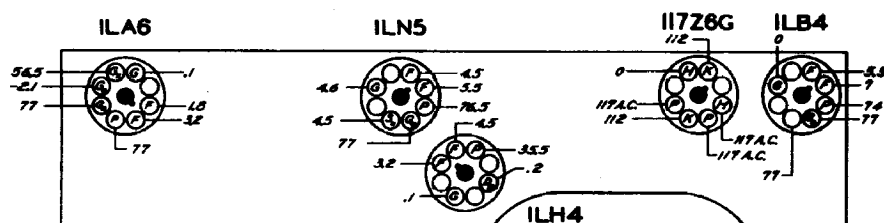
Stage Gains:

Ant. to conv. grid— $5.2\times$ at 1000 Kc.

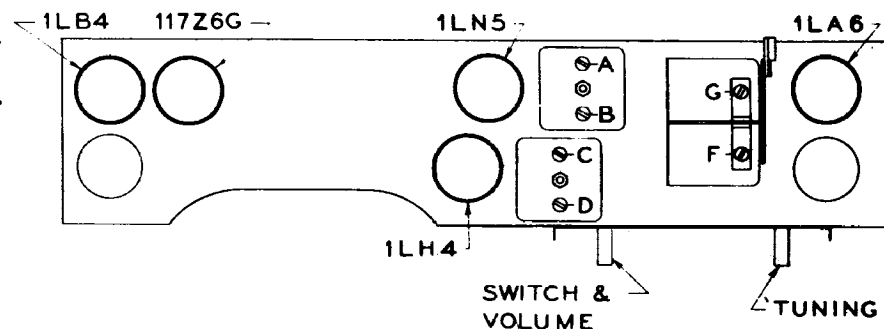
Conv. grid to I. F. grid— $86\times$ at 455 Kc.

Overall audio— $224\times$ at .050 watt, 400 cycles.

Tuning Range—540 Kc.—1570 Kc.



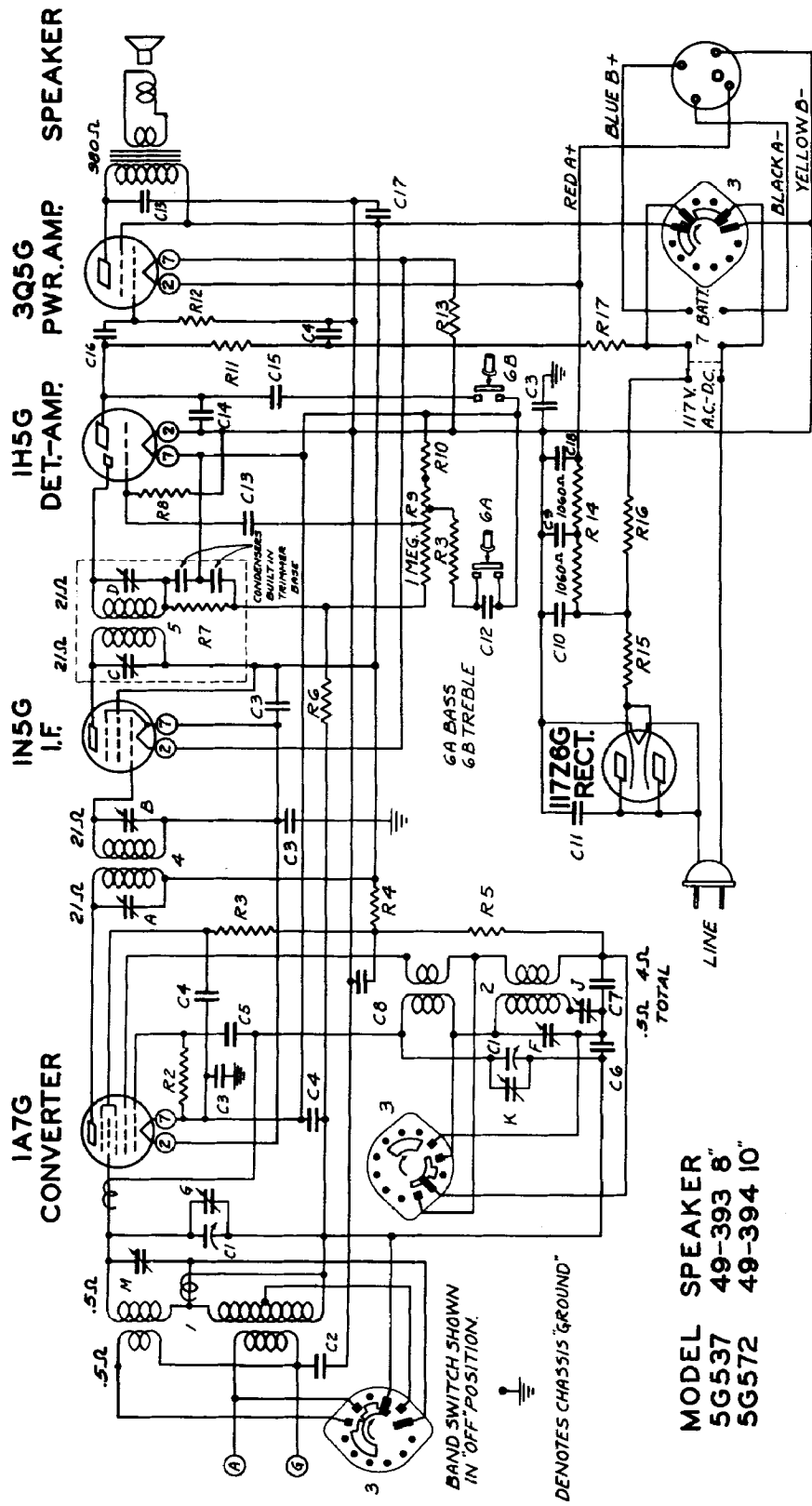
VOLTAGES MEASURED FROM SOCKET TERMINALS TO A.C. LINE AT CHANGEOVER SWITCH.



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 mmfd.	455	—	600	A B C D	I. F. Alignment
2	Single Turn Loop Coupled Loosely to Wave Magnet	—	1400	—	1400	F	Set Osc. to Scale
3		—	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of ILA6 socket.



MODEL SPEAKER
5G537 49-393 8"
5G572 49-394 10"

PIN END VIEW
OF MALE PLUG

DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION
C1	22-194	TWO GANG VARIABLE	C17	22-1027	120 MFD. ELECTROLYTIC	R12	63-600	2.2 MEG OHM	A	18-1	18-1 I.F. TRANS. PRI.
C2	22-194	.01 MFD.	C18	22-1027	120 MFD. ELECTROLYTIC	R13	63-1097	870 OHM WIREWOUND	B	18-1	18-1 I.F. TRANS. SEC.
C3	22-827	.05 MFD.				R14	63-1120	2-SECTION CAND OHM	C	22-1042	22-1042 I.F. TRANS. PRI.
C4	22-827	.05 MFD.				R15	63-1096	140 OHM WIREWOUND	D	22-1042	22-1042 I.F. TRANS. SEC.
C5	22-209	50 MFD.				R16	63-605	1000 OHM	E	22-640	22-640 BROADCAST INT. (WIND.)
C6	22-1022	.005 MFD.				R17	63-537	470M OHM	F	22-640	22-640 BROADCAST INT. (WIND.)
C7	22-102	.0025 MFD.							G	22-640	22-640 BROADCAST INT. (WIND.)
C8	22-1047	10 MFD. ELECTROLYTIC							H	22-640	22-640 BROADCAST INT. (WIND.)
C9	22-1047	30 MFD. ELECTROLYTIC							I	22-640	22-640 BROADCAST INT. (WIND.)
C10	22-865	.01 MFD.							J	22-640	22-640 BROADCAST INT. (WIND.)
C11	22-865	.01 MFD.							K	22-640	22-640 BROADCAST INT. (WIND.)
C12	22-865	.01 MFD.							L	22-640	22-640 BROADCAST INT. (WIND.)
C13	22-470	.002 MFD.							M	22-640	22-640 BROADCAST INT. (WIND.)
C14	22-470	.002 MFD.									
C15	22-887	.001 MFD.									
C16	22-245	.01 MFD.									

117V. AC-DC. 7 BATT.
BLUE B+
RED A+
BLACK A-
YELLOW B-

Models 5G537-5G572
Chassis No. 5A02

IF FREQUENCY 455 KC
5 TUBE SUPERHETERODYNE
110 V. AC-DC-BATT. PACK UNIVERSAL
2-BAND CHASSIS NO. 5A02
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Models 5G537-5G572

Chassis No. 5A02

All voltages measured with a 20000 ohm per volt meter from Neg. B to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 v. A.C.

Power consumption—117 v.—18 watts.

Power consumption, Battery—1.5 watts.

Power Output—340 milliwatts.

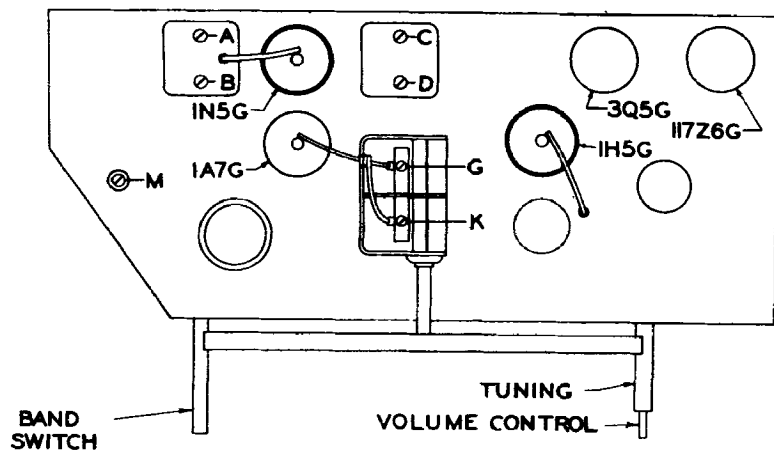
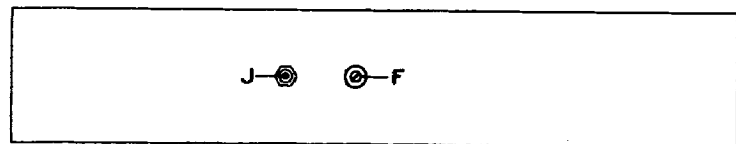
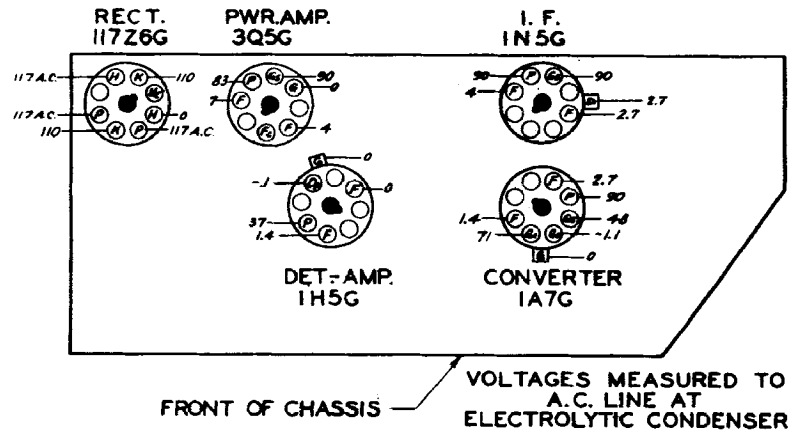
Stage Gains:

Tuning ranges—545 Kc.—1740 Kc.
—5500 Kc.—18400 Kc.

Ant. to conv. grid—4× at 1000 Kc.

Conv. grid to I. F. grid—129× at 455 Kc.

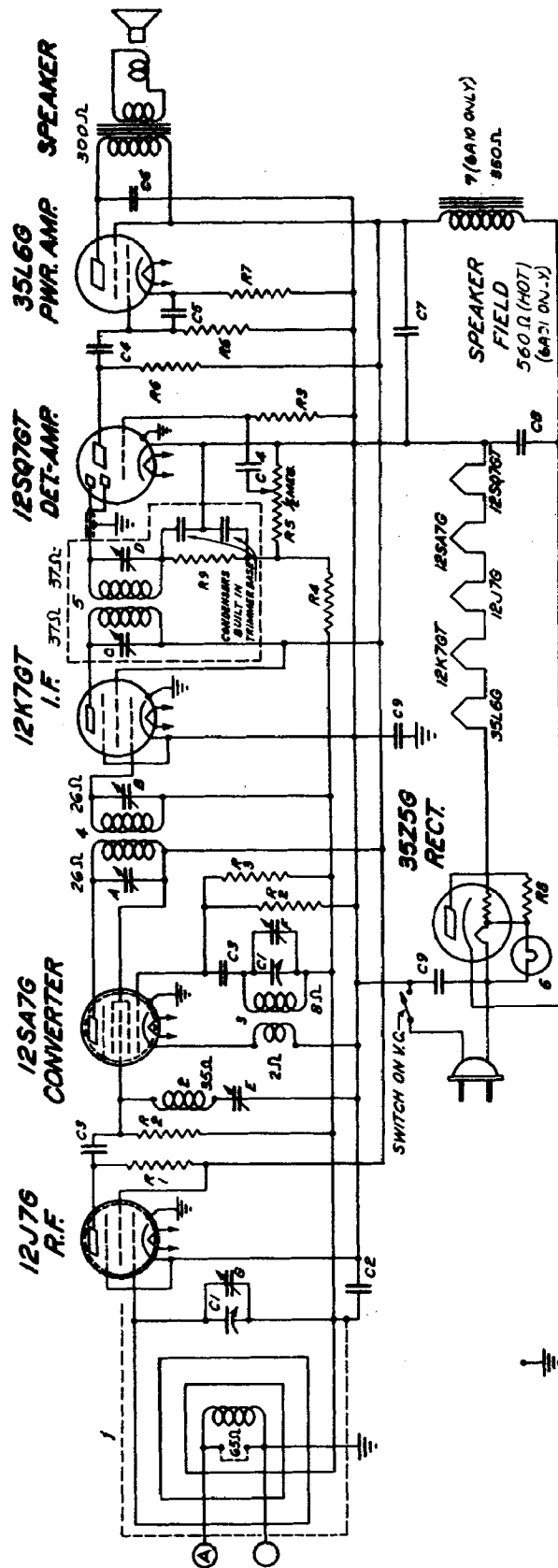
Overall audio—476× at .050 watt.
400 cycles.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid*	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A B C D	Align I. F.
2	Ant.—Gnd.	400 Ohms	18 Mc.	Short Wave	18 Mc.	K	Set. Osc. to Scale
3	Ant.—Gnd.	200 Mmf.	1700 Kc.	Broadcast	1700 Kc.	F	Set Osc. to Scale
4	Ant.—Gnd.	200 Mmf.	1700 Kc.	Broadcast	1700 Kc.	G	Align Ant.
5	Ant.—Gnd.	200 Mmf.	600 Kc.	Broadcast	600 Kc.	J	Rock Gang & Adj. to Max.
6	Ant.—Gnd.	400 Ohms	18 Mc.	Short Wave	18 Mc.	M	Align Ant.

*Gnd. lead of test osc. connected to 1A7G filament.



⏏ DENOTES CHASSIS "GROUND".

CHASSIS MODEL SPKR.
 6A01 GD510 49-385 4"
 6A10 GD525 49-403 4"
 6A10 GD526 49-403 4"

I.F. FREQUENCY 455 KC.
 6 TUBE SUPERHETERODYNE
 CHASSIS NO. 6A01 & NO. 6A10 A.C.-D.C.
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

PART NO.	DESCRIPTION	QWANTY	PART NO.	DESCRIPTION	QWANTY	PART NO.	DESCRIPTION	QWANTY
22-1006	TWO-GANG VARIABLE	1	63-581	22M OHM	1	58336	OSC. COIL ASSEMBLY	1
22-1007	.05 MFD.	1	63-582	15 MEG OHM	1	95-696	1ET I.F. TRANS.	1
22-1008	.0001 MFD.	1	63-583	22 MEG OHM	1	95-697	2ND I.F. TRANS.	1
22-1009	.01 MFD.	1	63-584	VOLUME CONTROL	1	100-87	PILOT LIGHT 6.3K .5A.	1
22-1010	.0005 MFD.	1	63-585	470M OHM	1	95-713	FILTER CHOKES (300 OHMS)	1
22-1011	.03 MFD.	1	63-586	180 OHM WIREWOUND	1			
22-1012	.20 MFD. ELECTROLYTIC	1	63-587	22 OHM WIREWOUND	1			
22-1013	.20 MFD. ELECTROLYTIC	1	63-588	47M OHM	1			
22-1014	.05 MFD.	1						
22-1015	10M OHM	1						
63-589	10M OHM	1						

Models 6D510-6D525-6D526

Chassis 6A01-6A10

Models 6D510-6D525-6D526-6R583

Chassis No. 6A01-6A08-6A10

All voltages measured with a 20,000 ohm per volt meter from Neg. B to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 v. A.C.

Power consumption—6A01-6A10—25.5 watts.

Power consumption—6A08—40.5 watts.

Power output—1. watt.

Stage Gains:

Ant. to R.F. grid—5.5× at 1000 Kc.

R.F. grid to conv. grid—6.2× at 1000 Kc.

Conv. grid to I.F. grid—51× at 455 Kc.

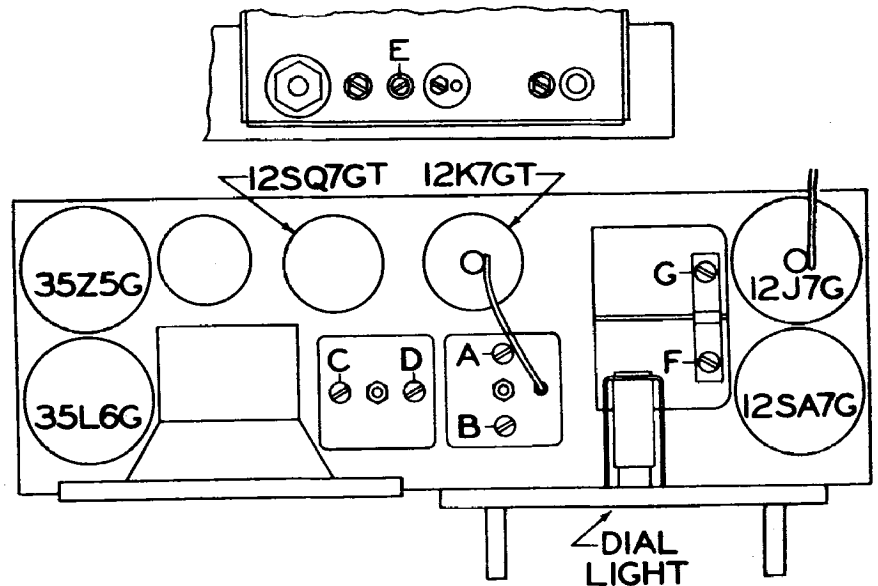
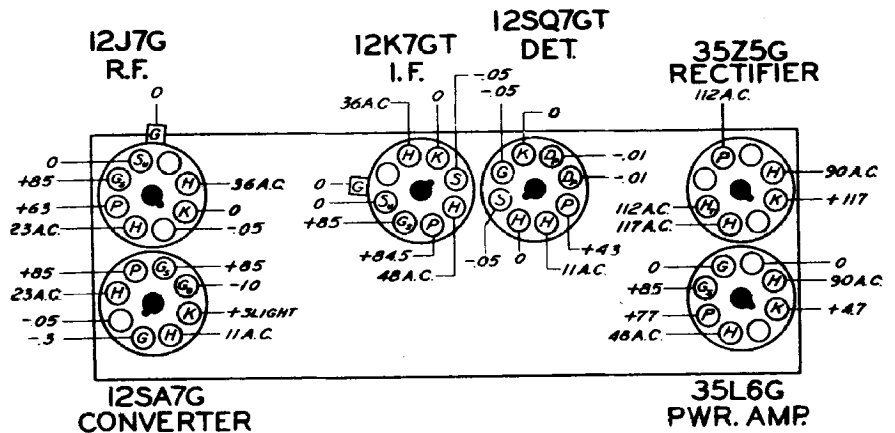
Overall audio—289× at .25 watt, 400 cycles.

6A01 uses dynamic speaker.

6A08 has phono connections added (see page 30).

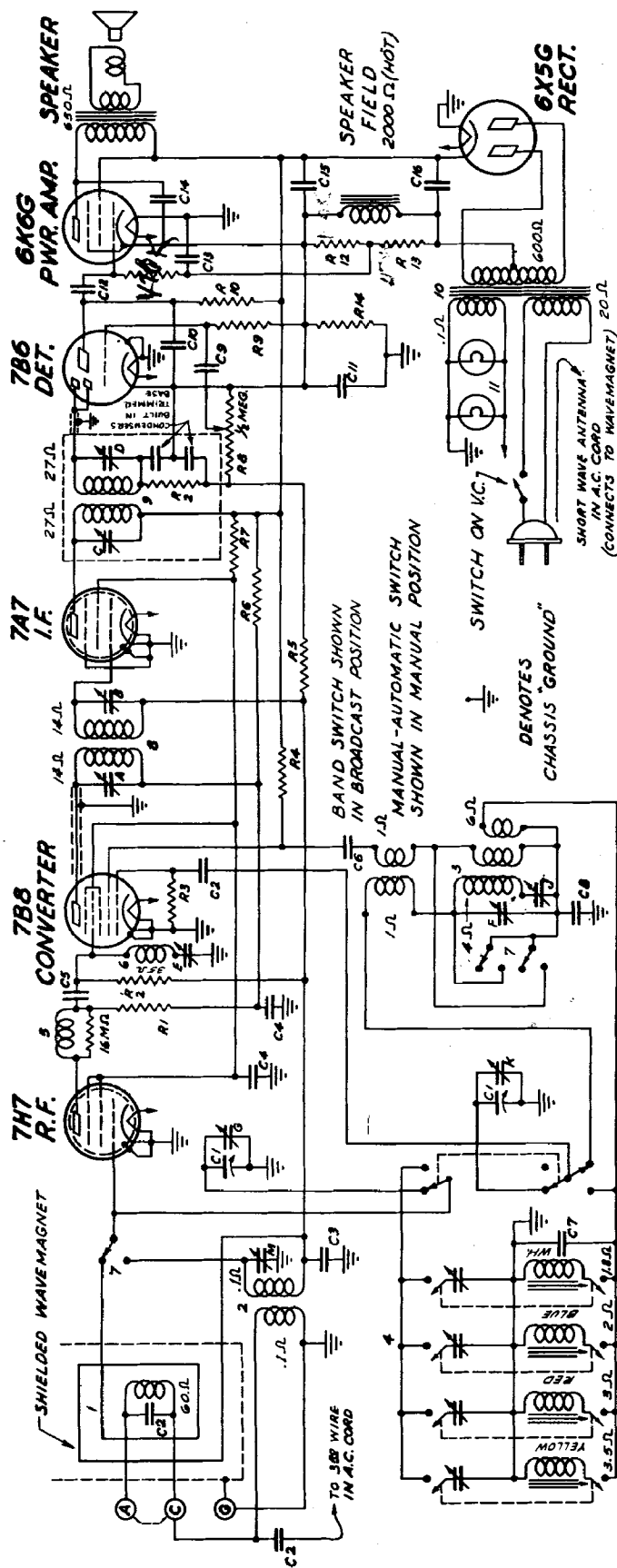
6A08 and 6A10 use P.M. speaker with choke to replace field winding.

Tuning range—540 Kc.—1600 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A B C D	I.F.
2	R.F. Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	E	Adj. for Min.
3	Ant.-grd. With 10 Ohm Shunt	.5 Mfd.	1600 Kc.	Broadcast	1600 Kc.	F	Set to Scale
4	"	.5 Mfd.	1400 Kc.	Broadcast	1600 Kc.	G	Align Ant.



MODEL SPEAKER
 6S 511 49-384 5"
 6S 527 49-384 5"
 6S 528 49-384 5"

I.F. FREQUENCY 455 K.C.
 6 TUBE SUPERHETERODYNE
 CHASSIS NO. 6A02-AC-TWO BAND
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C1	22-0007 TWO BAND VARIABLE	R1	63-257 4700 OHM	1	58376 WAVEMAGNET ASSEMBLY	1	1ST I.F. TRANS. PRL	1	1ST I.F. TRANS. PRL	1	1ST I.F. TRANS. PRL
C2	22-288 50 MFD.	R2	63-713 47 M OHM	2	58347 ANTENNA COIL ASSEM.	2	2ND I.F. " PRL	2	2ND I.F. " PRL	2	2ND I.F. " PRL
C3	22-423 10 MFD.	R3	63-593 47 M OHM	3	58348 OSCILLATOR COIL ASSEM.	3	2ND I.F. " SEC.	3	2ND I.F. " SEC.	3	2ND I.F. " SEC.
C4	22-423 10 MFD.	R4	63-084 10 M OHM	4	58344 AUTOMATIC TUNING ASSEM.	4	23-1018 WAVE-TRAP	4	23-1018 WAVE-TRAP	4	23-1018 WAVE-TRAP
C5	22-423 10 MFD.	R5	63-593 1.5 MEG OHM	5	58359 R.F. CHOKES & RES. ASSEM.	5	23-1018 WAVE-TRAP	5	23-1018 WAVE-TRAP	5	23-1018 WAVE-TRAP
C6	22-423 10 MFD.	R6	63-703 1000 OHM	6	58336 BAND SELECTOR SWITCH	6	23-1018 WAVE-TRAP	6	23-1018 WAVE-TRAP	6	23-1018 WAVE-TRAP
C7	22-423 10 MFD.	R7	63-151 15 M OHM	7	85-223 1ST I.F. TRANSFORMER	7	23-1018 WAVE-TRAP	7	23-1018 WAVE-TRAP	7	23-1018 WAVE-TRAP
C8	22-423 10 MFD.	R8	63-116 VOLUME CONTROL	8	95-639 2ND I.F. TRANSFORMER	8	23-1018 WAVE-TRAP	8	23-1018 WAVE-TRAP	8	23-1018 WAVE-TRAP
C9	22-423 10 MFD.	R9	63-976 15 MEG OHM	9	95-700 PWR. TRANS. 50-60W 117V	9	23-1018 WAVE-TRAP	9	23-1018 WAVE-TRAP	9	23-1018 WAVE-TRAP
C10	22-423 10 MFD.	R10	63-286 220 M OHM	10	100-89 PILOT LIGHT 6.3 V .15 A.	10	23-1018 WAVE-TRAP	10	23-1018 WAVE-TRAP	10	23-1018 WAVE-TRAP
C11	22-837 .1 MFD.	R11	63-597 470 M OHM	11		11		11		11	
C12	22-830 .02 MFD.	R12	63-260 100 M OHM								
C13	22-219 .02 MFD.										
C14	22-448 .004 MFD.										
C15	22-423 10 MFD.										
C16	22-423 10 MFD.										

Models 6S511-6S527-6S528

Chassis 6A02-6A13-6A14

Models 6S511-6S527-6S528-6S580

Chassis 6A02-6A04-6A13-6A14

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 6A02-6A13-6A14—40 watts.

Power consumption 6A04 — 55 watts.

Power output—2.6 watts.

Stage Gains:

Ant. to R.F. grid—3.8X at 1000 Kc.

R.F. grid to conv. grid—10X at 1000 Kc.

Conv. grid to I.F. grid—71X at 455 Kc.

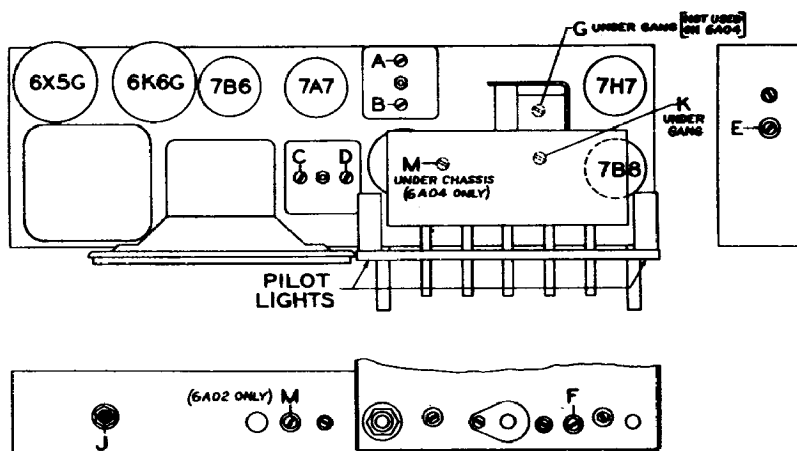
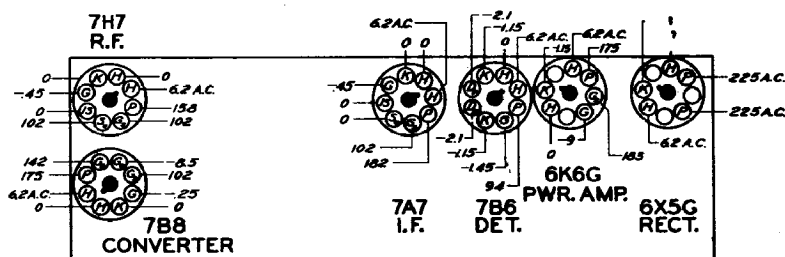
Overall audio—594X at .25 watt, 400 cycles.

NOTE

Chassis 6A04 has phono connections added (see page 31).

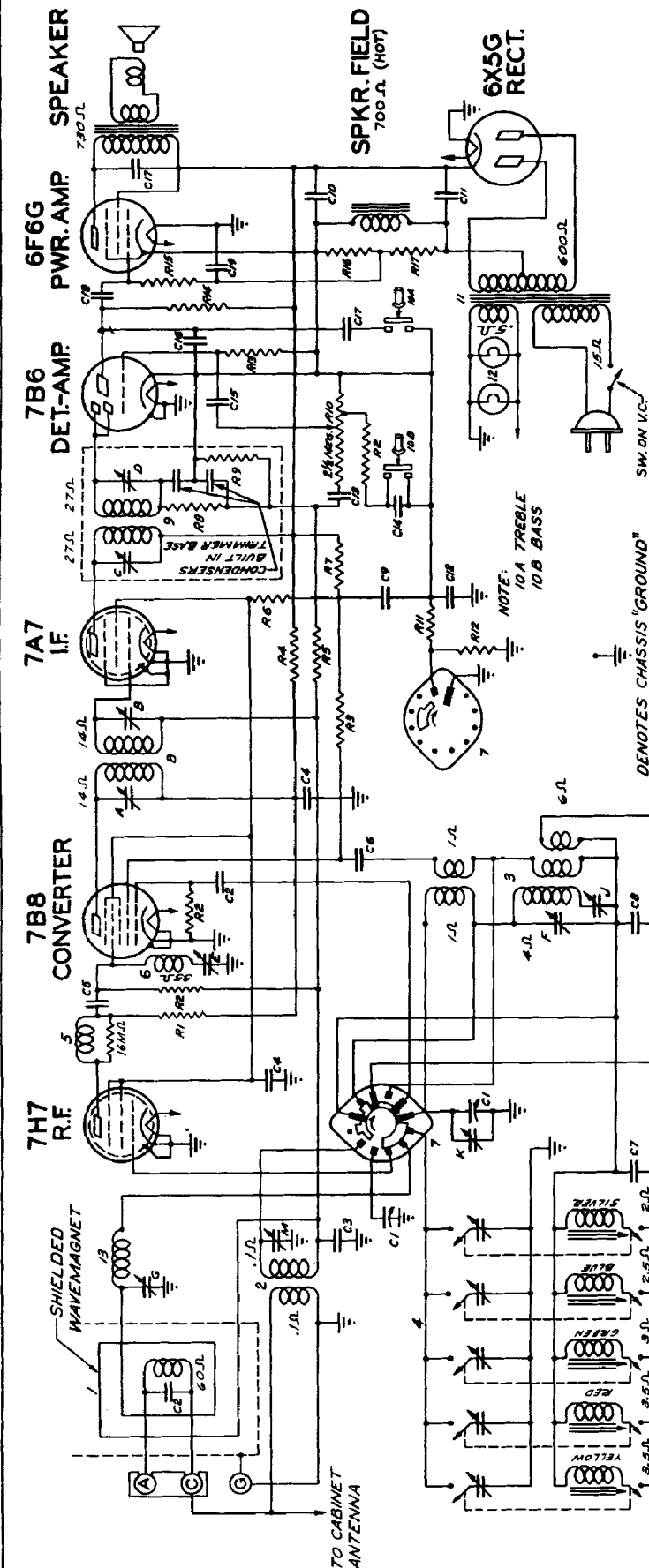
Chassis 6A13 and 6A14 are identical with 6A02 except for color of automatic knobs.

Tuning ranges—545 Kc.—1570 Kc.—5400 Kc.—18500 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	B.C.	600 Kc.	A B C D	Align I.F.
2	" "	.5 Mfd.	455 Kc.	B.C.	600 Kc.	E	Adj. for Minimum
3	Ant.-Gnd.	400 Ohm	18 Mc.	S.W.	18 Mc.	K	Set Osc. To Scale
4	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	B.C.	1500 Kc.	F	" "
5	" "	" "	" "	"	" "	G	Align Ant.
6	" "	" "	600 Kc.	"	600 Kc.	J	Rock gang & Adj. to Max.
7	" "	400 Ohm	16 Mc.	S.W.	16 Mc.	M	Align Ant.



BAND SWITCH SHOWN IN AUTOMATIC POSITION

NOTE: 10A TREBLE 10B BASS

DENOTES CHASSIS "GROUND"

MODEL
6S546
6S556

I.F. FREQUENCY 455 KC.
6 TUBE SUPERHETERODYNE
CHASSIS N2 6A05 2BAND A.C.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C 1	22-1044	TWO GANG VARIABLE	R 15	63-597	470 M OHM	13	38474	LOOP LOADING COIL			
C 2	22-209	50 MFD.	R 16	63-654	180 M OHM	A		1ET I.F. TRANS. PRI.			
C 3	22-829	.05 MFD.	R 17	63-656	270 M OHM	B		2ND I.F. " PRI.			
C 4	22-829	.05 MFD.				C		2ND I.F. " SEC.			
C 5	22-162	.0001 MFD.	1			D		22-1045 WAVE TRAP			
C 6	22-182	.00015 MFD.	2			E		22-1046 BROADCAST OSCILLATOR			
C 7	22-182	.00015 MFD.	3			F		22-1047 BROADCAST ANTENNA			
C 8	22-182	.00015 MFD.	4			G		22-1048 BROADCAST ANTENNA			
C 9	22-182	.00015 MFD.	5			H		22-1049 SHORT WAVE OSC. (ON GANG)			
C 10	22-1084	.00015 MFD.	6			J		22-1045 SHORT WAVE ANTENNA			
C 11	22-827	.0001 MFD.	7			K					
C 12	22-827	.0001 MFD.	8			M					
C 13	22-182	.0001 MFD.	9								
C 14	22-229	.0001 MFD.	10								
C 15	22-492	.0001 MFD.	11								
C 16	22-492	.0001 MFD.	12								
C 17	22-448	.0001 MFD.									
C 18	22-820	.02 MFD.									

Models 6S546-6S556
Chassis 6A05

Models 6S546-6S556

Chassis 6A05

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption—60 watts.

Power output—6 watts.

Stage Gains

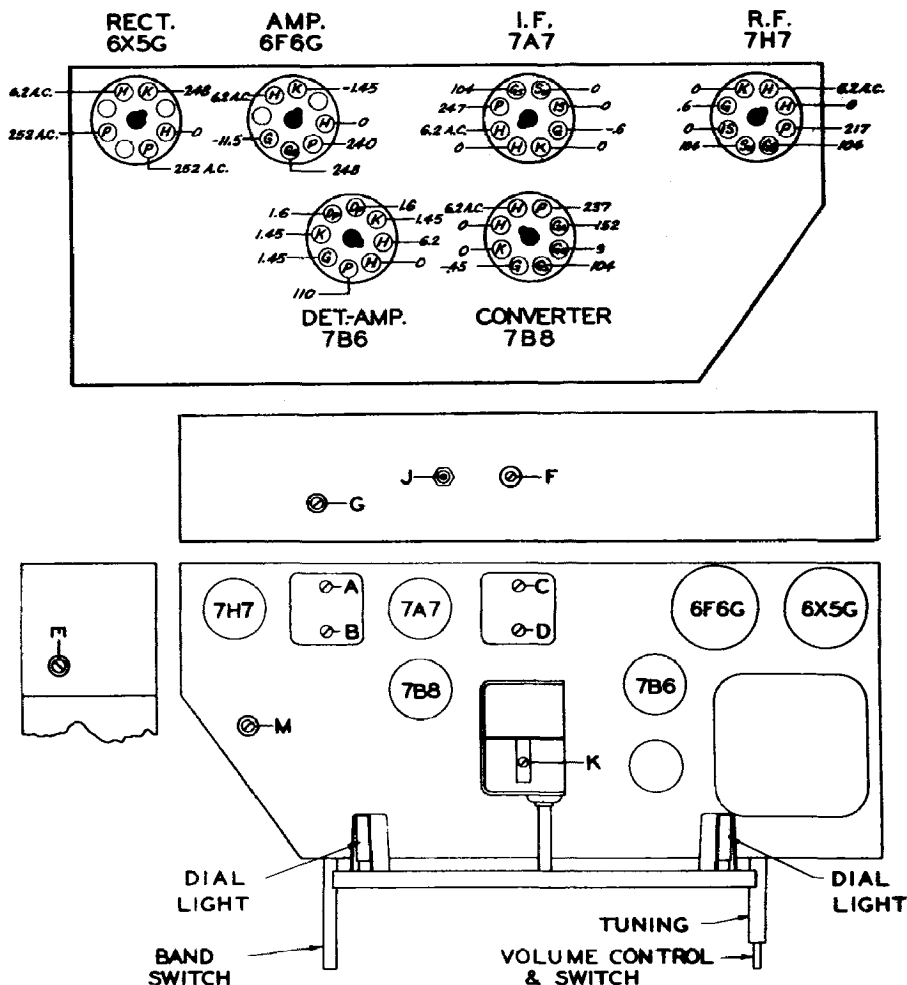
Ant. to R.F. grid—3.8X at 1000 Kc.

R.F. grid to conv. grid—7X at 1000 Kc.

Conv. grid to I.F. grid—92X at 455 Kc.

Overall audio—778X at 1 watt 400 cycles.

Tuning ranges— 545 Kc.— 1570 Kc.
5700 Kc.—18300 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A B C D	Align I.F.
2	R.F. Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	E	Adj. for Minimum
3	Ant.-Gnd.	400 Ohm	18 Mc.	Short Wave	18 Mc.	K	Set Osc. To Scale
4	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	Broadcast	1500 Kc.	F	" "
5	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	Broadcast	1500 Kc.	G	Align Ant.
6	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	600 Kc.	Broadcast	600 Kc.	J	Rock gang & Adj. to Max.
7	Ant.-Gnd. with 10 Ohm Shunt	400 Ohm	16 Mc.	Short Wave	16 Mc.	M	Align Ant.

Model 7S585

Chassis 7A01

All voltages measured with a 1000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

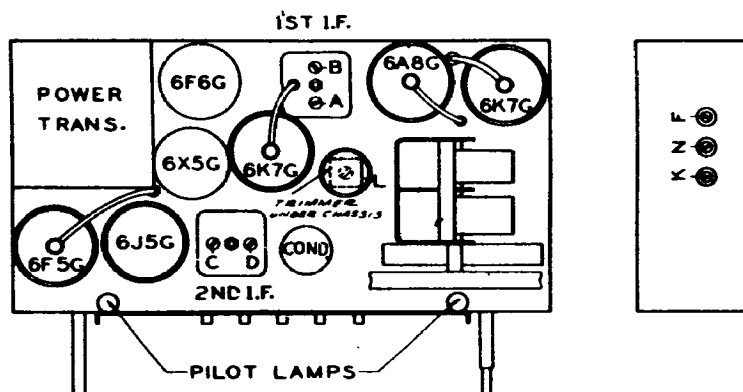
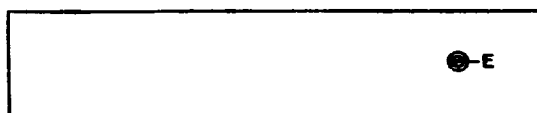
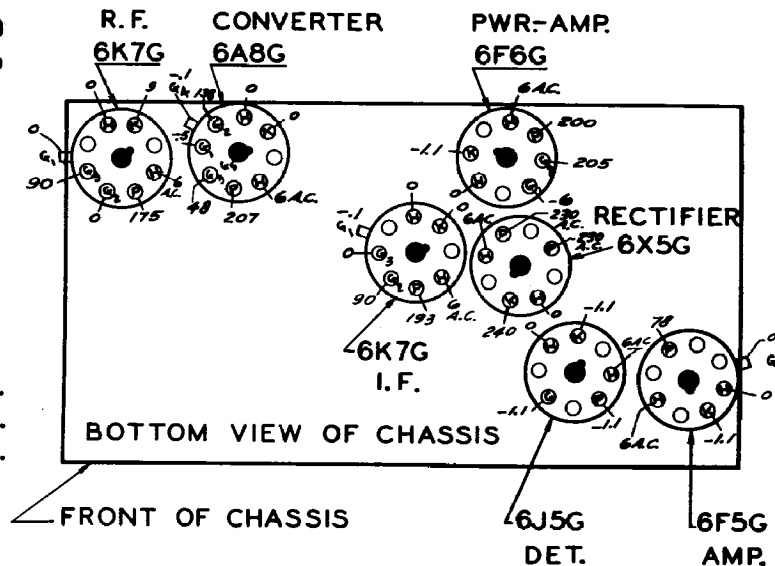
Volume control full on.

Line voltage 112 A.C.

Power consumption—80 watts.

Power output—4.5 watts.

Tuning ranges — 545 Kc.— 1570 Kc.
1520 Kc.— 5000 Kc.
5600 Kc.—18300 Kc.



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	6A8 Grid	½ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	R. F. 6K7 Grid	½ Mfd.	455 Kc.	Broadcast	600 Kc.	E	Adjust Wavetrap for Minimum
3	Antenna Post (On Loop)	400 Ohms	18000 Kc.	S. W.	18000 Kc.	K	Set Oscillator to Scale
4	Antenna Post (On Loop)	400 Ohms	16000 Kc.	S. W.	16000 Kc.	L	Rock Gang and Adjust for Max.
5	Antenna Post (On Loop)	400 Ohms	4500 Kc.	Police	4500 Kc.	N	Rock Gang and Adjust for Max.
6	Generator Loosely Coupled to Loop		1500 Kc.	Broadcast	1500 Kc.	F	Set Oscillator to Scale
7	Thru One or Two Turns		1400 Kc.	Broadcast	1400 Kc.	G	Alignment of Antenna

Models 7S529-7S530-7S547-7S557-7S558-7S559-7S581-7S582-7S584

Chassis 7A02-7A04

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption—7A02—60 watts.

Power consumption—7A04—80 watts.

Power output—6.5 watts.

Stage Gains

Ant. to R.F. grid—7 $\times$ at 1000 Kc.

R.F. grid to conv. grid—10.7 $\times$ at 1000 Kc.

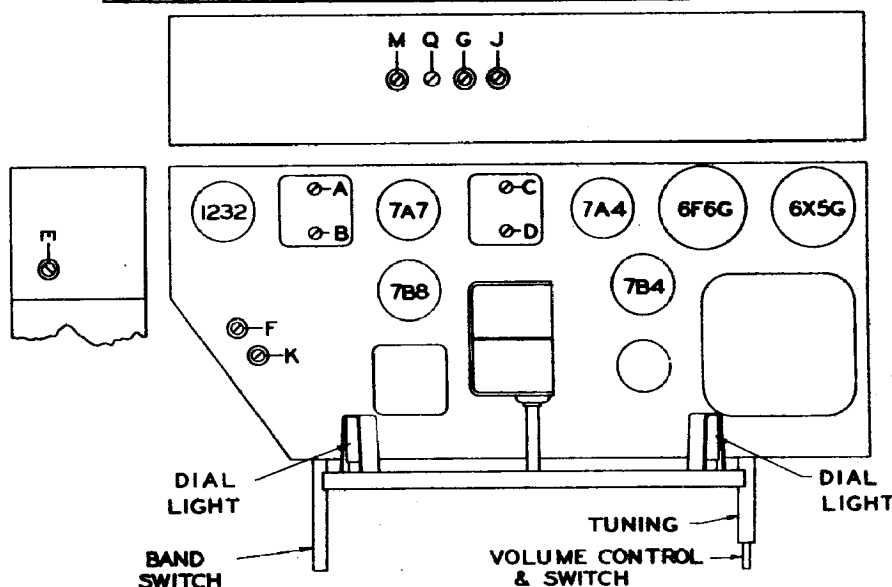
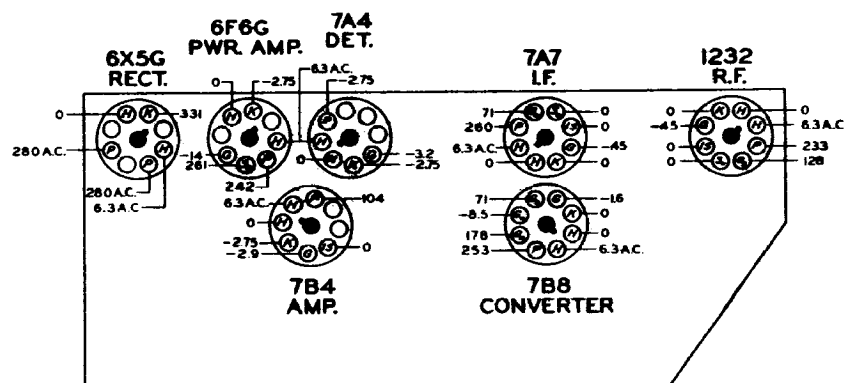
Conv. grid to I.F. grid—66 $\times$ at 455 Kc.

Overall audio—923 $\times$ at 1 watt 400 cycles.

NOTE

Chassis 7A04 has phono connections added (see page 31).

Tuning ranges— 540 Kc.— 1570 Kc.
1550 Kc.— 4800 Kc.
5900 Kc.—18300 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	B.C.	600 Kc.	A B C D	Align I.F.
2	R.F. Grid	" "	455 Kc.	" "	" "	E	Adjust for Minimum
3	Ant.-Gnd. with 10 ohm shunt	400 Ohms	18 Mc.	S.W.	18 Mc.	K	Set to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	M	Align ant.
5	"	"	4.5 Mc.	Med.	4.5 Mc.	Q	Rock gang & adj. to max.
6	"	.5 Mfd.	1500 Kc.	B.C.	1500 Kc.	F	Set to Scale
7	"	"	1400 Kc.	B.C.	1400 Kc.	G	Align ant.
8	"	"	600 Kc.	B.C.	600 Kc.	J	Rock gang & Adj. padder
9	"	"	1500 Kc.	B.C.	1500 Kc.	F—G	Repeat 6 & 7

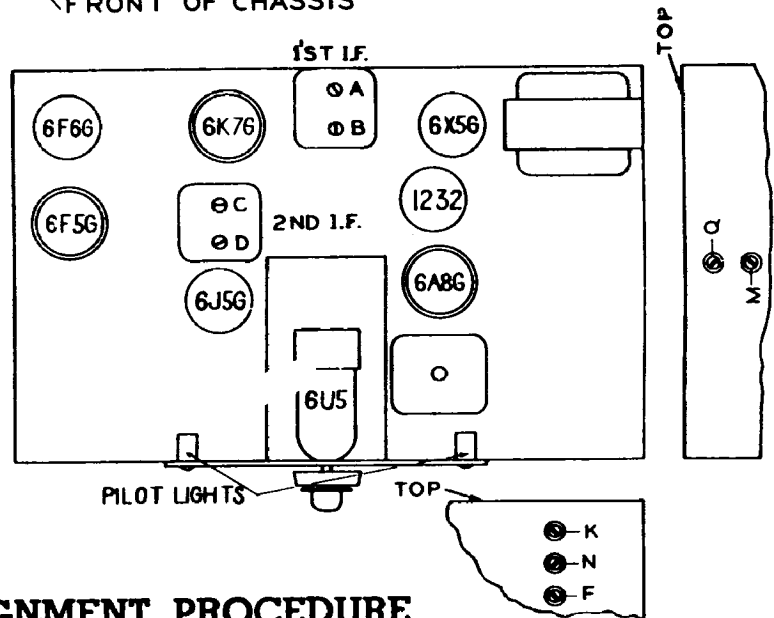
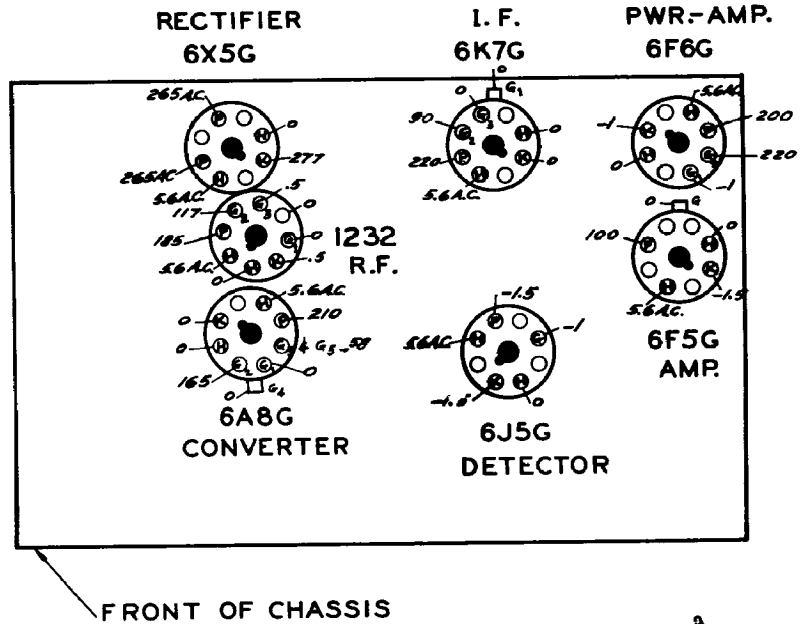
Model 8S586
Chassis 8A01

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Power consumption—85 watts.

Tuning ranges— 540 Kc.— 1600 Kc.
1505 Kc.— 5200 Kc.
5600 Kc.—18500 Kc.



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	½ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	Antenna Post (On Loop)	200 Mmf.	18000 Kc.	S. W.	18000 Kc.	K	Set Oscillator to Scale
3	Antenna Post (On Loop)	200 Mmf.	16000 Kc.	S. W.	16000 Kc.	M	Alignment of Antenna
4	Antenna Post (On Loop)	200 Mmf.	4500 Kc.	Police	4500 Kc.	N	Set Oscillator to Scale
5	Antenna Post (On Loop)	200 Mmf.	4500 Kc.	Police	4500 Kc.	Q	Alignment of Antenna
6	Single Turn Coupled Loosely to Loop		1400 Kc.	Broadcast	1400 Kc.	F	Set Oscillator to Scale
7	Loop Switch in Wave Magnet Position		1400 Kc.	Broadcast	1400 Kc.	G (On Loop)	Alignment of Antenna

Models 8S531-8S548-8S563-8S587-8S588

Chassis 8A02-8A03

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 v.

Power consumption—8A02—65 watts.

Power consumption—8A03—85 watts.

Power output—6 watts.

Stage Gains

Ant. to R.F. grid—4.9× at 1000 Kc.

R.F. grid to conv. grid—12× at 1000 Kc.

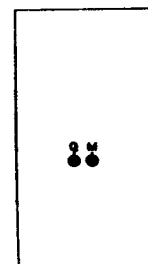
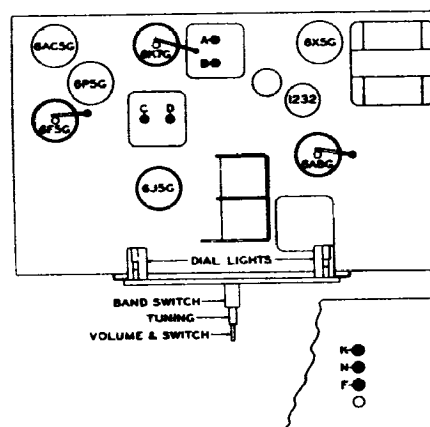
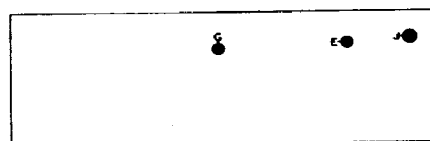
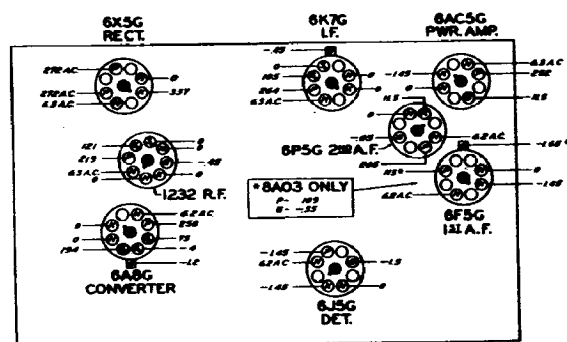
Conv. grid to I.F. grid—66× at 455 Kc.

Overall audio—743× at 1 watt 400 cycles.

NOTE

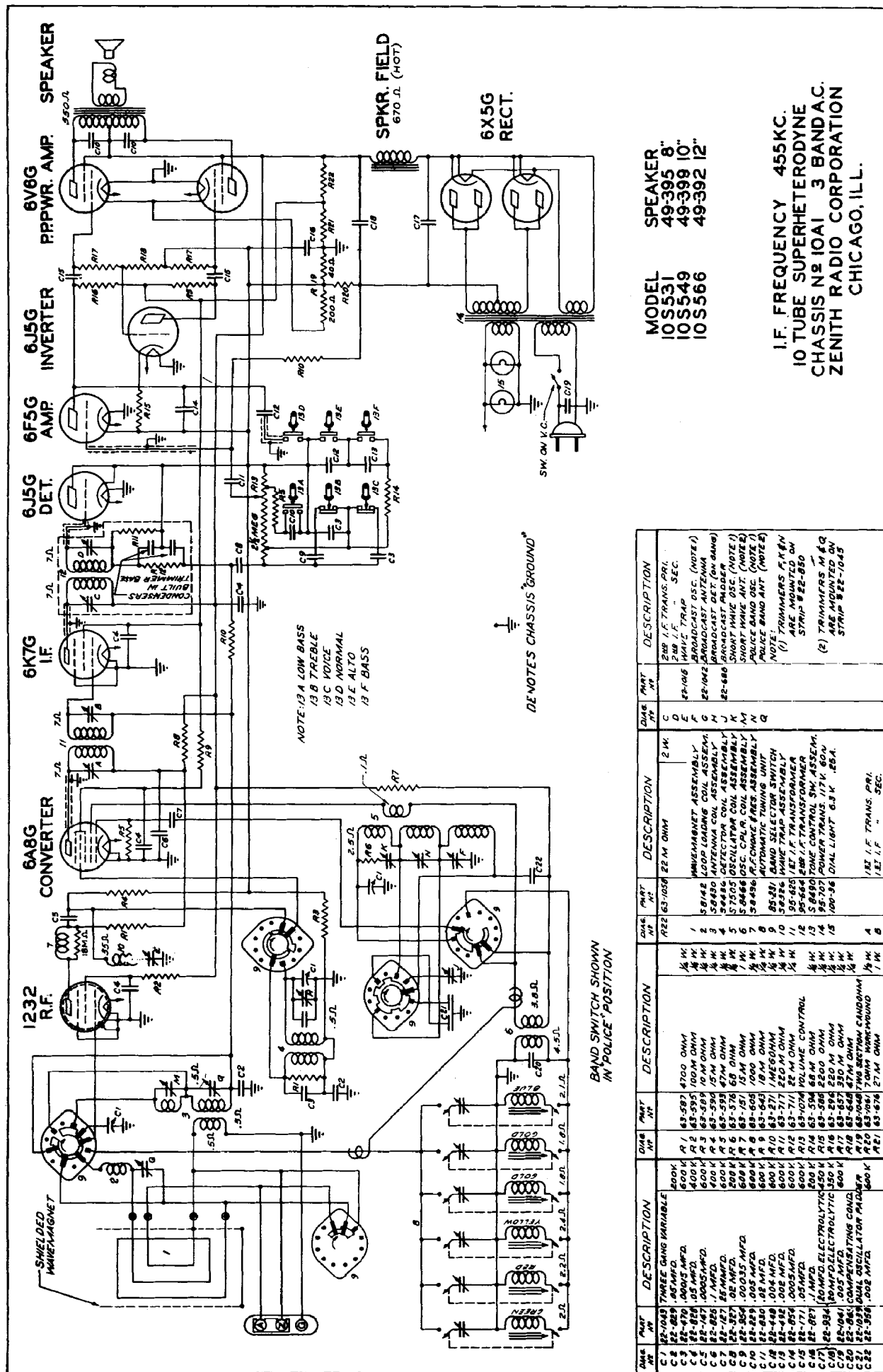
Chassis 8A03 has phono connections added (see page 31).

Tuning ranges— 540 Kc.— 1600 Kc.
1500 Kc.— 5200 Kc.
5700 Kc.—18300 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	B.C.	600 Kc.	A B C D	Align I.F.
2	" "	"	455 Kc.	B.C.	600 Kc.	E	Adjust for Minimum
3	Ant.-Gnd. with 10 ohm shunt	400 Ohms	18 Mc.	S.W.	18 Mc.	K	Set to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	M	Align ant.
5	"	"	4.5 Mc.	MED.	4.5 Mc.	N	Set to Scale
6	"	"	4.5 Mc.	MED.	4.5 Mc.	Q	Align ant.
7	"	None	1500 Kc.	B.C.	1500 Kc.	F	Set to Scale
8	"	"	1400 Kc.	B.C.	1400 Kc.	G	Align ant.
9	"	"	600 Kc.	B.C.	600 Kc.	I	Rock Gang and Adj. Padder
10	"	"	1500 Kc.	B.C.	1500 Kc.	F—G	Rpt. 7 & 8



MODEL
10S531
10S549
10S566

SPEAKER
49-395 8"
49-398 10"
49-392 12"

I.F. FREQUENCY 455 KC.
10 TUBE SUPERHETERODYNE
CHASSIS N° 10A1 3 BAND A.C.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Models 10S531-10S549-10S566

Chassis 10A1

Models 10S531-10S549-10S566-10S589-10S590

Chassis 10A1-10A2

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 v.

Power consumption—10A1—95 watts.

Power consumption—10A2—120 watts.

Power output—14 watts.

Stage Gains:

Ant. to R.F. grid— $3.7\times$ at 1000 Kc.

R.F. grid to conv. grid— $9.7\times$ at 1000 Kc.

Conv. grid to I.F. grid— $63\times$ at 455 Kc.

Overall audio— $1250\times$ at 1 watt 400 cycles.

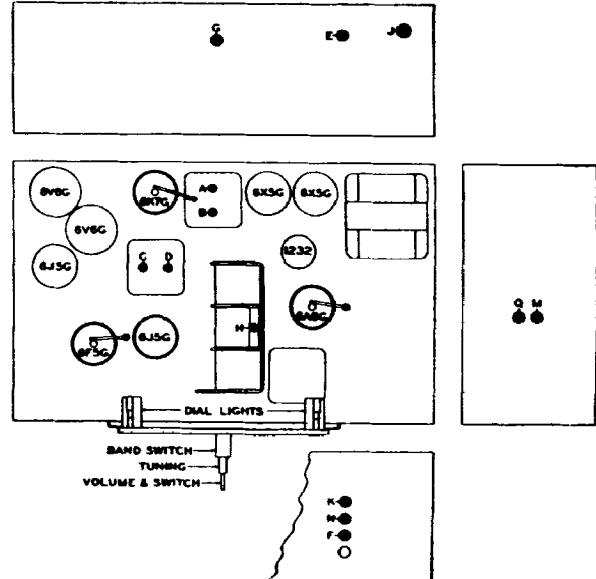
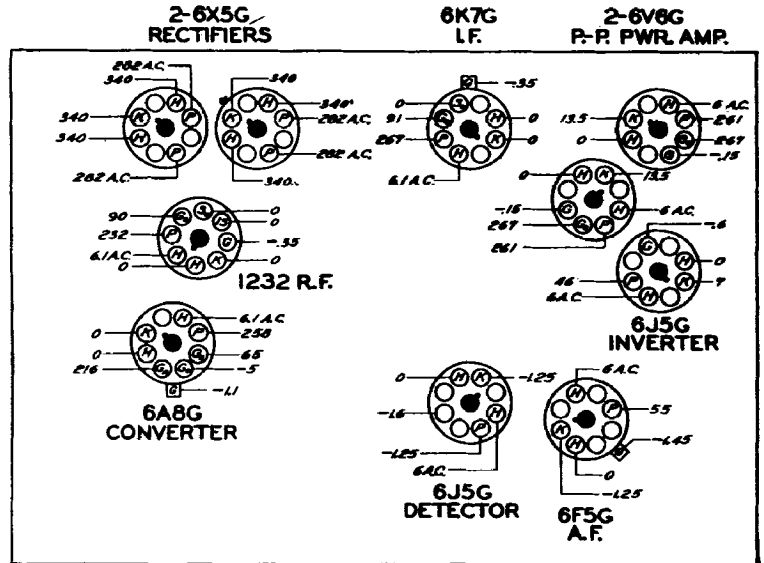
NOTE

Chassis 10A2 has phono connections added (see page 32).

Tuning ranges— 540 Kc.— 1600 Kc.

1500 Kc.— 5200 Kc.

5700 Kc.—18300 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Set Dial At	Band	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	B.C.	600 Kc.	A B C D	Align I.F.
2	Ant.-Gnd. with 10 ohm shunt	"	455 Kc.	B.C.	600 Kc.	E	Adjust for Minimum
3	"	400 Ohms	18 Mc.	S.W.	18 Mc.	K	Set to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	M	Align ant.
5	"	"	4.5 Mc.	POL.	4.5 Mc.		Set to Scale
6	"	"	4.5 Mc.	POL.	4.5 Mc.	Q	Align ant.
7	"	.5 Mfd.	1500 Kc.	B.C.	1500 Kc.	F	Set to Scale
8	"	"	1400 Kc.	B.C.	1400 Kc.	G—H	Align R.F. Det.
9	"	"	600 Kc.	B.C.	600 Kc.	I	Rock Gang and Adj. Padder
10	"	"	1500 Kc.	B.C.	1500 Kc.	F—G—H	Rpt. 7 & 8

Models 12S550-12S568-12S569-12S595

Chassis 12A3-12A4

All voltages measured with a 1000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 v.

Power consumption—12A3—95 watts.

Power consumption—12A4—120 watts.

Power output—15 watts.

Stage Gains

Ant. to R.F. grid— $2.08\times$ at 1000 Kc.

R.F. grid to conv. grid— $7.5\times$ at 1000 Kc.

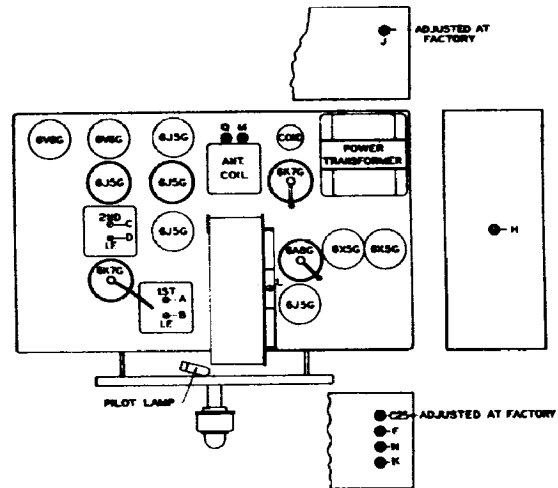
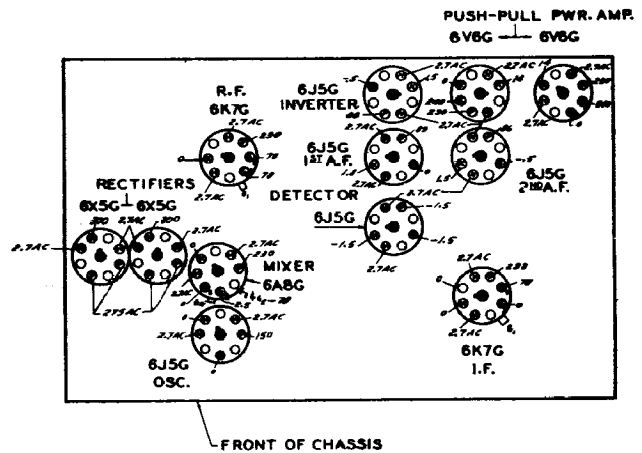
Conv. grid to I.F. grid— $43\times$ at 455 Kc.

Overall audio— $2127\times$ at 1 watt 400 cycles.

NOTE

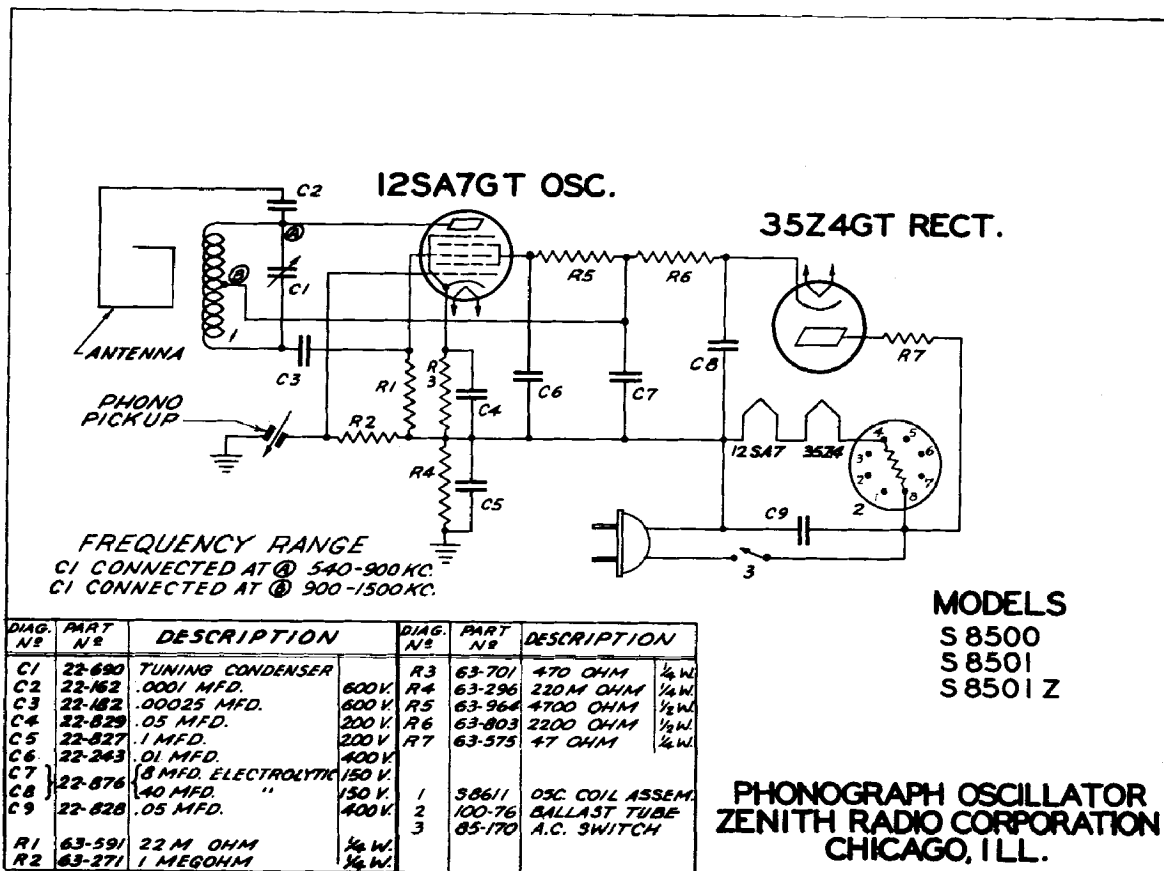
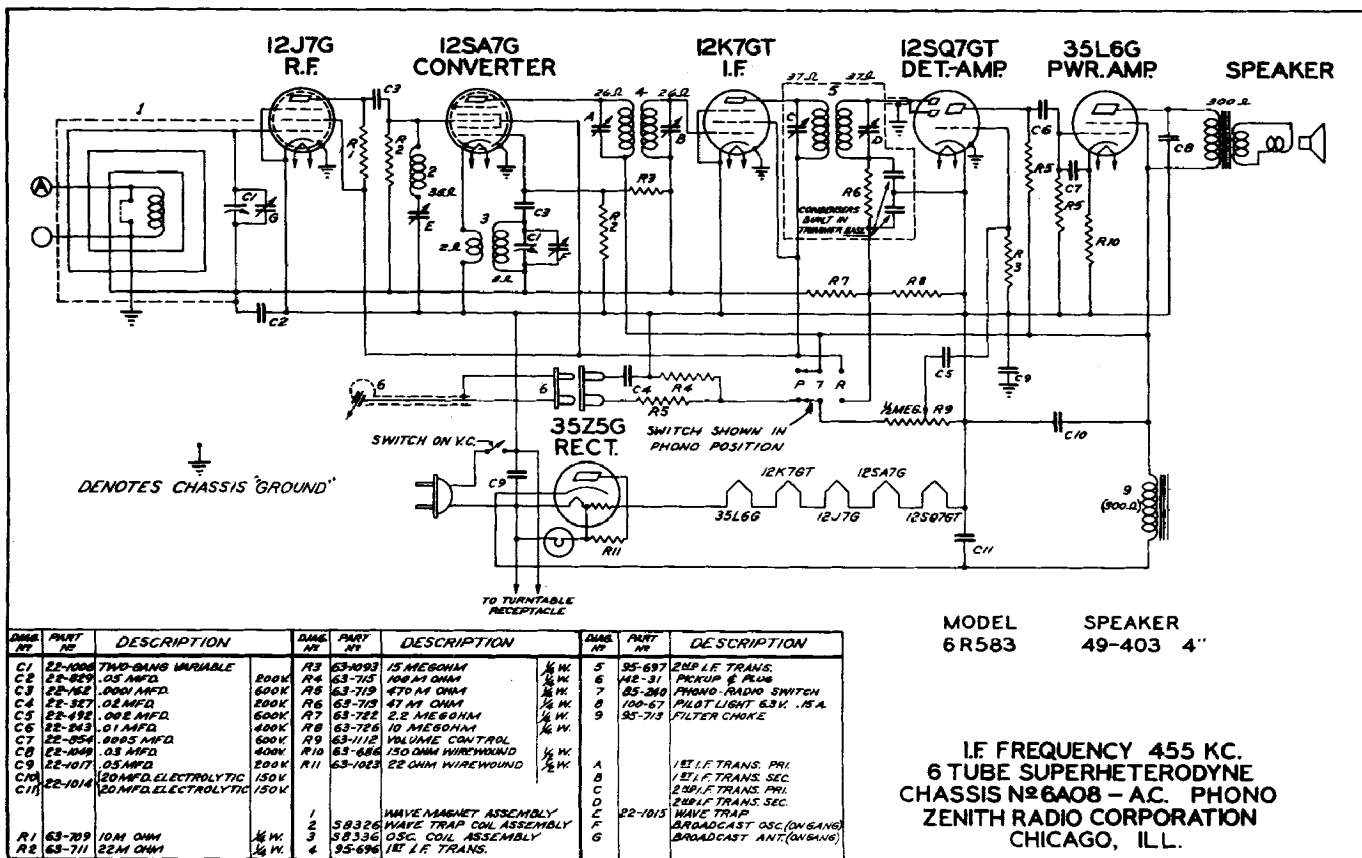
Chassis 12A4 has phono connections added (see page 32).

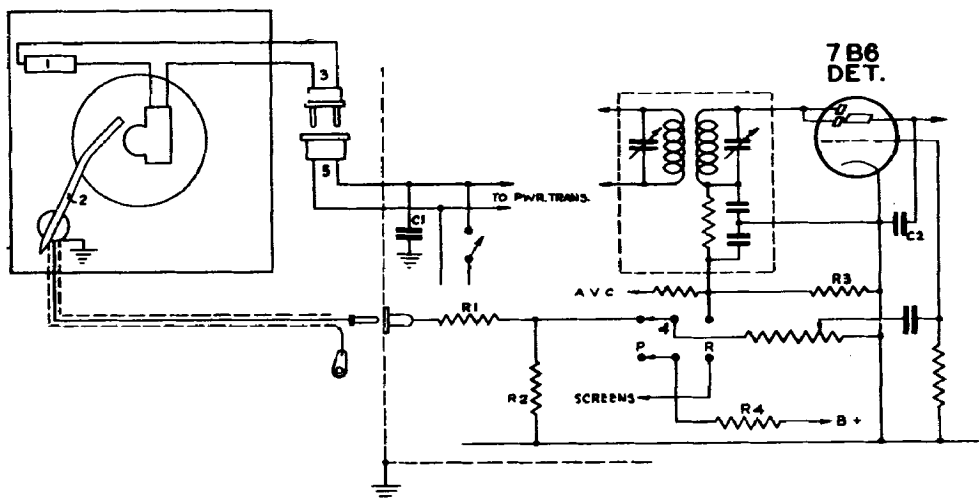
Tuning ranges— 540 Kc.— 1600 Kc.
1500 Kc.— 5200 Kc.
5700 Kc.—18300 Kc.



ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Mixer Grid	$\frac{1}{2}$ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I.F. Alignment
2	Antenna-Gnd.	400 Ohm	18000 Kc.	S.W.	18000 Kc.	K	Set Oscillator to Scale
3	"	"	16000 Kc.	"	16000 Kc.	L-M	Alignment of Det.—Rock Gang & Adjust for Max.
4	"	"	4500 Kc.	Police	4500 Kc.	N	Rock Gang & Adjust for Max. Output
5	"	"	4500 Kc.	"	4500 Kc.	Q	Alignment of Antenna
6	Single Turn Coupled Loosely to Loop		1400 Kc.	Broadcast	1400 Kc.	F	Set Oscillator to Scale
7	"		1400 Kc.	"	1400 Kc.	H	Alignment of R.F.
8	"		1400 Kc.	"	1400 Kc.	G (On Loop)	Alignment of Loop
9	"		600 Kc.	"	600 Kc.	I	Rock Gang & Adjust for Max. Output
10	"		1400 Kc.	"	600 Kc.	F-G-H	Repeat 6-7-8

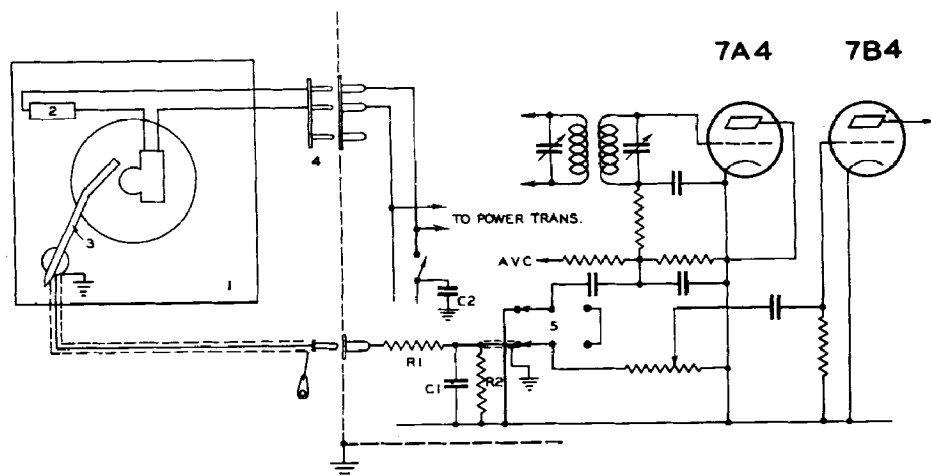




DIAG. N°	PART N°	DESCRIPTION
C1	22-1040	.02 MFD. 200 V.
C2	22-82	.001 MFD. 600 V.
R1	63-597	470M OHM 1/4 W.
R2	63-595	100M OHM 1/4 W.
R3	63-604	10 MEGOHM 1/4 W.
R4	63-151	15M OHM 1 W.
* R4 SAME AS R7 ON 6A02 DIAGRAM		
1	85-181	AUTOMATIC STOP-SWITCH
2	142-26	PHONO PICK-UP
3	58-86	A.C. PLUG
4	63-230	PHONO-RADIO SWITCH
5	52-188	CABLE & PLUG

ON THIS CHASSIS, TRIMMER "T" IS PART NO. 22-305 & TRIMMER "B" IS NOT USED.

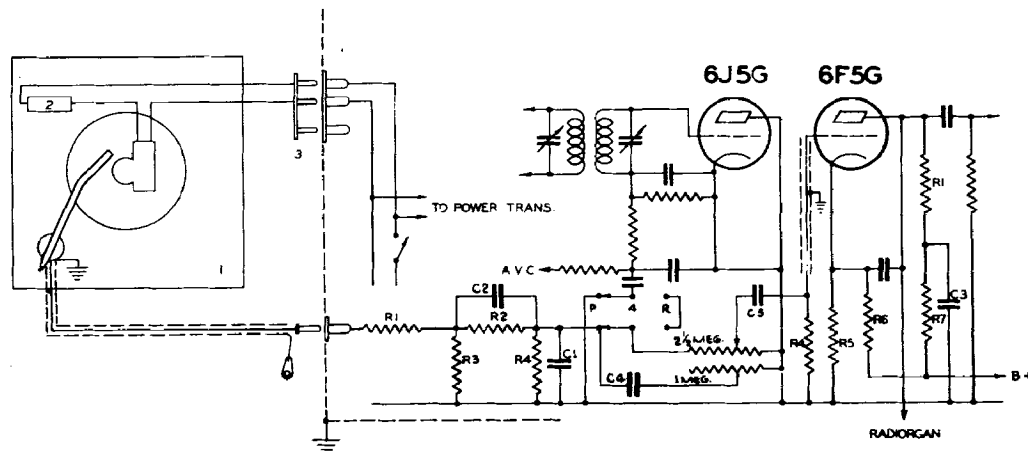
PHONO CIRCUIT DATA
 MODEL 6S 580
 SPEAKER 49-387 5"
 CHASSIS N°6A04



DIAG. N°	PART N°	DESCRIPTION
C1	22-887	.001 MFD. 600 V.
C2	22-1041	.005 MFD. 600 V.
R1	63-597	470M OHM 1/4 W.
R2	63-855	220M OHM 1/4 W.
* MODEL 75582 169-42		
1	85-191	WEBSTER AUTOMATIC RECORD PLAYER
2	142-26	A.C. SWITCH
3	58-85	PICK-UP
4	58-85	A.C. PLUG
5	85-171	PHONO-RADIO SW.

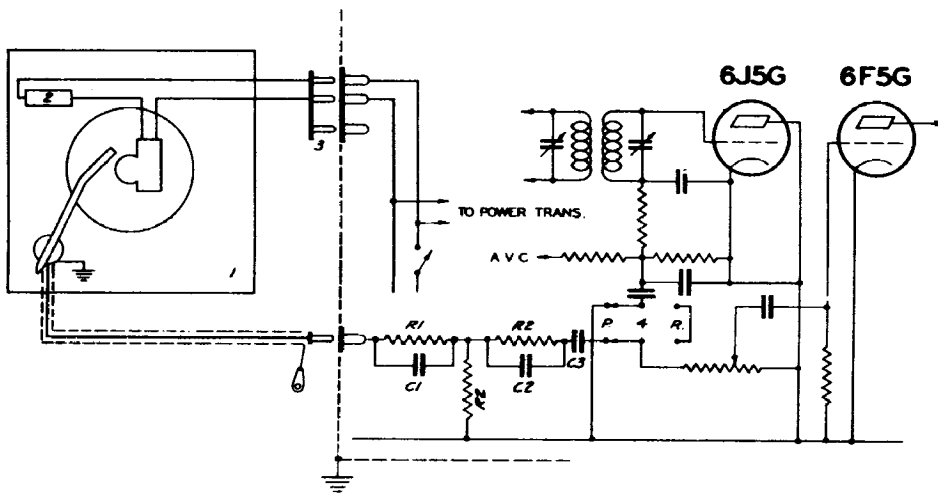
NOTE-BANDSWITCH ON THIS CHASSIS IS PART NO. 85-227.

PHONO CIRCUIT DATA
 MODEL 7S 582
 SPEAKER 49-369 10"
 7S 581 49-396 10"
 7S 584 49-397 12"
 CHASSIS NO. 7A04



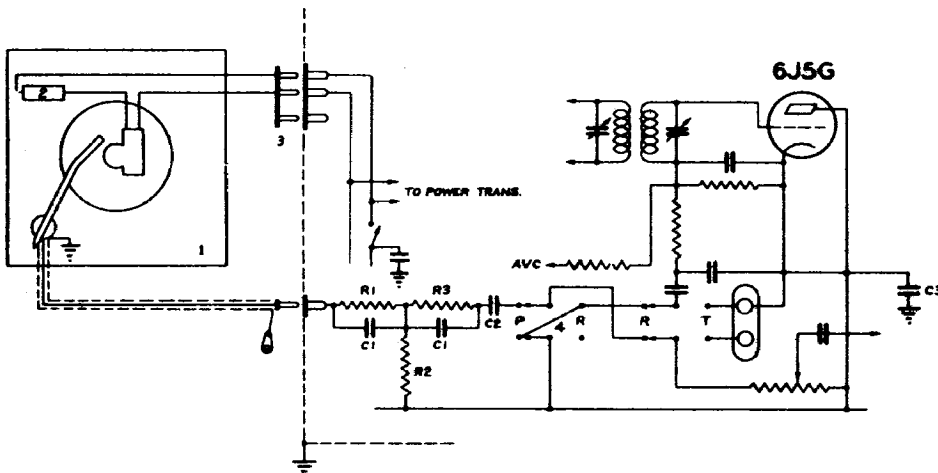
DIAG. N°	PART N°	DESCRIPTION
C1	22-182	.00025MFD. 600 V.
C2	22-954	.00035 MFD. 600 V.
C3	22-825	.1 MFD. 400 V.
C4	22-326	.005 MFD. 400 V.
C5	22-830	.02 MFD. 600 V.
R1	63-296	220 M OHM 1/4 W.
R2	63-597	470 M OHM 1/4 W.
R3	63-596	330 M OHM 1/4 W.
R4	63-271	1 MEG. 1/4 W.
R5	63-1109	590 OHM WIREWIND. 1/4 W.
R6	63-121	100 M OHM 1 W.
R7	63-595	47 M OHM 1/4 W.
R8	63-1117	VOLUME CONTROL
1	169-42	WEBSTER AUTOMATIC RECORD PLAYER
2	85-191	A.C. SWITCH
3	58-85	A.C. PLUG
4	85-226	PHONO-RADIO SW.

PHONO CIRCUIT DATA
 MODEL 8S 587
 SPEAKER 49-397 12"
 8S 588 49-397 12"
 CHASSIS NO. 8A03



DIAG Nº	PART Nº	DESCRIPTION
C 1	22-1048	.00085 MFD. 600 V.
C 2	22-954	.00035 MFD. 600 V.
C 3	22-667	.001 MFD. 600 V.
R 1	63-597	470M OHM 1/4 W.
R 2	63-271	1 MEGOHM 1/4 W.
1	169-42	WEBSTER AUTOMATIC RECORD PLAYER
2	85-191	A.C. SWITCH
3	58-85	A.C. PLUG
4	85-228	PHONO-RADIO SW.

PHONO CIRCUIT DATA
MODEL SPEAKER
 10S589 49-400 15"
 10S590 49-402 12"
CHASSIS Nº 10 A2



DIAG Nº	PART Nº	DESCRIPTION
C 1	22-954	.00085 MFD. 600 V.
C 2	22-887	.001 MFD. 600 V.
C 3	22-684	8 MFD. ELECTROLYTIC 150 V.
R 1	63-597	470M OHM 1/4 W.
R 2	63-596	330M OHM 1/4 W.
R 3	63-271	1 MEGOHM 1/4 W.
1	169-42	WEBSTER AUTOMATIC RECORD PLAYER
2	85-191	A.C. SWITCH
3	58-85	A.C. PLUG
4	85-228	PHONO RADIO SWITCH

PHONO CIRCUIT DATA
MODEL SPEAKER
 12S595 49-401 15"
CHASSIS Nº 12A4

PARTS PRICE LIST

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4A01	A	6A13	H	7A04	O
4A02	B	6A14	H	8A01	P
4A03	C	6A04	I	8A02	Q
4A04	D	6A05	J	8A03	R
5A01	E	6A08	K	10A01	S
5A02	F	6A10	L	10A2	T
6A01	G	7A01	M	12A3	U
6A02	H	7A02	N	12A4	V
				S8500-1	W

DIAL PARTS

26-235	Scale—dial	P	\$.25
26-239	Scale—stationary dial	U-V	.15
*26-254	Scale—dial	G-K-L	.20
*26-255	Scale—dial	H-I	.40
*26-256	Scale—dial	E	.25
*26-257	Scale—dial	N-O	.75
*26-258	Scale—dial	Q-R-S-T	.50
*26-259	Scale—split second dial	U-V	1.00
*26-265	Scale—dial	A-B-C-D	.30
*26-266	Scale—dial	J	.75
*26-267	Scale—dial	F	.75
27-16	Disc—flywheel	P-U-V	1.00
*27-35	Disc—band indicator	N-O	.10
*27-38	Disc—on-off indicator	F	.10
*27-39	Disc—flywheel	Q-R-S-T	1.00
32-15	Belt—drive	U-V	.15
32-18	Belt—drive	P	.15
32-23	Belt—drive	Q-R-S-T	.15
34-68	Gear—cond. shaft and bushing	U-V	.20
34-80	Gear—lower drive and pinion	U-V	.20
59-77	Pointer—dial	M	.10
59-84	Indicator—frequency	U-V	.10
59-86	Indicator—"ON"	A-B-C-D	.05
*59-95	Pointer—dial	G-K-L	.10
*59-96	Indicator—"ON" "OFF"	E	.06
*59-97	Pointer—dial	E	.10
*59-98	Pointer—dial	F-J-N-O	.15
*59-99	Pointer—dial	H-I	.15
*59-100	Indicator—band	Q-R-S-T	.15
*59-102	Pointer—split second	U-V	.10
*59-104	Pointer—dial	A-B-C-D	.08
61-42	Pulley—pointer shaft	U-V	.12
61-53	Pulley—drive (brass)	P	.15
61-55	Pulley—idler (for S6959)	M	.03
73-8	Set screw— $\frac{1}{8}$ x $\frac{1}{8}$ " H.H.	P	.02
73-16	Set screw— $\frac{1}{8}$ x $\frac{1}{8}$ " headless	U-V	.60C
73-24	Set screw— $\frac{1}{8}$ x $\frac{1}{4}$ " H.H.	P	1.50C
73-28	Set screw—pointer pulley	U-V	.02
73-33	Set screw—for 117-48	U-V	.02
76-229	Shaft—split sec. pointer pinion	U-V	.30
76-258	Shaft—tuning control	A-B-C-D	.10
76-282	Shaft—dial drive	M	.06
76-289	Shaft—volume control	U-V	.08
76-292	Shaft—volume control	P	.10
*76-302	Shaft—dial drive	G-K-L	.05
*76-303	Shaft—dial drive	H-I	.06
*76-304	Shaft—tuning control	E	.06
*76-305	Shaft—dial drive	F-J-N-O	.10
*76-306	Shaft—tuning control	Q-R-S-T	.20
*76-307	Shaft—volume control	Q-R-S-T	.10
80-69	Spring—dial cord tension	All Chassis	.01
80-130	Spring—clutch	U-V	.02
80-138	Spring—retainer (mov. scale)	U-V	.01
80-139	Spring—dial	U-V	.07
80-151	Spring—return (movable scale)	U-V	.02
80-181	Spring—pointer	All Chassis	.65C
80-207	Spring—indicator	A-B-C-D	.15
80-209	Spring—dial cord tension	E-G-K-L	.02
*80-223	Spring—indicator	E	.01
*80-227	Spring—drive shaft tension	F-J-N-O	.01
83-516	Strip—brass spacer	U-V	.02
83-707	Strip—movable scale spacer	U-V	.65C
83-708	Strip—movable scale spacer	U-V	.03
*93-470	Washer—black fibre	E	.25C
*93-471	Washer—felt	F	.25C
*93-482	Washer—black bakelite	F-H-I-J-N-O	.60C
94-271	Coupling—volume control shaft	P-Q-R-S-T	.06
94-280	Bushing—control arm insulating	Q-R-S-T-U-V	.03
94-282	Bushing—volume control shaft	Q-R-S-T-U-V	.03
94-285	Bushing—volume control shaft	Q-R-S-T-U-V	.03
97-117	Mtg. stud (MS452)	P-Q-R-S-T	.05
97-120	Mtg. stud for 61-55	M	.03

100-36	Dial light 6.3 V .25A	J-M to V incl. \$	.09
100-67	Dial light 6.3 V .15A	G-H-I-K-L	.09
114-46	Screw— $\frac{1}{8}$ x $\frac{1}{8}$ " H.H.-S.T.	U-V	.45C
114-47	Screw— $\frac{1}{8}$ x $\frac{1}{8}$ " H.H. slot. P.K.	U-V	.50C
114-52	Screw— $\frac{1}{8}$ x $\frac{1}{8}$ " H.H. Acorn	U-V	.35C
114-62	Screw— $\frac{1}{8}$ x $\frac{1}{4}$ " spl. taper. S.T.	U-V	.60C
114-115	Screw— $\frac{1}{8}$ x $\frac{1}{4}$ " Hex acorn head	U-V	.45C
117-48	Lever (band switch shaft)	P-U-V	.02
*117-59	Lever—indicator	F-N-O	.70C
*117-60	Lever—band switch	Q-R-S-T	.015
118-16	Link—lever connecting	P-Q-R-S-	
		T-U-V-	.01
*118-19	Link—indicator (short)	F-N-O	.02
*118-20	Link—indicator (long)	N-O	.03
*118-21	Link—band indicator	Q-R-S-T	.02
126-349	Dial light shield	H-I	.02
*148-32	Band switch control arm	Q-R-S-T	.10
159-12	Snap button	P	.01
159-35	Snap button	A-B-C-D	.65C
183-9	Rubber band	U-V	.50C
188-2	Retaining ring	P-Q-R-S-	
		T-U-V	.01
188-13	Retaining ring	M	.15C
188-27	Retaining ring	A-B-C-D-	
		F-J-N-O	.01
188-32	Retaining ring	E-G-H-I-K-L	.85C
192-41	Crystal—dial for (S7440)	M	.30
*192-53	Crystal—dial	G-K-L	.20
*192-54	Crystal—dial	H-I	.25
*192-57	Crystal—dial	E	.15
*192-59	Crystal—dial	C-D	.20
*192-60	Crystal—dial	A-B	.20
196-23	Gasket—dial escut. (for S7440)	M	.08
*196-34	Gasket—dial crystal	G-K-L	.01
*196-35	Gasket—dial crystal	A-B-C-D	.015
*196-36	Gasket—dial crystal	H-I	.015
199-11	Sleeve—rubber pulley	P-U-V	.75C
199-14	Sleeve—for MS452	P	.03
199-21	Sleeve—rubber bumper	U-V	.03
*199-27	Sleeve—rubber	Q-R-S-T	.60C
MS-418	Pulley & bracket assy.	A-B-C-D	.10
MS-452	Pulley & bracket assy. (chassis)	P-Q-R-S-T	.15
MS-506	Dial pulley & bracket assy.	M	.15
MS-577	Pulley & bracket assy. (gang)	P	.15
*MS-586	Pulley & bracket assy.	I	.10
*MS-591	Pulley & bracket assy.	F-H-I-J-N-O-	
		Q-R-S-T	.10
		P-Q-R-S-T	.08
S-5999	Dial light socket clip	U-V	.25C
S-6220	Drive pulley & clutch assy.	U-V	.35
S-6221	Freq. pointer gear & shaft assy.	P	.25
S-6223	Drive shaft & bushing assy.	P	.15
S-6440	Control arm & bushing assy.		
	(Band switch)		
S-6959	Dial scale & idler assy. (26-224)	M	.30
S-7262	Bushing & washer assy.	A-B-C-D	.05
S-7575	Dial cord & eyelet assy.	A-B-C-D	.05
S-7595	Short wave band scale	U-V	.60
S-7645	Dial cord & eyelet assy.	P	.10
S-7648	Dial pointer & clip assy.	P	.12
S-7766	Dial scale mtg. plate & strip	U-V	.55
S-7768	Condenser drive shaft & bushing	U-V	.20
S-7777	Control arm & pin assy.	U-V	.45
S-8307	Dial cord & eyelet assy.	M	.15
*S-8339	Dial pulley & bushing assy.	G-K-L	.10
*S-8354	Dial cord & eyelet assy.	G-K-L	.05
*S-8377	Dial light socket assy. (left)	H-I	.30
*S-8378	Dial cord & eyelet assy.	H-I	.10
*S-8388	Dial light socket assy. (right)	H-I	.30
*S-8392	Indicator cam assy.	E	.05
*S-8394	Pulley & bushing	E	.06
*S-8421	Dial cord & eyelet assy.	E	.05
*S-8438	Band indicator scale	U-V	.30
*S-8444	Dial light socket assy.	N-O	.65
*S-8453	Dial cord & eyelet assy.	F-J-N-O	.10
*S-8492	Dial cord & eyelet assy.	Q-R-S-T	.10

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4A01	A	8A13	H	7A04	O
4A02	B	8A14	H	8A01	P
4A03	C	8A04	I	8A02	Q
4A04	D	8A05	J	8A03	R
5A01	E	8A08	K	10A01	S
5A02	F	8A10	L	10A2	T
6A01	G	7A01	M	12A3	U
6A02	H	7A02	N	12A4	V
				88500-1	W

*S-8499	Dial pointer & spring	Q-R-S-T	\$.25
*S-8551	Dial light & socket assy.	J	.60
*S-8589	Broadcast band scale	U-V	.75

AUTOMATIC & RADIOORGAN PARTS

10-77	Cardboard cover (automatic)	P-Q-R-S-T-U-V	.05
12-719	Bracket—automatic retaining	P	.10
12-720	Bracket—automatic switch intg.	P-Q-R-S-T	.15
12-729	Bracket—automatic catch	P	.01
19-94	Clip—cover retaining	M	.02
24-209	Cover—auto. adjustment screw	M	.10
24-225	Cover—P.B. switch unit	M	.03
*24-231	Cover—auto. adjustment screw	H	.15
*24-231Y	Cover—auto. adj. screw (black)	H	.15
*24-232	Cover—auto. adj. screw (metal)	H-I	.30
*24-233	Cover—P.B. switch unit	H-I-J-N-O	.03
46-278	Knob—automatic tuning	M	.05
46-285	Knob—tone control	M	.03
46-295	Knob—automatic tuning	P	.05
46-296	Knob—automatic tuning	P	.05
*46-328	Knob—automatic tuning (white)	H-I-J-N-O	.05
*46-328Y	Knob—automatic tuning (black)	H	.05
*46-345	Knob—auto. tuning (female)	Q-R-S-T-U-V	.05
*46-346	Knob—auto. tuning (male)	Q-R-S-T-U-V	.05
*46-347	Knob—A.C. switch ("ON")	U-V	.10
*46-348	Knob—A.C. switch ("OFF")	U-V	.10
57-707	Plate—front (automatic)	M	.06
*57-834	Plate—radiorgan escutcheon	N-O	.30
*57-840	Plate—radiorgan escutcheon	F-J	.20
76-293	Shaft—knob retain. (radiorgan)	N-O-P-Q-R-S-T	.02
76-294	Shaft—knob retain. (radiorgan)	U-V	.03
*76-308	Shaft—knob retain. (radiorgan)	F-J	.01
80-161	Spring—latch bar	H-I-J-M-N-O	.25C
80-202	Spring—push lever	M	.25C
80-203	Spring—push lever	H-I-J-N-O	.25C
80-211	Spring—catch	N-O-P-Q-R-S-T-U	.25C
80-212	Spring—retaining (auto)	P	.02
*80-225	Spring—retaining	F-J	.65C
*80-226	Spring—retaining (auto)	Q-R-S-T-U-V	.01
*80-228	Spring—retaining	F-J-N-O	.60C
83-321	Strip—two lug terminal	M	.03
83-669	Strip—coil retaining	H-I-J-M-N-O	.03
83-671	Strip—fibre	H-I-J-M-N-O	.02
83-672	Strip—latch bar	M	.35C
83-709	Strip—pin jack terminal	P	.12
83-710	Strip—coil retaining	U-V	.20C
83-711	Strip—coil retaining	P-Q-R-S-T	.02
83-712	Strip—fibre	U	.01
83-713	Strip—fibre	P-Q-R-S-T-U	.01
83-732	Strip—armite	U-V	.35C
83-766	Strip—rubber (automatic)	P-S-T	.02
83-767	Strip—rubber (automatic)	U-V	.02
*83-776	Strip—rubber (automatic)	Q-R	.02
*83-794	Strip—latch bar	J-N-O	.02
*83-828	Strip—rubber (radiorgan)	U-V	.02
85-202	Switch—automatic	P	1.50
85-206	Switch—automatic	U-V	2.50
*85-237	Switch—automatic	Q-R-S-T	2.50
86-69	Terminal	U-V	.30C
93-216	Steel washer (latch bar)	M	.35C
112-223	Adj. screw & core	H-I-J-M-N-O-P-Q-R-S-T	.10
112-250	#4 x 40 x 7/32 R.H.S.T. screw	P-Q-R-S-T-U-V	.40C
114-39	Screw—#8x1/4" H.H. acorn S.T.	P-Q-R-S-T-U-V	.50C
114-46	Screw—#6 x 3/16" H.H. acorn	H-I	.30C
114-84	Screw—#6/32 x 1/4" H.H.-M.S.	P	.01
114-121	Screw—4.40x7/32" H.H. sl. S.T.	P	.45C
125-17	Rubber grommet	N-J-O	.015
149-13	Automatic screw & core assy.	U-V	.15
156-3	Catch—automatic escutcheon	P	.03

156-6	Catch—automatic escutcheon	N-O-Q-R-S-T-U-V	\$.03
*166-15	Rubber bumper	H-I-J-N-O	.55C
S-6072	Strip & eyelet assy. for S8132	M	.05
S-6195	Strip & eyelet assy. for S7422	M	.05
S-6928	Auto. tuning coil (red)	J-M-N-O	.15
S-6929	Auto. tuning coil (green)	J-M-N-O	.15
S-6930	Auto. tuning coil (blue)	J-M-N-O	.15
S-6932	Push lever & fibre arm	M	.15
S-6934	Contact spring & base assy.	M	.65
S-7021	Auto. tuning coil (yellow)	J-M-N-O-P-Q-R-S-T	.15
S-7419	Contact spr. & strip asy. (S7422)	M	.20
S-7420	Contact spr. & strip asy. (S8132)	M	.20
S-7422	Radiorgan switch assy. (right)	M	.65
S-7536	Auto. tuning coil (silver)	J-M-N-O	.15
S-7589	Auto. tuning coil (red)	U-V	.30
S-7590	Auto. tuning coil (green)	U-V	.30
S-7591	Auto. tuning coil (orange)	U-V	.30
S-7592	Auto. tuning coil (blue)	U-V	.30
S-7593	Auto. tuning coil (white)	U-V	.30
S-7857	Auto. tuning coil (red)	P-Q-R-S-T	.20
S-7858	Auto. tuning coil (green)	P-Q-R-S-T	.20
S-7859	Auto. tuning coil (blue)	P-Q-R-S-T	.20
S-7860	Auto. tuning coil (silver)	P-Q-R-S-T	.20
S-7882	Radiorgan knob & eyelet (alto)	P-Q-R-S	.10
S-7883	Radiorgan knob & eye. (normal)	P	.10
S-7884	Radiorgan knob & eye. (treble)	P	.10
S-7885	Radiorgan knob & eye. (lo-bass)	P	.10
S-7886	Radiorgan knob & eye. (bass)	P	.10
S-7887	Radiorgan knob & eye. (voice)	P	.10
S-8132	Radiorgan switch assy. (left)	M	.65
S-8241	Radiorgan escut. (less knobs)	P	.60
S-8242	Auto. escutcheon (less knobs)	P	.60
*S-8361	Contact spring & mtg. strip assy.	H-I	.75
*S-8363	Manual auto. switch push lev. assy.	H-I	.03
*S-8364	Auto. switch push lever assy.	H-I	.03
*S-8384	Auto. tuning unit assy. complete	H-I	5.25
*S-8389	Shield & terminal assy.	H	.05
*S-8396	Knob & eyelet assy. (alto)	N-O	.10
*S-8397	Knob & eyelet assy. (bass)	F-J-N-O	.10
*S-8398	Knob & eyelet assy. (lo-bass)	N-O	.10
*S-8399	Knob & eyelet assy. (voice)	N-O	.10
*S-8400	Knob & eyelet assy. (normal)	N-O	.10
*S-8401	Knob & eyelet assy. (treble)	N-O	.10
*S-8405	Knob & eyelet assy. (voice)	Q-R-S-T-U-V	.10
*S-8407	Knob & eyelet assy. (normal)	Q-R-S-T-U-V	.10
*S-8408	Knob & eyelet assy. (treble)	Q-R-S-T-U-V	.10
*S-8409	Knob & eyelet assy. (alto)	Q-R-S-T-U-V	.10
*S-8410	Knob & eyelet assy. (bass)	Q-R-S-T-U-V	.10
*S-8411	Knob & eyelet assy. (lo-bass)	Q-R-S-T-U-V	.10
*S-8449	Radiorgan contact strip assy.	N-O	.20
*S-8454	Contact spring & mtg. strip assy.	J-N-O	.75
*S-8455	Auto. switch push lever assy.	J-N-O	.02
*S-8457	Auto. tuning unit (complete)	J-N-O	5.25
*S-8490	Radiorg. switch cont. & strip assy.	O-R-S-T	.25
*S-8518	Radiorgan escut. (complete with knobs) (Alto, Bass, Lo Bass)	N-O	1.00
*S-8519	Radiorgan escut. (complete with knobs) (Voice, Normal, Treble)	N-O	1.00
*S-8531	Radiorg. contact & strip assy.	F-J	.10
*S-8541	Auto. tuning escut. (complete)	O-R-S-T	1.25
*S-8542	Radiorgan escut. (complete)	Q-R-S-T	1.50
*S-8549	Radiorgan escut. (bass) (comp. with knob)	F-J	.60
*S-8550	Radiorgan escut. (treble) (comp. with knob)	F-J	.60
*S-8593	Radiorgan switch cont. & strip	U-V	.25
*S-8615	Auto. tuning escutcheon (comp.)	U-V	1.50
*S-8616	Radiorgan escutcheon (complete)	U-V	1.50
*S-8685	Auto. tuning coil (yellow)	H-I	.15
*S-8686	Auto. tuning coil (red)	H	.15
*S-8687	Auto. tuning coil (blue)	H-I	.15
*S-8688	Auto. tuning coil (white)	H-I	.15
*S-8720	Auto. tuning assy. (complete)	Mod. 6S511W	5.25
*S-8740	Knob & eyelet assy. (treble)	F-J	.10

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4A01	A	6A13	H	7A04	O
4A02	B	6A14	H	8A01	P
4A03	C	6A04	I	8A02	Q
4A04	D	6A05	J	8A03	R
5A01	E	6A08	K	10A01	S
5A02	F	6A10	L	10A2	T
6A01	G	7A01	M	12A3	U
8A02	H	7A02	N	12A4	V
				S8500-1	W

CONDENSERS

22-82	.001 mfd.	600 volt		22-991	16 mfd. 350 V. x 16 mfd.		
22-127	25 mmfd.	600 volt			200 V. dry elec.	U-V	\$1.00
22-138	.2 mfd.	200 volt			.02 mfd.	600 volt	.20
22-147	.0005 mfd.	600 volt		*22-1006	Two gang variable	G-K-L	2.00
22-162	.0001 mfd.	600 volt		*22-1007	Two gang variable	H-I	2.25
22-171	.05 mfd.	600 volt		*22-1011	Single unit trimmer		.10
22-182	.00025 mfd.	600 volt		*22-1014	20x20 mfd. dry elec.	150 volt	G-K-L
22-188	.02 mfd.	400 volt		*22-1015	Wavetrap trimmer		.15
22-196	.01 mfd.	600 volt		*22-1016	.005 mfd.	1000 volt	.15
22-199	.5 mfd.	200 volt		*22-1017	.05 mfd.	200 volt	.15
22-219	.03 mfd.	200 volt		*22-1022	.005 mfd.	600 volt	.30
22-229	.005 mfd.	600 volt		*22-1023	Oscillator padder		.30
22-243	.01 mfd.	400 volt		*22-1024	Two gang variable	E	1.75
22-289	50 mmfd.	600 volt		*22-1026	20 mfd. 150 V. x 40 mfd.		.75
22-305	2-35 mmfd. trimmer				150 V. dry elec.	E	.65
22-326	.003 mfd.	400 volt		*22-1027	20 mfd. 25 V. x 20 mfd.		
22-327	.02 mfd.	200 volt			150 V. dry elec.	E-F	.65
22-358	.002 mfd.	600 volt		*22-1029	10 mfd. 250 V. x 15 mfd.		
22-448	.004 mfd.	600 volt			350 V. dry elec.	H-I	1.00
22-463	Oscillator padder			*22-1030	Two gang variable	N-O	2.00
22-470	.00015 mfd.	600 volt		*22-1031	Four section ceramic trimmer		.50
22-492	.002 mfd.	600 volt		*22-1033	Two section trimmer (ceramic)		.25
22-525	.005 mfd.	1000 volt		*22-1034	5 mfd. 450 V. x 15 mfd.		
22-627	.002 mfd.	1000 volt			350 V. dry elec.	J-N-O	.75
22-684	8 mfd. dry electro.	150 volt	B-D-V	*22-1035	5 x 15 mfd. 450 V. x 15 mfd.		
22-688	Oscillator padder				350 V. dry elec.	Q-R	1.00
22-690	Padder			*22-1036	14 mfd. dry elec.	450 volt	J-N-O
22-695	Two gang variable		A-B-C-D	*22-1037	Dual fixed padder		.50
22-716	.0005 mfd.	600 volt		*22-1039	Dual unit oscillator padder		.60
22-719	16 mfd. dry electro.	350 volt	M-P	*22-1040	.02 mfd.	200 volt	.15
22-742	10x15x15 mfd. dry elec.	250 volt	A-C	*22-1041	.005 mfd.	600 volt	.15
22-788	Trimmer			*22-1042	2-20 mmfd. trimmer		.15
22-825	.1 mfd.	400 volt		*22-1043	Three gang variable	S-T	5.00
22-826	.01 mfd.	200 volt		*22-1044	Two gang variable	J	2.25
22-827	.1 mfd.	200 volt		*22-1045	Two section ceramic trimmer		.25
22-828	.05 mfd.	400 volt		*22-1046	Two gang variable	F	2.25
22-829	.05 mfd.	200 volt		*22-1047	11x20x30 mfd. 150 volt dry elec.	F	1.25
22-830	.02 mfd.	600 volt		*22-1048	.00085 mfd.	600 volt	.15
22-843	.1 mfd.	400 volt		*22-1049	.03 mfd.	400 volt	.15
22-846	Automatic tuning trimmer						
22-847	Automatic tuning trimmer						
22-848	Automatic tuning trimmer						
22-849	Two gang variable		M				
22-850	Three section ceramic trimmer						
22-853	Dual padder						
22-854	.0005 mfd.	600 volt					
22-859	Automatic tuning trimmer						
22-868	480 mmfd. Silvercap						
22-869	.05 mfd.	400 volt					
22-873	Automatic tuning trimmer						
22-876	8x40 mfd. dry elec.	150 volt	W				
22-881	Four section ceramic trimmer						
22-887	.001 mfd.	600 volt					
22-927	Two gang variable		P-Q-R				
22-929	Broadcast oscillator padder						
22-930	Dual fixed oscillator padder						
22-933	6x16 mfd. dry elec.	450 volt	P				
22-934	20 mfd. 450 V. x 20 mfd.						
	350 V. dry elec.		S-T				
22-940	R. F. coil trimmer						
22-941	5x15 mfd. dry elec.	450 volt	M				
22-944	Compensating condenser						
22-951	Three gang variable		U-V				
22-953	.0002 mfd.	600 volt					
22-954	.00035 mfd.	600 volt					
22-958	Wave trap trimmer						
22-959	Single unit ceramic trimmer						
22-961	500 mfd. dry elec.	15 volt	A-C				
22-962	Wavemagnet trimmer						
22-966	.04 mfd.	600 volt					
22-970	20 mfd. 450 V. x 20 mfd.						
	350 V. dry elec.		U-V				
22-982	Two section ceramic trimmer						
22-988	20 mmfd.	600 volt					

R. F. & I. F. COILS & CHOKES

20-208	Antenna coil (Ant. 1)	A-B-C-D	.40
20-216	R. F. plate choke	U-V	.45
*20-224	Antenna broadcast coil	F	.30
95-589	1st I. F. transformer	A-B-C-D	1.25
95-590	2nd I. F. transformer (IF 21)	A-B-C-D	1.25
95-600	1st I. F. transformer (IF 20)	M	1.25
95-625	1st I. F. transformer (IF 17)	P-Q-R-S-T	1.25
95-637	1st I. F. transformer (IF 17)	U-V	1.25
95-638	2nd I. F. transformer (IF 18)	U-V	1.25
95-663	2nd I. F. transformer	P-Q-R	1.25
95-664	2nd I. F. transformer	S-T	1.25
*95-695	2nd I. F. transformer	M	1.25
*95-696	1st I. F. transformer	G-K-L	1.00
*95-697	2nd I. F. transformer	G-K-L	1.00
*95-698	1st I. F. transformer	H-I	1.00
*95-699	2nd I. F. transformer	H-I	1.00
*95-701	1st I. F. transformer	E	1.00
*95-702	2nd I. F. transformer	E	1.00
*95-703	1st I. F. transformer	N-O	1.00
*95-704	2nd I. F. transformer	N-O	1.00
*95-708	1st I. F. transformer	J	1.00
*95-709	2nd I. F. transformer	J	1.00
*95-711	1st I. F. transformer	F	1.25
*95-712	2nd I. F. transformer	F	1.25
S-5043	Choke assembly	A-C	.25
S-6381	Osc. coil (less cover) (Osc. 15)	A-C	.65
S-6936	Antenna coil (less can) (Ant. 29)	M	1.10
S-6937	Osc. coil (less can) (Osc. 34)	M	1.25
S-6992	Oscillator coupler coil assy.	M	.65
S-7500	R. F. coil & bracket assy.	M	.85
S-7504	Antenna coil (less can) (Ant. 31)	P	.95
S-7505	Osc. coil (less can) (Osc. 38)	O-R-S-T	1.25
S-7507	Osc. coupler coil & bracket	P	.75
S-7559	Wave trap coil assy.	P	.50

PARTS LIST—(Continued)

CHASSIS		CODE	CHASSIS		CODE	CHASSIS		CODE
4A01	A		8A13	H		7A04	O	
4A02	B		8A14	H		8A01	P	
4A03	C		8A04	I		8A02	Q	
4A04	D		8A05	J		8A03	R	
5A01	E		8A06	K		10A01	S	
5A02	F		8A10	L		10A2	T	
6A01	G		7A01	M		12A3	U	
6A02	H		7A02	N		12A4	V	
						88500-1	W	

S-7596	Ant. coil (less can) (Ant. 32)	U-V	\$.95	63-655	220 M ohm	1/4 watt	\$.07
S-7635	Choke coil & resistor assy.	P	.40	63-656	270 M ohm	1/4 watt	.07
S-7641	Osc. coil (less can) (Osc. 38)	P	1.25	63-657	330 M ohm	1/4 watt	.07
S-7656	Trimmer coil & strip assy.	U-V	.50	63-659	470 M ohm	1/4 watt	.07
S-7666	Osc. coil (less can) (Osc. 39)	U-V	1.25	63-669	3.9 megohm	1/4 watt	.07
S-7667	Detector coil (less can)	U-V	1.10	63-676	27 M ohm	1 watt	.10
S-7815	Oscillator coil (less can)	B-D	.65	63-677	33 M ohm	1 watt	.10
S-8111	Loading coil	P	.45	63-680	10 M ohm	1 watt	.10
S-8142	Loading coil	Q-R-S-T-U-V	.45	63-686	150 ohm	1/2 watt	insul. W. W. .17
*S-8326	Wave trap coil assy.	G-H-I-J-K-L-		63-697	100 ohm	1/4 watt	insulated .15
		N-O-Q-R-S-T	.20	63-701	470 ohm	1/4 watt	insulated .15
*S-8336	Oscillator coil (less can)	G-K-L	.45	63-703	1000 ohm	1/4 watt	insulated .15
*S-8347	Antenna coil (less can)	H-I	.30	63-705	2200 ohm	1/4 watt	insulated .15
*S-8348	Oscillator coil (less can)	H-I	1.00	63-709	10 M ohm	1/4 watt	insulated .15
*S-8359	Resistor & R. F. coil (less can)	H-I-J-N-O	.25	63-711	22 M ohm	1/4 watt	insulated .15
*S-8374	Oscillator coil (less can)	E	.25	63-713	47 M ohm	1/4 watt	insulated .15
*S-8403	Oscillator coil (less can)	N-O	.50	63-715	100 M ohm	1/4 watt	insulated .15
*S-8404	Antenna coil (less can)	N-O	.40	63-717	220 M ohm	1/4 watt	insulated .15
*S-8413	Capacitor assembly	E	.10	63-719	470 M ohm	1/4 watt	insul. 20% .15
*S-8430	Antenna coil (less can)	Q-R-S-T	.40	63-722	2.2 megohm	1/4 watt	insulated .15
*S-8436	Detector coil (less can)	S-T	1.25	63-726	10 megohm	1/4 watt	insulated .15
*S-8466	Oscillator coupler coil & bracket	Q-R-S-T	.25	63-742	180 ohm	1/4 watt	insulated .15
*S-8474	Antenna loading coil assy.	J	.25	63-757	4700 ohm	1/4 watt	insulated .15
*S-8496	R. F. coil & resistor assy.	Q-R-S-T	.30	63-773	180 M ohm	1/4 watt	insulated .15
*S-8507	Antenna coil (less can)	J	.30	63-774	220 M ohm	1/4 watt	insulated .15
*S-8508	Oscillator coil (less can)	J	1.10	63-778	470 M ohm	1/4 watt	insul. 10% .15
*S-8509	Antenna coil (less can)	F	1.25	63-796	10 M ohm	1/2 watt	.08
*S-8510	Oscillator coil (less can)	F	1.00	63-803	2200 ohm	1/2 watt	.08
*S-8590	Oscillator coupler coil & bracket	U-V	.50	63-960	68 M ohm	1/2 watt	.08
*S-8611	Oscillator coil (less can)	W	.30	63-964	4700 ohm	1/4 watt	.08

63-121	100M ohm	1 watt	.10	63-972	15 M ohm	1 watt	insulated .20
63-150	10M ohm	1/2 watt	.08	63-975	82 ohm	1/2 watt	insul. W.W. .17
63-151	15M ohm	1 watt	.10	63-976	15 megohm	1/4 watt	.07
63-238	1000 ohm	1/4 watt	.07	63-992	Candohm resistor		P .30
63-260	100M ohm	1/4 watt	.07	63-1023	22 ohm	1/2 watt	insul. W. W. .17
63-271	1 megohm	1/4 watt	.07	63-1048	Candohm		S-T .30
63-282	2200 ohm	1/4 watt	.07	63-1052	Candohm		U-V .30
63-296	220M ohm	1/4 watt	.07	63-1054	10 M ohm	1/2 watt	insulated .17
63-439	2700 ohm	1/4 watt	.07	63-1055	22 M ohm	1 watt	insulated .20
63-464	1 megohm insulated	1/4 watt	.15	63-1056	280 ohm	1 1/2 watt	insul. W.W. .25
63-574	33 ohm	1/4 watt	.07	63-1057	47 ohm	1/2 watt	insul. W.W. .17
63-575	47 ohm	1/4 watt	.07	63-1058	22 M ohm	2 watt	.20
63-576	68 ohm	1/4 watt	.07	63-1060	90 ohm	1 watt	insul. W.W. .20
63-577	100 ohm	1/4 watt	.07	63-1061	7 ohm	1/2 watt	insul. W.W. .17
63-581	470 ohm	1/4 watt	.07	63-1065	15 M ohm	1 watt	insulated .20
63-583	1000 ohm	1/4 watt	.07	63-1066	18 ohm	1/2 watt	insul. W.W. .17
63-585	2200 ohm	1/4 watt	.07	63-1072	Volume control & switch		R-D 1.50
63-586	3300 ohm	1/4 watt	.07	63-1074	Volume control & switch		S-T 1.50
63-587	4700 ohm	1/4 watt	.07	63-1075	Volume control & switch		Q 1.50
63-588	6800 ohm	1/4 watt	.07	63-1077	18 M ohm	1 watt	.10
63-589	10M ohm	1/4 watt	.07	63-1078	Volume control		U-V 1.00
63-590	15M ohm	1/4 watt	.07	63-1079	Volume control & switch		A-C 1.50
63-591	22M ohm	1/4 watt	.07	*63-1093	15 megohm	1/4 watt	insulated .15
63-592	33 M ohm	1/4 watt	.07	*63-1096	140 ohm	2 watt	insul. W.W. .30
63-593	47 M ohm	1/4 watt	.07	*63-1097	870 ohm	1 watt	insul. W.W. .20
63-594	68 M ohm	1/4 watt	.07	*63-1098	42 ohm	1/2 watt	insul. W.W. .20
63-595	100 M ohm	1/4 watt	.07	*63-1099	33 ohm	1/2 watt	insul. W.W. .17
63-596	330 M ohm	1/4 watt	.07	*63-1100	52 ohm	1/2 watt	insul. W.W. .20
63-597	470 M ohm	1/4 watt	.07	*63-1101	8200 ohm	2 watt	insulated .30
63-599	1.5 megohm	1/4 watt	.07	*63-1102	15 M ohm	1/2 watt	.08
63-600	2.2 megohm	1/4 watt	.07	*63-1103	390 ohm	1/2 watt	insul. W.W. .20
63-602	4.7 megohm	1/4 watt	.07	*63-1112	Volume control & switch		G-K-L 1.50
63-604	10 megohm	1/4 watt	.07	*63-1115	Volume control & switch		M 1.50
63-605	1000 ohm	1/2 watt	.08	*63-1117	Volume control & switch		P-R 1.50
63-607	15 M ohm	1/2 watt	.08	*63-1118	Volume control & switch		H-I 1.50
63-621	39 ohm	1/4 watt	.07	*63-1119	16 M ohm	1/2 watt	insulated .17
63-624	68 ohm	1/4 watt	.07	*63-1120	Candohm resistor		E-F .50
63-635	3300 ohm	1/4 watt	.07	*63-1121	Volume control & switch		E 1.50
63-637	4700 ohm	1/4 watt	.07	*63-1122	Volume control & switch		N-O 1.50
63-640	8200 ohm	1/4 watt	.07	*63-1123	Volume control & switch		J 1.50
63-643	18 M ohm	1/4 watt	.07	*63-1124	Volume control		F 1.00
63-647	39 M ohm	1/4 watt	.07				
63-648	47 M ohm	1/4 watt	.07				
63-654	180 M ohm	1/4 watt	.07				

MISCELLANEOUS		
2-19	Cabinet back	A-B .10
*2-35	Cabinet back	G .05
*2-35W	Cabinet back (white)	G .10

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4A01	A	6A13	H	7A04	O
4A02	B	6A14	H	8A01	P
4A03	C	6A04	I	8A02	Q
4A04	D	6A05	J	8A03	R
5A01	E	6A08	K	10A01	S
5A02	F	6A10	L	10A2	T
6A01	G	7A01	M	12A3	U
6A02	H	7A02	N	12A4	V
				88500-1	W
*2-36	Cabinet back (6D525)	L	\$.40	208-366 cone & voice coil	\$ 3.50
*2-37M	Cabinet back (6S511M)	H	.10	*49-367 10" Dynamic speaker (8S563)	8.00
*2-37W	Cabinet back (6S511W)	H	.10	*206-367 output transformer	1.00
*2-38	Cabinet back (6S527)	H	.10	*207-367 field coil	2.75
*2-39	Cabinet back (6S528)	H	.10	*208-367 cone & voice coil	2.50
*2-40	Cabinet back (7S529)	N	.10	*49-368 10" Dynamic speaker (7S557-558)	8.00
*2-41	Cabinet back (7S530)	N	.10	*206-368 output transformer	1.50
*2-42	Cabinet back	I	.10	*207-368 field coil	2.75
*2-44	Cabinet back	J	.20	*208-368 cone & voice coil	2.50
*2-45	Cabinet back (7S582)	O	.30	49-369 10" Dynamic speaker (7S585-582)	8.00
*2-46	Cabinet back (7S557)	N	.20	206-369 output transformer	1.50
*2-48	Cabinet back	K	.10	207-369 field coil	2.75
*11-65	Line cord & plug (special)	H-I-N-O	.65	208-369 cone & voice coil	2.50
12-613	Bracket—pickup arm holder	W	.20	49-377 8" Dynamic speaker (7S547-8S531-8S548)	6.00
*14-596M	Cabinet—510 brown bakelite (less back & handle)	G	3.75	206-377 output transformer	1.25
*14-596W	Cabinet—510 white bakelite (less back & handle)	G	4.50	207-377 field coil	1.75
*14-600M	Cabinet—511 brown bakelite (less back & handle)	H	6.00	208-377 cone & voice coil	2.00
*14-600W	Cabinet—511 white bakelite (less back & handle)	H	6.75	*49-384 5" Dynamic spkr. (6S511-527-528)	3.50
*14-605	Cabinet—515 brown bakelite	A-B	4.00	*206-384 output transformer	1.25
15-22	Cap—plug (for 78-193)	M	.10	*207-384 field coil (not replaceable)	
15-23	Cap—bat. cable plug (for 78-194)	E-M	.10	*208-384 cone & voice coil	1.25
15-29	Cap—tube shield	M	.03	*49-385 4" Dynamic speaker (6D510)	3.50
19-39	Clip—battery lead retaining	A-C	.02	*206-385 output transformer	1.25
19-59	Clip—battery lead (positive)	A-C	.15	*207-385 field coil (not replaceable)	1.00
19-60	Clip—battery lead (negative)	A-C	.15	*208-385 cone & voice coil	5.75
19-94	Clip—auto. cover plate retaining	M	.02	*49-386 5½" P.M. speaker (5G500)	1.25
*19-100	Clip—grid		.55C	*206-386 output transformer	1.50
24-142	Cover—needle cup	W	.05	*208-386 cone & voice coil	4.00
24-165	Cover—A. C. switch	U-V	.03	*49-387 5" Dynamic speaker (6S580)	1.25
24-209	Cover automatic adjustment	M	.10	*206-387 output transformer	
24-213	Cover—switch	S8501	.05	*207-387 field coil (not replaceable)	1.25
*24-231	Cover—automatic adjustment	H	.15	*208-387 cone & voice coil	1.25
*24-232	Cover—auto. adjustment (metal)	H-I	.30	*49-388 6" Dynamic speaker (6S546)	4.25
*24-234	Cover—escutcheon	F-J-N-O	.35	*206-388 output transformer	1.25
*36-12	Handle—cabinet (6D510-11)	G-H-L	.40	*207-388 field coil	1.50
*36-13	Handle—cabinet (6D510W)	G	.40	*208-388 cone & voice coil	1.50
*36-14	Handle—cabinet (6D510W) ivory & black	G-H	.40	*49-389 6" Dynamic spkr. (6S546-7S530)	4.25
41-1	Cup—needle	W	.05	*206-389 output transformer	1.25
44-16	Jack—television—radio	P-U-V	.10	*207-389 field coil	1.50
46-251	Knob—tuning control	A-B	.10	*208-389 cone & voice coil	6.50
46-265	Knob—switch	W	.10	*49-390 10" Dynamic speaker (6S556)	1.25
46-273	Knob—tuning control	E	.10	*206-390 output transformer	1.75
46-280	Knob—volume control	M	.10	*207-390 field coil	2.50
*46-327	Knob—tuning & volume control	E-G-H-I-K-L	.10	*208-390 cone & voice coil	4.50
*46-327Y	Knob—tun. & vol. control (black)	G-H	.10	*49-391 6" Dynamic speaker (7S529)	1.25
*46-330	Knob—band selector switch	N	.10	*206-391 output transformer	
*46-332	Knob—band selector switch	H-I	.10	*207-391 field coil (not replaceable)	1.50
*46-332Y	Knob—band select. switch (black)	H	.10	*208-391 cone & voice coil	1.50
*46-349	Knob—band selector switch	Q-R-S-T-U-V	.15	*49-392 12" Dynamic speaker (10S566)	10.00
*46-353	Knob—band selector switch	F-J	.15	*206-392 output transformer	1.50
*46-354	Knob—tuning control	D-C	.10	*207-392 field coil	2.75
Note—Also see S numbers under Miscellaneous for knobs				*208-392 cone & voice coil	3.50
49-286	5" P.M. speaker (4K515)		4.50	*49-393 8" P.M. speaker (5G537)	7.00
	206-286 output transformer		1.25	*206-393 output transformer	1.25
	208-286 cone & voice coil		1.25	*208-393 cone & voice coil	2.00
49-328	6½" P.M. spkr. (4B536-4K535)		5.50	*49-394 10" P.M. speaker (5G572)	10.00
	206-328 output transformer		1.25	*206-394 output transformer	2.00
	208-328 cone & voice coil		1.50	*208-394 cone & voice coil	2.50
49-345	5" P.M. speaker (4B515)		4.25	*49-395 8" Dynamic speaker (10S531)	7.25
	206-345 output transformer		1.25	*206-395 output transformer	1.50
	208-345 cone & voice coil		1.25	*207-395 field coil	2.75
49-351	10" Dynamic spkr. (12S550-568)		8.00	*208-395 cone & voice coil	2.00
	206-351 output transformer		1.50	*49-396 10" Dynamic speaker (7S581)	8.00
	207-351 field coil		2.75	*206-396 output transformer	1.50
	208-351 cone & voice coil		2.50	*207-396 field coil	2.75
49-359	8" P.M. speaker (4K570)		7.00	*208-396 cone & voice coil	2.50
	206-359 output transformer		1.25	*49-397 12" Dynamic speaker (8S587-588)	8.50
	208-359 cone & voice coil		2.00	*206-397 output transformer	1.50
49-366	12" Dynamic speaker (8S586)		8.00	*207-397 field coil	2.75
	206-366 output transformer		1.50	*208-397 cone & voice coil	3.50
	207-366 field coil		2.75	*49-399 10" Dynamic speaker (10S549)	8.00
				*206-399 output transformer	1.50
				*207-399 field coil	2.75
				*208-399 cone & voice coil	2.50
				*49-400 15" Dynamic speaker (10S589)	15.50

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4A01	A	6A13	H	7A04	O
4A02	B	6A14	H	8A01	P
4A03	C	6A04	I	8A02	Q
4A04	D	6A05	J	8A03	R
5A01	E	6A08	K	10A01	S
5A02	F	6A10	L	10A2	T
6A01	G	7A01	M	12A3	U
6A02	H	7A02	N	12A4	V
				S8500-1	W
*206-400 output transformer		\$ 2.50	*78-332 Socket—35L6G tube		\$.10
*207-400 field coil		2.75	*78-333 Socket—35Z5G tube		.10
*208-400 cone & voice coil		4.50	*78-335 Socket—7B8 tube		.15
*49-401 15" Dynamic speaker (12S595)		15.50	*78-336 Socket—7A7 tube		.15
*206-401 output transformer		2.50	*78-337 Socket—7B6 tube		.15
*207-401 field coil		2.75	*78-338 Socket—6K6G tube		.10
*208-401 cone & voice coil		4.50	*78-339 Socket—6X5G tube		.10
*49-402 12" Dynamic speaker (10S590)		10.00	*78-342 Socket—1LA6 tube		.15
*206-402 output transformer		1.50	*78-343 Socket—1LN5 tube		.15
*207-402 field coil		2.75	*78-344 Socket—1LH4 tube		.15
*208-402 cone & voice coil		3.50	*78-345 Socket—1LB4 tube		.15
*49-402 4" P.M. spkr. (6R583-6D525-526)		3.50	*78-346 Socket—five prong	N-O	.10
*206-403 output transformer		1.25	*78-347 Socket—117Z6G tube		.10
*208-403 cone & voice coil		1.00	*78-348 Socket—battery cable	E	.05
*49-404 15" Dynamic speaker (12S569)		15.50	*78-349 Socket—wavemagnet	I-J-Q-R-S-T	.05
*206-404 output transformer		2.50	*78-350 Socket—7A4 tube		.15
*207-404 field coil		2.75	*78-351 Socket—speaker	E	.05
*208-404 cone & voice coil		4.50	*78-352 Socket—7B4 tube		.15
*52-190 Speaker cable & plug	C-D	.15	*78-353 Socket—phono pickup	I-O-R-T-V	.03
54-128 Cover—retaining clip	H	.01	*78-354 Socket—1A7G tube		.10
57-11A Marker—antenna lead	A-B-C-D-F	.02	*78-355 Socket—1H5G tube		.10
57-11G Marker—ground lead	A-B-C-D-F	.02	*78-356 Socket—1N5G tube		.10
57-684 Plate—switch escutcheon	W	.10	*78-357 Socket—3Q5G tube		.10
57-708 Plate—television radio switch	P-U-V	.03	*78-358 Socket—phono plug	O-V	.10
57-752 Plate—escutcheon	P	2.50	*78-361 Socket—7H7 tube		.15
57-780 Plate—auto. tuning escutcheon	M	.60	*78-363 Socket—wavemagnet	K	.05
*57-824 Plate—escutcheon (auto.)	H-I	.35	*78-364 Socket—phono pickup	K	.05
*57-828 Plate—escutcheon	Q-R-S-T	3.00	80-198 Spring—chassis mounting		.01
*57-829 Plate—escutcheon	U-V	3.00	80-199 Spring—chassis mounting		.01
*57-833 Plate—escutcheon	N-O	2.10	83-690 Strip—pin jack terminal	W	.05
*57-839 Plate—escutcheon	J	2.10	*83-798 Strip—pin jack terminal	E	.15
*57-843 Plate—escutcheon	F	2.10	85-148 Switch—AC	U-V	.60
*57-850 Plate—escutcheon—Name (Zen.)	U-V	.45	85-170 Switch—AC	W	.70
*57-859 Plate—wavemagnet switch	E	.10	*5-171 Switch—radio-television	F-P-U-V	.25
58-74 Plug—battery cable	B-D	.10	85-181 Switch—auto. stop—model S8501		1.00
*58-83 Plug—five prong	N-O	.10	85-202 Switch—band selector	P	1.50
*58-84 Plug—four prong	I-J-Q-R-S-T	.05	85-205 Switch—band selector	M	1.10
*58-86 Plug—two prong	I	.10	85-209 Switch—band selector	U-V	1.85
*58-87 Plug—battery cable	F	.10	*25-223 Switch—band selector	H-I	.50
*58-88 Plug—three prong	K	.05	*85-224 Switch—power change over	E	.50
64-115 Brass eyelet	E	.20C	*85-225 Switch—wavemagnet	E	.20
68-1 Automatic adjustment wrench		.02	*85-226 Switch—band selector	N	1.25
73-21 #8/32 x 3/16" headless set screw	E	.01	*85-227 Switch—band selector	O	1.50
73-24 #8/32 x 1/4" headless set screw	E	1.50C	*85-229 Switch—band selector	Q-R	1.50
78-128 Socket—speaker	J-M-N-O-P-Q-R-S-T-U-V	.10	*85-231 Switch—band selector	S-T	1.85
	A-C	.10	*85-232 Switch—band selector	F	1.25
78-141 Socket—vibrator		.10	*85-233 Switch—band selector	J	.80
78-145 Socket—6F5G tube		.10	90-169 Paper tube for 6U5	P	.02
78-149 Socket—6X5G tube		.10	91-267 #14 stranded R.C. wire (red)	A-C	Ft. .05
78-150 Socket—6K7G tube		.10	91-268 #14 stranded R.C. wire (black)	A-C	Ft. .05
78-151 Socket—6A8G tube		.10	93-168 Washer—rubber shoulder	N-O-U-V	.05
78-152 Socket—6F6G tube		.10	93-192 Washer—steel	G-L	.35C
78-161 Socket—ballast tube	W	.10	93-215 Washer—rubber	F-N-O	.05
78-175 Socket—6J5G tube		.10	93-320 Washer—brown felt	H-I-K-L	.50C
78-176 Socket—6V6G tube		.10	93-371 Washer—black bakelite	E	.45C
78-190 Socket—speaker	F	.10	93-392 Washer—brown felt	D-E	.01
78-219 Socket—5 contact (wavemagnet)	P-V	.10	*93-475 Washer—brown felt	Q-R-S-T-U-V	.015
78-229 Socket—electrolytic condenser		.02	*93-481 Washer—finishing #8 flush type (bronze)	E	.35C
78-230 Socket—& cable for 6U5	P	.55	*93-483 Washer—finishing #8 flush type (brass)	E	.35C
78-246 Socket—1A7G tube		.10	94-322 Bushing—insulating	W	.05
78-247 Socket—1N5G tube		.10	*94-331 Bushing—speaker mounting	H-I	.55C
78-248 Socket—1H5G tube		.10	95-627 Power transformer 60 cycle	P-Q-R	3.75
78-249 Socket—1C5G tube		.10	95-634 Power transformer 60 cycle	M	3.25
78-257 Socket—6P5G tube		.10	95-635 Power transformer	A-C	1.75
78-258 Socket—6AC5G tube		.10	95-639 Power transformer 60 cycle	U-V	5.00
78-269 Socket—117Z6G tube		.10	95-651 Power transformer 25 cycle	P-Q-R	7.85
78-271 Socket—35Z4GT tube		.10	95-660 Power transformer 25 cycle	U-V	11.25
78-272 Socket—12SA7GT tube		.10	95-661 Power transformer 25 cycle	M	6.75
78-273 Socket—1Q5G tube		.10	*95-700 Power transformer 50-60 cycle	H-I	2.75
78-290 Socket—1232 tube		.15	*95-705 Power transformer 50-60 cycle	N-O	3.50
78-301 Socket—6A8G tube		.10	*5-707 Power transformer 60 cycle	S-T	5.00
78-314 Socket—1232 tube		.10	*95-710 Power transformer 50-60 cycle	J	3.50
*78-328 Socket—12J7G tube		.10	*95-713 Filter choke	K-L	.50
*78-329 Socket—12SA7G tube		.10	*95-723 Power transformer 25 cycle	H-I	5.50
*78-330 Socket—12K7GT tube		.10			
*78-331 Socket—12SQGT tube		.10			

PARTS LIST—(Continued)

CHASSIS		CODE	CHASSIS	CODE	CHASSIS	CODE
4A01	A		6A13	H	7A04	O
4A02	B		6A14	H	8A01	P
4A03	C		6A04	I	8A02	Q
4A04	D		6A05	J	8A03	R
5A01	E		6A08	K	10A01	S
5A02	F		6A10	L	10A2	T
6A01	G		7A01	M	12A3	U
6A02	H		7A02	N	12A4	V
					88500-1	W

*95-724	Power transformer 25 cycle	J	\$ 7.25	*202-197	Instruction book & tab sheet	U	\$.20
*95-725	Power transformer 25 cycle	N-O	7.25	*202-198	Instruction book & tab sheet	V	.20
*78-334	Socket—7L7 tube		.15	*202-199	Instruction book	W	.02
100-76	Ballast tube	W	.50	*95-726	Power transformer 25 cycle	S-T	11.25
*102-132	Tab Sheet only (Vertical Tabs for 1941 line)		.15	*202-200	Instruction book	K	.05
*102-133	Tab Sheet only (Horizontal Tabs for 1941 line)		.15	S7314	Band selector switch knob	M	.10
112-25	Screw— $\frac{1}{4}$ —20x1 $\frac{1}{8}$ H. washer head machine	Q-R-S-T-U-V	.04	S7315	Tuning control knob	M	.10
112-56	Screw— $\frac{1}{8}$ x $\frac{1}{4}$ " H.H. slotted S.T.	H-I	.45C	S7350	Dial escutcheon assem. (complete)	P	2.75
*112-290	Screw— $\frac{1}{8}$ x1" oval Phillips Hd. S. T. (bronze)	E	.02		57-752 dial escutcheon plate (less glass & gasket)		2.50
*112-291	Screw— $\frac{1}{8}$ x1" oval Phillips Hd. S. T. (brass)	E	.02		192-46 dial escutcheon glass		.35
114-37	Screw— $\frac{1}{8}$ x $\frac{1}{4}$ " Hex acorn Hd. S. T.	U-V	.45C	S7642	196-25 dial escutcheon glass gasket		.01
114-48	Screw— $\frac{1}{8}$ x32x $\frac{1}{4}$ " Hex acorn Hd. Mach.	U-V	.35C	S7773	Tone control switch contact & strip	P	.30
114-61	Screw— $\frac{1}{10}$ x32x1 $\frac{1}{2}$ " Hex washer Hd. Mach.	J-N-O	.03	S7773	AC switch & bracket assem.	U-V	.75
114-85	Screw— $\frac{1}{10}$ x32x1 $\frac{1}{8}$ " Hex washer Hd. Mach.	F-J-N-O	.65C	S7880	Vol. control knob & set screw	P	.15
*114-125	Screw— $\frac{1}{8}$ x2 $\frac{1}{2}$ " H.H. slotted S.T.	G-L	.02	S7881	Tuning control knob & set screw	P	.15
*114-127	Screw— $\frac{1}{8}$ x1-1/16" H.H. slotted S. T.	G-L	.90C	*S8365	Dial escutcheon assem. (complete)	Q-R-S-T	3.50
*114-128	Screw— $\frac{1}{10}$ x1-1/16" Hex washer Hd. S. T.	I	.015		*57-828 dial escutcheon plate (less glass & gasket)		3.00
*114-132	Screw— $\frac{1}{10}$ x1 $\frac{1}{8}$ " Hex washer Hd. S. T.	J-N-O	.04		*192-55 dial escutcheon glass		.35
*114-133	Screw— $\frac{1}{10}$ x1 $\frac{1}{4}$ " Hex washer Hd. S. T.	F-J-N-O	.02	*S8366	*196-31 dial escutcheon glass gasket		.15
*114-134	Screw— $\frac{1}{8}$ x1-1/16" Hex washer Hd. S. T.	G-K-L	.01		Dial escutcheon assem. (complete)	U-V	4.00
117-38	Lever—band switch	P	.30		*57-829 dial escutcheon plate (less glass, gasket, name plate & shield)		3.00
125-17	Rubber grommet	A-B-C-D-E	.015		*57-850 name plate		.45
126-239	Shield—tube	M-P-Q-R-S-T-U-V	.10		*126-329 dial center shield		.05
126-326	Shield—tube (goat)	M	.10		*192-61 dial escutcheon glass		.35
126-329	Shield—dial center	U-V	.05		*196-31 dial escutcheon glass gasket		.15
126-341	Shield—tube (goat)	M	.10	*S8372	Dial escutcheon assem. (complete)	N-O	2.50
*126-379	Shield—tube	N-J-O	.05		*57-833 dial escutcheon plate (less glass & gasket)		2.10
*126-382	Shield—tube	A-B-C-D-F	.06		*192-58 dial escutcheon glass		.30
141-77	Phono motor only	W	6.00		*196-33 dial escutcheon glass gasket		.10
*142-30	Phono tone arm (complete)	W	7.50	*S8402	Dial escutcheon assem. (complete)	J	2.50
*142-32	Pickup cartridge only (142-30)	W	6.00		*57-839 dial escutcheon plate (less glass & gasket)		2.10
159-20	Plug button (bronze)	K	.05		*192-58 dial escutcheon glass		.30
159-25	Plug button (bronze)	E-W	.03		*196-33 dial escutcheon glass		.10
159-27	Plug button (bronze)	J-N-S-U	.10	*S8412	Dial escutcheon assem. (complete)	F	2.50
159-33	Plug button (brass)	E	.03		*57-843 dial escutcheon plate (less glass & gasket)		2.10
*159-42	Plug button	A-B-G-H	.01		*192-58 dial escutcheon glass		.30
190-17	Synchronous vibrator	A-C	4.95		*196-33 dial escutcheon glass		.10
192-46	Glass—dial	P	.35	*S8520	Tuning control knob a set screw	F-J-N-O	.15
*192-55	Glass—dial	Q-R-S-T	.35	*S8521	Volume control knob & set screw	F-I-N-O	.15
*192-58	Glass—dial	F-J-N-O	.30	*S8539	Volume control knob & set screw	Q-R-S-T-U-V	.15
*192-61	Glass—dial	U-V	.35	*S8540	Tuning control knob & set screw	Q-R-S-T-U-V	.20
196-25	Gasket—dial glass	P	.01	*S8611	Oscillator coil assem.	W	.30
*196-31	Gasket—dial glass	Q-R-S-T-U-V	.15				
*196-33	Gasket—dial glass	F-J-N-O	.10				
*197-8	Rubber suction cup	E	.04				
*199-25	Rubber sleeve	N	.015				
*202-181	Instruction book & tab sheet	M	.20				
*202-182	Instruction book & tab sheet	P	.20				
*202-183	Instruction book	G-L	.02				
*202-184	Instruction book & tab sheet	H	.20				
*202-185	Instruction book	E	.05				
*202-186	Instruction book & tab sheet	N	.20				
*202-187	Instruction book & tab sheet	I	.20				
*202-188	Instruction book & tab sheet	Q	.20				
*202-189	Instruction book & tab sheet	J	.20				
*202-190	Instruction book & tab sheet	S	.20				
*202-191	Instruction book	A-C	.07				
*202-192	Instruction book	B-D	.03				
*202-193	Instruction book	F	.05				
*202-194	Instruction book & tab sheet	O	.20				
*202-195	Instruction book & tab sheet	R	.20				
*202-196	Instruction book & tab sheet	T	.20				

*202-197	Instruction book & tab sheet	U	\$.20
*202-198	Instruction book & tab sheet	V	.20
*202-199	Instruction book	W	.02
*95-726	Power transformer 25 cycle	S-T	11.25
*202-200	Instruction book	K	.05
S7314	Band selector switch knob	M	.10
S7315	Tuning control knob	M	.10
S7350	Dial escutcheon assem. (complete)	P	2.75
	57-752 dial escutcheon plate (less glass & gasket)		2.50
	192-46 dial escutcheon glass		.35
	196-25 dial escutcheon glass gasket		.01
S7642	Tone control switch contact & strip	P	.30
S7773	AC switch & bracket assem.	U-V	.75
S7880	Vol. control knob & set screw	P	.15
S7881	Tuning control knob & set screw	P	.15
*S8365	Dial escutcheon assem. (complete)	Q-R-S-T	3.50
	*57-828 dial escutcheon plate (less glass & gasket)		3.00
	*192-55 dial escutcheon glass		.35
	*196-31 dial escutcheon glass gasket		.15
*S8366	Dial escutcheon assem. (complete)	U-V	4.00
	*57-829 dial escutcheon plate (less glass, gasket, name plate & shield)		3.00
	*57-850 name plate		.45
	*126-329 dial center shield		.05
	*192-61 dial escutcheon glass		.35
	*196-31 dial escutcheon glass gasket		.15
*S8372	Dial escutcheon assem. (complete)	N-O	2.50
	*57-833 dial escutcheon plate (less glass & gasket)		2.10
	*192-58 dial escutcheon glass		.30
	*196-33 dial escutcheon glass gasket		.10
*S8402	Dial escutcheon assem. (complete)	J	2.50
	*57-839 dial escutcheon plate (less glass & gasket)		2.10
	*192-58 dial escutcheon glass		.30
	*196-33 dial escutcheon glass		.10
*S8412	Dial escutcheon assem. (complete)	F	2.50
	*57-843 dial escutcheon plate (less glass & gasket)		2.10
	*192-58 dial escutcheon glass		.30
	*196-33 dial escutcheon glass		.10
*S8520	Tuning control knob a set screw	F-J-N-O	.15
*S8521	Volume control knob & set screw	F-I-N-O	.15
*S8539	Volume control knob & set screw	Q-R-S-T-U-V	.15
*S8540	Tuning control knob & set screw	Q-R-S-T-U-V	.20
*S8611	Oscillator coil assem.	W	.30

WAVEMAGNET PARTS

12-735	Bracket—swivel pin	O	.02
12-747	Bracket—wavemagnet mounting	J-N-Q-R-S-U-V	.20
12-752	Bracket—swivel pin	O	.03
22-182	.00025 mfd. 600 volt	P U-V	.20
22-962	Trimmer condenser	P-U-V	.15
24-228	Cover—cardboard	P	.15
*24-236	Cover—cardboard	J-N-O	.15
*24-238	Cover—cardboard	Q-R-S-T	.15
*24-240	Cover—cardboard	U-V	.15
57-719	Plate—switch	U	.03
57-754	Plate—wavemagnet mounting	M	.70
57-758	Plate—wavemagnet cover	M	.10
57-786	Plate—sensitivity switch	P	.05
58-54	Five prong plug	P-U-V	.08
70-13	$\frac{1}{8}$ x $\frac{1}{4}$ " R.H.—W.S.—N.P.	I-K	.40C
70-66	$\frac{1}{8}$ x $\frac{1}{2}$ " R.H.—W.S.—N.P.	V	.60C
80-198	Spring—wavemagnet mounting	J-N-O-Q-R-S	.01
85-171	Switch—antenna	U	.25
85-189	Switch—sensitivity	P	.20
86-79	Terminal—antenna lead	M-P-U-V	.75C
86-80	Terminal—ground lead	M-P-U-V	.75C
*114-125	$\frac{1}{8}$ x 2 $\frac{1}{2}$ " H.H. slotted S.T. screw	H	.02

PARTS LIST—(Continued)

126-331	Shield	M	\$.40
147-82	Spacer—wood	M	.01
*147-87	Spacer—wood	P	.01
*147-98	Spacer—mounting	G-H-L	.01
*147-99	Spacer—mounting	G-H-L	.01
S7317	Wavemagnet winding assem.	M	1.85
S7625	Plug & wire assem.	M	.30
S7916	Wavemagnet winding assem.	P	2.25
S8074	Plate & switch assem.	P	1.25
S8081	Wavemagnet winding assem.	U	2.00
S8082	Wavemagnet plate & switch	U	.75
S8084	Wavemagnet plate & brkt. assem.	U-V	1.00
*S8337	Plate & switch assem.	M	1.25
*S8356	Wavemagnet assem. (complete)		
	(type 16)	G-L	1.50
*S8376	Wavemagnet assem. (complete)		
	(type 17)	H	1.75
*S8395	Wavemagnet assem. (complete)		
	(type 20)	E	4.00
*S8431	Wavemagnet assem. (complete)		
	(type 18) (Model 7S529-530)	N	2.50
*S8433	Wavemagnet assem. (complete)		
	(type 19) (Model 7S557-558)	N	3.00
*S8476	Wavemagnet assem. (complete)		
	(type 17A)	I	2.50
*S8524	Wavemagnet assem. (complete)		
	(type 19D) (Model 7S582)	O	3.50
*S8528	Wavemagnet assem. (complete)		
	(type 18B) (Model 6S546)	J	2.50
*S8532	Wavemagnet assem. (complete)		
	(type 18A) (Model 7S547)	N	2.50
*S8537	Wavemagnet assem. (complete)		
	(type 19B) (Model 8S563-587)	Q-R	3.00
*S8538	Wavemagnet assem. (complete)		
	(type 19C) (Model 8S548)	Q	3.00
*S8545	Wavemagnet assem. (complete)		
	(type 18C) (Model 7S581)	O	2.50
*S8569	Wavemagnet assem. (complete)		
	(type 19A) (Model 6S556)	J	3.25
*S8571	Wavemagnet assem. (complete)		
	(type 19E) (Model 8S531-10S531)	Q-S	3.00
*S8577	Wavemagnet assem. (complete)		
	(type 19F) (Model 10S556-590)	S-T	3.25
*S8647	Wavemagnet assem. (complete)		
	(type 19G) (Model 10S549)	S	3.25
*S8683	Wavemagnet assem. (complete)		
	(type 19K) (Model 10S589)	T	3.25
*S8689	Wavemagnet assem. wind. assem.	U-V	2.00
*S8703	Wavemagnet assem. (complete)		
	(type 16A)	K	1.75
*S8746	Wavemagnet assem. (complete)		
	(type 18D) (Model 8S588)	R	2.50

PHONO PARTS

12-613	Bracket—pickup support	W	.20
12-634	Bracket—pickup support	I-K-O	.10
15-22	Cap—plug (for 78-193)	P	.10
15-23	Cap—plug (for 78-194)	P	.10
19-32	Clip—light socket mounting	O-P-R-T-V	.01
24-142	Cover—needle holder	I-K-M-O-P-R-T-V-W	.05
24-213	Cover—switch	I-O-W	.05
29-9	9" turntable	W	1.25
29-10	9" turntable	M	1.25
29-11	11½" turntable	P	2.00
*29-16	8" turntable	I-O	1.00
*29-17	10" turntable	O-R-T-V	1.50
*29-18	8" turntable	K	1.00
41-1	Holder—needle	I-K-M-O-P-R-T-V-W	.05
46-239	Knob—phono-radio switch	R-T-V	.05
46-265	Knob—switch	W	.10
*46-332	Knob—phono-radio switch	K	.10
*52-188	Phono-motor cable & plug (fem.)	I-K	.20
57-684	Plate—switch escutcheon	W	.10
57-744	Plate—switch radio-phono	P	.05
57-777	Plate—phono-motor switch	P-R-T-V	.05
*57-846	Plate—radio-phono escutcheon	R-T-V	.03
*57-856	Plate—phono-motor switch	K	.05
58-39	Plug—five prong	P	.15
*58-85	Plug—three prong	O-R-T-V	.05
*58-86	Plug—two prong	K	.10

62-10	Female receptacle	P	\$.20
78-161	Socket—ballast tube	W	.10
78-193	Socket—five contact	P	.10
78-194	Socket—two contact	P	.10
78-271	Socket—35Z4GT tube	W	.10
78-272	Socket—12SA7GT tube	W	.10
78-291	Socket—phono comp. light socket & wire	M-P	.12
*78-353	Socket—pickup lead	R-T-V	.03
*78-358	Socket—phono plug	R-T-V	.10
*78-359	Socket—phono comp. light socket & wire	R-T-V	.20
*78-360	Socket—phono comp. light socket & wire	O	.15
83-534	Strip—five lug terminal	P	.06
83-690	Strip—pin jack terminal	W	.05
85-170	Switch—A.C.	W	.70
85-171	Switch—phono	O	.25
85-181	Switch—automatic stop	I-O-W	1.00
85-191	Switch—Motor (A.C.)	K-M-O-P-R-T-V	.25
85-192	Switch—phono	M-P	.35
85-203	Switch—phono compart. light	O-P-R-T-V	.55
85-204	Switch—phono compart. light	M	.55
*85-228	Switch—phono-radio	R-T-V	.25
*85-230	Switch—phono-radio	I	.50
*85-240	Switch—phono-radio	K	.50
93-271	Rubber washer (turntable retaining)	R-T	.04
94-322	Bushing—insulating	W	.05
*97-137	Switch lever stud	R-T-V	.10
100-76	Ballast tube	W	.50
100-80	Phono compartment lamp	M-O-P-R-T-V	.25
141-77	Phono motor (less turntable & pickup)	W	6.00
*141-80	Phono motor 115 volt 60 cycle (less turntable & pickup assey.)	I-O	6.00
*141-81	Phono motor 115 volt 50 cycle (less turntable & pickup assey.)	I-O	7.75
*141-83	Phono motor 115 volt 60 cycle (less turntable & pickup assey.)	K	6.00
*141-84	Phono motor 115 volt 50 cycle (less turntable & pickup assey.)	K	7.75
142-24	Crystal cartridge only (for 169-36)	M-P	6.00
142-26	Crystal pickup & tone arm (complete)	I	7.50
*142-28	Crystal pickup & tone arm (complete)	O	7.50
*142-30	Phono tone arm & cartridge (complete)	W	7.50
*142-31	Crystal pickup & tone arm (complete)	K	7.50
*142-32	Pickup cartridge only (for 142-30)	W	6.00
*142-33	Crystal cartridge only (for 142-28)	O	6.00
*142-34	Crystal cartridge only (for 169-42-44)	O-R-T-V	6.00
*142-35	Crystal cartridge only (for 142-26)	I	6.00
*142-36	Crystal cartridge only (for 142-31)	K	6.00
*148-31	Phono switch lever arm	R-T	.04
*148-35	Phono switch lever arm	V	.05
159-25	Plug button (statuary bronze)	W	.03
169-36	Automatic record changer (complete) (115V. 60 C.)	M-P	50.00
169-37	Automatic record changer (complete) (115V. 50 C.)	P	50.00
169-38	Automatic record changer (complete) (115V. 25 C.)	M-P	67.50
*169-42	Automatic record changer (complete) (115V. 60 C.)	O-R-T-V	50.00
*169-44	Automatic record changer (complete) (115V. 50 C.)	O-R-T-V	52.25
202-134	Phono instruction book	M-O-P-R-T-V	.03
*202-199	Phono instruction book	W	.02
*S8393	Phono switch arm & sleeve assey.	O	.10
*S8540	Phono switch knob & set screw (46-351)	O	.15
*S8611	Oscillator coil assembly	W	.30

*NOTE: Parts used for first time in 1941 line.

All Prices List—Subject to Regular Discount and Change Without Notice

SERVICE MANUAL

1941 Models

6MN595 AC 6011 Special
7MN596 AC 6001 DeLuxe



Built for
NASH MOTORS

Division of Nash-Kelvinator Corp.
Kenosha, Wis.

Made by ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.

IMPORTANT — Be sure the warranty service tag is properly filled out and accompanies each receiver where free warranty service is expected by the customer or dealer.

Zenith Model 6MN595
Nash A.C. 6011 Special

Zenith Model 7MN596
Nash A.C. 6001 De Luxe

The cover on both receivers may be removed to check tubes and vibrator without removing the set from the car.

SOCKET VOLTAGES

Figs. 1 and 2 show approximate voltages at the socket terminals.

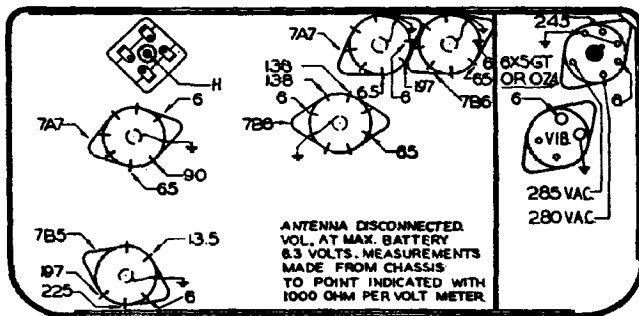


Fig. 1.

NASH AC 6011 SPECIAL
ZENITH 6MN 595

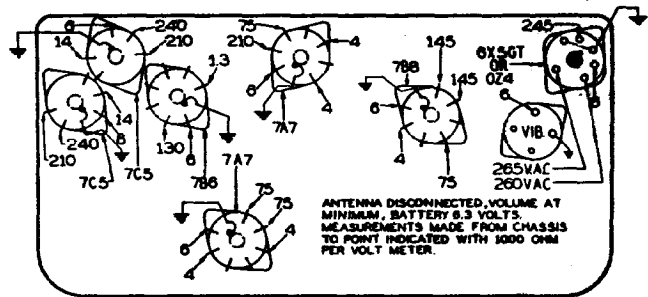


Fig. 2.

NASH AC 6001 DELUXE
ZENITH 7MN 596

Tuning Range: 540 to 1600 K.C.

Sensitivity: 8 microvolts at 1 watt output.

Power Output: 3.5 watts measured at the voice coil.

Speaker: 7" full dynamic

LF.: 455 K.C.

Tube Complement: 7A7 R.F.—7B8 oscillator and Modulator—7A7 L.F.—7B6 2nd detector and A.V.C.—7B5 pentode power output—6X5GT or OZ4 rectifier.

Current Consumption: 6.8 amperes.

Tuning Range: 540 to 1600 K.C.

Sensitivity: 8 microvolts at 1 watt output.

Power Output: 6 1/2 watts measured at the voice coil.

Speaker: 8" full dynamic

LF.: 455 K.C.

Tube Complement: 7A7 R.F.—7B8 oscillator and Modulator—7A7 L.F.—7B6 2nd detector and A.V.C.—two 7C5 beam push pull power output—6X5GT or OZ4 rectifier.

Current Consumption: 8 amperes.

Mr. Warranty Service Man:

The following information is furnished you so that you may restore original performance to the Nash receivers. The alignment procedure is new so study it carefully before trying to make any adjustments.

ALIGNMENT

The alignment of a receiver is one of the most important functions that a service man performs and the instructions must be carefully followed for both models.

CAUTION:

Care should be taken while making all adjustments on the receiver to have the volume control turned full on. The intensity of the signal should be reduced only at the signal generator.

The signal for the entire alignment procedure, both I.F. and R.F., is fed through a special Zenith dummy which can be purchased at your Zenith Distributor. Part number S7694. The capacities in the Zenith dummy antenna as shown in Fig. 6 are identical with the Nash antenna.

6MN595 AC 6011 SPECIAL

LF.: The tuning condenser is fully meshed (540 K.C.) The signal generator is set at 455 K.C. and fed through the special Zenith antenna dummy to the receiver. The wave trap adjustment screw A, (see Fig. 3) is adjusted for maximum response. The adjusting screws B, C, D and E (see Fig. 3) are then adjusted in order for maximum response on the output meter. The wave trap A is then adjusted for minimum response.

R.F.: The tuning control is rotated until the condenser plates are completely out of mesh (1600 K.C.) Set the signal generator to 1600 K.C. Adjust the 1600 K.C. osc. trimmer F shown in Fig. 3 for maximum response.

Set the signal generator to 1400 K.C. Rotate the tuning control until the signal is heard and adjust the 1400 antenna trimmer G (See Fig. 3) for maximum response.

Reset the signal generator to 600 K.C. and rotate the tuning control until a signal is heard, and adjust the core H (See Fig. 1) in the antenna coil for maximum response.

If core H is found to be off a great deal, the 1400 antenna trimmer G should be readjusted.

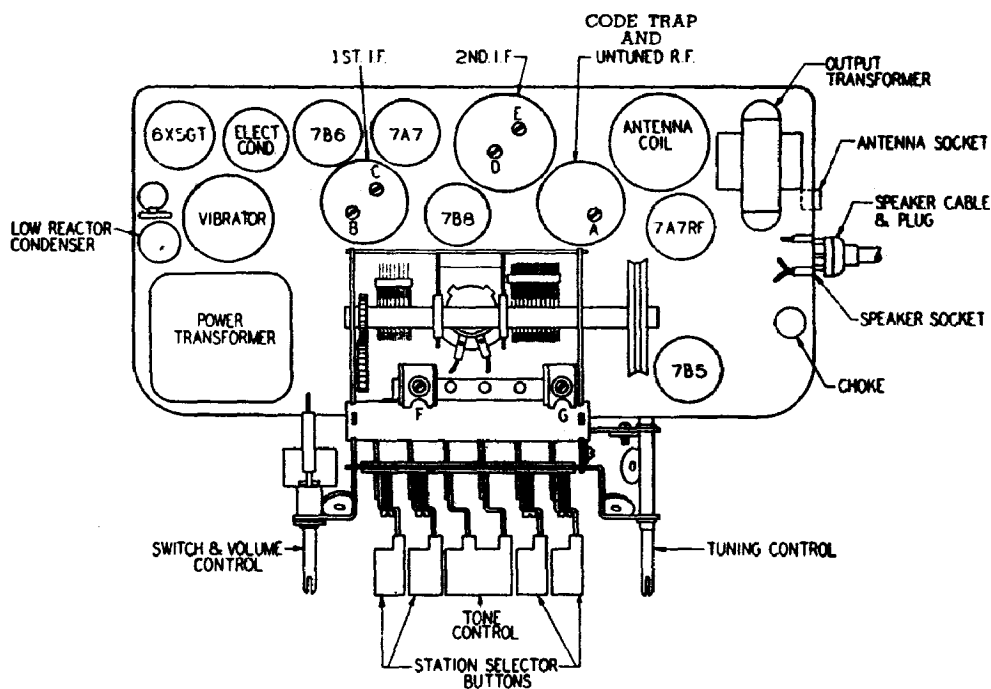


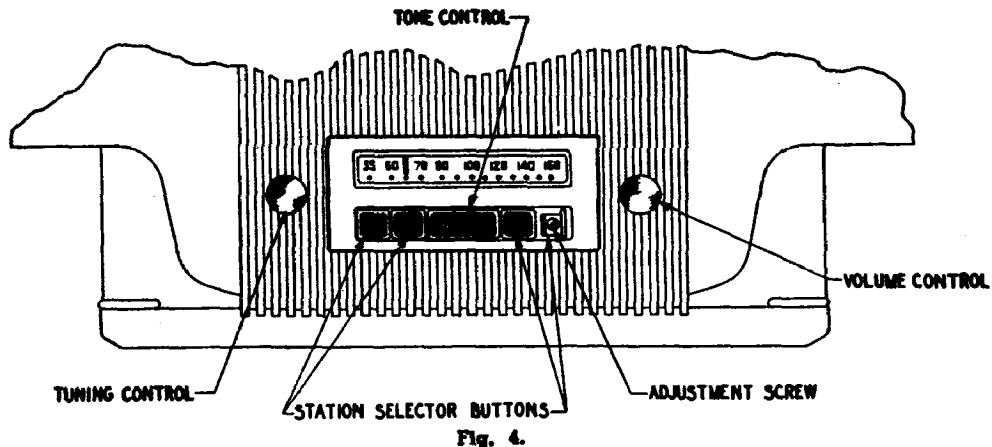
Fig. 3.

NASH AC 6011 SPECIAL
ZENITH 6MN 595

SETTING THE SUPER-MATIC TUNING

Adjustment should not be made until receiver has warmed up 15 minutes.

- (A) Select a desired station at right side of dial scale.
- (B) Loosen screw on right hand push button bar. (See Fig. 4)
- (C) Push Super-Matic button bar in as far as possible and tighten screw while bar is in this position.
- (D) Repeat the above for remaining bars, choosing three other desired stations.
- (E) Insert push buttons on push button bars.



NASH AC 6011 SPECIAL
ZENITH 6MN 595

Fig. 4.

7MN596 AC 8001 DELUXE

NOTE: This receiver is equipped with an adjustable sensitivity control located on the top of the chassis as shown in Fig. 5. The control is set at the factory to a position which gives sensitivity of 8 microvolts at 1 watt output. It is found advisable to hold the receiver at this level as any higher sensitivity may result in excessive background noise and unless laboratory equipment is available for measuring sensitivity, it is not advisable to change this setting.

LF.: The receiver must be in one of the automatic positions. The signal generator is set at 455 K.C. and fed through the special Zenith antenna dummy to the receiver. The code trap adjustment screw A (see Fig. 5) is adjusted for maximum response. The adjustment screws B, C, D and E are then adjusted in order for maximum response on the output meter (See Fig. 5). The code trap A is then adjusted for minimum response.

R.F.: The receiver is returned to manual and the tuning control is rotated until the condenser plates are out of mesh (1600 K.C.) Set the signal generator to 1600 K.C. and adjust the 1600 K.C. osc. trimmer F (See Fig. 5) for maximum response.

Set the signal generator to 1400 K.C. and rotate the tuning control until a signal is heard and adjust the R.F. trimmer G and antenna trimmer H (See Fig. 5) for maximum response.

Set the signal generator to 600 K.C. and rotate the tuning control until the signal is heard. The condenser gang is then rocked slightly while adjusting the 600 K.C. padder I (See Fig. 5) to maximum reading on output meter.

IMPORTANT — Unless certain dummy antenna capacities are employed with either the signal generator, or in making the adjustments on stations, a receiver will not respond properly. The capacities provided in the Zenith dummy antenna part No. S7694 shown in Fig. 6 are identical with the conditions found in the Nash car, and if adjusted accordingly, the instrument will operate properly when reinstalled in the automobile. The Zenith dummy antenna is especially priced very low, and should be purchased at once for use in servicing the Zenith built Nash receiver.

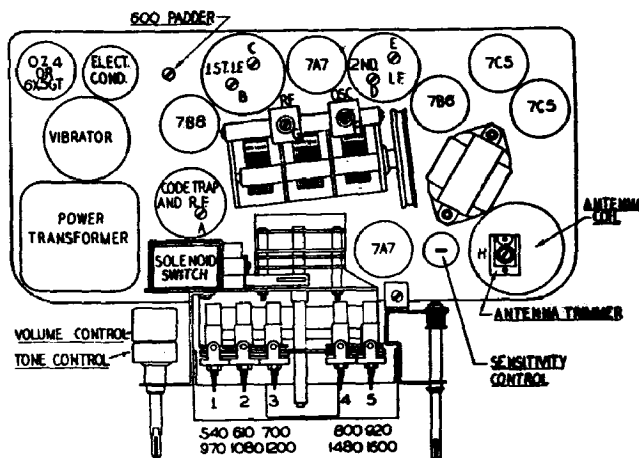


Fig. 5.

NASH AC 6001 DELUXE
ZENITH 7MN 596

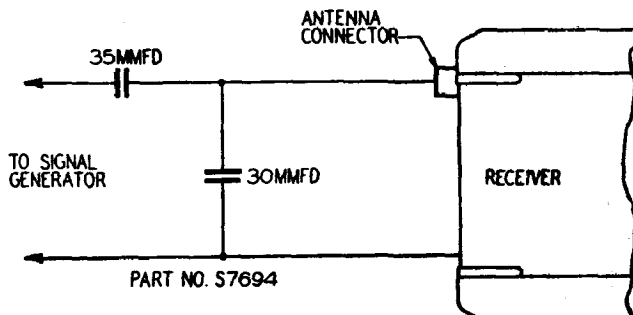
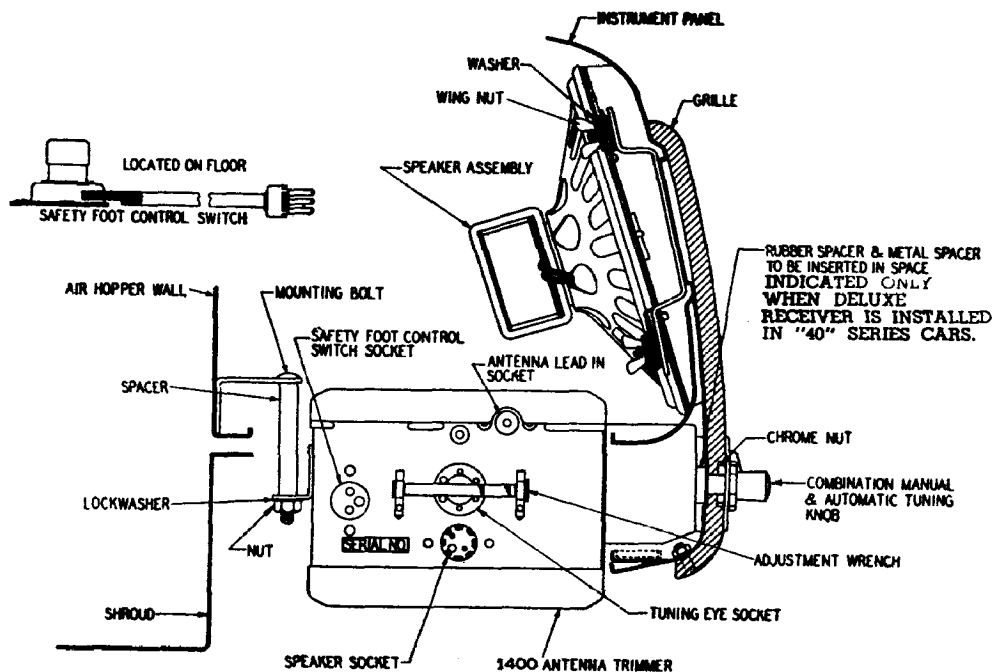


Fig. 6.

NASH AC 6011 SPECIAL
ZENITH 6MN 595
NASH AC 6001 DELUXE
ZENITH 7MN 596

SETTING THE SAFETY AUTOMATIC ELECTRIC TUNING

(A) The automatic station adjusting eye is plugged into the socket on the receiver. (See Fig. 7)



NASH AC 6001 DELUXE
ZENITH 7MN 596

Fig. 7.

(B) The indicator window is removed from the receiver by inserting a small screw driver underneath the left edge of the indicator window and pressing outward. This makes the adjustment screws available.

The set should be turned on and allowed to warm up at least half an hour.

(C) The range for each adjustment is located underneath the adjustment number.

A station close to 580 K.C. is set by having the figure 1 so it would appear in indicator window. The adjustment screw No. 1 (See Fig. 8) is then adjusted to the proper signal until the tuning eye gap can not be decreased in size. The No. 1 nut (See Fig. 8) is then adjusted until the gap on the tuning eye cannot be further decreased in size. A wrench for making these adjustments is located on the side of the receiver. (See Fig. 7)

(D) For stations 2, 3, etc. on the Safety Automatic Electric Tuner you set the adjustment screws and nuts the same as for station 1.

The Safety Automatic Station Adjusting Eye is available at all Zenith distributors.

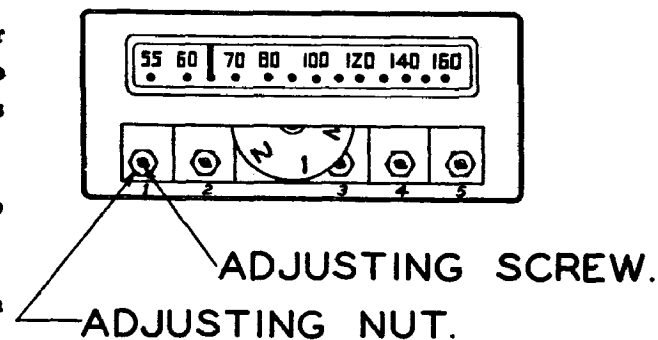


Fig. 8.

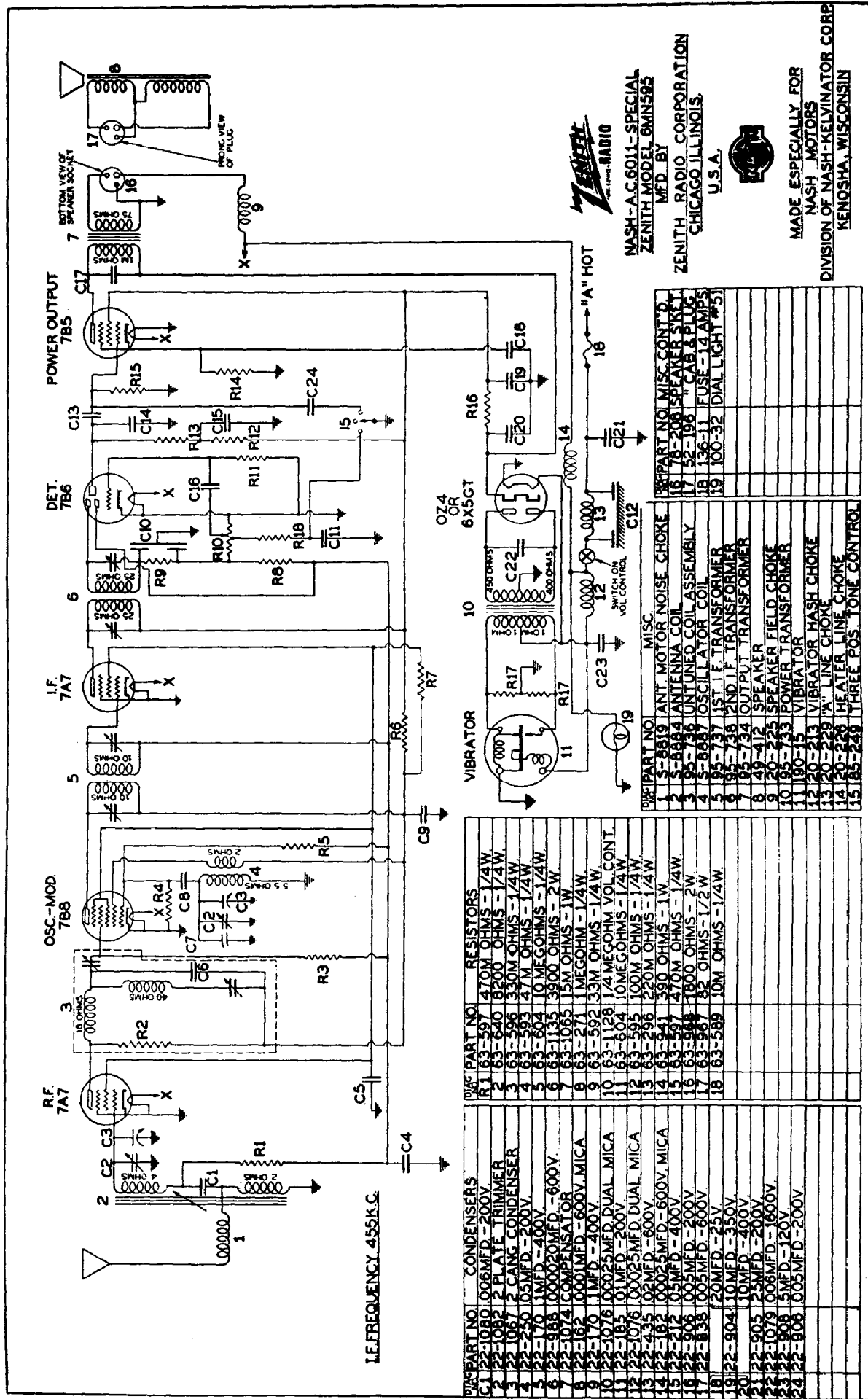
NASH AC 6001 DELUXE
ZENITH 7MN 596



NASH - A.C. 6011 - SPECIAL } 3 TURNS.
ZENITH - 6MN595.
NASH - A.C. 6001 - DELUXE } 4 TURNS.
ZENITH - 7MN596.

Fig. 9.

The stringing of the dial cord is very important for unless properly strung the cord will jump off the pulleys. Figure 9 shows the proper way to string the cords on both receivers.



NASH-AC 8011-SPECIAL
ZENITH MODEL 6MN595
MFD BY
ZENITH RADIO CORPORATION
CHICAGO ILLINOIS
U.S.A.

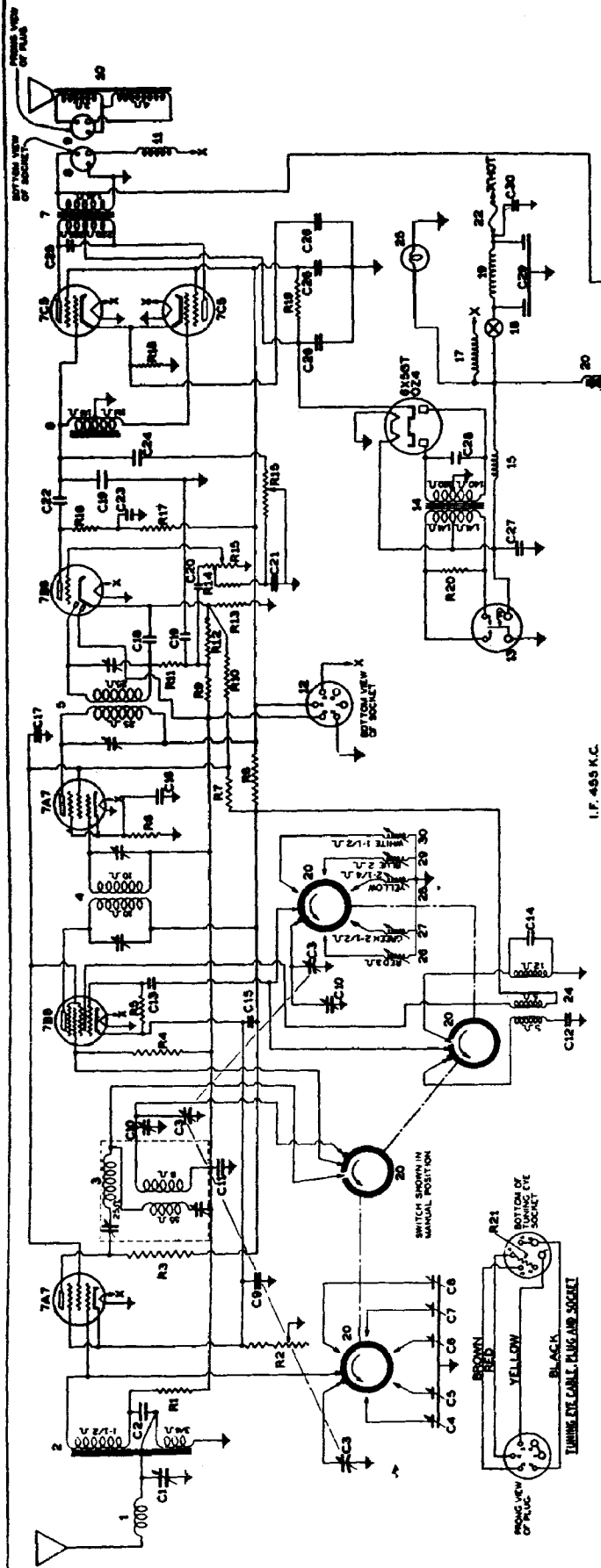


MADE ESPECIALLY FOR
NASH MOTORS
DIVISION OF NASH-KELVINATOR CORP
KENOSHA, WISCONSIN

PART NO. MISC. CONT'D	
1	5-8819 ANT. MOTOR NOISE CHOKE
2	5-8819 ANT. NOISE CHOKE
3	5-8819 ANT. NOISE CHOKE
4	5-8819 ANT. NOISE CHOKE
5	5-8819 ANT. NOISE CHOKE
6	5-8819 ANT. NOISE CHOKE
7	5-8819 ANT. NOISE CHOKE
8	5-8819 ANT. NOISE CHOKE
9	5-8819 ANT. NOISE CHOKE
10	5-8819 ANT. NOISE CHOKE
11	5-8819 ANT. NOISE CHOKE
12	5-8819 ANT. NOISE CHOKE
13	5-8819 ANT. NOISE CHOKE
14	5-8819 ANT. NOISE CHOKE
15	5-8819 ANT. NOISE CHOKE
16	5-8819 ANT. NOISE CHOKE
17	5-8819 ANT. NOISE CHOKE
18	5-8819 ANT. NOISE CHOKE
19	5-8819 ANT. NOISE CHOKE

PART NO. RESISTORS	
1	63-597 470M OHMS - 1/4W
2	63-597 470M OHMS - 1/4W
3	63-597 470M OHMS - 1/4W
4	63-597 470M OHMS - 1/4W
5	63-597 470M OHMS - 1/4W
6	63-597 470M OHMS - 1/4W
7	63-597 470M OHMS - 1/4W
8	63-597 470M OHMS - 1/4W
9	63-597 470M OHMS - 1/4W
10	63-597 470M OHMS - 1/4W
11	63-597 470M OHMS - 1/4W
12	63-597 470M OHMS - 1/4W
13	63-597 470M OHMS - 1/4W
14	63-597 470M OHMS - 1/4W
15	63-597 470M OHMS - 1/4W
16	63-597 470M OHMS - 1/4W
17	63-597 470M OHMS - 1/4W
18	63-597 470M OHMS - 1/4W
19	63-597 470M OHMS - 1/4W
20	63-597 470M OHMS - 1/4W
21	63-597 470M OHMS - 1/4W
22	63-597 470M OHMS - 1/4W
23	63-597 470M OHMS - 1/4W
24	63-597 470M OHMS - 1/4W

NASH AC8011 SPECIAL ZENITH MODEL 6MN595



NASH-A.C.8001-DELUXE
ZENITH SAFETY FOOT CONTROL MODEL-7MNS98
MED. BY
ZENITH RADIO CORPORATION
CHICAGO, ILLINOIS
U.S.A.

MADE ESPECIALLY FOR
NASH MOTORS
DIVISION OF NASH-KELVINATOR CORPORATION
KENOSHA, WISCONSIN

SUPPLY NO.	CONDENSERS	RESISTORS	MISCELLANEOUS
1	ANTENNA TRIMMER	200 OHMS 1/4W	ANTENNA COIL NOISE CHOC
2	05 MFD - 200V	200 TO 800 OHMS SEN CONT.	ANTENNA COIL
3	3 GANG CONDENSER	150M OHMS 1/4W	150 TRANSFORMER
4	TRIMMER CAP	150M OHMS 1/4W	150 TRANSFORMER
5	"	150M OHMS 1/4W	150 TRANSFORMER
6	"	150M OHMS 1/4W	150 TRANSFORMER
7	"	150M OHMS 1/4W	150 TRANSFORMER
8	"	150M OHMS 1/4W	150 TRANSFORMER
9	"	150M OHMS 1/4W	150 TRANSFORMER
10	"	150M OHMS 1/4W	150 TRANSFORMER
11	"	150M OHMS 1/4W	150 TRANSFORMER
12	"	150M OHMS 1/4W	150 TRANSFORMER
13	"	150M OHMS 1/4W	150 TRANSFORMER
14	"	150M OHMS 1/4W	150 TRANSFORMER
15	"	150M OHMS 1/4W	150 TRANSFORMER
16	"	150M OHMS 1/4W	150 TRANSFORMER
17	"	150M OHMS 1/4W	150 TRANSFORMER
18	"	150M OHMS 1/4W	150 TRANSFORMER
19	"	150M OHMS 1/4W	150 TRANSFORMER
20	"	150M OHMS 1/4W	150 TRANSFORMER
21	"	150M OHMS 1/4W	150 TRANSFORMER
22	"	150M OHMS 1/4W	150 TRANSFORMER
23	"	150M OHMS 1/4W	150 TRANSFORMER
24	"	150M OHMS 1/4W	150 TRANSFORMER
25	"	150M OHMS 1/4W	150 TRANSFORMER
26	"	150M OHMS 1/4W	150 TRANSFORMER
27	"	150M OHMS 1/4W	150 TRANSFORMER
28	"	150M OHMS 1/4W	150 TRANSFORMER
29	"	150M OHMS 1/4W	150 TRANSFORMER
30	"	150M OHMS 1/4W	150 TRANSFORMER
31	"	150M OHMS 1/4W	150 TRANSFORMER
32	"	150M OHMS 1/4W	150 TRANSFORMER
33	"	150M OHMS 1/4W	150 TRANSFORMER
34	"	150M OHMS 1/4W	150 TRANSFORMER
35	"	150M OHMS 1/4W	150 TRANSFORMER
36	"	150M OHMS 1/4W	150 TRANSFORMER
37	"	150M OHMS 1/4W	150 TRANSFORMER
38	"	150M OHMS 1/4W	150 TRANSFORMER
39	"	150M OHMS 1/4W	150 TRANSFORMER
40	"	150M OHMS 1/4W	150 TRANSFORMER
41	"	150M OHMS 1/4W	150 TRANSFORMER
42	"	150M OHMS 1/4W	150 TRANSFORMER
43	"	150M OHMS 1/4W	150 TRANSFORMER
44	"	150M OHMS 1/4W	150 TRANSFORMER
45	"	150M OHMS 1/4W	150 TRANSFORMER
46	"	150M OHMS 1/4W	150 TRANSFORMER
47	"	150M OHMS 1/4W	150 TRANSFORMER
48	"	150M OHMS 1/4W	150 TRANSFORMER
49	"	150M OHMS 1/4W	150 TRANSFORMER
50	"	150M OHMS 1/4W	150 TRANSFORMER
51	"	150M OHMS 1/4W	150 TRANSFORMER
52	"	150M OHMS 1/4W	150 TRANSFORMER
53	"	150M OHMS 1/4W	150 TRANSFORMER
54	"	150M OHMS 1/4W	150 TRANSFORMER
55	"	150M OHMS 1/4W	150 TRANSFORMER
56	"	150M OHMS 1/4W	150 TRANSFORMER
57	"	150M OHMS 1/4W	150 TRANSFORMER
58	"	150M OHMS 1/4W	150 TRANSFORMER
59	"	150M OHMS 1/4W	150 TRANSFORMER
60	"	150M OHMS 1/4W	150 TRANSFORMER
61	"	150M OHMS 1/4W	150 TRANSFORMER
62	"	150M OHMS 1/4W	150 TRANSFORMER
63	"	150M OHMS 1/4W	150 TRANSFORMER
64	"	150M OHMS 1/4W	150 TRANSFORMER
65	"	150M OHMS 1/4W	150 TRANSFORMER
66	"	150M OHMS 1/4W	150 TRANSFORMER
67	"	150M OHMS 1/4W	150 TRANSFORMER
68	"	150M OHMS 1/4W	150 TRANSFORMER
69	"	150M OHMS 1/4W	150 TRANSFORMER
70	"	150M OHMS 1/4W	150 TRANSFORMER
71	"	150M OHMS 1/4W	150 TRANSFORMER
72	"	150M OHMS 1/4W	150 TRANSFORMER
73	"	150M OHMS 1/4W	150 TRANSFORMER
74	"	150M OHMS 1/4W	150 TRANSFORMER
75	"	150M OHMS 1/4W	150 TRANSFORMER
76	"	150M OHMS 1/4W	150 TRANSFORMER
77	"	150M OHMS 1/4W	150 TRANSFORMER
78	"	150M OHMS 1/4W	150 TRANSFORMER
79	"	150M OHMS 1/4W	150 TRANSFORMER
80	"	150M OHMS 1/4W	150 TRANSFORMER
81	"	150M OHMS 1/4W	150 TRANSFORMER
82	"	150M OHMS 1/4W	150 TRANSFORMER
83	"	150M OHMS 1/4W	150 TRANSFORMER
84	"	150M OHMS 1/4W	150 TRANSFORMER
85	"	150M OHMS 1/4W	150 TRANSFORMER
86	"	150M OHMS 1/4W	150 TRANSFORMER
87	"	150M OHMS 1/4W	150 TRANSFORMER
88	"	150M OHMS 1/4W	150 TRANSFORMER
89	"	150M OHMS 1/4W	150 TRANSFORMER
90	"	150M OHMS 1/4W	150 TRANSFORMER
91	"	150M OHMS 1/4W	150 TRANSFORMER
92	"	150M OHMS 1/4W	150 TRANSFORMER
93	"	150M OHMS 1/4W	150 TRANSFORMER
94	"	150M OHMS 1/4W	150 TRANSFORMER
95	"	150M OHMS 1/4W	150 TRANSFORMER
96	"	150M OHMS 1/4W	150 TRANSFORMER
97	"	150M OHMS 1/4W	150 TRANSFORMER
98	"	150M OHMS 1/4W	150 TRANSFORMER
99	"	150M OHMS 1/4W	150 TRANSFORMER
100	"	150M OHMS 1/4W	150 TRANSFORMER

NASH—A.C.8001—DELUXE ZENITH SAFETY FOOT CONTROL MODEL—7MNS98

PARTS PRICE LIST

ZENITH-NASH AUTOMOBILE RECEIVERS

Model	Nash No.	Zenith No.	Chassis No.	Code
Special	AC6011	6MN595	6A17	S
DeLuxe	AC6001	7MN596	7A08	D

COILS & CHOKES

20-213	Vibrator hash choke	SD	\$.25
20-225	"A" line choke	S	.10
20-226	Heater line choke	S	.10
20-229	Motor noise filter choke	SD	.10
20-231	Speaker field choke	D	.10
20-232	Heater line choke	D	.10
95-736	RF transformer	S	1.00
95-737	1st IF transformer	S	1.00
95-738	2nd IF transformer	SD	1.00
95-742	1st IF transformer	D	1.00
S8819	Antenna motor noise choke assembly	SD	.20
S8877	Oscillator coil assembly	S	1.00
S8884	Antenna coil assembly	S	1.25
S9041	RF coil and shield assembly	D	1.50
S9160	Antenna coil and strip assembly	D	1.00
S9182	Oscillator coil assembly	D	1.00

CONDENSERS

22-162	.0001 mfd.	600 volt	SD	.15
22-170	.1 mfd.	400 volt	SD	.20
22-182	.00025 mfd.	600 volt	SD	.20
22-185	.01 mfd.	200 volt	SD	.15
22-190	.1 mfd.	200 volt	D	.18
22-212	.05 mfd.	400 volt	SD	.15
22-250	.05 mfd.	200 volt	SD	.15
22-435	.02 mfd.	600 volt	SD	.15
22-838	.005 mfd.	600 volt	SD	.15
22-901	RF coil trimmer		D	.25
22-904	10 mfd. 400 volt x 10 mfd. 350 volt x 20 mfd. 25 volt dry electrolytic		S	1.15
22-905	.25 mfd.	200 volt	SD	.22
22-906	.005 mfd.	200 volt	SD	.15
22-908	.5 mfd.	120 volt	SD	.25
22-917	10 mfd. 400 volt x 20 mfd. 450 volt x 20 mfd. 25 volt dry electrolytic		D	1.35
22-919	Ammeter condenser		SD	.40
22-920	Generator condenser		SD	.35
22-956	500 mmfd. Silvercap		D	.35
22-988	20 mmfd.	600 volt	S	.20
22-1067	Two gang variable & automatic tuning unit		S	5.50
22-1074	Compensating condenser		S	.20
22-1075	.007 mfd.	200 volt	D	.15
22-1076	Dual spark plate condenser		SD	.20
22-1077	Oscillator padder condenser		D	.30
22-1079	.006 mfd.	1600 volt	S	.20
22-1080	.006 mfd.	200 volt	S	.15
22-1082	Two section ceramic trimmer		S	.30
22-1085	Three gang variable condenser		D	3.00
22-1093	Automatic tuning trimmer		D	.20
22-1094	Automatic tuning trimmer		D	.20
22-1095	Automatic tuning trimmer		D	.15
22-1102	Two section ceramic trimmer		D	.30
22-1114	Antenna trimmer condenser		D	.15
22-1115	.05 mfd.	200 volt	D	.15
22-1116	.007 mfd.	1600 volt	D	.25

RESISTORS

63-271	1 megohm	1/4 watt	SD	.07
63-296	220M ohm	1/4 watt	SD	.07
63-311	15M ohm	1/4 watt	D	.07
63-589	10M ohm	1/4 watt	S	.07
63-592	33M ohm	1/4 watt	S	.07
63-593	47M ohm	1/4 watt	S	.07

63-595	100M ohm	1/4 watt	S	.07
63-596	330M ohm	1/4 watt	SD	.07
63-597	470M ohm	1/4 watt	S	.07
63-604	10 megohm	1/4 watt	S	.07
63-634	820 ohm	1/4 watt	D	.07
63-640	8200 ohm	1/4 watt	S	.07
63-647	39M ohm	1/4 watt	D	.07
63-649	56M ohm	1/4 watt	D	.07
63-701	470 ohm	1/4 watt insulated	D	.15
63-712	33M ohm	1/4 watt insulated	D	.15
63-713	47M ohm	1/4 watt insulated	D	.15
63-719	470M ohm	1/4 watt insulated	D	.15
63-941	390 ohm W. W.	1 watt insulated	S	.20
63-948	330 ohm W. W.	1/4 watt insulated	D	.20
63-967	82 ohm	1/2 watt insulated	S	.17
63-968	1800 ohm W.W.	2 watt insulated	SD	.30
63-971	220 ohm	1/2 watt	D	.08
63-1046	Distributor suppressor		SD	.25
63-1065	15M ohm	1 watt insulated	SD	.20
63-1128	Volume control and switch		S	1.50
63-1129	Volume control, tone control & switch		D	2.50
63-1131	Sensitivity control		D	.50
63-1135	3900 ohm W.W.	2 watt insulated	S	.30
63-1140	4700 ohm W.W.	2 watt insulated	D	.30

SET INSTALLATION ACCESSORIES

22-919	Ammeter condenser	SD	.40
22-920	Generator condenser	SD	.35
54-132	7/16-32 round nut	SD	.07
54-146	#10/32 Wing nut	SD	1.50C
63-1046	Distributor suppressor	SD	.25
68-2	Installation tool	SD	.02
80-145	Motor hood bond spring	SD	.02
144-20	1/4-20 x 3" carriage bolt	SD	.03
147-100	Set mounting spacer (2reg.)	SD	.04
147-101	Set mounting spacer (1 reg.)	SD	.04

SPEAKER AND MOUNTING ACCESSORIES

49-412	7" Electro-dynamic speaker	S	3.50
	208-412 cone & voice coil assembly	S	1.75
49-413	8" Electro-dynamic speaker	D	4.00
	208-413 cone & voice coil assembly	D	2.00
52-196	Speaker cable	SD	.50
57-862	Speaker mounting plate	SD	.50
125-12	Rubber Grommet (3 reg.)	SD	.03
147-85	Speaker mtg. spacer (4 reg.)	SD	.01
196-38	Speaker gasket	SD	.30

DIAL & TUNING MECHANISM

12-808	Dial scale mounting bracket	S	.15
12-809	Tuning shaft mounting bracket	S	.15
12-841	Dial scale mounting bracket	D	.15
22-1067	Two gang variable & auto. tuning unit	S	5.50
22-1082	Two section ceramic trimmer	S	.30
22-1085	Three gang variable	D	3.00
22-1102	Two section ceramic trimmer	D	.30
24-241	Tuning mechanism cover	S	1.25
24-254	Tuning mechanism cover	D	1.25
26-271	Dial scale	SD	.35
46-363	Automatic tuning knob	S	.20
46-364	Tone control knob	S	.30
46-365	Tuning control knob	D	.25
46-367	Tuning control knob	S	.20
46-367	Volume control knob	D	.20
46-368	Tone control knob	D	.15

59-107	Dial pointer	SD	.05
76-314	Tuning control shaft	S	.15
76-317	Tuning control shaft	D	.15
80-231	Dial cord tension spring	SD	.02
80-232	Tuning knob retaining spring	SD	.01
80-236	Tuning shaft spring	D	.75C
85-249	Tone control switch	S	.75
100-32	Dial light bulb	SD	.07
125-34	Rubber grommet	S	.03
188-34	Retaining ring (for 76-314 & 76-317)	SD	.01
MS621	Tuning shaft bracket assembly	D	.20
S8938	Idler Pulley & bracket assy.	S	.10
S8939	Volume control bracket & pulley assy.	S	.15
S8940	Dial cord & eyelet assembly	S	.10
S9130	Volume control bracket & pulley assy.	D	.20
S9131	Tuning control pulley assy.	D	.20
S9148	Dial cord & eyelet assy.	D	.10

AUTOMATIC COILS & SWITCH ASSEMBLY

22-1093	Automatic tuning trimmer	D	.20
22-1094	Automatic tuning trimmer	D	.20
22-1095	Automatic tuning trimmer	D	.15
24-250	Automatic tuning adjustment cover	D	.50
27-40	Automatic tuning indicator disc	D	.10
52-209	Foot control switch cable	D	1.00
68-3	Automatic tuning adjustment wrench	D	.02
80-236	Manual-automatic switch spring	D	.75C
83-842	Coil retaining strip	D	.03
83-843	Fibre strip	D	.01
83-850	Coil retaining strip	D	.03
83-851	Fibre strip	D	.02
85-252	Automatic tuning switch & solenoid	D	3.00
85-264	Foot control switch & cable	D	2.00
93-497	Indicator disc washer	D	.70C
112-295	Adjustment screw & core	D	.10
127-31	Manual automatic switch contact	D	.15
127-32	Manual automatic switch contact	D	.20
S8971	Automatic tuning oscillator coil, red	D	.15

S8972	Automatic tuning oscillator coil, green	D	.15
S8973	Automatic tuning oscillator coil, yellow	D	.15
S8974	Automatic tuning oscillator coil, blue	D	.15
S8975	Automatic tuning oscillator coil, white	D	.15

MISCELLANEOUS

52-168	Battery cable - fuse to ammeter	S	.25
52-197	Battery cable - set to fuse	SD	.15
52-200	Battery cable - fuse to ammeter	D	.20
52-209	Foot control switch cable	D	1.00
58-92	Tuning eye socket jumper	D	.50C
78-208	Socket - speaker plug	SD	.10
78-281	Socket - vibrator	SD	.10
78-283	Socket - antenna connector	SD	.10
78-284	Socket - tuning eyetube	D	.10
78-381	Socket - dial light	SD	.05
78-399	Socket - octal tube	SD	.10
78-400	Socket - loktal base tube (6 contact)	SD	.15
78-401	Socket - loktal base tube (8 contact)	SD	.15
78-406	Socket - foot control switch	D	.10
80-145	Motor hood bond spring	SD	.02
85-249	Tone control switch	S	.75
85-264	Foot control switch & cable	D	2.00
95-731	Power transformer	D	2.75
95-733	Power transformer	S	2.50
95-734	Audio output transformer	S	1.25
100-32	Dial light bulb	SD	.07
136-11	14 ampere fuse	S	.10
136-12	20 ampere fuse	D	.10
190-15	Non-synchronous vibrator	SD	2.95
193-10	Foot control drilling template	D	.03
202-209	Instruction book	S	.25
202-219	Instruction book	D	.20
S9101	Audio transformer assembly	D	3.00
S9184	Tuning eye accessory kit	D	2.50
S7694	Dummy antenna assembly	SD	1.25
S9188	Dummy antenna assembly	SD	1.25

NOTE: When ordering speakers or speaker parts specify code letter or letters.

All Prices List — Subject to Regular Discount and Change Without Notice



SERVICE MANUAL

**Built for
FORD MOTOR CO.
Detroit, Mich.**



Model
6MF590

Made by ZENTH RADIO CORPORATION, Chicago, Ill., U.S.A.

Electrical Specifications

Sensitivity—7 Micro-volts at one watt output. **Power Output**—4.5 watts measured at the voice coil. **Tuning Range** 540-1600 K.C. **Speaker**—full size electro-dynamic. I.F. 455 K.C. **Roto-Selector tuning**—automatic tuning for five stations. **Foot Control Switch**. Automatic tuning for five stations controlled by foot switch on floor optional.

Tube Complement—7A7 R.F.; 7B8 Oscillator and Modulator; 7A7 I.F.; 7B6 second detector and A.V.C.; 7C5 Beam power output; 6X5GT or 0Z4 Rectifier.
Current Consumption—7 amp.

MR. WARRANTY SERVICE MAN:

The following information is furnished you so you may restore original performance to the Ford receiver.

The alignment procedure is new so study it carefully before trying to make any adjustments.

IMPORTANT:

The Warranty tag must be filled in by the dealer and accompany each receiver when free warranty service is expected by the customer or dealer. Otherwise you are not authorized to do warranty service work.

SOCKET VOLTAGES:

Fig. 1 shows approximate voltages at the socket terminals. The resistance measurements are shown on the schematic on page 53.

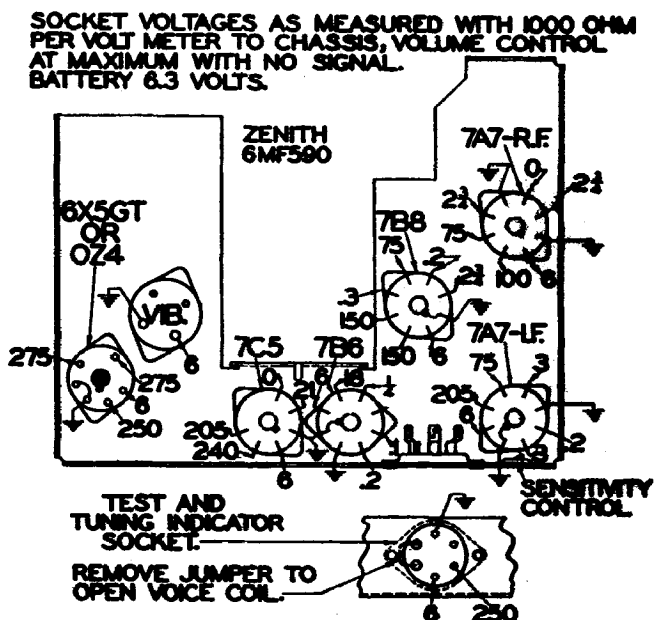


FIG. 1

ALIGNMENT:

The alignment of a receiver is one of the most important functions that a service man performs, and the instructions must be carefully followed.

CAUTION:

Care should be taken while making all adjustments on the receiver to have the volume control turned full on. The intensity of the signal should be reduced only at the signal generator.

The signal for the entire alignment procedure, both I.F. and R.F. is fed through a special Zenith dummy which can be purchased from your Zenith distributor, Part No. S9187. The capacities in the Zenith dummy antenna as shown in Fig. 2 are identical with the Ford antenna.

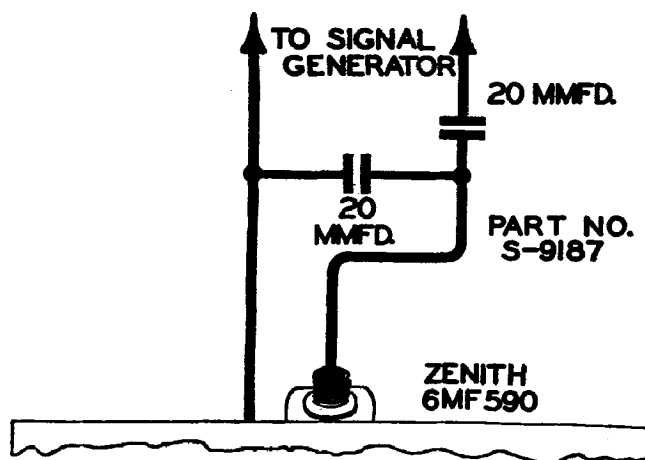


FIG. 2

NOTE:

This receiver is equipped with an adjustable sensitivity control located on the bottom of the chassis as shown in Fig. 1. The control is set at the factory to a position which gives sensitivity of 7 microvolts at 1 watt output. It is found advisable to hold the receiver at this level as any higher sensitivity may result in excessive background noise and unless laboratory equipment is available for measuring sensitivity it is not advisable to change the setting.

I.F.—

1. The receiver must be in one of the automatic positions.
2. The signal generator is set at 455 K.C. and fed through the special Zenith dummy to the receiver.
3. The R.F. and code trap adjustment screw A (see Fig. 3) is adjusted for maximum response.

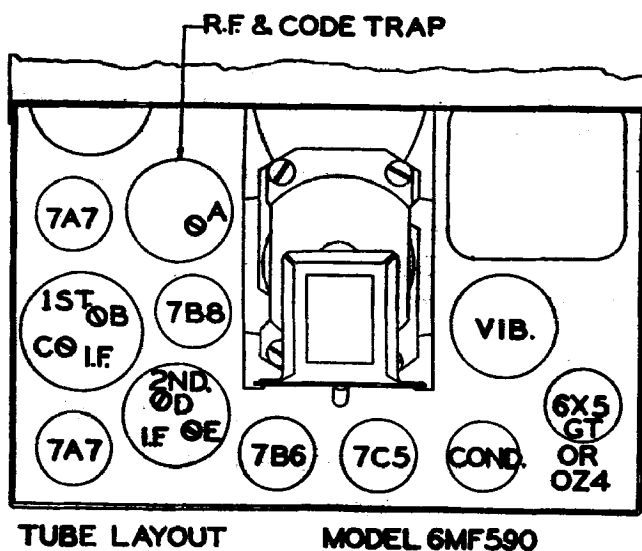


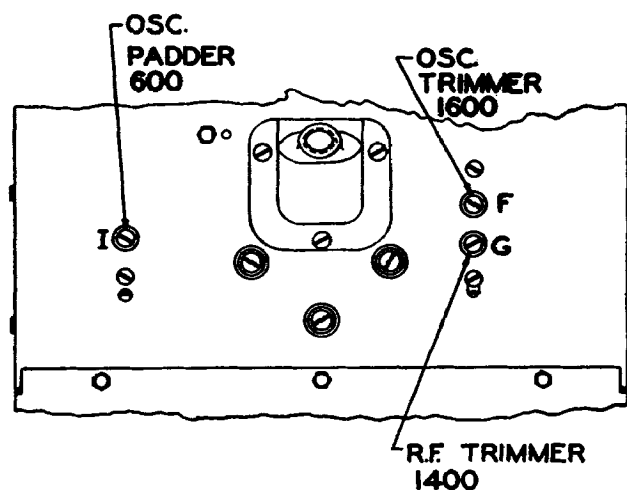
FIG. 3

4. The adjustment screws B, C, D and E (see Fig. 3) are then adjusted in order for maximum response.
5. The code trap A is then adjusted for minimum response.

R.F.

1. The receiver is returned to manual tuning.
2. The tuning control is rotated until the condenser plates are out of mesh (1600 K.C.)

3. The signal generator is set to 1600 K.C.
4. Adjust the 1600 K.C. oscillator trimmer F (see Fig. 4) for maximum response.
5. Set signal generator to 1400 K.C. and rotate the tuning control until a signal is heard.
6. Adjust the R.F. trimmer G (see Fig. 4) and the antenna trimmer H (see Fig. 5) for maximum response.
7. Set the signal generator to 600 K.C. and rotate the tuning control until signal is heard.
8. The condenser gang is then rocked slightly while adjusting the 600 K.C. padder I (see Fig. 4).



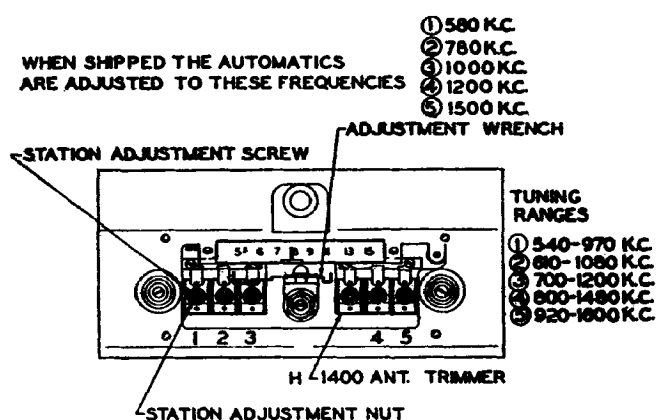
TRIMMER LAYOUT MODEL 6MF590

FIG. 4

SETTING THE ROTO-SELECTOR:

First turn the receiver on, and allow it to operate for approximately half an hour. This is necessary in order that the operating temperature may reach normal, and thereby assure accurate adjustment. After the

set has been on for the necessary length of time, remove the plastic escutcheon over the tuning control by first pulling off the three knobs and removing the lock nuts on the tuning and volume control shafts. With the escutcheon removed, the automatic adjusting screws become accessible as shown in Fig. 5. The adjustments are made by means of a special wrench held in position by a clip as shown in Fig. 5 and using this wrench, the adjustments are made as follows:



MODEL 6MF590

FIG. 5

1. Select a station within the range of adjustment No. 1 (Fig. 5). The range of the adjustments is shown in Fig. 5.
2. Set Roto-Selector in position No. 1.
3. Adjust the No. 1 screw (see Fig. 5) with wrench provided until the desired station is tuned to the loudest point.
4. Adjust No. 1 nut (see Fig. 5) for maximum signal.
5. Repeat the last two above operations to make sure the adjustments are accurate.

6. The same procedure is followed in setting the remaining four adjustments selecting a station within the tuning range of each adjusting screw and placing the selector switch in the corresponding position for each adjusting screw.

The station adjusting eye can be used to great advantage in setting the stations. This eye will enable you to get an accurate setting regardless of signal strength.

The eye may also be used when aligning the receiver instead of an output meter. The eye with a special cable and plug is available at your Zenith distributor.

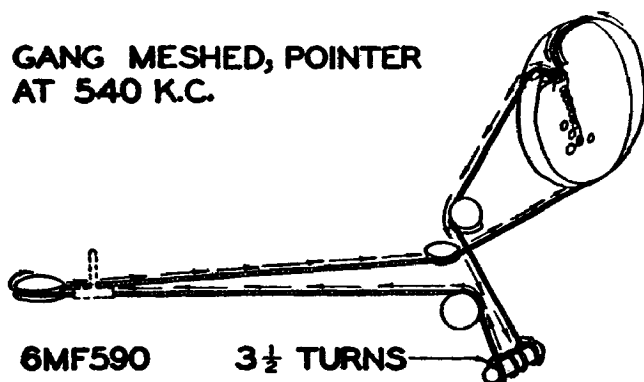


FIG. 6

The stringing of the dial cord is very important for unless properly strung the cord will jump off the pulleys. Figure 6 shows the proper way to string the cord.

The jumper shown on the test socket in Fig. 1 is provided so that an output meter may be connected to the voice coil side of the output transformer.

If you have the type of output meter which is usually connected to the plate of the output tube, it may be adapted for this type of connection by following the instructions shown in Fig. 7.

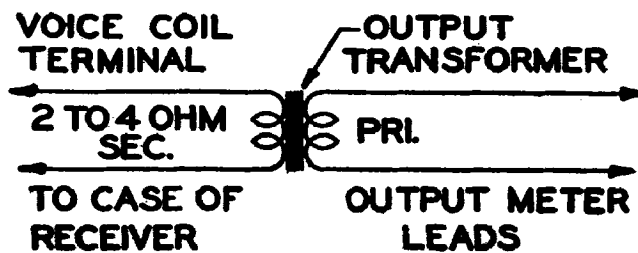
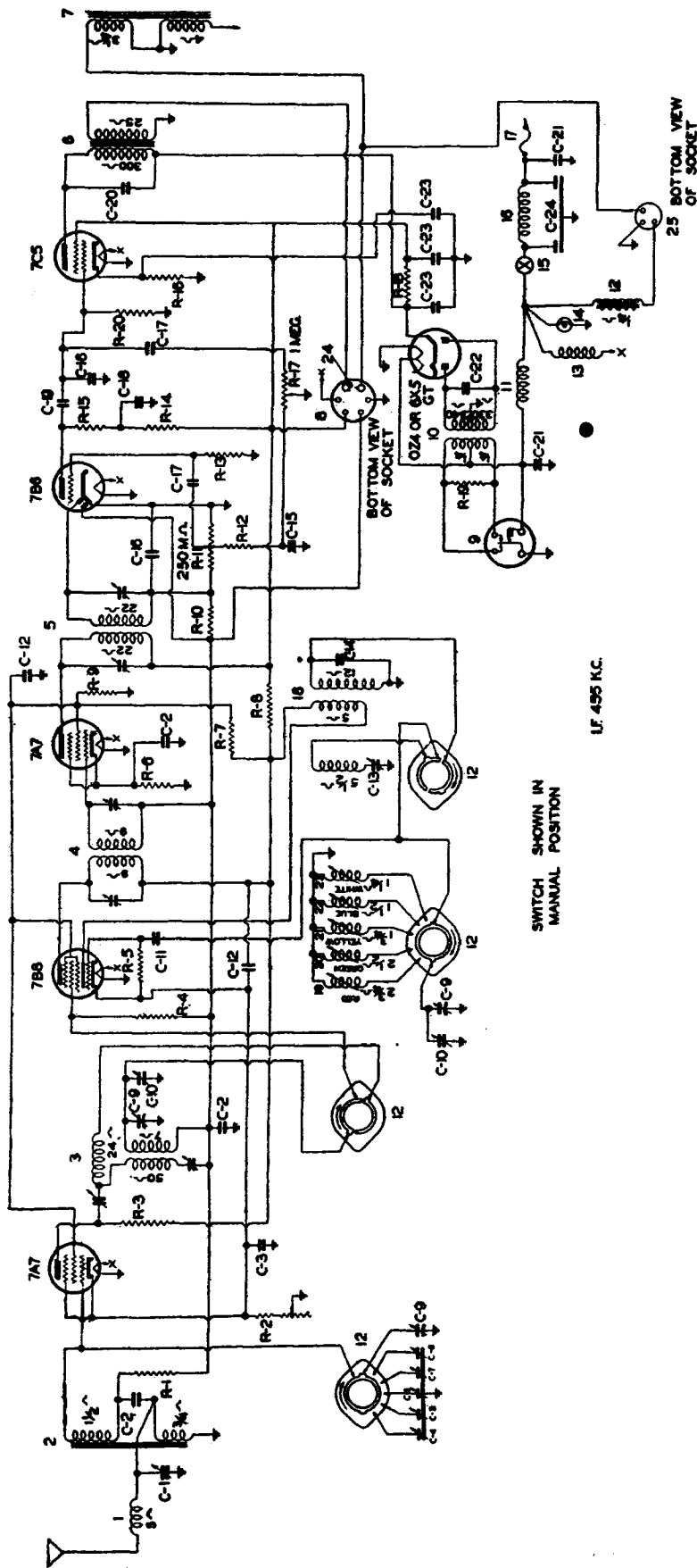


FIG. 7

The Zenith Radio Corporation furnishes the antenna for 1941 Ford and Mercury only.

Parts for this antenna will be available at your Zenith distributor.



MODEL-84F580
MFD. BY
ZENITH RADIO CORPORATION
CHICAGO, ILLINOIS



1941 ROTO-SELECTOR 11A1805-A1
Zenith Motor Company

PARTS PRICE LIST

Model 6MF590 (Chassis 6A21)

Model 6MF591 (Chassis 6A21)*

F O R D

1941 Roto-Selector

11A18805-A1

1941 Roto-Selector

11A18805-B

COILS AND CHOKES

20-213	Main hash choke	\$0.25
20-229	Motor noise filter choke	.10
20-233	Heater line choke	.10
95-742	1st I.F. transformer	1.00
95-743	2nd I.F. transformer	1.00
S8819	Antenna motor noise choke assembly	.20
S8927	Antenna coil and strip assembly	1.00
S8928	Oscillator coil and strip assembly	1.00
S8988	R.F. coil assembly	1.50

CONDENSERS

22-162	.0001 mfd. 600 volt.	.15
22-170	.1 mfd. 400 volt.	.20
22-182	.00025 mfd. 800 volt.	.20
22-185	.01 mfd. 200 volt.	.15
22-190	.1 mfd. 200 volt.	.18
22-212	.05 mfd. 400 volt.	.15
22-250	.05 mfd. 200 volt.	.15
22-435	.02 mfd. 600 volt.	.15
22-838	.005 mfd. 600 volt.	.15
22-901	R.F. coil trimmer	.25
22-906	.005 mfd. 200 volt.	.15
22-908	.5 mfd. 120 volt.	.25
22-955	10 mfd. 400 volt x 10 mfd. 350 volt x 20 mfd. 25 volt dry electrolytic	1.25
22-956	500 mmfd. Silver mica	.35
22-1076	Qual spark plate condenser	.20
22-1079	.006 mfd. 1600 volt.	.20
22-1083	Three gang variable	3.00
22-1093	Automatic tuning trimmer	.20
22-1094	Automatic tuning trimmer	.20
22-1095	Automatic tuning trimmer	.15
22-1096	Antenna trimmer	.15
22-1101	Two section ceramic trimmer	.25
22-1103	Oscillator padder	.35
22-1115	.05 mfd. 200 volt.	.15
22-1147	Distributor and oil gauge condenser	.35
22-1148	Voltage regulator and circuit breaker condenser ..	.50

RESISTORS

63-271	1 megohm 1/4 watt.	.07
63-296	220M ohm 1/4 watt.	.07
63-311	15M ohm 1/4 watt.	.07
63-589	10M ohm 1/4 watt.	.07
63-592	33M ohm 1/4 watt.	.07
63-593	47M ohm 1/4 watt.	.07
63-595	100M ohm 1/4 watt.	.07
63-596	330M ohm 1/4 watt.	.07
63-597	470M ohm 1/4 watt.	.07
63-604	10 megohm 1/4 watt.	.07
63-634	820 ohm 1/4 watt.	.07
63-719	470M ohm 1/4 watt insulated ...	.15
63-948	330 ohm W. W. 1 watt insulated ...	.20
63-968	1800 ohm W. W. 2 watt insulated ...	.30

63-971	220 ohm 1/2 watt.	.08
63-1065	15M ohm 1 watt insulated ...	.20
63-1131	Sensitivity control	.50
63-1133	Volume control and switch	1.50
63-1135	3900 ohm W. W. 2 watt insulated ...	.30
63-1147	Tone control	1.00

SET INSTALLATION ACCESSORIES

54-123	No. 10/24 Wing nut	.02
94-312	Antenna connector bushing	.04
97-127	Antenna connector stud	.25
112-256	Set mounting screw	.01

SPEAKER AND COVER ACCESSORIES

24-248	Speaker cover	.30
49-421	7" Electro-dynamic speaker	3.75
*207-421	Field coil	1.25
*208-421	Cone and voice coil assembly	1.75
147-85	Speaker mounting spacer (4 req.)	.01
196-39	Speaker gasket	.40

DIAL AND TUNING MECHANISM

12-823	Dial scale background bracket	.10
22-1083	Three gang variable	3.00
22-1101	Two section ceramic trimmer	.25
22-1103	Oscillator padder	.35
26-273	Dial Scale	.25
46-374	Volume and tuning control knob	.10
46-375	Automatic tuning knob (6MF590)	.10
46-376	Automatic tuning knob (6MF591)	.10
46-379	Tone control knob	.05
54-149	Escutcheon retaining nut	.04
57-863	Escutcheon plate	1.00
59-108	Dial pointer	.05
63-1133	Volume control and switch	1.50
76-315	Tuning control shaft	.05
80-69	Dial cord tension spring	.01
80-232	Knob retaining spring	.01
83-862	Knob retaining strip	.02
100-36	Dial light bulb	.09
125-24	Rubber grommet (4 req.)	.015
188-32	Retaining ring	.85C
S8965	Idler pulley and bracket	.05
S8966	Idler pulley and bracket	.05
S8982	Dial cord and eyelet assembly	.10

AUTOMATIC COILS AND SWITCH ASSEMBLY

22-1093	Automatic tuning trimmer	.20
22-1094	Automatic tuning trimmer	.20
22-1095	Automatic tuning trimmer	.15
22-1096	Antenna trimmer	.15
46-375	Automatic tuning knob (6MF590)	.10
46-376	Automatic tuning knob (6MF591)	.10
52-201	Foot control switch cable (6MF591)	1.00

*Foot Control Switch changes Model 6MF590 to Model 6MF591

88-3	Automatic tuning wrench	.02
83-842	Coil retaining strip	.03
83-843	Fibre strip	.01
85-253	Automatic tuning switch—solenoid and tone control	4.00
85-262	Foot control switch and cable (6MF591).....	2.00
112-295	Adjustment screw and core.....	.10
S8971	Automatic tuning oscillator coil—red	.15
S8972	Automatic tuning oscillator coil—green	.15
S8973	Automatic tuning oscillator coil—yellow	.15
S8974	Automatic tuning oscillator coil—blue	.15
S8975	Automatic tuning oscillator coil—white	.15

MISCELLANEOUS

52-198	Battery cable—set to fuse	.10
52-203	Battery cable—fuse to ammeter	.15
52-201	Foot control switch cable (6MF591)	1.00
58-92	Tuning eye socket jumper	.50C
78-281	Socket—vibrator	.10
78-284	Socket—tuning eye tube	.10
78-399	Socket—loktal tube	.10
78-400	Socket—loktal base tube (6 contact).....	.15

78-401	Socket—loktal base tube (8 contact).....	.15
78-406	Socket—foot control switch cable	.10
78-409	Socket—dial light	.10
85-282	Foot control switch and cable (6MF591).....	2.00
94-312	Antenna connector bushing	.04
95-744	Audio transformer	1.25
95-745	Power transformer	5.00
97-127	Antenna connector stud	.25
100-36	Dial light bulb	.08
112-310	Foot control switch mounting screw (6MF591)....	.85C
136-12	20 ampere fuse	.10
190-15	Non-synchronous vibrator	2.95
202-213	Instruction book	.05
202-237	Instruction sheet (foot control) (6MF591).....	.03
S8981	Antenna connector housing assembly	.30
S9185	Tuning eye accessory kit	2.50
S9187	Dummy antenna assembly	1.25

*NOTE: When ordering speaker parts specify code letter or letters as used with speaker part number.

All Prices List—Subject to Regular Discount and Change Without Notice.

8-30-40

ANTENNA PARTS LIST (1941 only)

Ford Mercury 1941—Closed Car Integral Antenna No. 11A-18813-A1 Code A

Ford Mercury 1941—Open Car Integral Antenna No. 11A-18813-B1 Code B

Part No.	Description	Code	List Price			
S9045	Stationary tube and collar assembly.....	A	.65	73-42	No. 6/32 x .280 Allen set screw.....	B .20
S9052	Control housing assembly	B	3.50		(special point)	
S9053	Stationary rod assembly.....	B	.50	73-43	No. 6/32 x .370 Allen set screw.....	B .10
S9054	Telescoping tube assembly	B	1.00		(cone point)	
S9055	Knob and bushing assembly	B	.50	80-242	Antenna extension spring	B .05
S9056	Antenna lead assembly	B	.40	93-507	Felt washer (.075 x .171 x .328)	A .05
S9079	Extension tube and rod assembly.....	A	1.00	93-508	Felt washer (.050 x .500 x .940)	A-B .05
S9080	Adjusting knob assembly	A	.40	93-509	Steel trim washer	A-B .10
S9081	Roof tube assembly	A	.55	94-352	Insulator bushing	A .10
S9234	Grommet and sleeve assembly	B	.20	94-358	Insulator bushing	B .35
46-387	Stanchion	A	.20	193-14	Template	A-B .15
54-154	Upper roof tube nut (gland nut).....	A	.15	198-42	Rubber gasket	A .10
54-155	Lower roof tube nut	A	.15	196-43	Rubber gasket	B .05
54-156	Cap nut	A-B	.10	202-229	Instruction sheet	A .05
68-4	Allen set screw wrench.....	A-B	.10	202-230	Instruction sheet	B .05
73-40	No. 6/32 x 1/4" Allen set screw (cuppoint) A		.15			
73-41	No. 6/32 x .810 slotted hd. set screw....	B	.05			
	(cone point)					

All Prices List—Subject to Regular Discount and Change Without Notice.

8-30-40

SERVICE MANUAL

Built for
Lincoln Motor Car Division
FORD MOTOR COMPANY
Dearborn, Michigan
U.S.A.



Model
7ML592

Made by ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.

Electrical Specifications

Sensitivity—6 microvolts at one watt output. **Power Output**—6 watts measured at the voice coil. **Tuning Range**—540 to 1600 K.C. **Speaker**—full size electrodynamic. **I.F.**—455 K.C. **Roto-Selector** tuning with foot control switch—Selection of any five desired stations automatically by using the foot control or Roto-Selector on instrument panel.

Tube Complement—7A7 R.F. — 7B8 oscillator and modulator — 7A7 I.F. — 7B6 2nd detector and A.V.C. — two 7C5 beam power push pull output — 6X5GT or 0Z4 rectifier—
Current consumption 8 amperes.

IMPORTANT:

Be sure the Warranty Service tag is properly filled out and accompanies each receiver where free warranty service is expected by the customer or dealer. You do not have authority to render free service otherwise.

NOTE:

This receiver is used in the Lincoln-Zephyr and Continental cars. It bears the same Model No. 7ML592 for both cars.

SOCKET VOLTAGES:

Fig. 1 shows approximate voltages at the socket terminals.

MR. WARRANTY SERVICE MAN:

The following information is furnished you so that you may restore original performance to the Lincoln receiver. The alignment procedure is new, so study it

carefully before trying to make any adjustments.

A good warranty job means more business for you.

SOCKET VOLTAGES AS MEASURED WITH
1000 OHM PER VOLT METER TO CHASSIS.
VOLUME CONTROL AT MAXIMUM WITH NO
SIGNAL.
BATTERY 6.3 VOLTS.

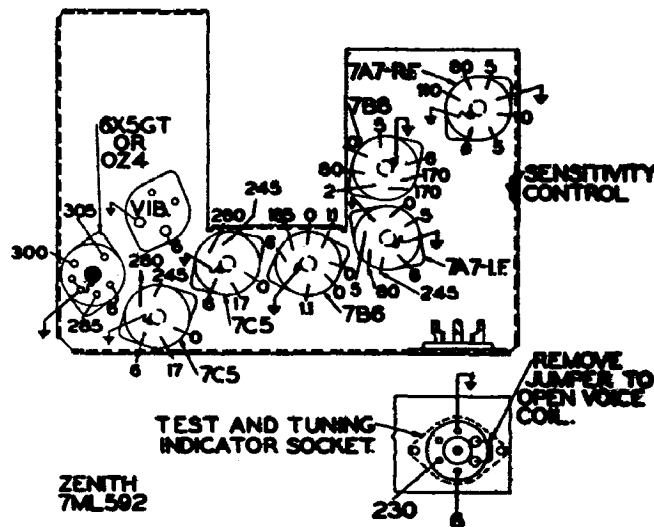


FIG. 1

ALIGNMENT:

The alignment of the receiver is one of the most important functions that a service man performs, and the instructions must be carefully followed.

CAUTION:

Great care should be taken while making all adjustments on the receiver to have the volume control turned full on. The intensity of the signal should be reduced only at the signal generator.

The signal for the entire alignment procedure, both I.F. and R.F. is fed through a special Zenith dummy which can be purchased from your Zenith distributor—Part No. S9189.

The capacities in the Zenith dummy as shown in Fig. 2 are identical with the Lincoln antenna, and if the receiver is adjusted accordingly, the instrument will operate properly when installed in the car.

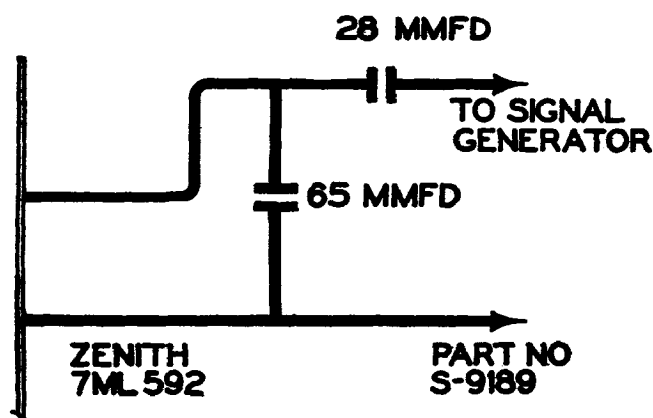


FIG. 2

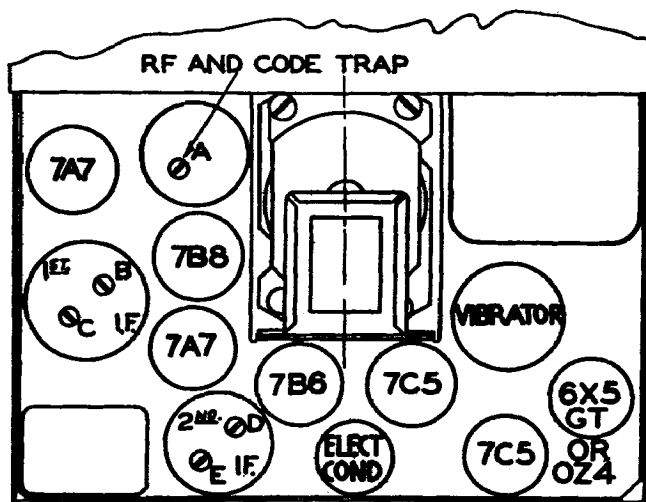
NOTE:

This receiver is equipped with an adjustable sensitivity control located on the side of the chassis as shown in Fig. 1. The control is set at the factory to a position which gives sensitivity of 6 microvolts at 1 watt output. It is found advisable to hold the

receiver at this level as any higher sensitivity may result in excessive background noise and unless laboratory equipment is available for measuring sensitivity, it is not advisable to change this setting.

I.F.—

1. The receiver must be in one of the automatic positions.
2. The signal generator is set at 455 K.C. and fed through the special Zenith dummy to the receiver.
3. The R.F. and code trap adjustment screw A (see Fig. 3) is adjusted for maximum response.
4. The adjustment screws B, C, D and E (see Fig. 3) are then adjusted in order for maximum response.
5. The code trap A is then adjusted for minimum response.



TUBE LAYOUT—MODEL 7ML 592

FIG. 3

R.F.—

1. The receiver is returned to manual tuning.
2. The tuning control is rotated until the condenser plates are out of mesh (1600 K.C.)
3. The signal generator is set to 1600 K.C.

4. Adjust the 1600 K.C. oscillator trimmer F (see Fig. 4) for maximum response.
5. Set signal generator to 1400 K.C. and rotate the tuning control until a signal is heard.
6. Adjust the R.F. trimmer G (see Fig. 4) and the antenna trimmer H (see Fig 5) for maximum response.
7. Set the signal generator to 600 K.C. and rotate the tuning control until signal is heard.
8. The condenser gang is then rocked slightly while adjusting the 600 K.C. padder I (see Fig. 4) for maximum response.

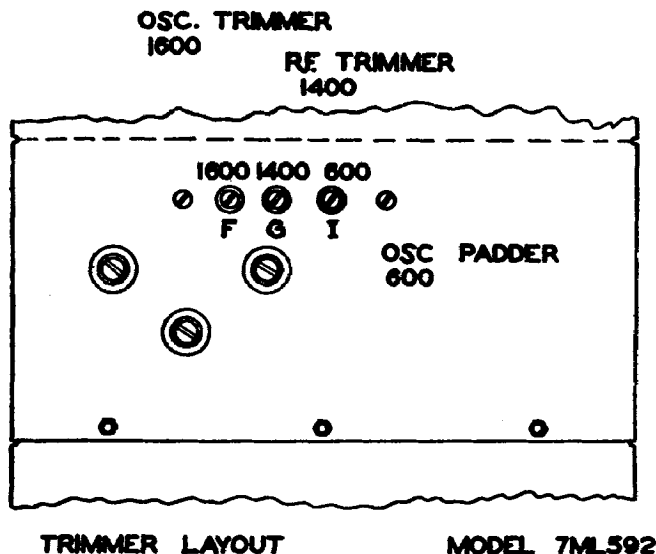


FIG. 4

SETTING THE ROTO-SELECTOR:

The tuning range is shown below each adjustment number (see Fig. 5).

1. Turn receiver on and allow it to operate for half an hour before making any adjustment.
2. Select a station within the range of position 1 on the Roto-Selector

3. Adjust the No. 1 screw (see Fig. 5) with the wrench provided until the desired station is tuned to the loudest point.
4. Adjust No. 1 nut (see Fig. 5) for maximum signal.

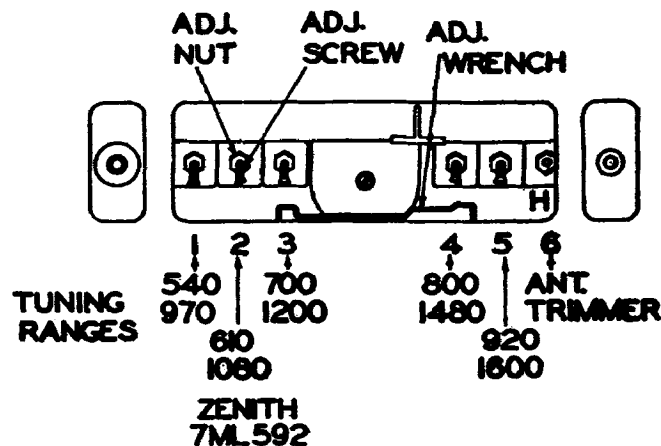


FIG. 5

5. Repeat the last two above operations to make sure the adjustments are accurate.
6. The same procedure is followed in setting the remaining four adjustments, selecting a station within the tuning range of each adjustment screw and placing the selector switch in the corresponding position for each adjustment screw.
7. Place escutcheon in position and secure in place with screws (see Fig. 6).
8. Place the control knobs in the proper position.

SCREWS USED TO SECURE ESCUTCHEON

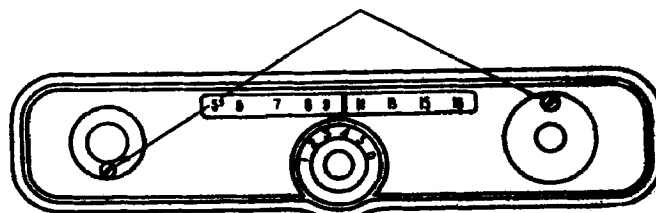


FIG. 6

A station adjusting eye is available at your Zenith distributor. It is especially essential when setting the Roto-Selector on a strong signal. This eye may also be used for alignment work instead of an output meter.

A jumper is provided on the test socket (see Fig. 1) located on the bottom of the receiver. Removing of this jumper will open the voice coil and allow you to connect your output meter to the voice coil side of the output transformer.

If you have the type of output meter which is usually connected to the plate of the output tube, it may be adapted for

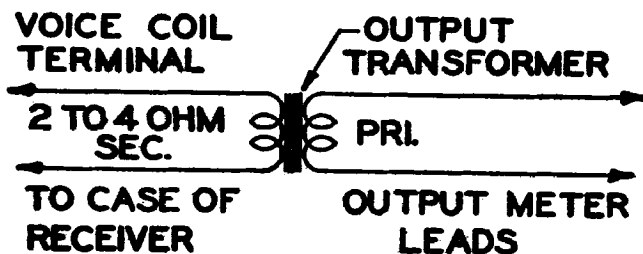


FIG. 7

this type of connection by following the instructions shown in Fig. 7.

The stringing of the dial cord is ~~most~~ important for unless properly strung the cord will jump off the pulleys. Fig 8 shows the proper way to string the dial cord.

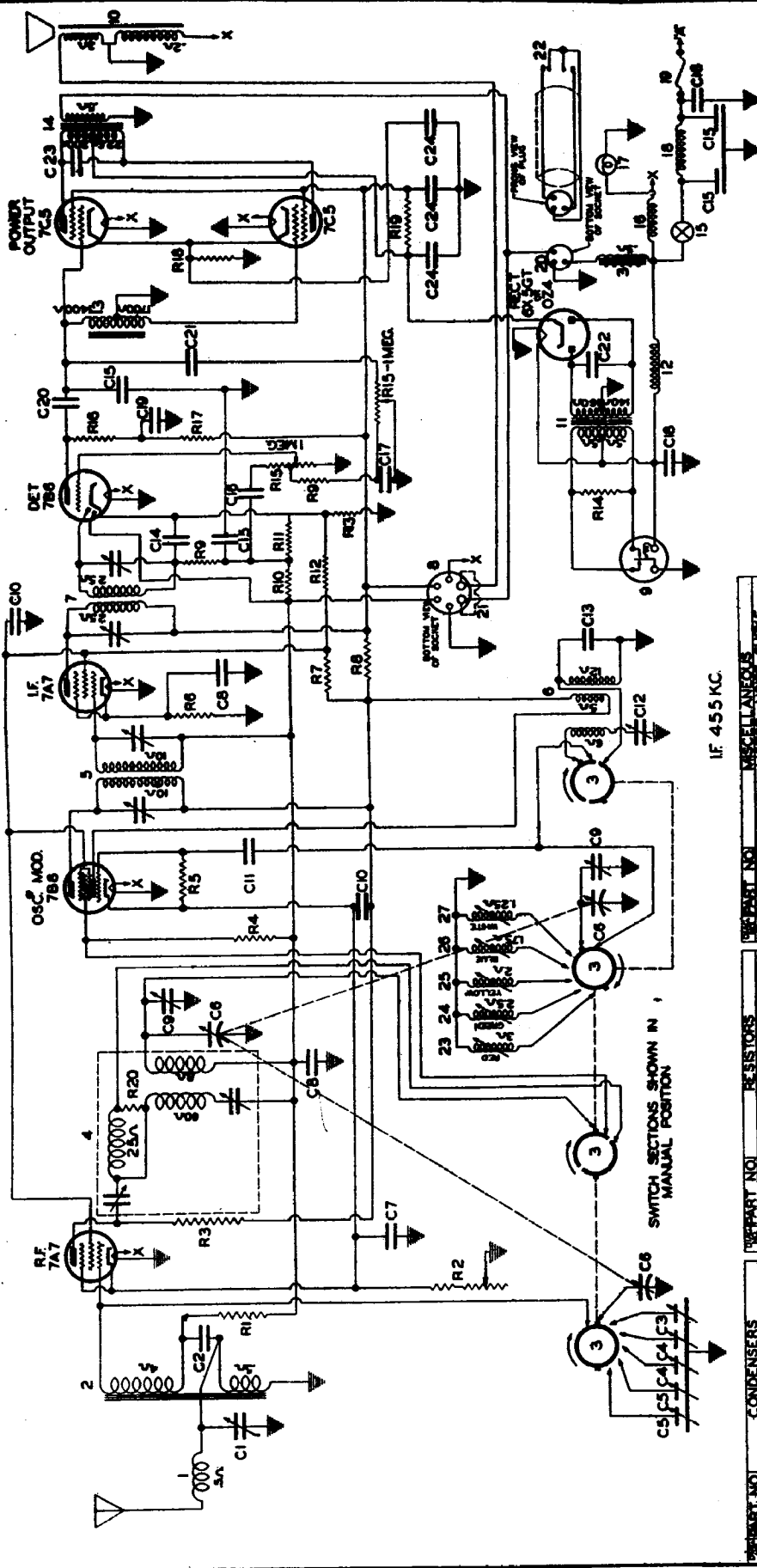


ZENITH
7ML592

FIG. 8

The Zenith Radio Corporation furnishes antennas for the 1941 Lincoln-Zephyr and Continental cars only. Parts will be available at your Zenith distributor.

The station adjusting eye and the antenna dummies should be part of your equipment when your station is checked for rating by the Zenith field man.



SAFETY FOOT CONTROL MODEL 74L-592
MFD. BY ZENITH RADIO CORPORATION
CHICAGO, ILLINOIS U.S.A.

**Lincoln
Zephyr**

1941 ROTO-SELECTOR KIT-19905-A
WITH FOOT CONTROL SWITCH
LINCOLN MOTOR CAR DIVISION
FORD MOTOR COMPANY
DEARBORN, MICH.
U.S.A.

IF 455 KC.

SWITCH SECTIONS SHOWN IN
MANUAL POSITION

CONDENSERS		RESISTORS		MISCELLANEOUS	
PART NO.	VALUE	PART NO.	VALUE	PART NO.	DESCRIPTION
1	0.0001	1	470 MOHMS	1	ANTENNA
2	0.0001	2	200 MOHMS	2	ANTENNA COIL
3	0.0001	3	100 MOHMS	3	ANTENNA SELECTOR SWITCH
4	0.0001	4	50 MOHMS	4	ANTENNA COIL
5	0.0001	5	25 MOHMS	5	ANTENNA COIL
6	0.0001	6	12.5 MOHMS	6	ANTENNA COIL
7	0.0001	7	6.25 MOHMS	7	ANTENNA COIL
8	0.0001	8	3.125 MOHMS	8	ANTENNA COIL
9	0.0001	9	1.56 MOHMS	9	ANTENNA COIL
10	0.0001	10	0.78 MOHMS	10	ANTENNA COIL
11	0.0001	11	0.39 MOHMS	11	ANTENNA COIL
12	0.0001	12	0.19 MOHMS	12	ANTENNA COIL
13	0.0001	13	0.09 MOHMS	13	ANTENNA COIL
14	0.0001	14	0.04 MOHMS	14	ANTENNA COIL
15	0.0001	15	0.02 MOHMS	15	ANTENNA COIL
16	0.0001	16	0.01 MOHMS	16	ANTENNA COIL
17	0.0001	17	0.005 MOHMS	17	ANTENNA COIL
18	0.0001	18	0.002 MOHMS	18	ANTENNA COIL
19	0.0001	19	0.001 MOHMS	19	ANTENNA COIL
20	0.0001	20	0.0005 MOHMS	20	ANTENNA COIL
21	0.0001	21	0.0002 MOHMS	21	ANTENNA COIL
22	0.0001	22	0.0001 MOHMS	22	ANTENNA COIL
23	0.0001	23	0.00005 MOHMS	23	ANTENNA COIL
24	0.0001	24	0.00002 MOHMS	24	ANTENNA COIL
25	0.0001	25	0.00001 MOHMS	25	ANTENNA COIL
26	0.0001	26	0.000005 MOHMS	26	ANTENNA COIL
27	0.0001	27	0.000002 MOHMS	27	ANTENNA COIL
28	0.0001	28	0.000001 MOHMS	28	ANTENNA COIL
29	0.0001	29	0.0000005 MOHMS	29	ANTENNA COIL
30	0.0001	30	0.0000002 MOHMS	30	ANTENNA COIL
31	0.0001	31	0.0000001 MOHMS	31	ANTENNA COIL
32	0.0001	32	0.00000005 MOHMS	32	ANTENNA COIL
33	0.0001	33	0.00000002 MOHMS	33	ANTENNA COIL
34	0.0001	34	0.00000001 MOHMS	34	ANTENNA COIL
35	0.0001	35	0.000000005 MOHMS	35	ANTENNA COIL
36	0.0001	36	0.000000002 MOHMS	36	ANTENNA COIL
37	0.0001	37	0.000000001 MOHMS	37	ANTENNA COIL
38	0.0001	38	0.0000000005 MOHMS	38	ANTENNA COIL
39	0.0001	39	0.0000000002 MOHMS	39	ANTENNA COIL
40	0.0001	40	0.0000000001 MOHMS	40	ANTENNA COIL
41	0.0001	41	0.00000000005 MOHMS	41	ANTENNA COIL
42	0.0001	42	0.00000000002 MOHMS	42	ANTENNA COIL
43	0.0001	43	0.00000000001 MOHMS	43	ANTENNA COIL
44	0.0001	44	0.000000000005 MOHMS	44	ANTENNA COIL
45	0.0001	45	0.000000000002 MOHMS	45	ANTENNA COIL
46	0.0001	46	0.000000000001 MOHMS	46	ANTENNA COIL
47	0.0001	47	0.0000000000005 MOHMS	47	ANTENNA COIL
48	0.0001	48	0.0000000000002 MOHMS	48	ANTENNA COIL
49	0.0001	49	0.0000000000001 MOHMS	49	ANTENNA COIL
50	0.0001	50	0.00000000000005 MOHMS	50	ANTENNA COIL
51	0.0001	51	0.00000000000002 MOHMS	51	ANTENNA COIL
52	0.0001	52	0.00000000000001 MOHMS	52	ANTENNA COIL
53	0.0001	53	0.000000000000005 MOHMS	53	ANTENNA COIL
54	0.0001	54	0.000000000000002 MOHMS	54	ANTENNA COIL
55	0.0001	55	0.000000000000001 MOHMS	55	ANTENNA COIL
56	0.0001	56	0.0000000000000005 MOHMS	56	ANTENNA COIL
57	0.0001	57	0.0000000000000002 MOHMS	57	ANTENNA COIL
58	0.0001	58	0.0000000000000001 MOHMS	58	ANTENNA COIL
59	0.0001	59	0.00000000000000005 MOHMS	59	ANTENNA COIL
60	0.0001	60	0.00000000000000002 MOHMS	60	ANTENNA COIL
61	0.0001	61	0.00000000000000001 MOHMS	61	ANTENNA COIL
62	0.0001	62	0.000000000000000005 MOHMS	62	ANTENNA COIL
63	0.0001	63	0.000000000000000002 MOHMS	63	ANTENNA COIL
64	0.0001	64	0.000000000000000001 MOHMS	64	ANTENNA COIL
65	0.0001	65	0.0000000000000000005 MOHMS	65	ANTENNA COIL
66	0.0001	66	0.0000000000000000002 MOHMS	66	ANTENNA COIL
67	0.0001	67	0.0000000000000000001 MOHMS	67	ANTENNA COIL
68	0.0001	68	0.00000000000000000005 MOHMS	68	ANTENNA COIL
69	0.0001	69	0.00000000000000000002 MOHMS	69	ANTENNA COIL
70	0.0001	70	0.00000000000000000001 MOHMS	70	ANTENNA COIL
71	0.0001	71	0.000000000000000000005 MOHMS	71	ANTENNA COIL
72	0.0001	72	0.000000000000000000002 MOHMS	72	ANTENNA COIL
73	0.0001	73	0.000000000000000000001 MOHMS	73	ANTENNA COIL
74	0.0001	74	0.0000000000000000000005 MOHMS	74	ANTENNA COIL
75	0.0001	75	0.0000000000000000000002 MOHMS	75	ANTENNA COIL
76	0.0001	76	0.0000000000000000000001 MOHMS	76	ANTENNA COIL
77	0.0001	77	0.00000000000000000000005 MOHMS	77	ANTENNA COIL
78	0.0001	78	0.00000000000000000000002 MOHMS	78	ANTENNA COIL
79	0.0001	79	0.00000000000000000000001 MOHMS	79	ANTENNA COIL
80	0.0001	80	0.000000000000000000000005 MOHMS	80	ANTENNA COIL
81	0.0001	81	0.000000000000000000000002 MOHMS	81	ANTENNA COIL
82	0.0001	82	0.000000000000000000000001 MOHMS	82	ANTENNA COIL
83	0.0001	83	0.0000000000000000000000005 MOHMS	83	ANTENNA COIL
84	0.0001	84	0.0000000000000000000000002 MOHMS	84	ANTENNA COIL
85	0.0001	85	0.0000000000000000000000001 MOHMS	85	ANTENNA COIL
86	0.0001	86	0.00000000000000000000000005 MOHMS	86	ANTENNA COIL
87	0.0001	87	0.00000000000000000000000002 MOHMS	87	ANTENNA COIL
88	0.0001	88	0.00000000000000000000000001 MOHMS	88	ANTENNA COIL
89	0.0001	89	0.000000000000000000000000005 MOHMS	89	ANTENNA COIL
90	0.0001	90	0.000000000000000000000000002 MOHMS	90	ANTENNA COIL
91	0.0001	91	0.000000000000000000000000001 MOHMS	91	ANTENNA COIL
92	0.0001	92	0.0000000000000000000000000005 MOHMS	92	ANTENNA COIL
93	0.0001	93	0.0000000000000000000000000002 MOHMS	93	ANTENNA COIL
94	0.0001	94	0.0000000000000000000000000001 MOHMS	94	ANTENNA COIL
95	0.0001	95	0.00000000000000000000000000005 MOHMS	95	ANTENNA COIL
96	0.0001	96	0.00000000000000000000000000002 MOHMS	96	ANTENNA COIL
97	0.0001	97	0.00000000000000000000000000001 MOHMS	97	ANTENNA COIL
98	0.0001	98	0.000000000000000000000000000005 MOHMS	98	ANTENNA COIL
99	0.0001	99	0.000000000000000000000000000002 MOHMS	99	ANTENNA COIL
100	0.0001	100	0.000000000000000000000000000001 MOHMS	100	ANTENNA COIL

PARTS PRICE LIST

Model 7ML-592 (Chassis 7A09)

LINCOLN-ZEPHYR

1941 Roto-Selector 16H-18805-A

COILS AND CHOKES

29-213	Main hash choke	\$0.25
29-228	Heater line hash choke	.10
29-229	Motor noise filter choke	.10
95-737	1st IF Transformer	1.00
95-738	2nd IF Transformer	1.00
98-19	Antenna motor noise choke assembly	.20
98-98	R.F. coil assembly	1.50
98-97	Antenna coil and strip assembly	1.00
98-171	Oscillator coil and strip assembly	1.00

CONDENSERS

22-162	.0001 mfd. 800 volt.	.15
22-170	.1 mfd. 400 volt.	.20
22-182	.00025 mfd. 600 volt.	.20
22-185	.01 mfd. 200 volt.	.15
22-190	.1 mfd. 200 volt.	.18
22-212	.05 mfd. 400 volt.	.15
22-250	.05 mfd. 200 volt.	.15
22-435	.02 mfd. 600 volt.	.15
22-838	.005 mfd. 600 volt.	.15
22-901	R.F. coil trimmer	.25
22-906	.005 mfd. 200 volt.	.15
22-908	.5 mfd. 120 volt.	.25
22-917	10 mfd. 400 volt x 20 mfd. 450 volt x 20 mfd. 25 volt dry electrolytic	1.35
22-956	500 mmfd. Silvercap	.35
22-1075	.007 mfd. 200 volt.	.15
22-1078	Dual spark plate condenser	.20
22-1084	Three gang variable	3.00
22-1093	Automatic tuning trimmer	.20
22-1094	Automatic tuning trimmer	.20
22-1095	Automatic tuning trimmer	.15
22-1105	.008 mfd. 1600 volt.	.25
22-1108	Two section trimmer and padder	.60
22-1109	Antenna trimmer	.15
22-1110	Motor noise suppression (gas gauge)	.25
22-1111	Motor noise suppression (generator)	.45
22-1113	Motor noise suppression (water gauge) (Oil gauge—"A" lead)	.35
22-1115	.05 mfd. 200 volt.	.15
22-1147	Motor noise suppression (distributor)	.35

RESISTORS

63-271	1 megohm 1/4 watt.	.07
63-296	220M ohm 1/4 watt.	.07
63-311	15M ohm 1/4 watt.	.07
63-585	100M ohm 1/4 watt.	.07
63-587	470M ohm 1/4 watt.	.07
63-634	820 ohm 1/4 watt.	.07
63-647	39M ohm 1/4 watt.	.07
63-649	56M ohm 1/4 watt.	.07
63-712	33M ohm 1/4 watt insulated ..	.15
63-713	47M ohm 1/4 watt insulated ..	.15
63-718	330M ohm 1/4 watt insulated ..	.15
63-747	470 ohm 1/4 watt insulated ..	.15
63-768	56M ohm 1/4 watt insulated ..	.15
63-848	330 ohm W. W. 1 watt insulated ..	.20
63-968	1800 ohm W. W. 2 watt insulated ..	.30

63-971	220 ohm 1/2 watt.	.08
63-1065	15M ohm 1 watt insulated ..	.20
63-1131	Sensitivity control	.50
63-1134	Volume control-tone control and switch	2.50
63-1140	4700 ohm W. W. 2 watt insulated ..	.30

SET INSTALLATION ACCESSORIES

12-819	Installation bracket (2 req.)	.03
12-831	Suppressor condenser bracket	1.50C
22-1110	Gas gauge condenser	.25
22-1111	Generator condenser	.45
22-1112	Distributor condenser	.35
22-1113	Water gauge-oil gauge—"A"	.35
	Lead condenser	
54-151	Wing nut	1.50C
112-296	Set mounting screw (2 req.)	.07
112-310	Foot control switch mounting screw (3 req.) ..	.85C

SPEAKER AND COVER ACCESSORIES

24-245	Speaker cover	.30
49-422	7" Electro-dynamic speaker	3.75
	*207-422 Field coil	1.25
	*208-422 Cone and voice coil assembly	1.75
147-85	Speaker mounting spacer (4 req.)	.01
196-40	Speaker gasket	.35

DIAL AND TUNING MECHANISM

12-829	Dial scale background bracket	.15
12-853	Solenoid mounting bracket	.02
22-1084	Three gang variable	3.00
26-274	Dial scale	.50
46-377	Automatic tuning knob	.25
46-378	Tone control knob	.30
46-383	Volume and tuning control knob	.10
57-864	Escutcheon plate	1.00
59-109	Dial pointer	.05
63-1134	Volume control-tone control and switch	2.50
76-316	Manual tuning shaft	.15
80-69	Dial cord tension spring	.01
80-232	Knob retaining spring	.01
100-36	Dial light bulb	.09
125-24	Rubber grommet (4 req.)	.015
126-349	Dial light shield	.02
196-41	Cork gasket (4 req.)	.25C
S9105	Idler pulley and bracket (vol. con.)	.05
S9106	Idler pulley and bracket (tuning)	.10
S9116	Dial cord and eyelet assembly	.10

AUTOMATIC COILS AND SWITCH ASSEMBLY

12-849	Automatic tuning coil mounting bracket	.03
22-1093	Automatic tuning trimmer	.20
22-1094	Automatic tuning trimmer	.20
22-1095	Automatic tuning trimmer	.15
22-1109	Antenna trimmer condenser	.15
46-377	Automatic tuning knob	.25
52-210	Foot control switch cable	1.00
68-3	Automatic tuning wrench	.02
83-842	Coil retaining strip	.03

83-843	Fibre strip	.01
85-261	Automatic tuning switch and solenoid	3.00
85-285	Foot control switch and cable	2.00
112-295	Adjustment screw and core	.10
S8971	Automatic tuning oscillator coil—red	.15
S8972	Automatic tuning oscillator coil—green	.15
S8973	Automatic tuning oscillator coil—yellow	.15
S8974	Automatic tuning oscillator coil—blue	.15
S8975	Automatic tuning oscillator coil—white	.15

MISCELLANEOUS

52-202	Battery cable—set to fuse	.15
52-203	Battery cable—fuse to ammeter	.15
52-210	Foot control switch cable	1.00
58-92	Tuning eye socket jumper	.50C
78-251	Socket—antenna connector	.10
78-281	Socket—vibrator	.10
78-284	Socket—tuning eye tube	.10
78-399	Socket—loktal tube	.10

78-400	Socket—loktal base tube (8 contact)	.15
78-401	Socket—loktal base tube (8 contact)	.15
78-408	Socket—foot control switch	.10
78-411	Socket—dial light	.10
85-285	Foot control switch and cable	2.00
95-749	Audio input transformer	1.75
95-750	Audio output transformer	1.25
95-751	Power transformer	2.75
100-36	Dial light bulb	.08
112-310	Foot control switch mounting screw	.85C
136-12	20 ampere fuse	.10
190-15	Non-synchronous vibrator	2.95
202-216	Instruction book	.25
S9185	Tuning eye accessory kit	2.50
S9189	Dummy antenna assembly	1.25

*NOTE: When ordering speaker parts specify code letter or letters as used with speaker part number.

All Prices List—Subject to Regular Discount and Change Without Notice.

8-31-40

ANTENNA PARTS LIST (1941 only)

Lincoln-Zephyr 1941 — Concealed Cowl Antenna No. 16H-18813-A Code C

Lincoln Continental 1941 — Concealed Cowl Antenna No. 16H-18813-B Code D

Part No.	Description	Code	List Price
S9164	Antenna lead-in cable assembly	C	1.25
S9165	Antenna lead-in cable assembly	D	1.50
S9208	Antenna tube assembly	C	2.50
S9210	Antenna tube assembly	D	2.00
12-859	Lower mounting bracket	C-D	.05
46-392	Stanchion (upper)	C-D	.25
46-393	Stanchion (lower)	C-D	.25
54-157	Bottom nut	C-D	.05
54-158	Gland nut	C-D	.25
54-159	Adjusting nut	C-D	.05
68-5	Adjusting wrench	C-D	.05
93-161	¼" external shakeproof lockwasher	C-D	.05

93-516	Bakelite washer	C-D	.05
93-517	Steel washer—cadmium	C-D	.05
	(1/32 x 17/64 x ½)		
126-398	Shield channel	C	.25
126-401	Shield channel	D	.25
193-12	Template	D	.10
193-13	Template	C	.05
196-44	Rubber gasket	C-D	.05
202-226	Instruction sheet	C	.05
202-227	Instruction sheet	D	.05

All Prices List—Subject to Regular Discount and Change Without Notice.

8-31-40

SERVICE MANUAL SUPPLEMENT



1941 RECEIVERS

MODEL	CHASSIS	PAGE
5G504F.....	5A03	69
5G504M.....	5A03	69
5G510.....	5A10	71
5G534.....	5A10	71
6G501F.....	6A19	75
6G501L.....	6A19	75
6G501M.....	6A19	75
6G505.....	6A19	75
6D512.....	6A16	73
6D512W.....	6A16	73
6D539.....	6A16	73
6S596.....	6A20	77
6S597.....	6A20	77
8S593.....	8A04	79
8S594.....	8A04	79
10H551.....	10A3	81
10H571.....	10A3	81
12S550Z.....	12A1	83
12S568E.....	12A1	83
12S568Z.....	12A1	83
12S569E.....	12A1	83
12S569Z.....	12A1	83
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S8500Z.....		84
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S9000.....		84
Parts Price List.....		86

ZENITH RADIO CORPORATION
CHICAGO, U.S.A.

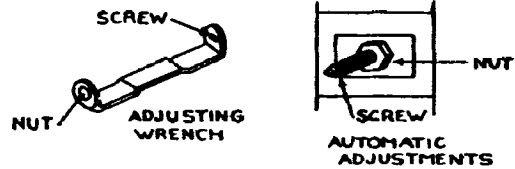
ALIGNMENT INSTRUCTIONS

The proper procedure for the correct alignment of each chassis is outlined on the page opposite each circuit diagram.

The signal generator should be connected to the antenna and ground terminals of the receiver with 10 ohms shunted across the output of the signal generator as a dummy antenna (unless otherwise specified).

The chassis drawing shows all trimmers which are lettered to correspond to the alignment chart. Corresponding letters are also shown adjacent to each trimmer on the circuit diagrams.

The use of a wavemagnet requires two adjustments for each automatic button. These adjustments are made with a special wrench (part No. 68-1) supplied with each receiver. The center or screw adjustment controls the oscillator circuit and the nut tunes the wavemagnet or antenna input—see illustration right.



WAVE MAGNET

The primary winding of the Wavemagnets used on 1941 models is of the high impedance type and the natural period of this winding is within the broadcast band. When an antenna is connected to the primary winding the additional capacity tunes it below broadcast frequencies which is very desirable for energy transfer.

However, this requires that the primary winding be short circuited whenever an external antenna is not attached in order to preserve the tuning characteristics of the loop winding. A shorting bar is provided for this purpose, and should always be in place when the receiver is operated on the Wavemagnet alone.

VOLTAGE CHARTS

The voltages appearing on each socket contact are shown on the chassis drawings. Voltages are measured with a 20,000 ohm per volt meter and allowance should be made for variations in line voltage or if a voltmeter of different rating is used in making tests.

STAGE GAINS

Data on the average amplification of different portions of each type chassis is included for the use of service men equipped with vacuum tube voltmeters or similar voltage measuring equipment.

It is listed under the heading of Stage Gains.

RECORDING DATA

A certain degree of skill and care is necessary to obtain really good results in home recording, and many complaints of lack of tone, insufficient volume, noise, etc., can be traced to improper operation of the recorder. The service man should read all instructions and become thoroughly familiar with recording technique before attempting to service the instrument.

Due to the softness and tendency towards cold-flow of the material used in home recording blanks, it is difficult to record the higher audio frequencies in their normal proportion. Compensation is introduced in the audio system of the recorder which automatically increases the amplification of these frequencies resulting in a greatly improved tone quality. The "bass" radiorgan button should always be in the down or off position while recording.

The material used on record blanks is of two types. The lower priced blanks have a fiber base coated with an acetate material, and are excellent for home use.

Blanks such as are used in broadcast stations or for commercial purposes have a metallic base, and are coated with an inflammable nitrate material capable of superior recording characteristics. These blanks are costly, and the increased cost is not justified for home use.

It is very essential that the recording stylus be in good condition and securely locked in the recording head. The stylus resembles a lathe or engraving

tool, and must be extremely sharp so as to cut a clean groove in the record blank. A dull stylus will tear the coating on the blank instead of cutting, and excessive noise will be the result. A magnifying glass is a very useful tool for examining both the stylus and record groove.

There will be a natural tendency for the stylus to become loosened in the cutting head due to vibration. Many cases of poor recording can be traced to failure to tighten the stylus locking screw before each period of use.

Complaints of improper movement of the recorder arm resulting in blank spaces on the record will be found due to either foreign material (dirt, etc.) on the feed screw, or failure to remove the thread of material cut from the record blank, and allowing this material to accumulate under the stylus. If the thread becomes entangled with the stylus, and also wrapped around the turntable spindle, it will exert a pull towards the spindle, causing an uneven movement of the arm.

Excessive volume in recording will cause either an echo in the record or the grooves to run together. A volume level indicator tube is provided to prevent this.

Recording of motor noise resulting in a noisy record is usually due to improper floating of the mechanism (Model 8S594) or too rigid mounting of the motor. This can be corrected by slightly loosening one or more of the motor support screws.

FREQUENCY MODULATION

Zenith Frequency Modulation receivers differ in many respects from other F.M. receivers on the market, and while no attempt will be made here to explain the theory of F.M., an explanation of the circuit design will be of aid in successfully servicing these receivers.

ANTENNA

The receiver contains two built-in antennas, one a standard wavemagnet effective on the broadcast and short wave bands, and the other a folded dipole for use on F.M.

The polarization of the transmitted wave is much more important on the ultra short waves used in F.M. than is the case at lower frequencies. The receiving antenna system must correspond in polarization to the transmitting antenna, i.e.—if the transmitter uses a vertical antenna system, the receiver antenna must also be vertical, and if the transmitter antenna is horizontal, the receiver antenna must, of course, also be horizontal. At this time definite standards of polarization have not been established. The F.M. wavemagnet used in the Zenith receiver is vertically polarized, and if the local F.M. station is of the horizontal type, an external F.M. dipole antenna kit should be used.

R.F. TUNING

Due to the wide frequency coverage of each F.M. channel (200 k.c.) a high degree of selectivity in the R.F. and converter stages is undesirable. The use of a sufficiently high intermediate frequency prevents difficulty with image reception. These considerations allow the use of a wide band R.F. amplifier which is aperiodic over the entire F.M. band, and also provides an exceptional amount of R.F. amplification. The circuits are adjusted to the proper frequency by means of an electrolytic copper slug coupled to each coil. Varying the degree of coupling between the copper slug and the coil varies the inductance of the winding. This means is also used to tune the oscillator in which the coupling between the copper slug and the oscillator coil is varied by means of a cam on the variable condenser shaft. This also allows the use of a very efficient, easily adjusted system of electrical automatic tuning in which it is only necessary to make one adjustment (tuning the oscillator) for each automatic button.

I. F. AMPLIFIER

Most designs of F.M. receivers have used an intermediate frequency of approximately 2 megacycles in order to obtain sufficient amplification. The Zenith receiver, by using exceptionally low loss transformers, and a television type tube (1852) incorporates more than sufficient amplification with an intermediate frequency of 4.3 megacycles. This eliminates the need of staggering or overcoupling the tuning of the I.F. stages and allows all adjustments to be made at 4.3 megacycles while retaining a 200 kilocycle band width.

Two stages of I.F. are used on F.M. with one stage being used on standard broadcast and short wave by merely placing the 4.3 megacycle and 455 K.C. transformer windings in series.

LIMITER

Most of the noise reducing characteristics of the receiver are obtained in the limiter and excellent limiter action is available in these receivers through the use of two cascaded stages.

A limiter consists of an I.F. stage using a tube with sharp cutoff characteristics, and with grid, screen and plate voltages so proportioned that overload occurs with a small input signal, giving a constant square wave output which removes all variations in amplitude, and allows only variations in frequency to reach the discriminator. This action naturally furnishes an excellent means of automatic volume control. The conventional AVC network which is also used is only to prevent overload in the preceding stages. The limiter tubes are so biased as to block off and greatly reduce the tube hiss and circuit noises common to most F.M. receivers when tuning between stations.

DISCRIMINATOR

This circuit consists of a push pull diode detector in which the opposing voltages across the load resistors cancel each other as long as the input signal is at 4.3 megacycles. Modulation variations from this frequency cause unequal voltages to be developed across the two load resistors resulting in an audio output voltage. It is quite essential that the discriminator transformer remains accurately tuned to 4.3 megacycles and stability is maintained in this transformer by the use of permeability tuning.

AUDIO

In order to preserve the inherent high quality of frequency modulation it is necessary that a high fidelity audio system be used. F.M. transmitting stations employ what is known as a predistorter which is an audio network with a rising high note characteristic. The receiver must be designed with a compensating audio curve to offset the over abundance of highs from the transmitter. This results in a decrease in tube noise and quieter reception, and a flat over-all audio curve. The famous Zenith Radiorgan allows the same tremendous variation of audio response which is available in other Zenith models.

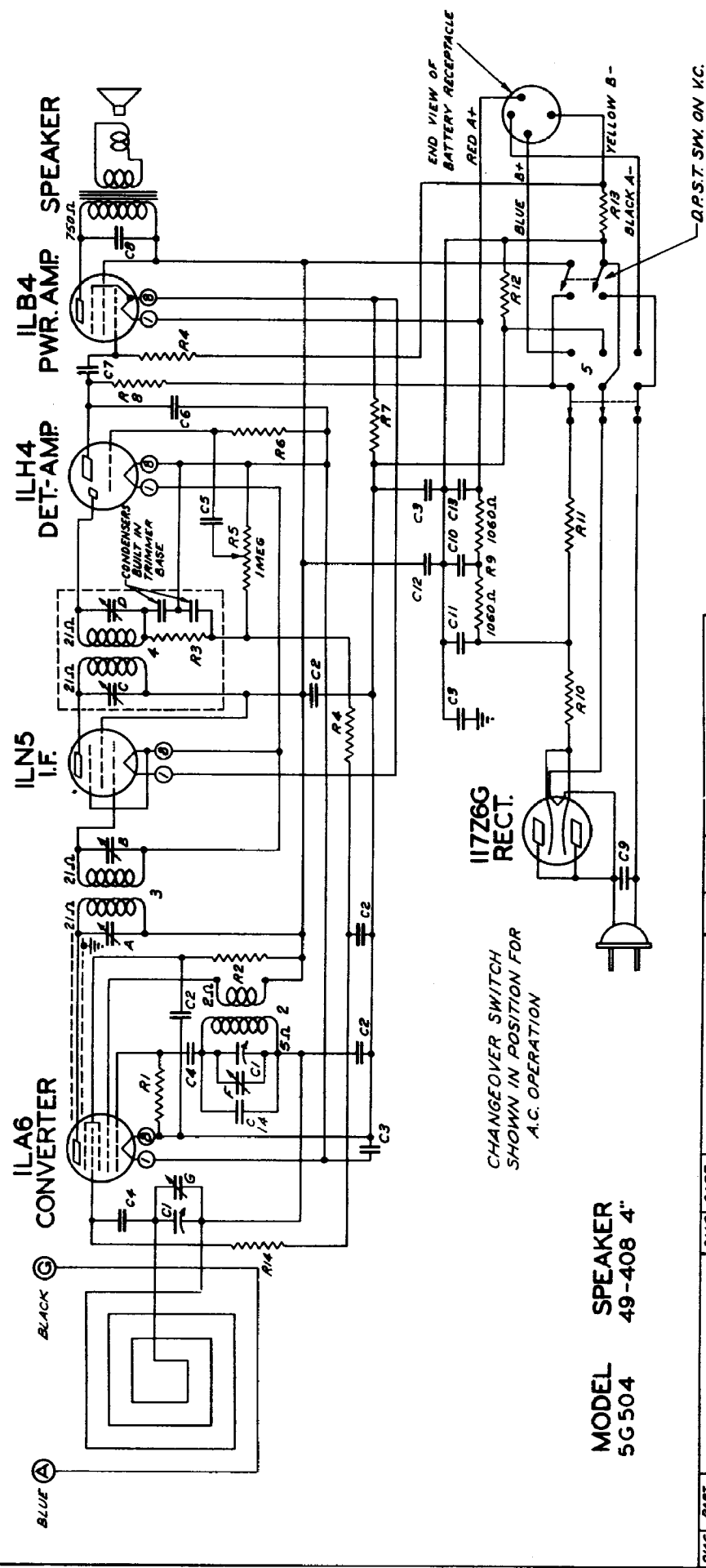
LOUD SPEAKER

The dynamic type loud speaker has a sound diffusing dual cone capable of reproducing frequencies up to 15,000 cycles. Low audio frequencies are preserved by the use of a large bass reflex type baffle system. This requires that the speaker compartment be entirely enclosed, the back pressure being relieved through the bass reflex openings beneath the speaker. The space between the bottom of the cabinet, and the floor becomes a part of this system.

SERVICE

The advanced design of this chassis allows it to be serviced with the tools available in every well equipped repair shop, no special equipment being necessary.

8-10-34 GANG RELATED.
9-7-40 63-107 WAS 63-1127
10-4-40 C14 ADL:IL



Circuit Diagram
Model 5G504
Chassis No. 5A03

Model 5G504

Chassis No. 5A03

All voltages measured from point indicated to Neg. B. using 20000 ohm per volt meter.

Volume control at minimum and condenser plates in full mesh.

Line voltage—117 v. A.C.

Power consumption—117 v.—20 watts.

Power consumption, battery—1.02 watts.

Power output—170 milliwatts.

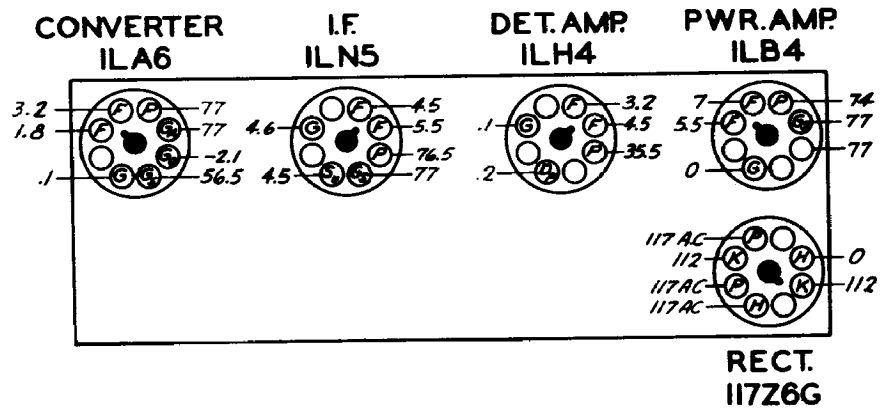
Stage Gains:

Ant. to conv. grid—4.9× at 1000 Kc.

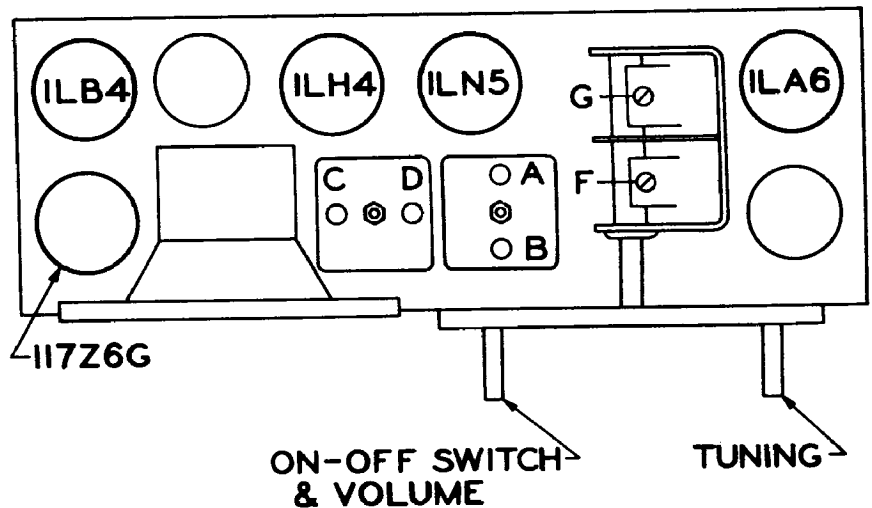
Conv. grid to I. F. grid—53× at 455 Kc.

Overall audio—280× at .050 watt, 400 cycles.

Tuning Range—540 Kc.—1600 Kc.



SOCKET VOLTAGES

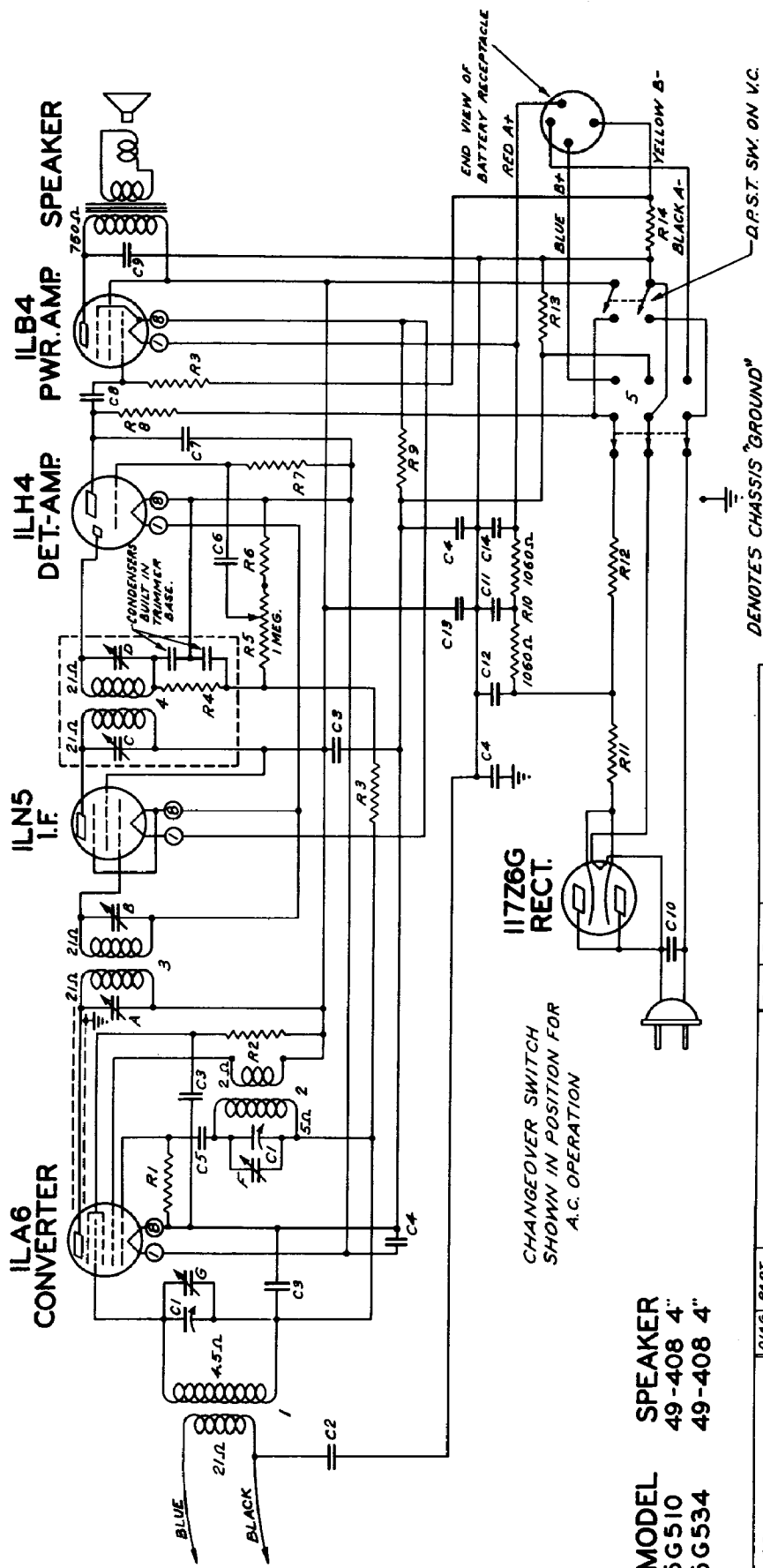


TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 mmfd.	455	—	600	A B C D	I. F. Alignment
2	Single Turn Loop Coupled Loosely to Wave Magnet	—	1400	—	1400	F	Set Osc. to Scale
3		—	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of ILA6 socket.



110V. A.C.-D.C.-BATTERY PACK
I.F. FREQUENCY 455 KC.
5 TUBE SUPERHETERODYNE
CHASSIS N25A10
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DENOTES CHASSIS "GROUND"

11726G
RECT.

CHANGE-OVER SWITCH
SHOWN IN POSITION FOR
A.C. OPERATION

MODEL
5G510
5G534

DIAG. NO.	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
1	20-227	ANTENNA COIL	1	20-227	ANTENNA COIL	1	20-227
2	58914	OSC. COIL ASSEMBLY	2	58914	OSC. COIL ASSEMBLY	2	58914
3	95-720	1ST I.F. TRANSFORMER	3	95-720	1ST I.F. TRANSFORMER	3	95-720
4	95-721	2ND I.F. TRANSFORMER	4	95-721	2ND I.F. TRANSFORMER	4	95-721
5	85-254	CHANGE-OVER SWITCH	5	85-254	CHANGE-OVER SWITCH	5	85-254
6	1B1 I.F. TRANS.	1ST I.F. TRANS.	6	1B1 I.F. TRANS.	1ST I.F. TRANS.	6	1B1 I.F. TRANS.
7	1B1 I.F. SEC.	1ST I.F. SEC.	7	1B1 I.F. SEC.	1ST I.F. SEC.	7	1B1 I.F. SEC.
8	2B1 I.F. SEC.	2ND I.F. SEC.	8	2B1 I.F. SEC.	2ND I.F. SEC.	8	2B1 I.F. SEC.
9	2B1 I.F. SEC.	2ND I.F. SEC.	9	2B1 I.F. SEC.	2ND I.F. SEC.	9	2B1 I.F. SEC.
10	BROADCAST OSC.	BROADCAST OSC.	10	BROADCAST OSC.	BROADCAST OSC.	10	BROADCAST OSC.
11	BROADCAST ANT.	BROADCAST ANT.	11	BROADCAST ANT.	BROADCAST ANT.	11	BROADCAST ANT.

Circuit Diagram
Models 5G510-5G534
Chassis No. 5A10

Models 5G510-5G534

Chassis No. 5A10

All voltages measured from point indicated to Neg. B. using 20000 ohm per volt meter.

Antenna disconnected — volume control at minimum and condenser plates in full mesh.

Line voltage—117 v. A.C.

Power consumption—117 v.—18.5 watts.

Power consumption, battery—1.02 watts.

Power output—160 milliwatts.

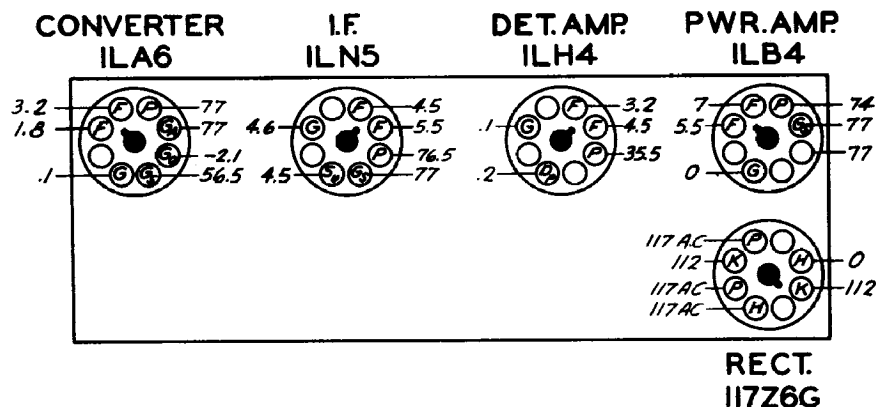
Stage Gains:

Ant. to conv. grid— $3.8\times$ at 1000 Kc.

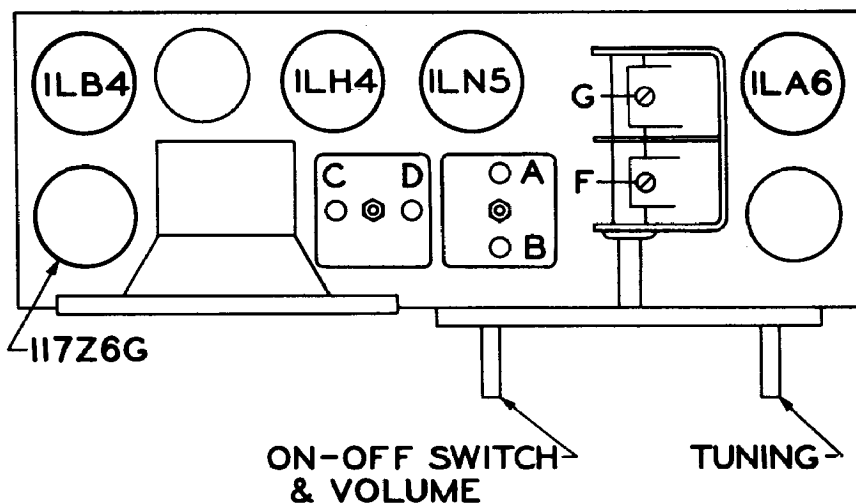
Conv. grid to I. F. grid— $65\times$ at 455 Kc.

Overall audio— $260\times$ at .050 watt, 400 cycles.

Tuning Range—540 Kc.—1600 Kc



SOCKET VOLTAGES

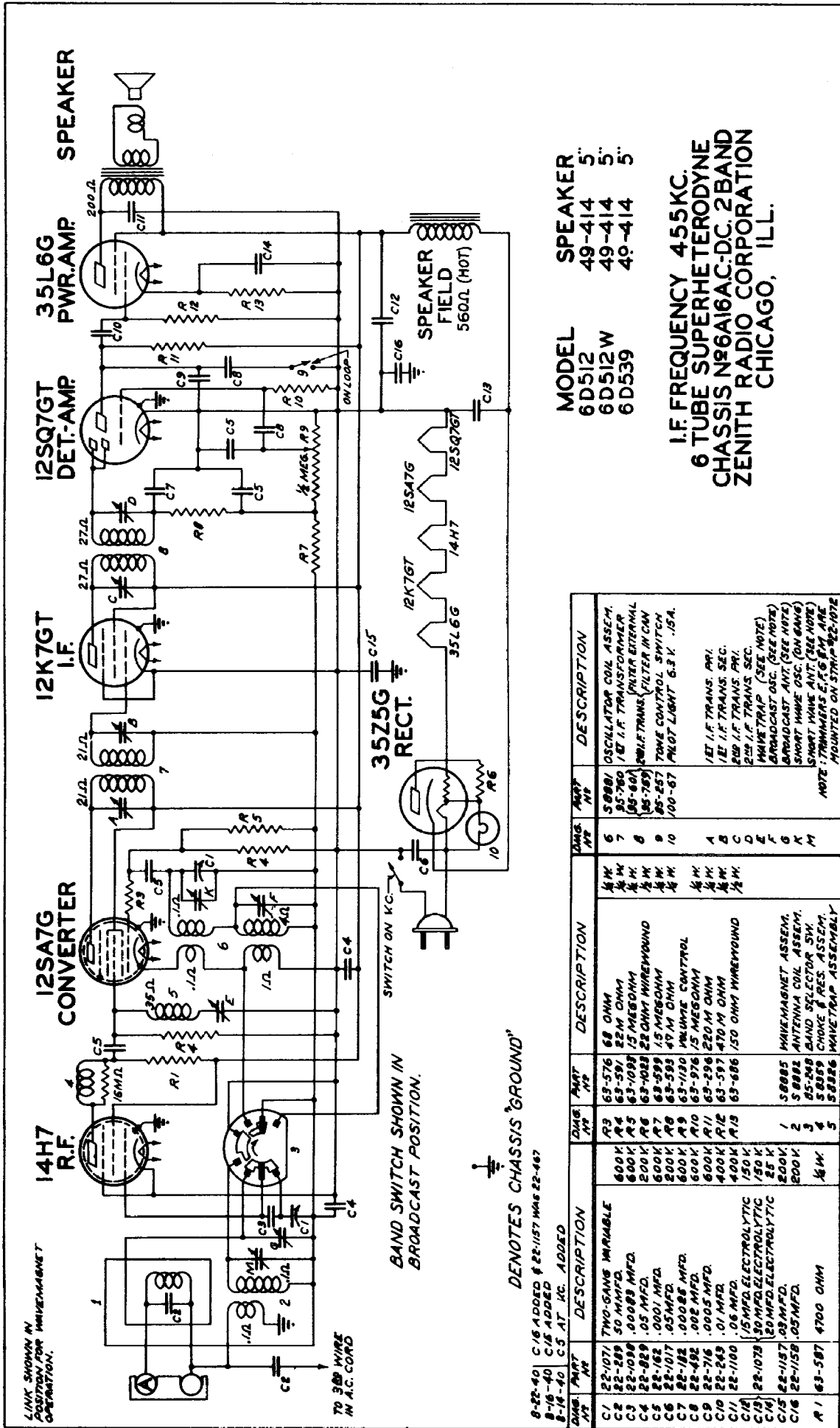


TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 mmfd.	455	—	600	A B C D	I. F. Alignment
2	Ant.—G N D	200 mmfd.	1400	—	1400	F	Set Osc. to Scale
3	" "	200 mmfd.	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of ILA6 socket.



Circuit Diagram

Models 6D512-6D512W-6D539

Chassis No. 6A16

Q. NO.	PART NO.	DESCRIPTION	Q. NO.	PART NO.	DESCRIPTION	Q. NO.	PART NO.	DESCRIPTION	Q. NO.	PART NO.	DESCRIPTION
C1	22-1071	TWO-GANG VARIABLE	R3	63-576	68 OHM	1	S-8885	WAVE-MAGNET ASSEM.	1	S-8885	WAVE-MAGNET ASSEM.
C2	22-289	50 MFD.	R4	63-591	22 M OHM	2	S-8882	ANTENNA COIL ASSEM.	2	S-8882	ANTENNA COIL ASSEM.
C3	22-1036	0.0083 MFD.	R5	63-1033	15 MEG OHM	3	85-M3	BAND SELECTOR SW.	3	85-M3	BAND SELECTOR SW.
C4	22-289	0.0083 MFD.	R6	63-1033	22 OHM WIREWOUND	4	S-8886	CHOKE & RES. ASSEM.	4	S-8886	CHOKE & RES. ASSEM.
C5	22-163	0.001 MFD.	R7	63-593	15 MEG OHM	5	S-8886	WAVE-TRAP ASSEMBLY	5	S-8886	WAVE-TRAP ASSEMBLY
C6	22-1071	0.001 MFD.	R8	63-593	47 M OHM	6			6		
C7	22-182	0.00086 MFD.	R9	63-1120	WAVE CONTROL	7			7		
C8	22-492	0.002 MFD.	R10	63-576	15 MEG OHM	8			8		
C9	22-716	0.005 MFD.	R11	63-296	220 M OHM	9			9		
C10	22-243	.01 MFD.	R12	63-597	470 M OHM	10			10		
C11	22-1100	.05 MFD.	R13	63-686	150 OHM WIREWOUND						
C12	22-1073	30 MFD. ELECTROLYTIC									
C13	22-1157	10 MFD. ELECTROLYTIC									
C14	22-1157	0.05 MFD.									
C15	22-1157	0.05 MFD.									
C16	63-587	4700 OHM									
R1	63-587	4700 OHM									

DENOTES CHASSIS 'GROUND'

8-22-40 C16 ADDED 8-22-1157 WAS 22-467

8-16-40 C15 ADDED

8-16-40 C5 AT KC. ADDED

Models 6D512-6D512W-6D539

Chassis No. 6A16

All voltages measured with a 20000 ohm per volt meter from Neg. B to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 v. A.C.

Power consumption—27 watts.

Power output—1.1 watts.

Stage Gains:

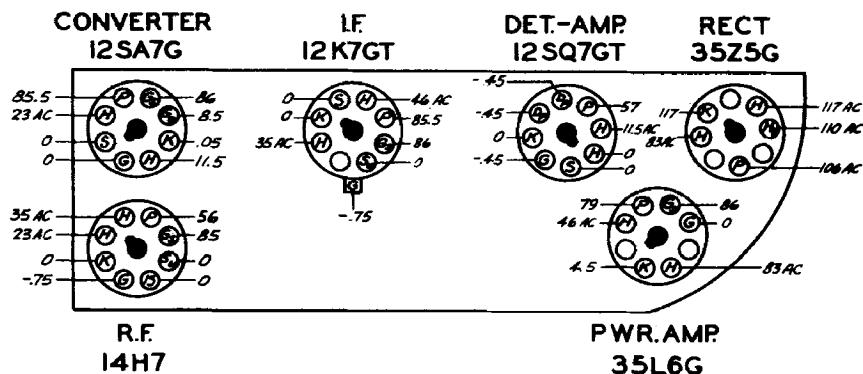
Ant. to R.F. grid—4.2× at 1000 Kc.

R.F. grid to conv. grid—10.3× at 1000 Kc.

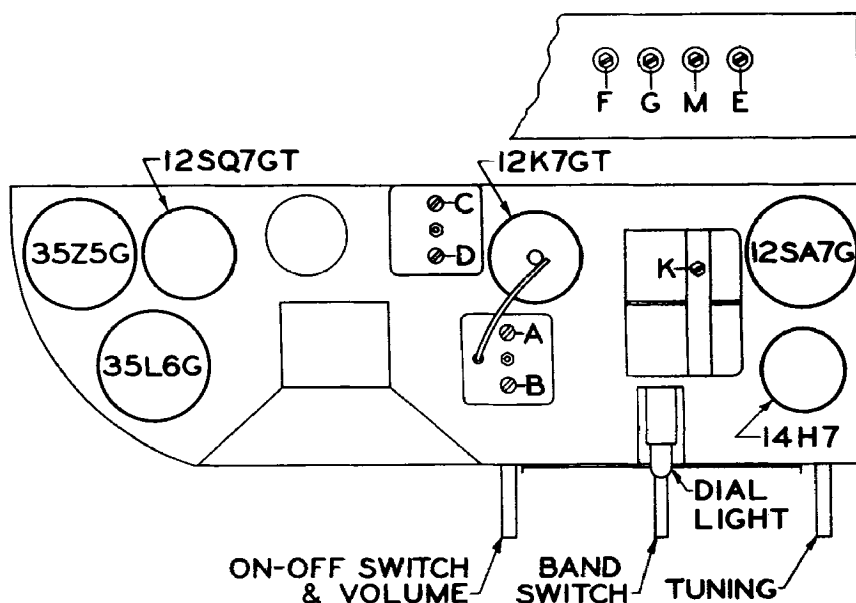
Conv. grid to I.F. grid—52.6× at 455 Kc.

Overall audio—423× at .25 watt, 400 cycles.

Tuning Range—540 Kc.—1600 Kc.
5600 Kc.—16000 Kc.



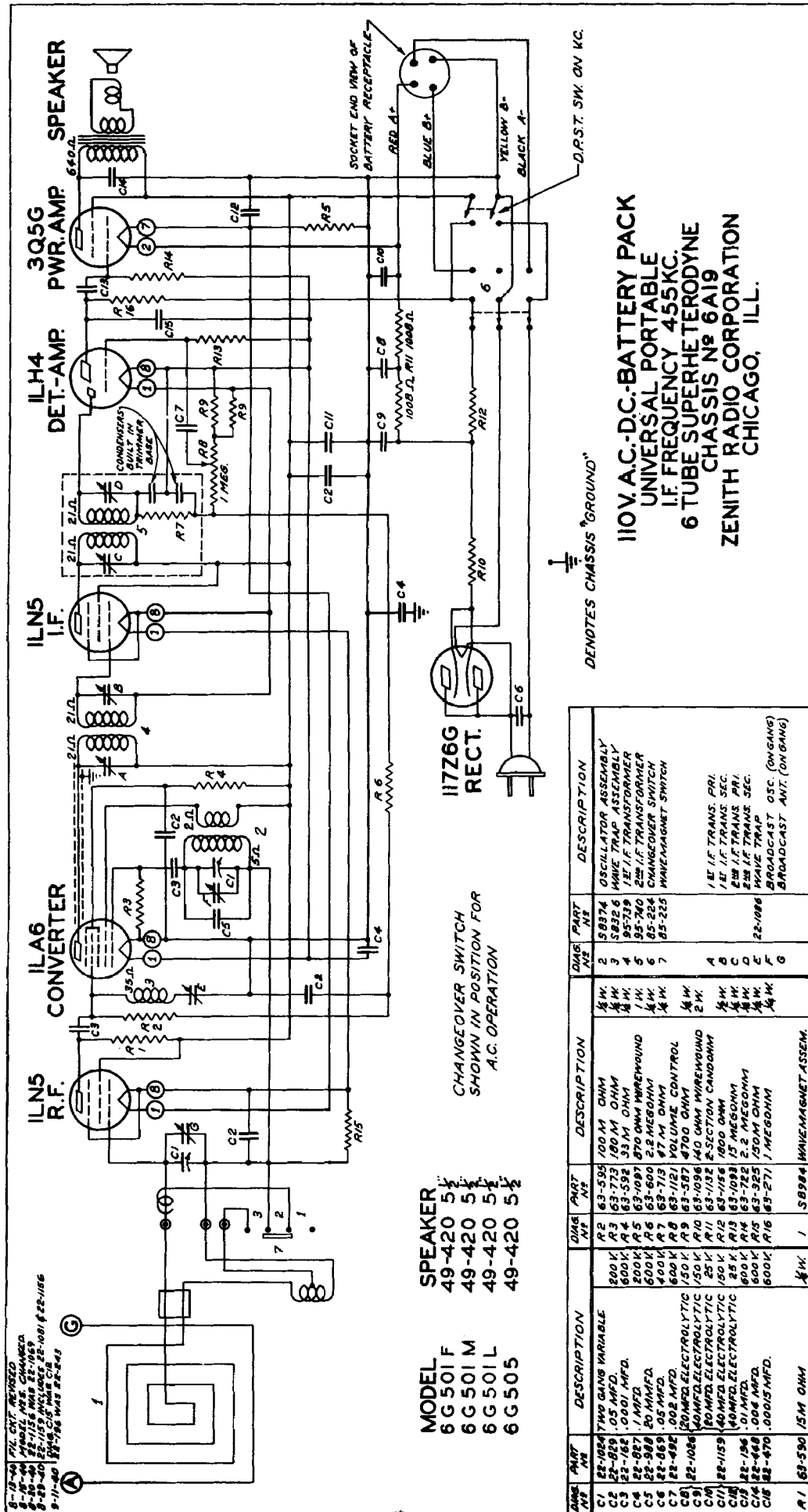
SOCKET VOLTAGES



TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	12SA7 Grid	.1 mfd.	455 Kc.	BC	600	A, B, C, D	I. F. Alignment
2	14H7 Grid	.1 mfd.	455 Kc.	BC	600	E	Adjust Wave-Trap to Min.
3	Ant. Post	400 Ω	15 Mc.	SW	15 Mc.	K	Set Oscillator to Scale
4	Ant. Post	400 Ω	15 Mc.	SW	15 Mc.	M	Rock Gang Adjust. to Max.
5	Single turn loosely coupled to loop—shorting bar in position	—	1500	BC	1500	F	Set Oscillator to Scale
6		—	1400	BC	1400	G	Adjust to Max.



Circuit Diagram

Models 6G501F-6G501L-6G501M

Channel No. 8A19

Models 6G501F-6G501L-6G501M

Chassis No. 6A19

All voltages measured with a 20000 ohm per volt meter from Neg. B to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 v. A.C.

Power consumption—117 v.—20 watts.

Power output—360 milliwatts.

Stage Gains:

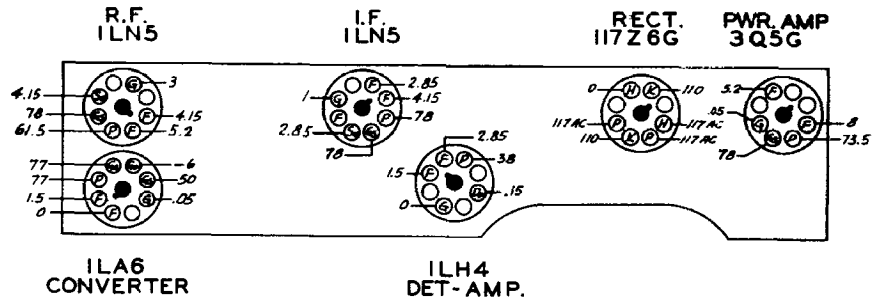
Ant. to R.F. grid—5× at 1000 Kc.

R.F. grid to conv. grid—6.5× at 1000 Kc.

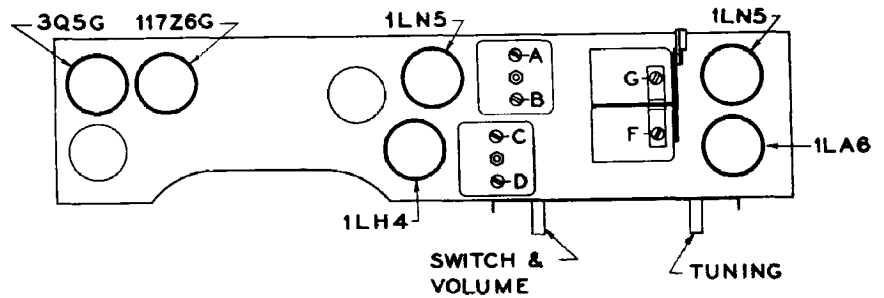
Conv. grid to I.F. grid—49.1× at 455 Kc.

Overall audio—322× at .05 watt, 400 cycles.

Tuning Range—540 Kc. to 1570 Kc.



SOCKET VOLTAGES

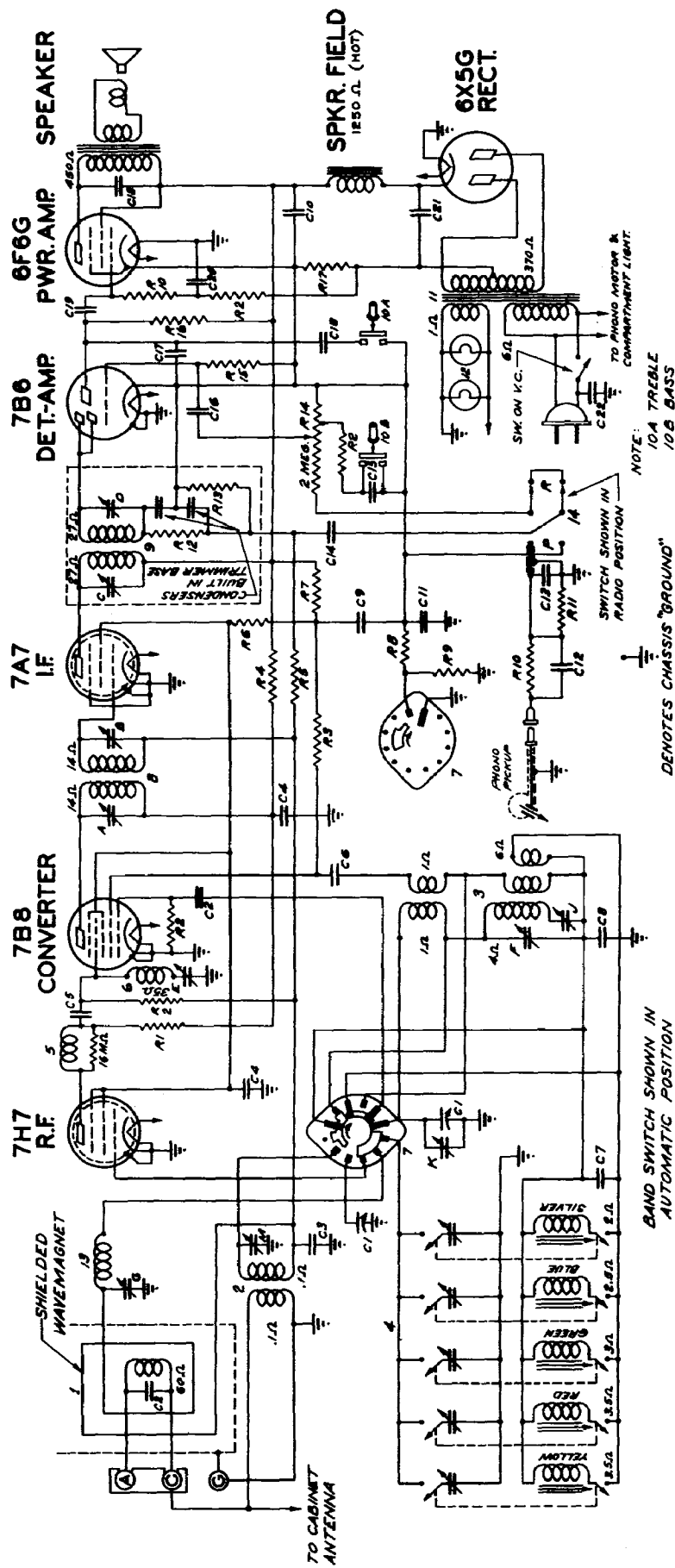


TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 mmfd.	455	—	600	A B C D	I. F. Alignment
2	1st. Det. Grid	.5 mmfd.	455	—	600	E	Adj. Trap Minimum
3	Single Turn Loop Coupled Loosely to Wave Magnet	—	1400	—	1400	F	Set Osc. to Scale
4		—	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of 1LA6 socket.



COMPONENT	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C1	25-1044 250 MFD.	25-1044	250 MFD.	1	WAVEMAGNET ASSEMBLY	1	WAVEMAGNET ASSEMBLY
C2	25-229 50 MFD.	25-229	50 MFD.	2	ANTENNA COIL ASSEMBLY	2	ANTENNA COIL ASSEMBLY
C3	25-229 10 MFD.	25-229	10 MFD.	3	OSCILLATOR COIL ASSEMBLY	3	OSCILLATOR COIL ASSEMBLY
C4	25-229 10 MFD.	25-229	10 MFD.	4	OSCILLATOR COIL ASSEMBLY	4	OSCILLATOR COIL ASSEMBLY
C5	25-162 1000 MFD.	25-162	1000 MFD.	5	OSCILLATOR COIL ASSEMBLY	5	OSCILLATOR COIL ASSEMBLY
C6	25-162 1000 MFD.	25-162	1000 MFD.	6	OSCILLATOR COIL ASSEMBLY	6	OSCILLATOR COIL ASSEMBLY
C7	25-162 1000 MFD.	25-162	1000 MFD.	7	OSCILLATOR COIL ASSEMBLY	7	OSCILLATOR COIL ASSEMBLY
C8	25-162 1000 MFD.	25-162	1000 MFD.	8	OSCILLATOR COIL ASSEMBLY	8	OSCILLATOR COIL ASSEMBLY
C9	25-162 1000 MFD.	25-162	1000 MFD.	9	OSCILLATOR COIL ASSEMBLY	9	OSCILLATOR COIL ASSEMBLY
C10	25-162 1000 MFD.	25-162	1000 MFD.	10	OSCILLATOR COIL ASSEMBLY	10	OSCILLATOR COIL ASSEMBLY
C11	25-162 1000 MFD.	25-162	1000 MFD.	11	OSCILLATOR COIL ASSEMBLY	11	OSCILLATOR COIL ASSEMBLY
C12	25-162 1000 MFD.	25-162	1000 MFD.	12	OSCILLATOR COIL ASSEMBLY	12	OSCILLATOR COIL ASSEMBLY
C13	25-162 1000 MFD.	25-162	1000 MFD.	13	OSCILLATOR COIL ASSEMBLY	13	OSCILLATOR COIL ASSEMBLY
C14	25-162 1000 MFD.	25-162	1000 MFD.	14	OSCILLATOR COIL ASSEMBLY	14	OSCILLATOR COIL ASSEMBLY
C15	25-162 1000 MFD.	25-162	1000 MFD.	15	OSCILLATOR COIL ASSEMBLY	15	OSCILLATOR COIL ASSEMBLY
C16	25-162 1000 MFD.	25-162	1000 MFD.	16	OSCILLATOR COIL ASSEMBLY	16	OSCILLATOR COIL ASSEMBLY
C17	25-162 1000 MFD.	25-162	1000 MFD.	17	OSCILLATOR COIL ASSEMBLY	17	OSCILLATOR COIL ASSEMBLY
C18	25-162 1000 MFD.	25-162	1000 MFD.	18	OSCILLATOR COIL ASSEMBLY	18	OSCILLATOR COIL ASSEMBLY
C19	25-162 1000 MFD.	25-162	1000 MFD.	19	OSCILLATOR COIL ASSEMBLY	19	OSCILLATOR COIL ASSEMBLY

MODEL 6 S 596
6 S 597

I.F. FREQUENCY 455 KC.
6 TUBE SUPERHETERODYNE
CHASSIS N2 6A20 2BAND A.C. PHONO
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Circuit Diagram

Models 6S596-6S597

Chassis No. 6A20

Models 6S596-6S597

Chassis No. 6A20

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 v. A.C.

Power consumption—55 watts.

Power output—6 watts.

Stage Gains:

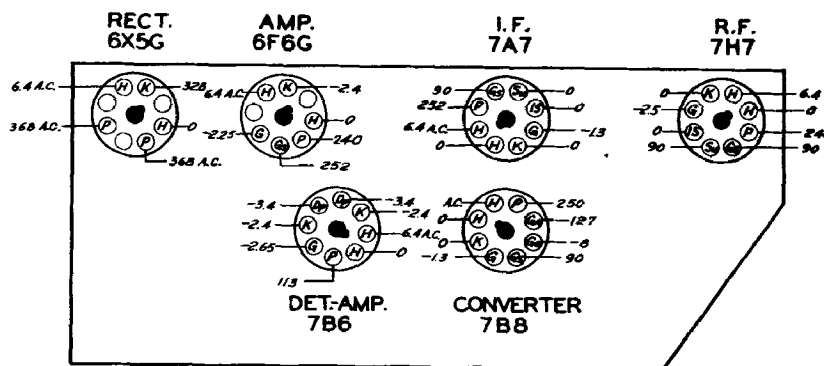
Ant. to R.F. grid—5.2× at 1000 Kc.

R.F. grid to conv. grid—5.9× at 1000 Kc.

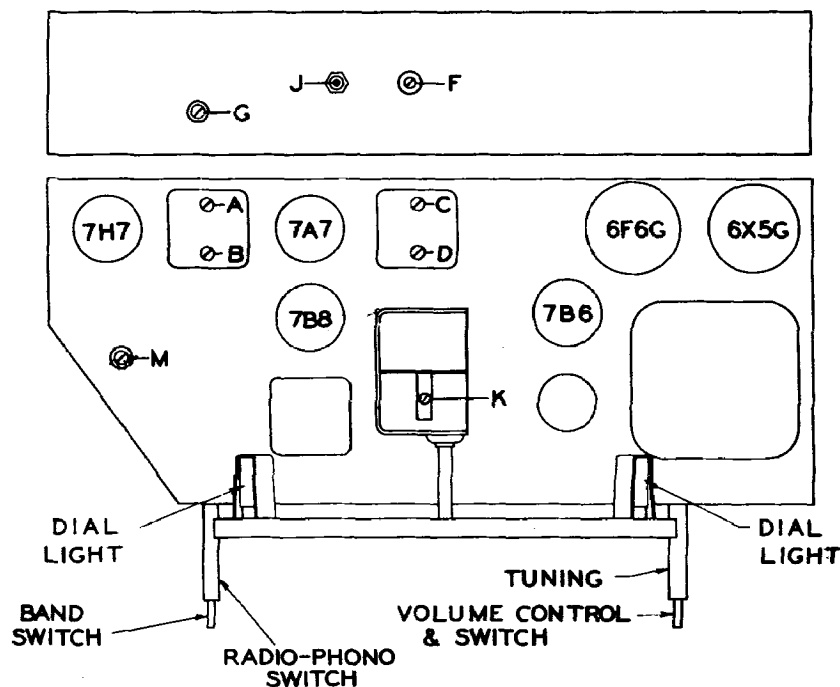
Conv. grid to I.F. grid—57.5× at 455 Kc.

Overall audio—735× at 1 watt, 400 cycles.

Tuning Range—545 Kc.—1570 Kc.
5400 Kc.—18300 Kc.



SOCKET VOLTAGES



TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A B C D	Align I.F.
2	R.F. Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	E	Adj. for Minimum
3	Ant.-Gnd.	400 Ohm	18 Mc.	Short Wave	18 Mc.	K	Set Osc. To Scale
4	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	Broadcast	1500 Kc.	F	" "
5	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	Broadcast	1500 Kc.	G	Align Ant.
6	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	600 Kc.	Broadcast	600 Kc.	J	Rock gang & Adj. to Max.
7	Ant.-Gnd. with 10 Ohm Shunt	400 Ohm	16 Mc.	Short Wave	16 Mc.	M	Align Ant.

Models 8S593-8S594

Chassis No. 8A04

All voltages measured with a 20000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 A.C.

Power consumption—70 watts.

Power output—8 watts.

Stage Gains:

Ant. to R.F. grid—5 $\times$ at 1000 Kc.

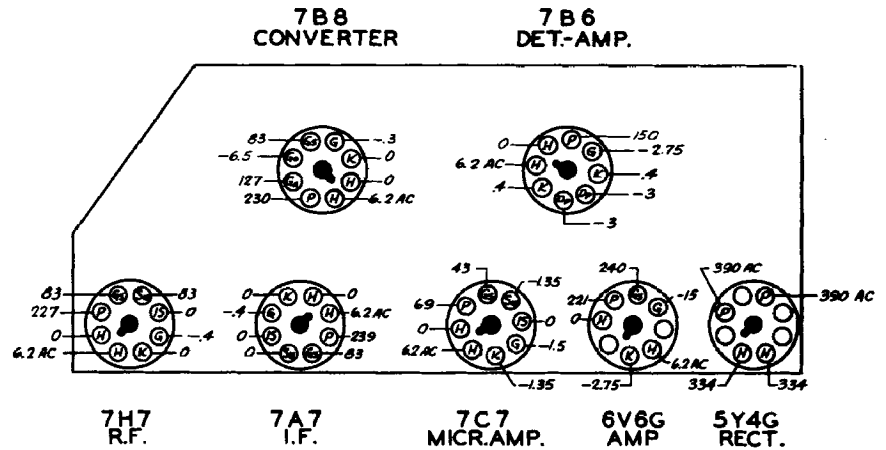
R.F. grid to conv. grid—4.2 $\times$ at 1000 Kc.

Conv. grid to I.F. grid—76.6 $\times$ at 455 Kc.

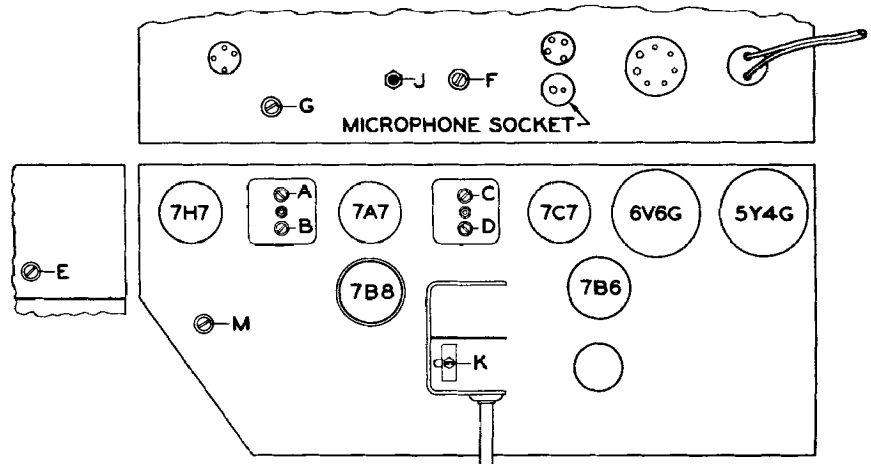
Overall audio—865 $\times$ at 1 watt, 400 cycles.

Tuning Range—540 Kc.—1570 Kc.
5700 Kc.—18300 Kc.

See Recording Notes on Page 66.



SOCKET VOLTAGES



TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A B C D	Align I.F.
2	R.F. Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	E	Adj. for Minimum
3	Ant.-Gnd.	400 Ohm	18 Mc.	Short Wave	18 Mc.	K	Set Osc. To Scale
4	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	Broadcast	1500 Kc.	F	" "
5	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	1500 Kc.	Broadcast	1500 Kc.	G	Align Ant.
6	Ant.-Gnd. with 10 Ohm Shunt	.5 Mfd.	600 Kc.	Broadcast	600 Kc.	J	Rock gang & Adj. to Max.
7	Ant.-Gnd. with 10 Ohm Shunt	400 Ohm	16 Mc.	Short Wave	16 Mc.	M	Align Ant.

Models 10H551-10H571

Chassis No. 10A3

All voltages measured with a 1000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 A.C.

Power consumption—90 watts.

Power output—6.5 watts.

Tuning Range—540 Kc.—1600 Kc.
1.5 Mc.—5.2 Mc. 5.7 Mc.—18.5 Mc.
41.5 Mc.—50.5 Mc.

Stage Gains:

Bc. and 455 Kc.—L.F.

Ant. to R.F. grid— $6.5\times$ at 1000 Kc.
R.F. grid to conv. grid— $28.1\times$ at 1000 Kc.

Conv. grid. to L.F. grid— $31.3\times$ at 455 Kc.

Overall audio— $1640\times$ at 1 watt, 400 cycles.

F.M. and 4.3 Mc.—L.F.

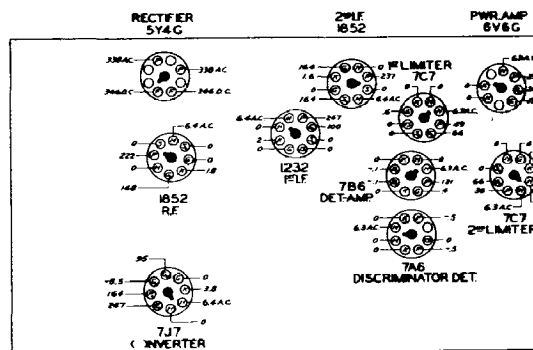
Ant. to R.F. grid— $1.8\times$ at 46 Mc.

R.F. grid to conv. grid— $7.9\times$ at 46 Mc.

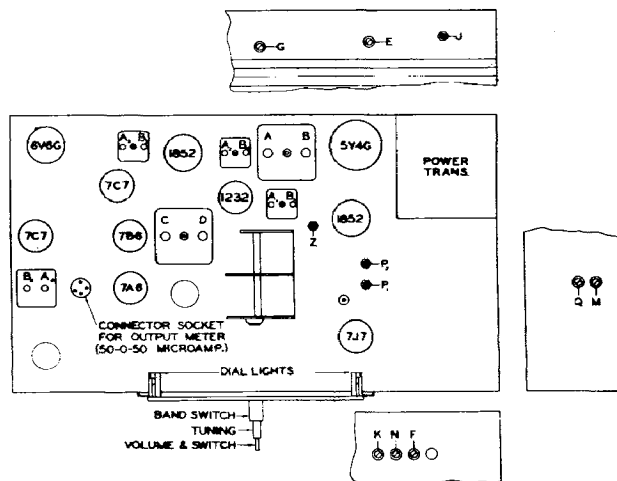
Conv. grid to 1st L.F. grid— $2.7\times$ at 4.3 Mc.

1st L.F. grid to 2nd L.F. grid— $80\times$ at 4.3 Mc.

2nd L.F. grid to LIMITER grid— $25\times$ at 4.3 Mc.



SOCKET VOLTAGES



TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Connect Output Meter to	Trimmers	Purpose
1	Con. Grid	0.5 Mid.	455 Kc.	B.C.	600 Kc.	6V6G Output	A B C D	Align L.F.
2	R.F. Grid	0.5 Mid.	455 Kc.	B.C.	600 Kc.	6V6G Output	E	L.F. Trap Adjust for Minimum
3	Ant. terminals marked Z and G	400 Ohms	18 Mc.	S.W.	18 Mc.	"	K	Set to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	"	M	Align Ant.
5	"	"	5.0 Mc.	Med.	5.0 Mc.	"	N	Set to Scale
6	"	"	4.5 Mc.	Med.	4.5 Mc.	"	Q	Align Ant.
7	Single turn Loop Loosely coupled to loop	"	1400 Kc.	B.C.	1400 Kc.	"	F	Set Osc. to Scale
8	"	"	1400	B.C.	1400 Kc.	"	G	Align Ant. Broadcast Padder
9	"	"	600 Kc.	B.C.	600 Kc.	"	J (Rock Gang)	"
10	1852 Grid	0.5 Mid.	4.3 Mc.	Manual F.M.	4.3 Mc.	F.M. Output Meter Across Full Disc. Load	B4	Align for Zero Deflection
11	"	"	"	"	"	F.M. Output Meter Across Half Disc. Load	A4	Align for Max. Deflection
12	"	"	"	"	"	"	A3B3	"
13	767-1232 Grid	"	"	"	"	"	A2B2	"
14	7J7 Grid	"	"	"	"	"	A B	"
15	F.M. Ant. Terminals	100 Ohms	46.0 Mc.	"	46.0 Mc.	"	Adjust cam on gang shaft for scale	"
16	"	"	42.5 Mc.	"	42.5 Mc.	"	P	"
17	"	"	49 Mc.	"	49 Mc.	"	P2	"
18	"	"	46 Mc.	"	46 Mc.	"	Z	"

During F.M. Alignment keep input low, to obtain max. sensitivity for alignment. This is necessary because with large inputs the limiting action of the limiters masks alignment operations.

NOTE—A 10M ohm per volt or higher voltmeter may be used as an F.M. output meter.

Models 12S550Z-12S568E-12S568Z-12S569E-12S569Z-12S595Z

Chassis No. 12A1

All voltages measured with a 1000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Line voltage 117 v.

Power consumption—100 watts.

Power output—14 watts.

Stage Gains:

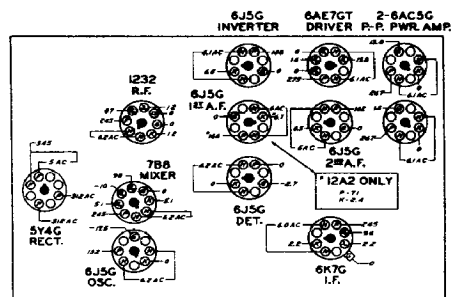
Ant. to R.F. grid—10.7× at 1000 Kc.

R.F. grid to conv. grid—6.75× at 1000 Kc.

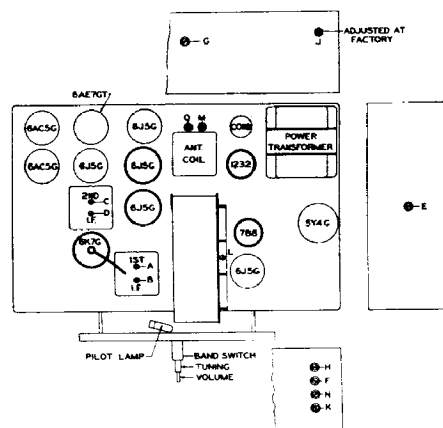
Conv. grid to I.F. grid—31.3× at 455 Kc.

Overall audio—1640× at 1 watt, 400 cycles.

NOTE—The letter E after model number designates the use of a 14 inch speaker.



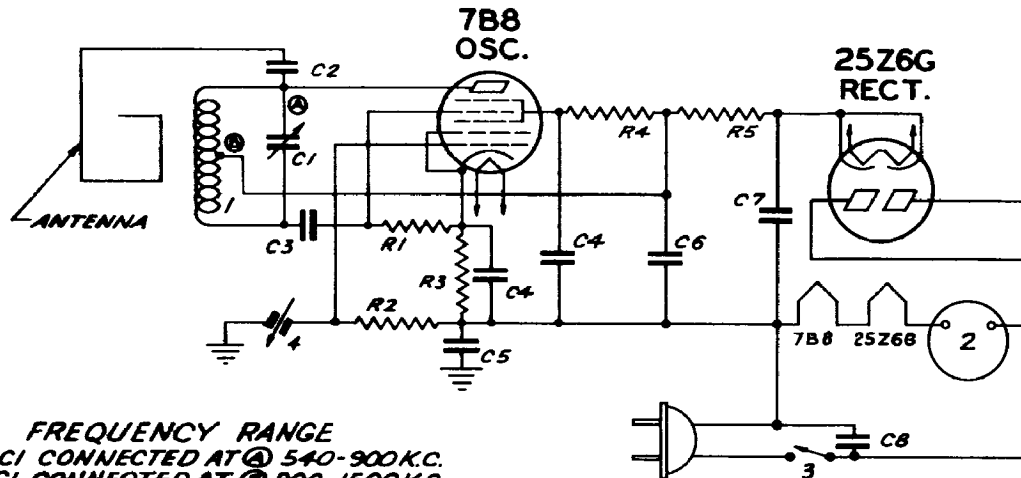
SOCKET VOLTAGES



TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Mixer Grid	1/2 Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I.F. Alignment
2	"	"	455 Kc.	"	600 Kc.	E	Adj. Trap to Minimum
3	Antenna-Gnd.	400 Ohm	18000 Kc.	S.W.	18000 Kc.	K	Set Oscillator to Scale
4	"	"	16000 Kc.	"	16000 Kc.	L-M	Alignment of Det.—Rock Gang & Adjust for Max.
5	"	"	4500 Kc.	Police	4500 Kc.	N	Rock Gang & Adjust for Max. Output
6	"	"	4500 Kc.	"	4500 Kc.	Q	Alignment of Antenna
7	Single Turn Coupled Loosely to Loop		1400 Kc.	Broadcast	1400 Kc.	F	Set Oscillator to Scale
8	"		1400 Kc.	"	1400 Kc.	H	Alignment of R.F.
9	"		1400 Kc.	"	1400 Kc.	G (On Loop)	Alignment of Loop
10	"		600 Kc.	"	600 Kc.	J	Rock Gang & Adjust for Max. Output
11	"		1400 Kc.	"	600 Kc.	F-G-H	Repeat 6-7-8

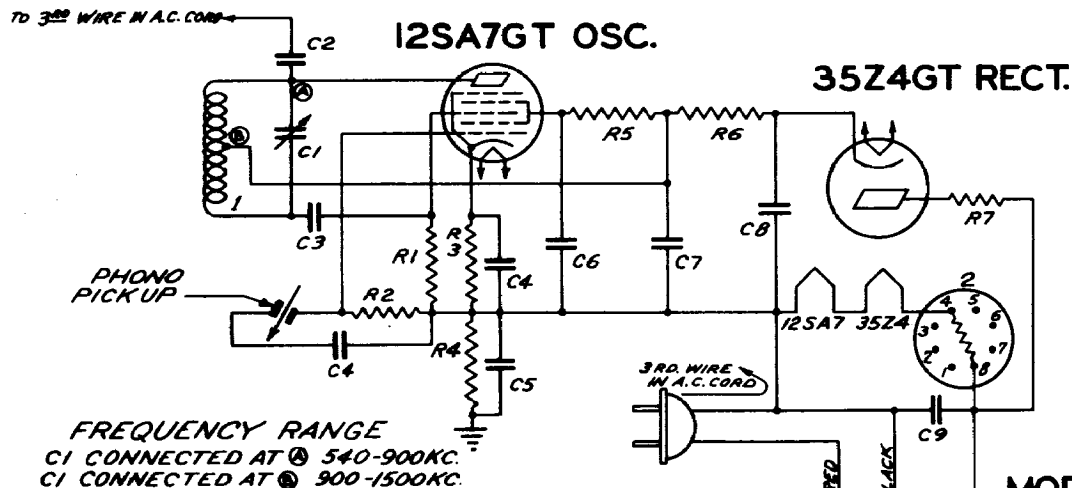


FREQUENCY RANGE
C1 CONNECTED AT (A) 540-900 K.C.
C1 CONNECTED AT (B) 900-1500 K.C.

MODELS
S8500Z

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-690	TUNING CONDENSER	R2	63-464	1 MEGOHM $\frac{1}{4}$ W.
C2	22-127	25 MMFD. 600 V.	R3	63-581	470 OHM $\frac{1}{4}$ W.
C3	22-182	.00025 MFD. 600 V.	R4	63-964	4700 OHM $\frac{1}{4}$ W.
C4	22-829	.05 MFD. 200 V.	R5	63-707	4700 OHM $\frac{1}{4}$ W.
C5	22-827	.1 MFD. 200 V.			
C6	22-1061	8 MFD. ELECTROLYTIC 150 V.	1	58611	OSC. COIL ASSEM.
C7	22-1061	16 MFD. " 150 V.	2	141-85	MOTOR (60~)
C8	22-869	.05 MFD. 400 V.	3	85-191	A.C. SWITCH
R1	63-593	47 M OHM $\frac{1}{4}$ W.	4	NR-30	PICKUP

PHONOGRAPH OSCILLATOR
ZENITH RADIO CORPORATION
CHICAGO ILL.

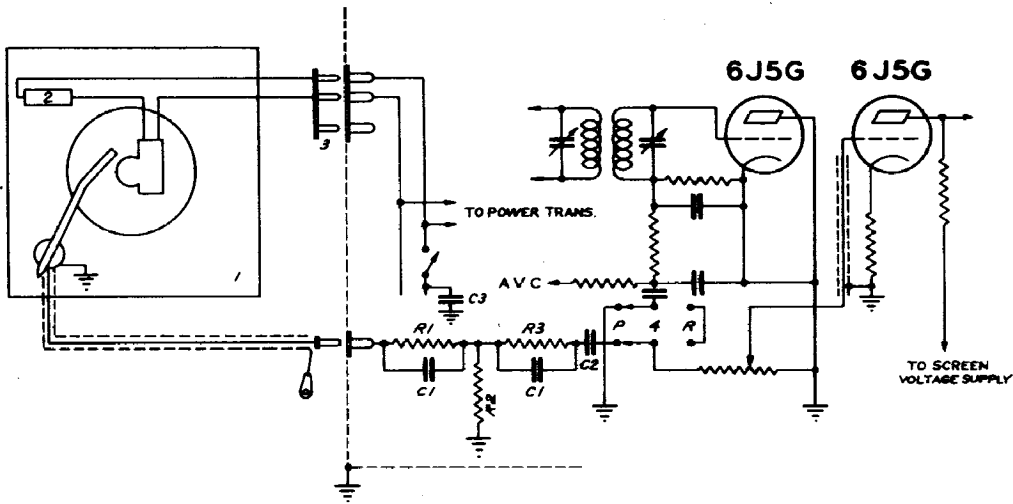


FREQUENCY RANGE
C1 CONNECTED AT (A) 540-900 K.C.
C1 CONNECTED AT (B) 900-1500 K.C.

MODEL
S9000

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-690	TUNING CONDENSER	R3	63-701	470 OHM $\frac{1}{4}$ W.
C2	22-127	25 MMFD. 600 V.	R4	63-296	220M OHM $\frac{1}{4}$ W.
C3	22-182	.00025 MFD. 600 V.	R5	63-964	4700 OHM $\frac{1}{4}$ W.
C4	22-829	.05 MFD. 200 V.	R6	63-803	2200 OHM $\frac{1}{4}$ W.
C5	22-827	.1 MFD. 200 V.	R7	63-575	47 OHM $\frac{1}{4}$ W.
C6	22-243	.01 MFD. 400 V.			
C7	22-876	8 MFD. ELECTROLYTIC 150 V.	1	58611	OSC. COIL ASSEM.
C8	22-876	16 MFD. " 150 V.	2	100-76	BALLAST TUBE
C9	22-828	.05 MFD. 400 V.	3	52-208	3 PRONG RECEPTACLE
R1	63-591	22 M OHM $\frac{1}{4}$ W.			
R2	63-271	1 MEGOHM $\frac{1}{4}$ W.			

PHONOGRAPH OSCILLATOR
ZENITH RADIO CORPORATION
CHICAGO, ILL.



DIAG. NO.	PART NO.	DESCRIPTION
C1	22-954	.00035 MFD. 600 V.
C2	22-587	.001 MFD. 600 V.
C3	22-1065	.0025 MFD. 600 V.
R1	63-597	470M OHM 1/2 W.
R2	63-657	330M OHM 1/2 W.
R3	63-271	1 MEGOHM 1/2 W.
1	169-42	WEBSTER AUTOMATIC RECORD PLAYER
2	85-191	A.C. SWITCH
3	58-85	A.C. PLUG
4	85-228	PHONO-RADIO SW.

PHONO CIRCUIT DATA
 MODEL 12S595Z SPEAKER 49-401 15"
 CHASSIS NO 12A2

PARTS PRICE LIST

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
5A03	A	6A20	E	12A2	I
5A10	B	8A04	F	84500Z	I
6A16	C	10A3	G	84501Z	K
6A19	D	12A1	H	89000	L

DIAL PARTS

26-254	Scale—dial	A-B	\$.20
26-256	Scale—dial	D	.25
26-259	Scale—split second dial	H-I	1.00
26-260	Scale—stationary	H-I	.40
26-272	Scale—dial	C	.35
27-16	Flywheel	H-I	1.00
27-39	Flywheel	G	1.00
32-15	Belt—drive	H-I	.15
32-23	Belt—drive	G	.15
34-68	Condenser shaft gear & bushing	H-I	.20
34-80	Lower drive gear & pinion	H-I	.20
59-84	Pointer—frequency indicator	H-I	.10
59-96	Indicator—on-off	D	.06
59-97	Pointer—dial	D	.10
59-98	Pointer—dial	E-F	.15
59-99	Pointer—dial	C	.15
59-102	Pointer—split second	H-I	.10
59-105	Indicator—band	G	.25
59-112	Pointer—dial	A-B	.20
61-42	Pointer shaft pulley	H-I	.12
73-16	Set screw—headless 8/32 x 1/8	H-I	.60C
73-28	Set screw—pointer pulley	H-I	.02
73-33	Set screw—for 117-48	H-I	.02
76-229	Shaft—split second	H-I	.30
76-302	Shaft—drive (after serial No. 384251)	B	.05
76-304	Shaft—tuning control	D	.06
76-305	Shaft—drive	E-F	.10
76-306	Shaft—tuning control	G	.20
76-307	Shaft—volume control	G	.10
76-310	Shaft—volume control	H-I	.10
76-312	Shaft—drive (see 76-302)	A-B	.06
76-313	Shaft—turning control	C	.05
78-297	Dial light socket & wire	H-I	.20
78-378	Dial light socket & wire	C	.20
80-69	Spring—dial cord tension	C-E-F-G	.01
80-130	Spring—clutch	H-I	.02
80-138	Spring—retainer	G-H-I	.01
80-139	Spring—dial	H-I	.07
80-151	Spring—return	H-I	.02
80-209	Spring—dial cord tension	A-B-D	.02
80-223	Spring—indicator	D	.01
80-227	Spring—drive shaft tension	E-F	.01
80-239	Spring—shaft tension	G	.01
83-516	Strip—brass spacer	H-I	.02
83-707	Strip—movable scale spacer	H-I	.65C
83-708	Strip—movable scale spacer	H-I	.03
93-470	Washer—black fibre	D	.25C
93-482	Washer—black bakelite	C-E-F	.60C
94-271	Bushing—shaft coupling	G-H-I	.06
94-280	Bushing—control arm insulator	G-H-I	.03
94-282	Bushing—vol. control shaft insl.	G-H-I	.03
94-285	Bushing—vol. control shaft insl.	G-H-I	.03
100-36	Dial light—6.3 volt .25 ampere	E-F-G-H-I	.09
100-67	Dial light—6.3 volt .15 ampere	C	.09
114-46	Screw—No. 6 x 7/8 H acorn head S.T.	H-I	.45C
114-47	Screw—No. 6x7/8 H.H. slotted PK	H-I	.50C
114-52	Screw—8/32x7/8 H acorn head MS	H-I	.35C
114-62	Screw—8 x 1/4 special taper ST	H-I	.60C
114-115	Screw—6 x 1/4 H acorn head ST	H-I	.45C
117-48	Lever—band switch	H-I	.02
117-60	Lever—band switch	G	.015
118-16	Link—connecting (for 117-48)	H-I	.01
118-21	Link—band indicator	G	.02
118-24	Link—lever connecting	G	.03
148-32	Band switch control arm	G	.10
183-9	Rubber band	H-I	.50C
188-2	Retaining ring	H-I	.01
188-13	Retaining ring—band switch	E-F	.15C
188-27	Retaining ring—tuning	E-F	.01
188-32	Retaining ring	A-B-C-D-G	.85C

192-53	Crystal dial	A-B	.20
192-57	Crystal—dial	D	.15
192-60	Crystal—dial	C	.20
192-62	Crystal—dial (6D539)	C	.20
196-34	Gasket—dial crystal	B	.01
196-35	Gasket—dial crystal	C	.015
199-11	Rubber sleeve—drive pulley	H-I	.75C
199-21	Rubber bumper sleeve	H-I	.03
S5999	Dial light socket & clip assy.	F-G	.08
S6220	Drive pulley & clutch assy.	H-I	.25
S6221	Frequency pointer gear & shaft assy.	H-I	.35
S7766	Dial scale mtg. plate assy.	H-I	.55
S8339	Pulley & bushing assy.	A-B	.10
S8354	Dial cord & eyelet	A-B	.05
S8392	Indicator can assembly	D	.05
S8394	Pulley & bushing assy.	D	.06
S8421	Dial cord & eyelet assy.	D	.05
S8438	Band indicator strip assy.	H-I	.30
S8492	Dial cord & eyelet	G	.10
S8499	Dial pointer & spring assy.	G	.25
S8551	Dial light socket & wire	E	.60
S8560	Dial scale & bracket	E-F	.80
S8589	Broadcast band scale assy.	H-I	.75
S8658	Tuning shaft & bushing assy.	G	.25
S8759	Control arm & pin assy.	H-I	.35
S8763	Short wave scale assy.	H-I	1.25
S8779	Drive shaft & bushing assy.	H-I	.30
S8932	Dial cord & eyelet assy.	C	.05
S8962	Dial cord & eyelet assy.	E	.05
S9072	Cam assembly	G	.15
S9088	Can assembly	F	.05
S9291	Dial scale bracket & lever assy.	G	1.50
MS452	Drive belt pulley & bracket assy.	G	.15
MS591	Pulley & bracket assembly	C-E-F-G	.10

AUTOMATIC & RADIOORGAN PARTS

10-77	Cardboard box	G-H-I	.05
24-233	Cover—push button switch	E	.03
46-345	Knob—automatic tuning	G-H-I	.05
46-346	Knob—automatic tuning	G-H-I	.05
46-347	Knob—A.C. switch (on)	H-I	.10
46-348	Knob—A.C. switch (off)	H-I	.10
46-356	Knob—marked No. 1	G	.10
46-357	Knob—marked No. 2	G	.10
46-358	Knob—marked No. 3	G	.10
46-359	Knob—marked No. 4	G	.10
46-360	Knob—marked No. 5	G	.10
46-361	Knob—marked manual	G	.10
56-74	Retaining pin—F.M. escutcheon	G	.05
68-1	Auto. tuning—adjusting wrench		.02
76-293	Shaft—knob	G	.02
76-294	Shaft—knob	H-I	.03
76-308	Shaft—Knob	E-F	.01
80-161	Spring—latch bar	E	.25C
80-203	Spring—push lever	E	.25C
80-211	Spring—catch	G-H-I	.25C
80-224	Spring—retaining	G	.50C
80-225	Spring—retaining	E-F	.65C
80-226	Spring—retaining	G-H-I	.01
80-228	Spring—retaining	E-F	.60C
80-229	Spring—retaining pin	G	.60C
83-669	Strip—coil retaining	E	.03
83-710	Strip—coil retaining	H-I	.20C
83-711	Strip—auto. coil retaining	G	.02
83-767	Strip—rubber (auto. escutcheon)	H-I	.02
83-794	Strip—latch bar	E	.02
83-828	Strip—rubber (radiorgan esc.)	H-I	.02
83-838	Strip—fibre	E	.02
83-839	Strip—auto. tuning (fibre)	G	.02
83-840	Strip—fibre	H-I	.03
83-869	Strip—fibre (FM automatic)	G	.03

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
5A03	A	8A20	E	12A2	I
5A10	B	8A04	F	S8500Z	J
8A16	C	10A3	G	S8501Z	K
8A19	D	12A1	H	S9000	L

85-236	Switch—automatic	H-I	3.00	95-765	Transformer—1st I.F. 455 K.C.	G	1.50
85-237	Switch—automatic tuning	G	2.50	95-766	Transformer—2nd I.F. 455 K.C.	G	2.00
85-263	Switch—FM automatic tuning	G	3.00	95-767	Transformer—1st I.F. 4.3 MC	G	1.00
93-510	Ceramic washer	G	.015	95-768	Transformer—2nd I.F. 4.3 MC	G	1.00
112-233	Adjustment screw core	E-G-H-I	.10	95-769	Transformer—3rd I.F. 4.3 MC	G	1.00
112-250	Screw—4-40 x 3/4 RHST	H-I	.40C	95-772	Transformer—4th I.F. 4.3 MC	G	1.25
112-292	Screw—4-40 x 3/4 (No. 5 coil)	E	.10	S8142	Loading coil assembly	H-I	.45
114-39	Screw—8 x 1/4 H acorn Hd. S.T.		.50C	S8326	Wave trap coil assembly	C-D-E-F	
125-17	Rubber grommet	E	.015			G-H-I	.20
149-18	Core & screw assy. (FM auto- matic)	G	.15	S8359	Resistor & R.F. coil assembly	C-E-F-G	.25
156-6	Escutcheon catch	G-H-I	.03	S8374	Oscillator coil assembly	D	.25
166-15	Rubber bumper	E	.55C	S8413	Capacitor assembly	D	.10
188-32	Retaining ring	G	.85C	S8466	Oscillator coupler coil & terminal	G-H-I	.25
S6928	Automatic tuning coil—red	E	.15	S8474	Antenna loading coil assy.	E-F	.25
S6929	Automatic tuning coil—green	E	.15	S8507	Antenna coil assembly	E-F	.30
S6930	Automatic tuning coil—blue	E	.15	S8508	Oscillator coil assembly	E	1.10
S7021	Automatic tuning coil—yellow	E-G-H-I	.15	S8611	Oscillator coil assy. (yellow)	J-K-L	.30
S7536	Automatic tuning coil—silver	E	.15	S8730	Oscillator coil assembly	A	.60
S7857	Automatic tuning coil—red	G-H-I	.20	S8744	R.F. coil & dowell assembly	H-I	.50
S7858	Automatic tuning coil—green	G-H-I	.20	S8749	Antenna coil assembly	H-I	.75
S7859	Automatic tuning coil—blue	G-H-I	.20	S8750	Oscillator coil assembly	H-I	1.00
S7860	Automatic tuning coil—silver	G-H-I	.20	S8751	Detector coil assembly	H-I	1.00
S8397	Knob & eyelet assembly (bass)	E	.10	S8881	Oscillator coil assembly	C	.75
S8406	Knob & eyelet assembly (voice)	H-I	.10	S8882	Antenna coil assembly	C	.40
S8407	Radiorgan knob & eyelet (normal)	G-H-I	.10	S8914	Oscillator coil assembly	B	.50
S8408	Radiorgan knob & eyelet (treble)	G-H-I	.10	S8922	Oscillator coil assembly	F	.50
S8409	Radiorgan knob & eyelet (alto)	G-H-I	.10	S8998	F.M. I.F. Wave trap assembly	G	.30
S8410	Radiorgan knob & eyelet (bass)	G-H-I	.10	S9044	Loading coil assembly	G	.50
S8411	Radiorgan knob & eyelet (10 bass)	G-H-I	.10	S9065	F.M. antenna coil assembly	G	.40
S8454	Contact spring & mounting strip assy.	F	.75	S9066	F.M. detector coil assembly	G	.30
S8455	Automatic switch push lever assy.	E	.02	S9068	F.M. manual oscillator assembly	G	.60
S8457	Automatic tuning unit complete	E	5.25	S9074	Oscillator coil assembly	G	1.25
S8490	Radiorgan switch contact & strip assy.	G	.25	S9075	Antenna coil assembly	G	1.00
S8531	Radiorgan contact & strip assy.	E-F	.10	S9279	F.M. manual oscillator coil & bracket	G	1.25
S8541	Auto. tuning escutcheon & knob assy.	G	1.25				
S8549	Radiorgan escutcheon & knob assy. (bass)	E-F	.60				
S8550	Radiorgan escutcheon & knob assy. (treble)	E-F	.60				
S8593	Radiorgan switch contact & strip assy.	H-I	.25				
S8615	Automatic tuning escutcheon (complete)	H-I	1.50				
S8616	Radiorgan escutcheon (complete)	H-I	1.50				
S8740	Knob & eyelet assy. (treble)	E	.10				
S8985	Radiorgan knob & eyelet assy. (voice)	G	.10				
S9069	Oscillator coil assy. (3 required)	G	.30				
S9070	Oscillator coil assy. (2 required)	G	.30				
S9315	Radiorgan escutcheon & knob assy.	G	1.25				
S9316	F.M. tuning escutcheon & knob assy. (Complete) (No. 1-2-3)	G	1.25				
S9317	F.M. tuning escutcheon & knob assy. (Complete) (No. 4-5-Man.)	G	1.25				

R. F. & I. F. COILS & CHOKES			
20-227	Antenna coil	B	.40
20-230	Speaker compensating filter	G	1.00
95-637	Transformer—1st I.F.	H-I	1.25
95-708	Transformer—1st I.F.	E-F	1.00
95-709	Transformer—2nd I.F.	E	1.00
95-715	Transformer—2nd I.F.	H-I	1.25
95-720	Transformer—1st I.F.	A-B	1.00
95-721	Transformer—2nd I.F.	A-B	1.00
95-739	Transformer—1st I.F.	D	1.00
95-740	Transformer—2nd I.F.	D	1.00
95-759	Transformer—2nd I.F.	C	1.00
95-760	Transformer—1st I.F.	C	1.00
95-761	Transformer—2nd I.F.	F	1.00

CONDENSERS			
22-127	25 mmfd.	600 volt	.15
22-147	.0005 mfd.	600 volt	.20
22-162	.0001 mfd.	600 volt	.15
22-182	.00025 mfd.	600 volt	.20
22-188	.02 mfd.	400 volt	.15
22-196	.01 mfd.	600 volt	.15
22-219	.03 mfd.	200 volt	.15
22-229	.005 mfd.	600 volt	.15
22-243	.01 mfd.	400 volt	.15
22-289	50 mmfd.	600 volt	.15
22-319	.005 mfd.	200 volt	.15
22-326	.003 mfd.	400 volt	.15
22-327	.02 mfd.	200 volt	.15
22-348	.001 mfd.	600 volt	.20
22-358	.002 mfd.	600 volt	.30
22-448	.004 mfd.	600 volt	.15
22-470	.00015 mfd.	600 volt	.15
22-492	.002 mfd.	600 volt	.15
22-688	Oscillator padder		G-H-I
22-690	Oscillator trimmer		J-K
22-716	.0005 mfd.	600 volt	.20
22-790	.004 mfd.	1000 volt	.20
22-825	.1 mfd.	400 volt	.20
22-827	.1 mfd.	200 volt	.18
22-828	.05 mfd.	400 volt	.15
22-829	.05 mfd.	200 volt	.15
22-830	.02 mfd.	600 volt	.15
22-846	Automatic tuning trimmer		E-G-H-I
22-847	Automatic tuning trimmer		E-G-H-I
22-848	Automatic tuning trimmer		E-G-H-I
22-850	Ceramic trimmer—3 section		G
22-853	Dual fixed padder		H-I
22-854	.005 mfd.	600 volt	.15
22-859	Automatic tuning trimmer		E-G-H-I
22-868	480 mmfd. Silvercap		E-G-H-I
22-869	.05 mfd.	400 volt	.15

PARTS LIST—(Continued,

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
5A03	A	6A20	E	12A2	I
5A10	B	6A04	F	S8500Z	J
6A16	C	10A3	G	S8501Z	K
6A19	D	12A1	H	S9000	L

22-873	Automatic tuning trimmer	E-G-H-I	.25	22-1140	50 mmfd. ceramic	.40
22-876	8 mfd. x 4 mfd. 150 volt Dry Elec.	L	.85	22-1143	25 mmfd. ceramic	.25
22-887	.001 mfd. 600 volt		.15	22-1146	50 mmfd. ceramic	.35
22-951	3 gang variable	H-I	5.25	22-1156	40 mfd. 25 volt	
22-953	.0002 mfd. 600 volt		.12		Dry electrolytic	D
22-954	.00035 mfd. 600 volt		.12	22-1157	.03 mfd. 200 volt	.15
22-956	500 mmfd. Silvercap	G	.35	22-1158	.05 mfd. 200 volt	.15
22-959	Ceramic trimmer—single section	F	.15	22-1159	40 mfd. 150 volt x 40 mfd. 25 volt	
22-970	20 mfd. 450 volt x 20 mfd. 350 volt				x 20 mfd. 25 volt Dry electrolytic	D
	Dry electrolytic	H-I	1.15			.75
22-982	Ceramic trimmer—2 section	H-I	.30			
22-988	20 mmfd. 600 volt		.20			
22-992	.02 mfd. 600 volt		.25			
22-1015	Wave trap trimmer	E-F-G-H-I	.15			
22-1016	.005 mfd. 1000 volt		.15			
22-1017	.05 mfd. 200 volt		.15			
22-1022	.005 mfd. 600 volt		.30			
22-1023	Oscillator padder	E-F	.30			
22-1024	Two gang variable	D	1.75			
22-1026	20 mfd. 150 volt x 40 mfd. 150 volt					
	Dry electrolytic	A-B-D	.75			
22-1027	20 mfd. 25 volt x 20 mfd. 150 volt					
	Dry electrolytic	A-B	.65			
22-1034	5 mfd. 450 volt x 15 mfd. 350 volt					
	Dry electrolytic	E	.75			
22-1036	14 mfd. 450 volt					
	Dry electrolytic	E-F	.50			
22-1039	Dual unit padder	G	.60			
22-1041	.005 mfd. 600 volt		.15			
22-1042	Single section trimmer	E-F-G-H-I	.15			
22-1044	Two gang variable	E-F	2.25			
22-1045	Ceramic trimmer—two section	G	.25			
22-1052	Ceramic trimmer—four section	H-I	.50			
22-1053	16 mfd. 200 volt x 16 mfd. 450 volt					
	Dry electrolytic	H-I	.75			
22-1061	8 mfd. x 16 mfd. 150 volt Dry					
	electrolytic	J	.50			
22-1062	Two gang variable	A	1.75			
22-1069	20 mfd. 25 volt					
	Dry electrolytic	F-J-K	.40			
22-1071	Two gang variable	C	2.00			
22-1072	Four section ceramic trimmer	C	.50			
22-1073	15 mfd. x 30 mfd. 150 volt x 20					
	mfd. 25 volt Dry electrolytic	C	.75			
22-1081	20 mfd. 25 volt x 40 mfd. 150 volt					
	Dry electrolytic	D	.65			
22-1086	Wave trap trimmer	D	.15			
22-1087	Two gang variable	B	2.00			
22-1098	830 mmfd. 600 volt	C	.15			
22-1099	5 mfd. x 20 mfd. 450 volt x 5 mfd.					
	250 volt Dry electrolytic	F	.90			
22-1100	.06 mfd. 400 volt		.15			
22-1108	20 mfd. x 20 mfd. 450 volt Dry					
	electrolytic	H-I	1.25			
22-1118	.005 mfd. 600 volt		.15			
22-1119	.005 mfd. 1000 volt		.20			
22-1121	Two gang variable	G	2.50			
22-1123	5 mfd. 300 volt					
	Dry electrolytic	G	.40			
22-1124	30 mfd. 450 volt					
	Dry electrolytic	G	.75			
22-1125	15 mfd. 450 volt x 5 mfd. 300 volt					
	x 15 mfd. 250 volt Dry electrolytic	G	1.00			
22-1126	.01 mfd. 400 volt		.15			
22-1127	.02 mfd. 400 volt		.15			
22-1128	.02 mfd. 600 volt		.15			
22-1129	.0005 mfd. 1000 volt		.20			
22-1130	15 mmfd. 600 volt		.15			
22-1134	.002 mfd. 1000 volt		.20			
22-1135	.005 mfd. 600 volt		.15			
22-1136	.00025 mfd. 600 volt		.15			
22-1137	.00015 mfd. 600 volt		.15			
22-1138	.0005 mfd. 600 volt		.15			
22-1139	50 mmfd. ceramic		.25			

RESISTORS			
63-150	10M ohm	1/2 watt	.08
63-156	10M ohm	1 watt	.20
63-160	100M ohm	1/2 watt	.08
63-238	1M ohm	1/4 watt	.07
63-246	150 ohm	1/4 watt	.07
63-271	1 megohm	1/4 watt	.07
63-296	220M ohm	1/4 watt	.07
63-325	150M ohm	1/4 watt	.07
63-339	2700 ohm	1/4 watt	.07
63-464	1 megohm	1/4 watt insulated	.15
63-572	15 ohm	1/4 watt	.07
63-575	47 ohm	1/4 watt	.07
63-576	68 ohm	1/4 watt	.07
63-581	470 ohm	1/4 watt	.07
63-583	1M ohm	1/4 watt	.07
63-584	1500 ohm	1/4 watt	.07
63-585	2200 ohm	1/4 watt	.07
63-587	4700 ohm	1/4 watt	.07
63-590	15M ohm	1/4 watt	.07
63-591	22M ohm	1/4 watt	.07
63-592	33M ohm	1/4 watt	.07
63-593	47M ohm	1/4 watt	.07
63-594	68M ohm	1/4 watt	.07
63-595	100M ohm	1/4 watt	.07
63-596	330M ohm	1/4 watt	.07
63-597	470M ohm	1/4 watt	.07
63-599	1.5 megohm	1/4 watt	.07
63-600	2.2 megohm	1/4 watt	.07
63-602	4.7 megohm	1/4 watt	.07
63-605	1M ohm	1/2 watt	.08
63-607	15M ohm	1/2 watt	.08
63-608	15M ohm	1 watt	.10
63-621	39 ohm	1/4 watt	.07
63-624	68 ohm	1/4 watt	.07
63-627	180 ohm	1/4 watt	.07
63-637	4700 ohm	1/4 watt	.07
63-645	27M ohm	1/4 watt	.07
63-646	33M ohm	1/4 watt	.07
63-650	68M ohm	1/4 watt	.07
63-652	120M ohm	1/4 watt	.07
63-654	180M ohm	1/4 watt	.07
63-657	330M ohm	1/4 watt	.07
63-676	27 ohm	1 watt	.10
63-679	82M ohm	1 watt	.10
63-686	150 ohm W.W.	1/2 watt insulated	.17
63-701	470 ohm	1/4 watt insulated	.15
63-707	4700 ohm	1/4 watt insulated	.15
63-711	22M ohm	1/4 watt insulated	.15
63-713	47M ohm	1/4 watt insulated	.15
63-715	100M ohm	1/4 watt insulated	.15
63-717	220M ohm	1/4 watt insulated	.15
63-719	470M ohm	1/4 watt insulated	.15
63-722	2.2 megohm	1/4 watt insulated	.15
63-741	150 ohm	1/4 watt insulated	.15
63-742	180 ohm	1/4 watt insulated	.15
63-773	180M ohm	1/4 watt insulated	.15
63-778	470M ohm	1/4 watt insulated	.15
63-790	4.7 megohm	1/4 watt insulated	.15
63-803	2200 ohm	1/2 watt	.08
63-961	47M ohm	1 watt	.10
63-694	4700 ohm	1/2 watt	.08
63-976	15 megohm	1/4 watt	.07

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
5A83	A	6A20	E	12A2	I
5A10	B	8A04	F	8S500Z	J
6A16	C	10A3	G	8S501Z	K
6A19	D	12A1	H	80000	L

63-1023	22 ohm W.W.	1/2 watt insulated	.17	206-351	Output transformer	1.50
63-1055	22M ohm	1 watt insulated	.20	207-351	Field coil	2.75
63-1056	280 ohm W.W.	1 1/2 watt insulated	.25	208-351	Cone & voice coil	2.50
63-1058	22M ohm	2 watt	.20	49-380	Dynamic speaker 10" (6S597)	8.00
63-1063	140 ohm W.W.	1 watt insulated	.20	206-380	Output transformer	1.50
63-1066	18 ohm W.W.	1/2 watt insulated	.17	207-380	Field coil	2.75
63-1074	Volume control	and switch	1.50	208-380	Cone & voice coil	2.50
63-1078	Volume control		1.00	49-396	Dynamic speaker 10" (6S596)	8.00
63-1093	15 megohm	1/4 watt insulated	.15	206-396	Output transformer	1.50
63-1096	140 ohm W.W.	2 watt insulated	.30	207-396	Field coil	2.75
63-1097	870ohm W.W.	1 watt insulated	.20	208-396	Cone & voice coil	2.50
63-1098	42 ohm W.W.	1/2 watt insulated	.20	49-404	Dynamic speaker 15" (12S569Z)	15.50
63-1099	33 ohm W.W.	1/2 watt insulated	.17	206-404	Output transformer	2.50
63-1101	8200 ohm	2 watt insulated	.30	207-404	Field coil	2.75
63-1102	15M ohm	1/2 watt	.08	208-404	Cone & voice coil	4.50
63-1105	1 M ohm	2 watt	.15	49-408	PM speaker 4"	3.50
63-1108	6 ohm W.W.	2 watt insulated	.30	206-408	Output transformer	1.25
63-1109	75M ohm	1 watt	.10	208-408	Cone & voice coil	1.00
63-1119	16M ohm	1/2 watt insulated	.17	49-414	Dynamic speaker 5"	3.75
63-1121	Volume control	and switch	1.50	206-414	Output transformer	1.25
63-1123	Volume control	and switch	1.50	207-414	Field coil (not replace- able)	
63-1126	Volume control	and switch	1.50	208-414	Cone & voice coil	1.25
63-1127	Two section candohm		.60	49-416	Dynamic speaker 14" (12S568E)	10.00
63-1130	Volume control	and switch	1.50	206-416	Output transformer	2.00
63-1132	Candohm		.50	207-416	Field coil	2.75
63-1137	Two section candohm		.35	208-416	Cone & voice coil	4.00
63-1139	8 ohm W.W.	5 watt insulated	.35	49-420	PM speaker 5 1/2"	5.00
63-1142	Candohm		.30	206-420	Output transformer	1.25
63-1144	Volume control	and switch	1.50	208-420	Cone & voice coil	1.50
	(After serial No. 384251)			49-423	Dynamic speaker 14" (8S594)	10.00
63-1146	Volume control (microphone)		1.00	206-423	Output transformer	2.00
63-1156	1800 ohm	1/2 watt	.08	207-423	Field coil	2.75
63-1158	100. ohm	1/2 watt	.08	208-423	Cone & voice coil	4.00
63-1159	39M ohm	1 watt	.10	49-424	Dynamic speaker 12"	10.00
63-1160	56M ohm	1 watt insulated	.20	206-424	Output transformer	1.50
63-1161	270 ohm	1/2 watt	.08	207-424	Field coil	2.75
63-1162	33M ohm	1 watt	.10	208-424	Cone & voice coil	3.50
63-1163	2200 ohm	1/2 watt insulated	.17	49-425	Dynamic speaker 12" (8S593)	8.50
63-1164	300 ohm	1/2 watt insulated	.17	206-425	Output transformer	1.50

2-35	Cabinet back—5G510	B	.05	57-11A	Antenna lead marker	.02
2-51	Cabinet back—6D512	C	.05	57-11G	Ground lead marker	.02
2-51W	Cabinet back—6D512W	C	.10	57-849	Frequency modulation escutcheon	1.50
2-53	Cabinet back—6D539	C	.10	57-859	Wavemagnet switch plate	.10
11-70	Line cord and plug	A	.50	57-876	Tuning eye escutcheon	.30
11-71	Line cord and plug	C-L	.65	58-85	Plug—3 prong	.05
13-14	"OFF" indicator tack	A	.01	64-115	Brass eyelet—tube socket	.20C
14-596	Cabinet—bakelite 510	B	3.75	68-1	Automatic tuning adjustment wrench	.02
14-664	Cabinet—bakelite 512	C	4.00	73-21	Headless set screw 8/32 x 1/4	.01
14-664W	Cabinet—bakelite 512W	C	4.75	73-24	Headless set screw 8/32 x 1/4	1.50C
15-34	Battery cable plug cap	A-B-D	.05	78-128	Socket—speaker	.10
20-230	Speaker compensating filter	G	1.00	78-142	Socket—speaker	.10
24-165	Cover—AC switch	H-I	.03	78-149	Socket—6X5G	.10
24-234	Cover—automatic tuning adjust- ment	E	.35	78-150	Socket—6J7G	.10
24-251	Cover—escutcheon opening	F	.40	78-152	Socket—6F6G	.10
36-12	Cabinet handle—5G510	B	.40	78-175	Socket—6J5G	.10
46-273	Knob—tuning control	D	.10	78-176	Socket—6V6G	.10
46-327	Knob tuning control	C	.10	78-182	Socket—5Y4G	.10
46-327Y	Knob—tuning control (6D512W)	C	.10	78-225	Socket—dial light	.08
46-330	Knob—volume control	F	.10	78-229	Socket—electrolytic condenser	A-B-C-D
46-332	Knob—band selector switch	C	.10			E-F-G
46-332Y	Knob—band selector switch (6D512W)	C	.10	78-250	Socket—electrolytic condenser	G-H-I
46-349	Knob—band selector switch	G-H-I	.15	78-258	Socket—6AC5G	H-I
46-362	Knob—tuning control	A-B	.05	78-294	Socket—loktal base tube	C-F
46-385	Knob—volume control	A	.05	78-335	Socket—7B8	E
46-395	Knob—volume control			78-336	Socket—7A7	E
	(After serial No. 384251)	B	.10	78-337	Socket—7B6	E
49-351	Dynamic speaker 10" (12S550Z-12S568Z)	H-I	8.00	78-343	Socket—11LN5	D
				78-344	Socket—11LH4	D
				78-347	Socket—117Z6G	A-B-D

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
5A03	A	6A20	E	12A2	I
5A10	B	8A04	F	88500Z	J
6A18	C	10A3	G	88501Z	K
6A19	D	12A1	H	89000	L

78-348	Socket—battery cable	A-B	.05	159-33	Button—plug		.03
78-349	Socket—wavemagnet plug	E-F-G-H-I	.05	159-42	Button—back retaining	C	.01
78-351	Socket—speaker	D	.05	199-26	Rubber sleeve	G	.02
78-353	Socket—single contact	E-G	.03	202-202	Instruction book	A	.05
78-358	Socket—phono plug	E	.10	202-204	Instruction book	H	.20
78-361	Socket—7H7	E	.15	202-212	Instruction book	D	.05
78-367	Socket—1LA6	A-B-D	.15	202-222	Instruction book	C	.03
78-368	Socket—1LN5	A-B	.15	202-223	Instruction book	E	.20
78-369	Socket—1LH4	A-B	.15	202-225	Instruction book	B	.03
78-370	Socket—1LB4	A-B	.15	202-228	Instruction book (8S593)	F	.20
78-371	Socket—7B8	H-I	.15	202-231	Instruction book	G	.25
78-376	Socket—octal base (8 contact)	C-G	.10	202-246	Instruction book (8S594)	F	.20
78-379	Socket—6AE7GT	H-I	.10	S8365	Dial escutcheon assy. (complete)	G	3.50
78-380	Socket—1232	H-I	.15	57-828	Escutcheon		3.00
78-396	Socket—battery cable	D	.10	192-55	Glass		.35
78-397	Socket—3Q5G (octal)	D	.10	196-31	Gasket		.15
78-402	Socket—phono	F	.10	S8366	Dial escutcheon assy. (complete)	H-I	4.00
78-407	Socket—resonance indicator & cable	F	.45	57-829	Dial escutcheon		3.00
78-408	Socket—phono	F	.05	57-850	Nameplate		.45
78-410	Socket—loktal base tube	G	.15	126-329	Dial center shield		.05
80-198	Spring—chassis mounting	G-H-I	.01	192-61	Glass		.35
80-199	Spring—chassis mounting	G-H-I	.01	196-31	Gasket		.15
83-798	Strip—pin jack terminal	D	.15	S8393	Tone switch arm & sleeve assy.	F	.10
83-832	Strip—pin jack terminal	A	.15	S8402	Dial escutcheon assy. (complete)	E	2.50
85-134	Switch—normal—brilliant	F	.15	57-839	Escutcheon plate	E	2.10
85-148	Switch—AC	H-I	.60	192-58	Glass	E	.30
85-224	Switch—power change over	D	.50	196-33	Glass gasket	E	.10
85-225	Switch—wavemagnet	D	.20	S8520	Tuning control knob & setscrew	E-F	.15
85-234	Switch—band selector	G	2.50	S8521	Volume control knob & setscrew	E-F	.15
85-235	Switch—band selector	H-I	2.00	S8539	Volume control knob & setscrew	G-H-I	.15
85-242	Switch—power change over	A	.60	S8540	Tuning control knob & setscrew	G-H-I	.20
85-248	Switch—band selector	C	.50	S8546	Phono switch knob & setscrew	E	.15
85-254	Switch—power change over	B	.40	S8921	Dial escutcheon assembly	F	2.50
85-255	Switch—band selector	E	1.00	57-875	Escutcheon		2.10
85-257	Switch—tone control	C	.20	192-58	Glass		.30
85-258	Switch—band selector	F	1.00	196-33	Gasket		.10
93-168	Washer—rubber shoulder		.05	S8960	Band switch knob & setscrew	E-F	.15
93-320	Washer—brown felt		.50C				
93-371	Washer—black bakelite		.45C				
93-392	Washer—brown felt		.01				
93-475	Washer—brown felt	G	.015				
93-485	Washer—No. 8 flush type finishing		.50C				
93-486	Washer—No. 8 flush type finishing (brass)		.60C				
95-705	Transformer—power 50-60 cycle	E	3.50	12-747	Wavemagnet mounting bracket	E-H-I	.20
95-714	Transformer—power 60 cycle	H-I	5.50	24-236	Cardboard cover	E-F	.15
95-725	Transformer—power 25 cycle	E	7.25	24-238	Cardboard cover	H-I	.15
95-727	Transformer—power 25 cycle	H-I	10.00	40-16	Hinge	D	.10
95-756	Transformer—power 50-60 cycle	F	4.50	46-394	Wavemagnet knob	G	.20
95-771	Transformer—power 50-60 cycle	G	5.00	54-136	Cap nut 8/32 x 1/8	D	1.75C
95-775	Transformer—power 25 cycle	G	9.25	54-141	Round speed nut	G	.01
112-25	Screw—1/4-20 x 1 1/8 H Washer head MS	H-I	.04	58-84	Plug—four prong	E-F-G-H-I	.05
112-273	Screw—No. 8 x 3/4 oval BH		.80C	73-8	Set screw—8/32 x 1/8 H.H.	G	.02
112-290	Screw—No. 8 x 1 oval P.H. ST		.02	80-198	Spring—wavemagnet mounting	E-F-G	.01
112-291	Screw—No. 8 x 1 oval P.H. ST (brass)		.02	114-147	Wavemagnet mounting screw	C	.02
114-48	Screw—6/32 x 1/4 H acorn head MS		.35C	147-106	Wavemagnet mounting spacer	C	.01
114-61	Screw—10/32 x 1 1/2 HW H. MS		.03	147-107	Wavemagnet mounting spacer	C	.01
114-85	Screw—10/32 x 1 1/8 HW H. MS		.65C	197-8	Rubber suction cup	D	.04
114-120	Screw—4-40 x 1/8 H.H. ST		.70C	S8237	Wavemagnet catch assembly	D	.02
114-129	Screw—1/4-20 x 3/4 H.H. ST		.04	S8655	Wavemagnet assy. complete (12S568Z-12S569Z)	H-I	3.50
114-132	Screw—No. 10 x 1 1/8 H.H. ST		.04	S8742	Wavemagnet assy. complete (12S550Z)	A	1.50
114-133	Screw—No. 10 x 1 1/4 H.H. ST		.02	S8885	Wavemagnet assy. complete	H-I	3.00
114-153	Screw—1/4-20 x 1 1/8 H.H. MS		.04	S8984	Wavemagnet assy. complete	C	1.50
125-31	Speaker mounting grommet		.03	S9042	Wavemagnet assy. complete (6S596)	D	3.50
126-239	Shield—tube	H-I	.10	S9047	Wavemagnet assy. complete	E	3.00
126-379	Shield—tube	C-E-F-H-I	.05	S9166	Wavemagnet assy. complete (6S597)	F	3.50
147-97	Spacer—speaker mounting	F	.02	S9174	Wavemagnet (FM) assy. complete (10H571)	E	3.50
149-17	Core and screw assembly	G	.15	S9175	Wavemagnet (FM) assy. complete (10H551)	G	2.25
159-25	Button—plug (bronze)	D	.03	S9178	Wavemagnet (Std.) assy. complete (10H551)	G	2.00
159-27	Button—plug (bronze)	E-F-G-H-I	.10				3.00

WAVEMAGNET PARTS

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
5A03	A	6A20	E	12A2	I
5A10	B	8A04	F	88500Z	J
6A16	C	10A3	G	88501Z	K
6A19	D	12A1	H	89000	L

S9179 Wavemagnet (Std.) assy. complete (10H571) G

3.25

PHONO & RECORDER PARTS

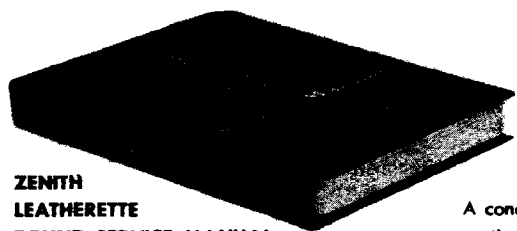
4-397	Microphone base	F	2.00
12-613	Pickup support bracket	J-K	.20
24-142	Cover—needle cup	E-F	.05
29-9	Turntable—9"	J	1.25
29-19	Turntable—9"	K	1.25
29-20	Turntable—10"	E-L	1.50
29-21	Turntable—10" (8S593)	F	2.50
29-22	Turntable—10" (8S594)	F	2.50
41-1	Needle cup	E-F	.05
46-382	Knob—brilliant—normal switch	F	.10
52-188	Plug & cable—phono motor	F	.20
52-208	3 prong receptacle & wire assy.	L	.25
54-31	Hex nut—10/32 x 3/8	F	.35C
54-143	Speed nut	E	.02
57-777	Plate—motor switch (8S593)	F	.05
57-856	Plate—switch	J-K	.05
57-872	Plate—motor switch	E-F	.03
58-85	Plug—3 prong	E	.05
58-86	Plug—2 prong	F	.10
58-94	Plug—4 prong	F	.10
58-95	Plug—3 prong	L	.10
69-162	Screw—10/32 x 1 1/4 RH MS (bronze)	F	.01
78-159	Socket—25Z6G	J-K	.10
78-161	Socket—balast tube	L	.10
78-271	Socket—35Z4GT	L	.10
78-272	Socket—12SA7GT	L	.10
78-358	Socket—phono	E	.10
78-359	Socket—phono light	E	.20
78-371	Socket—7B8	J-K	.15

83-655	Strip—pin jack terminal	L	.15
83-690	Strip—pin jack terminal	J-K	.05
85-171	Switch—phono	E	.25
85-191	Switch	J-K	.25
85-203	Switch—phono light	E	.55
85-259	Switch—recorder unit control	F	2.50
94-322	Bushing—insulating	J-K	.05
94-366	Bushing—to adapt 169-53 for 50 cycle	L	
98-1	Microphone	F	10.00
100-76	Ballast tube	L	.50
100-80	Light—phono compartment	E	.25
114-129	Screw—1/4-20 x 3/4 HWH MS	F	.04
141-85	Phono motor—60 cycle	J	6.00
141-86	Phono motor—60 cycle	K	6.00
142-30	Tone arm (complete)	J-K	7.50
142-32	Cartridge (142-30)	J-K	6.00
142-37	Crystal cartridge only (169-48)	E	6.00
142-38	Crystal cartridge only (169-50-51)	F	6.00
142-40	Recorder cutting head complete	F	10.00
142-42	Pickup cartridge	L	6.00
159-42	Plug button (bronze)	J-K	.01
169-48	Automatic recorder changer—60 cycle	E	40.00
169-50	Recorder unit—60 cycle (8S594)	F	75.00
169-51	Recorder unit—60 cycle (8S593)	F	45.00
169-53	Automatic record changer—60 cycle	L	40.00
202-203	Phono instruction book	J-K	.01
202-224	Phono instruction book	E	.03
202-233	Phono instruction book	L	.01
S8393	Phono switch arm & sleeve assy.	E	.10
S8546	Phono switch knob & set screw	E-F	.15
S8611	Oscillator coil assy. (yellow)	J-K-L	.30

THESE **ZENITH**

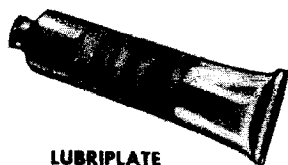
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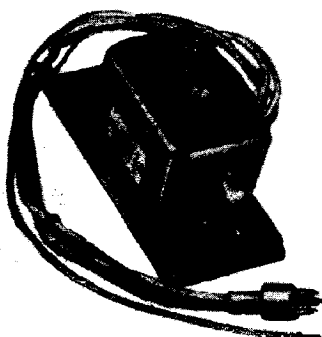
LUBRIPLATE

A conductive lubricant highly useful in correcting noisy contacts on switches, shafts or wherever moving contacts must also carry current. List Price \$.30 each.



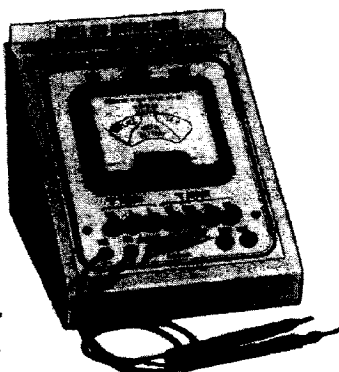
WAVETRAPP

An inductively coupled wavetrapp for use with loop antennas of all types. Two tuning ranges are available as follows—Type S8818, 500 k.c. to 1000 k.c.—Type S8325 800 k.c. to 1600 k.c. List Price \$1.40 each



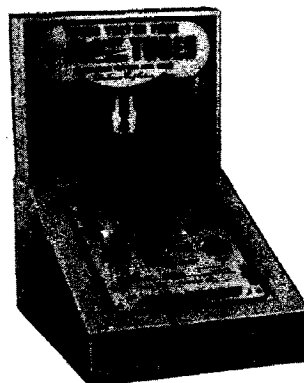
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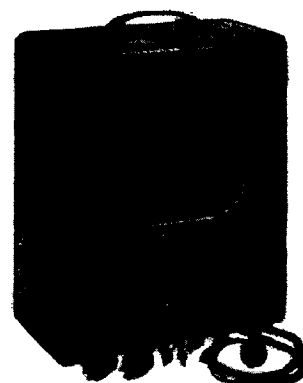
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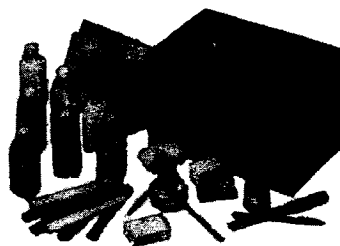
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UNIVERSAL PORTABLE TEST SPEAKER—Every service bench should be equipped with this instrument. Write for detailed literature. Price \$21.95 F. O. B. Chicago.

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ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS



AUTOMATIC RECORD CHANGER

USED IN 1941 MODELS 6S596-6S597-7S591-S9000

ALSO USED IN 1942 MODELS
5R686J - 7S681J - 7S682J - 7S685J



Figure 1

GENERAL

Index letters are alphabetically arranged on the illustrations to facilitate rapid locating of parts. Prefix letters are in illustrations as follows: A in photo of top of record changer, B & C in photo of the bottom, D in the photo of the Main cam gear assembly, and E in the photo of the Ratchet trip mechanism.

The capacity of the instrument is ten 12" or twelve 10" records.

To load, turn the two large lower blades AL (in top view) towards the center of the turn table AM, as shown. Then place the records over the turn table shaft, allowing them to rest on

the blades. To start operation, trip Reject button AF. To unload after playing, grasp under lower blades, lift slightly, and turn 180 degrees allowing them to fall into the notches provided and lift records from turn table.

Set middle button AG to 10" or 12" in accordance with size of records. All records must be of same size for each loading.

To change record any time when needle is on the record, merely trip Reject button AF.

To play records manually, turn changer blades back away from center of table, and set Manual-Automatic button AH for manual operation.

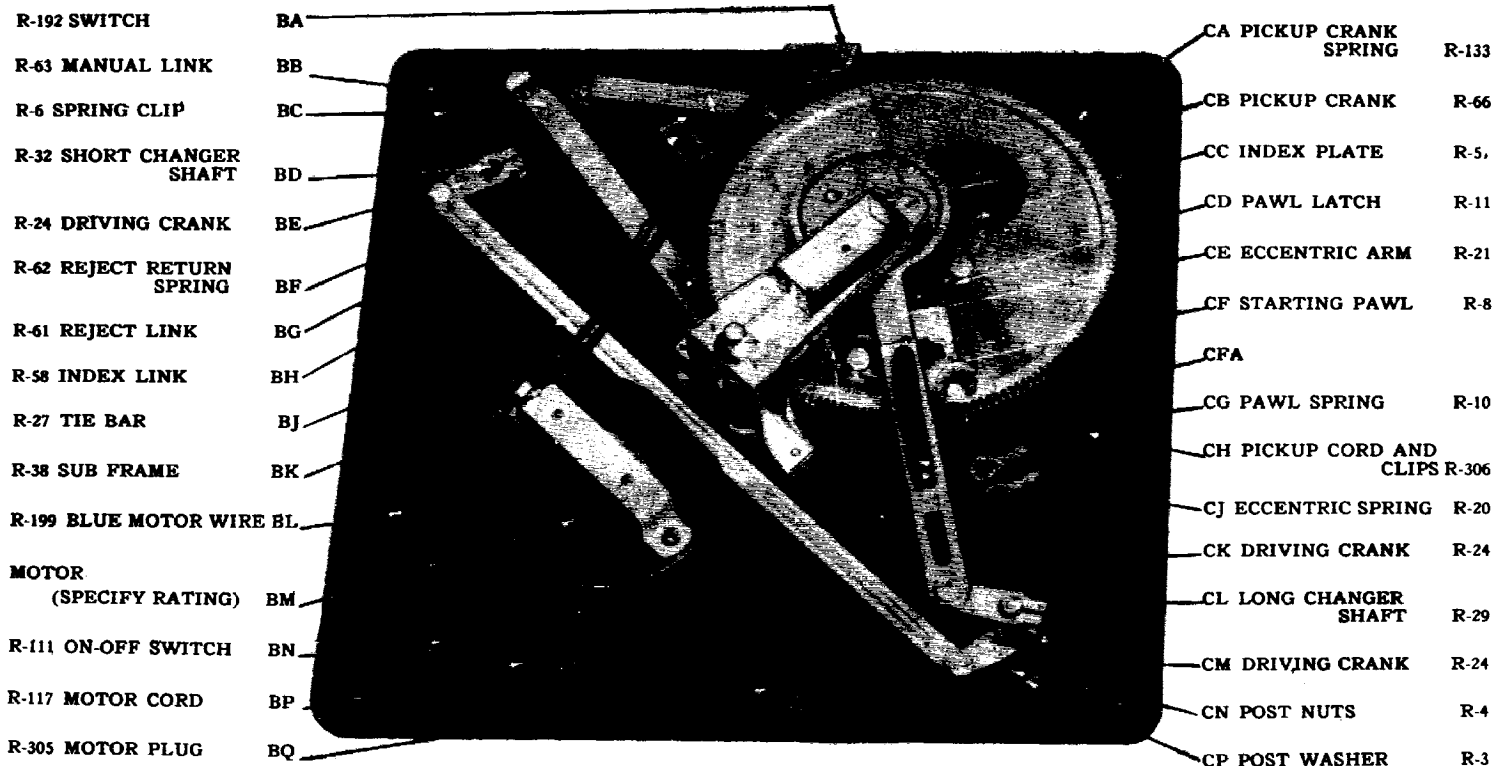


Figure 2

DESCRIPTION OF CHANGE CYCLE

Push Reject button AF which releases latch CD (through reject link BG) that holds pawl CF. When CF is in starting (or neutral) position it is under sub-frame BK and upon being released from latch CD engages with lugs on pinion DG which is rotating. This turns Main cam gear DQ sufficiently to engage first tooth shown at CFA and continues to rotate it for one complete revolution, which constitutes one cycle of the changer. Pinion DG is driven through the train from motor pulley AD through the idler pulley AA which drives on the rim of turn table AM keyed to turn table shaft DA.

The pickup arm movement is controlled laterally by the pickup crank CB, the end of which rides in the cam track DPA of cam gear DQ.

As the cam rim DPB slides on the head of lift pin raising pickup arm AN, the roller on pickup crank CB, rolling in track DPA it forces outward (carrying outward with it pickup arm AN) into the concentric portion of track DPA.

While the pickup arm is swung out in the raised position and the cam gear continues, the eccentric CE actuates the changer blades through eccentric arm CE, changer shafts CL and BD, and tie bar BU.

ADJUSTMENTS AND SYNCHRONIZING

1. To set changer blades, AU and AL, loosen screws on BE, CK, and CM, and place blade in position shown in top view with top blades about 1/16" from the edge of a 12" record and cam gear in neutral or playing position. The tie bar BF should then be pivoted over to within 1/6" of sub-frame BJ with driving crank pointing straight out to left (machine in position shown in bottom view). Then screw clamps BE, CK, and CM tight.

2. To adjust the lift of the pickup arm, should it hit under the lower blade AL or not clear over 10-12" records, merely tighten or loosen (by small degrees) the hex head screw on the under side of the pickup arm near the pivot end.

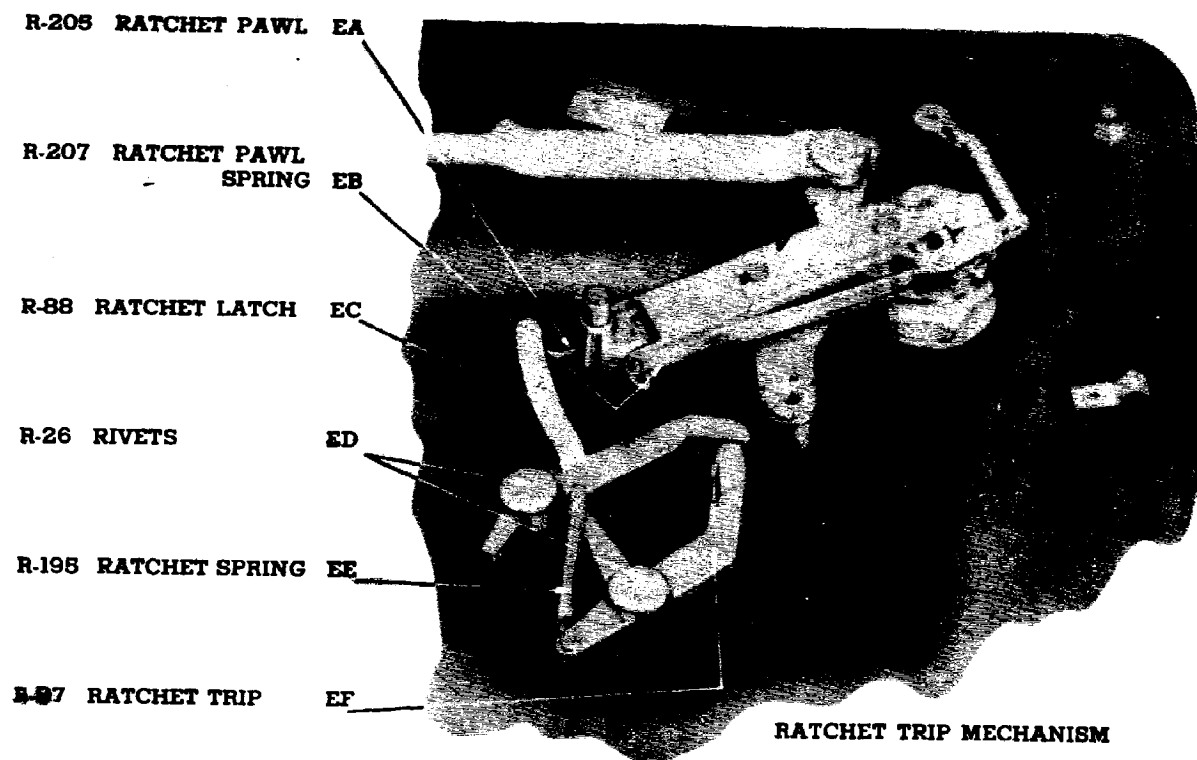


Figure 3

The lateral swing is controlled by crank CB riding in groove DPA.

To adjust the swing of pickup arm loosen the screw on the hub of CB, place a record (preferably a 12" one) on the turn table, trip reject button and turn turn table by hand until pickup arm AN lowers to record. Just before the needle touches, stop turning and push the arm sideways until the needle is about $3/32$ " from the edge of the record then continue to turn turn table to see if it lands that distance from the edge. Then tighten up the clamping screw on pickup crank CB.

The tripping adjustment or latch adjusting screw DM controls the point at which the mechanism picks up the pickup arm AN and removes it to allow next record to be dropped. Should records not finish playing it is merely necessary to unscrew this screw until it completes records properly, or should machine fail to trip at end of record, turn screw in so that it will trip sooner.

REPLACING MOTOR

Remove idler wheel AC and the three motor mounting screws AG. Be sure to save metal bushing spacers, which slip inside of rubber grommets. These prevent rubber from being squeezed out of shape which would prevent proper cushioning of motor. Place motor of proper rating in same position as present motor and replace spacers, washers and screws as before.

OILING

Normally, this mechanism should require no additional lubrication. However, a drop of any good machine oil on all friction surfaces, and to the oil wicks on both ends of the motor shaft, may be applied about once a year, or more often if used extensively.

RATCHET TRIP MODELS

No. 320 This model is equipped with a ratchet mechanism that serves the purpose of tripping the machine for the next record when records occur

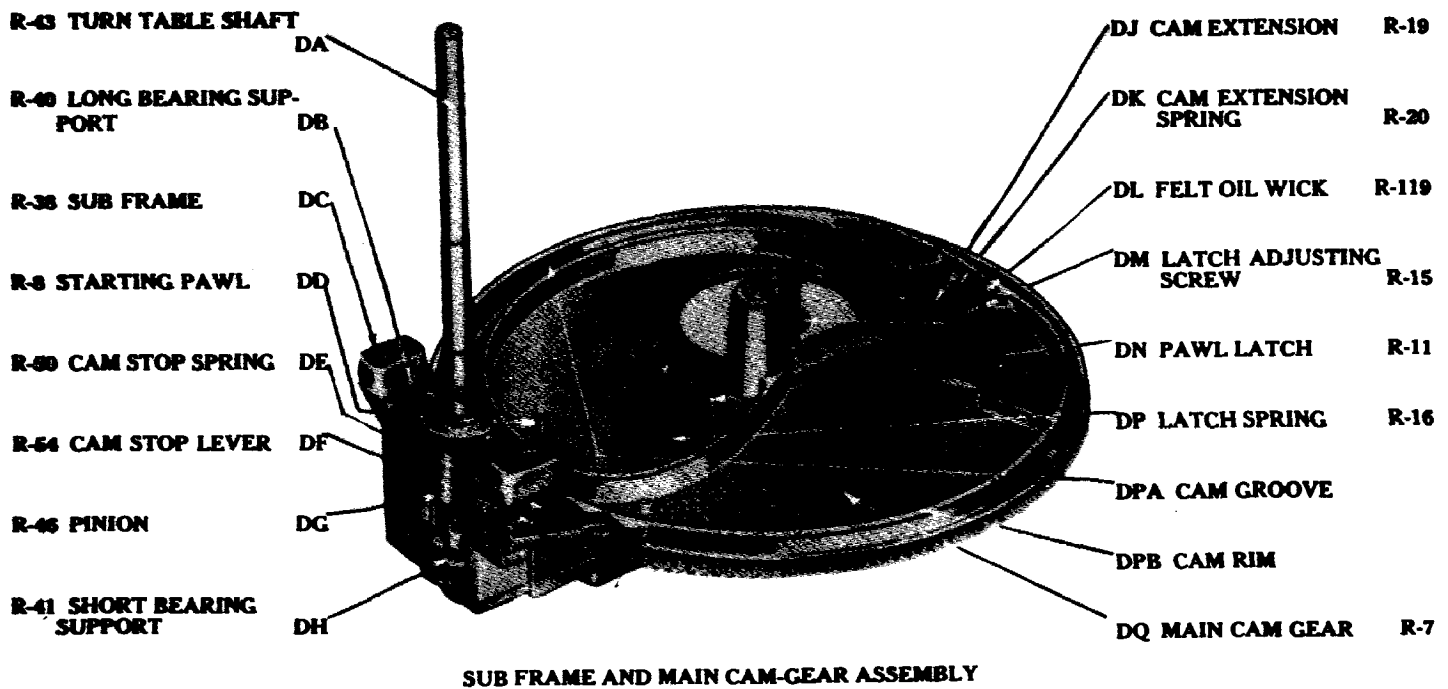


Figure 4

that end in an eccentric groove too far from the center to allow the positive stop to trip.

The Pickup arm crank CB as it swings inward with the pickup arm during the playing of a record drags the Ratchet Pawl EA across the serrations in the arm of Ratchet latch EC. The Pawl EA, which pivots about its center, tends to maintain a position pointing straight out from the end of the crank CB through the action of Ratchet Pawl Spring EB. Thus, a reversal of the direction of travel of the crank caused by the pickup arm following the eccentric groove at the end of a record, will cause the pawl EA to catch in the

serrations in latch EC pivoting it about one of the rivets ED allowing the ratchet trip EF to pivot about the other Rivet ED through the spring action of Ratchet spring EE. The vertical protrusion on Ratchet Trip EF then trips the latch DN which starts the cycle for dropping the next record.

No. 221 & No. 321 Same as 220 and 320 except that the power supply for these models is 50 cycle 110V.

No. 223 & No. 323 Same as 220 and 320 except that power supply is 25 cycle 110V.

ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS



AUTOMATIC RECORD CHANGER 169-42

USED IN 1941 MODELS 7S582, 7S584, 8S587, 8S588, 10S589, 10S590, 12S595

12A578 Push Button "R" AJ

12A579 Push Button "M" AB

12A580 Push Button "12" AC

12A581 Push Button "10" AI

12A043 Changer Post AF

Recorder mounting hole AJ

11A126 Pickup brkt assembly ... AG

Needle landing adj. hole AH

Motor oiling holes AI

..... AJ

..... AK

..... AL

(3) Sub-plate mtg. screws AM

12A003 Lifter rod nut AP

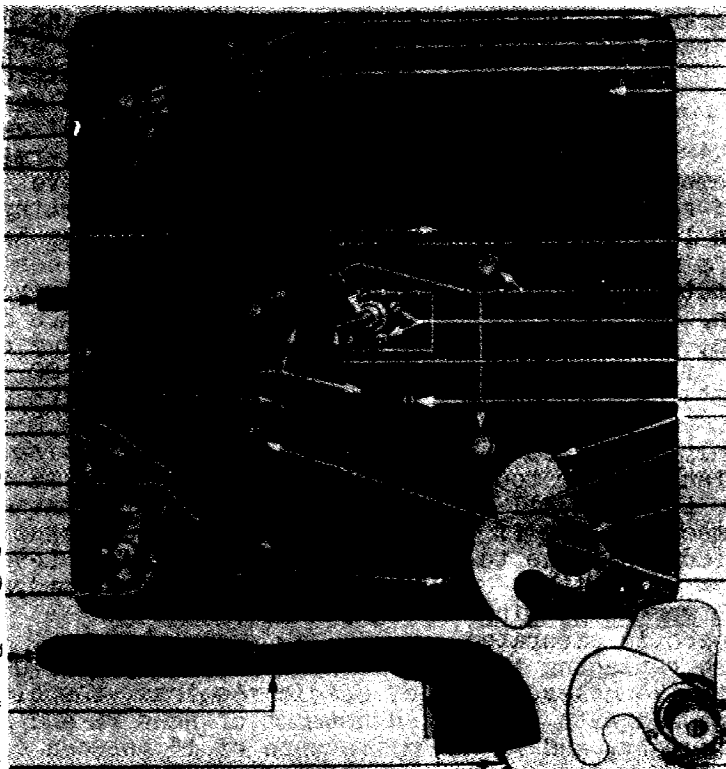
11A733 Swivel shaft & head asm. AO

12A046 Swivel post AP

Give (Needle screw AD

Model) Pickup arm AF

Number (Pickup cord AS



12A093 Changer post washer, 12A093
11A120 Changer shaft assem - front, 11A120
11A121 Changer shaft assem - rear, 11A121
Changer shaft pin
Plug button, 50A5100

Turntable spindle & hsg. assem., 17A025

(3) Mounting screws, 26A072

(4) Spindle housing mtg. screws, 26A039

TT spindle & cone assem., 17A025

Motor shipping screw

Shelf plate) Changer plate assem.

Selector plate) 2 req'd 11A117

Changer cap, 12A044

Cam gear screw

Changer plate spring, 12A081

Changer plate washer, 12A061

Pointer

PHOTO A-B. Top View.

For the Service Man

This Manual is designed for the use of the service mechanic only, and is intended to facilitate as far as possible his work of caring for the changer mechanism, whether he is called in for the purpose of assuring its continued satisfactory operation, or to remedy some difficulty which has appeared. For his convenience, the "Operating Instructions", supplied to user by the factory, may be summarized as follows:

The Changer plays twelve 10" or ten 12" records. . . . To reload, revolve the two posts slightly, grasping them underneath the Shelf Plates. Turn them back after the played records are removed; they will fall and lock when in proper position. Then place the new records on the Shelf Plates and push "R" button to put Changer in operation. . . . To play the other size records, turn the knob at top of each post until proper figure is opposite pointer, and press the "10" or "12" button, to agree with pointer setting. . . . To reject a record (or to start a change cycle as for testing purposes), simply press the "R" (Release or Reject) button, at any time while needle is upon a record. . . . To play manually, turn plates out of the way as for reloading, and press "M" button.

(What are here called the "plates" of the Changer are frequently known among mechanics as "blades" — a name best avoided when talking with users because it may convey to some an exaggerated impression of danger in the movement of these parts.)

Illustrations

The three photos illustrate all vital parts of the Changer. Letters are used alphabetically, to refer to points on the photos; thus, Motor Oiling Holes "AI" are found by simply glancing down Column A (left side of photo A-B) to letters AI. Reference letters must NOT be used for ordering parts: Order only by the factory numbers. Where no number is given, part cannot be separately supplied; order the Assembly containing it.

Oiling (reprinted from Operating Instructions)

The Changer should be lubricated once a year with about a dozen drops of a good light machine oil at each of the following 6 points. All points can be reached from above, through holes in the mounting plate as follows:

- No. 1) Three oil holes in motor gear housing. Reach all three
- No. 2) through two holes AI.
- No. 3)

- No. 4 Through hole marked AJ, drop the oil upon flat surface of cam. It will distribute itself to proper points.
- No. 5 Through hole marked AK, see felt wick, and drop the oil directly upon it.
- No. 6 Through hole marked AL, see felt wick, and drop the oil directly upon it.

To Check Oiling

If squeaks are heard, compare the squeak with and without a load of records; any stack of records in motion is likely to squeak a little against a pin through their center. This can be corrected by rubbing a little wax on record pin. See that all five wicks are in position, including three 1/4" round wicks in frame of motor, one washer-shaped wick ("No. 5") on Lift DK, and one ("No. 6") on Cam Lever DI. See that each wick is thoroughly saturated (as it may not be if insufficient oil or too heavy oil has been used.) Lift out all three motor wicks, with tweezers; see if old oil has become gummy (commonly due to use of low-grade oil or low viscosity oil). If necessary, clean gummed-up wicks with kerosene. See that each is saturated with good oil; then, before replacing them, drop a little good oil into the holes. The gear box of the Motor is packed with a semi-fluid grease at the factory, and it should never be necessary to take it apart for lubrication purposes.

General Description of the Change Cycle

An automatic record player for records of two sizes has three principal duties to perform. These duties are here performed by three mechanisms, inter-connected and built together, but largely separate in their operation.

(1) The record-changing mechanism--brought into operation originally by the contact of Lifter Cam DH with Pawl DJ--is the simplest of the three. It is driven by the cam groove (visible on under side in photo E-F) of Cam Gear DC. As Cam Lever DI is forced, by the Pawl, out underneath Lift DK (which is shown revolved to the right for visibility) the Lift rises and forces roller DE into the under groove in Cam Gear. The motion is transferred to Rear Changer Shaft (at ED) through Cam Connecting Rod DB (EH), thence through Changer Connecting Rod FG to Front Changer Shaft BB.

(2) The pickup-operating mechanism--likewise brought into operation originally by the cam-and-pawl action upon Cam Lever DI--is driven in part by the groove in upper (visible) side of Cam Gear DC. As cam Lever is forced out, at the beginning of the change cycle, against Link FO, it causes the Link to push upward upon Pickup

Plunger CA, thus lifting needle from record. The same pressure upon Link FO works, through Guide Arm CJ, to force Stud down into the groove on the Cam Gear. This rotates the pickup arm, while Pickup Plunger CA holds it up off of record. It is rotated first out beyond the turntable until Selector Plates BK have dropped the next record, then rotated back to proper position to start playing.

(3) The mechanism for bringing needle in to correct starting position must operate accurately for both 10" and 12" records. Partly due to this requirement, the starting position is not determined by the cam action. The upper groove on Cam Gear is designed so that it, acting alone, would carry the needle farther back toward record pin than would ever be desirable as a starting adjustment. Travel of pickup arm toward Record Pin is then stopped, at proper point for lowering onto the record, by action of Lever Hub CQ. The stopping takes place as lug CQ (upon the Lever Hub) strikes the shoulder on Rod FP. This enables the entire mechanism rotated by cam action on Guide Arm CJ to travel on past the proper point of rotation for record-starting, while the pickup arm itself, which is held rigid to Lever Hub CQ, is accurately stopped at proper record-starting point.

Correct adjustment for starting position of needle requires, therefore, only correct adjustment of Rods FL and FP; the radial difference of 1" between correct starting position for 10" and 12" records is taken care of by exact dimensioning, at the factory, of surfaces at right end of Rod FL which stop against the "10" and "12" key stems. Due to this, when Adjusting Cam at FM is turned (as directed below under Adjustment A) the starting position of needle is simultaneously altered for both 10" and 12" records.

Adjustments

There are two adjustments that can be made, FROM ABOVE: CHANGER NEED NOT BE REMOVED FROM CABINET. All adjustments are correctly made at the factory, and ordinarily need never be altered. Should it become necessary to readjust, due to accident or tampering, proceed as follows:

A. ADJUSTING LANDING POSITION OF NEEDLE ON THE RECORD. If needle comes down on the sound track, playing of records will not start at their beginning. Insert screw driver through hole AH. Turn Screw head on Needle Landing Adjusting Cam FM very slightly counter-clockwise. If needle comes down too close to outer edge of record, or out beyond edge of record, turn Adjusting Cam clockwise.

The factory adjustment of needle landing is 1/8" in from outer edge of record.

Compare also Paragraph 12 below.

B. ADJUSTING HEIGHT TO WHICH PICKUP ARM RISES. The arm should rise, during the

12A568 Pickup plunger CA
 12A537 Lifter guide CB
 26A020 Hinge spring screw CC
 21A004 Hinge spring CD

11A718 Key control assembly CE
 12A097 Pickup plunger spring CF
 12A077 Manual key rod CG
 12A565 Rejection rod CH
 12A096 Pickup plunger sleeve CI
 Swivel guide arm CJ
 11A714 Swivel tube & trunnion assm. CK
 12A072 Trunnion shoulder screw (2) .. CL
 Clutch release roller CM
 12A573 Guide arm spring CN
 12A089 Swivel spreader spring CO
 12A709 Spring CP
 11A726 Clutch assembly CQ
 11A724 Clutch Lever & sleeve assm. CR
 12A593 Clutch lever & sleeve spg. .. CS
 12A547 Clutch spring retainer CT

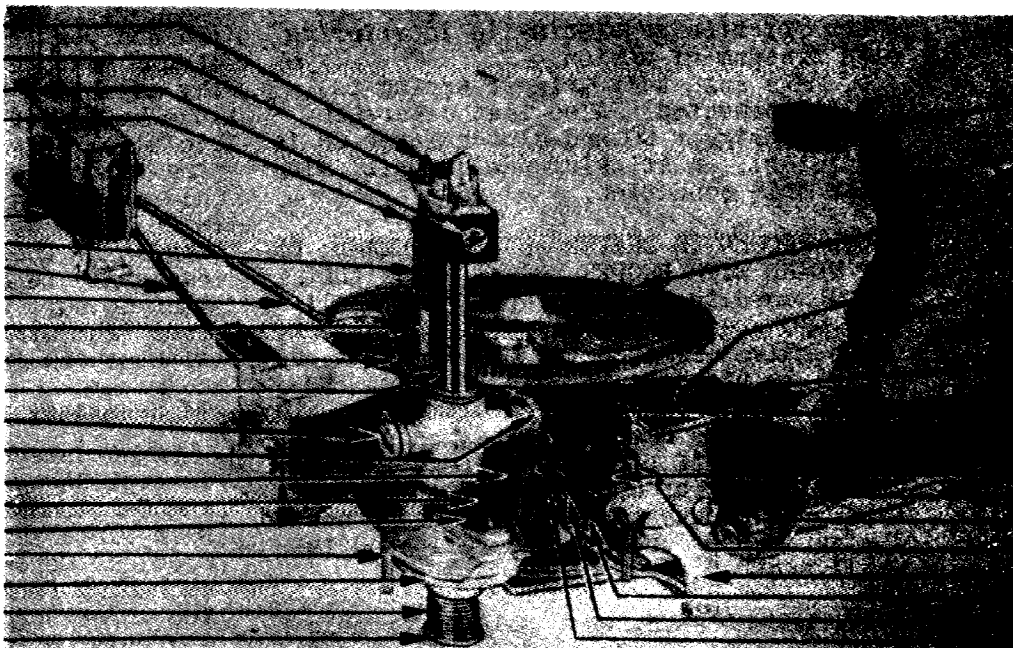


PHOTO C-D. View of Sub-Plate Assembly, Together with Certain Other Assemblies.

(Give Model No. as at EQ) Motor EA
 (Give Model No.) Main mtg. plate EB

M-21 plug & #7002 shell EC
 11A736 Changer shaft collar & screw assm. ED
 Spreader and hub assembly EE
 12A045 Spring roller EF
 12A088 Changer spreader spring EG
 11A114 Cam conn. rod assembly EH
 12A087 Return spring EI
 12A525 Return spring catch EJ
 12A570 Clutch release lever pin EK
 11A723 Clutch release assembly EL
 26A028 Connecting rod nut EM
 26A020 Clutch retainer screw EN
 Clutch release adjusting screw EO
 12A083 cam conn. rod lift spring EP
 Changer model number EQ

Serial number ER
 11B717 Adjusting rod assembly ES
 12A543 Lower swivel spreader ET
 12A574 Pickup leader spring EU
 12A542 Upper swivel spreader EV
 12A053 Post nut (3 req'd) EW
 1228 lockwasher (3 req'd) EX

(Give Model No.) Pickup cartridge EY

26A020 Screw EZ

21A006 Lift plate EAZ

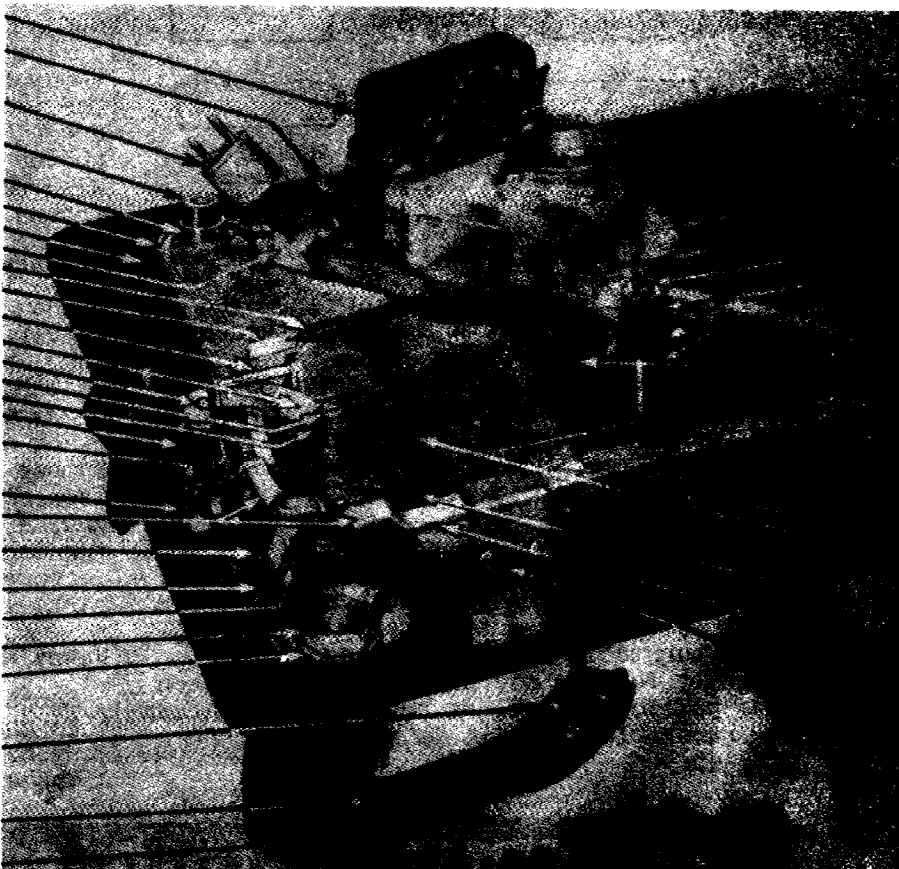


PHOTO E-F. Bottom View.



DA Spreader hub assem. lower
 DB Cam connecting rod
 DC Cam gear
 DD Cam lever spring, 12A572
 DE Roller
 DF Ground lead, 20A262
 DG Sub-plate (Sub-plate, levers & gear assem. 11C729)
 DH Lifter cam (cam gear assem. 11A715)
 DI Cam lever
 DJ Cam lever pawl
 DK Cam conn. rod lift
 DL Shoulder screw, 12A007
 LM Pawl spring, 12A084
 DN Clutch release brkt, 12A521
 DO Release trigger
 DP Clutch screw, 26A037
 DQ Clutch lever spring, 12A584

Assemblies.

change cycle, high enough so that it clears by only 1/4" the record above it, next to be played. (Be careful, before deciding that readjustment is necessary, to see that the record at bottom of stack is not a warped one.) To make this adjustment, loosen Lock Nut "AN" and turn Pickup Sleeve "CI" to lengthen or shorten Pickup Plunger "CA". However, if Pickup is made to rise too close to bottom record, Stud on Guide Arm CJ may never clear the groove in Cam Gear. In making this adjustment, therefore, care must be taken to see that Pickup Arm does not keep moving back and forth continuously (due to Stud remaining in engagement with groove). When correct adjustment is found, tighten Lock Nut securely.

Replacing Motor

The service mechanic may be called upon to adapt the Changer to a different power supply. For this purpose, or in case of any serious fault within Motor, remove entire Motor EA from the Changer, and replace it with a suitable new Motor. See that Motor Frame is well grounded by wire, DF, (in photo C-D) soldered to lug on Sub-Plate DG. (In ordering a replacement Motor, specify the power supply and give Model Number at EQ; also make and model number of phono-radio or other type of installation.)

Trouble Shooting

Cases of failure to operate satisfactorily will generally be found due either to neglect of proper lubrication, or to tampering with the mechanism after it leaves the factory, or to injuries accidentally sustained as by external vibration or by impact of some heavy object. In addition, there is always the possibility that any kind of spring

may "go dead" (cease to operate without any visible breakage) even though the utmost factory precautions are taken against it--or that set screws may work loose due to some external vibration. For tightening set screws, a No. 8 size Allen (hexagon) wrench is required: Be sure that set screws are properly seated on the holes or flat provided. Damage from tampering is likely to take the form of bent parts; never bend any part during examination.

Among the principal trouble symptoms to which such causes may give rise, are the following:

1. MECHANISM IS SLOW IN STARTING, OR MOTOR GETS HOT. May be caused by:

a. Failure to lubricate properly. Oil thoroughly. See oiling instructions.

b. Check voltage. Line voltage may be abnormally low or high.

c. Motor windings damaged. If windings are found damaged, remove motor and return it to factory for repair or replacement.



FA Motor mtg. plate, 17B007
 FB Coupling assembly, 11A789
 FC Motor mtg. screw (3 req'd) 26A038
 FD Motor mtg. grommets (6 req'd) 25A005
 FE Motor mtg. stud (3 req'd) 17A077
 FF Tee nut
 FG Changer conn. rod assem. 11A122
 FH Manual & Rej. rod spring 12A090
 FI Idler gear, 12A560
 FJ Changer lever & hub assem. front
 FK Adjusting Rod spring, 12A087
 FL Adjusting rod extension
 FM Needle landing adj. cam
 FN Clutch lever pullback spring, 12A089
 FO Link (swivel guide arm assem. 11A730)
 FP Adjusting rod
 FQ Adjusting rod bracket 12A036

2. MOTOR FAILS TO RUN, EVEN WHEN IT IS ENTIRELY DISCONNECTED FROM OTHER WIRING AND PROPER VOLTAGE IS APPLIED DIRECTLY TO THE TWO ENDS OF ITS WINDINGS. This indicates trouble in Motor windings. Unless the damage is easily seen and repaired, replace motor, as above described.

3. MOTOR IS SLOW IN STARTING.

a. Check oiling, as directed above. It may not have been properly done; old oil may have become gummy.

b. Changer may have been in a very cold place, and may not yet have reached room temperature. Give it a fair chance to get warmed up before concluding that Motor is defective, and proceeding as in Paragraph 2 above.

4. SQUEAKS OR OTHER NOISES, DURING PLAYING OF RECORDS.

Check oiling, as directed above. (If squeaks are heard, they will usually be found to come from the records--not from the mechanism.)

See "To Check Oiling".

5. CHANGER IS NOISY WHEN IN CYCLE.

Check oiling. Also see if any part has become loose or bent and is rubbing against a moving part such as the swivel Guide Arm, CJ against the Cam Gear, DC.

6. MOTION OF PICKUP TOWARD RECORD PIN WILL NOT TRIP CHANGER MECHANISM.

See that the Manual button is not pressed down. See that shipping bolts are removed.

If trigger is being properly actuated, probably Cam Lever "DI" is binding against Sub-Plate "DG". Look for dirt or obstructions; See that Pawl "DJ" and trigger "DO" are working freely on their rivets. If the Lever engages the Pawl so that Lift "DK" forces roller "DE" up into the under groove on Cam Gear, and if set screws are tight, the change cycle must operate as Cam Gear turns.

7. PRESSING "R" BUTTON DOESN'T TRIP CHANGER MECHANISM.

a. Due to shipping bolts not being removed, causing a bind on manual rod, or manual button is down.

b. Check Key Control Unit "CE." See whether there is an obstruction or a bent part which prevents "R" button from going clear down to the end of its travel.

c. Examine Reject Rod "CH." If it does not trip, even when properly revolved by complete depressing of "R" button, the rod has probably been bent, and must be restored in same way. Grasp the two ends and twist it slightly.

d. If Trigger "DO" is being properly actuated but without starting a change cycle, see directions above, Paragraph 6.

8. PRESSING "M" BUTTON FAILS TO PUT CHANGER MECHANISM OUT OF ACTION SO AS TO ENABLE MANUAL OPERATION.

a. First see that "M" button goes clear down; then follow its action through Manual Rod "CG".

b. Probably caused by the manual rod being bent and not projecting up through sub-plate DG and stopping cam lever DI when it is released from the trigger.

9. TRIPS TOO SOON OR BEFORE RECORD HAS FINISHED PLAYING. This can be caused by too little clearance between the trigger DO and the clutch lever assembly CR. To get more clearance on this adjustment, turn the adjusting screw DP in a clock-wise direction a half-turn or whatever is necessary to make tone arm trip on 1/4" motion.

10. TONE ARM FALLS OFF RECORD. Needle sits down too close to edge of records, not adjusted in far enough, or needle landing adjusting cam FM is reversed. Should contact lug on adjusting rod extension FL on the long side of cam. Check pickup leader spring EU. It may have become loose; more tension can be given it by bending down lug.

11. TONE ARM SITS DOWN TOO FAR IN. Due to adjusting rod FP binding and not measuring properly. If found to be bent, should be straightened to correct shape so that it will operate freely.

12. NEEDLE LANDS PROPERLY ON RECORD BUT FAILS TO MOVE OVER INTO RECORD GROOVE.

Pickup arm is normally impelled toward center of records by Lead Spring EU. Should a slight increase in its tension be found necessary, this can be easily obtained by slightly bending the lug, to which it is attached, down against Main Plate.

13. "WOW" IN RECORD REPRODUCTION.

a. Record is warped or otherwise defective or instrument is not being operated at normal room temperature, 70°F.

b. Motor mounting plate FA being bent will cause "wow". Straighten it if possible or replace with new plate if too badly bent to warrant straightening. This is only found where rough handling is evident.

c. Motor shaft out of alignment with the turntable shaft (also due to rough handling). To correct, move the motor EA on its mounting until motor shaft is parallel to the turntable shaft and the Universal coupling FB is exactly at right angles to motor and turntable shafts, then tighten motor mounting screws securely.

14. LAST RECORD DROPS ON ONE SIDE ONLY.

a. This suggests a Changer Post bent out of perpendicular to Main Plate. If Post must be straightened, be careful not to bend other parts.

b. One selector set for 10" while playing 12" records.

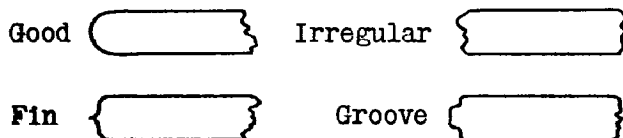
15. CHANGER CONTINUES CYCLING.

a. Probably due to failure of Lift DK to be drawn back out of engagement with Cam Gear CD. Check the various rivets at which motion occurs, to find the point where friction or binding is interfering with freedom of motion.

b. Make sure that trigger spring is not disconnected. Also that clearance between trigger DO and clutch lever CR is sufficient. A sticking pawl DJ will also cause this condition.

16. RECORD IS DRIVEN, BUT NOT HEARD, OR NOT HEARD WITH PROPER VOLUME. See that pickup cord is plugged in. Check amplifier and speaker and connections to them, thoroughly. If then trouble is still suspected in pickup cartridge EY, test its output with a vacuum-tube voltmeter. Playing an average record, output should test 1 to 2.5 volts if pickup cartridge is of crystal type, or 0.5 volts if of magnetic type. If pickup cartridge is found not to deliver proper output, remove it and install another.

17. RECORD JAMS. Most slicing trouble (record jams) is due to off-size or defective records, and is no fault of the record changer or record changer adjustments. Properly manufactured records have a uniform semi-circular edge and can be successfully handled by record changers, even though the records vary considerably in thickness.



Cross section of record edge showing a perfect record and three imperfect edges.

Records that prove troublesome in the selecting or slicing process can usually be corrected by using a piece of fine sand paper or emory cloth to touch up the edge.

18. AUDIO HOWL. Record changer not floating on cushions or spring mounting. See that shipping bolts are removed. If unit still does not float, loosen the nuts or mounting assembly allowing unit to rise and float.

19. TURNTABLE IS TIGHT. This turntable is assembled to the turntable shaft with a taper lock fit in the center. To remove, grasp turntable with both hands, turn slightly forward and backward, at the same time pulling upward, or run motor and grasp the turntable while it is revolving, and pull up.

20. THUMP HEARD IN RECORD REPRODUCTION.

Probably caused by the motion of the friction clutch CR when it is momentarily released by the motion of the release lever, EL, which in turn is actuated by the 4 raised portions on the cam gear, DC. If thump is objectionable, it can be lessened by adjusting the clutch lever, EL, so that the motion of the clutch lever is lessened to allow only a slight amount of motion of the clutch assembly, CR. Also if the clutch spring CS, is too strong, replace with a new spring or cut one-quarter of the length of the old spring or whatever is necessary to assure satisfactory operation. Also be sure that clutch assembly parts are free from dirt and burrs and work freely without binding.

If Necessary to Disassemble the Changer

First detach the entire changer mechanism (except Changer Connecting Rod Assembly FG and Cam Connecting Rod Assembly EH) from Main Plate EB. To do this, first take out Shoulder Screw DL, to free the rest of the mechanism from Assembly EH. Then remove the three screws AM, which hold Sub-plate Assembly DG to Main Plate EB. Also remove Screw BM to Main Plate EB which holds Cam Gear DC. Pull off the four Key Control Buttons. Remove, then the two screws that hold Key Control Unit CE to Main Plate. Now remove clutch Release Bracket DN, and Adjusting Rod Bracket FQ — this means taking out five screws. Remove Flat Spring FH, by taking out one screw. Rods CG and CH can then, with due care, be extracted without bending. Free the Cam Connecting Rod Assembly EH, by loosening set screw in collar ED holding Spreader Hub EE to rear Changer Shaft. In reassembling, reverse the procedure, taking care to get all springs properly connected as shown in the photos, without stretching any of them, also readjust if necessary any assemblies thrown out of adjustment by this operation.

Replacement Parts

When spare parts of sub-assemblies are required, order them direct from the factory, by factory number and name as given on photos — not by reference letters. Where no number is given, order by full and exact description. Always specify Serial Number as seen at ER, and Model Number as seen at EQ. Parts shown in above photographs, but not given factory numbers, are furnished only in assemblies as shown with factory numbers. Refer to replacement parts list.

Handy Reference

Shops having frequent occasion to service this changer can obtain on request a second copy of this Manual, for posting, both sides visible, above bench.

ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS

SERVICE MANUAL

Built for
FORD MOTOR CO.
Detroit, Mich.



Model
6MF593

Made by **ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.**

Electrical Specifications

SENSITIVITY - 9 microvolts at one watt output.

POWER OUTPUT - 3 watts measured at the voice coil.

TUNING RANGE 540 - 1600 K.C.

SPEAKER - Full size electro dynamic. I.F. 455 K.C.

TUBE COMPLEMENT - 7A7 R.F.; 7B8 Oscillator and Modulator; 7A7 I.F.; 7B6 Second Detector and A.V.C.; 7B5 Pentode power output; 6X5GT Rectifier.

CURRENT CONSUMPTION - 6 amp.

MR. WARRANTY SERVICE MAN:

The following information is furnished you so you may restore original performance to the Ford receiver.

The alignment procedure is new so study it carefully before trying to make any adjustments.

IMPORTANT:

The Warranty tag must be filled in by the dealer and accompany each receiver when free warranty service is expected by the customer or dealer. Otherwise you are not authorized to do warranty service work.

SOCKET VOLTAGES:

Fig. 1 shows approximate voltages at the socket terminals.

SOCKET VOLTAGES AS MEASURED WITH 1000 OHM PER VOLT METER TO CHASSIS, VOLUME CONTROL AT MAXIMUM WITH NO SIGNAL. BATTERY 6.3 VOLTS.

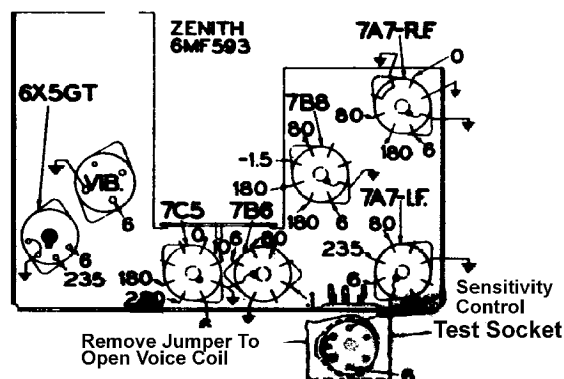


Fig. 1

ALIGNMENT:

The alignment of a receiver is one of the most important functions that a service man performs, and the instructions must be carefully followed.

CAUTION:

Care should be taken while making all adjustments on the receiver to have the volume control turned full on. The intensity of the signal should be reduced only at the signal generator.

The signal for the entire alignment procedure, both I.F. and R.F. is fed through a special Zenith dummy which can be purchased from your Zenith distributor, Part NO. S9187. The capacities in the Zenith dummy antenna as shown in Fig. 2 are identical with the Ford antenna.

NOTE:

This receiver is equipped with an adjustable sensitivity control located on the bottom of the chassis as shown in Fig. 1. The control is set at the factory to a position which gives sensitivity of 9 microvolts at 1 watt output. It is found advisable to hold the receiver at this level as any higher sensitivity may result in excessive background noise and unless laboratory equipment is available for measuring sensitivity it is not advisable to change the setting.

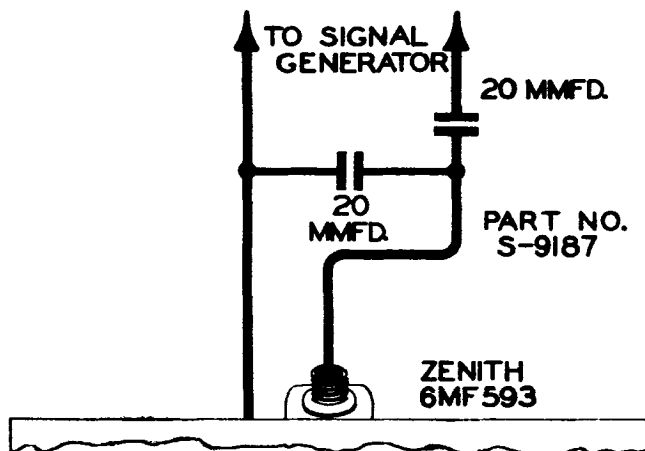


Fig. 2

I.F. —

1. The tuning control is rotated until the condenser plates are fully meshed. (540 K.C.)

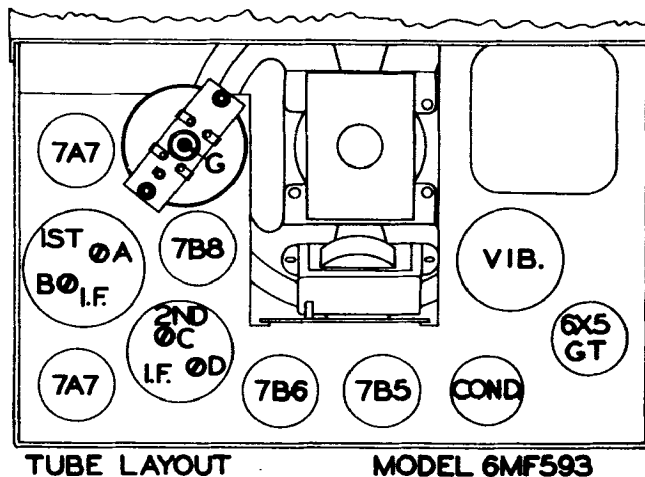


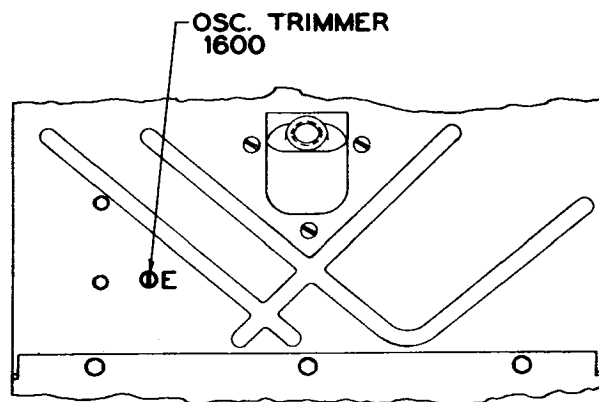
Fig. 3

2. The signal generator is set at 455 K.C. and fed through the special Zenith dummy to the receiver.
3. The adjustment screws A, B, C and D (see Fig. 3) are then adjusted in order for maximum response.

R.F. —

1. The tuning control is rotated until the condenser plates are out of mesh. (1600 K.C.)
2. The signal generator is set to 1600 K.C.
3. Adjust the 1600 K.C. oscillator trimmer E (see Fig. 4) for maximum response
4. Set signal generator to 1400 K.C. and rotate the tuning control until a signal is heard.
5. Adjust the 1400 antenna trimmer F (see Fig. 5) for maximum response.

6. Set the signal generator to 600 K.C. and rotate the tuning control until the signal is heard.



TRIMMER LAYOUT

MODEL 6MF593

Fig. 4

7. The condenser gang is then rocked slightly while adjusting the 600 K.C. core G (see Fig. 3)

8. Repeat operations 4 and 5.

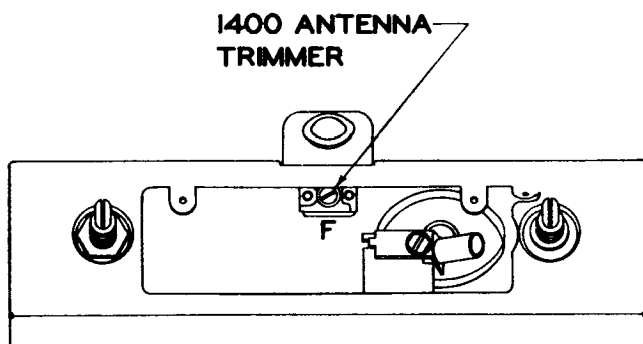
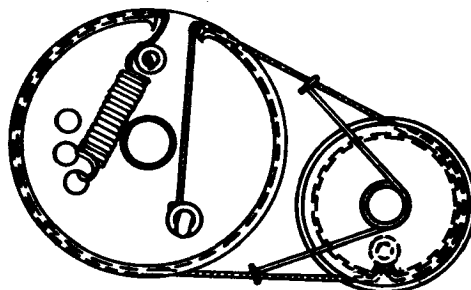


Fig. 5

The stringing of the cord is very important. Figure 6 shows the proper way to string the dial cord.

GANG MESHED, DIAL AT 540 K.C.



6MF593

Fig. 6

The Zenith Radio Corporation furnishes the antenna for 1941 Ford and Mercury only.

Parts for this antenna will be available at your Zenith distributor.

The jumper shown on the test socket in Fig. 1 is provided so that an output meter may be connected to the voice coil side of the output transformer.

If you have the type of output meter which is usually connected to the plate of the output tube, it may be adapted for this type of connection by following the instructions shown in Fig. 7.

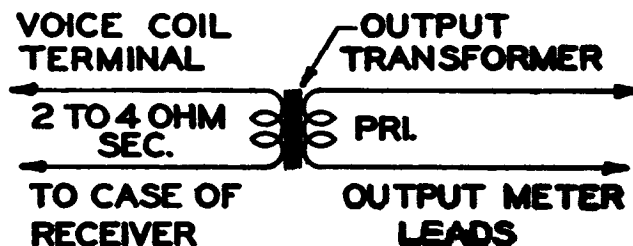
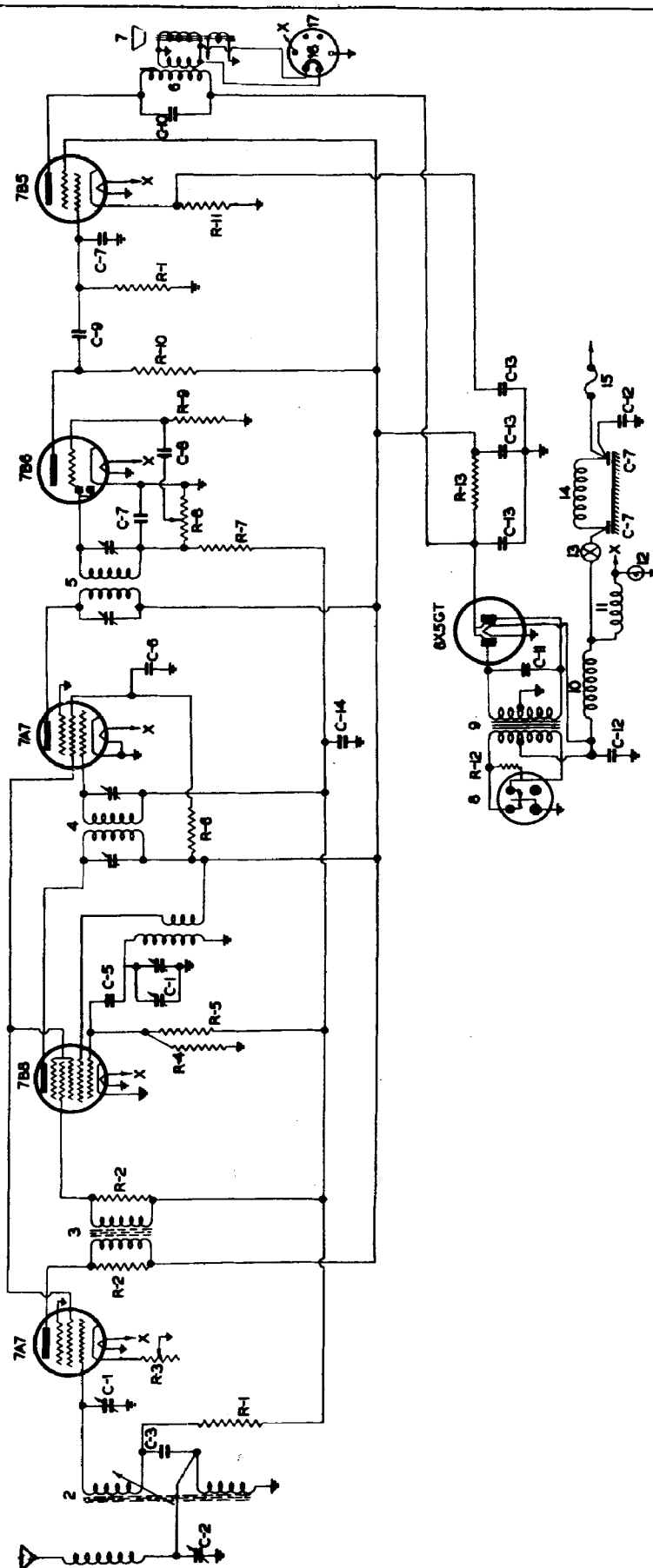


FIG. 7



PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
1	ANT. MOTOR NOISE CHoke	1	ANT. MOTOR NOISE CHoke
2	ANT. COIL	2	ANT. COIL
3	ANT. COIL	3	ANT. COIL
4	ANT. COIL	4	ANT. COIL
5	ANT. COIL	5	ANT. COIL
6	ANT. COIL	6	ANT. COIL
7	ANT. COIL	7	ANT. COIL
8	ANT. COIL	8	ANT. COIL
9	ANT. COIL	9	ANT. COIL
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15	ANT. COIL	15	ANT. COIL
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81	ANT. COIL	81	ANT. COIL
82	ANT. COIL	82	ANT. COIL
83	ANT. COIL	83	ANT. COIL
84	ANT. COIL	84	ANT. COIL
85	ANT. COIL	85	ANT. COIL
86	ANT. COIL	86	ANT. COIL
87	ANT. COIL	87	ANT. COIL
88	ANT. COIL	88	ANT. COIL
89	ANT. COIL	89	ANT. COIL
90	ANT. COIL	90	ANT. COIL
91	ANT. COIL	91	ANT. COIL
92	ANT. COIL	92	ANT. COIL
93	ANT. COIL	93	ANT. COIL
94	ANT. COIL	94	ANT. COIL
95	ANT. COIL	95	ANT. COIL
96	ANT. COIL	96	ANT. COIL
97	ANT. COIL	97	ANT. COIL
98	ANT. COIL	98	ANT. COIL
99	ANT. COIL	99	ANT. COIL
100	ANT. COIL	100	ANT. COIL

Zenith Radio
 MODEL - 6MF 503
 MFD. BY
 ZENITH RADIO CORPORATION
 CHICAGO, ILLINOIS

1941 SPECIAL 11A-16505-C1
Radio Motor Company

PARTS PRICE LIST

MODEL 8MF593 (CHASSIS 6A23)

FORD 11A-18805-C1

COILS & CHOKES

20-213	Main hash choke.	\$0.25
20-229	Motor noise filter choke . .	.10
20-233	Heater line choke.	.10
95-784	2nd I.F. transformer . . .	1.00
95-789	1st I.F. transformer . . .	1.00
S8819	Antenna motor noise choke assembly.	.20
S9371	Antenna coil assembly. . .	1.00
S9391	R.F. coil assembly.	.60
S9393	Oscillator coil assembly .	.40

CONDENSERS

22-170	.1 mfd. . . . 400 volt . .	.20
22-250	.05 mfd. . . 200 volt . .	.15
22-289	50 mmfd. . . 600 volt . .	.15
22-435	.02 mfd. . . 600 volt . .	.15
22-906	.005 mfd. . . 200 volt . .	.15
22-908	.5 mfd. . . . 120 volt . .	.25
22-1076	Spark plate condenser. . .	.20
22-1115	.05 mfd. . . 200 volt . .	.15
22-1147	Motor noise suppression (distributor & oil gauge). .	.35
22-1148	Motor noise suppression (voltage regulator and circuit breaker).	.50
22-1170	.01 mfd. . . 600 volt. .	.15
22-1171	.012 mfd. . . 1600 volt . .	.20
22-1172	Two gang variable	1.75
22-1177	Ceramic trimmer	.15
22-1179	10 mfd. - 350 volt x 10 mfd. 300 volt x 20 mfd. 25 volt dry electrolytic	1.25

RESISTORS

63-271	1 megohm . . 1/4 watt. . .	.07
63-296	220M ohm . . 1/4 watt. . .	.07

RESISTORS (Cont.)

63-588	6800 ohm . . 1/4 watt. . .	.07
63-595	100M ohm . . 1/4 watt. . .	.07
63-597	470M ohm . . 1/4 watt. . .	.07
63-604	10 megohm. . 1/4 watt. . .	.07
63-673	8.2 megohm . 1/4 watt. . .	.07
63-941	390 ohm W.W. 1 watt ins.	.20
63-958	22M ohm. . . 1 watt ins.	.20
63-971	220 ohm. . . 1/2 watt. . .	.08
63-1148	Sensitivity control.	.25
63-1170	1500 ohm W.W. 2 watt ins.	.30
63-1177	Volume control and switch.	1.50

SET INSTALLATION ACCESSORIES (\$7846)

54-123	#10/24 Wing nut.	.02
54-165	1/2-20 x 11/16" Hex nut . .	.02
94-312	Antenna connector bushing.	.04
97-127	Antenna connector stud . .	.25
112-256	Set mounting screw	.01

SPEAKER AND COVER ACCESSORIES

24-261	Speaker cover.	.30
49-434	5" Electro-dynamic speaker	3.25
206-434	Output transformer	1.25
207-434	Field coil (not replaceable)	
208-434	Cone & voice coil.	1.25
49-440	5" Electro-dynamic speaker	2.50
207-440	Field coil (not replaceable)	
208-440	Cone & voice coil.	1.25

NOTE: When ordering speaker parts
specify code letter or letters
as used with speaker part number.

54-10	#8/32 x 1/4" Hex nut. . . .	.25C
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SPEAKER AND COVER ACCESSORIES (Cont.)

54-30	#8/32 x 5/16" Hex nut . . .	.25C
114-88	#8/32 x 1/2" Hex acorn head M.S.	.45C
196-39	Rubber speaker gasket. . .	.40

DIAL & TUNING MECHANISM

22-1172	Two gang variable.	1.75
46-402	Tuning control knob. . . .	.15
46-403	Volume control knob. . . .	.10
54-162	3/8-32 x 5/8" Hex nut . . .	.01
57-890	Escutcheon plate.	.75
63-1177	Volume control and switch. .	1.50
80-254	Dial cord tension spring . .	.01
80-257	Dial cord idler spring . . .	.03
93-534	Volume control spacer washer.	.50C
94-344	Drive shaft bushing.	.08
100-32	Dial light bulb - 6.8 volt .	.07
125-24	Rubber grommet (gang mounting).	.015
188-2	Retaining ring	.01
S9418	Drive pulley & shaft assembly.	.15
S9421	Dial cord & eyelet assbly. .	.10
S9422	Dial light socket & wire assembly.	.25

MISCELLANEOUS

52-202	Battery cable (set to fuse)	.15
52-217	Battery cable (fuse to am- meter).	.15
58-92	Socket jumper.	.50C
78-281	Socket - vibrator.	.10
78-284	Socket - six contact	.10
78-399	Socket - octal base tube . .	.10
78-400	Socket - loktal base tube. .	.15
78-401	Socket - loktal base tube. .	.15
94-312	Antenna connector bushing. .	.04
95-782	Power transformer.	2.50
95-795	Speaker transformer (used with 49-440).	.75
97-127	Antenna connector stud . . .	.25
100-32	Dial light bulb - 6.8 volt .	.07
112-293	Antenna coil core & screw. .	.15
114-149	#6 x 3/16" Hex acorn head S.T. - N.P. (chassis screw)	.45C
136-11	14 Ampere fuse	.10
149-19	R.F. coil iron core.	.05
190-15	Non-synchronous vibrator . .	2.95
202-249	Instruction book	.05
S7846	Installation kit assembly. .	.40
S8981	Antenna connector housing assembly.	.30
S9067	Condenser kit assembly . . .	1.80
S9187	Dummy antenna assembly . . .	1.25

ANTENNA PARTS LIST (1941 only)

Ford Mercury 1941 - Closed Car Integral Antenna No. 11A-18813-A1 Code A

Ford Mercury 1941 - Open Car Integral Antenna No. 11A-18813-B1 Code B

Part No.	Description	Code	List Price	Part No.	Description	Code	List Price
S9045	Stationary tube and collar assembly.	A	\$0.65	S9054	Telescoping tube assembly .	B	1.00
S9052	Control housing assembly. .	B	3.50	S9055	Knob and bushing assembly .	B	.50
S9053	Stationary rod assembly . .	B	.50	S9056	Antenna lead assembly. . .	B	.40

Part No.	Description	Code	List Price
S9079	Extension tube and rod assembly.	A	1.00
S9080	Adjusting knob assembly . .	A	.40
S9081	Roof tube assembly.	A	.55
S9234	Grommet and sleeve assembly	B	.20
46-387	Stanchion.	A	.20
54-154	Upper roof tube nut (gland nut).	A	.15
54-155	Lower roof tube nut	A	.15
54-156	Cap nut.	A-B	.10
68-4	Allen set screw wrench. . .	A-B	.10
73-40	No. 6/32 x 1/8" Allen set screw (cuppoint)	A	.15
73-41	No. 6/32 x .810 slotted hd. set screw. (cone point). .	B	.05
73-42	No. 6/32 x .280 Allen set screw (special point). . .	B	.20
73-43	No. 6/32 x .370 Allen set screw (cone point).	B	.10

Part No.	Description	Code	List Price
80-242	Antenna extension spring. .	B	.05
93-507	Felt washer (.075 x .171 x .328).	A	.05
93-508	Felt washer (.050 x .500 x .940).	A-B	.05
93-509	Steel trim washer	A-B	.10
94-352	Insulator bushing	A	.10
94-358	Insulator bushing	B	.35
193-14	Template.	A-B	.15
196-42	Rubber gasket	A	.10
196-43	Rubber gasket	B	.05
202-229	Instruction sheet.	A	.05
202-230	Instruction sheet.	B	.05

All Prices List - Subject to Regular Discount
and Change Without Notice.

12-5-40

**SERVICE MANUAL
SUPPLEMENT**



SERVICING CHART

169 - 60

Automatic Record Changer

AND

RECORDER

S-1

ZENITH RADIO CORPORATION

CHICAGO, U. S. A.

S E R V I C E N O T E S

1. PICKUP DOES NOT INDEX PROPERLY ON TEN INCH OR TWELVE INCH RECORDS --

(A) Adjustment for correct indexing of 10-inch records:

1. Swing tone arm outward until tone arm lever assembly, (Item 19, Fig. 1) latches with tone arm latch lever, (Item 18, Fig. 1) which is held to tone arm shaft, (Item 77, Fig. 1) by two setscrews.
2. Make sure these setscrews are tight and that there is a slight play between the tone arm lever assembly and the panel, (Item 5, Fig. 1). This will give proper clearance at ball race assembly, (Item 74, Fig. 3).

The tone arm lever assembly, (Item 19, Fig. 1) is held against tone arm latch lever, (Item 18, Fig. 1) by the tension of tone arm locator lever spring, (Item 16, Fig. 1).

3. Next loosen the clamping screw in the Swivel Bracket Assembly (Item 46, Fig. 3).
4. Now move tone arm, (Item 60, Fig. 4) until its outside edge is 1/8" from the outside edge of the panel (Item 5, Fig. 1) and retighten screw securely.

2. RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE AT END OF RECORD --

- (A) Worn or Damaged Stop Groove: If the stop groove in the record is worn out or damaged, discard such a record.
- (B) Cut-off Adjustment May Be Incorrect: The Record Changer should go into its changing cycle when the needle enters the stop groove and has traveled to within a distance of 1-7/8" from the center of the turntable shaft.

If the Record Changer does not go into its changing cycle when the needle has reached the above mentioned distance, the Tone Arm Trip Lever Shoe, (Item 23, Fig. 1), should be moved toward the outside edge of the panel. To do this, it is necessary to loosen the thumb nut, (Item 22, Fig. 1), and then retighten after adjustment has been made.

If the Record Changer goes into its changing cycle before the needle has reached a distance of 1-7/8" from the center of the turntable, the Tone Arm Trip Lever Shoe should be moved inward toward the center of the Record Changer.

3. RECORD CHANGER DOES NOT GO INTO ITS CHANGING CYCLE WHEN SWITCH KNOB IS TURNED ON --

When the switch is turned to "ON" the Record Changer should start its changing cycle. If it does not, the following points should be checked.

1. Make sure motor is running.
2. Check Trip Rod, (Item 32, Fig. 1), to make sure it releases Trip Lever Assembly, (Item 20, Fig. 1), from Engagement Clutch Cam Assembly, (Item 79, Fig. 2), when Switch Knob is being turned on. If Trip Lever Assembly is not released, Trip rod should be shortened by bending until Trip Lever clears Engagement Clutch Cam Assembly, when Switch Knob is turned.

3. Make sure that Clutch Reset Pawl, (Item 40, Fig. 2), clears Drive Link Assembly, Item 31, Fig. 1.

4. RECORD CHANGER CONTINUES TO REPEAT ITS CHANGING CYCLE WITHOUT PLAYING RECORDS --

(A) Trip Lever Assembly (Item 20, Fig. 1) does not latch in Engagement Clutch Cam Assembly (Item 79, Fig. 2), which may be due to causes listed below:

1. Trip Rod (Item 32, Fig. 1), may be bent so that it is too short, holding Trip Lever Assembly from contacting Engagement Clutch Cam Assembly.

2. Springs (Items 24 or 35, Fig. 1) may be disconnected.

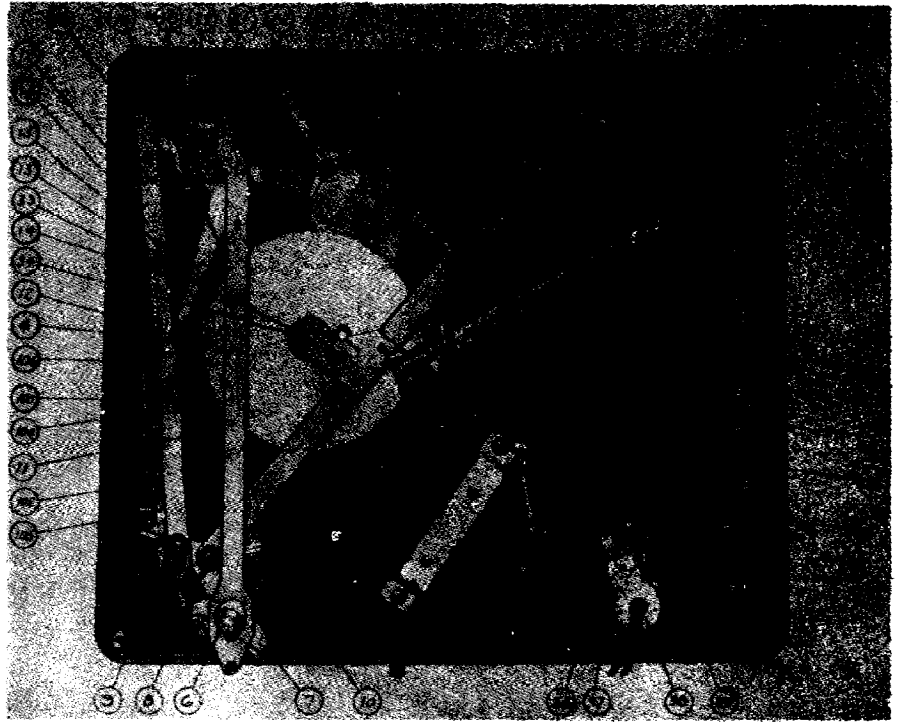


Fig. 1

5. NO SOUND WHEN NEEDLE IS ON MOVING RECORD --

1. Muting switch (Item 26, Fig. 1), may be out of adjustment. The contacts of this switch should be open whenever its long blade is not resting on the shoe of the Engagement Clutch Cam Assembly (Item 79, Fig. 2). If the contacts remain closed after the long blade has left the shoe, they should be adjusted by bending until there is a separation of approximately $1/32$ ".

Switch should be checked to make sure contacts are closed when long blade is resting on the shoe of the Engagement Clutch Cam Assembly.

2. The lugs on the Muting switch may have been bent together.

3. Pickup cartridge in Tone Arm may have been damaged or may be defective.

6. TONE ARM ADJUSTMENTS FOR 12" RECORDS --

1. Turn both Control Knobs until the arrows marked "12" are pointing toward the center of the turntable.

2. Place a twelve inch record on the turntable.

3. Start Record Changer and note where needle contacts record. Correct contacting is about $1/8$ " from the outside edge of record.

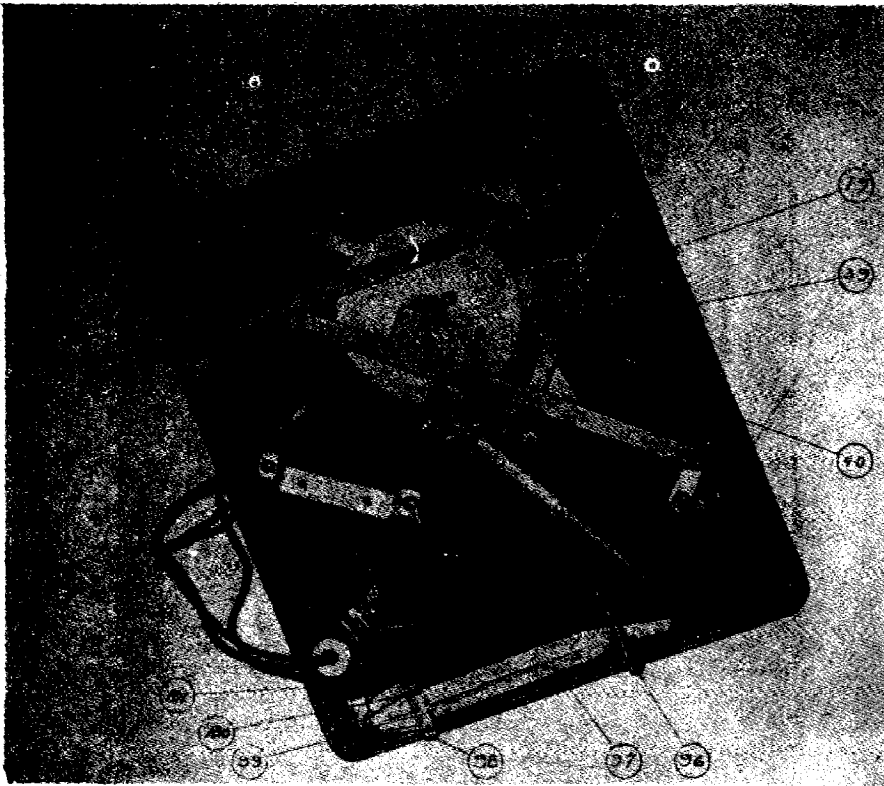


Fig. 2

4. Set Rod (Item 56, Fig. 3) is operated by Selector Arm (Item 61, Fig. 4). The 12" Set Link (Item 10, Fig. 1) operates as a stop when Record Changer is set for 12" records. When Tone Arm Locator Assembly (Item 12, Fig. 1) contacts 12" Set Link the Tone Arm should be in the correct position to play a 12" record.

If at this point, the position of Tone Arm is incorrect, loosen the screw which holds the Tone Arm Locator Shoe 12" (Item 14, Fig. 1) and move in either direction as required and tighten screw.

7. TONE ARM ADJUSTMENTS FOR 10" RECORDS —

1. Turn both knobs until the arrows marked "10" are pointing toward the center of the turntable.
2. Place a 10" record on the turntable and start Record Changer.
3. Note where needle contacts record. Correct contacting is about 1/8" from the outside edge of record. If contacting of needle is not correct as mentioned, loosen the screw which holds Tone Arm Locator Shoe 10" (Item 15, Fig. 1) and slide shoe in or out as required, then tighten screw.

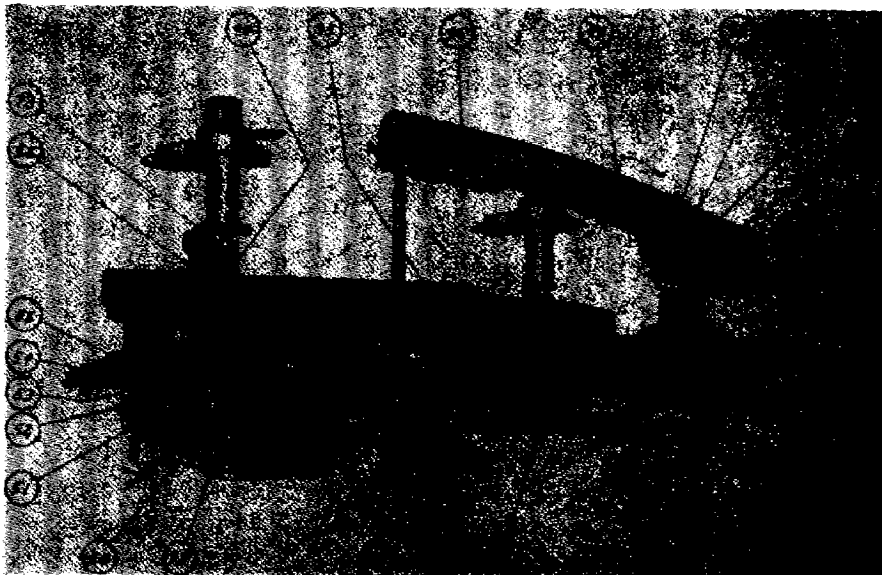
8. TONE ARM HEIGHT ADJUSTMENTS —

Set the Record Changer for ten-inch records, turn Switch to "ON" and allow Record Changer to go thru a changing cycle with no record on the Turntable. The clearance between Turntable and the bottom surface of the Tone Arm should be approximately 1/8". Usually this clearance can be obtained by adjusting the Tone Arm Adjustment Screw (Item 70, Fig. 3). It is well to check the following points before making any adjustment.

Check clearance between Roller (Item 51, Fig. 3) and Selector Crank Shaft Assembly (Item 7, Fig. 1). There should be approximately 1/32" clearance at this point. If the clearance is greater, it would be due to the pressure on the Spring Washer (Item 50, Fig. 3) being too great. This will prevent the Tone Arm Lifter Reset Spring (Item 82, Fig. 3) from returning the Tone Arm Lifter Link Assembly (Item 81, Fig. 2) sufficiently. To relieve the pressure on the Spring Washer, lower the Selector Shaft Collar (Item 6, Fig. 1) slightly.

9. TONE ARM LOWERS ON RECORD TOO SUDDENLY —

If the Tone Arm lowers too suddenly, the Spring Washer (Item 50, Fig. 3) which is located between the Tone Arm Lifter Link Assembly (Item 81, Fig. 2) and Selector Shaft Crank Assembly Post (Item 7, Fig. 1) is not under sufficient pressure. The setscrews in the Selector Shaft Collar (Item 6, Fig. 1) should be loosened and the Selector Shaft Collar pressed upward slightly and set screws tightened.



SERVICE NOTES
(RECORDER)

Fig. 3

1. FUNCTION OF MANUAL CONTROL BUTTON AND RELATIVE PARTS

When Manual Control Button (Item 84, Fig. 4) is moved to the Manual Play-Back recording position, it moves the Manual Control Slide (Item 102, Fig. 1) which in turn moves Clutch Lock Slide (Item 103, Fig. 1) into a position which prevents Engagement Clutch Cam Assembly (Item 79, Fig. 2) from rotating. When Engagement Clutch Cam Assembly is in the above mentioned position and is not free to rotate, the Changer will not go into its changing cycle.

Also when the Manual Control Button is in the above mentioned position, the Manual Control Slide has moved the Locator Lock Slide (Item 106, Fig. 1) into a position where it engages the Tone Arm Locator & Bushing Assembly (Item 12, Fig. 1) and prevents same from bearing against Tone Arm Lever Assembly (Item 19, Fig. 1) allowing the Tone Arm to swing freely without hindrance and without setting Changer into its changing cycle. When the Manual Control button is in the automatic position the Changer will function normally as an automatic record changer.

2. POSSIBLE MECHANICAL CAUSES OF POOR RECORDINGS

- (A) Threads from record cuttings getting down onto Rubber Idler drive wheel (Item 83, Fig. 4) and between drive wheel and motor pulley. This will cause very bad speed variation of the turntable and, of course, will result in very inferior recording. Cuttings may also wrap around motor shaft and cause motor to slow down or stop.

To remove the record cuttings, the turntable should be lifted by applying an even lifting force at opposite edges of the turntable while the turntable spindle is gently tapped downward on its top end, and the record cuttings then removed. The Rubber Idler Drive Wheel should be taken off — this can be accomplished by un-snapping the small snap cotter ring and slipping Rubber Idler Drive Wheel off its shaft, after which all record cuttings can be removed.

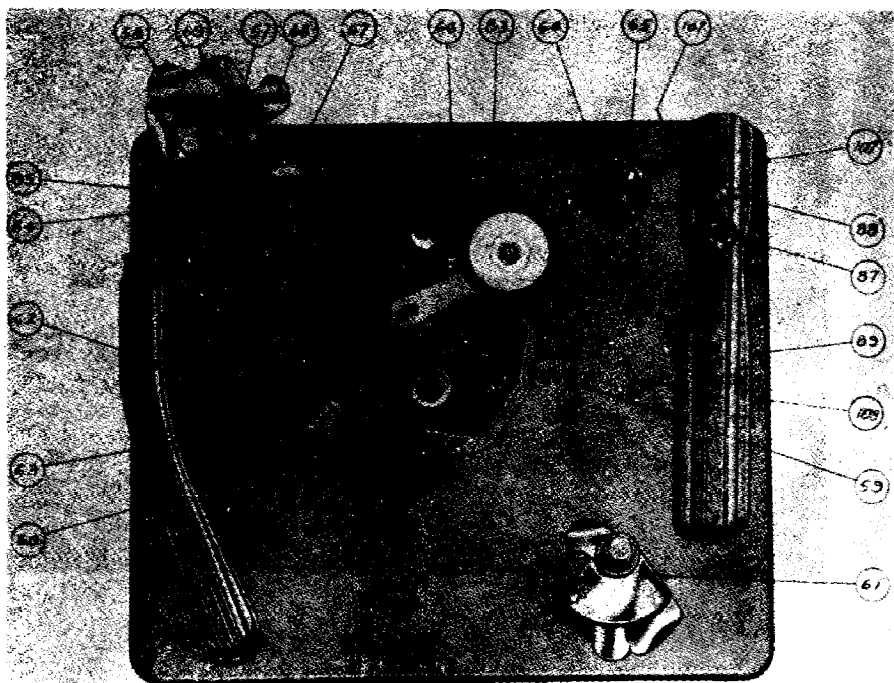


Fig. 4

Note: It is very important that no grease or oil be gotten on the surface of the Rubber Idler Drive Wheel.

- (B) Tight pivot bearings: Check cartridge pivot screw (Item 108, Fig. 4) for binding. Also recording arm pivot screw (Item 107, Fig. 4) and Traverse arm pivot screws (Item 101, Fig. 2). These bearings should all be free, but have no looseness or play.

If the pivot screw, (Item 108, Fig. 4) of the Cutter Cartridge is tight, the Cutter Cartridge cannot follow a

slight up and down variation of the record or turntable. A record cut in this manner will, when played back, have a high scratch level, rough cutting and a tendency for the needle to jump from one groove to another.

- (C) Damaged Rubber Idler Drive Wheel (Item 83, Fig. 4)

Rubber Idler Drive Wheel may have become damaged by:

1. Allowing oil or grease to come in contact with same.
2. By allowing turntable to drop and cut into the outside surface of the Rubber Idler Drive Wheel.
3. Stopping the turntable by hand while the motor is running will cause a flat spot on the surface of the Rubber Idler Drive Wheel.

Note: If the Rubber Idler Drive Wheel has been damaged in any of the above mentioned ways, it should be replaced with a new one.

- (D) Vibration Reaching the Recorder While A Blank is Being Recorded: It is very important the floor or the surface upon which the Recorder rests remain quiet as any vibration such as people walking across the floor or shaking of the instrument in which the Recorder is mounted will seriously effect the quality of the finished recording.
- (E) Recorder Not Level: It is very important that the Recorder is standing level. This can be checked by placing a small level on the turntable and checking same in two positions at right angles to each other and then leveling instrument in which Recorder is mounted.

- (F) **Bent or Damaged Turntable Spindle:** If the Turntable Spindle (Item 59, Fig. 4) has been bent in shipment, or by someone exerting a heavy pressure on one side, it should be replaced with a new one. A bent Turntable Spindle will cause the surface of the Turntable to move up and down while it is turning and, of course, will seriously effect the quality of both recording and play-back.

Note: When removing the Turntable an even upward lifting force should be applied at opposite edges of the Turntable while Turntable Spindle is gently tapped downward on its top end.

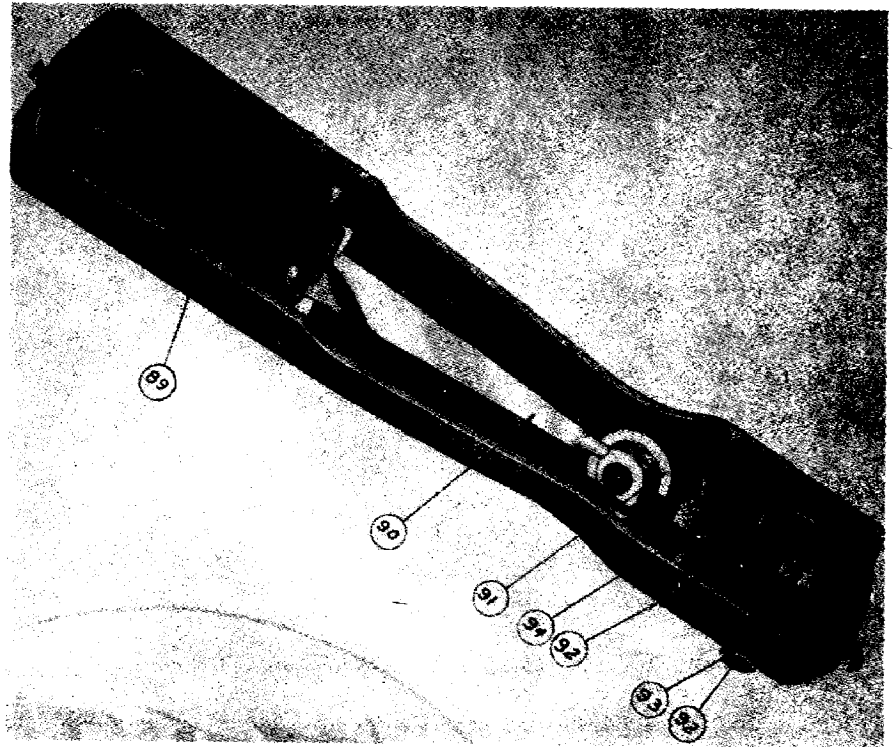


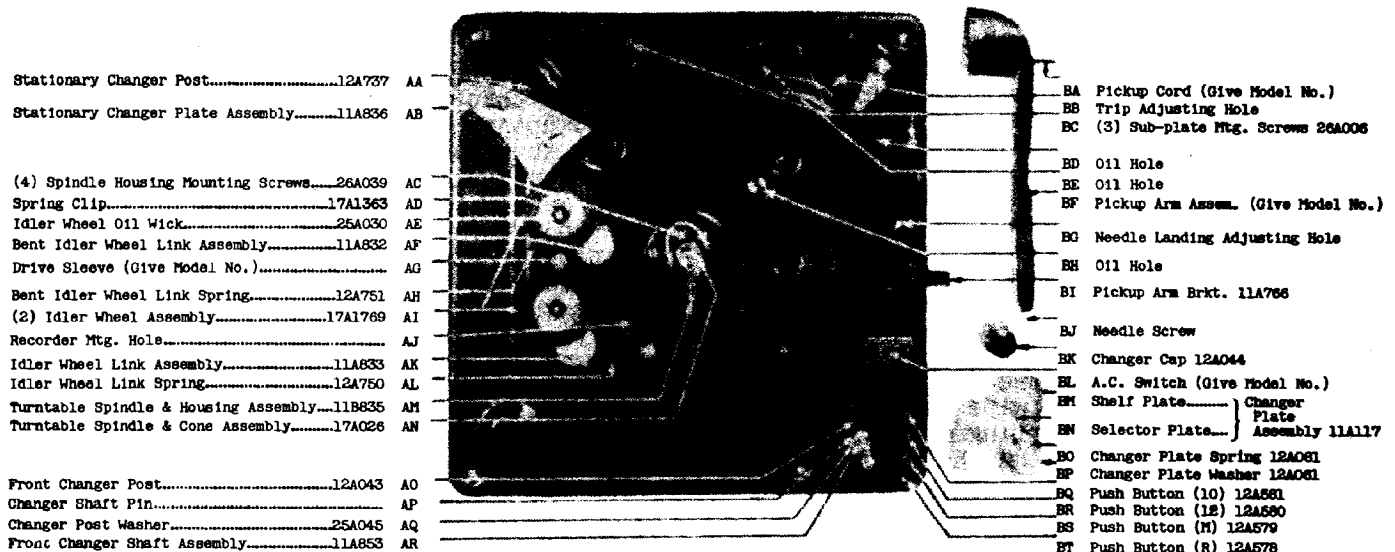
Fig. 5

- (G) **Record Cuttings Causing A Bind Between Turntable Spindle (Item 59, Fig. 4) and Its Bearing:**

It is very important that all record cuttings are removed from Turntable Spindle and its bearing.

- (H) **Tension On Rubber Idler Drive Wheel (Item 83, Fig. 4) Too Great:** If the tension on the Rubber Idler Drive Wheel is too great, this will result in a "wow" or a rumble in the recording. To decrease the tension on Rubber Idler Drive Wheel, loosen the screw holding the lug which is located beneath the Rubber Idler Drive Wheel and turn it slightly in a clockwise direction. This will reduce the spring tension on the Rubber Idler Drive Wheel. When the spring tension is correct, the spring will be approximately at right angles to the lug.
- (I) **Tension On Rubber Idler Drive Wheel (Item 83, Fig. 4) Too Weak:** This will cause very bad speed variation. Turntable will slow down and then speed up as audio current of varying intensity reaches the cutter cartridge.

AUTOMATIC RECORD CHANGER 169-55



FOR THE SERVICE MAN

This Manual is designed for the use of the Service Mechanic only, and is intended to facilitate as far as possible his work of caring for the changer mechanism, whether he is called in for the purpose of assuring its continued satisfactory operation, or to remedy some difficulty which has appeared. For his convenience, the "Operating Instructions", supplied to user by the factory, may be summarized as follows:

The Changer plays twelve 10" or ten 12" records. . . . To reload, revolve the two posts slightly, grasping them underneath the Shelf Plates. Turn them back after the played records are removed; they will fall and lock when in proper position. Then place the new records on the Shelf Plates and push "R" button to put Changer in operation. . . . To play the other size records, turn the knob at top of front post until proper figure is opposite pointer, also raise and turn rear stationary changer plate until proper figure is facing turntable spindle, and press the 10" or 12" button, to agree with pointer setting. . . . To reject a record (or to start a change cycle as for testing purposes), simply press the "R" (Release or Reject) button, at any time while needle is upon a record. . . . To play manually, turn plates out of the way as for

reloading, and press "M" button. (What are here called the "plates" of the Changer are frequently known among servicemen as "blades" — a name best avoided when talking with users because it may convey to some an exaggerated impression of danger in the movement of these parts.)

ILLUSTRATIONS

The three photos illustrate all vital parts of the Changer. Letters are used alphabetically, to refer to points on the photos. Reference letters must NOT be used for ordering parts: Order only by the factory numbers. Where no number is given, part cannot be separately supplied; order the assembly containing it.

OILING (REPRINTED FROM OPERATING INSTRUCTIONS)

The Changer should be lubricated once a year with about a dozen drops of a good light machine oil at each of the following 3 points. All points can be reached from above, through holes in the mounting plate, as follows:

- No. 1. Through hole marked (BH), drop the oil upon flat surface of cam. It will distribute itself to proper points.

- No. 2. Through hole marked (BE), see felt wick, and drop the oil directly upon it.
- No. 3. Through hole marked (BD), see felt wick, and drop the oil directly upon it.

TO CHECK OILING

If squeaks are heard, compare the squeak with and without a load of records; any stack of records in motion is likely to squeak a little against a pin through their center. This can be corrected by rubbing a little wax on the turntable spindle. See that all four felt washer-shaped wicks are in position, including two washer-shaped wicks on Idler Wheels (AH), one wick ("No. 2") on Lift (DI) and one ("No. 3") on Cam Lever (DH). See that each wick is thoroughly saturated (as it may not be if insufficient oil or low grade or low viscosity oil has been used. ("CAUTION". Do not over saturate the two Idler Wheel oil wicks (AE) as centrifugal force will throw the excessive oil out over the edge of Idler Wheel (AH) and cause loss of traction to turntable, therefore always wipe excess oil off Idler Wheels before starting motor.) Also check the two oil wicks on the motor at (EA) to see that they are thoroughly saturated. Also check lubrication on Turntable Spindle bearings. The top bearings can be oiled by removing turntable and oiling at (AN) then oil lower bearing from below, also check lubrication at all other bearing points.

GENERAL DESCRIPTION OF THE CHANGE CYCLE

An automatic record player for records of two sizes has three principal duties to perform. These duties are here performed by three mechanisms, interconnected and built together, but largely separated in their operation.

(1) The record-changing mechanism -- brought into operation originally by the contact of Lifter Cam (DF) with Pawl (DM) -- is the simplest of the three. It is driven by the cam groove (visible on under side in Photo E-F) of Cam Gear (DC). As Cam Lever (DH) is forced, by the Pawl, out underneath Lift (DI) (which is shown revolved to the right for visibility) the Lift rises and forces roller (DE) into the under groove in Cam Gear. The motion is transferred to Stationary Changer Shaft (at EC) through Cam Connecting Rod (DB) or (EG), thence through Changer Connecting Rod (FG) to Front Changer Shaft (AR).

(2) The pickup-operating mechanism -- like-wise brought into operation originally by the cam-and-pawl action upon Cam Lever (DH) -- is driven in part by the groove in upper (visible) side of Cam Gear (DC). As Cam Lever is forced out, at the beginning of the change cycle, against Link (FO), it causes the Link to push upward upon Pickup Plunger (CA), thus lifting needle from

record. The same pressure upon Link (FO) works, through Guide Arm (CK), to force Stud (DD) down into the groove on the Cam Gear (DC). This moves the pickup arm with a swinging movement while Pickup Plunger (CA) holds it up off of record. It first swings out beyond the turntable until Shelf Plates have released a record, then swings back to proper position to start playing.

(3) The mechanism for bringing needle in to correct starting position must operate accurately for both 10" and 12" records. Partly due to this requirement, the starting position is not determined by the cam action. The upper groove on Cam Gear is designed so that it, acting alone, would carry the Pickup Arm farther toward the Turntable spindle than would ever be desirable as a starting adjustment. Travel of pickup arm toward Turntable Spindle is then stopped at proper point for lowering onto the record, by action of Stop Lever (CP). The stopping takes place as lug (CP) (on the Stop Lever) strikes the shoulder on Rod (FQ). This enables the entire mechanism, rotated by cam action on Guide Arm (CK), to travel on past the proper point of rotation for record-starting, while the pickup arm itself, which is held rigid to Stop Lever (CP) is accurately stopped at proper record-starting point.

Correct adjustment for starting position of needle requires, therefore, only correct adjustment of Rods (FL and FQ); the radial difference of 1" between correct starting position for 10" and 12" records is taken care of by exact dimensioning, at the factory, of surfaces at right end of Rod (FL) which stop against the "10" and "12" key stems. Due to this, when Adjusting Cam (FN) is turned (as directed below under Adjustment A) the starting position of needle is simultaneously altered for both 10" and 12" records.

ADJUSTMENTS

There are three adjustments that can be made, FROM ABOVE: CHANGER NEED NOT BE REMOVED FROM CABINET. All adjustments are correctly made at the factory, and ordinarily need never be altered. Should it become necessary to readjust, due to accident or tampering, proceed as follows:

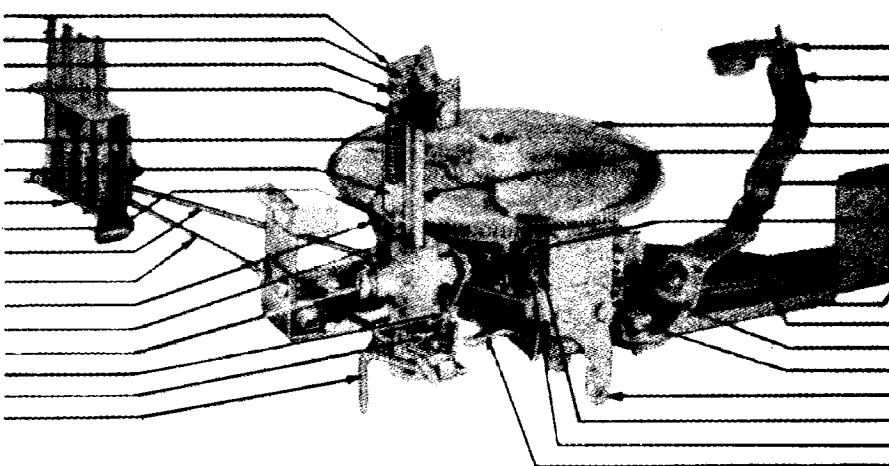
A. ADJUSTING LANDING POSITION OF NEEDLE ON THE RECORD. If needle comes down on the sound track, playing of records will not start at their beginning. Insert screw driver through hole (BG). Turn Screw head on Needle Landing Adjusting Cam (FN) very slightly counter-clockwise. If needle comes down too close to outer edge of record, or out beyond edge of record, turn Adjusting Cam clockwise.

The factory adjustment of needle landing is 1/8" in from outer edge of record.

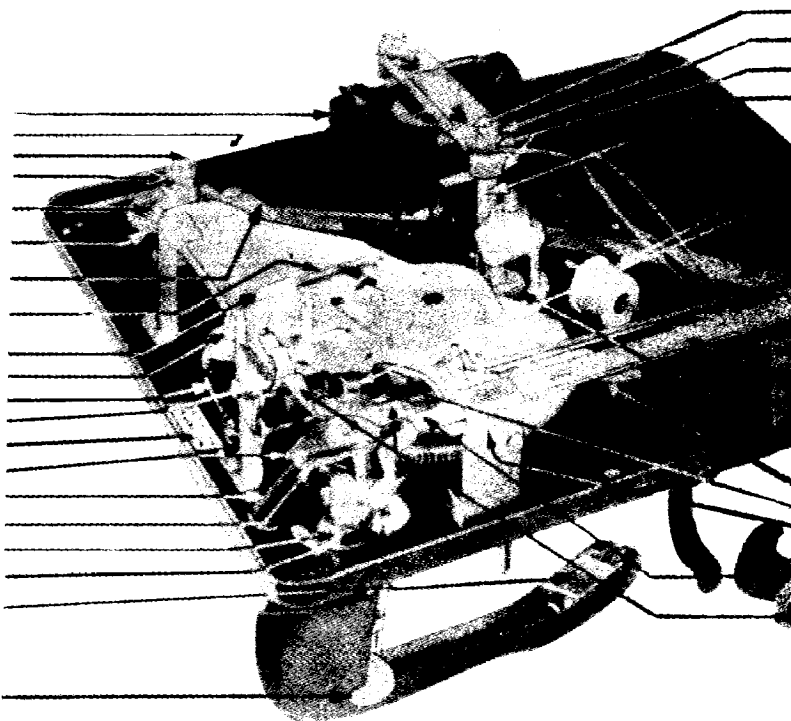
Compare also Paragraph 12.

Pickup Plunger.....12A568 CA
 Swivel Shaft & Head Assembly.....11A733 CB
 Lifter Guide.....12A537 CC
 Hinge Spring.....21A004 CD

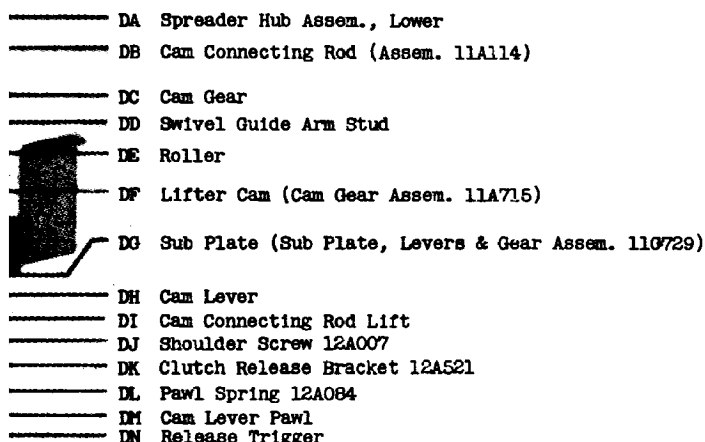
 Pickup Plunger Spring.....12A097 CE
 Pickup Plunger Sleeve.....12A096 CF
 Key Control Assembly.....11A718 CG
 Lifter Rod Nut.....12A003 CH
 Rejection Key Rod.....12A565 CI
 Manual Key Rod.....12A077 CJ
 Swivel Guide Arm Assembly.....11A730 CK
 Swivel Tube & Trunnion Assembly.....11A714 CL
 Trunnion Shoulder Screw.....12A072 CM
 Guide Arm Spring.....12A573 CN
 Swivel Spreader Spring.....12A089 CO
 Stop Lever & Trigger Adj. Assembly.....11A838 CP



(Give Model No. as at EM) Motor..... EA
 (Give Model No.) Main Mtg. Plate..... EB
 Stationary Changer Shaft Assem.....11A840 EC
 Changer Shaft Collar & Screw Assem.....11A736 ED
 Spring Roller.....12A045 EE
 Changer Spreader Spring.....12A088 EF
 Cam Connecting Rod Assembly.....11A114 EG
 Return Spring.....12A087 EH
 Return Spring Catch.....12A525 EI
 Connecting Rod Nut.....26A028 EJ
 Cam Connecting Rod Lift Spring.....12A083 EK
 Adj. Rod Lever Spring.....12A577 EL
 Changer Serial & Model No..... EM
 Lower Swivel Spreader.....12A543 EN
 Pickup Leader Spring.....12A574 EO
 Upper Swivel Spreader.....12A542 EP
 (3) Post Nut.....12A053 EQ
 (3) Lockwasher.....1228 ER
 (Give Model No.) Pickup Cartridge..... ES



(Give Model No.) Lift Plate..... ET



B. ADJUSTING HEIGHT TO WHICH PICKUP ARM RISES. The arm should rise, during the change cycle, high enough so that it clears by only 1/4" the record above it, resting on shelf plates. (Be careful, before deciding that readjustment is necessary, to see that the record at bottom of stack is not a warped one.) To make this adjustment, loosen Lock Nut (CH) and turn Pickup Sleeve (CF) to lengthen or shorten Pickup Plunger (CA). However, if Pickup is made to rise too close to bottom record, Stud (DD) on Guide Arm (CK) may never clear the Cam Gear. In making this adjustment, therefore, care must be taken to see that Pickup Arm does not keep moving back and forth continuously (due to Stud remaining in engagement with groove). When correct adjustment is found, tighten Lock Nut securely.

C. ADJUSTING DISTANCE FROM TURNTABLE SPINDLE AT WHICH TRIGGER WILL TRIP AND CHANGE CYCLE WILL BEGIN. Insert screwdriver through trip adjusting hole (BB). Turn screw head on Trip Adjusting Cam (FF) clockwise for earlier tripping, or counter-clockwise for later tripping. (Effect is to alter position of the Cam which strikes Trigger (DN). It may be found that Cam has been revolved through a half-turn; in this case, above directions would apply only after Cam has been returned to correct position by revolving screw head one-half turn).

This Changer does not depend, for automatic tripping, on the records being provided with any special grooves at end; it trips whenever needle comes within a certain distance of T.T. Spindle.

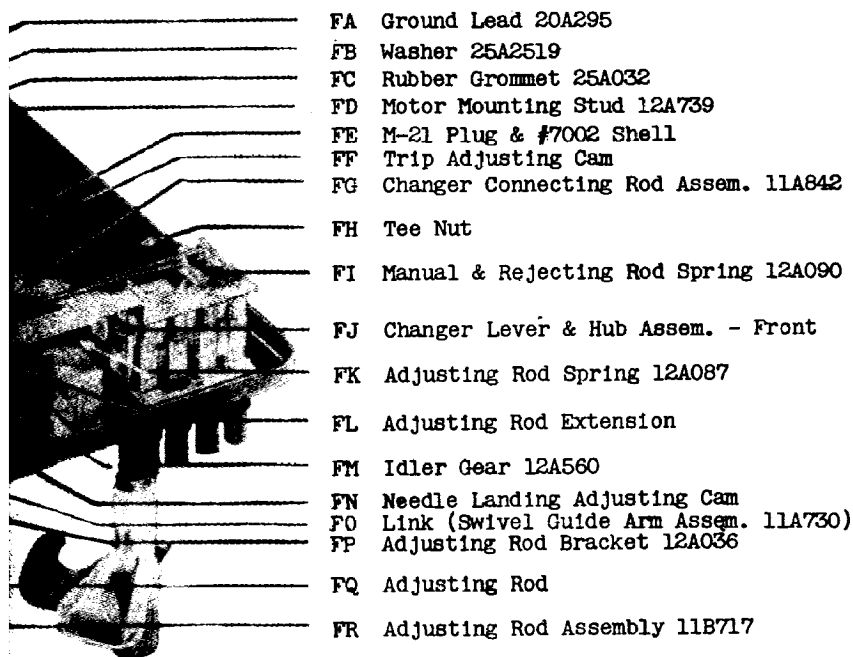
The factory adjustment is for 1-13/16" to 1-15/16" from center of T.T. Spindle. This is generally the most satisfactory adjustment; no modern record will then be cut off before playing is finished, and none will fail to trip at end. For certain records of early manufacture, it may be impossible to find an adjustment that will always trip and never cut off, but these records may always be played manually.

REPLACING MOTOR

The service man may be called upon to adapt the Changer to a different power supply. For this purpose, or in case of any serious fault within Motor, remove entire Motor (EA) from the Changer and replace it with a suitable new Motor. See that Motor Frame is well grounded by wire, (FA) (in photo E-F). (In ordering a replacement Motor, specify the power supply and give Model Number at EM; also Make and Model Number of phonograph or other type of installation.)

TROUBLE SHOOTING

Cases of failure to operate satisfactorily will generally be found due either to neglect of proper lubrication, or to tampering with the



mechanism after it leaves the factory, or to injuries accidentally sustained as by external vibration or by impact of some heavy object. In addition, there is always the possibility that any kind of spring may "go dead" (cease to operate without any visible breakage) even though the utmost factory precautions are taken against it — or that set screws may work loose due to some external vibration. For tightening set screws, a No. 8 size Allen (hexagon) wrench is required: Be sure that set screws are properly seated on the holes or flats provided. Damage from tampering is likely to take the form of bent parts; never bend any part during examination.

Among the principal trouble symptoms to which such causes may give rise, are the following:

1. MECHANISM IS SLOW IN STARTING, OR MOTOR GETS HOT.

May be caused by:

- a. Failure to lubricate properly. Oil thoroughly. See oiling instructions.
- b. Check voltage. Line voltage may be abnormally low or high.
- c. Motor windings damaged. If windings are found damaged, remove motor and return it to factory for repair or replacement.

2. MOTOR FAILS TO RUN, EVEN WHEN IT IS ENTIRELY DISCONNECTED FROM OTHER WIRING AND PROPER VOLTAGE IS APPLIED DIRECTLY TO THE TWO ENDS OF ITS WINDINGS.

- a. This indicates trouble in Motor windings. Unless the damage is easily seen and repaired, replace motor, as above described.
- b. Check motor rotor by turning the drive sleeve with finger and thumb, if it seems to bind slightly it can usually be corrected by lightly tapping the bottom bearing bridge, this will align the two self aligning shaft bearings and allow the rotor to turn freely.

3. MOTOR IS SLOW IN STARTING.

- a. Check oiling, as directed above. It may not have been properly done; old oil may have become gummy.
- b. Changer may have been in a very cold place, and may not yet have reached room temperature. Give it a fair chance to get warmed up before concluding that Motor is defective, and proceeding as in Paragraph 2 above.

4. SQUEAKS OR OTHER NOISES, DURING PLAYING OF RECORDS.

Check oiling, as directed above. (If squeaks are heard, they will usually be found to come from the records — not from the mechanism.)

See "To Check Oiling".

5. CHANGER IS NOISY WHEN IN CYCLE.

Check oiling. Also see if any part has become loose or bent and is rubbing against a moving part, such as the swivel Guide Arm, (CK) against the Cam Gear, (DC).

6. MOTION OF PICKUP TOWARD TURNTABLE SPINDLE WILL NOT TRIP CHANGER MECHANISM.

- a. See that the manual button is not pressed down. See that shipping bolts are removed.
- b. If trigger (DN) is being properly actuated, probably Cam Lever (DH) is binding against Sub-Plate (DG). Look for dirt or obstructions: such as the manual rod (CJ) binding in hole in Sub-Plate; See that Pawl (DM) and trigger (DN) are working freely on their rivets. If the Lever engages the Pawl so that Lift (DI) forces roller (DE) up into the under groove on Cam Gear (DC), and if set screws are tight, the change cycle must operate as Cam Gear turns.

7. PRESSING "R" BUTTON DOESN'T TRIP CHANGER MECHANISM.

- a. Due to shipping bolts not being removed, causing a bind on manual rod (CJ) or manual button is down.
- b. Check Key Control Unit (CG). See whether there is an obstruction or a bent part which prevents "R" button from going clear down to the end of its travel.
- c. Examine Reject Rod (CI). If it does not trip, even when properly revolved by complete depressing of "R" button, the rod has probably been bent, and must be restored in same way. Grasp the two ends and twist it slightly.
- d. If Trigger (DN) is being properly actuated but without starting a change cycle, see directions above, Paragraph 6.

8. PRESSING "M" BUTTON FAILS TO PUT CHANGER MECHANISM OUT OF ACTION SO AS TO ENABLE MANUAL OPERATION.

- a. First see that "M" button goes clear down; then follow its action through Manual Rod (CJ).
- b. Probably caused by the manual rod being bent and not projecting up through sub-plate (DG) and stopping cam lever (DH) when it is released from the trigger (DN).

9. TRIPS TOO SOON OR BEFORE RECORD HAS FINISHED PLAYING.

- a. Adjust as described in adjustment "C". (Refer to adjustments).
- b. If satisfactory adjustment cannot be made then check stop lever (CP). It may be loose on Swivel Shaft (CB). If so, reset and tighten set screws.

10. TONE ARM FALLS OFF RECORD. Needle sits down too close to edge of records, not adjusted in far enough, or needle landing adjusting cam (FN) is reversed. Should contact lug on adjusting rod extension (FL) on the long side of cam. Also check pickup leader spring (EO). It may have become loose; more tension can be given it by bending down lug.

11. TONE ARM SITS DOWN TOO FAR IN.

- a. Properly due to adjusting rod (FQ) binding and not measuring properly. If found to be bent, it should be straightened to correct shape so that it will operate freely. Read Item #3

on General Description of Change Cycle.

- b. Refer to Paragraph #9, Item #2 above.

12. NEEDLE LANDS PROPERLY ON RECORD BUT FAILS TO MOVE OVER INTO RECORD GROOVE.

Pickup arm is normally impelled toward center of records by Lead Spring (EO). Should a slight increase in its tension be found necessary, this can be easily obtained by slightly bending the lug, to which it is attached, down against Main Plate.

13. "WOW" IN RECORD REPRODUCTION.

- a. Record is warped or otherwise defective or instrument is not being operated at normal room temperature, 70° F.
b. Also may be caused by oil on Idler wheels (See "To Check Oiling" Caution note).

14. RECORD DROPS ON ONE SIDE ONLY.

- a. This suggests a Changer Post bent out of perpendicular to Main Plate. If Post must be straightened, be careful not to bend other parts.
b. Selector Plate set for 12" while playing 12" records, but stationary plate is set for 10".

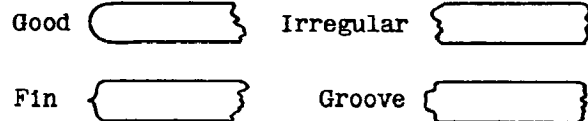
15. CHANGER CONTINUES CYCLING.

- a. Probably due to failure of Lift (DI) to be drawn back out of engagement with Cam Gear (DC). Check the various rivets at which motion occurs, to find the point where friction or binding is interfering with freedom of motion.
b. Make sure that trigger spring is not disconnected and that trigger (DN) holds cam lever (DH) in a neutral position. More tension can be given trigger spring by bending lug to stretch spring. A sticking pawl (DM) will also cause this condition.

16. RECORD IS DRIVEN, BUT NOT HEARD, OR NOT HEARD WITH PROPER VOLUME. See that pickup cord is plugged in. Check amplifier and speaker and connections to them, thoroughly. If then trouble is still suspected in pickup cartridge (ES), test its output with a vacuum-tube voltmeter. Playing an average record, output should test 1 to 2.5 volts if pickup cartridge is of crystal type, or 0.5 volts if of magnetic type. If pickup cartridge is found not to deliver proper output, remove it and install another.

17. RECORD JAMS. Most slicing trouble (record jams) is due to off-size, defective or warped records and is no fault of the record changer or record changer adjustments. Properly manufactured records have

a uniform semi-circular edge and can be successfully handled by record changers, even though the records vary considerably in thickness.



Cross section of record edge showing a perfect record and three imperfect edges.

Records that prove troublesome in the selecting or slicing process can usually be corrected by using a piece of fine sand paper or emory cloth to round up the edges.

18. AUDIO HOWL. Record changer not floating on cushions or spring mounting. See that shipping bolts are removed. If unit still does not float, loosen the nuts or mounting assembly allowing unit to rise and float.

19. TURNTABLE IS TIGHT. This turntable is assembled to the turntable spindle with a taper lock fit in the center. To remove, grasp turntable with both hands, turn slightly forward and backward, at the same time pulling upward, or run motor and grasp the turntable while it is revolving, and pull up. When replacing turntable, care should be taken not to injure Rubber Idler Drive Wheels (AH).

REPLACEMENT PARTS

When spare parts of sub-assemblies are required, order them direct from the factory, by factory number and name as given on photos — not by reference letters. Where no number is given, order by full and exact description. Always specify Serial Number and Model Number as seen at EM. Parts shown in above photographs, but not given factory numbers, are furnished only in assemblies as shown with factory numbers. Refer to replacement parts list.

**ZENITH RADIO CORPORATION
CHICAGO, ILL.**

Printed in U.S.A.

SERVICE MANUAL SUPPLEMENT



1941 RECEIVERS

MODEL	CHASSIS	PAGE
4K600	4B01	129
5D610	5B01	131
5D610W	5B01	131
5D625	5B01	131
6D516	6A24	133
6D520	6A26	135
6D520W	6A26	135
6D538	6A26	135
6G533	6A25	137
6G560	6A25	137
6R592	6A08 Book H7	13-36
6S532	6A05R	139
7S591	7A04 Book H7	20-31
7S591J	7A04 Book H7	20-31
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ZENITH RADIO CORPORATION

CHICAGO, U. S. A.

FREQUENCY MODULATION

Broadcasting by the Frequency Modulation method has already proved to be the most satisfactory means of "Local" radio transmission with reduced noise and high fidelity. It is not generally understood that these two features of FM are due in a great measure to the wide frequency band which this method of modulation employs. The FM receiver must be accurately aligned because much of the FM system's noise reducing ability is lost if the FM IF and discriminator circuits are misaligned.

The alignment of FM receivers differs from the familiar AM receiver alignment procedure where a modulated signal from the generator is used and the output is measured with an A.C. voltmeter across the voice coil.

The signal generator for FM alignment must be capable of supplying an unmodulated signal of at least .5 volt at the IF frequencies (4 to 9 Mc.) and a moderate unmodulated signal at the FM RF frequencies (41.5 to 50.5 Mc.) A 50-0-50 microammeter, such as Triplett #321 or #521, makes an excellent output meter when used with our #S9614 four prong plug and cable assembly and a S.P.D.T. switch. (see fig. 1)

The output meter is connected across HALF the diode load resistor for gain alignment and is connected across the FULL diode load resistor for frequency settings. A polarized socket is provided (near the 7A6 tube) which accommodates the output meter plug to facilitate switching the meter across either FULL or HALF the diode load resistor.

IMPORTANT—The FM IF and discriminator alignment must be followed in a stage-by-stage sequence, beginning at the discriminator and working forward to the converter stage. This differs from the conventional AM IF alignment procedure where the signal is applied to the converter grid and all the IFs are aligned simultaneously.

The signal from the generator must be kept just below the point where the limiter action of the receiver begins. To explain further we should consider the purpose of the limiter. It does what its name implies; it limits the amount of signal applied to the discriminator circuit. When the input signal is strong the limiter cuts off, allowing only a portion of the signal to pass, while at low signal levels the limiter acts as an IF amplifier. Therefore, it is easy to understand why the signal input to the receiver and IFs must be held below the limiter operating range during alignment. The most practical way of determining the proper amount of input signal is to watch the output meter (connected across HALF the diode load) while the signal from the generator is increased. The meter will indicate the increase in signal until limiting action begins, from which point on no appreciable increase can be noted on the meter even though the generator signal has been increased considerably. The desired signal input level (from the generator) is just below the limiting point which may be determined by increasing the generator output while watching the output meter, then reducing the generator output slightly when the limiting point is reached.

IF AND DISCRIMINATOR ALIGNMENT

Holes have been placed at the top of all the FM IF transformer shields so that a signal generator may be connected across the transformer secondaries to facilitate alignment. (see fig. 2) A very high input signal will be necessary to get an output indication for the discriminator alignment. Should the generator be unable to supply sufficient signal, the Discriminator input stage may be aligned first in order that its gain may be utilized to raise the input signal to the discriminator.

1. Connect the output meter across the FULL discriminator load. (fig. 1)
2. Feed an unmodulated signal, at the IF frequency, through the dummy antenna (fig. 2) to the 3rd IF transformer secondary. (The IF frequency is stamped on the IF transformer shields.) Adjust the slug B4 for resonance. Rotating the slug B4 through the resonance point will cause the output meter to swing through zero from positive to negative or vice versa. A zero reading on the meter indicates the desired resonance point.
3. Switch the output meter to HALF discriminator load (fig. 1). Adjust trimmer A4 for maximum output, keeping the signal input below the point of limiting action.
4. (Meter at HALF load) Connect the generator to the 2nd IF transformer secondary and adjust the 3rd IF trimmers A3 and B3 for maximum output.
5. (Meter at HALF load) Connect the generator across the 1st IF transformer secondary and adjust the 2nd IF transformer trimmers A2 B2 for maximum output.
6. (Meter at HALF load) Connect the generator to the converter grid. A small socket is provided near the converter tube which will accommodate the side pin of the #S9615 Dummy Antenna assembly (fig. 2) to facilitate this generator connection. Adjust the 1st IF transformer trimmers A1 B1 for maximum output.

FM OSCILLATOR AND RF ALIGNMENT

- 7a. (Meter at FULL load) Connect the generator, through a 100 ohm dummy antenna, to the FM antenna terminals. Set the generator at 50 Mc. and tune in the signal on the receiver. As the pointer passes the 50 Mc. calibration the output meter will swing from negative through zero to a positive reading or vice versa. The resonance point is again at the zero setting. Should the pointer be off calibration more than plus or minus .5 Mc., which is tolerable, the oscillator may be set by adjusting the two flexible green leads between the manual tuning oscillator coil and the band switch. If the pointer is below 50 Mc. it can be raised by bringing the two green leads together and in the same manner the pointer can be lowered by separating the leads.
- 7b. (Meter still at FULL load) Set the generator at 46 Mc. and check the dial calibration (zero on meter). 46 Mc. should be on scale unless the cam on the condenser shaft has been loosened. If the cam has to be adjusted to scale the oscillator at 46 Mc., the 50 Mc. oscillator adjustment must be repeated. The converter stage is aligned after the receiver has been adjusted to scale within the .5 Mc. limits.
- 8a. (Meter at FULL load) With generator connected to the FM antenna terminals through 100 ohm dummy, set the generator at 49 Mc. and tune in signal on receiver to get a zero output meter reading. Switch the meter to HALF load and adjust the generator to give an output just below the limiter action point. Adjust slug P1 for maximum output.
- 8b. (Meter at FULL load) Set generator at 46 Mc. and tune in on receiver. Switch meter to HALF load and adjust "Z" for maximum output.
- 8c. (Meter at FULL load) Set generator at 42.5 Mc. and tune in on receiver. Switch meter to HALF load and adjust P2 for maximum output.

There are no RF adjustments for the FM push buttons when the push buttons are used on automatic. Button #1 is checked at 50 Mc., buttons #2 and #3 checked at 49 Mc., buttons #5 and #6 checked at 42.5 Mc., and button #4 is the manual switch.

In conclusion we again wish to emphasize the importance of keeping the signal from the generator below the point where limiter action begins, that the output meter is connected across the FULL diode load resistor for frequency and calibration operations, and that the output meter is connected across HALF the diode load resistor for gain checks.

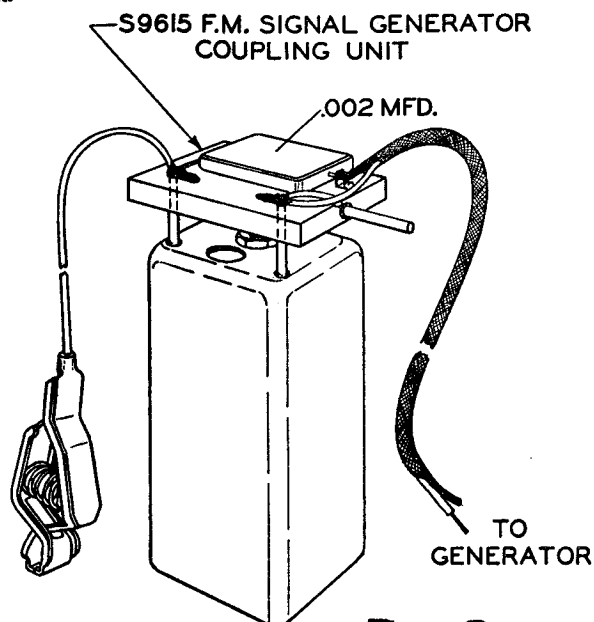


FIG. 2

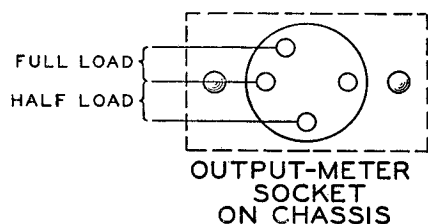
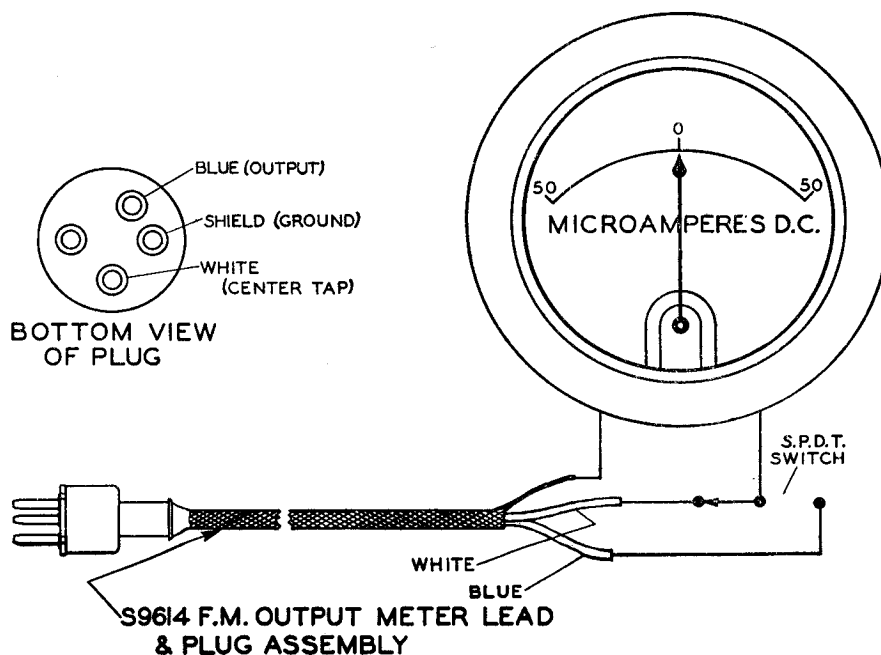
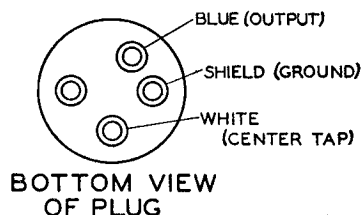
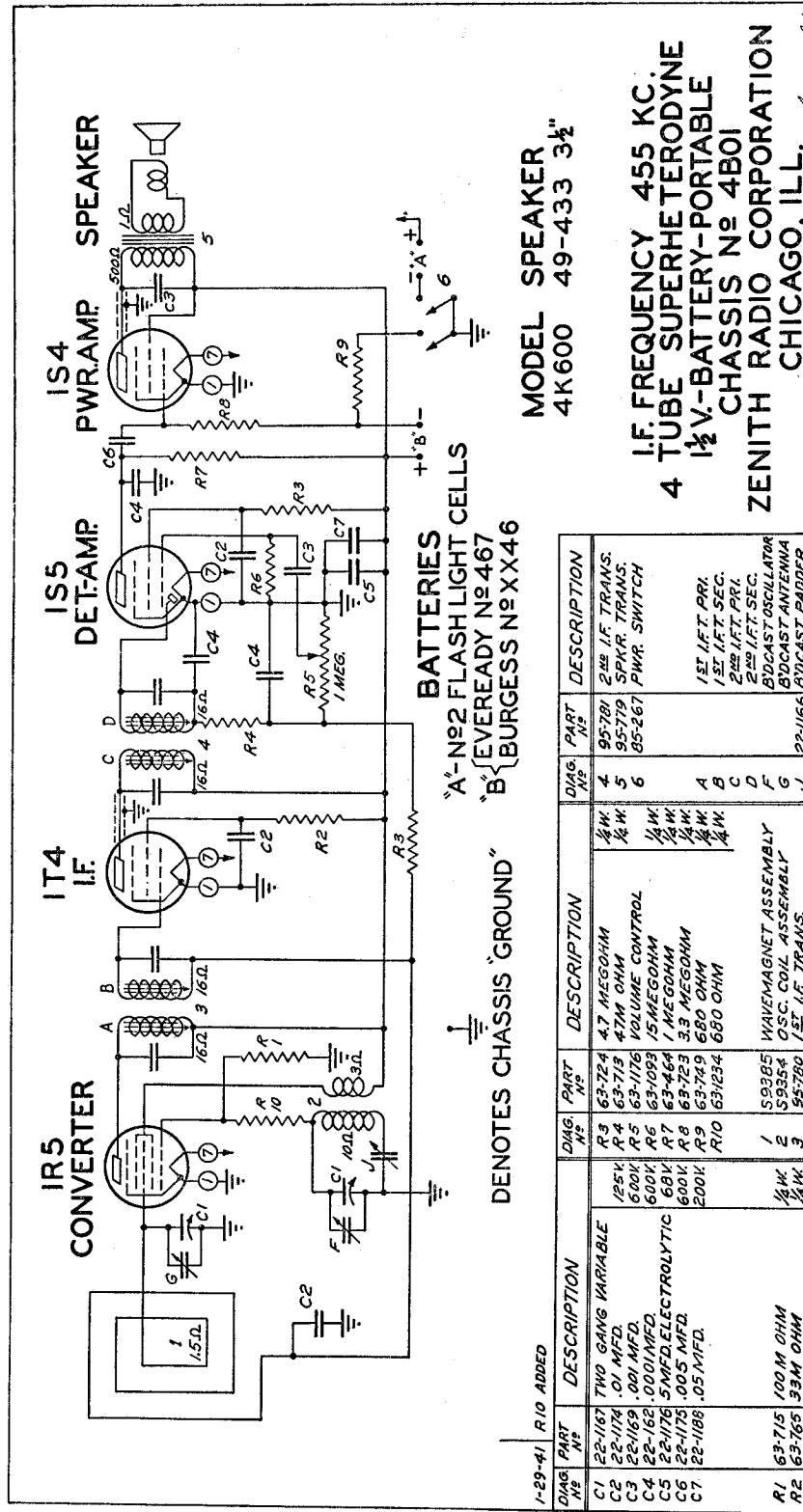


FIG. 1





DIAG. No.	PART No.	DESCRIPTION	DIAG. No.	PART No.	DESCRIPTION	DIAG. No.	PART No.	DESCRIPTION
C1	22-1167	TWO GANG VARIABLE	R3	63-724	4.7 MEGOHM	4	95-781	2ND I.F. TRANS.
C2	22-1174	.01 MFD.	R4	63-713	47M OHM	5	95-779	SPKR. TRANS.
C3	22-1169	.001 MFD.	R5	63-1176	VOLUME CONTROL	6	85-267	PWR. SWITCH
C4	22-1162	.0001 MFD.	R6	63-093	15 MEGOHM			
C5	22-1176	5MFD. ELECTROLYTIC	R7	63-464	1 MEGOHM	A		1ST I.F.T. PRI.
C6	22-1175	.005 MFD.	R8	63-723	3.3 MEGOHM	B		2ND I.F.T. SEC.
C7	22-1188	.05 MFD.	R9	63-719	680 OHM	C		2ND I.F.T. SEC.
			R10	63-1234	680 OHM	D		BROADCAST OSCILLATOR
R1	63-715	100M OHM				F		BROADCAST ANTENNA
R2	63-765	33M OHM				J	22-1166	BROADCAST PADDER

Circuit Diagram

Model 4K600

Chassis No. 4B01

Model 4K600

Chassis No. 4B01

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Battery voltage 67.5 Volt "B" 2-1.5 Volt "A" cells.

Power output .160 watts.

Tuning Ranges 540 Kc. to 1620 Kc.

Stage Gains:

Bc. and 455 Kc. I.F.

Loop to Conv. grid down $1/3\times$ at 1000 Kc.

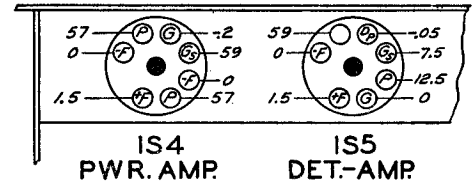
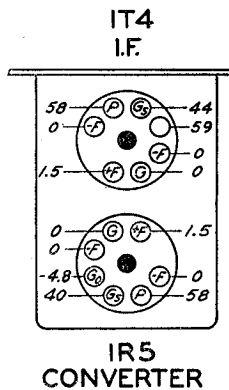
Conv. grid to I.F. grid $49\times$ at 455 Kc.

Overall audio $317\times$ at .05 watt, 400 cycles.

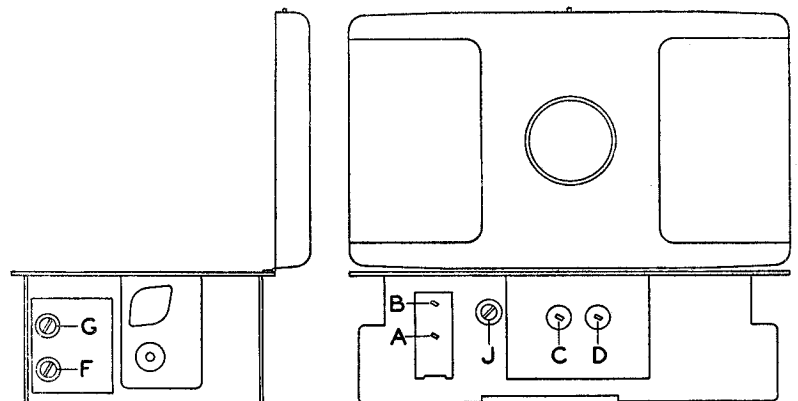
Note

#MS-652 "Alignment Jig" should be used for accurate alignment, because of chassis to case capacities.

#S 9434 "Radex" Transmitting Loop may be substituted for 1 turn loop. See pages 144-145.



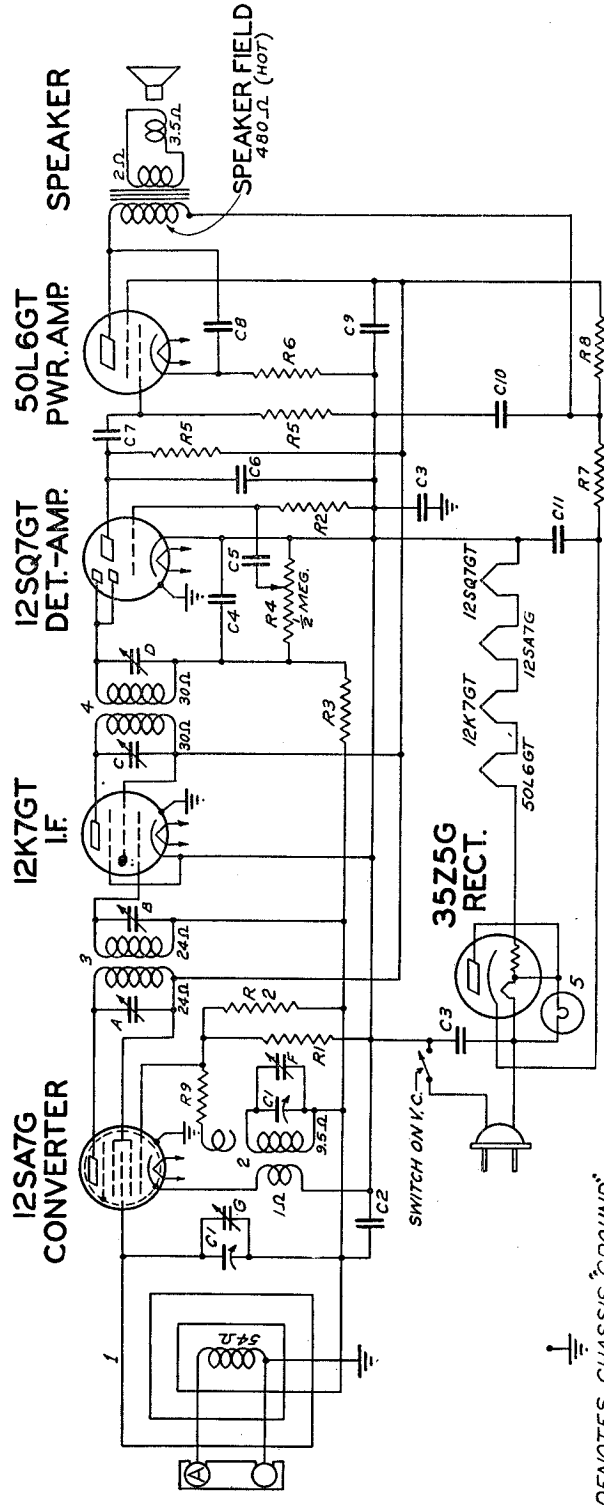
SOCKET VOLTAGES



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.1 mfd.	455 Kc.	—	1600 Kc.	A, B, C, D	Align I. F.
2	1 Turn Loop Made from Generator Leads. Diameter Approx. 10" See Note!	—	1600 Kc.	—	1600 Kc.	F	Set Oscillator to Scale
3		—	600 Kc.	—	600 Kc.	J	Rock Gang and Adjust for Max.
4		—	1400 Kc.	—	1400 Kc.	G	Align Antenna

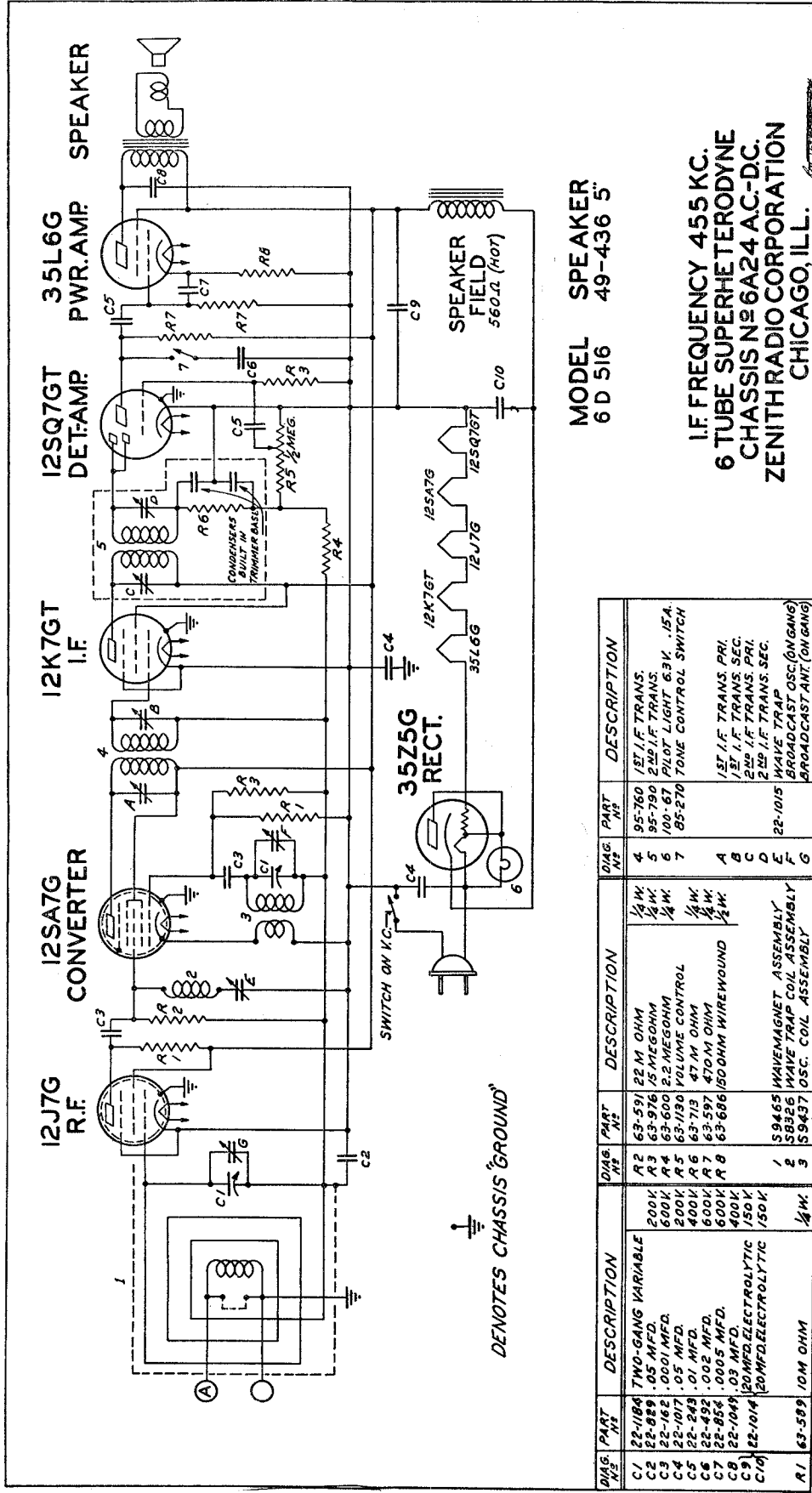


MODEL SPEAKER
 5 D 610 49-439 4"
 5 D 625 49-439 4"

I.F. FREQUENCY 455 KC.
5 TUBE SUPERHETERODYNE
CHASSIS № 5B01 A.C.-D.C.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. №	PART №	DESCRIPTION	DIAG. №	PART №	DESCRIPTION	DIAG. №	PART №	DESCRIPTION
1-3-4	R9 ADDED							
C1	22-1185	TWO-GANG VARIABLE	R1	63-589	10 M OHM	2	59450	OSC. COIL ASSEMBLY
C2	22-829	.05 MFD.	R2	63-976	15 MEGOHM	3	95-656	1ST I.F. TRANS.
C3	22-1017	.05 MFD.	R3	63-600	2.2 MEGOHM	4	95-754	2ND I.F. TRANS.
C4	22-953	.0002 MFD.	R4	63-1112	VOLUME CONTROL	5	100-67	PILOT LIGHT 6.3V. .15A.
C5	22-432	.0002 MFD.	R5	63-597	470 M OHM	A		1ST I.F. TRANS. PRI.
C6	22-834	.0005 MFD.	R6	63-1171	75 OHM WIREWOUND	B		1ST I.F. TRANS. SEC.
C7	22-243	.01 MFD.	R7	63-1172	100 OHM WIREWOUND	C		2ND I.F. TRANS. PRI.
C8	22-1182	.01 MFD.	R8	63-1173	1500 OHM	D		2ND I.F. TRANS. SEC.
C9	22-1186	20 MFD. ELECTROLYTIC	R9	63-579	220 OHM	F		BROADCAST OSC. (ON GANG)
C10	22-1186	20 MFD. ELECTROLYTIC				G		BROADCAST ANT. (ON GANG)
C11	22-1186	30 MFD. ELECTROLYTIC	1	59452	WAVEMAGNET ASSEMBLY			

Circuit Diagram
Models 5D610, 5D610W, 5D625
Chassis No. 5B01



Circuit Diagram
Model 6D516
Chassis No. 6A24

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-184	TWO-GANG VARIABLE	R2	63-531	22 M OHM	4	95-760	12T I.F. TRANS.
C2	22-185	.05 MFD.	R3	63-576	15 MEG OHM	5	95-790	22T I.F. TRANS.
C3	22-186	.0001 MFD.	R4	63-600	2.2 MEG OHM	6	100-67	PILOT LIGHT 6.3 V. .15A.
C4	22-187	.05 MFD.	R5	63-730	VOLUME CONTROL	7	85-270	100-67 TONE CONTROL SWITCH
C5	22-243	.01 MFD.	R6	63-713	47 M OHM	A		12T I.F. TRANS. PRI.
C6	22-243	.01 MFD.	R7	63-597	470 M OHM	B		12T I.F. TRANS. SEC.
C7	22-243	.002 MFD.	R8	63-597	470 M OHM	C		22T I.F. TRANS. PRI.
C8	22-243	.0005 MFD.	R9	63-606	150 OHM WIREWOUND	D		22T I.F. TRANS. SEC.
C9	22-1047	.03 MFD.				E		WAVE TRAP
C10	22-1047	.03 MFD.				F		BROADCAST OSC. (ON GANG)
						G		BROADCAST ANT. (ON GANG)
R1	63-585	10M OHM						

Model 6D516

Chassis No. 6A24

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 25.5 watts.

Power output 1. watt.

Tuning Ranges 540 Kc. to 1600 Kc.

Stage Gains:

Bc. and 455 Kc. I.F.

Ant. to R.F. grid $5.5\times$ at 1000 Kc.

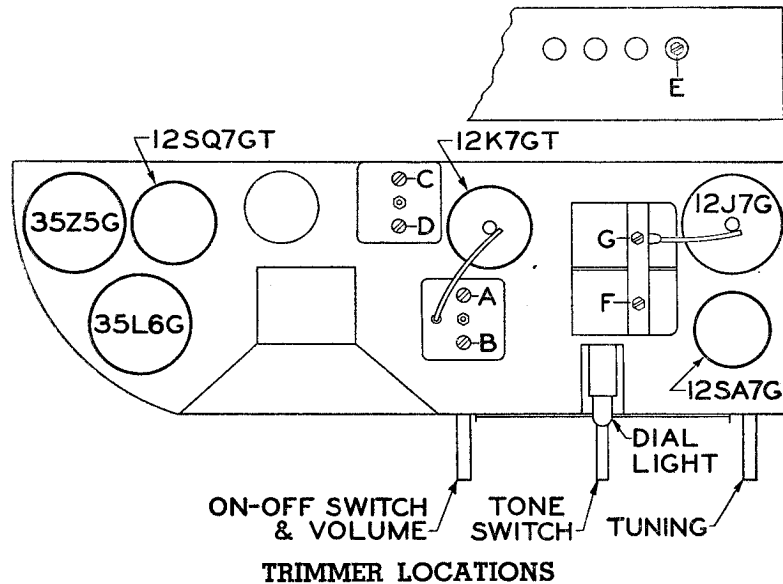
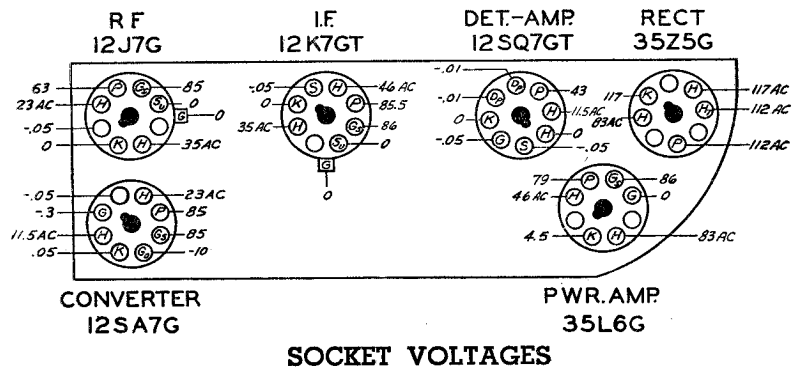
R.F. grid to conv. grid $6.2\times$ at 1000 Kc.

Conv. grid to I.F. grid $51\times$ at 455 Kc.

Overall audio $289\times$ at .25 watt, 400 cycles.

Note!

#S-9434 "Radex" loop may be substituted for 1 turn loop during alignment.



ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I. F.
2	R. F. Grid	.5 mfd.	455 Kc.	"	600 Kc.	E	Adj. Wave Trap for Minimum
3	1 Turn Loop Made from Generator Leads	—	1600 Kc.	"	1600 Kc.	F	Set Oscillator to Scale
4	See Note!	—	1400 Kc.	"	1400 Kc.	G	Align Antenna

Models 6D520, 6D520W, 6D538

Chassis No. 6A26

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 25.5 watts.

Power output 1. watt.

Tuning Ranges 540 Kc to 1600 Kc.

Stage Gains:

Bc. and 455 Kc. I.F.

Ant. to R.F. grid $5.5\times$ at 1000 Kc.

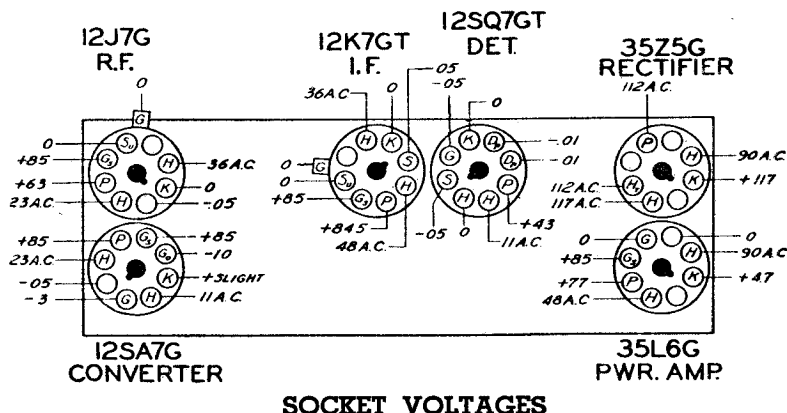
R.F. grid to conv. grid $6.2\times$ at 1000 Kc.

Conv. grid. to I.F. grid $51\times$ at 455 Kc.

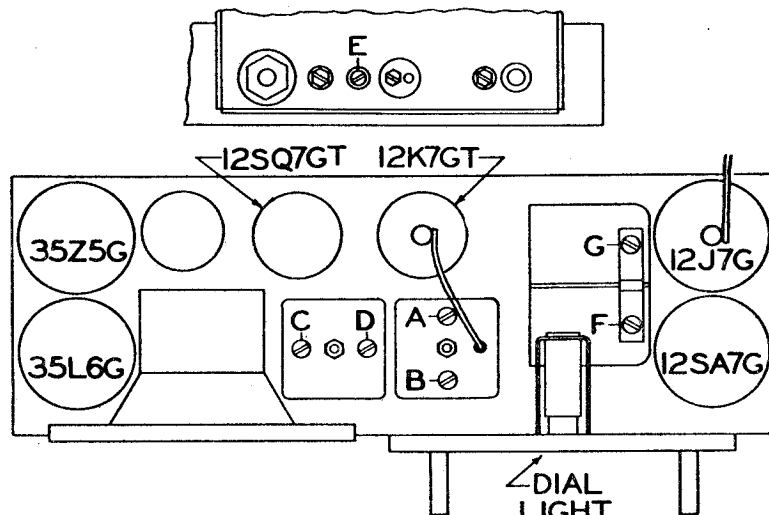
Overall audio $289\times$ at .25 watt, 400 cycles.

Note!

#S-9434 "Radex" Loop may be substituted for 1 turn loop during alignment.



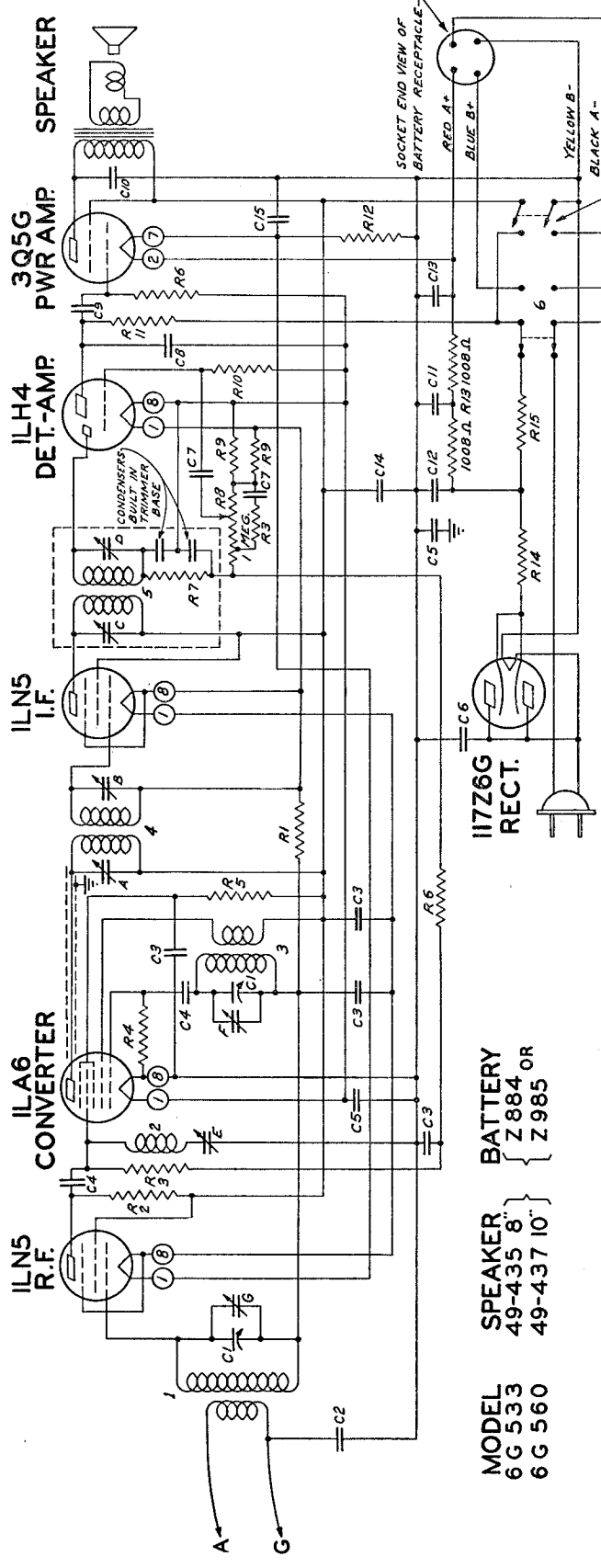
SOCKET VOLTAGES



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I. F.
2	R. F. Grid	.5 mfd.	455 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	1 Turn Loop Made from Generator Leads.	—	1600 Kc.	BC	1600 Kc.	F	Set Oscillator to Scale
4	See Note!	—	1400 Kc.	BC	1400 Kc.	G	Align Antenna



DIAG. PART NO.	DESCRIPTION	DIAG. PART NO.	DESCRIPTION	DIAG. PART NO.	DESCRIPTION
C1	22-1181 TWO GANG VARIABLE	R1	63-325 150 M OHM	1	20-227 ANTENNA COIL
C2	22-1183 .01 MFD.	R2	63-590 15 M OHM	2	58326 WAVE TRAP COIL ASSEMBLY
C3	22-825 .05 MFD.	R3	63-595 100 M OHM	3	59446 OSCILLATOR COIL ASSEMBLY
C4	22-162 100 MMF.D.	R4	63-654 180 M OHM	4	95-782 1ST I.F. TRANSFORMER
C5	22-827 .1 MFD.	R5	63-592 33 M OHM	5	95-793 2ND I.F. TRANSFORMER
C6	22-1017 .05 MFD.	R6	63-600 2.2 MEGOHM	6	95-171 CHANGEOVER SWITCH
C7	22-492 .002 MFD.	R7	63-713 47 M OHM		
C8	22-470 .00015 MFD.	R8	63-1728 VOLUME CONTROL		
C9	22-156 .01 MFD.	R9	63-585 2500 OHM		
C10	22-448 .004 MFD.	R10	63-976 15 MEGOHM	A	1ST I.F. TRANS. PRI.
C11	22-826 .05 MFD. ELECTROLYTIC	R11	63-597 15 MEGOHM	B	1ST I.F. TRANS. SEC.
C12	22-826 .05 MFD. ELECTROLYTIC	R12	63-297 870 OHM WIREWOUND	C	2ND I.F. TRANS. PRI.
C13	22-1159 .05 MFD. ELECTROLYTIC	R13	63-1132 2-SECTION CALADOMM	D	2ND I.F. TRANS. SEC.
C14	22-1159 .05 MFD. ELECTROLYTIC	R14	63-1095 140 OHM WIREWOUND	E	WAVE TRAP
C15	22-1159 .05 MFD. ELECTROLYTIC	R15	63-1156 1800 OHM	F	BROADCAST OSC. (ON GANG)
				G	BROADCAST ANT. (ON GANG)

MODEL 6G 533
6G 560

SPEAKER 49-435 8"
49-437 10"

BATTERY { Z884 OR Z985

117Z6G RECT.

ILN5 R.F.

ILA6 CONVERTER

ILN5 I.F.

ILH4 DET.-AMP

3Q5G PWR AMP

SPEAKER

CHANGEOVER SWITCH SHOWN IN POSITION FOR 115V. AC-DC. OPERATION.

SOCKET END VIEW OF BATTERY RECEPTACLE

RED A+ BLUE B+ YELLOW B- BLACK A-

D.P.S.T. SW. ON K.C.

1 DENOTES CHASSIS "GROUND"

I.F. FREQUENCY 455KC.
6 TUBE SUPERHETERODYNE
CHASSIS No 6A25
110 VOLT AC-DC.-BATTERY PACK
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Circuit Diagram
Model 6G533 - 6G560
Chassis No. 6A25

Model 6G533 - 6G560

Chassis No. 6A25

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 20 watts.

Power output .360 watts.

Tuning Ranges 540 Kc. to 1620 Kc.

Stage Gains:

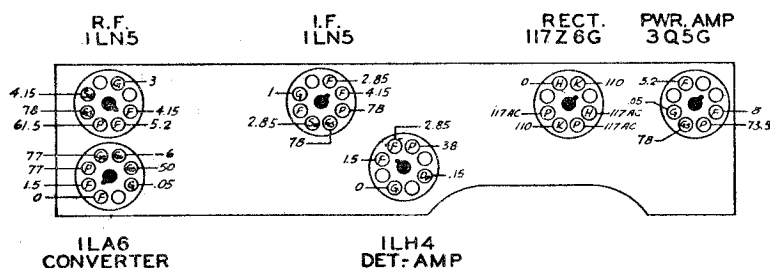
Bc. and 455 Kc. I.F.

Ant. to R.F. grid $5\times$ at 1000 Kc.

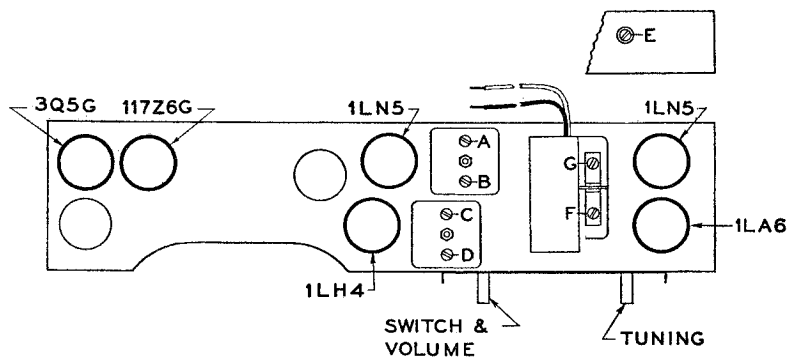
R.F. grid to conv. grid $6.5\times$ at 1000 Kc.

Conv. grid to I.F. grid $49.1\times$ at 455 Kc.

Overall audio $322\times$ at .05 watt 400 cycles.



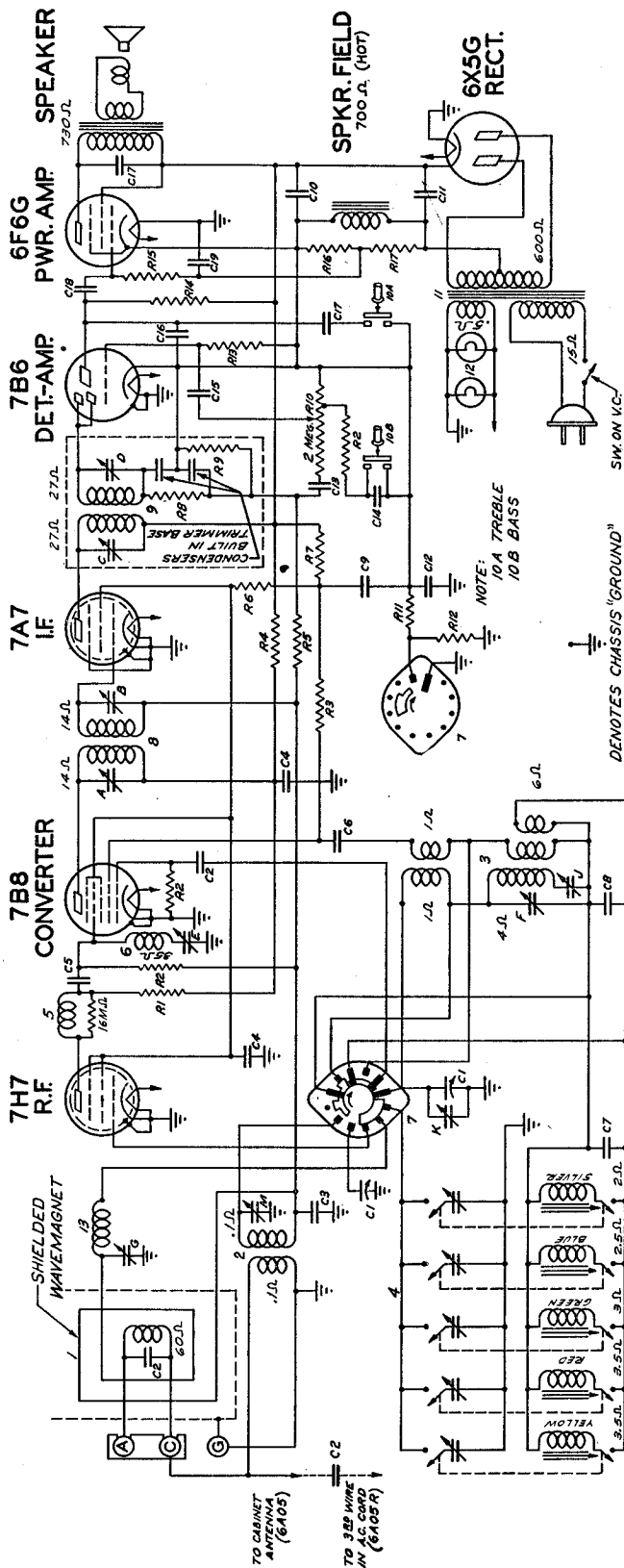
SOCKET VOLTAGES



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I. F.
2	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	Ant.—Gnd.	200 mmf.	1620 Kc.	BC	1620 Kc.	F	Set Oscillator to Scale
4	Ant.—Gnd.	200 mmf.	1400 Kc.	BC	1400 Kc.	G	Align Antenna



CHASSIS MODEL
6A05 6S546
6A05 6S556
6A05R 6S532

SPEAKER
49-388 6"
49-390 10"
49-438 6"

I.F. FREQUENCY 455 KC.
6 TUBE SUPERHETERODYNE
CHASSIS NO. 6A05 & 6A05R 2 BAND A.C.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

BAND SWITCH SHOWN IN
AUTOMATIC POSITION

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-1044	TWO GANG VARIABLE	C19	22-138	2 MFD.	R15	63-597	470M OHM	A	1ST I.F. TRANS. PRI.	
C2	22-830	50 MMFD.	R2	63-593	47M OHM	R16	63-654	180M OHM	B	1ST I.F. SEC.	
C3	22-829	.05 MFD.	R3	63-599	1000 OHM	R17	63-656	270M OHM	C	2ND I.F. SEC.	
C4	22-828	.05 MFD.	R4	63-593	47M OHM	1	S8507	WAVEMAGNET ASSEMBLY	D	2ND I.F. PRI.	
C5	22-162	.0001 MFD.	R5	63-593	47M OHM	2	S8507	WAVEMAGNET ASSEMBLY	E	2ND I.F. SEC.	
C6	22-162	.0001 MFD.	R6	63-593	47M OHM	3	S8508	OSCILLATOR COIL ASSEMBLY	F	2ND I.F. SEC.	
C7	22-162	.0001 MFD.	R7	63-593	47M OHM	4	S8508	OSCILLATOR COIL ASSEMBLY	G	2ND I.F. SEC.	
C8	22-162	.0001 MFD.	R8	63-593	47M OHM	5	S8508	OSCILLATOR COIL ASSEMBLY	H	2ND I.F. SEC.	
C9	22-1034	15 MFD. ELECTROLYTIC	R9	63-599	15M OHM	6	S8359	P.F. CHOKES & RES. ASSEMBLY	I	2ND I.F. SEC.	
C10	22-1036	1 MFD.	R10	63-101	850M OHM	7	S8359	P.F. CHOKES & RES. ASSEMBLY	J	2ND I.F. SEC.	
C11	22-1037	1 MFD.	R11	63-713	470M OHM	8	S8359	P.F. CHOKES & RES. ASSEMBLY	K	2ND I.F. SEC.	
C12	22-1038	.02 MFD.	R12	63-719	470M OHM	9	95-709	250 I.F. TRANSFORMER	L	2ND I.F. SEC.	
C13	22-1039	.005 MFD.	R13	63-712	VOLUME CONTROL	10	S8531	100 I.F. TRANSFORMER	M	2ND I.F. SEC.	
C14	22-1039	.005 MFD.	R14	63-712	VOLUME CONTROL	11	S8531	100 I.F. TRANSFORMER			
C15	22-854	.0005 MFD.	R15	63-624	68 OHM	12	95-710	POWER TRANS. 50-60V 117V			
C16	22-854	.0005 MFD.	R16	63-624	68 OHM		100-36	PILOT LIGHT 6.3V .25A			
C17	22-448	.004 MFD.	R17	63-976	15M OHM						
C18	22-830	.02 MFD.	R18	63-976	15M OHM						

Circuit Diagram
Model 6S532
Chassis No. 6A05R

Model 6S532

Chassis No. 6A05R

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 60 watts.

Power output 6. watts.

Tuning Ranges 545 Kc. to 1570 Kc.
5.7 Mc. to 18.3 Mc.

Stage Gains:

Bc. and 455 Kc. I.F.

Ant. to R.F. grid $3.8\times$ at 1000 Kc.

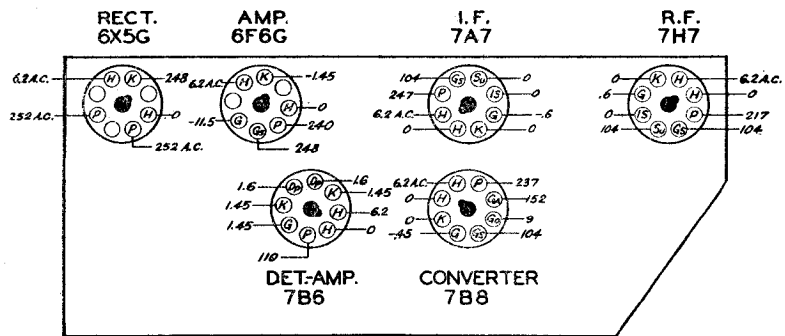
R.F. grid to conv. grid $7\times$ at 1000 Kc.

Conv. grid to I.F. grid $92\times$ at 455 Kc.

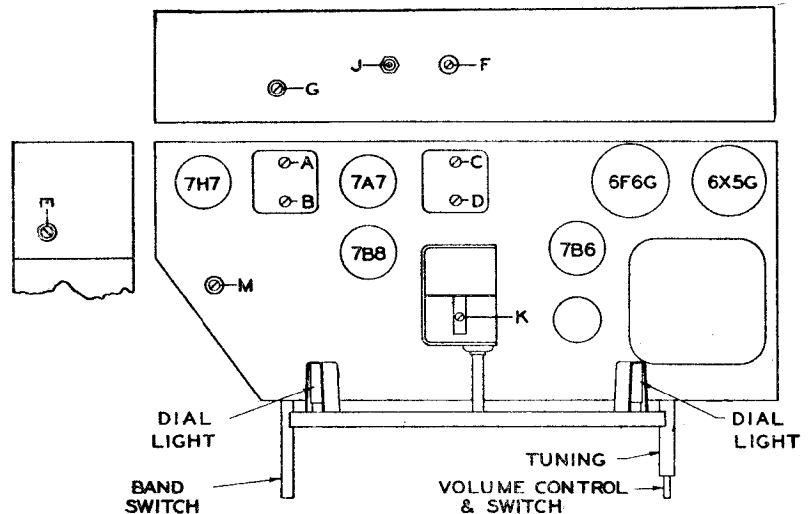
Overall audio $778\times$ at 1 watt 400 cycles.

Note!

#S-9434 "Radex" loop may be substituted for 1 turn loop during alignment.



SOCKET VOLTAGES

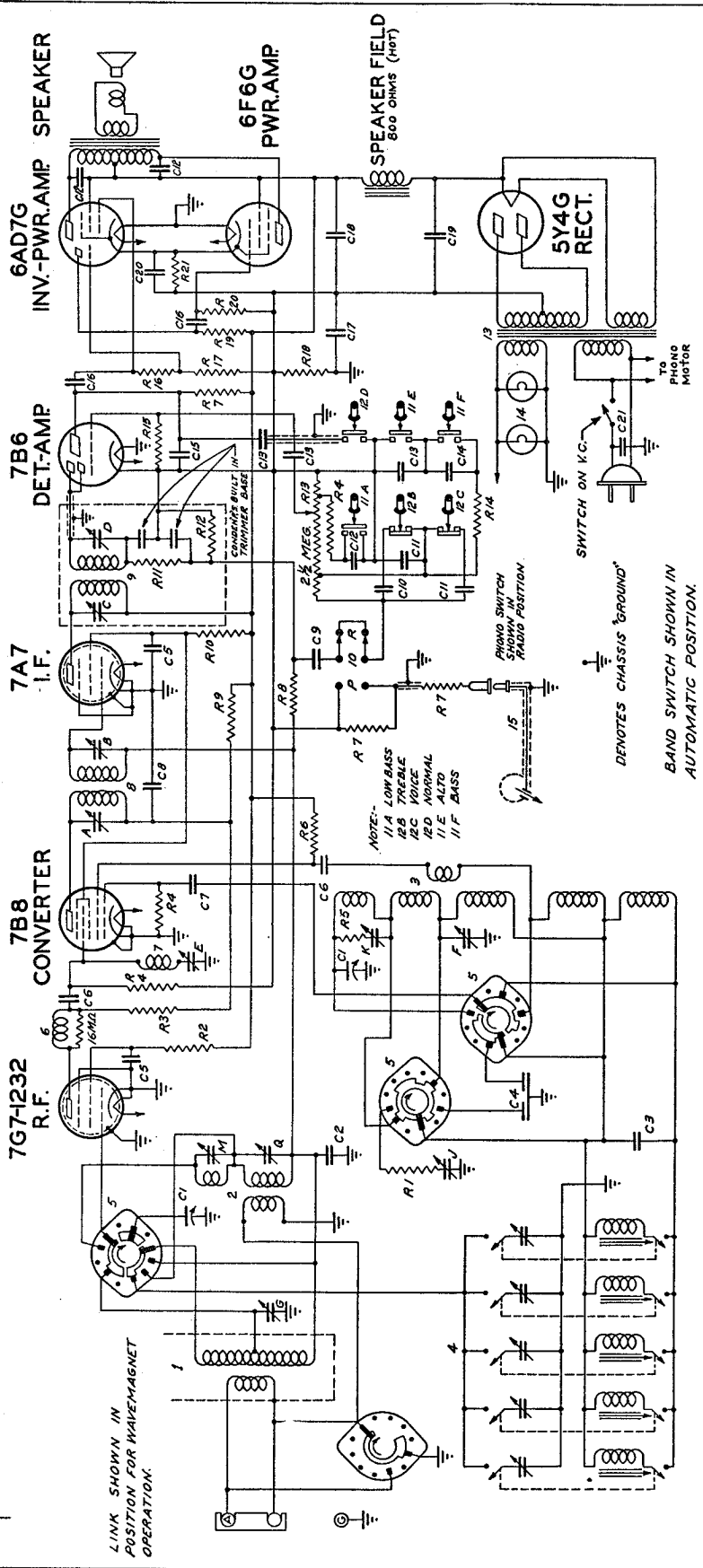


TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I. F.
2	R. F. Grid	.5 mfd.	455 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	1 Turn Loop Made from Generator Leads. See Note!	—	18 Mc.	SW	18 Mc.	K	Set Oscillator to Scale
4		—	1500 Kc.	BC	1500 Kc.	F	Set Oscillator to Scale
5		—	1500 Kc.	BC	1500	G	Align Antenna
6		—	600 Kc.	BC	600 Kc.	J	Rock Gang and Adjust for Max.
7		—	16 Mc.	SW	16 Mc.	M	Align Antenna

2-7-41 CEO WAS SONPED - C22 OMITTED



DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
1	63-694	33 OHM	1	63-1015	WAVE TRAP
2	63-587	4700 OHM	2	63-1015	WAVE TRAP
3	63-587	4700 OHM	3	63-1015	WAVE TRAP
4	63-587	4700 OHM	4	63-1015	WAVE TRAP
5	63-587	4700 OHM	5	63-1015	WAVE TRAP
6	63-587	4700 OHM	6	63-1015	WAVE TRAP
7	63-587	4700 OHM	7	63-1015	WAVE TRAP
8	63-587	4700 OHM	8	63-1015	WAVE TRAP
9	63-587	4700 OHM	9	63-1015	WAVE TRAP
10	63-587	4700 OHM	10	63-1015	WAVE TRAP
11	63-587	4700 OHM	11	63-1015	WAVE TRAP
12	63-587	4700 OHM	12	63-1015	WAVE TRAP
13	63-587	4700 OHM	13	63-1015	WAVE TRAP
14	63-587	4700 OHM	14	63-1015	WAVE TRAP
15	63-587	4700 OHM	15	63-1015	WAVE TRAP
16	63-587	4700 OHM	16	63-1015	WAVE TRAP
17	63-587	4700 OHM	17	63-1015	WAVE TRAP
18	63-587	4700 OHM	18	63-1015	WAVE TRAP
19	63-587	4700 OHM	19	63-1015	WAVE TRAP
20	63-587	4700 OHM	20	63-1015	WAVE TRAP

MODEL 7S598
SPEAKER 49-441 10"
I.F. FREQUENCY 455 KC.
7 TUBE SUPERHETERODYNE
CHASSIS NO. 7A11-3 BAND A.C.-PHONO
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Circuit Diagram
Model 7S598
Chassis No. 7A11

Model 7S598

Chassis No. 7A11

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 77 watts.

Power output 8.4 watts.

Tuning Ranges:

540 Kc. to 1570 Kc.

1.55 Mc. to 4.8 Mc.

5.8 Mc. to 18.3 Mc.

Stage Gains:

Bc. and 455 Kc. I.F.

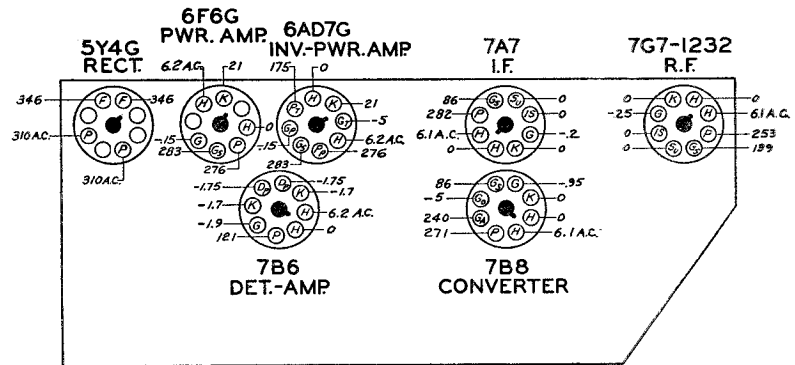
Ant. to R.F. grid $3.2\times$ at 1000 Kc.
R.F. grid to conv. grid $8.1\times$ at 1000 Kc.

Conv. grid to I.F. grid $65\times$ at 455 Kc.

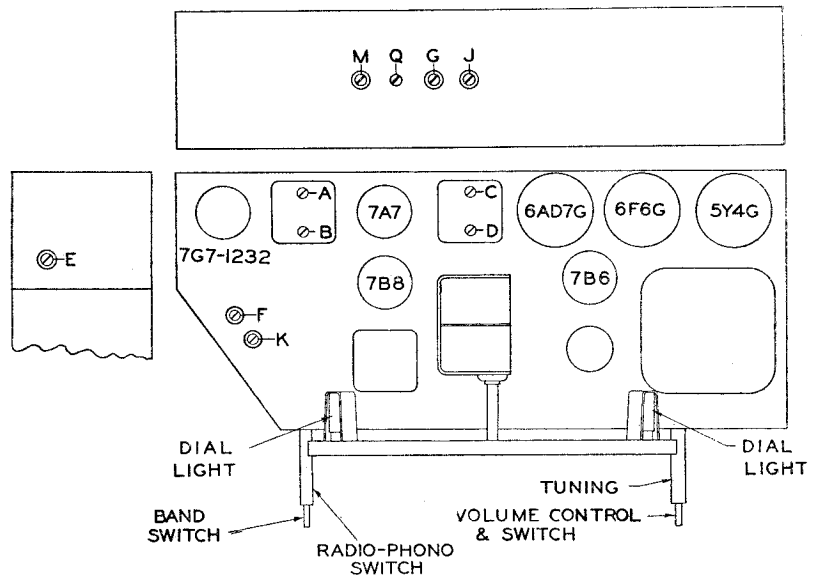
Overall audio $1411\times$ at 1 watt, 400 cycles.

Note!

#S-9434 "Radex" loop may be substituted for 1 turn loop during alignment.



SOCKET VOLTAGES



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I. F.
2	R. F. Grid	.5 mfd.	455 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	1 Turn Loop Made with Generator Leads to 10" dia. See Note!	—	18 Mc.	SW	18 Mc.	K	Set Oscillator to Scale
4		—	16 Mc.	SW	16 Mc.	M	Align Antenna
5		—	4.5 Mc.	Med.	4.5 Mc.	Q	Rock Gang and Adjust for Max.
6		—	1500 Kc.	BC	1500 Kc.	F	Set Oscillator to Scale
7		—	1400 Kc.	BC	1400 Kc.	G	Align Antenna
8		—	600 Kc.	BC	600 Kc.	J	Rock Gang and Adjust for Max.
9	Repeat operations 6 - 7 and 3 - 4						

Circuit Diagram
Models 10H571R, 10H573
Chassis No. 10A3R

Note: Adjust FM I.F. frequency to value designated on I.F. transformer.

Models 10H571R, 10H573

Chassis No. 10A3R

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 90 watts.

Power output 6.5 watts.

Tuning Ranges

540 Kc. to 1600 Kc.

1.5 Mc. to 5.2 Mc.

5.7 Mc. to 18.5 Mc.

41.5 Mc. to 50.5 Mc.

Stage Gains:

Bc. and 455 Kc. I.F.

Ant. to R.F. $6.5\times$ at 1000 Kc.
R.F. grid to conv. grid $28.1\times$ at 1000 Kc.

Conv. grid to I.F. grid $31.3\times$ at 455 Kc.

Overall audio $800\times$ at 1 watt, 400 cycles.

Fm. and 8.6 Mc. I.F.

Ant. to R.F. grid — $1.8\times$ at 46. Mc.

R.F. grid to conv. grid — $7.9\times$ at 46. Mc.

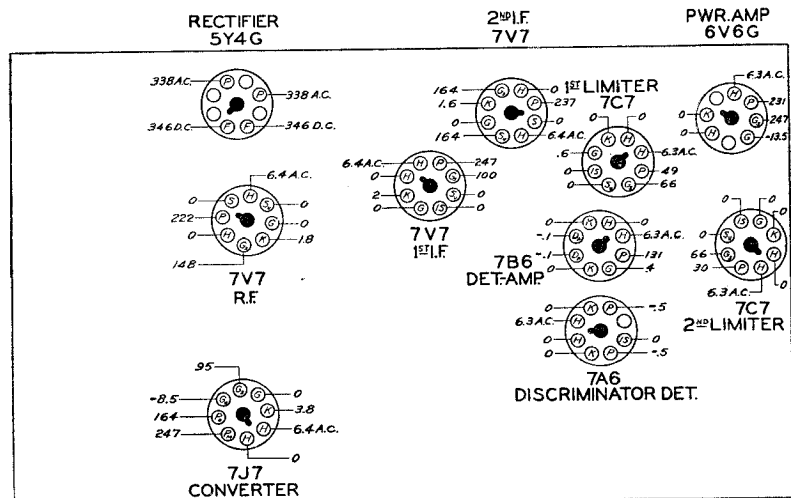
Conv. grid to 1st I.F. grid — $2.7\times$ at 8.6 Mc.

1st I.F. grid to 2nd I.F. grid — $80\times$ at 8.6 Mc.

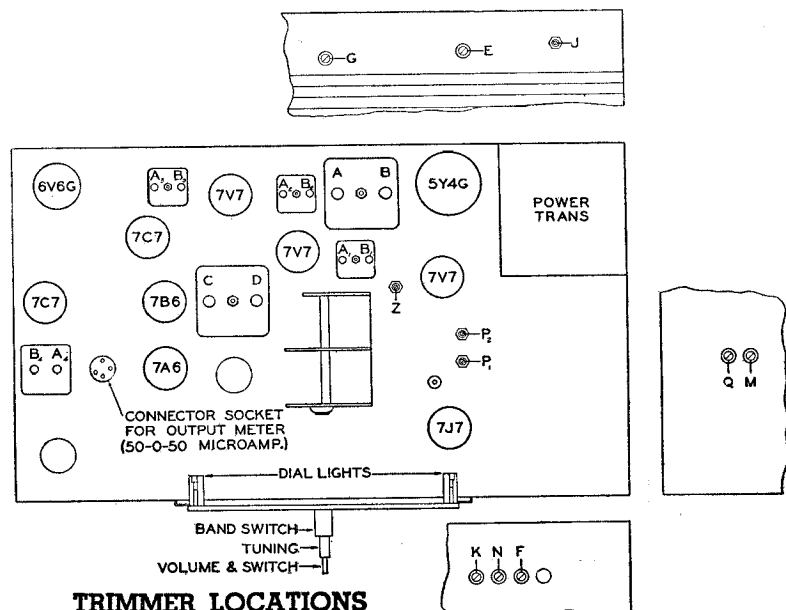
2nd I.F. grid to Limiter grid — $25\times$ at 8.6 Mc.

Note!

#S-9434 "Radex" loop may be substituted for 1 turn loop during alignment.



SOCKET VOLTAGES



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

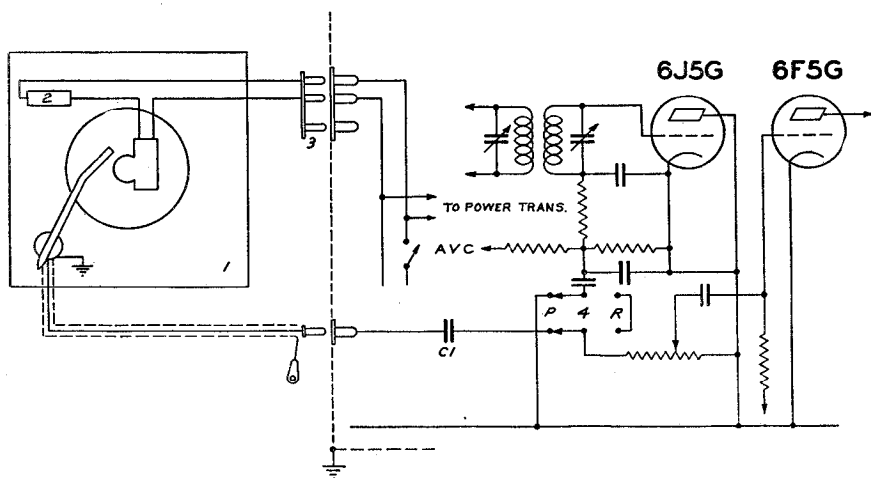
Opr.	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D,	Align I. F.
2	R. F. Grid	"	455 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	Antenna Z and G	400 ohms	18 Mc.	SW	18 Mc.	K	Set Oscillator to Scale
4	"	"	18 Mc.	SW	18 Mc.	M	Align Antenna
5	"	"	5.0 Mc.	Med.	5.0 Mc.	N	Set Oscillator to Scale
6	"	"	4.5 Mc.	Med.	4.5 Mc.	Q	Align Antenna
7	1 Turn Loop Made with Generator	—	1400 Kc.	BC	1400 Kc.	F	Set Oscillator to Scale
8	Leads to 10" dia.	—	1400 Kc.	BC	1400 Kc.	G	Align Antenna
9	See Note!	—	600 Kc.	BC	600 Kc.	J	Rock Gang to Track BC Padder

F. M. ALIGNMENT — See Pages 126-127

X = FM output meter across full discriminator load.

Y = FM output meter across half discriminator load.

10	7V7 2nd I.F. Grid	.5 mfd.	8.6 Mc.	Manual FM	8.6 Mc.	A 4	Align for Maximum deflection—Y
11	"	"	8.6 Mc.	"	8.6 Mc.	B 4	Align for Zero deflection—X
12	"	"	8.6 Mc.	"	8.6 Mc.	A 3 - B 3	Align for Maximum deflection—Y
13	7V7 1st I. F. Grid	"	8.6 Mc.	"	8.6 Mc.	A 2 - B 2	" — Y
14	Converter Grid	"	8.6 Mc.	"	8.6 Mc.	A 1 - B 1	" — Y
15	FM Ant. Terminals	100 ohms	46. Mc.	"	46. Mc.	Adj. Cam on Gang Shaft to Scale Osc.	Align for Zero deflection—X
16	"	"	42.5 Mc.	"	42.5 Mc.	P 1	Align for Maximum deflection—Y
17	"	"	49. Mc.	"	49. Mc.	P 2	" — Y
18	"	"	46. Mc.	"	46. Mc.	Z	" — Y



DIAG. N°	PART N°	DESCRIPTION
C1	22-1189	.00075 MFD. 600 V.
1	169-63	WEBSTER AUTOMATIC
2	169-64	RECORD PLAYER
3	85-191	A.C. SWITCH
4	85-85	A.C. PLUG
	85-228	PHONO-RADIO SW.

PHONO CIRCUIT DATA
MODEL 10S599
SPEAKER 49-442-14"
CHASSIS N°10A2R

Same as 10A2R with audio compensation revised to match new pickup.

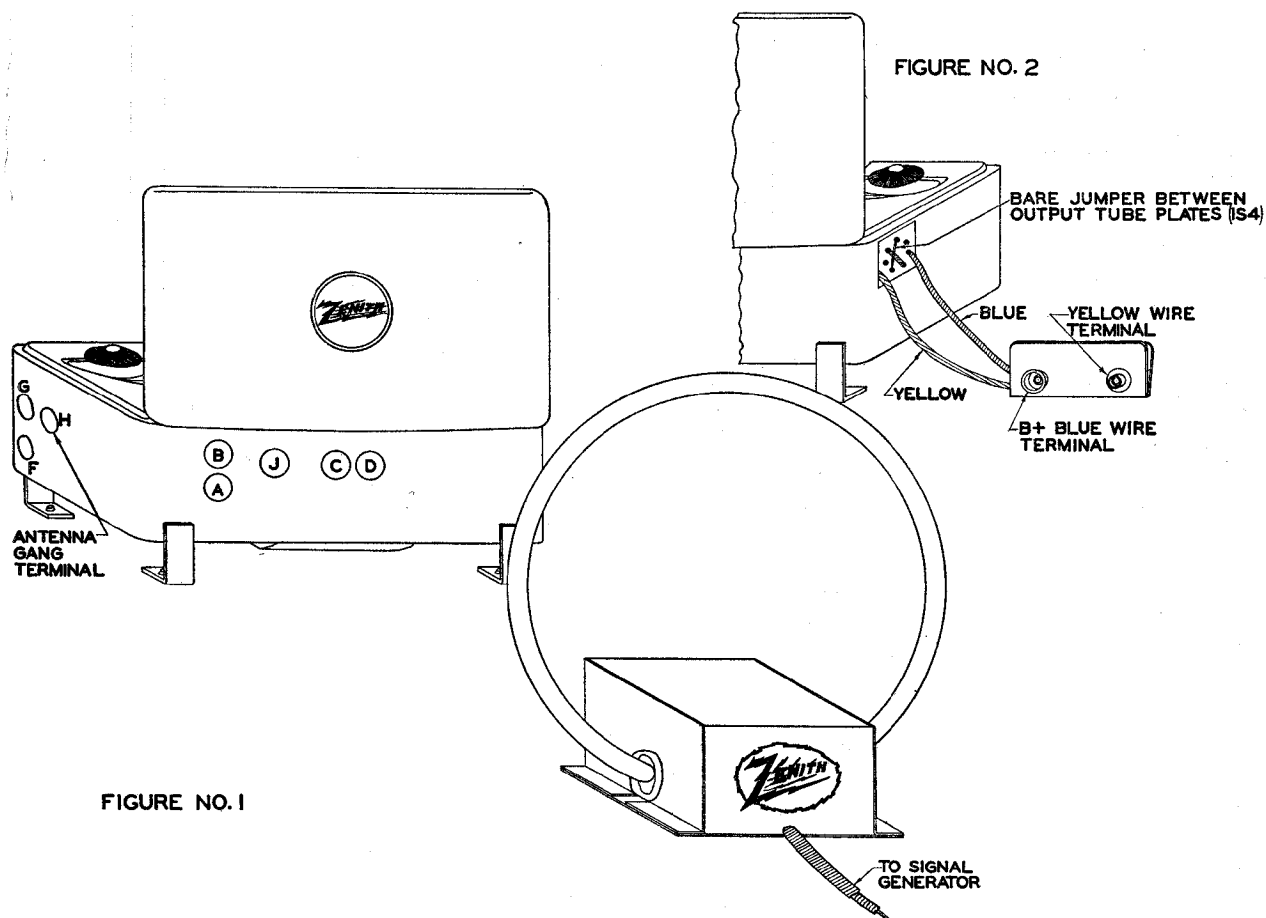


FIGURE NO.1

FIGURE NO. 2

ALIGNMENT INSTRUCTIONS

Chassis No. 4B01

The following ALIGNMENT PROCEDURE on Model 4K600 POKETRADIO must be carefully followed using a #MS-652 Zenith Alignment Jig to maintain actual shielding capacities during the balancing operations.

Remove back of receiver.

Remove "B" batteries.

Remove case of receiver.

To remove case; first place receiver on bench with lid down, then place screw driver under spring clips and pry up, at the same time pulling case away from chassis. After spring clips have been released the case can be lifted off chassis. Next remove clips by turning and pulling away from chassis. Do not remove "A" Batteries. Place chassis in Alignment Jig as shown in Figure 1.

Connect one lead from the output meter to the bare jumper connecting the plates of the output tube (1S4) and the other output meter lead to B+ at the battery (blue wire). CAUTION — Keep signal from generator at minimum so A.V.C. action will not give a false peak.

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1.	1st Det. Grid (at H)	.1 mfd.	455	—	1600	A,B,C,D	I.F. Alignment
2.	#S9434 Radiating Loop loosely coupled to the 4K600 antenna. See Fig. 1.	—	1600	—	1600	F	Set Oscillator to scale.
3.	" "	—	600	—	600	J	Rock gang for maximum osc. tracking
4.	" "	—	1400	—	1400	G	Peak Antenna for Maximum

Schematic and Voltage for 4B01 Chassis Page 129

PARTS PRICE LIST

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B01	A	6A24	D	7A11	G
5B01	B	6A25	E	10A2R	H
6A05R	C	6A26	F	10A3R	I

DIAL PARTS

Part No.	Model	List Price
19-111	Pulley retaining clip B-D-E-F-G-I	\$.04
26-254	Dial scale F	.20
26-280	Dial scale D	.35
26-281	Dial scale B	.20
27-35	Band indicator disc. G	.10
27-39	Flywheel disc H-I	1.00
32-23	Drive belt H-I	.15
54-161	Speed nut D	.50C
59-95	Dial pointer B-D	.10
59-96	On-off indicator E	.06
59-98	Dial pointer C-G	.15
59-99	Dial pointer F	.15
59-100	Band indicator H	.15
59-105	Band indicator I	.25
59-116	Dial pointer E	.10
61-75	Drive pulley D-G-I	.10
61-78	Drive pulley B-E-F	.10
76-302	Drive shaft B-F	.05
76-305	Drive shaft C-G	.10
76-307	Volume Control Shaft H-I	.10
76-313	Tuning Control Shaft D	.05
76-326	Tuning Control Shaft E	.10
78-325	Dial light socket and wire B-F	.20
78-378	Dial light socket and wire D	.20
80-69	Dial cord tension spring C-D-G-H-I	.01
80-139	Retainer spring I	.01
80-181	Dial pointer spring B-D-H	.65C
80-209	Dial cord tension spring B-E-F	.02
80-223	Indicator spring E	.01
80-227	Drive shaft tension spring C-G	.01
80-239	Shaft tension spring I	.01
93-371	Black bakelite washer E	.45C
93-482	Black bakelite washer C-F-G	.60C
94-271	Shaft coupling bushing (vol. cont.) H-I	.06
94-280	Control arm insulating bushing H-I	.03
94-282	Volume control shaft insulating bushing H-I	.03
94-285	Volume control shaft insulating bushing H-I	.03
94-339	Black bakelite bushing I	.03
97-117	Pulley mounting stud H	.05
100-36	Dial light bulb - 6.3 volt .25 amp C-G-H-I	.09
100-67	Dial light bulb - 6.3 volt .15 amp B-D-F	.09
117-59	Band indicator lever G	.70C
117-60	Band switch lever H-I	.015
118-16	Lever connecting link H	.01
118-19	Band indicator link (short) G	.02
118-20	Band indicator link (long) G	.03
118-21	Band indicator link H-I	.02
118-24	Lever connecting link I	.03
148-32	Band switch control arm H-I	.10
188-2	Retaining ring H	.01
188-13	Retaining ring G	.15C
188-27	Retaining ring C-G	.01
188-32	Retaining ring B-D-E-F-I	.85C
192-53	Dial Crystal F	.20
192-57	Dial Crystal E	.15
192-60	Dial Crystal D	.20
196-34	Dial Crystal gasket F	.01
199-27	Rubber sleeve H	.60C
S-5999	Dial light socket and clip assy. H-I	.08
S-8354	Dial cord and eyelet assy. B-F	.05
S-8373	Dial scale assy. (26-279 & 59-96) E	.35
S-8392	Indicator cam assy. E	.05
S-8421	Dial cord and eyelet assy. E	.05
S-8426	Dial scale and band indicator assy. G	1.00
S-8437	Dial scale bracket & lever assy. H	1.00
S-8444	Dial light socket & wire assy. G	.65
S-8453	Dial cord and eyelet assy. C-G	.10
S-8492	Dial cord and eyelet assy. H-I	.10

Part No.	Model	List Price
S-8499	Dial pointer and spring assy. H-I	.25
S-8551	Dial light socket and wire assy. C	.60
S-8560	Dial scale & bracket assy. (26-266) C	.80
S-8658	Tuning shaft and bushing assy. H-I	.25
S-8932	Dial cord and eyelet assy. D	.05
S-9072	Cam assembly I	.15
S-9545	Dial scale bracket & lever assy. (26-268) I	1.75
MS-452	Pulley & bracket assy. (on chassis) H	.15
MS-591	Pulley and bracket assy. C-H	.10

AUTOMATIC and RADIO-ORGAN PARTS

10-77	Cardboard box H-I	.05
12-720	Unit mounting bracket (automatic) H	.15
24-233	Push button switch cover C-G	.03
46-328	Automatic tuning knob C-G	.05
46-345	Automatic tuning knob (female) H-I	.05
46-346	Automatic tuning knob (male) H-I	.05
46-356	Knob marked #1 I	.10
46-357	Knob marked #2 I	.10
46-358	Knob marked #3 I	.10
46-359	Knob marked #4 I	.10
46-360	Knob marked #5 I	.10
46-361	Knob marked Manual I	.10
56-74	Retaining pin I	.05
68-1	Automatic Tuning adjustment wrench I	.02
70-69	#2 x 3/8" oval head wood screw H	.30C
76-293	Knob shaft G-H-I	.02
76-308	Knob shaft C	.01
80-161	Latch bar spring C-G	.25C
80-203	Push lever spring C-G	.25C
80-211	Catch spring G-H-I	.25C
80-224	Retaining spring I	.50C
80-225	Retaining spring C	.65C
80-226	Retaining spring H-I	.01
80-228	Retaining spring C-G	.60C
80-229	Retaining pin spring I	.60C
83-669	Coil retaining strip C-G	.03
83-671	Fibre strip C	.02
83-711	Coil retaining strip H-I	.02
83-713	Fibre strip H	.01
83-766	Rubber strip H	.02
83-794	Latch bar strip C-G	.02
83-838	Fibre strip G	.02
83-839	Automatic unit fibre strip I	.02
83-900	Fibre strip (F.M.) I	.03
85-237	Switch (automatic) H-I	2.50
85-263	FM. automatic tuning switch I	3.00
93-510	Ceramic washer I	.015
112-223	Adjustment screw & core C-G-H-I	.10
112-250	#4-40 x 7/32" R.H. S.T. screw H	.40C
112-292	Adjustment screw & core G	.10
114-39	#8 x 1/4" hex. acorn hd. S.T. screw H	.50C
125-17	Rubber grommet C-G	.015
149-18	Core and screw assy. I	.15
156-6	Escutcheon catch G-H-I	.03
166-15	Rubber bumper C-G	.55C
188-32	Retaining ring I	.85C

NOTE—For trimmers, see Condenser list.

S-6928	Automatic tuning coil (red) C-G	.15
S-6929	Automatic tuning coil (green) C-G	.15
S-6930	Automatic tuning coil (blue) C-G	.15
S-7021	Automatic tuning coil (yellow) C-G-H-I	.15
S-7536	Automatic tuning coil (silver) C-G	.15
S-7857	Automatic tuning coil (red) H-I	.20
S-7858	Automatic tuning coil (green) H-I	.20
S-7859	Automatic tuning coil (blue) H-I	.20
S-7860	Automatic tuning coil (silver) H-I	.20
S-8396	Knob & eyelet assembly (alto) G	.10

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B01	A	6A24	D	7A11	G
5B01	B	6A25	E	10A2R	H
6A05R	C	6A26	F	10A3R	I

Part No.	Model	List Price
S-8397	Knob & eyelet assembly (bass) C-G	.10
S-8398	Knob & eyelet assembly (lo bass) G	.10
S-8399	Knob & eyelet assembly (voice) G	.10
S-8400	Knob & eyelet assembly (normal) G	.10
S-8401	Knob & eyelet assembly (treble) G	.10
S-8406	Knob & eyelet assembly (voice) H	.10
S-8407	Knob & eyelet assembly (normal) H-I	.10
S-8408	Knob & eyelet assembly (treble) H-I	.10
S-8409	Knob & eyelet assembly (alto) H-I	.10
S-8410	Knob & eyelet assembly (bass) H-I	.10
S-8411	Knob & eyelet assembly (lo bass) H-I	.10
S-8449	Radio organ contact strip assy. G	.20
S-8451	Automatic tuning escutcheon (complete) H-I	1.25
S-8452	Radio organ escutcheon (complete) H	1.50
S-8454	Contact spring and mounting strip assy. C	.75
S-8455	Automatic switch push lever assy. C-G	.02
S-8457	Automatic tuning unit assy. (complete) C-G	6.25
S-8490	Radio organ switch contact and strip assy. H-I	.25
S-8495	Automatic tuning unit assy. (complete) H-I	7.25
S-8518	Radio organ escutcheon & knob assembly — (alto, bass, lo bass) G	1.00
S-8519	Radio organ escutcheon & Knob assembly—(voice, normal, treble) G	1.00
S-8531	Radio organ contact and strip assy. C	.10
S-8549	Radio organ escutcheon and knob assy. (bass) C	.60
S-8550	Radio organ escutcheon and knob assy. (treble) C	.60
S-8740	Knob and eyelet assy. (treble) C	.10
S-8985	Knob and eyelet assy. (voice) I	.10
S-9069	Oscillator coil assy. (F.M.) I	.30
S-9070	Oscillator coil assy. (F.M.) (2 required) I	.30
S-9315	Radio organ escutcheon and knob assy. (complete) I	1.25
S-9316	F.M. tuning escutcheon and knob assembly (complete) (#1-2-3 knob) I	1.25
S-9317	FM. tuning escutcheon and knob assy. (complete) (#4-5 manual knob) I	1.25
S-9344	Oscillator coil assembly (F.M.) I	.30
S-9345	Oscillator coil assembly (F.M.) I	.30
S-9383	F.M. tuning escutcheon assy: (57-849) I	1.60
S-9531	F.M. automatic tuning unit assy: (complete) I	7.50

R. F. and I. F. COILS and CHOKES

20-227	Antenna coil E	\$.40
20-230	Speaker compensating filter I	1.00
95-625	1st I.F. transformer (I.F. 17) H	1.25
95-664	2nd I.F. transformer H	1.25
95-696	1st I.F. transformer B-F	1.00
95-697	2nd I.F. transformer F	1.00
95-703	1st I.F. transformer G	1.00
95-708	1st I.F. transformer C	1.00
95-709	2nd I.F. transformer C	1.00
95-760	1st I.F. transformer D	1.00
95-761	2nd I.F. transformer G	1.00
95-765	1st I.F. transformer (455kc) I	1.50
95-766	2nd I.F. transformer (455kc) I	2.00
95-780	1st I.F. transformer A	1.25
95-781	2nd I.F. transformer A	1.25
95-785	1st I.F. transformer (8.6 megacycle) (F.M.) I	1.00
95-786	2nd I.F. transformer (8.6 megacycle) (F.M.) I	1.00

Part No.	Model	List Price
95-787	3rd I.F. transformer (8.6 megacycles) (F.M.) I	1.00
95-788	Discriminator I.F. transformer (8.6 meg.) (F.M.) I	1.50
95-790	2nd I.F. transformer D	1.00
95-792	1st I.F. transformer E	1.00
95-793	2nd I.F. transformer E	1.25
95-794	2nd I.F. transformer B	1.00
S-7505	Oscillator coil assembly H	1.25
S-8142	Loading coil assy. H	.45
S-8326	Wave trap coil assy. C-D-E-F-G-H-I	.20
S-8336	Oscillator coil assy. F	.45
S-8359	Resistor and R. F. coil assy. C-G-I	.25
S-8403	Oscillator coil assy. G	.50
S-8404	Antenna coil assy. G	.40
S-8430	Antenna coil assy. H	.40
S-8436	Detector coil assy. H	1.25
S-8466	Oscillator coupler coil and bracket assy. H-I	.25
S-8474	Antenna loading coil assy. C	.25
S-8496	R.F. choke and resistor assy. H	.30
S-8507	Antenna coil assy. C	.30
S-8508	Oscillator coil assy. C	1.10
S-9044	Loading coil assy. I	.50
S-9065	F.M. Ant. coil assy. I	.50
S-9066	F.M. Det. coil assy. I	.30
S-9068	F.M. manual oscillator coil assy. I	.60
S-9074	Oscillator coil assy. I	1.25
S-9075	Antenna coil assy. (S.W.) I	1.00
S-9350	F.M. Oscillator peaking coil assy. (grid) I	.20
S-9437	Oscillator coil assy. D	.30
S-9446	Oscillator coil assy. E	.30
S-9450	Oscillator coil assy. B	.50
S-9483	Plate choke assy. I	.30
S-9503	F.M. I.F. Wave trap assy. (8.6 meg.) I	.30
S-9504	A.C. line choke assy. I	.25
S-9507	Oscillator coil and bracket assy. A	.60
S-9535	F.M. oscillator peaking coil assy. (plate) I	.25
S-9562	F.M. manual oscillator coil assy: I	.40
S-9563	F.M. manual oscillator coil and bracket assy. I	1.75

CONDENSERS

22-127	25 mmf.	600 volt	\$.15
22-138	.2 mfd	200 volt	.25
22-147	.0005 mfd	600 volt	.20
22-162	.0001 mfd.	600 volt	.15
22-171	.05 mfd.	600 volt	.20
22-182	.00025 mfd.	600 volt	.20
22-188	.02 mfd.	400 volt	.15
22-196	.01 mfd.	600 volt	.15
22-229	.005 mfd.	600 volt	.15
22-243	.01 mfd.	400 volt	.15
22-289	50 mmf.	600 volt	.15
22-319	.005 mfd.	200 volt	.15
22-327	.02 mfd.	200 volt	.15
22-348	.001 mfd.	600 volt	.20
22-358	.002 mfd.	600 volt	.30
22-448	.004 mfd.	600 volt	.15
22-470	.00015 mfd.	600 volt	.15
22-492	.002 mfd.	600 volt	.15
22-688	Oscillator Padder	H-I	.30
22-716	.0005 mfd.	600 volt	.20
22-825	.1 mfd.	400 volt	.20
22-826	.01 mfd.	200 volt	.15
22-827	.1 mfd.	200 volt	.18
22-828	.05 mfd.	400 volt	.15
22-829	.05 mfd.	200 volt	.15

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B01	A	6A24	D	7A11	G
5B01	B	6A25	E	10A2R	H
6A05R	C	6A26	F	10A3R	I

Part No.		Model	List Price
22-830	.02 mfd. 600 volt		.15
22-846	Automatic tuning trimmer	C-G-H-I	.15
22-847	Automatic tuning trimmer	C-G-H-I	.20
22-848	Automatic tuning trimmer	C-G-H-I	.25
22-850	3 section ceramic trimmer	H-I	.50
22-852	30 mfd. 250 volt Dry electrolytic	G	.85
22-854	.0005 mfd. 600 volt		.15
22-859	Automatic tuning trimmer	C-G-H-I	.20
22-868	480 mmf. Silver cap		.30
22-873	Automatic tuning trimmer	C-G-H-I	.25
22-887	.001 mfd. 600 volt		.15
22-934	20 mfd. x 450 volt x 20 mfd. x 350 volt Dry electrolytic	H	1.10
22-953	.0002 mfd. 600 volt		.12
22-954	.00035 mfd. 600 volt		.12
22-966	.04 mfd. 600 volt		.20
22-1006	2 gang variable	F	2.00
22-1014	20 mfd. x 20 mfd. x 150 volt Dry electrolytic	D-F	.75
22-1015	Wave trap trimmer	C-D-E-F-G-H-I	.15
22-1017	.05 mfd. 200 volt		.15
22-1022	.005 mfd. 600 volt		.30
22-1023	Oscillator padder	C	.30
22-1026	20 mfd. x 150 volt x 40 mfd. 150 volt Dry electrolytic	E	.75
22-1030	2 gang variable	G	2.00
22-1031	4 section trimmer	G	.50
22-1033	2 section trimmer	G	.25
22-1034	5 mfd. x 450 volt x 15 mfd. 350 volt dry electrolytic	C	.75
22-1036	14 mfd. 450 volt dry electrolytic	C	.50
22-1037	Dual fixed padder	G	.60
22-1039	Dual fixed padder	H-I	.60
22-1041	.005 mfd. 600 volt		.15
22-1042	Single section trimmer	C-H-I	.15
22-1043	3 gang variable	H	5.00
22-1044	2 gang variable	C	2.25
22-1045	2 section ceramic trimmer	H-I	.25
22-1048	.00085 mfd. 600 volt		.15
22-1049	.03 mfd. 400 volt		.15
22-1121	2 gang variable	I	2.50
22-1123	5 mfd. 300 volt Dry electrolytic	I	.40
22-1124	30 mfd. x 450 volt Dry electrolytic	I	.75
22-1126	.01 mfd. 400 volt		.15
22-1127	.02 mfd. 400 volt		.15
22-1129	.0005 mfd. 1000 volt		.20
22-1130	15 mmf. 600 volt		.15
22-1134	.002 mfd. 1000 volt		.20
22-1135	.005 mfd. 600 volt		.15
22-1136	.00025 mfd. 600 volt		.15
22-1137	.00015 mfd. 600 volt		.15
22-1138	.0005 mfd. 600 volt		.15
22-1139	50 mmf. ceramic (compensating condenser)	I	.25
22-1140	50 mmf. ceramic	I	.40
22-1143	25 mmf. ceramic	I	.25
22-1146	50 mmf. ceramic (compensating condenser)	I	.35
22-1159	20 mfd. x 25 volt x 40 mfd. x 150 volt x 40 mfd. x 25 volt Dry electrolytic	E	.75
22-1166	Oscillator padder	A	.20
22-1167	2 gang variable	A	2.00
22-1169	.001 mfd. 600 volt		.20
22-1174	.01 mfd. 125 volt		.15
22-1175	.005 mfd. 600 volt		.15
22-1176	5 mfd. x 68 volt Dry electrolytic	A	.30
22-1178	5 mfd. x 300 volt x 50 mfd. x 250 volt x 30 mfd. x 450 Dry elec.	I	1.25
22-1181	2 gang variable	E	2.00
22-1182	.01 mfd. 400 volt		.15

Part No.		Model	List Price
22-1183	.01 mfd. 400 volt		.15
22-1184	2 gang variable	D	2.00
22-1185	2 gang variable	B	2.00
22-1186	20 mfd. - 150 volt x 20 mfd. - 150 volt x 30 mfd. - 150 volt Dry Elec.	B	1.25
22-1187	20 mfd. - 450 volt x 20 mfd. - 450 volt x 20 mfd. - 50 volt Dry Elec.	G	1.50
22-1188	.05 mfd. 200 volt		.15
22-1189	.00075 mfd. 600 volt		.15
22-1193	15 mmf. ceramic	I	.25
22-1196	500 mmf. silver cap	I	.35
22-1202	.04 mfd. 200 volt		.15

RESISTORS

63-150	10M ohm	1/2 watt	.08
63-151	15M ohm	1 watt	.10
63-156	10M ohm	1 watt	.20
63-160	100M ohm	1/2 watt	.08
63-246	150 ohm	1/4 watt	.07
63-260	100M ohm	1/4 watt	.07
63-271	1 Meg. ohm	1/4 watt	.07
63-296	220M ohm	1/4 watt	.07
63-325	150M ohm	1/4 watt	.07
63-464	1 Meg ohm	1/4 watt Insulated	.15
63-572	15 ohm	1/4 watt	.07
63-576	68 ohm	1/4 watt	.07
63-579	220 ohm	1/4 watt	.07
63-583	1000 ohm	1/4 watt	.07
63-585	2200 ohm	1/4 watt	.07
63-587	4700 ohm	1/4 watt	.07
63-589	10M ohm	1/4 watt	.07
63-590	15M ohm	1/4 watt	.07
63-591	22M ohm	1/4 watt	.07
63-592	33M ohm	1/4 watt	.07
63-593	47M ohm	1/4 watt	.07
63-594	68M ohm	1/4 watt	.07
63-595	100M ohm	1/4 watt	.07
63-597	470M ohm	1/4 watt	.07
63-599	1.5 Meg ohm	1/4 watt	.07
63-600	2.2 Meg ohm	1/4 watt	.07
63-605	1000 ohm	1/2 watt	.08
63-607	15M ohm	1/2 watt	.08
63-621	39 ohm	1/4 watt	.07
63-624	68 ohm	1/4 watt	.07
63-637	4700 ohm	1/4 watt	.07
63-643	18M ohm	1/4 watt	.07
63-648	47M ohm	1/4 watt	.07
63-652	120M ohm	1/4 watt	.07
63-654	180M ohm	1/4 watt	.07
63-656	270M ohm	1/4 watt	.07
63-657	330M ohm	1/4 watt	.07
63-659	470M ohm	1/4 watt	.07
63-676	27M ohm	1 watt	.10
63-679	82M ohm	1 watt	.10
63-686	150 ohm W.W.	1/2 watt Insulated	.17
63-694	33 ohm	1/4 watt Insulated	.15
63-701	470M ohm	1/4 watt Insulated	.15
63-711	22M ohm	1/4 watt Insulated	.15
63-713	47M ohm	1/4 watt Insulated	.15
63-715	100M ohm	1/4 watt Insulated	.15
63-719	470M ohm	1/4 watt Insulated	.15
63-723	3.3 Meg ohm	1/4 watt Insulated	.15
63-724	4.7 Meg ohm	1/4 watt Insulated	.15
63-741	150 ohm	1/4 watt Insulated	.15
63-749	680 ohm	1/4 watt Insulated	.15
63-765	33M ohm	1/4 watt Insulated	.15
63-772	150M ohm	1/4 watt Insulated	.15
63-773	180M ohm	1/4 watt Insulated	.15
63-774	220M ohm	1/4 watt Insulated	.15
63-943	4700 ohm	1 watt Insulated	.20

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B01	A	6A24	D	7A11	G
5B01	B	6A25	E	10A2R	H
6A05R	C	6A26	F	10A3R	I

Part No.	Model	List Price	Part No.	Model	List Price
63-960	68M ohm ½ watt	.08	46-349	Band selector switch knob	H-I .15
63-975	82 ohm W.W. ½ watt	Insulated .17	46-395	Tuning and volume control knob	E .10
63-976	15 Meg ohm ¼ watt	.07	46-400	Tuning control knob	A .05
63-1048	Candohm	H .30	46-401	Volume control knob	A .05
63-1058	22M ohm 2 watt	.20	46-406	Tuning and volume control knob (6D520)	F .10
63-1061	7 ohm W.W. ½ watt	Insulated .17	46-409	Tuning and volume control knob 6D538 - Metallic gold	F .15
63-1074	Volume control and switch	H-I 1.50	46-414	Tuning and volume control knob (6D538 - Metallic gold)	F .10
63-1077	18M ohm 1 watt	Insulated .20	49-385	4" Dynamic speaker	F 3.50
63-1093	15 Meg ohm ¼ watt	Insulated .15	206-385	Output transformer	1.25
63-1096	140 ohm W.W. 2 watt	Insulated .30	207-385	Field coil (not replaceable)	1.00
63-1097	870 ohm W.W. 1 watt	Insulated .20	208-385	Cone and voice coil	1.00
63-1098	42 ohm W.W. ½ watt	Insulated .20	49-424	12" Dynamic speaker	I 10.00
63-1101	8200 ohm 2 watt	Insulated .30	206-424	Output transformer	1.50
63-1102	15M ohm ½ watt	.08	207-424	Field coil	2.75
63-1112	Volume control and switch	B 1.50	208-424	Cone and voice coil (Diffuser cone for 49-424)	3.50
63-1119	16M ohm ½ watt	Insulated .17	49-433	3½" P.M. Speaker (furnished complete only)	A 2.00
63-1122	Volume control and switch	G 1.50	49-435	8" P.M. Speaker (Model 6G533)	E 6.50
63-1123	Volume control and switch	C 1.50	206-435	Output transformer	1.50
63-1130	Volume control and switch	D 1.50	208-435	Cone and voice coil	2.00
63-1132	Candohm	E .50	49-436	5" Dynamic speaker	D 3.75
63-1149	Volume control and switch	F 1.50	206-436	Output transformer	1.25
63-1150	Candohm (2 section)	I .30	207-436	Field coil (not replaceable)	1.25
63-1151	16M ohm ½ watt	Insulated .17	208-437	Cone and voice coil	1.25
63-1156	1800 ohm ½ watt	.08	49-437	10" P.M. Speaker (Model 6D560)	E 8.50
63-1158	100 ohm ½ watt	.08	206-437	Output transformer	1.65
63-1159	39M ohm 1 watt	.10	208-437	Cone and voice coil	2.50
63-1160	56M ohm 1 watt	Insulated .20	49-438	6" Dynamic speaker	C 4.25
63-1162	33M ohm 1 watt	.10	206-438	Output transformer	1.25
63-1163	2200 ohm ½ watt	Insulated .17	207-438	Field coil (not replaceable)	1.50
63-1164	300 ohm ½ watt	Insulated .17	208-438	Cone and voice coil	1.50
63-1171	75 ohm W.W. ½ watt	Insulated .20	49-439	4" Dynamic speaker	B 3.00
63-1172	100 ohm W.W. ½ watt	Insulated .20	208-439	Cone and voice coil	1.00
63-1173	1500 ohm 1 watt	.10	Note—Field winding is used as primary of output transformer. Secondary to match voice coil is wound over the field coil (not replaceable).		
63-1174	420 ohm W.W. ½ watt	Insulated .17	49-441	10" Dynamic speaker	G 8.00
63-1176	Volume control	A 1.00	206-441	Output transformer	1.50
63-1178	Volume control and switch	E 1.50	207-441	Field coil	2.75
63-1179	1000 ohm 1 watt	Insulated .20	208-441	Cone and voice coil	2.50
63-1180	15M ohm ½ watt	Insulated .17	49-442	14" Dynamic speaker	H 10.00
MISCELLANEOUS			206-442	Output transformer	2.00
2-35	Cabinet back (Model 5D610)	B .05	207-442	Field coil	2.75
2-35W	Cabinet back (Model 5D610W)	B .10	208-442	Cone and voice coil	4.00
2-58	Cabinet back (Model 6D520)	F .05	54-160	Chassis hold down nut	I .03
2-58W	Cabinet back (Model 6D520W)	F .10	54-161	Speed nut	B-F .50C
2-59	Cabinet back	C .10	54-163	#8 x 32 Wing nut	A 1.50C
2-60	Cabinet back	D .10	57-11A	Antenna lead marker	E .02
5-30	67.5 Volt battery (Eveready # 467)	A	57-11G	Ground lead marker	E .02
5-31	1.5 Volt battery (#2 Flashlight cell)	A	58-83	5 prong plug	G .10
11-71	Line Cord and plug	C .65	58-84	4 prong plug	H .05
14-693	Model 516 bakelite cabinet	D 4.50	59-114	Dial pointer	A .07
14-697	Model 610 bakelite cabinet	B 3.25	68-1	Automatic adjustment tuning wrench	G-H-I .02
14-697W	Model 610W bakelite cabinet	B 4.00	69-167	Hinge screw #3-48 x ½"	A .65C
14-698	Model 520 bakelite cabinet	F 2.50	70-69	#2 x ¾" Oval head wood screw (Escutcheon mtg.)	G .30C
14-702	Model 520W bakelite cabinet	F 3.25	70-83	#6 x ½" Washer head wood screw (cabinet back mtg.)	C .45C
15-34	Battery cable plug cap	E .05	73-24	#8-32 x ¼" Hex head set screw cup point	1.50C
19-100	Grid clip	H .55C	78-128	Socket speaker plug	G-H-I .10
19-110	Handle strap clip	A .10	78-145	Socket 6F5G	H .10
19-112	Box frame retaining clip	A .03			
23-15	Antenna strip connector	I .02			
24-234	Automatic adjustment tuning cover	G .35			
24-259	Back cover	A .60			
36-14	Cabinet handle (6D520W)	F .40			
36-16	Cabinet handle (6D520)	F .50			
46-327	Tuning and volume control knob	B-D .10			
46-327Y	Tuning and volume control knob (Models 610W and 520W)	B-F .10			
46-328	Automatic tuning knob	G .05			

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B01	A	6A24	D	7A11	G
5B01	B	6A25	E	10A2R	H
6A05R	C	6A26	F	10A3R	I

Part No.	Model	List Price
78-149	Socket 6X5G	H \$.10
78-150	Socket 6K7G	H10
78-151	Socket 6A8G	H10
78-175	Socket 6J5G	H10
78-176	Socket 6V6G	H10
78-229	Socket Electrolytic condenser	B-D-E-F-G-I02
78-250	Socket Electrolytic condenser	I05
78-290	Socket 1232	H15
78-346	Socket 5 prong	G10
78-349	Wavemagnet plug	H-I05
78-351	Socket, speaker plug	E05
78-353	Socket, single contact	G-I03
78-358	Socket, phono plug	G10
78-371	Socket, loktal base tube	E15
78-373	Socket, octal base tube (5 contact)	D10
78-374	Socket, octal base tube (6 contact)	E10
78-376	Socket, octal base tube (8 contact)	D-G-I10
78-382	Socket, octal base tube (7 contact)	D-I10
78-383	Socket, octal base tube (7 contact)	D10
78-396	Socket, battery cable	E10
78-401	Socket, loktal base tube (8 contact)	G-I15
78-410	Socket, loktal base tube	I15
78-436	Socket, miniature tube	A15
78-437	Socket, miniature tube (2 used)	A10
78-439	Socket, miniature tube	A10
78-444	Socket, octal base tube (8 contact)	B-F-G10
78-445	Socket, octal base tube (6 contact)	E10
78-446	Socket, loktal base tube (7 contact)	E15
78-447	Socket, octal base tube (7 contact)	B-F-G10
78-448	Socket, octal base tube (5 contact)	B-F10
78-449	Socket, octal base tube (7 contact)	B-F10
80-198	Chassis mounting spring	H-I01
80-199	Chassis mounting spring	H-I01
82-7	Handle strap	A10
83-895	"B" Battery terminal strip	A15
85-171	Power change-over switch	E-G25
85-231	Band selector switch	H 1.85
85-234	Band selector switch	I 2.50
85-238	S.P.D.T. Switch (Ant. change-over)	I15
85-247	Band selector switch	G 1.50
85-257	Tone control switch	F20
85-267	Power switch	A25
85-270	Tone control switch	D40
85-273	Audio Filter switch	I35
93-168	Rubber shoulder washer (Chassis mtg.)	I05
93-215	Rubber washer (chassis mounting)	C-G05
93-320	Round felt washer	B-E-F50C
93-475	Round felt washer	H-I015
95-707	Power transformer 117 volt 60 cycle	H 5.00
95-726	Power transformer 117 volt 25 cycle	H 11.25
95-756	Power transformer 117 volt 50-60 cycle	G 4.50
95-771	Power transformer 117 volt 50-60 cycle	I 5.00
95-773	Power transformer 117 volt 25 cycle	I 9.25
95-779	Speaker transformer	A50
110-94	Speaker grille cloth	A10
112-25	1/4 - 20 x 1 1/8" Hex. washer head M.S. (chassis mtg.)	H04
112-273	#8 x 3/4" Oval binding head sheet metal screw	B80C
112-283	#8-32 x 3/4" Washer head M.S. (6D520W)	F50C
112-322	#2 - 56 x 3/8" Phillips recessed oval head type F.S.T. screw	A02
114-40	#10 - 32x 3/8" Hex washer head M.S.	E60C
114-96	#10-24 x 3/8" Hex washer head M.S. (6D520)	F 50C

Part No.	Model	List Price
114-134	#8 x 1 1/8" Hex washer head S.T. screw (Models 538 and 625)	B-F \$.01
114-153	1/4-20 x 1 1/8" Hex head M.S.	I04
114-154	#10-32 x 1 1/2" Hex washer head M-S (chassis mtg.)	G03
114-155	#10 x 1 1/8" Hex washer head S.T. screw (Chassis mtg.)	G04
126-239	Tube shield	H10
126-379	Tube shield	D-G-I05
126-407	Tube shield	A07
149-17	Core and screw assembly	I15
159-42	Back retaining button	B-D-F01
166-17	Rubber bumper (2 required)	I10
192-53	Dial crystal	B-F20
192-57	Dial crystal	E15
192-60	Dial crystal	D20
196-34	Dial crystal gasket (Models 538 and 625)	B-F01
196-46	Speaker gasket	A03
199-26	Rubber sleeve	I02
202-189	Instruction book	C20
202-196	Instruction book	H20
202-252	Instruction book	A02
202-257	Instruction book	F03
202-259	Instruction book	D05
202-260	Instruction book	E10
202-262	Instruction book	B03
202-265	Instruction book	G20
202-269	Instruction book	I25
S-8365	Dial escutcheon assembly (complete)	H-I 3.50
57-825	Dial escutcheon plate	 3.00
192-55	Dial glass	35
196-31	Dial glass gasket	15
S-8520	Tuning control knob and set screw (46-329)	G15
S-8521	Band switch and volume control knob and set screw (46-331)	G15
S-8539	Volume control knob and set screw (46-352)	H-I15
S-8540	Tuning control knob and set screw (46-350)	H-I20
S-9363	Battery retaining bracket and spring assy.	A25
S-9377	Cover and front plate assy.	A 2.25
S-9383	F.M. tuning escutcheon assy. (57-849)	I 1.60
S-9405	Box frame and bracket assy.	A65
S-9477	Dial escutcheon assembly (complete)	C 2.25
57-894	Dial escutcheon plate	 1.85
192-58	Dial glass	30
196-33	Dial glass gasket	10
S-9478	Dial escutcheon assembly (complete)	G 2.25
57-895	Dial escutcheon plate	 1.85
192-58	Dial glass	30
196-33	Dial glass gasket	10

WAVEMAGNET PARTS

12-747	Wavemagnet retaining bracket	G20
24-236	Cardboard cover	G15
24-238	Cardboard cover	H15
54-141	Round speed nut	I01
57-894	Wavemagnet switch plate	I10
58-83	5 prong plug	G10
58-84	4 prong plug	H-I05
70-7	Wavemagnet mounting screw #6 x 1/2" R.H.W.S.	G40C
80-198	Wavemagnet mounting spring	G-I01
112-232	#10 x 1" B.H. sheet metal screw	G01

PARTS LIST—(Continued)

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B01	A	6A24	D	7A11	G
5B01	B	6A25	E	10A2R	H
6A05R	C	6A26	F	10A3R	I

Part No.	Model	List Price
114-125	#6 x 2½" hex. head slotted S. T. screw	B-F02
114-147	Wavemagnet mounting screw	D02
117-61	Wavemagnet rotating lever	I30
147-106	Mounting spacer	D01
147-107	Mounting spacer	D01
199-26	Rubber sleeve	I02
S-8433	Wavemagnet assembly complete (type 19)	G 3.00
S-8577	Wavemagnet assembly complete (type 19F)	H 3.25
S-9385	Wavemagnet and inside cover assembly	A 1.50
S-9436	Wavemagnet assembly complete (type 16C)	F 1.75
S-9441	Wavemagnet assembly complete (type 18E)	C 2.50
S-9452	Wavemagnet assembly complete (type 16F)	B 1.25
S-9465	Wavemagnet assembly complete (type 16E)	D 1.50
S-9522	Wavemagnet assembly complete (type 19P)	I 3.25
S-9524	F.M. doublet assembly complete (type FM-3)	I 2.50

PHONO PARTS

19-32	Light socket retaining clip	G-H01
24-142	Needle cup cover	G05
29-20	10" turntable	G 1.50
29-23	10" turntable (models 7S598J and 10S599)	G-H 1.50

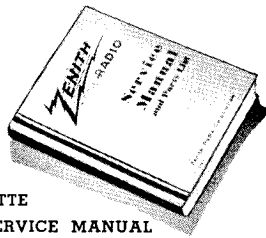
Part No.	Model	List Price
41-1	Needle holder	G05
46-239	Phono-radio switch knob	H05
57-777	Motor switch plate	H05
57-846	Radio-phono escutcheon	H03
57-872	Motor switch plate	G03
58-85	3 prong plug	G-H05
78-353	Pickup lead socket	H03
78-358	Phono plug socket	H10
78-359	Phono compartment light socket and wire	G-H20
85-203	Phono light switch	G-H55
85-228	Phono-radio switch	H25
93-271	Rubber washer (turntable retaining)	H04
97-137	Switch lever stud	H10
100-80	Phono compartment light bulb	G-H25
142-37	Crystal cartridge only (for 169-48)	G 6.00
142-46	Crystal cartridge and permanent sapphire needle	H 8.00
148-31	Phono switch lever arm	H04
169-48	Automatic record changer 60 cycle	G 40.00
169-55	Automatic record changer 60 cycle (7S-598J)	G 40.00
169-63	Automatic record changer 60 cycle	H 50.00
202-224	Phono instruction sheet	G03
202-253	Phono instruction sheet (7S-598J)	G03
202-254	Phono instruction sheet	G-H02
202-266	Phono instruction sheet	H03
S-8393	Phono switch arm and sleeve assembly	G10
S-8713	Phono switch and bracket assembly	H35
S-9438	Phono switch knob and set screw (46-405)	G15

All prices list—subject to regular discount and change without notice.

FEBRUARY 18, 1941

THESE **ZENITH** FACTORY APPROVED STANDARD AIDS WILL HELP YOU *Increase Your Radio Service Profits!*

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A bound, indexed, 618-page manual of service information on Zenith receivers manufactured since 1928 through 1941.



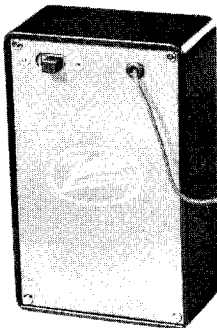
LUBRIPLATE

A conductive lubricant highly useful in correcting noisy contacts on switches, shafts or wherever moving contacts must also carry current. List Price \$.30 each.



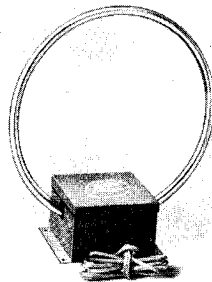
ZENITH CABINET POLISH

A highly quality cabinet polish for all lacquer and varnish finishes. A pint glass bottle wrapped in cellophane. List Price \$1.00.



ZENITH UNIVERSAL GENERATOR

Designed to create a source of universal frequency. Will peak the 600 padder at 600 KC without rocking gang condenser. Housed in bakelite cabinet. Has multitude of uses. Dealer Price \$3.25



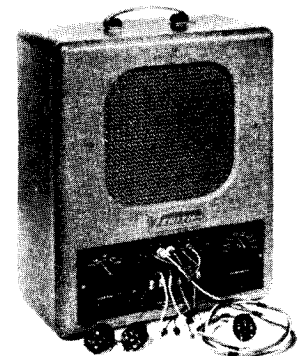
ZENITH RADIATING LOOP

Works on every loop operated set. Saves time and money for servicemen. 100% accurate. Does away hit and miss ways of testing loop antennas. Heavy chrome loop on metal base. Dealer Price \$2.95.



ZENITH BLANK DISCS-NEEDLES

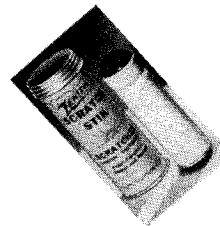
New profit items every service man and servicing dealer should sell. High quality discs-cutting and playback needles will add dollars to your weekly profits. For discounts see or write nearest Zenith distributor.



UNIVERSAL PORTABLE TEST SPEAKER—Every service bench should be equipped with this instrument. Write for detailed literature. Price \$21.95 F. O. B. Chicago.

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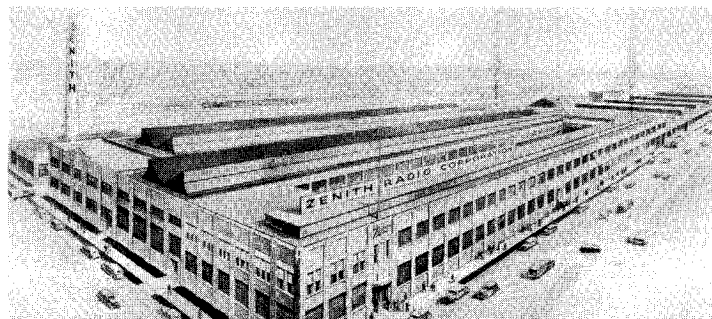


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Handy tool. Ideal for removing minor blemishes on all furniture finishes. One end of stik smooths surface, while other end used for polishing. Easy to use. List 75c.

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Made to the highest standard of quality. Sold in tamper-proof can. Guaranteed to consumer for one year from date of sale. No shelf obsolescence.

ZENITH REPLACEMENT PARTS

Represent the last word in high engineering standards and precision manufacturing. Your nearest Zenith Distributor carries a complete line of Zenith parts for immediate delivery.

ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS



AUTOMATIC RECORD CHANGER 169-63

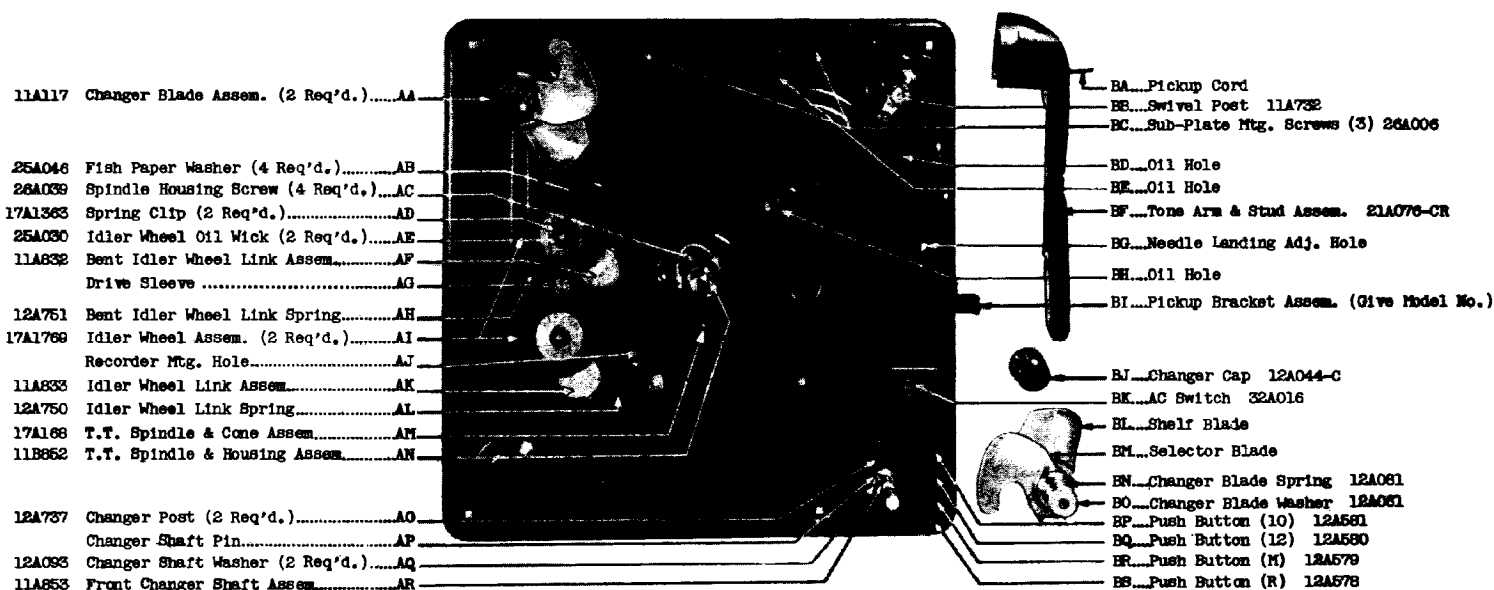


Photo A-B. Top View

FOR THE SERVICE MAN

This Manual is designed for the use of the Service Mechanic only, and is intended to facilitate as far as possible his work of caring for the changer mechanism, whether he is called in for the purpose of assuring its continued satisfactory operation, or to remedy some difficulty which has appeared. For his convenience, the "Operating Instructions", supplied to user by the factory may be summarized as follows:

The Changer plays twelve 10" or ten 12" records. . . . To reload, revolve the two posts slightly, grasping them underneath the Shelf Blades. Turn them back after the played records are removed; they will fall and lock when in proper position. Then place the new records on the Shelf Blades and push "R" button to put Changer in operation. . . . To play the other size records, turn the knob at top of each post until proper figure is opposite pointer, and press the "10" or "12" button, to agree with pointer setting. . . . To reject a record (or to start a change cycle as for testing purposes), simply press the "R" (Release or Reject) button, at any time while needle is upon a record. . . . To play manually, turn Blades out of the way as for reloading, and press "M" button.

ILLUSTRATIONS

The three photos illustrate all vital parts of the Changer. Letters are used alphabetically, to refer to points on the photos. Reference letters must NOT be used for ordering parts: Order only by the factory numbers. Where no number is given, part cannot be separately supplied; order the assembly containing it.

OILING (REPRINTED FROM OPERATING INSTRUCTIONS)

The Changer should be lubricated once a year with about a dozen drops of a good light machine oil at each of the following 3 points. All points can be reached from above, through holes in the mounting plate, as follows:

- No. 1. Through hole marked (BH), drop the oil upon flat surface of cam. It will distribute itself to proper points.

- No. 2. Through hole marked (BE), see felt wick, and drop the oil directly upon it.
- No. 3. Through hole marked (BD), see felt wick, and drop the oil directly upon it.

TO CHECK OILING

If squeaks are heard, compare the squeak with and without a load of records, any stack of records in motion is likely to squeak a little against a pin through their center. This can be corrected by rubbing a little wax on the turntable spindle. See that all four felt washer-shaped wicks are in position, including two washer-shaped wicks (AE) on Idler Wheels (AI), one wick ("No. 2") on lifter lever and one ("No. 3") on Cam Lever (DG). See that each wick is thoroughly saturated (as it may not be if insufficient oil or low grade or low viscosity oil has been used). ("CAUTION". Do not over saturate the two Idler Wheel oil wicks (AE) as centrifugal force will throw the excessive oil out over the edge of Idler Wheel (AI) and cause loss of traction to turntable, therefore always wipe excess oil off Idler Wheels before starting motor.) Also check the two oil wicks on the motor at (EA) to see that they are thoroughly saturated. Also check lubrication on Turntable Spindle bearings. The top bearings can be oiled by removing turntable and oiling at (AN) then oil lower bearing from below, also check lubrication at all other bearing points.

GENERAL DESCRIPTION OF THE CHANGE CYCLE

An automatic record player for records of two sizes has three principal duties to perform. These duties are here performed by three mechanisms, interconnected and built together, but largely separated in their operation.

(1) The record-changing mechanism -- brought into operation originally by the contact of Lifter Cam (DE) with Pawl (DH) is the simplest of the three. It is driven by the cam groove (visible on under side in Photo E-F) of Cam Gear (DC). As Cam Lever (DG) is forced, by the Pawl, out underneath Lift, it rises and forces roller into the groove in underside of Cam Gear. The motion is transferred to rear Changer Shaft (at EC) through Cam Connecting Rod (EF), thence through Changer Connecting Rod (FG) to Front Changer Shaft (AR).

(2) The pickup-operating mechanism -- like-wise brought into operation originally by the cam-and-pawl action upon Cam Lever (DG) -- is driven in part by the groove in upper (visible) side of Cam Gear (DC). As Cam Lever is forced out, at the beginning of the change cycle, against Link (FN), it causes the Link to push upward upon Pickup Plunger (CB), thus

lifting needle from record. The same pressure upon Link (FN) works, through Guide Arm (CK), to force Stud down into the groove on the Cam Gear (DC). This moves the pickup arm with a swinging movement while Pickup Plunger (CA) holds it up off of record. It first swings out beyond the turntable until Shelf Blades have released a record, then swings back to proper position to start playing.

(3) The mechanism for bringing needle into correct starting position must operate accurately for both 10" and 12" records. Partly due to this requirement, the starting position is not determined by the cam action. The upper groove on Cam Gear is designed so that it, acting alone, would carry the Pickup Arm farther toward the Turntable spindle than would ever be desirable as a starting adjustment. Travel of pickup arm toward Turntable Spindle is then stopped at proper point for lowering onto the record, by action of Stop Lever (CP). The stopping takes place as lug (CP) (on the Stop Lever) strikes the shoulder on Rod (FP). This enables the entire mechanism, rotated by cam action on Guide Arm (CK), to travel on past the proper point of rotation for record-starting, while the pickup arm itself, which is held rigid to Stop Lever (CP) is accurately stopped at proper record-starting point.

Correct adjustment for starting position of needle requires, therefore, only correct adjustment of Rods (FL and FP); the radial difference of 1" between correct starting position for 10" and 12" records is taken care of by exact dimensioning, at the factory, of surfaces at right end of Rod (FL) which stop against the "10" and "12" key stems. Due to this, when Adjusting Cam (FM) is turned (as directed below under Adjustment A) the starting position of needle is simultaneously altered for both "10 and 12" records.

ADJUSTMENTS

There are two adjustments that can be made, FROM ABOVE: CHANGER NEED NOT BE REMOVED FROM CABINET. All adjustments are correctly made at the factory, and ordinarily need never be altered. Should it become necessary to readjust, due to accident or tampering, proceed as follows:

A. ADJUSTING LANDING POSITION OF NEEDLE ON THE RECORD. If needle comes down on the sound track, playing of records will not start at their beginning. Insert screw driver through hole (BG). Turn Screw head on Needle Landing Adjusting Cam (FM) very slightly counter-clockwise. If needle comes down too close to outer edge of record, or out beyond edge of record, turn Adjusting Cam clockwise.

The factory adjustment of needle landing is 1/8" in from outer edge of record.

Compare also Paragraph 12.

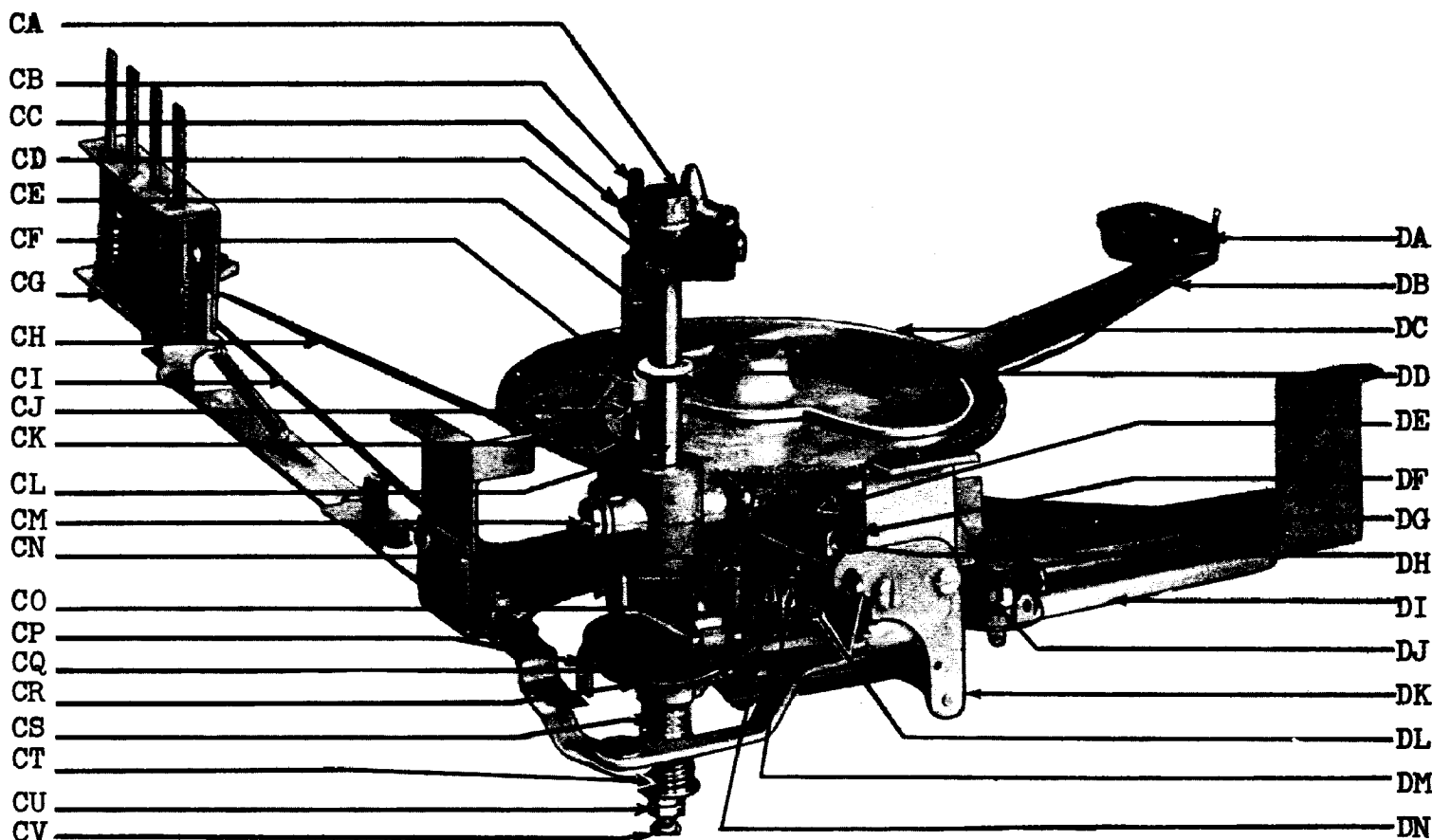


Photo C-D. Subplate and other Assemblies

CA 11A733 Swivel Shaft & Head Assem.
 CB 12A796 Pickup Plunger.
 CC 12A537 Lifter Guide.
 CD 21A004 Hinge Spring.
 CE 12A097 Pickup Plunger Spring.
 CF 12A096 Pickup Plunger Sleeve.
 CG 11A718 Key Control Assem.
 CH 12A565 Rejection Key Rod.
 CI 12A077 Manual Key Rod.
 CJ 12A003 Lifter Rod Nut.
 CK 11A730 Swivel Guide Arm.
 CL 11A872 Swivel Trunnion Assem.
 CM 12A072 Trunnion Shoulder Screws (2).
 CN 12A785 Guide Arm Spring.
 CO 12A089 Swivel Spreader & Clutch Lever pull-back Spring.
 CP 11A856 Clutch & Lever Assem.
 CQ 12A766 Cork Clutch Disc.
 CR 11A863 Clutch Lever Assem.

CS 12A734 Clutch Lever Sleeve Spring.
 CT 12A547 Clutch Spring Retainer.
 CU 26A028 Connecting Rod Nut.
 CV 26A161 Clutch Retainer Adj. Screw.

DA ----- Spreader Hub Assem. (Part of 11A114)
 DB 11A114 Cam Connecting Rod Assem.
 DC 11A715 Cam Gear Assem.
 DD 25A019 Bearing race washer.
 DE See 11A715 Lifter Cam (Cam Gear Assem.) 11A715.
 DF 12A084 Pawl Spring
 DG ----- Cam Lever. (Part of 11C729)
 DH ----- Cam Lever Pawl. (Part of 11C729)
 DI 11C729 Sub-Plate, Gear & Lever Assem.
 DJ 12A007 Shoulder Screw.
 DK 12A521 Clutch Release Bracket.
 DL 12A531 Release Trigger.
 DM 26A037 Clutch Screw.
 DN 12A584 Clutch Lever Spring.

B. ADJUSTING HEIGHT TO WHICH PICKUP ARM RISES. The arm should rise, during the change cycle, high enough so that it clears by only 1/4" the record above it, resting on shelf plates. (Be careful, before deciding that readjustment is necessary, to see that the record at bottom of stack is not a warped one.) To make this adjustment, loosen Lock Nut (CJ) and turn Pickup Sleeve (CF) to lengthen or shorten Pickup Plunger (CB). However, if Pickup is made to rise too close to bottom record, Stud on Guide Arm (CK) may never clear the Cam Gear. In making this

adjustment, therefore, care must be taken to see that Pickup Arm does not keep moving back and forth continuously (due to Stud remaining in engagement with groove). When correct adjustment is found, tighten Lock Nut securely.

REPLACING MOTOR

The service man may be called upon to adapt the Changer to a different power supply. For this purpose, or in case of any serious fault within Motor, remove entire

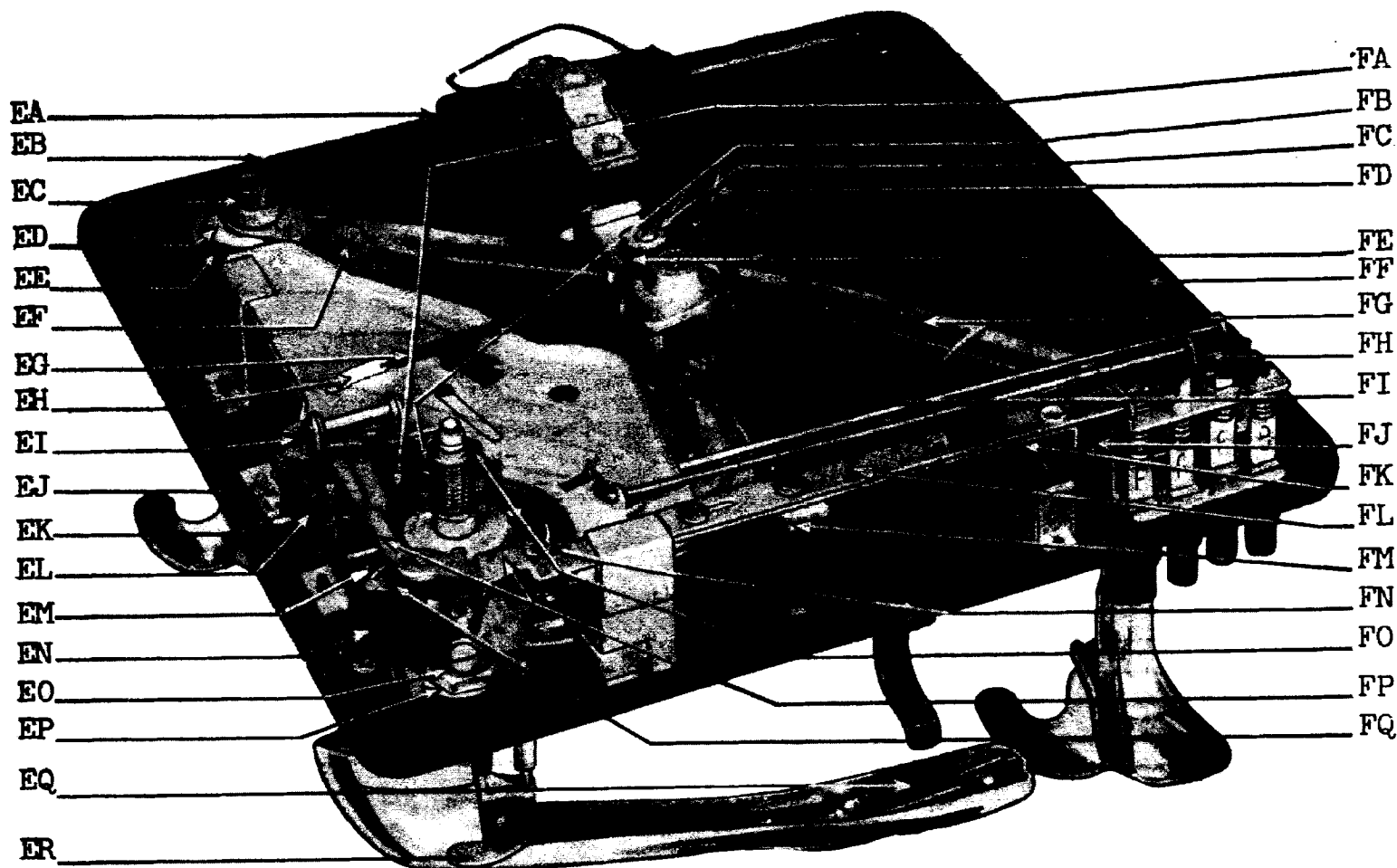


Photo E-F. Bottom View

EA 15B036 Motor Assembly. (60 Cycle)
 EB ——— Main Mtg. Plate
 EC 11A736 Changer Shaft Collar & Screw Assem.
 ED 12A045 Spring Roller.
 EE 12A088 Changer Spreader Spring.
 EF 11A114 Cam Con. Rod Assem.
 EG 12A087 Adjusting Rod Return Spring.
 EH 12A525 Return Spring Catch.
 EI 26A028 Connecting Rod Nut.
 EJ ——— Changer Serial Number & Model No.
 EK 12A577 Adj. Rod Lever Spring.
 EL 12A083 Cam Connecting Rod Lift Spring.
 EM 12A543 Lower Swivel Spreader.
 EN 12A787 Pickup Leader Spring.
 EO 12A053 Post Nut (3 Req'd.).
 EP #1228 Lockwasher (3 Req'd.).
 EQ 142-46 Pickup Cartridge.
 ER 21A006-CR Lift Plate.

FA ——— Clutch Lever Stop. (Part of 11A863)
 FB 26A051 Clutch Adjusting Screw.
 FC 25A039 Washer.
 FD 20A295 Ground Lead Assem.
 FE 25A032 Rubber Grommet.
 FF ——— Tee Nut. (Part of Main Plate)
 FG 11A122 Changer Conn. Rod Assem.
 FH 12A090 Manual & Rej. Rod Spring.
 FI 12A560 Idler Spur Gear.
 FJ ——— Changer Lever & Hub Assem. Front.
 (Part of 11A122)
 FK 12A087 Adjusting Rod Return Spring.
 FL ——— Adjusting Rod Extension. (Part of
 11B717)
 FM ——— Needle Landing Adj. Cam. (Part of 11B717)
 FN ——— Link (Swivel Guide Arm Assem.).
 FO 12A530 Clutch Release Jack.
 FP 11B717 Adjusting Rid Assem.
 FQ 12A542 Upper Swivel Spreader.

When Part number is omitted, unit is part of an assembly.

Contact the local distributor or write to the factory for 25 cycle information.

Motor (EA) from the Changer and replace it with a suitable new Motor. See that Motor Frame is well grounded by wire, (FD) (in photo E-F). (In ordering a replacement Motor, specify the power supply and give Model Number of Phono-radio or other type of installation).

TROUBLE SHOOTING

Cases of failure to operate satisfactorily will generally be found due either to neglect of proper lubrication, or to tampering with the mechanism after it leaves the factory, or to injuries accidentally sustained as by

external vibration or by impact of some heavy object. In addition, there is always the possibility that any kind of spring may "go dead" (cease to operate without any visible breakage) even though the utmost factory precautions are taken against it — or that set screws may work loose due to some external vibration. For tightening set screws, a No. 8 size Allen (hexagon) wrench is required: Be sure that set screws are properly seated on the holes or flats provided. Damage from tampering is likely to take the form of bent parts; never bend any part during examination.

Among the principal trouble symptoms to which such causes may give rise, are the following:

1. MECHANISM IS SLOW IN STARTING, OR MOTOR GETS HOT.

May be caused by:

- a. Failure to lubricate properly. Oil thoroughly. See oiling instructions.
- b. Check voltage. Line voltage may be abnormally low or high.
- c. Motor windings damaged. If windings are found damaged, remove motor and return it to factory for repair or replacement.

2. MOTOR FAILS TO RUN, EVEN WHEN IT IS ENTIRELY DISCONNECTED FROM OTHER WIRING AND PROPER VOLTAGE IS APPLIED DIRECTLY TO THE TWO ENDS OF ITS WINDINGS.

- a. This indicates trouble in Motor windings. Unless the damage is easily seen and repaired, replace motor, as above described.
- b. Check motor rotor by turning the drive sleeve with finger and thumb if it seems to bind slightly it can usually be corrected by lightly tapping the bottom bearing bridge, this will align the two self aligning shaft bearings and allow the rotor to turn freely.

3. MOTOR IS SLOW IN STARTING.

- a. Check oiling, as directed above. It may not have been properly done; old oil may have become gummy.
- b. Changer may have been in a very cold place, and may not yet have reached room temperature. Give it a fair chance to get warmed up before concluding that Motor is defective, and proceed as described above (see paragraph 2.).

4. SQUEAKS OR OTHER NOISES, DURING PLAYING OF RECORDS.

Check oiling, as directed above. (If squeaks are heard, they will usually be found to come from the records—not from the mechanism.)

See "To Check Oiling".

5. CHANGER IS NOISY WHEN IN CYCLE.

Check oiling. Also see if any part has become loose or bent and is rubbing against

a moving part, such as the swivel Guide Arm, (CK) against the Cam Gear, (DC).

6. MOTION OF PICKUP TOWARD TURNTABLE SPINDLE WILL NOT TRIP CHANGER MECHANISM.

- a. See that the manual button is not pressed down. See that shipping bolts are removed.
- b. If trigger (DL) is being properly actuated, probably Cam Lever (DG) is binding against Sub-Plate (DI). Look for dirt or obstructions: such as the manual rod (CI) binding in hole in Sub-Plate; See that Pawl (DH) and trigger (DL) are working freely on their rivets.
- c. Check to see that there is not too much clearance between the trigger (DL) and the clutch lever assembly (CS). To correct, turn clutch adjusting screw (DM) counter clockwise until clearance is approximately 1/64" between trigger and "U" shaped bracket on clutch lever assembly (CS).
- d. Check clutch release jack (FO) to see that it has returned to a neutral position as it may be sticking and holding clutch open. If clutch is held open, clutch lever assembly (CR) will not be actuated to trip trigger (DL) and change cycle will not start.

7. PRESSING "R" BUTTON DOESN'T TRIP CHANGER MECHANISM.

- a. Probably due to shipping bolts are being removed, causing a bind on manual rod (CI) or manual button is down.
- b. Check Key Control Unit (CG). See whether there is an obstruction or a bent part which prevents "R" button from going clear down to the end of its travel.
- c. Examine Reject Rod (CH). If it does not trip, even when properly revolved by complete depressing of "R" button, the rod has probably been bent, and must be restored in same way. Grasp the two ends and twist it slightly.
- d. If Trigger (DL) is being properly actuated but without starting a change cycle, see directions above, Paragraph 6.

8. PRESSING "M" BUTTON FAILS TO PUT CHANGER MECHANISM OUT OF ACTION SO AS TO ENABLE MANUAL OPERATION.

- a. First see that "M" button goes clear down; then follow its action through Manual Rod (CI).
- b. Probably caused by the manual rod being bent and not projecting up through sub-plate (DI) and stopping cam lever (DG) when it is released from the trigger (DL).

9. TRIPS TOO SOON OR BEFORE RECORD HAS FINISHED PLAYING.

- a. This can be caused by too little clearance between the trigger (DL)

and the clutch lever assembly (CS). To get more clearance on this adjustment, turn the adjusting screw (DM) in a clockwise direction a half-turn or whatever is necessary to make tone arm trip on 1/4" motion.

- b. If friction clutch (CR) is not being opened momentarily by the motion of release lever at (FB) which is actuated by the four raised portions on cam gear (DC), then normal tracking of tone arm on record will cause clutch lever (CR) to trip trigger. To correct, adjust (FB) so that clutch opens momentarily approximately 1/64", thereby allowing "U" bracket on clutch lever to be reset to normal each time clutch opens.

10. TONE ARM FALLS OFF RECORD.

Needle sits down too close to edge of records, not adjusted in far enough, or needle landing adjusting cam (FM) is reversed. Should contact lug on adjusting rod extension (FL) on the long side of cam. Also check pickup leader spring (EN). It may have become loose; more tension can be given it by bending down lug.

11. TONE ARM SITS DOWN TOO FAR IN.

- a. Probably due to adjusting rod (FP) binding and not measuring properly. If found to be bent, it should be straightened to correct shape so that it will operate freely. Read Item #3 on General Description of Change Cycle.

12. NEEDLE LANDS PROPERLY ON RECORD BUT FAILS TO MOVE OVER INTO RECORD GROOVE.

Pickup arm is normally impelled toward center of records by Lead Spring (EN). Should a slight increase in its tension be found necessary, this can be easily obtained by slightly bending the lug, to which it is attached, down against Main Plate.

13. "WOW" IN RECORD REPRODUCTION.

- a. Record is warped or otherwise defective or instrument is not being operated at normal room temperature, 70°F.
- b. Also may be caused by oil on Idler wheels, or inside rim of turntable. (See "To Check Oiling" Caution note.)

14. RECORD DROPS ON ONE SIDE ONLY.

- a. This suggests a Changer Post bent out of perpendicular to Main Plate. If Post must be straightened, be careful not to bend other parts.
- b. One selector set for 10" while playing 12" records.

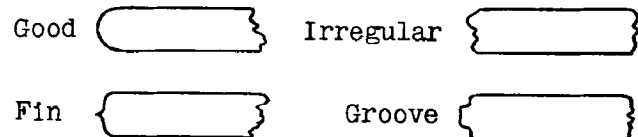
15. CHANGER CONTINUES CYCLING.

- a. Probably due to failure of Lift to be drawn back out of engagement with Cam Gear (DC). Check the various rivets at which motion occurs, to find the point where friction or binding is interfering with freedom of motion.
- b. Make sure that trigger spring is not disconnected. Also that clearance between trigger (DL) and clutch lever (CR) is approximately 1/64" max. A sticking pawl (DH) will also cause this condition.

16. RECORD IS DRIVEN, BUT NOT HEARD, OR NOT HEARD WITH PROPER VOLUME. See that pickup cord is plugged in. Check amplifier and

speaker and connections to them, thoroughly. If then trouble is still suspected in pickup cartridge (EQ), test its output with a vacuum-tube voltmeter. Average voltage at 1000 C.P.S. using an Audio Test Record No. 1 should read from .5 volts to 2.5 volts depending upon type of crystal cartridge used. If pickup cartridge is found not to deliver proper output, remove it and install another.

17. RECORD JAMS. Most slicing trouble (record jams) is due to off-size, defective or warped records and is no fault of the record changer or record changer adjustments. Properly manufactured records have a uniform semi-circular edge and can be successfully handled by record changers, even though the records vary considerably in thickness.



Cross section of record edge showing a perfect record and three imperfect edges.

Records that prove troublesome in the selecting or slicing process can usually be corrected by using a piece of fine sand paper or emory cloth to round up the edges.

18. AUDIO HOWL. Record changer not floating on cushions or spring mounting. See that shipping bolts are removed. If unit still does not float, loosen the nuts or mounting assembly allowing unit to rise and float.

19. TURNTABLE IS TIGHT. This turntable is assembled to the turntable spindle with a taper lock fit in the center. To remove, grasp turntable with both hands, turn slightly forward and backward, at the same time pulling upward. When replacing turntable, care should be taken not to injure Rubber Idler Drive Wheels (AI).

CAUTION:

If Pickup cartridge has a permanent point sapphire needle, utmost care must be taken to avoid breakage. Should the needle be broken it is necessary to replace the entire cartridge. Never attempt to remove permanent point sapphire needle from the cartridge since it is an integral part and cannot be removed without damaging the cartridge. Needles can only be replaced in cartridges having a needle screw.

REPLACEMENT PARTS

When spare parts or sub-assemblies are required, order them direct from the factory, by factory number and name as given on photos — not by reference letters. Where no number is given, order by full and exact description. Always specify Serial Number and Model Number as seen at (EJ). Parts shown in above photographs, but not given factory numbers, are furnished only in assemblies as shown with factory numbers. Refer to replacement parts list.

**ZENITH AUTOMATIC RECORD CHANGER
REPLACEMENT PARTS**

1941 MODEL (Part #169-63 - 60 cycle)
(Part #169-64 - 50 cycle)

NOTE: Parts riveted, welded or otherwise not replaceable
individually are grouped together as sub-assemblies.

29-23	10" Turntable	\$1.50
142-46	Crystal cartridge & permanent sapphire needle (LP-21)	8.00
#1228	Shakeproof lockwasher - cadmium plate	.04
11A114	Cam connecting rod assembly	1.00
11A715	Cam Gear Assembly	3.50
11A117	Changer blade assembly - with cap	4.00
11A122	Changer connecting rod assembly	2.50
11A714	Swivel tube & trunnion assembly	1.75
11B717	Adjusting rod assembly	1.25
11A718	Key control assembly	1.25
11A723	Clutch release assembly	.50
11C729	Sub plate and lever assembly	7.50
11A730	Swivel guide arm assembly	.55
11A732C	Swivel post & bearing assembly	.75
11A733	Swivel shaft & head assembly	.75
11A736	Changer shaft collar & screw assembly	.50
11A832	Idler wheel link & stud assembly - bent	.25
11A833	Idler wheel link & stud assembly	.20
11B852	Spindle & gear assembly	5.00
11A853	Front changer shaft assembly	.50
11A854	Rear changer shaft assembly	.60
11A856	Clutch & lever assembly	1.25
11A863	Clutch lever assembly	.60
11A872	Swivel Trunnion assembly	2.50
11A875	Lower swivel spreader & spring assembly	.25
12A003	Lifter rod nut	.10
12A007	Shoulder screw	.10
12A036	Adjusting rod bracket	.10
12A044C	Changer cup	.40
12A045	Spring roller	.25
12A053	Post nut	.15
12A061	Changer blade washer	.03
12A066	Shoulder rivet	1.25C
12A072	Trunnion shoulder screw	.10
12A077	Manual key rod	.10
12A081	Changer blade spring	.03
12A083	Cam connecting rod lift spring	.10
12A084	Pawl spring	.10
12A087	Adjusting rod return spring	.10
12A088	Changer spreader spring	.15
12A089	Swivel spreader & clutch lever pull - back spring	.10
12A090	Manual & rejection rod spring	.10
12A091	Cushion spring	.03
12A093	Changer shaft washer	.03
12A096	Pick-up plunger sleeve	.15
12A097	Pick-up plunger spring	.05
12A521	Clutch release bracket	.05
12A525	Return spring catch	.05
12A530	Clutch release jack	.05
12A531	Release Trigger	.10
12A537	Lifter guide	.30
12A542	Upper swivel spreader	.10
12A543	Lower swivel spreader	.10
12A547	Clutch spring retainer	.10
12A558	Drive pinion gear	.35
12A560	Idler spur gear	.50
12A561	Idler gear shaft	.05

PARTS LIST (Continued)

12A565	Rejection key rod	\$.10
12A570	Clutch release lever pin	.05
12A577	Adjusting rod lever spring	.10
12A578	Push button (R).	.15
12A579	Push button (M).	.15
12A580	Push button (12)	.15
12A581	Push button (10)	.15
12A584	Clutch lever spring	.03
12A585	Steel ball	.75C
12A586	Bearing race washer	.03
12A734	Clutch lever sleeve spring	.03
12A737	Changer post (12A793-C)	.75
12A750	Idler wheel link spring	.06
12A751	Bent idler wheel link spring	.10
12A766	Cork clutch disc	.02
12A785	Guide Arm Spring	.10
12A787	Leader spring	.10
12A796	Pick-up plunger	.35
12A832	Drive pinion pin	.05
15B036	Motor assembly - 110 volt - 60 cycle	11.00
17A026	Turntable spindle housing assembly	2.10
17A168	Turntable spindle & cone assembly	1.75
17A214	60 cycle drive bushing	.40
17A215	50 cycle drive bushing	.50
17A1363	Spring clip	1.25C
17A1769	Idler wheel assembly	1.00
20A295	Ground lead assembly	.10
21A004	Hinge spring (tone arm)	.10
21A006-CR	Lifter plate	.40
21A076-CR	Tone arm & stud assembly	3.50
25A002	Fiber washer	.03
25A019	Bearing race washer	.03
25A027	Thrust washer	.03
25A030	Idler wheel washer - felt	.01
25A032	Grommet	.05
25A039	Washer	1.25C
25A045	Changer post washer	.03
25A046	Fish paper washer	1.25C
26A006	#8-32 x 3/8" B.H.S.T. screw (statuary bronze plate)	1.50C
26A020	#6-32 x 1/4" B.H.S.T. screw - cadmium plate (11A117)	1.25C
26A028	Connecting rod nut (6-32)	.05
26A037	Clutch screw	.01
26A039	#8-32 x 5/16" R.H.M.S. - cadmium plate	.02
26A041	3/16" x 2" mounting bolt - statuary bronze	.05
26A042	3/16" Hex nut (changer mounting)	.05
26A045	#4-40 x 1/4" B.H.M.S. statuary bronze plate	.03
26A051	Clutch adjusting screw	.05
26A089	R.H.M.S. - Nickel plate (11A117)	1.25C
26A161	#6-32 x 1" R.H.M.S. steel - cadmium plate	1.25C
32A016	A.C. switch	.50
50A020	Cord Clamp	.05

For 25 cycle information contact your distributor or write factory.

*NOTE: Parts marked with * are also used on #169-55 Record Changer.

All Prices List - Subject to Regular Discount and Change without Notice.

ZENITH RADIO CORPORATION
CHICAGO, ILL.

Printed in U.S.A.

SERVICE MANUAL



1942 RECEIVERS

MODEL	CHASSIS	PAGE	MODEL	CHASSIS	PAGE
4K616	4B02-4B03	165	6R687	6B06	195
4K635	4B02-4B03	165	6R687R	6B06	195
4K658	4B02-4B03	165	6R688	6B06	195
4B639	4B04	167	6S632	6B08	197
4K640	4B05	169	6S646	6B08	197
5D611	5B02	171	6S646R	6B08	197
5D611W	5B02	171	6S656	6B08	197
5D627	5B02	171	6G638	6B09	199
5R680	5B03	173	6G660	6B09	199
5K637	5B04	175	7S633	7B01	201
5G617	5B05-5B06	177	7S634	7B01	201
5G636	5B05-5B06	177	7S657	7B01	201
5G603	5B07	179	7S633R	7B01R	201
5R686	5B13	181	7S634R	7B01R	201
5R680X	5B14	183	7S657R	7B01R	201
6D614	6B01	185	7S681	7B02	203
6D614W	6B01	185	7S682	7B02	203
6D621	6B01	185	7S685	7B02	203
6D629	6B01	185	8S647	8B01	205
6R631	6B02	187	8S661	8B01	205
6G601	6B03	189	10S669	10B1	207
6D612	6B04	191	10S690	10B2	207
6D612W	6B04	191	12H678	12A6	209
6D622	6B04	191	12H679	12A6	209
6D628	6B04	191	12H650	12B1	211
6D615	6B05	193	12H670	12B1	211
6D615W	6B05	193	12H671	12B1	211
6D623	6B05	193	12H689	12B2	213
6D630	6B05	193	12H695	12B2	213
6R683	6B06	195	12H696	12B2	213
6R684	6B06	195	S-9001	S-9001	214
			S-9002	S-9002	214
			Parts Price List		215

Note: Bakelite models replaced with wood cabinets are designated by a "2" after the letter in the model number. Example: 5D611 becomes 5D2611.

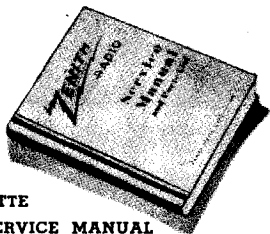
NOTICE: ADD APPROXIMATELY 10% TO PRICES CONTAINED HEREIN AS PER OUR CHANGE NOTICE OF SEPTEMBER 29, 1941.

ZENITH RADIO CORPORATION

CHICAGO, U.S.A.

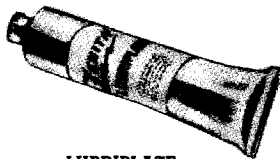
THESE **ZENITH** FACTORY APPROVED STANDARD AIDS WILL HELP YOU *Increase Your Radio Service Profits!*

YOUR NEAREST ZENITH DISTRIBUTOR HAS THEM IN STOCK FOR IMMEDIATE DELIVERY



ZENITH LEATHERETTE BOUND SERVICE MANUAL

A bound, indexed, 618-page manual of service information on Zenith receivers manufactured since 1928 through 1941.



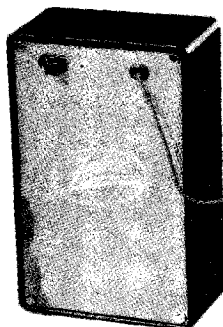
LUBRIPLATE

A conductive lubricant highly useful in correcting noisy contacts on switches, shafts or wherever moving contacts must also carry current. List Price \$.30 each.



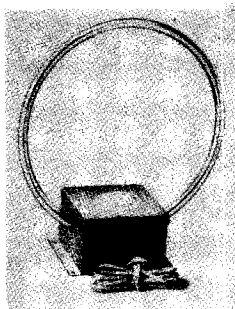
ZENITH CABINET POLISH

A highly quality cabinet polish for all lacquer and varnish finishes. A pint glass bottle wrapped in cellophane. List Price \$1.00.



ZENITH UNIVERSAL GENERATOR

Designed to create a source of universal frequency. Will peak the 600 padder at 600 KC without rocking gang condenser. Housed in bakelite cabinet. Has multitude of uses. Dealer Price \$3.25



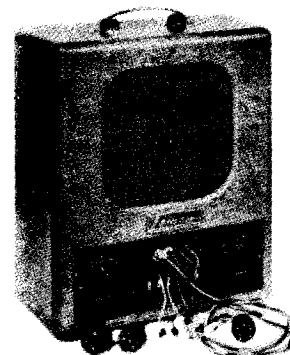
ZENITH RADIATING LOOP

Works on every loop operated set. Saves time and money for servicemen. 100% accurate. Does away hit and miss ways of testing loop antennas. Heavy chrome loop on metal base. Dealer Price \$2.95.



ZENITH BLANK DISCS-NEEDLES

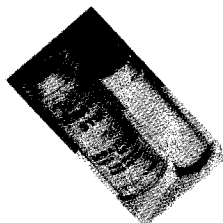
New profit items every service man and servicing dealer should sell. High quality discs-cutting and playback needles will add dollars to your weekly profits. For discounts see or write nearest Zenith distributor.



UNIVERSAL PORTABLE TEST SPEAKER—Every service bench should be equipped with this instrument. Write for detailed literature. Price \$21.95 F.O.B. Chicago.

ZENITH HEADPHONES— HUSHATONE

Increase your profits by selling radio accessories. Zenith crystal Headphones and Hushatones are sold to the hard-of-hearing — for night owls and the convalescent. High quality workmanship and materials. For discounts see nearest Zenith distributor.

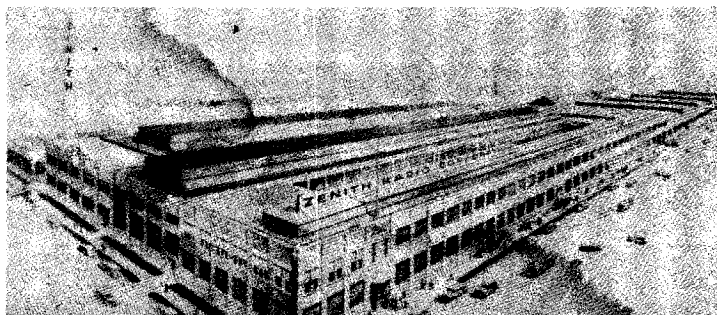


ZENITH SCRATCH STIK

Handy tool. Ideal for removing minor blemishes on all furniture finishes. One end of stik smooths surface, while other end used for polishing. Easy to use. List 75c.

MERCHANDISING MATERIAL TO HELP YOU INCREASE YOUR SALES

See your nearest Zenith Distributor for the latest Zenith releases of Merchandising Helps for Expanding Your Sales and Profits.



ZENITH RADIO TUBES

Made to the highest standard of quality. Sold in tamper-proof can. Guaranteed to consumer for one year from date of sale. No shelf obsolescence.

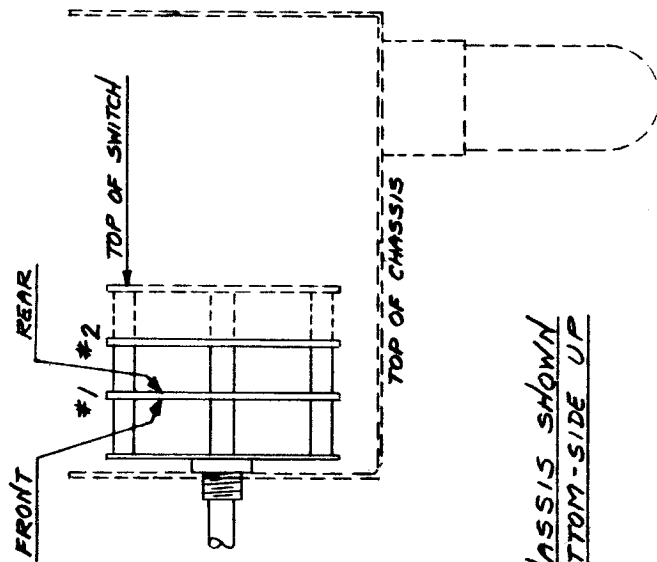
ZENITH REPLACEMENT PARTS

Represent the last word in high engineering standards and precision manufacturing. Your nearest Zenith Distributor carries a complete line of Zenith parts for immediate delivery.

ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS

SUGGESTED BY	F.E.M.
DRAWN BY	R.L.R.
O.K'd BY	R.H.P.



BAND SWITCH LEGEND

① = No 1 CONTACT

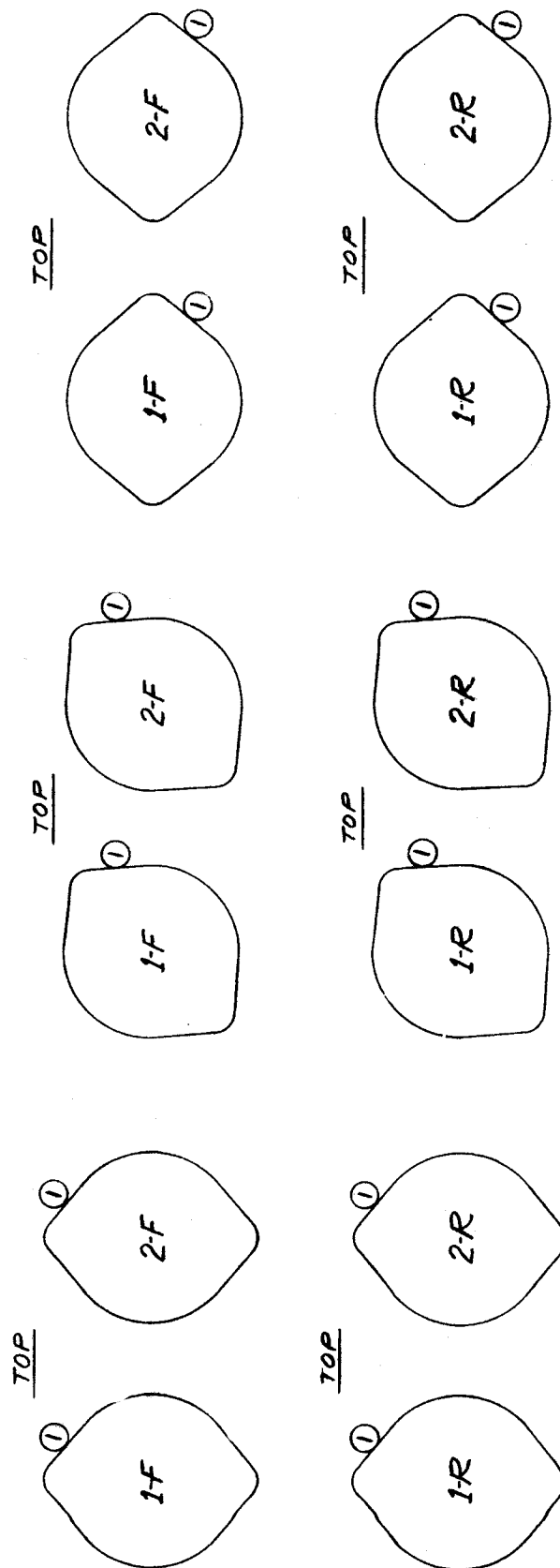
"1" = POSITION OF WAFFER (FROM FRONT OF CHASSIS.)

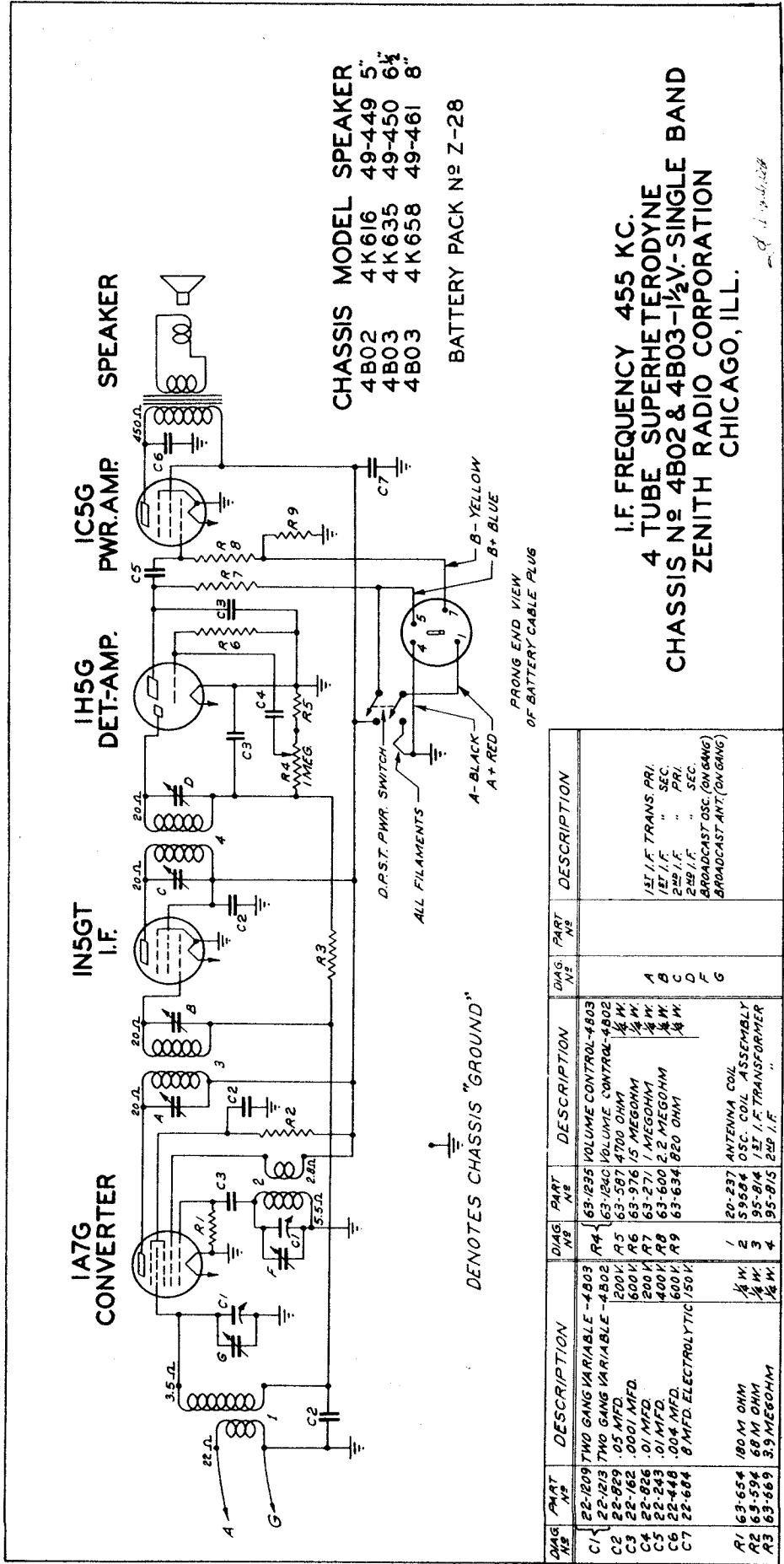
"F" = FRONT OF WAFFER (FROM FRONT OF CHASSIS.)

"R" = REAR OF WAFFER (PHANTOM VIEW - FROM FRONT OF CHASSIS.)

ALL CIRCUITS SHOULD SHOW REAR OF WAFFER IN PHANTOM VIEW.

CHASSIS SHOWN BOTTOM-SIDE UP

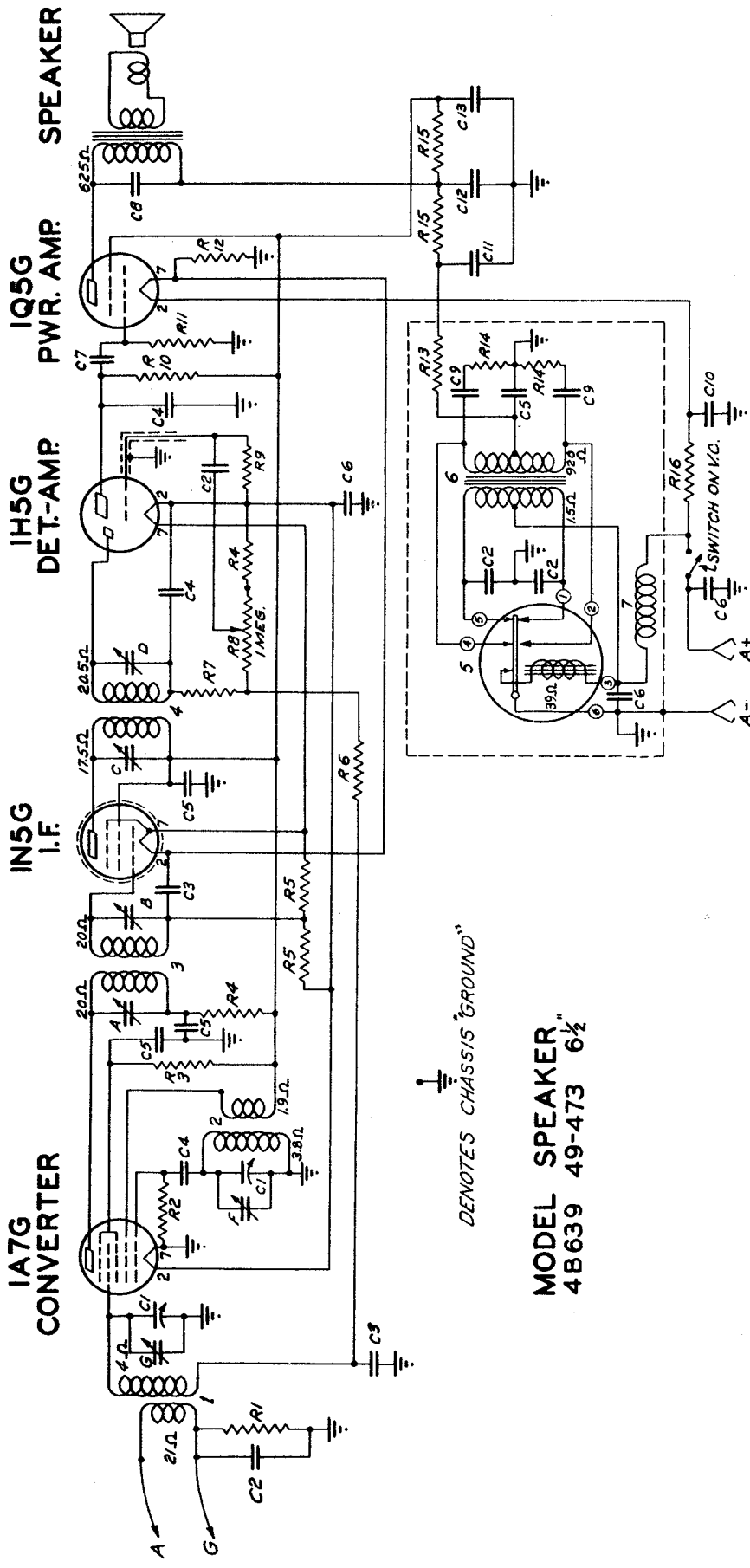




Models 4K616-4K635-4K658

Chassis No. 4B02-4B03

Chassis No. 4B02-4B03



I.F. FREQUENCY 455 KC.
4 TUBE SUPERHETERODYNE
CHASSIS N^o4B04-6V-SINGLE BAND
ZENITH RADIO CORPORATION
CHICAGO, ILL.

R. B. 4. 104

DIAG. N ^o	PART N ^o	DESCRIPTION	DIAG. N ^o	PART N ^o	DESCRIPTION	DIAG. N ^o	PART N ^o	DESCRIPTION
C1	22-695	TWO GANG VARIABLE	R2	63-595	100M OHM	1	20-208	ANTENNA COIL
C2	22-826	.01 MFD.	R3	63-594	68M OHM	2	S6381	OSCILLATOR COIL ASSEM.
C3	22-829	.05 MFD.	R4	63-583	1000 OHM	3	95-589	1ST I.F. TRANS.
C4	22-162	.0001 MFD.	R5	63-296	220M OHM	4	95-590	2ND I.F. TRANS.
C5	22-828	.05 MFD.	R6	63-669	3.9 MEG OHM	5	190-17	VIBRATOR
C6	22-199	.5 MFD.	R7	63-593	47M OHM	6	95-635	POWER TRANSFORMER
C7	22-243	.01 MFD.	R8	63-1079	VOLUME CONTROL	7	S5043	CHOKE ASSEMBLY
C8	22-448	.004 MFD.	R9	63-976	15 MEG OHM			
C9	22-966	.04 MFD.	R10	63-271	1 MEG OHM	A		1ST I.F. TRANS. PRI.
C10	22-961	.500 MFD. ELECTROLYTIC	R11	63-600	2.2 MEG OHM	B		1ST I.F. TRANS. SEC.
C11	22-742	.15 MFD.	R12	63-1060	90 OHM WIREWOUND	C		2ND I.F. TRANS. PRI.
C12	22-742	.15 MFD.	R13	63-577	100 OHM	D		2ND I.F. TRANS. SEC.
C13			R14	63-697	100 OHM	F		BROADCAST OSC. (ON GANG)
			R15	63-605	1000 OHM	G		BROADCAST ANT. (ON GANG)
R1	63-597	470M OHM	R16	63-1061	7 OHM			

Model 4B639

Chassis No. 4B04

Model 4B639

Chassis No. 4B04

All voltages measured with a 1000 ohm per volt meter from chassis to socket contacts.

Voltage readings are all positive D.C. unless otherwise indicated.

Antenna disconnected volume control full on.

Battery voltage 6 volt.

Battery consumption—.5 ampere.

Power Output—.37 watts.

Stage Gains:

Ant. to conv. grid—4.9 $\times$ at 1000 Kc.

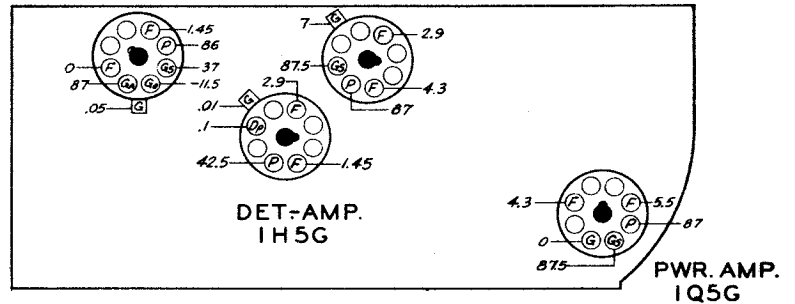
Conv. grid to I. F. grid—50 $\times$ at 455 Kc.

Overall audio—448 $\times$ at .050 watt—400 cycles.

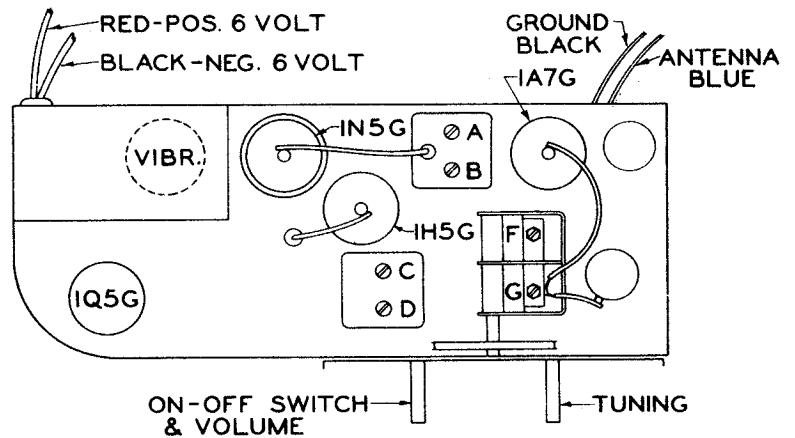
Tuning range—540 Kc.—1740 Kc.

CONVERTER
1A7G

I. F.
1N5G



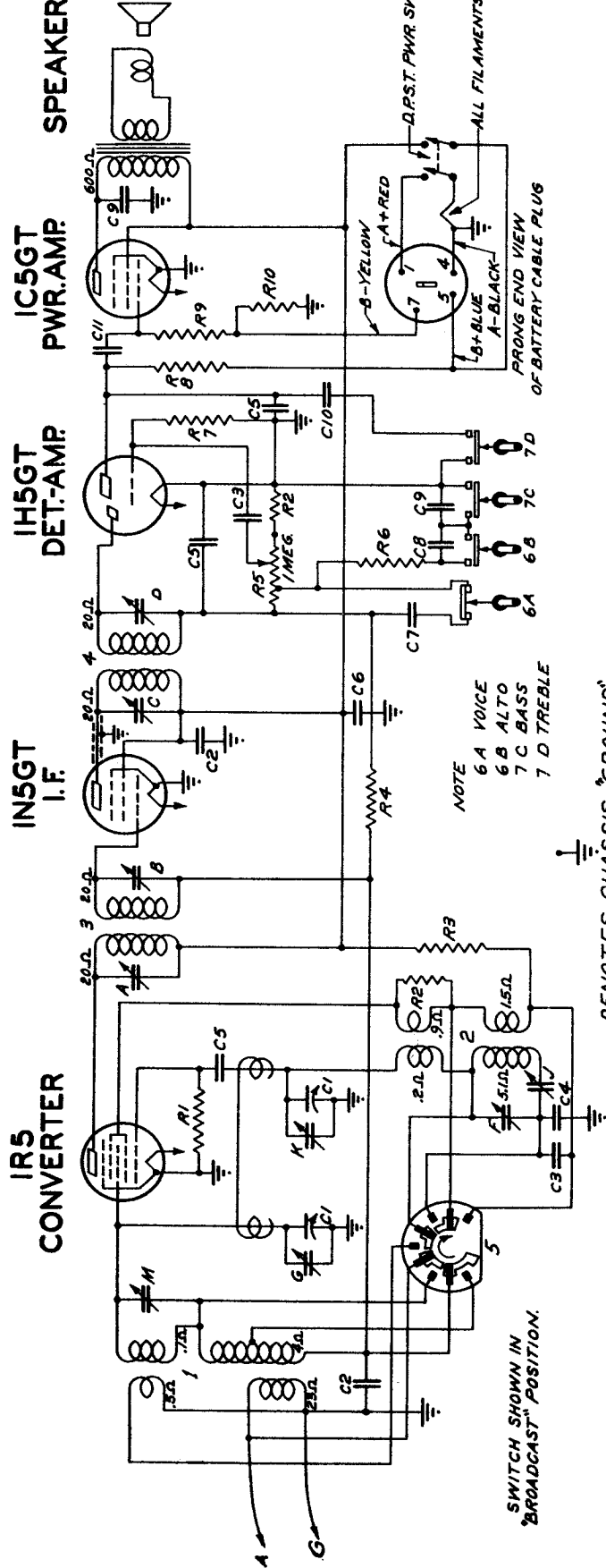
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	1/2 Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	Ant.-Gnd.	200 Mmf.	1500 Kc.	Broadcast	1500 Kc.	F	Set Oscillator to Scale
3	"	200 Mmf.	1400 Kc.	Broadcast	1400 Kc.	G	Alignment of Antenna



⏏
DENOTES CHASSIS 'GROUND'

MODEL SPEAKER."
4K 640 49-450 6½

BATTERY PACK N° Z-28

I.F. FREQUENCY 455 KC.
4 TUBE SUPERHETERODYNE
CHASSIS N° 4B05-1½V.-2 BAND
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DWG. N°	PART N°	DESCRIPTION	DWG. N°	PART N°	DESCRIPTION	DWG. N°	PART N°	DESCRIPTION
C1	22-1208	TWO-GANG VARIABLE	R4	63-669	3.9 MEGOHM	1	S 9832	ANTENNA COIL ASSEM.
C2	22-829	.05 MFD.	R5	63-1236	VOLUME CONTROL	2	S 9829	OSCILLATOR " "
C3	22-826	.01 MFD.	R6	63-594	68 M OHM	3	95-838	1ET I.F. TRANSFORMER
C4	22-1022	.005 MFD.	R7	63-976	15 MEGOHM	4	95-839	2ND I.F. " "
C5	22-162	.0001 MFD.	R8	63-271	1 MEGOHM	5	85-279	BAND SELECTOR SW.
C6	22-684	8 MFD. ELECTROLYTIC	R9	63-600	2.2 MEGOHM	6	85-284	T.C. SW. ASSEM. (LEFT)
C7	22-807	.001 MFD.	R10	63-634	820 OHM	7	85-288	T.C. SW. ASSEM. (RIGHT)
C8	22-448	.004 MFD.						
C9	22-492	.012 MFD.						
C10	22-182	.00025 MFD.						
C11	22-243	.01 MFD.						
R1	63-260	100 M OHM						
R2	63-387	4700 OHM						
R3	63-311	15 M OHM						

Model 4K640

Chassis No. 4B05

Model 4K640

Chassis No. 4B05

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Battery Z28

Volume control full on.

Power consumption 1.6 watts.

Power output .27 watts.

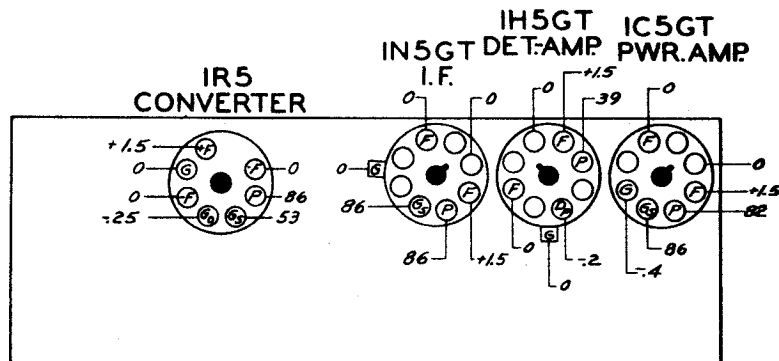
Stage Gains:

Tuning ranges— 540 Kc.—1620 Kc.
—5600 Kc.—18200 Kc.

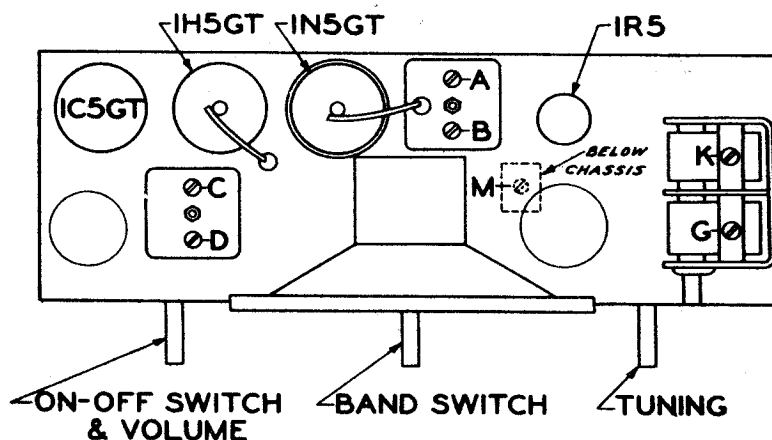
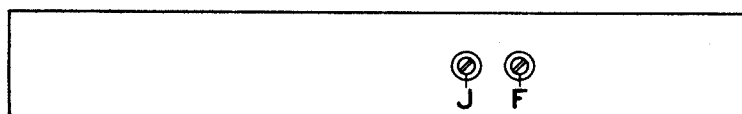
Ant. to conv. grid—6X at 1000 Kc.

Conv. grid to I. F. grid—48X at 455 Kc.

Overall audio—340X at .050 watt, 400 cycles.



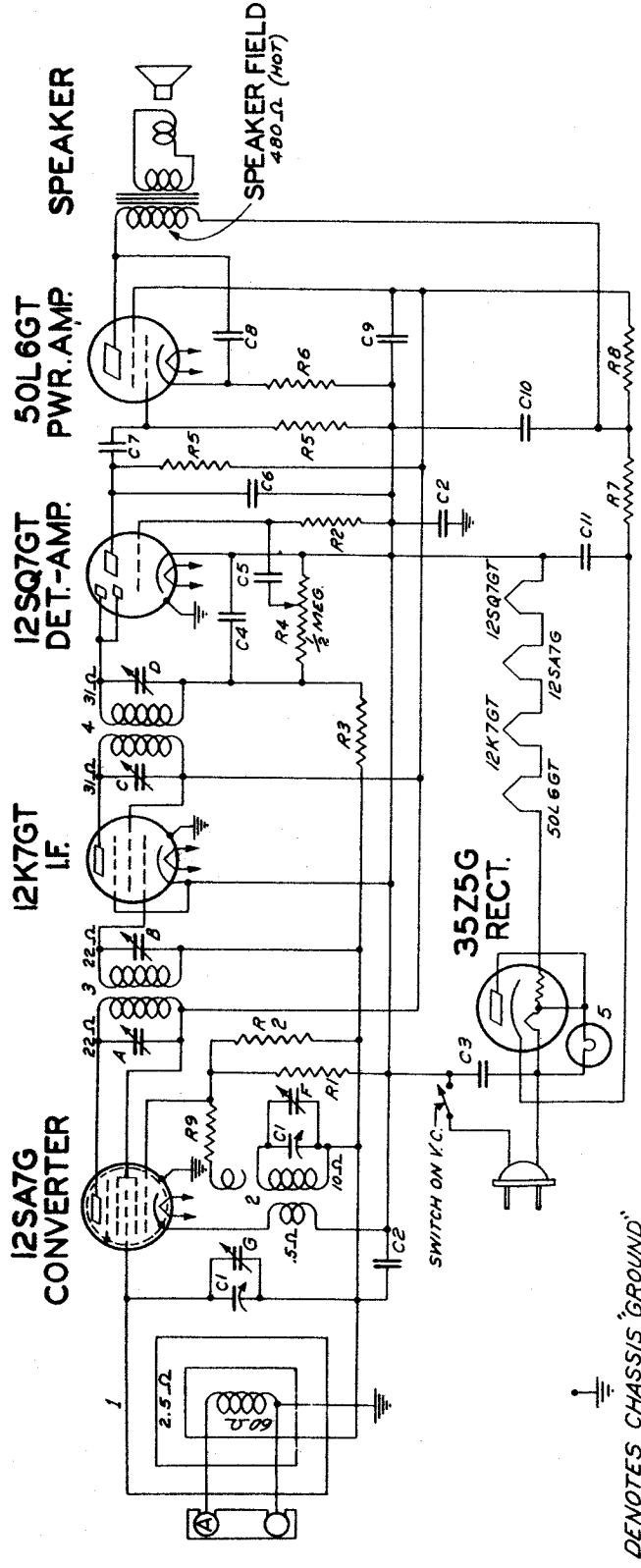
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A B C D	Align I. F.
2	Ant.—Gnd.	400 Ohms	18 Mc.	Short Wave	18 Mc.	K	Set. Osc. to Scale
3	Ant.—Gnd.	200 Mmf.	1600 Kc.	Broadcast	1600 Kc.	F	Set Osc. to Scale
4	Ant.—Gnd.	200 Mmf.	1400 Kc.	Broadcast	1400 Kc.	G	Align Ant.
5	Ant.—Gnd.	200 Mmf.	600 Kc.	Broadcast	600 Kc.	J	Rock Gang & Adj. to Max.
6	Ant.—Gnd.	400 Ohms	18 Mc.	Short Wave	18 Mc.	M	Rock Gang



MODEL SPEAKER
5 D 611 49-439 4"
5 D 627 49-439 4"

I.F. FREQUENCY 455 KC.
5 TUBE SUPERHETERODYNE
CHASSIS № 5B02 AC-DC.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-1206	TWO-GANG VARIABLE	R1	63-589	10M OHM
C2	22-829	.05 MFD.	R2	63-576	15 MEG OHM
C3	22-1017	.05 MFD.	R3	63-600	2.2 MEG OHM
C4	22-953	.0002 MFD.	R4	63-1112	VOLUME CONTROL
C5	22-492	.0002 MFD.	R5	63-597	470M OHM
C6	22-854	.0005 MFD.	R6	63-1171	75 OHM WIREWOUND
C7	22-243	.01 MFD.	R7	63-1172	100 OHM WIREWOUND
C8	22-1182	.01 MFD.	R8	63-1173	500 OHM
C9		20 MFD. ELECTROLYTIC	R9	63-579	220 OHM
C10	22-1186	20 MFD.			
C11		30 MFD.			

Models 5D611-5D627

Chassis No. 5B02

Models 5D611-5D627

Chassis No. 5B02

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. or D.C.

Power consumption 29 watts.

Power output 1.3 watts.

Tuning Ranges 540 Kc to 1620 Kc.

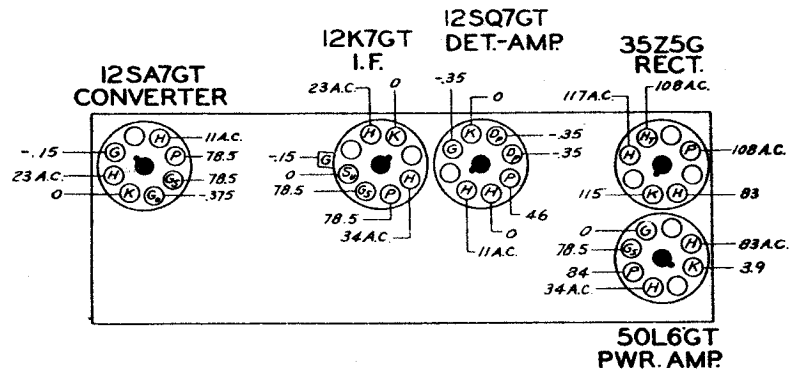
Stage Gains:

Bc. and 455 Kc. I.F.

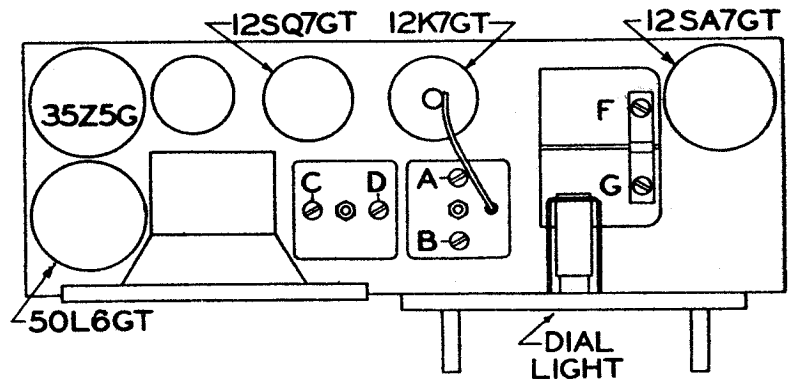
Ant. to Conv. grid $7\times$ at 1000 Kc.

Conv. grid to I.F. grid $74\times$ at 455 Kc.

Overall audio $225\times$ at .05 watt 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.1 mfd.	455 Kc.	—	600 Kc.	A, B, C, D	Align I. F.
2	Single Turn Loop coupled loosely to Wave Magnet	—	1500 Kc.	—	1500 Kc.	F	Set Oscillator to Scale
3		—	1500 Kc.	—	1500 Kc.	G	Adjust for Maximum

Model 5R680

Chassis No. 5B03

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 50 watts.

Power output 1.6 watts.

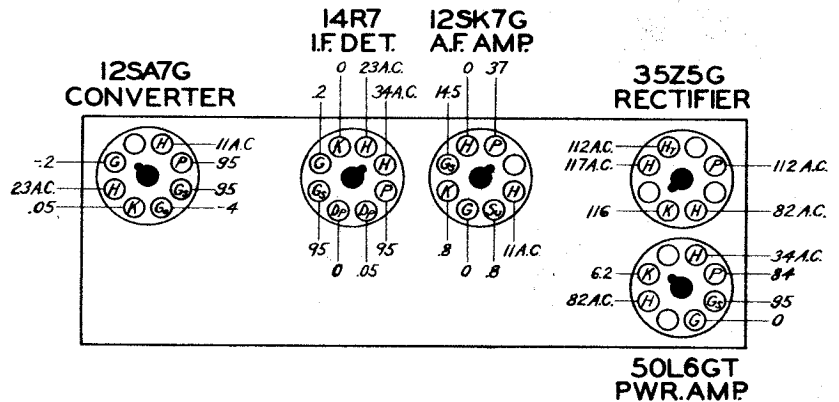
Tuning Ranges 540 Kc to 1620 Kc.

Stage Gains
Bc. and I.F.

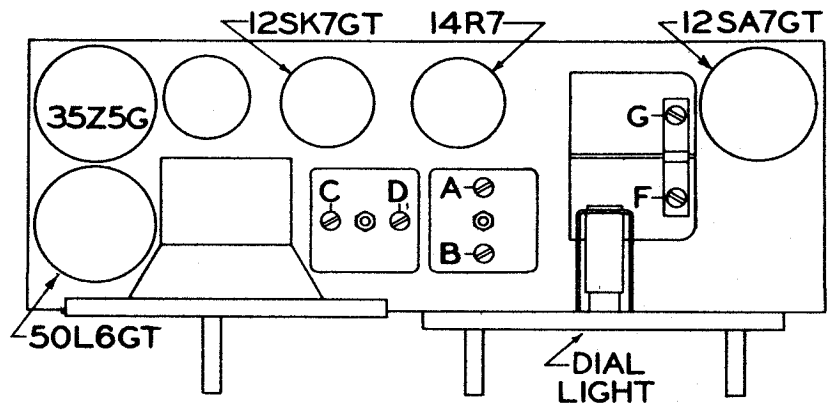
Ant. to conv. grid— $5.8\times$ at 1000 Kc.

Conv. grid to I. F. grid— $57\times$ at 455 Kc.

Overall audio— $222\times$ at .35 watt, 400 cycles.



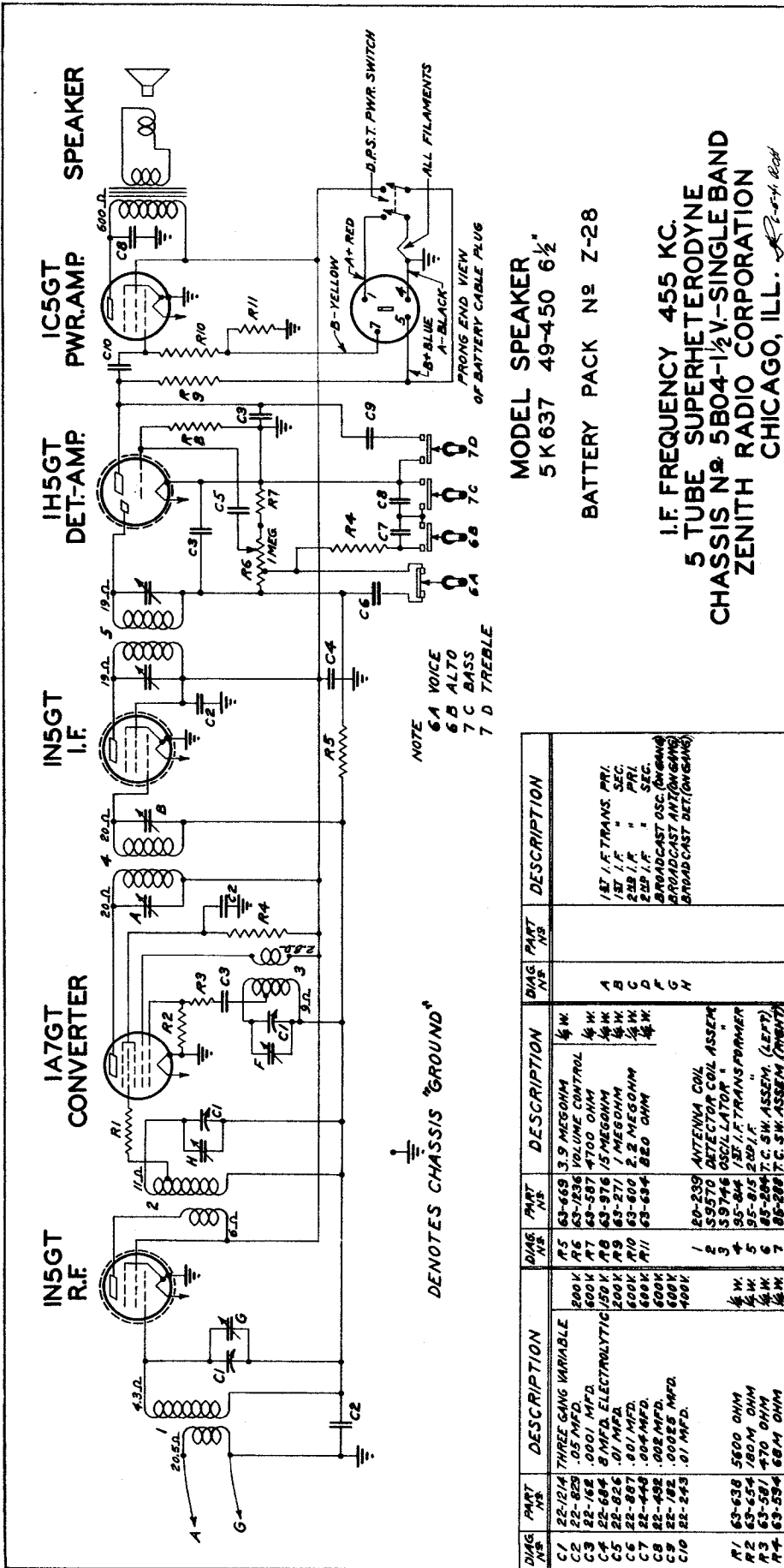
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	1600 Kc.	A, B, C, D	Align I.F.
2	Single Turn Loop Loosely Coupled to Wave Magnet	.5 mfd.	1600 Kc.	"	1600 Kc.	F	Set to Scale
3		.5 mfd.	1400 Kc.	"	1400 Kc.	G	Align Ant.



Model 5K637

Chassis No. 5B04

Model 5K637

Chassis No. 5B04

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Battery Z28.

Power consumption 1.3 watts.

Power output .270 watts.

Tuning Range

540 Kc. to 1620 Kc.

Stage Gains

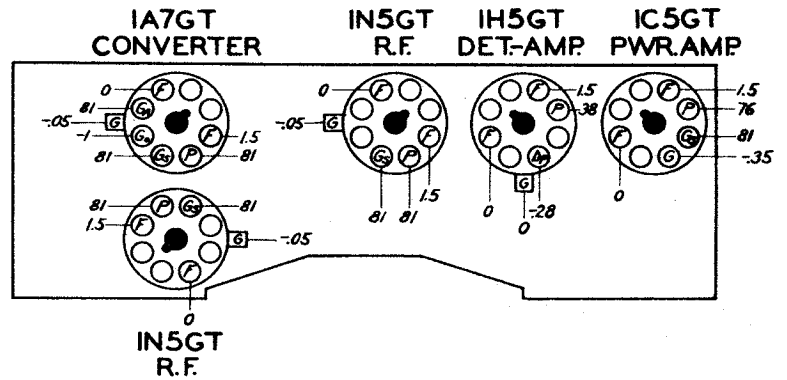
Bc. and I.F.

Ant. to R.F. grid $10.7\times$ at 1000 Kc.

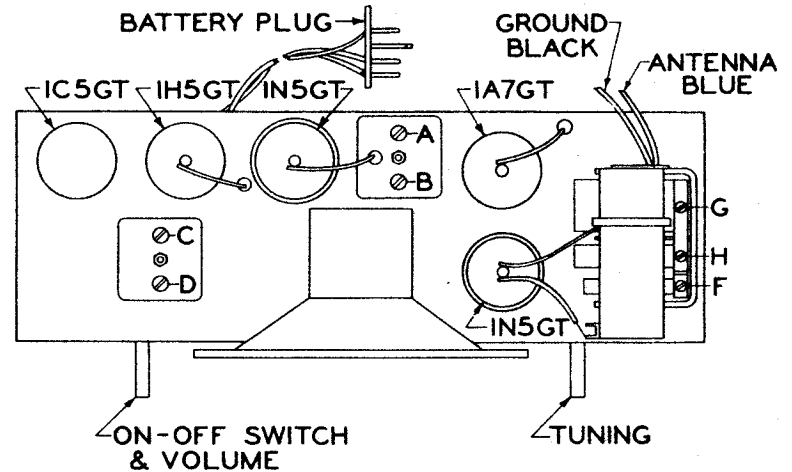
R.F. grid to conv. grid $3.25\times$ at 1000 Kc.

Conv. grid to I.F. grid $40\times$ at 455 Kc.

Overall audio $366\times$ at .05 watt. 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW

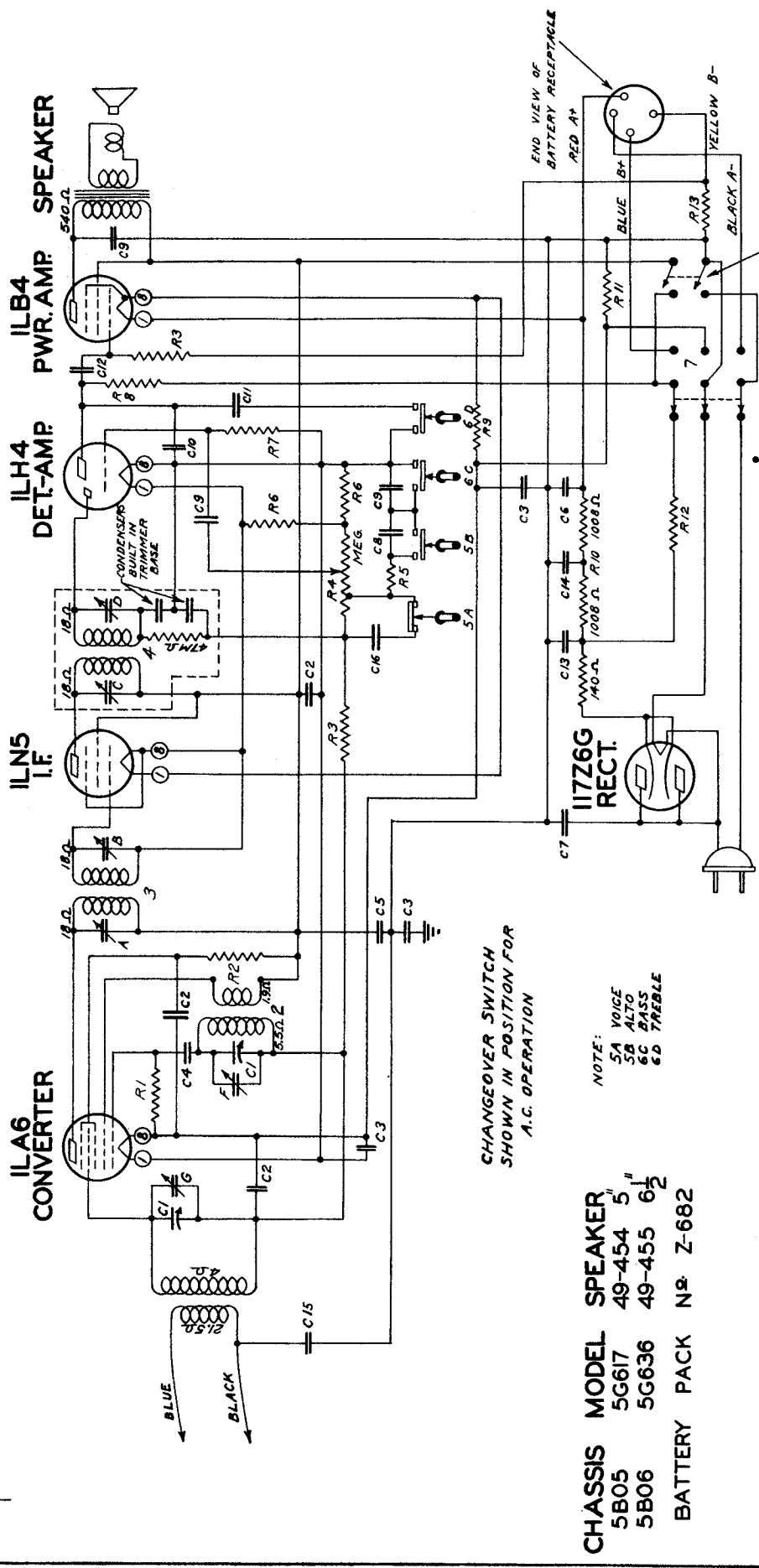


TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	$\frac{1}{2}$ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	Ant.—Gnd.	200 Mmf.	1500 Kc.	Broadcast	1500 Kc.	F	Set Oscillator to Scale
3	"	200 Mmf.	1400 Kc.	Broadcast	1400 Kc.	H, G	Align R.F. & Ant.

8-29-41 (OR 22-1266) (OR 22-1267) ADDED



DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
1	20-238	ANTENNA COIL	1	63-654	180 M OHM
2	5-9597	OSCILLATOR COIL ASSEMBLY	2	63-646	33 M OHM
3	95-816	1ST I.F. TRANSFORMER	3	63-600	2.2 MEG OHM
4	95-817	2ND I.F. TRANSFORMER	4	63-1236	VOLUME CONTROL
5	85-285	T.C. SWITCH LEFT (5B05)	5	63-1241	VOLUME CONTROL
6	85-284	" " " RIGHT (5B05)	6	63-584	68 M OHM
7	85-289	" " " CHANGEOVER SWITCH	7	63-587	4700 OHM
8	85-288	" " " CHANGEOVER SWITCH	8	63-976	15 MEG OHM
9	85-287	" " " CHANGEOVER SWITCH	9	63-271	1 MEG OHM
10	85-286	" " " CHANGEOVER SWITCH	10	63-087	870 OHM WIREWOUND
11	85-285	" " " CHANGEOVER SWITCH	11	63-239	3 SECTION CAND OHM
12	85-284	" " " CHANGEOVER SWITCH	12	63-089	33 OHM WIREWOUND
13	85-283	" " " CHANGEOVER SWITCH	13	63-433	2700 OHM
14	85-282	" " " CHANGEOVER SWITCH	14	63-627	180 OHM
15	85-281	" " " CHANGEOVER SWITCH	15	63-627	180 OHM
16	85-280	" " " CHANGEOVER SWITCH	16	63-627	180 OHM
17	85-279	" " " CHANGEOVER SWITCH	17	63-627	180 OHM
18	85-278	" " " CHANGEOVER SWITCH	18	63-627	180 OHM
19	85-277	" " " CHANGEOVER SWITCH	19	63-627	180 OHM
20	85-276	" " " CHANGEOVER SWITCH	20	63-627	180 OHM
21	85-275	" " " CHANGEOVER SWITCH	21	63-627	180 OHM
22	85-274	" " " CHANGEOVER SWITCH	22	63-627	180 OHM
23	85-273	" " " CHANGEOVER SWITCH	23	63-627	180 OHM
24	85-272	" " " CHANGEOVER SWITCH	24	63-627	180 OHM
25	85-271	" " " CHANGEOVER SWITCH	25	63-627	180 OHM
26	85-270	" " " CHANGEOVER SWITCH	26	63-627	180 OHM
27	85-269	" " " CHANGEOVER SWITCH	27	63-627	180 OHM
28	85-268	" " " CHANGEOVER SWITCH	28	63-627	180 OHM
29	85-267	" " " CHANGEOVER SWITCH	29	63-627	180 OHM
30	85-266	" " " CHANGEOVER SWITCH	30	63-627	180 OHM
31	85-265	" " " CHANGEOVER SWITCH	31	63-627	180 OHM
32	85-264	" " " CHANGEOVER SWITCH	32	63-627	180 OHM
33	85-263	" " " CHANGEOVER SWITCH	33	63-627	180 OHM
34	85-262	" " " CHANGEOVER SWITCH	34	63-627	180 OHM
35	85-261	" " " CHANGEOVER SWITCH	35	63-627	180 OHM
36	85-260	" " " CHANGEOVER SWITCH	36	63-627	180 OHM
37	85-259	" " " CHANGEOVER SWITCH	37	63-627	180 OHM
38	85-258	" " " CHANGEOVER SWITCH	38	63-627	180 OHM
39	85-257	" " " CHANGEOVER SWITCH	39	63-627	180 OHM
40	85-256	" " " CHANGEOVER SWITCH	40	63-627	180 OHM
41	85-255	" " " CHANGEOVER SWITCH	41	63-627	180 OHM
42	85-254	" " " CHANGEOVER SWITCH	42	63-627	180 OHM
43	85-253	" " " CHANGEOVER SWITCH	43	63-627	180 OHM
44	85-252	" " " CHANGEOVER SWITCH	44	63-627	180 OHM
45	85-251	" " " CHANGEOVER SWITCH	45	63-627	180 OHM
46	85-250	" " " CHANGEOVER SWITCH	46	63-627	180 OHM
47	85-249	" " " CHANGEOVER SWITCH	47	63-627	180 OHM
48	85-248	" " " CHANGEOVER SWITCH	48	63-627	180 OHM
49	85-247	" " " CHANGEOVER SWITCH	49	63-627	180 OHM
50	85-246	" " " CHANGEOVER SWITCH	50	63-627	180 OHM
51	85-245	" " " CHANGEOVER SWITCH	51	63-627	180 OHM
52	85-244	" " " CHANGEOVER SWITCH	52	63-627	180 OHM
53	85-243	" " " CHANGEOVER SWITCH	53	63-627	180 OHM
54	85-242	" " " CHANGEOVER SWITCH	54	63-627	180 OHM
55	85-241	" " " CHANGEOVER SWITCH	55	63-627	180 OHM
56	85-240	" " " CHANGEOVER SWITCH	56	63-627	180 OHM
57	85-239	" " " CHANGEOVER SWITCH	57	63-627	180 OHM
58	85-238	" " " CHANGEOVER SWITCH	58	63-627	180 OHM
59	85-237	" " " CHANGEOVER SWITCH	59	63-627	180 OHM
60	85-236	" " " CHANGEOVER SWITCH	60	63-627	180 OHM
61	85-235	" " " CHANGEOVER SWITCH	61	63-627	180 OHM
62	85-234	" " " CHANGEOVER SWITCH	62	63-627	180 OHM
63	85-233	" " " CHANGEOVER SWITCH	63	63-627	180 OHM
64	85-232	" " " CHANGEOVER SWITCH	64	63-627	180 OHM
65	85-231	" " " CHANGEOVER SWITCH	65	63-627	180 OHM
66	85-230	" " " CHANGEOVER SWITCH	66	63-627	180 OHM
67	85-229	" " " CHANGEOVER SWITCH	67	63-627	180 OHM
68	85-228	" " " CHANGEOVER SWITCH	68	63-627	180 OHM
69	85-227	" " " CHANGEOVER SWITCH	69	63-627	180 OHM
70	85-226	" " " CHANGEOVER SWITCH	70	63-627	180 OHM
71	85-225	" " " CHANGEOVER SWITCH	71	63-627	180 OHM
72	85-224	" " " CHANGEOVER SWITCH	72	63-627	180 OHM
73	85-223	" " " CHANGEOVER SWITCH	73	63-627	180 OHM
74	85-222	" " " CHANGEOVER SWITCH	74	63-627	180 OHM
75	85-221	" " " CHANGEOVER SWITCH	75	63-627	180 OHM
76	85-220	" " " CHANGEOVER SWITCH	76	63-627	180 OHM
77	85-219	" " " CHANGEOVER SWITCH	77	63-627	180 OHM
78	85-218	" " " CHANGEOVER SWITCH	78	63-627	180 OHM
79	85-217	" " " CHANGEOVER SWITCH	79	63-627	180 OHM
80	85-216	" " " CHANGEOVER SWITCH	80	63-627	180 OHM
81	85-215	" " " CHANGEOVER SWITCH	81	63-627	180 OHM
82	85-214	" " " CHANGEOVER SWITCH	82	63-627	180 OHM
83	85-213	" " " CHANGEOVER SWITCH	83	63-627	180 OHM
84	85-212	" " " CHANGEOVER SWITCH	84	63-627	180 OHM
85	85-211	" " " CHANGEOVER SWITCH	85	63-627	180 OHM
86	85-210	" " " CHANGEOVER SWITCH	86	63-627	180 OHM
87	85-209	" " " CHANGEOVER SWITCH	87	63-627	180 OHM
88	85-208	" " " CHANGEOVER SWITCH	88	63-627	180 OHM
89	85-207	" " " CHANGEOVER SWITCH	89	63-627	180 OHM
90	85-206	" " " CHANGEOVER SWITCH	90	63-627	180 OHM
91	85-205	" " " CHANGEOVER SWITCH	91	63-627	180 OHM
92	85-204	" " " CHANGEOVER SWITCH	92	63-627	180 OHM
93	85-203	" " " CHANGEOVER SWITCH	93	63-627	180 OHM
94	85-202	" " " CHANGEOVER SWITCH	94	63-627	180 OHM
95	85-201	" " " CHANGEOVER SWITCH	95	63-627	180 OHM
96	85-200	" " " CHANGEOVER SWITCH	96	63-627	180 OHM
97	85-199	" " " CHANGEOVER SWITCH	97	63-627	180 OHM
98	85-198	" " " CHANGEOVER SWITCH	98	63-627	180 OHM
99	85-197	" " " CHANGEOVER SWITCH	99	63-627	180 OHM
100	85-196	" " " CHANGEOVER SWITCH	100	63-627	180 OHM

Models 5G617-5G636

Chassis No. 5B05-5B06

Models 5G617-5G636

Chassis No. 5B05-5B06

All voltages measured from point indicated to Neg. B. using 20000 ohm per volt meter.

Antenna disconnected — volume control at minimum and condenser plates in full mesh.

Battery — Z682.

Line voltage 117 A.C. or D.C.

Power consumption—117 v.—20 watts.

Power consumption, battery—1.02 watts.

Power output—.160 watts.

Stage Gains:

Ant. to conv. grid—5 at 1000 Kc.

Conv. grid to I. F. grid—75 at 455 Kc.

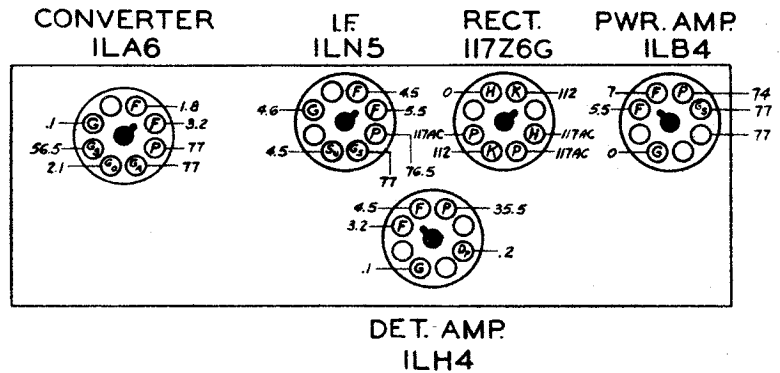
Overall audio—260 at .050 watt, 400 cycles.

Tuning Range—540 Kc.—1740 Kc.

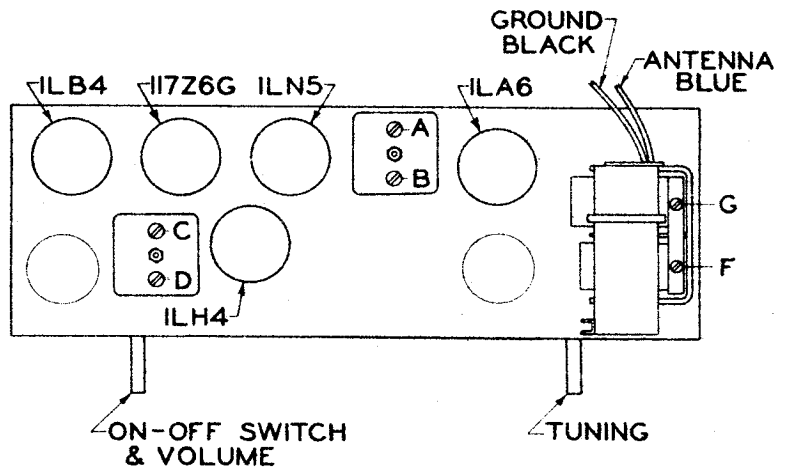
NOTE

Chassis 5B05 —attached speaker.

Chassis 5B06—remote speaker.



SOCKET VOLTAGES—BOTTOM VIEW

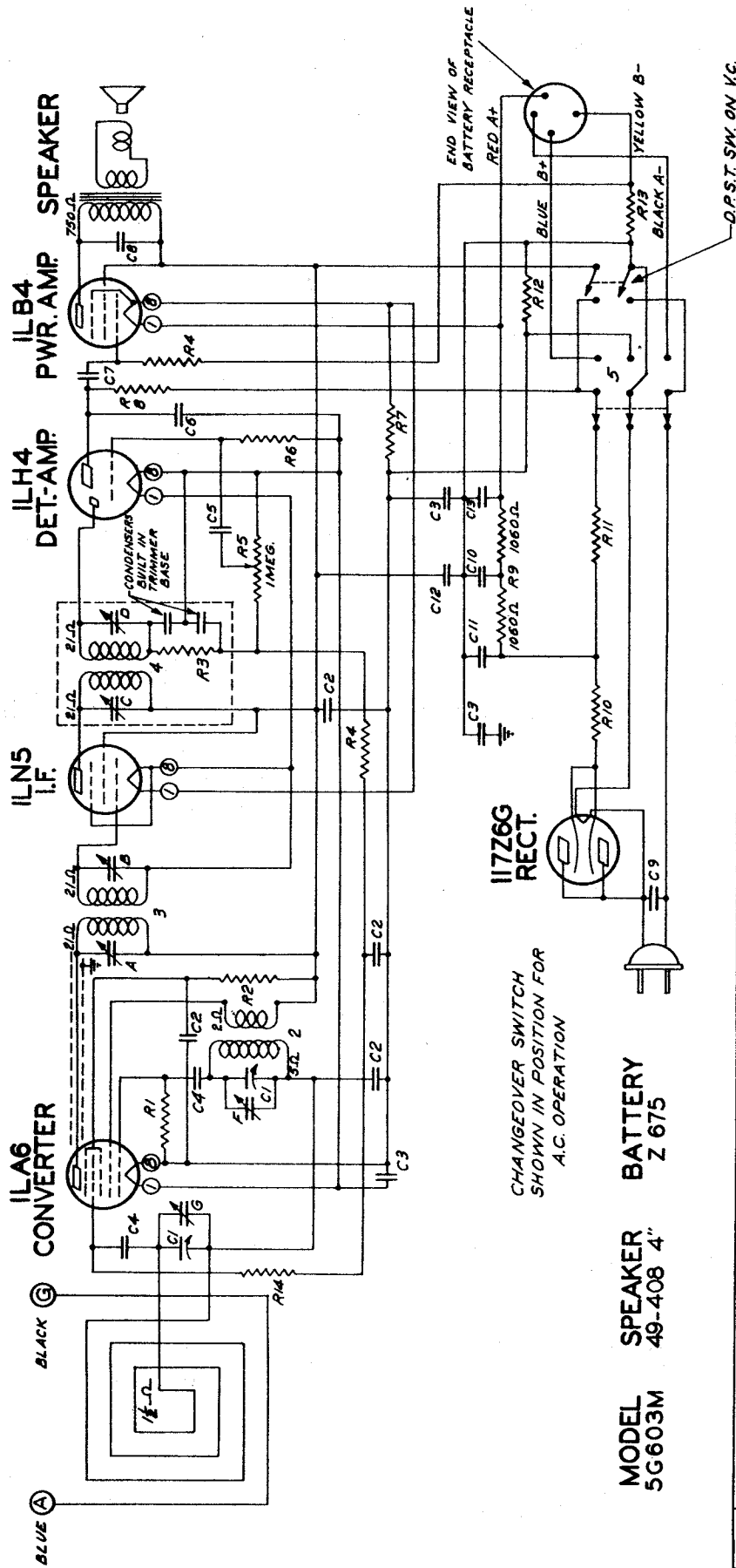


TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	.5 mmfd.	455	—	600	A B C D	I F. Alignment
2	Ant.—Gnd.	200 mmfd.	1400	—	1400	F	Set Osc. to Scale
3	" "	200 mmfd.	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of 1LA6 socket.



110 VOLT A.C.-BATTERY PACK
 UNIVERSAL PORTABLE
 I.F. FREQUENCY 455 KC.
 5 TUBE SUPERHETERODYNE
 CHASSIS N^o 5B07
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-1062	TWO GANG VARIABLE	R1	63-773	180 M OHM	1	58742	WAVEMAGNET ASSEMBLY
C2	22-259	.05 MFD.	R2	63-646	33 M OHM	2	58730	OSC. COIL ASSEMBLY
C3	22-259	.05 MFD.	R3	63-773	47 M OHM	3	95-780	1ST I.F. TRANSFORMER
C4	22-162	.0001 MFD.	R4	63-600	22 MEGOHM	4	95-721	2ND I.F. TRANSFORMER
C5	22-492	.002 MFD.	R5	63-126	VOLUME CONTROL	5	85-242	CHANGEDOVER SWITCH
C6	22-470	.0005 MFD.	R6	63-976	15 MEGOHM			1ST I.F. TRANS. PRI.
C7	22-243	.01 MFD.	R7	63-1097	870 OHM WIREWOUND			1ST I.F. TRANS. SEC.
C8	22-326	.003 MFD.	R8	63-271	1 MEGOHM			2ND I.F. TRANS. PRI.
C9	22-269	.05 MFD.	R9	63-1157	2-SECTION CANDOHH			2ND I.F. TRANS. SEC.
C10	22-1026	20 MFD. ELECTROLYTIC	R10	63-1096	140 OHM WIREWOUND	A		BROADCAST OSC. (ON GANG)
C11	22-1026	20 MFD. ELECTROLYTIC	R11	63-439	2700 OHM	B		BROADCAST ANT. (ON GANG)
C12	22-1027	20 MFD. ELECTROLYTIC	R12	63-1099	33 OHM WIREWOUND	C		
C13	22-1027	20 MFD. ELECTROLYTIC	R13	63-742	180 OHM	D		
			R14	63-296	220 M OHM	F		
						G		

Model 5G603

Chassis No. 5B07

Model 5G603

Chassis No. 5B07

All voltages measured from point indicated to Neg. B. using 20000 ohm per volt meter.

Volume control at minimum and condenser plates in full mesh.

Line voltage—117 v. A.C. or D.C.

Battery Z675.

Power consumption—117 v.—20 watts.

Power consumption, battery—1.02 watts.

Power output—.170 watts.

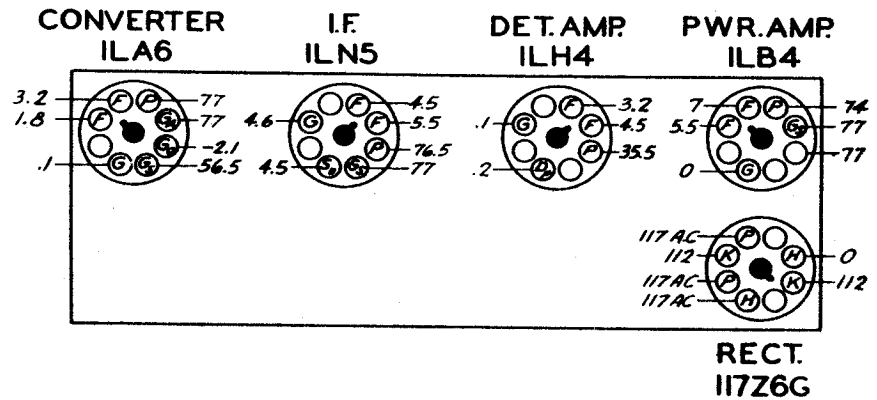
Stage Gains:

Ant. to conv. grid—4.9× at 1000 Kc.

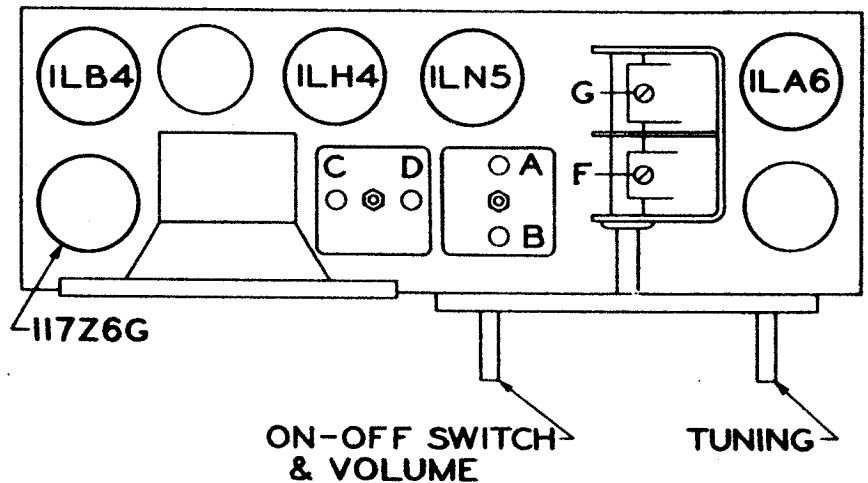
Conv. grid to I. F. grid—53× at 455 Kc.

Overall audio—280× at .050 watt, 400 cycles.

Tuning Range—540 Kc.—1600 Kc.



SOCKET VOLTAGES—BOTTOM VIEW

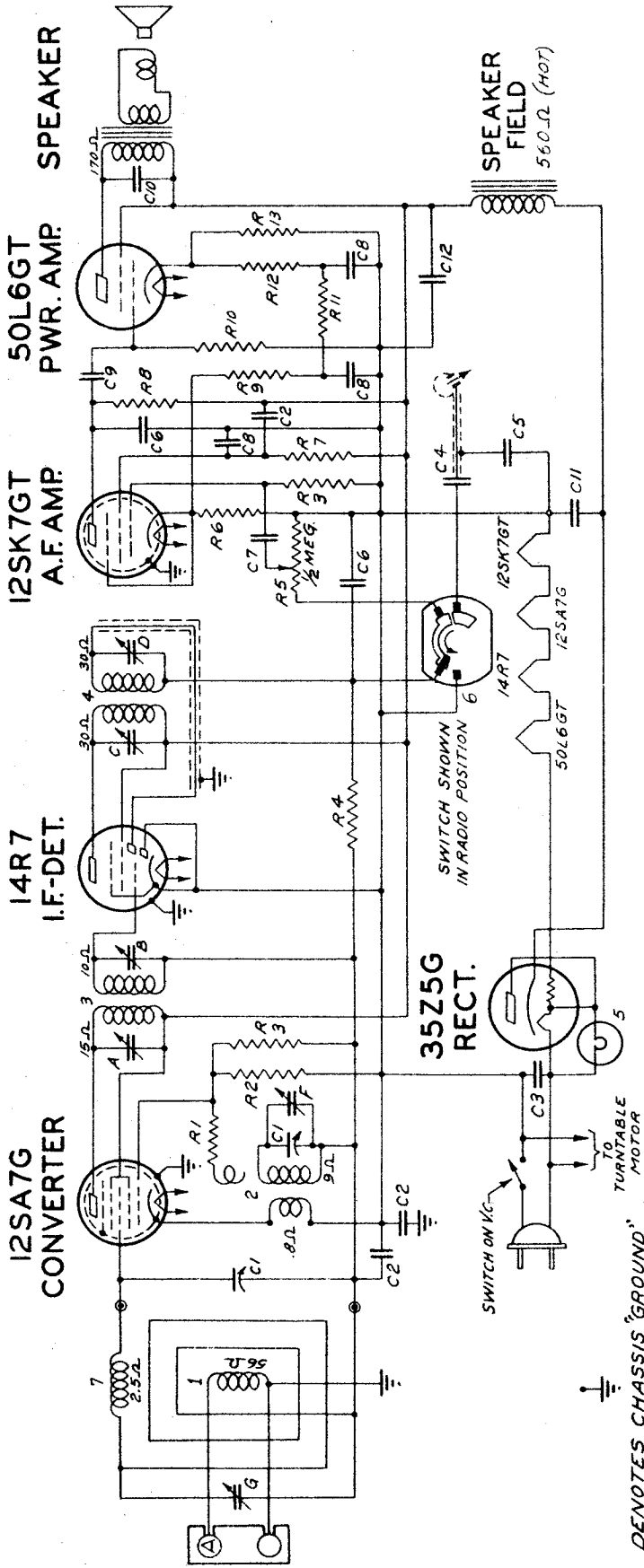


TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	.5 mmk1.	455	—	600	A B C D	I. F. Alignment
2	Single Turn Loop Coupled Loosely to Wave Magnet	—	1400	—	1400	F	Set Osc. to Scale
3		—	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of ILA6 socket.



MODEL SPEAKER
5 R 686 49-480 5"
5 R 686J 49-480 5"

I.F. FREQUENCY 455 KC.
5 TUBE SUPERHETERODYNE
CHASSIS N25B13-A.C. PHONO
ZENITH RADIO CORPORATION
CHICAGO, ILL.

PART No.	DESCRIPTION	DIAG. No.	PART No.	DESCRIPTION	DIAG. No.	PART No.	DESCRIPTION	DIAG. No.	PART No.	DESCRIPTION
C1	22-1242 TWO-GANG VARIABLE	R3	63-976 15 MEGOHM	3	95-B11 1ST I.F. TRANSFORMER	12SA7G	12SA7G	1	59879 WAKEMAGNET	
C2	22-829 .05 MFD	R4	63-600 2.2 MEGOHM	4	95-B12 2ND I.F. TRANSFORMER	50L6GT	50L6GT	2	59470 OSCILLATOR COIL ASSEMBLY	
C3	22-1017 .05 MFD	R5	63-1112 VOLUME CONTROL	5	100-67 DIAL LIGHT 6.3V 15A.	14R7	14R7	3		
C4	22-1189 .00075 MFD.	R6	63-634 820 OHM	6	85-282 PHONO-RADIO SWITCH	35Z5G	35Z5G	4		
C5	22-327 .02 MFD.	R7	63-778 470M OHM	7	510072 LOOP LOADING COIL	TO	TO	5		
C6	22-953 .0002 MFD.	R8	63-445 100M OHM			TURNABLE	TURNABLE			
C7	22-492 .002 MFD.	R9	63-439 270M OHM			MOTOR	MOTOR			
C8	22-827 .1 MFD.	R10	63-597 470M OHM							
C9	22-188 .02 MFD.	R11	63-637 470M OHM							
C10	22-1182 .01 MFD.	R12	63-639 6800 OHM							
C11	22-1026 20 MFD. ELECTROLYTIC	R13	63-1015 140 OHM WIREWOUND							
C12	40 MFD.									
R1	63-579 220 OHM									
R2	63-589 10M OHM									

Models 5R686-5R686J

Chassis No. 5B13 Phono.

Models 5R686-5R686J

Chassis No. 5B13 Phono.

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 50 watts.

Power output 1.6 watts.

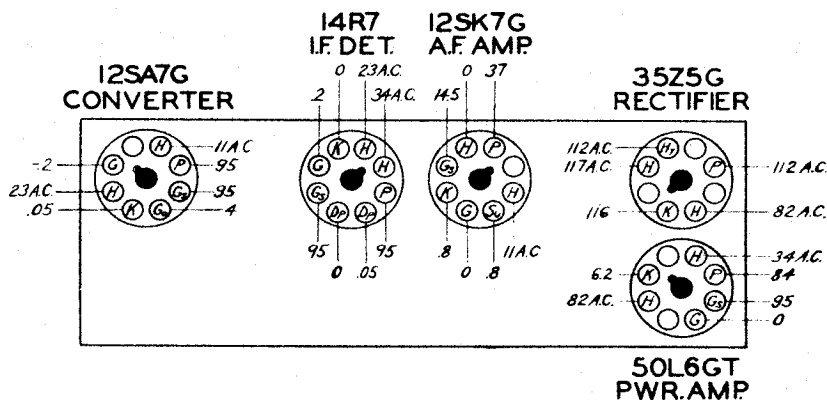
Tuning Ranges 540 Kc to 1620 Kc.

Stage Gains
Bc. and I.F.

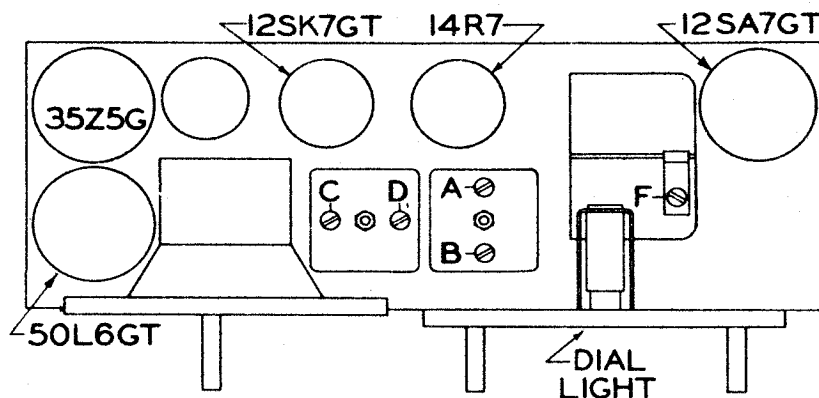
Ant. to conv. grid— $5.8\times$ at 1000 Kc.

Conv. grid to I. F. grid— $57\times$ at 455 Kc.

Overall audio— $222\times$ at .35 watt, 400 cycles.



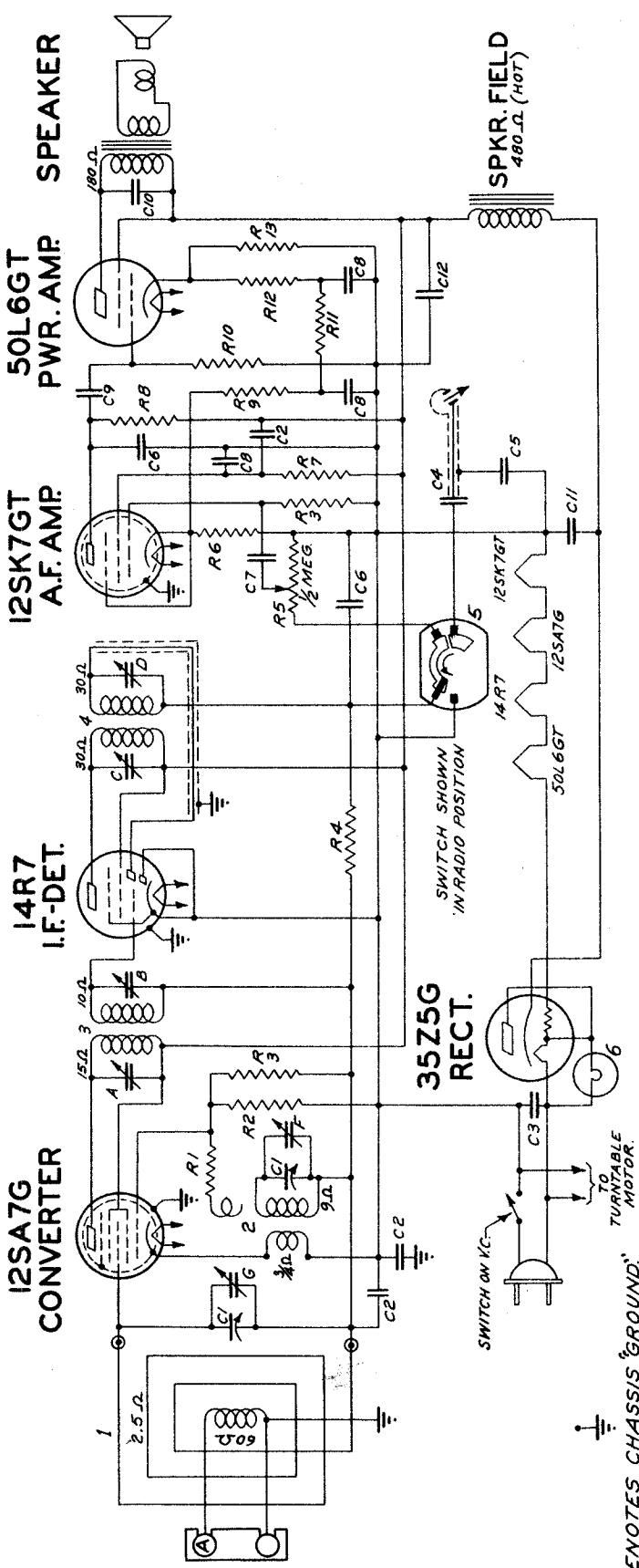
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	1600 Kc.	A, B, C, D	Align I.F.
2	One Turn Loop Coupled Loosely to Wave Magnet	—	1600 Kc.	"	1600 Kc.	F	Set to Scale
3	"	—	1400 Kc.	"	1400 Kc.	G. Located at Back of Wave Magnet	Align Ant.



MODEL SPEAKER
5 R 680X 49-479 4"

I.F. FREQUENCY 455 KC.
5 TUBE SUPERHETERODYNE
CHASSIS №5B14-A.C. PHONO
ZENITH RADIO CORPORATION
CHICAGO, ILL. *P. 9.54. RCH.*

DIAG. N°	PART N°	DESCRIPTION	DIAG. N°	PART N°	DESCRIPTION	DIAG. N°	PART N°	DESCRIPTION
C1	22-1206	TWO-GANG VARIABLE	R3	63-976	15 MEGOHM	3	95-811	1ST I.F. TRANSFORMER
C2	22-829	.05 MFD.	R4	63-600	2.2 MEGOHM	4	95-812	2ND I.F. TRANSFORMER
C3	22-1017	.05 MFD.	R5	63-1112	VOLUME CONTROL	5	85-282	PHONO-RADIO SWITCH
C4	22-887	.001 MFD.	R6	63-634	820 OHM	6	100-67	DIAL LIGHT 5.3 K. .15A.
C5	22-327	.02 MFD.	R7	63-778	470M OHM			
C6	22-953	.0002 MFD.	R8	63-445	100M OHM			
C7	22-492	.002 MFD.	R9	63-439	2700 OHM			
C8	22-827	.1 MFD.	R10	63-597	470M OHM	A		1ST I.F. TRANS. PRI.
C9	22-188	.02 MFD.	R11	63-637	470M OHM	B		1ST I.F. " SEC.
C10	22-1182	.01 MFD.	R12	63-639	6800 OHM	C		2ND I.F. " PRI.
C11	22-1026	20MFD. ELECTROLYTIC	R13	63-1213	140 OHM	D		2ND I.F. " SEC.
C12		40MFD.				F		BROADCAST OSC. (ON GANG)
								BROADCAST ANT. (ON GANG)
R1	63-579	220 OHM						
R2	63-589	10M OHM						

Model 5R680X

Chassis No. 5B14

Chassis No. 5B14

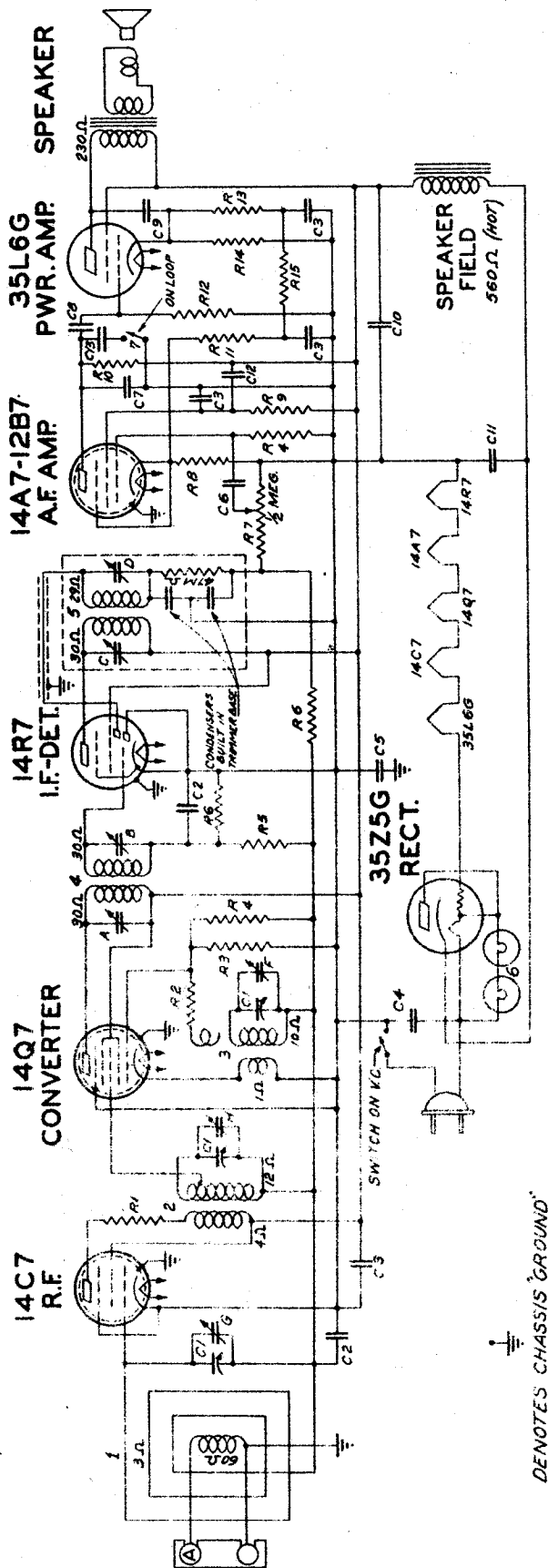
Tuning Ranges 540 Kc to 1620 Kc.

Overall audio—222X at .35 watt,
400 cycles.



ALIGNMENT PROCEDURE

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MODEL SPEAKER
 6 D 614 49-448 5"
 6 D 614W 49-448 5"
 6 D 629 49-448 5"

I.F. FREQUENCY 455 KC.
 6 TUBE SUPERHETERODYNE
 CHASSIS N°6B01 A.C.-D.C.
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION
C1	22-1201	THREE-GANG VARIABLE	R3	63-589	10M OHM	2	S9561	DETECTOR COIL ASSEMBLY
C2	22-869	.05 MFD.	R4	63-1093	15 MEGOHM	3	S9578	OSCILLATOR COIL ASSEMBLY
C3	22-827	.1 MFD.	R5	63-722	2.2 MEGOHM	4	95-806	12 I.F. TRANS.
C4	22-1017	.05 MFD.	R6	63-600	2.2 MEGOHM	5	95-807	2ND I.F. TRANS.
C5	22-1207	.07 MFD.	R7	63-1238	VOLUME CONTROL	6	100-90	PILOT LIGHT 3.2V. 15A
C6	22-243	.01 MFD.	R8	63-634	820 OHM	7	85-257	TONE CONTROL SWITCH
C7	22-854	.0005 MFD.	R9	63-659	470 M OHM	A		12 I.F. TRANS. PRI.
C8	22-188	.02 MFD.	R10	63-260	100 M OHM	B		12 I.F. TRANS. SEC.
C9	22-1049	.03 MFD.	R11	63-439	270 M OHM	C		2ND I.F. TRANS. SEC.
C10	22-1014	20MFD.ELECTROLYTIC	R12	63-597	470 M OHM	D		BROADCAST OSC. (ON GANG)
C11	22-1219	.04 MFD.	R13	63-755	3300 OHM	E		BROADCAST ANT. (ON GANG)
C12	22-1219	.04 MFD.	R14	63-1237	150 OHM WIREWOUND	F		BROADCAST DET. (ON GANG)
C13	22-492	.002 MFD.	R15	63-637	4700 OHM	G		
R1	63-590	15M OHM				H		
R2	63-579	220 OHM						

Models 6D614-6D614W-6D621-6D629

Chassis No. 6B01

Models 6D614-6D614W-6D621-6D629

Chassis No. 6B01

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. or D.C.

Power consumption 40 watts.

Power output 1.38 watts.

Tuning Range

540 Kc. to 1620 Kc.

Stage Gains

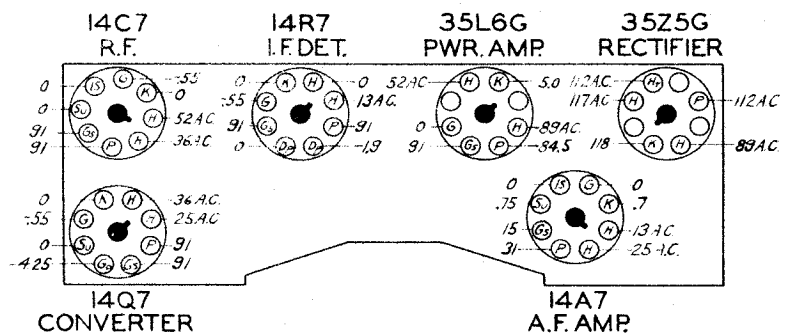
Bc. and I.F.

Ant. to R.F. grid 8 at 1000 Kc.

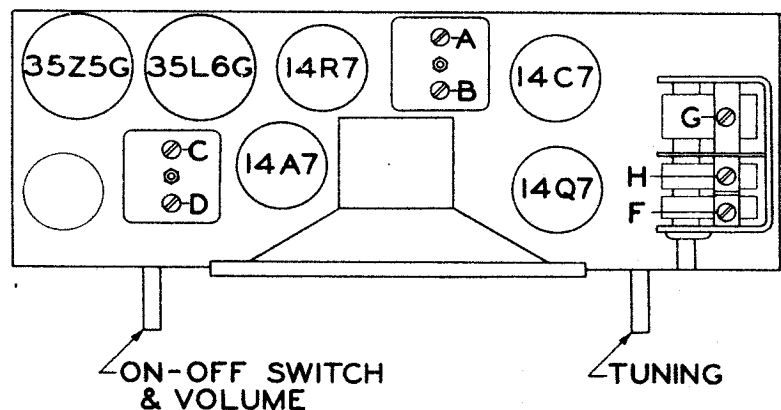
R.F. grid to conv. grid 9.6 at 1000 Kc.

Conv. grid to I.F. grid 39 at 455 Kc.

Overall audio 162 at .25 watt. 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455	BC	600	A, B, C, D	Align I.F.
2	One Turn Loop Coupled Loosely to Wave Magnet	—	1600	BC	1600	F	Set osc. to scale at 1600 Kc.
3		—	1400	BC	1400	H, G	Align det. and antenna stage

Model 6R631

Chassis No. 6B02

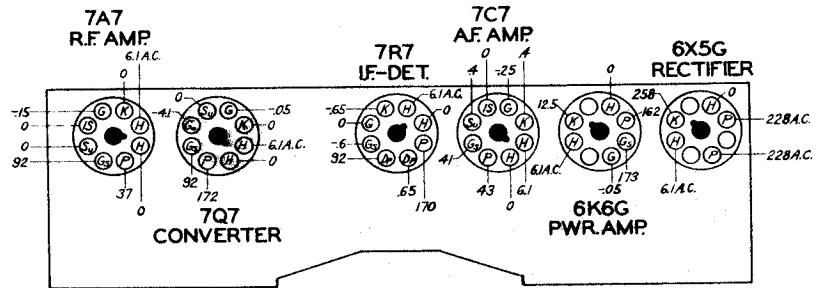
All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

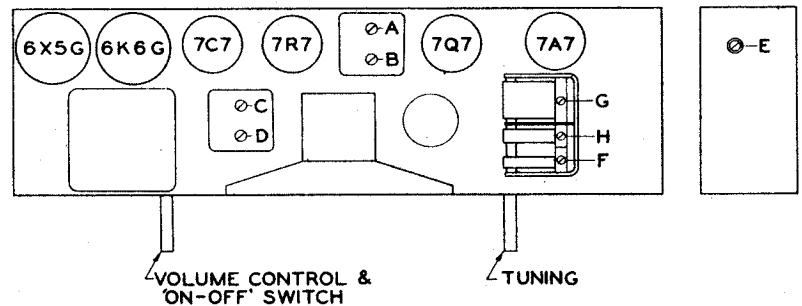
Volume control full on.
Line voltage 117 A.C.
Power consumption 37 watts.
Power output 1.6 watts.
Tuning Range
540 Kc. to 1620 Kc.

Stage Gains
Bc. and I.F.

Ant. to R.F. grid $3\times$ at 1000 Kc.
R.F. grid to conv. grid $13\times$ at 1000 Kc.
Conv. grid to I.F. grid $58\times$ at 455 Kc.
Overall audio $200\times$ at .25 watt, 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Manual	600 Kc.	A B C D	Align I.F.
2	R.F. Grid	.5 Mfd.	455 Kc.	Automatic	600 Kc.	E	Adjust Wavetrap for Minimum
3	One Turn Loop Coupled Loosely to Wave Magnet	.5 Mfd.	1600 Kc.	Manual	1600 Kc.	F	Set to Scale
4		.5 Mfd.	1400 Kc.	Manual	1400 Kc.	H. G	Align det. and ant. stage

Model 6G601

Chassis No. 6B03

All voltages measured with a 20000 ohm per volt meter from Neg. B to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control on full.

Battery Z985.

Line voltage 117 v. A.C. or D.C.

Power consumption—117 v.—20 watts.

Power output—360 milliwatts.

Stage Gains:

Ant. to R.F. grid—5× at 1000 Kc.

R.F. grid to conv. grid.—6.5× at 1000 Kc.

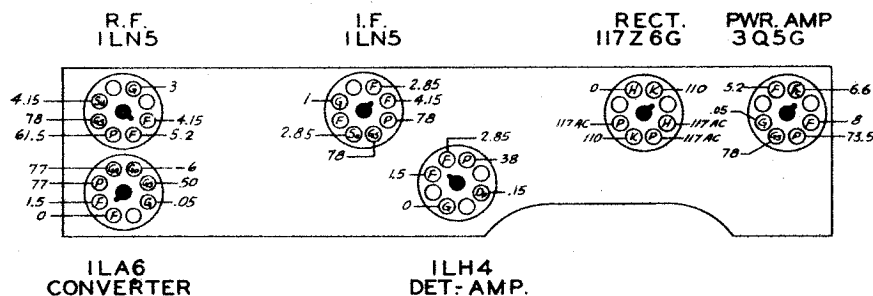
Conv. grid to I.F. grid—49.1× at 455 Kc.

Overall audio—322× at .05 watt. 400 cycles.

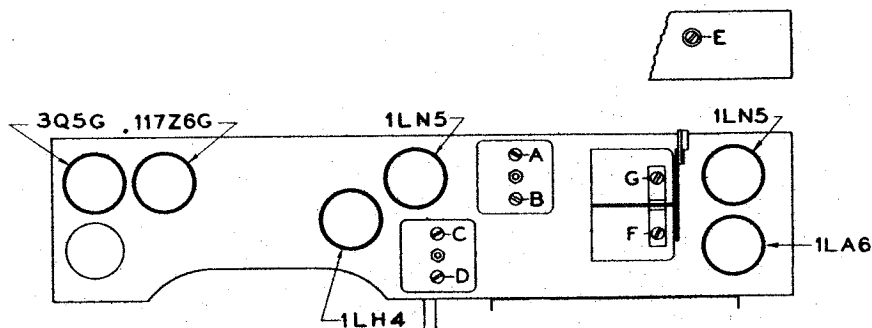
Tuning Range—540 Kc. to 1620 Kc.

NOTE!

This receiver may also be used with the 1,000 hour Farm battery pack Z-884 and extension cable S-9598.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	.5 mmfd.	455	—	600	A B C D	I. F. Alignment
2	Converter Grid	.5 mmfd.	455	—	600	E	Adj. Trap Minimum
3	Single Turn Loop Coupled Loosely to Wave Magnet	—	1400	—	1400	F	Set Osc. to Scale
4		—	1400	—	1400	G	Alignment of Antenna

*Gnd. of test osc. connected to No. 8 pin of 1LA6 socket.

Chassis No. 6B04

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Models 6D615-6D615W- 6D623-6D630

Chassis No. 6B05

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. or D.C.

Power consumption 40 watts.

Power output 1.38 watts.

Tuning Range

540 Kc. to 1620 Kc.

Stage Gains

Bc. and I.F.

Ant. to R.F. grid $8\times$ at 1000 Kc.

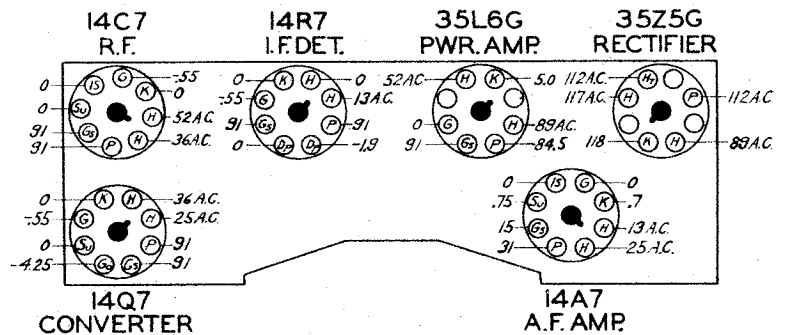
R.F. grid to conv. grid $9.6\times$ at 1000 Kc.

Conv. grid to I.F. grid $39\times$ at 455 Kc.

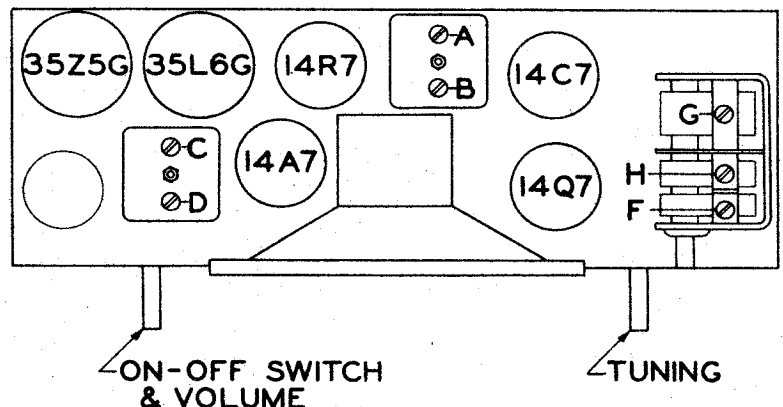
Overall audio $162\times$ at .25 watt, 400 cycles.

— Note —

6B05 chassis is identical to 6B01 with the addition of 4 button Radiorgan in place of 2 position tone control.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I.F.
2	1 turn loop made from generator or Radex Loop	—	1600 Kc.	BC	1600 Kc.	F	Set osc. to scale at 1600 Kc.
3		—	1400 Kc.	BC	1400 Kc.	H, G	Align det. and ant. stage

Models 6R683-6R684-6R687R*-6R688

Chassis No. 6B06 Phono.

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 60 + 25 watts.

Power output 6. watts.

Tuning Range

540 Kc. to 1620 Kc.

Stage Gains
Bc. and I.F.

Ant. to R.F. grid 7× at 1000 Kc.

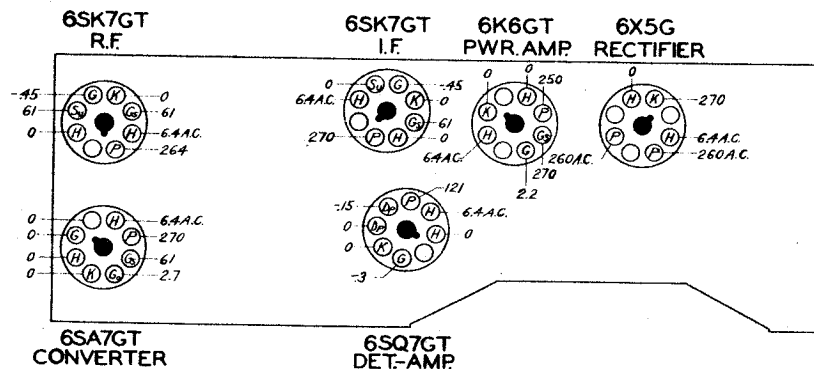
R.F. grid to conv. grid 9× at 1000 Kc.

Conv. grid to I.F. grid 52× at 455 Kc.

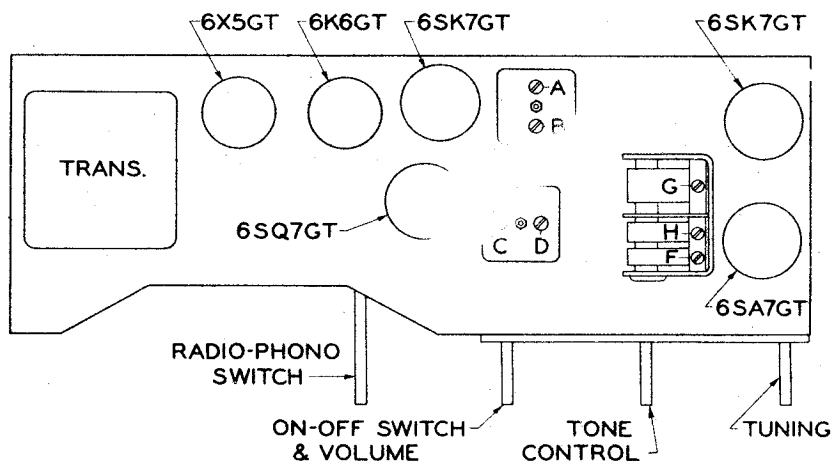
Overall audio—630× at 1 watt, 400 cycles.

Note!

*R denotes mahogany cabinet.



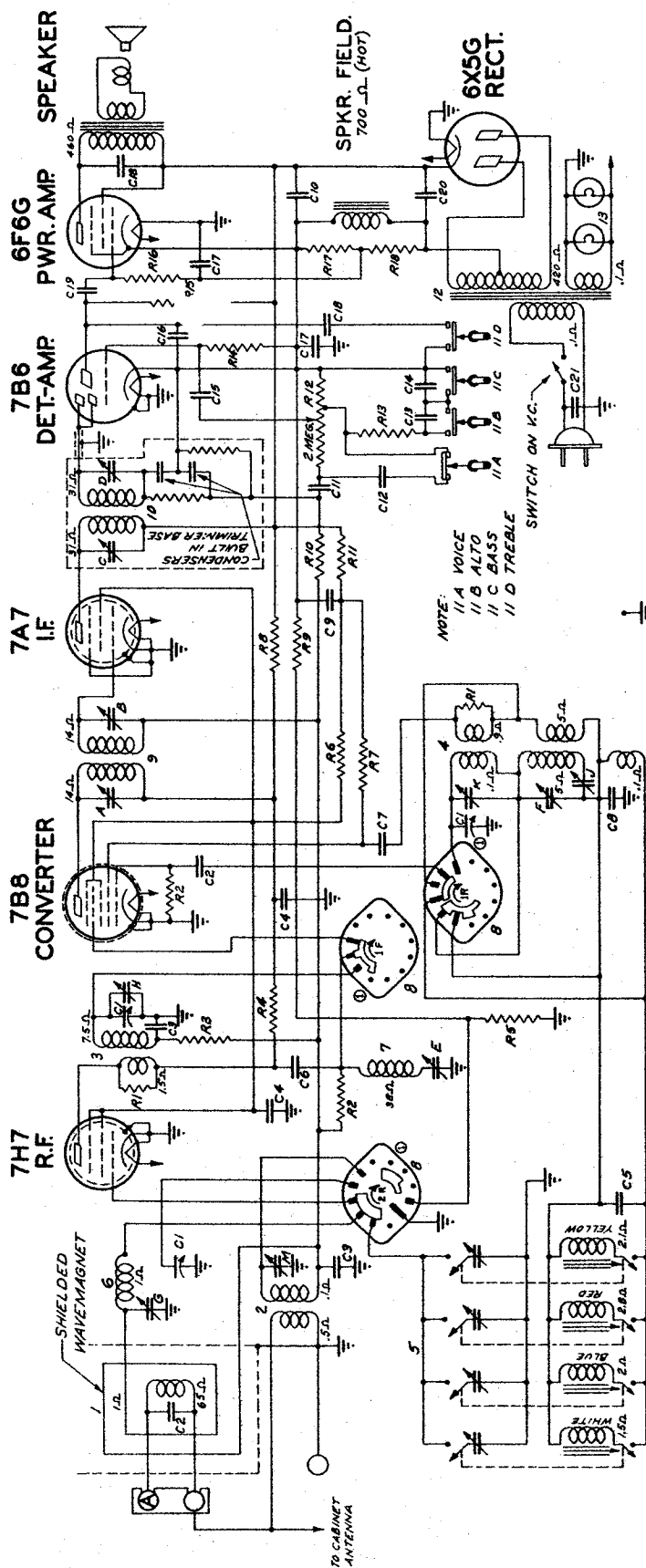
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I.F.
2	Single Turn Loop Coupled Loosely	.5 mfd.	1600 Kc.	"	1600 Kc.	F	Set Oscillator to Scale
3	Wave Magnet	.5 mfd.	1400 Kc.	"	1400 Kc.	H, G	Align det. and antenna stage



8-29-41 R17 WAS 63-654 & R18 WAS 63-656
5-16-41 C21 ADDED.

BAND SWITCH SHOWN IN
AUTOMATIC POSITION

DENOTES CHASSIS "GROUND"

MODEL
6S632
6S646
6S656

SPEAKER
49-460 6"
49-459 8"
49-465 10"

I.F. FREQUENCY 455KC.
6 TUBE SUPERHETERODYNE
CHASSIS No 6B08 2 BAND A.C.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

QMG No	PART No	DESCRIPTION	QMG No	PART No	DESCRIPTION	QMG No	PART No	DESCRIPTION	QMG No	PART No	DESCRIPTION							
C1	22-1025	TIME GANG VARIABLE	C20	22-1036	14 MFD. ELECTROLYTIC	1	16	63-597	470 M OHM	A	1	16	63-597	470 M OHM	1	16	63-597	470 M OHM
C2	22-1025	30 M MFD	C21	22-1041	1005 MFD.	2	17	63-658	390 M OHM	2	17	63-658	390 M OHM	2	17	63-658	390 M OHM	
C3	22-1025	50 MFD	C22	22-1041	1005 MFD.	3	18	63-660	560 M OHM	3	18	63-660	560 M OHM	3	18	63-660	560 M OHM	
C4	22-1025	50 MFD	C23	22-1041	1005 MFD.	4	19	63-590	15 M OHM	4	19	63-590	15 M OHM	4	19	63-590	15 M OHM	
C5	22-1025	50 MFD	C24	22-1041	1005 MFD.	5	20	63-593	47 M OHM	5	20	63-593	47 M OHM	5	20	63-593	47 M OHM	
C6	22-1025	50 MFD	C25	22-1041	1005 MFD.	6	21	63-595	100 M OHM	6	21	63-595	100 M OHM	6	21	63-595	100 M OHM	
C7	22-1025	50 MFD	C26	22-1041	1005 MFD.	7	22	63-637	4700 OHM	7	22	63-637	4700 OHM	7	22	63-637	4700 OHM	
C8	22-1025	50 MFD	C27	22-1041	1005 MFD.	8	23	63-624	68 OHM	8	23	63-624	68 OHM	8	23	63-624	68 OHM	
C9	22-1025	50 MFD	C28	22-1041	1005 MFD.	9	24	63-957	33 M OHM	9	24	63-957	33 M OHM	9	24	63-957	33 M OHM	
C10	22-1025	50 MFD	C29	22-1041	1005 MFD.	10	25	63-150	10 M OHM	10	25	63-150	10 M OHM	10	25	63-150	10 M OHM	
C11	22-1025	50 MFD	C30	22-1041	1005 MFD.	11	26	63-583	1000 OHM	11	26	63-583	1000 OHM	11	26	63-583	1000 OHM	
C12	22-1025	50 MFD	C31	22-1041	1005 MFD.	12	27	63-1094	42 OHM WIREWOUND	12	27	63-1094	42 OHM WIREWOUND	12	27	63-1094	42 OHM WIREWOUND	
C13	22-1025	50 MFD	C32	22-1041	1005 MFD.	13	28	63-599	15 MEG OHM	13	28	63-599	15 MEG OHM	13	28	63-599	15 MEG OHM	
C14	22-1025	50 MFD	C33	22-1041	1005 MFD.	14	29	63-1191	8200 OHM	14	29	63-1191	8200 OHM	14	29	63-1191	8200 OHM	
C15	22-1025	50 MFD	C34	22-1041	1005 MFD.	15	30	63-1123	25 MEG OHM	15	30	63-1123	25 MEG OHM	15	30	63-1123	25 MEG OHM	
C16	22-1025	50 MFD	C35	22-1041	1005 MFD.	16	31	63-976	25 MEG OHM	16	31	63-976	25 MEG OHM	16	31	63-976	25 MEG OHM	
C17	22-1025	50 MFD	C36	22-1041	1005 MFD.	17	32	63-296	220 M OHM	17	32	63-296	220 M OHM	17	32	63-296	220 M OHM	
C18	22-1025	50 MFD	C37	22-1041	1005 MFD.	18	33	63-296	220 M OHM	18	33	63-296	220 M OHM	18	33	63-296	220 M OHM	
C19	22-1025	50 MFD	C38	22-1041	1005 MFD.	19	34	63-296	220 M OHM	19	34	63-296	220 M OHM	19	34	63-296	220 M OHM	

18T I.F. TRANS. PRI.

18T I.F. " SEC.

20M I.F. " PRI.

20M I.F. " SEC.

22-1015

WAVE TRAP

BROADCAST OSC. (NOTE 1)

BROADCAST ANT. (NOTE 2)

BROADCAST DET. (ON GANG)

BROADCAST PADDOR (NOTE 2)

SHORT WAVE OSC. (NOTE 2)

SHORT WAVE ANT. (NOTE 2)

NOTES

(1) TRIMMERS F & G ARE MOUNTED ON STRIP #2-118

(2) TRIMMERS G, L & M ARE MOUNTED ON STRIP #2-111

Models 6S632-6S646-6S656

Chassis No. 6B08

Models 6S632-6S646-6S656

Chassis No. 6B08

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 60 watts.

Power output 6 watts.

Tuning Range

540 Kc. to 1620 Kc.

5400 Kc. —18300 Kc.

Stage Gains

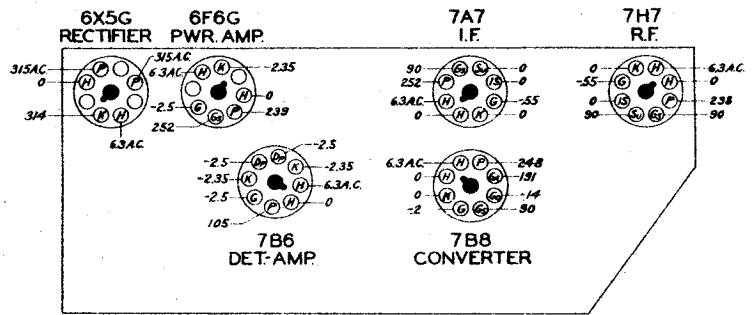
Bc. and I.F.

Ant. to R.F. grid $4.6\times$ at 1000 Kc.

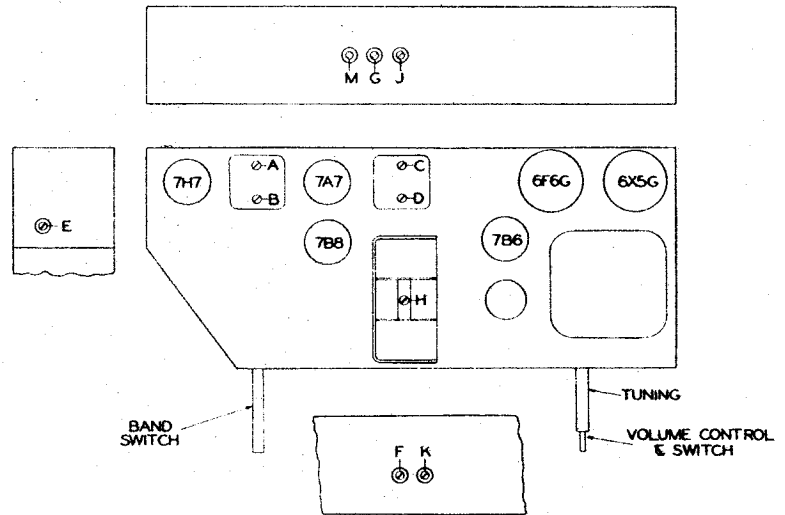
R.F. grid to conv. grid $9.3\times$ at 1000 Kc.

Conv. grid to I.F. grid $75\times$ at 455 Kc.

Overall audio $724\times$ at 1 watt 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	" "	.5 Mfd.	455 Kc.	Automatic	—	E	Adjust for Minimum
3	Antenna-Gnd.	400 Ohms	18 Mc.	S. W.	18 Mc.	K	Set to Scale
4	" " "	400 Ohms	16 Mc.	S. W.	16 Mc.	M	Align ant.
5	Single Turn Loop Coupled Loosely to Wave Magnet	—	1600 Kc.	Broadcast	1600 Kc.	F	Set to Scale
6	" " "	—	1400 Kc.	Broadcast	1400 Kc.	G—H	Align R.F. & Ant.
7	" " "	—	600 Kc.	Broadcast	600 Kc.	J	Rock gang & Adj. padder
8	Recheck 5 and 6						

Models 6G638-6G660

Chassis No. 6B09

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Battery Z-884.

Volume control full on.

Line voltage 117 A.C. or D.C.

Power consumption 20 watts.

Power output .38 watts.

Tuning Range

540 Kc. to 1820 Kc.

1780 Kc. 5750 Kc.

5650 Kc.—18400 Kc.

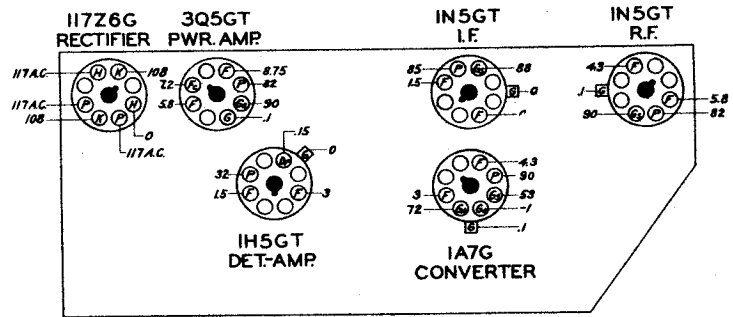
Stage Gains
Bc. and I.F.

Ant. to R.F. grid $6.8\times$ at 1000 Kc.

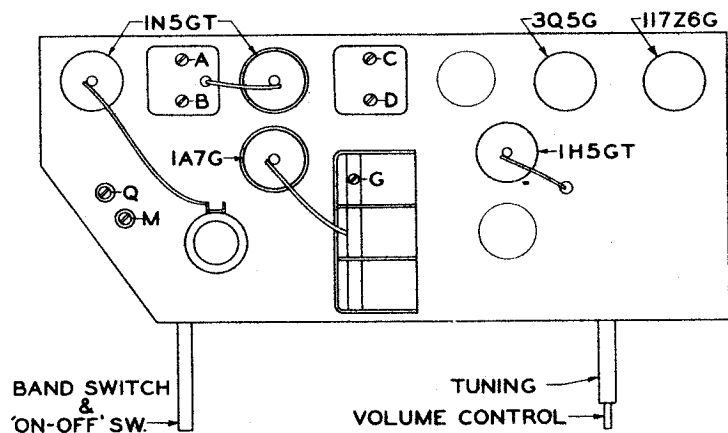
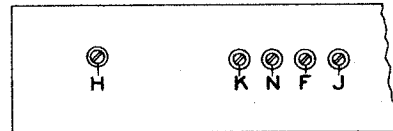
R.F. grid to conv. grid $3.8\times$ at 1000 Kc.

Conv. grid to I.F. grid $66\times$ at 455 Kc.

Overall audio $425\times$ at .05 watt, 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.1 Mfd.	455 Kc.	B.C.	600 Kc.	A B C D	Align I.F.
2	Ant. & Grnd with 10 ohm shunt	400 Ohm	18 Mc.	S.W.	18 Mc.	K	Set to Scale
3	"	"	16 Mc.	S.W.	16 Mc.	M	Align Ant.
4	"	"	5 Mc.	Police	5 Mc.	N	Set to Scale
5	"	"	"	"	"	Q	Align Ant.
6	"	200 mmf	1800 Kc.	B.C.	1800 Kc.	F	Set to Scale
7	"	"	1700 Kc.	"	1700 Kc.	G—H	Align R.F. & det.
8	"	"	600 Kc.	"	600 Kc.	J	Rock gang & Adj. padder
9	"	"	1800 Kc.	"	1800 Kc.	F—G—H	Repeat 6 & 7

Models 7S633R-7S634R-7S657R

Chassis No. 7B01R*

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 65 watts.

Power output—6 watts.

Tuning ranges— 540 Kc.— 1620 Kc.
1550 Kc.— 5150 Kc.
5800 Kc.—18300 Kc.

Stage Gains
Bc. and I.F.

Ant. to R.F. grid $6.3\times$ at 1000 Kc.
R.F. grid to conv. grid $6.1\times$ at 1000 Kc.

Conv. grid to I.F. grid $80\times$ at 455 Kc.

Overall audio $646\times$ at 1 watt, 400 cycles.

Note!

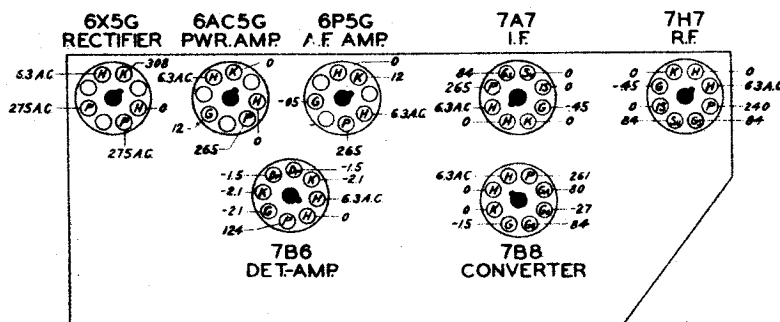
*R denotes change in 7B01 Chassis of loading coil, speaker and power transformer.

S9589 L.C. to S-8474.

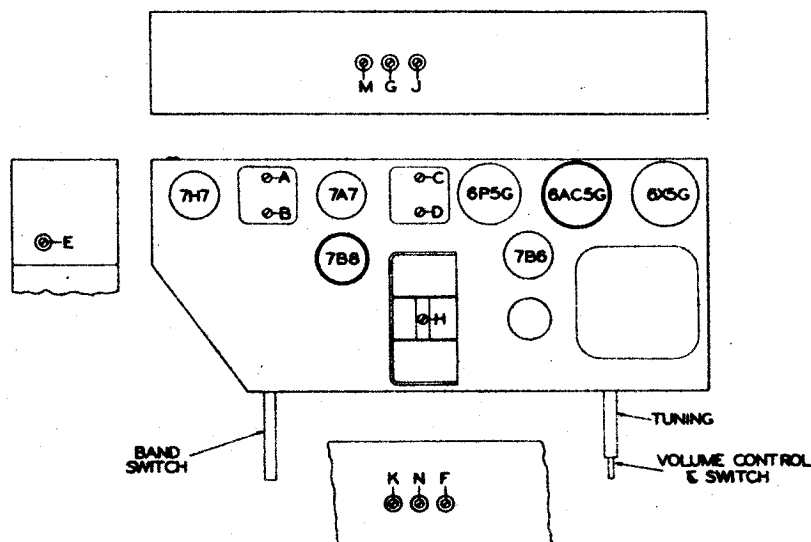
49-460 Speaker to 49-505.

49-457 Speaker to 49-397.

95-710 Power Trans. to 95-882.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	$\frac{1}{2}$ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	R.F. Grid	$\frac{1}{2}$ Mfd.	455 Kc.	Automatic	600 Kc.	E	Adj. for Minimum
3	Ant.-Gnd.	400 Ohms	18 Mc.	S. W.	18 Mc.	K	Set Oscillator to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	M	Alignment of Antenna
5	"	"	4.5 Mc.	Police	4.5 Mc.	N	Rock Gang and Adjust for Max.
6	Single Turn Loop Coupled Loosely to Wave Magnet	—	1600 Kc.	Broadcast	1600 Kc.	F	Set Oscillator to Scale
7	"	—	1400 Kc.	Broadcast	1400 Kc.	H, G	Align R.F. & Ant.
8	"	—	600 Kc.	Broadcast	600 Kc.	J	Rock Gang and Adjust for Max.

Models 7S681-7S682-7S685

Chassis No. 7B02 Phono.

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 80+30 watts.

Power output 8.4 watts.

Tuning Range

540 Kc. to 1620 Kc.

5400 Kc.—18300 Kc.

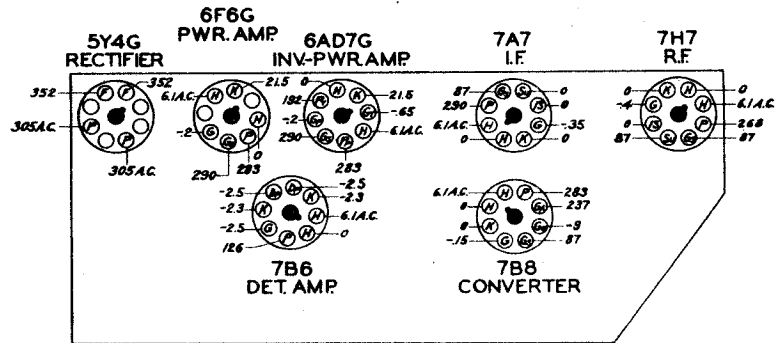
Stage Gains
Bc. and I.F.

Ant. to R.F. grid 7.1× at 1000 Kc.

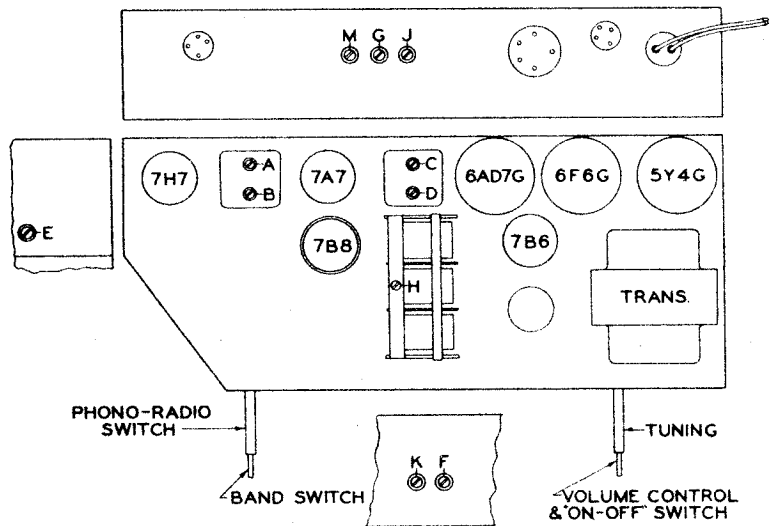
R.F. grid to conv. grid 5.6× at 1000 Kc.

Conv. grid to I.F. grid 7.3× at 455 Kc.

Overall audio 1600× at 1 watt 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Adjust Trimmers	Purpose
1	Converter Grid	½ Mfd.	455 Kc.	Broadcast	600 Kc.	A, B, C, D	I. F. Alignment
2	Ant.-Gnd.	400 Ohms	455 Kc.	S.W.	6.5 Mc.	E	Adjust Wavetrap for Minimum
3	"	"	18 Mc.	S. W.	18 Mc.	F	Set to Scale
4	"	"	16 Mc.	S. W.	16 Mc.	M	Align ant.
5	Single Turn Loop Loosely Coupled to Wave Magnet	—	1600 Kc.	Broadcast	1600 Kc.	K	Set to Scale
6	"	—	1400 Kc.	Broadcast	1400 Kc.	H, G	Align det. and ant. stage
7	"	—	600 Kc.	Broadcast	600 Kc.	J	Rock Gang and Adjust for Max.

Models 8S647-8S661

Chassis No. 8B01

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption—75 watts.

Max. power output—8 watts.

Stage Gains

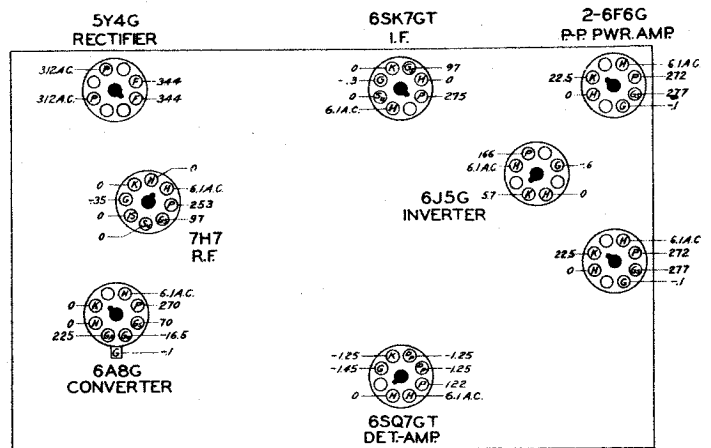
Ant. to R.F. grid— $5\times$ at 1000 Kc.

R.F. grid to conv. grid— $8\times$ at 1000 Kc.

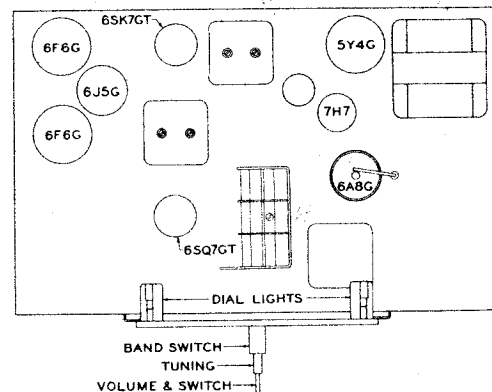
Conv. grid to I.F. grid— $52\times$ at 455 Kc.

Overall audio— $1236\times$ at 1 watt 400 cycles.

Tuning ranges— 540 Kc.— 1600 Kc.
1550 Kc.— 5100 Kc.
5800 Kc.— 18300 Kc.



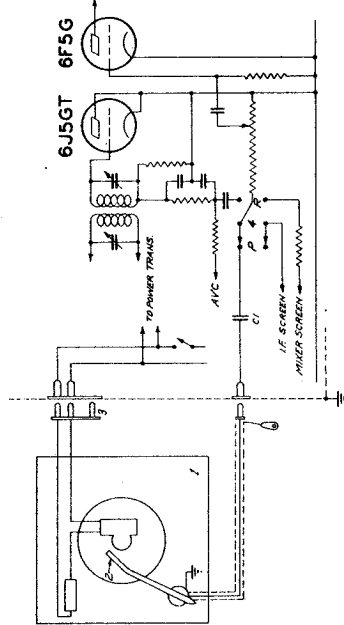
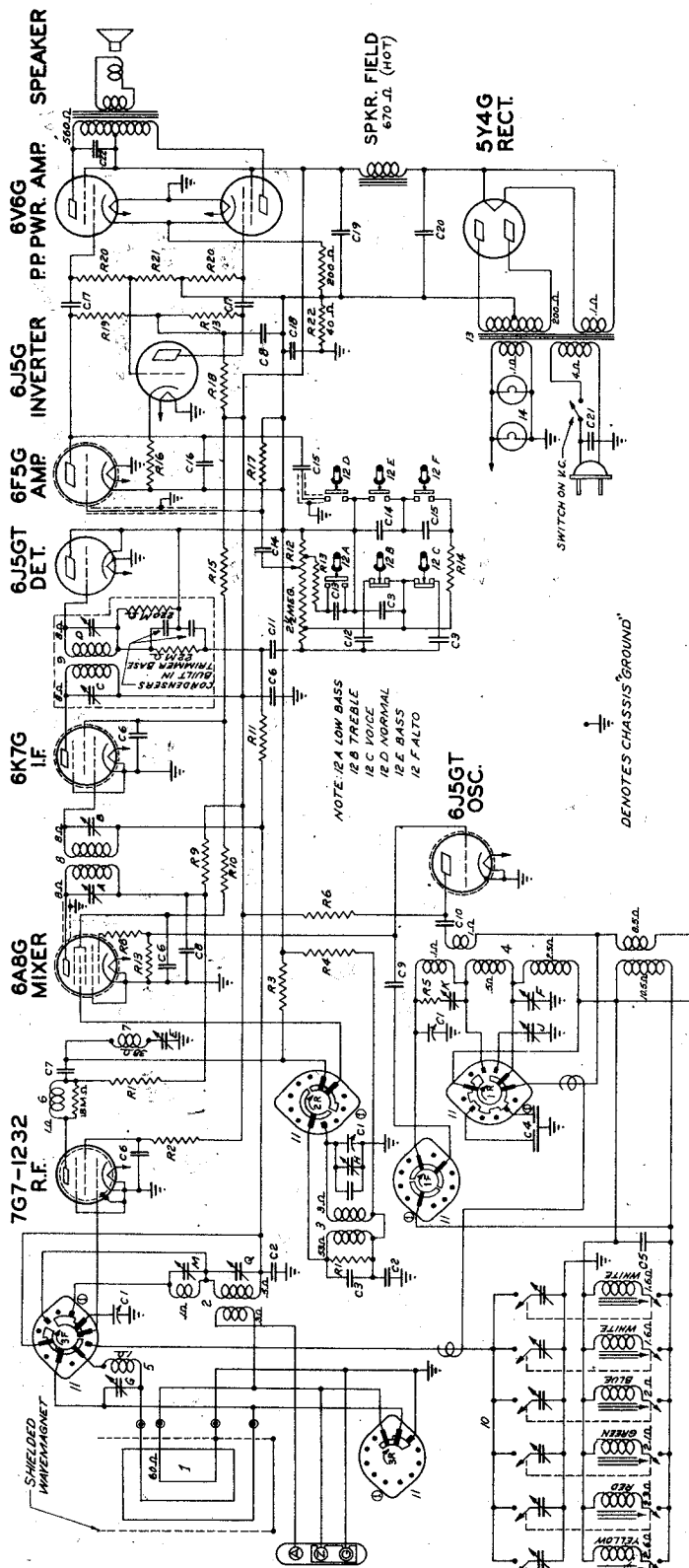
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	B.C.	1600 Kc.	A B C D	Align I.F.
2	Ant. Gnd. with 10 ohm shunt	400 Ohms	455 Kc.	Police	1700 Kc.	E	Adjust for Minimum
3	"	"	18 Mc.	S.W.	18 Mc.	K	Set to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	M	Align ant.
5	"	"	4.5 Mc.	Police	4.5 Mc.	N	Set to Scale
6	"	"	4.5 Mc.	Police	4.5 Mc.	Q	Align ant.
7	Single Turn Loop Loosely Coupled to Wave Magnet	—	1500 Kc.	B.C.	1500 Kc.	F	Set to Scale
8	"	—	1400 Kc.	B.C.	1400 Kc.	G-H	Align R.F. Align ant.
9	"	—	600 Kc.	B.C.	600 Kc.	J	Rock Gang and Adj. Padder
10	Rpt. 7 & 8						

[illegible]

QWID N°	PART NR	DESCRIPTION	600 K	60W 50W
C1	22-1189	.00075 MFD.		
	169-80	AUTOMATIC		
	169-81	RECORD CHANGER		
2	142-46	PICKUP CARTRIDGE		
3	58-85	A.C. PLUG		
4	95-109	PHONO BRASS SW		

Models 10S669-10S690

Chassis No. 10B1-10B2

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 v. A.C.

Power consumption—10B1—100 watts.

Power consumption—10B2—125 watts.

Power output—14 watts.

Stage Gains:

Ant. to R.F. grid— $3.7 \times$ at 1000 Kc.

R.F. grid to conv. grid— $9.7 \times$ at 1000 Kc.

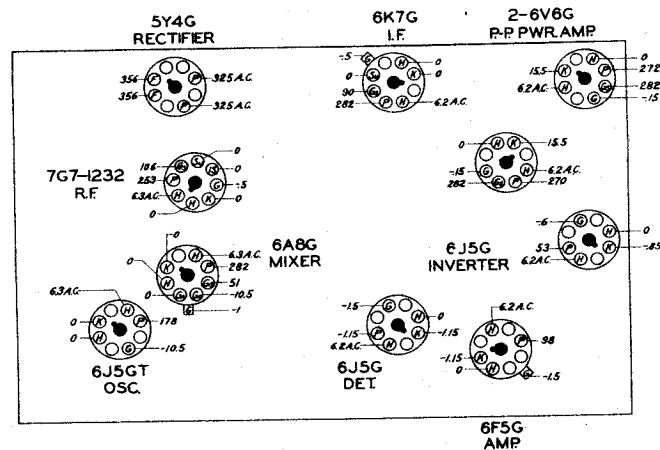
Conv. grid to I.F. grid— $63 \times$ at 455 Kc.

Overall audio— $1250 \times$ at 1 watt 400 cycles.

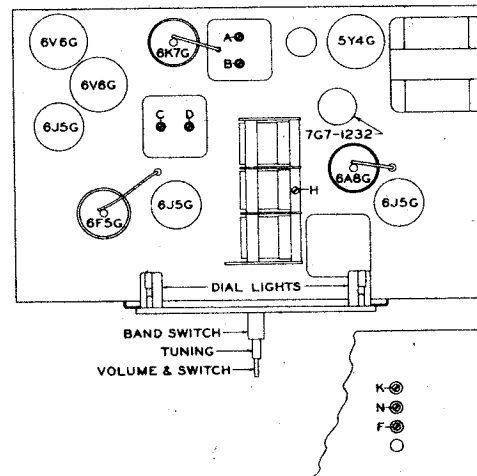
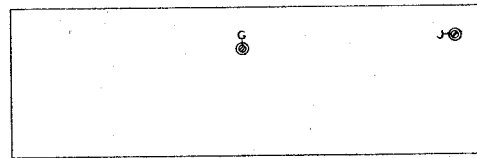
NOTE

Chassis 10B2 has phono connections added

Tuning ranges— 540 Kc.— 1600 Kc.
1500 Kc.— 5200 Kc.
5700 Kc.—18300 Kc.



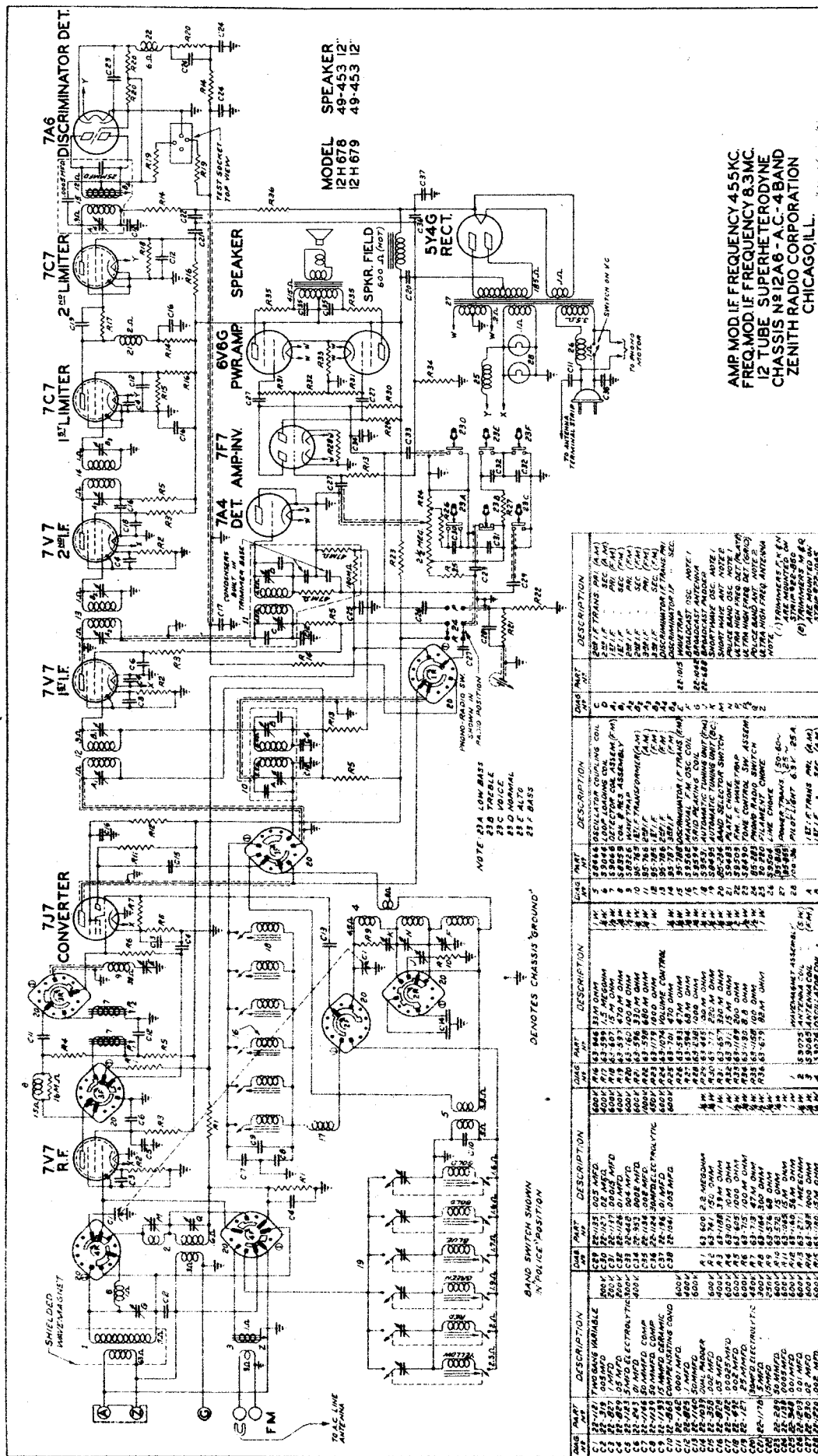
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Conn. Test Osc. to	Dummy Ant.	Input Sig. Freq.	Set Dial At	Band	Trimmers	Purpose
1	Converter Grid	.5 Mfd.	455 Kc.	B.C.	600 Kc.	A B C D	Align I.F.
2	Ant.-Gnd. with 10 ohm shunt	400 ohms	455 Kc.	POL.	1700 Kc.	E	Adjust for Minimum
3	"	"	18 Mc.	S.W.	18 Mc.	K	Set to Scale
4	"	"	16 Mc.	S.W.	16 Mc.	M	Align ant.
5	"	"	4.5 Mc.	POL.	4.5 Mc.		Set to Scale
6	"	"	4.5 Mc.	POL.	4.5 Mc.	Q	Align ant.
7	Single Turn Loop Loosely Coupled to Wave Magnet	—	1500 Kc.	B.C.	1500 Kc.	F	Set to Scale
8	"	—	1400 Kc.	B.C.	1400 Kc.	G—H	Align R.F. Det.
9	"	—	600 Kc.	B.C.	600 Kc.	J	Rock Gang and Adj. Padder
10	"	—	1500 Kc.	B.C.	1500 Kc.	F—G—H	Rpt. 7 & 8



Models 12H678-12H679

Chassis No. 12A6

COMPONENT	DESCRIPTION	QTY	VALUE	DESCRIPTION	QTY	VALUE
C1	220K	1	220K	5Y4G	1	5Y4G
C2	100K	1	100K	7A4	1	7A4
C3	100K	1	100K	7F7	1	7F7
C4	100K	1	100K	6V6G	1	6V6G
C5	100K	1	100K	7C7	2	7C7
C6	100K	1	100K	7A6	1	7A6
C7	100K	1	100K	7J7	1	7J7
C8	100K	1	100K	7V7	3	7V7
C9	100K	1	100K	7C7	2	7C7
C10	100K	1	100K	7A6	1	7A6
C11	100K	1	100K	7J7	1	7J7
C12	100K	1	100K	7V7	3	7V7
C13	100K	1	100K	7C7	2	7C7
C14	100K	1	100K	7A6	1	7A6
C15	100K	1	100K	7J7	1	7J7
C16	100K	1	100K	7V7	3	7V7
C17	100K	1	100K	7C7	2	7C7
C18	100K	1	100K	7A6	1	7A6
C19	100K	1	100K	7J7	1	7J7
C20	100K	1	100K	7V7	3	7V7
C21	100K	1	100K	7C7	2	7C7
C22	100K	1	100K	7A6	1	7A6
C23	100K	1	100K	7J7	1	7J7
C24	100K	1	100K	7V7	3	7V7
C25	100K	1	100K	7C7	2	7C7
C26	100K	1	100K	7A6	1	7A6
C27	100K	1	100K	7J7	1	7J7
C28	100K	1	100K	7V7	3	7V7

Models 12H678-12H679

Chassis No. 12A6

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 150 watts.

Power output 14. watts.

Tuning Ranges

540 Kc. to 1600 Kc.

1.5 Mc. to 5.2 Mc.

5.2 Mc. to 18.5 Mc.

41.5 Mc to 50.5 Mc—(FM)

Stage Gains

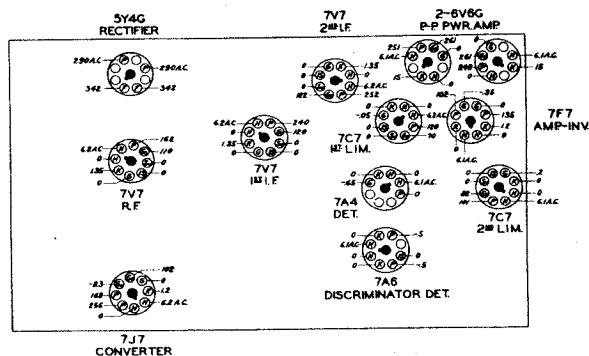
Bc. and I.F.

Ant. to R.F. grid $6.5\times$ at 1000 Kc.

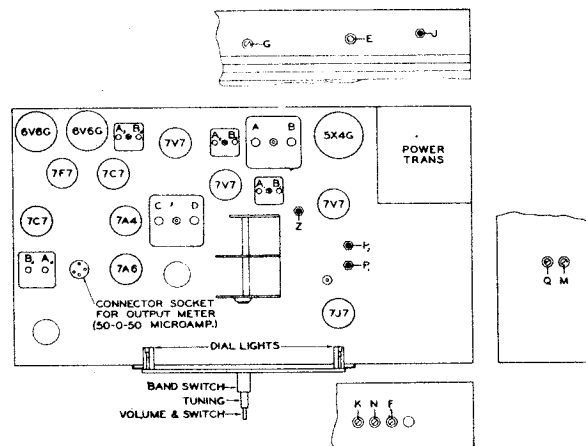
R.F. grid to conv. grid $28.1\times$ at 1000 Kc.

Conv. grid to I.F. grid $265\times$ at 455 Kc.

Overall audio $807\times$ at 1 watt, 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Con. Grid	0.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I.F.
2	R.F. Grid	0.5 mfd.	455 Kc.	BC	600 Kc.	E	Adjust for minimum 455 Kc. signal
3	Ant. Z and G	400 ohm	18 Mc.	SW	18 Mc.	K	Scale SW Osc. at 18 meg.
4	"	"	16 Mc.	SW	16 Mc.	M	Align SW antenna
5	"	"	5 Mc.	Med.	5.0 Mc.	N	Scale med. band osc. at 5. meg.
6	"	"	4.5 Mc.	Med.	4.5 Mc.	Q	Align med. band antenna
7	One turn loop made with generator lead or Radex loop	---	1600 Kc.	BC	1600 Kc.	F	Set BC Osc. to scale at 1600 Kc.
8		---	1400 Kc.	BC	1400 Kc.	G	Align broadcast loop
9		---	600 Kc.	BC	600 Kc.	J	Rock gang to track BC padder
10	7V7 2nd I.F. Grid	0.5 mfd.	8.3 Mc.	Man. F.M.	42.5 Mc.	A ₄	Align for max. deflection across 1/2 discrim. load
11	"	"	"	"	"	B ₄	Align for zero deflection across full discrim. load
12	"	"	"	"	"	A ₃ - B ₃	Align for max. deflection across 1/2 discrim. load
13	7V7 1st I.F. Grid	"	"	"	"	A ₂ - B ₂	"
14	Converter Grid	"	"	"	"	A ₁ - B ₁	"
15	F.M. Ant. Terminal	100 ohm	46 Mc.	"	46 Mc.	Adj. cam on gang to scale osc.	Align for zero deflection across full discrim. load
16	"	"	42.5 Mc.	"	42.5 Mc.	P ₁	Align for max. deflection across 1/2 discrim. load
17	"	"	49 Mc.	"	49 Mc.	P ₂	"
18	"	"	46 Mc.	"	46 Mc.	Z	"

Models 12H650-12H670-12H671

Chassis No. 12B1

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 110 watts.

Power output 15 watts.

Tuning Ranges

540 Kc. to 1620 Kc.

5.6 Mc. to 18.5 Mc.

42 Mc to 50 Mc—(FM)

Stage Gains

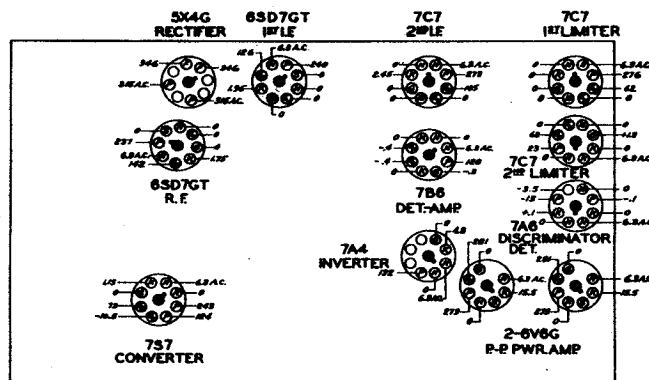
Bc. and I.F.

Ant. to R.F. grid $8\times$ at 1000 Kc.c.

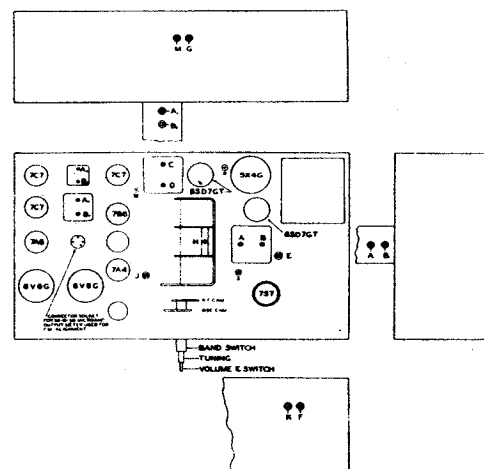
R.F. grid to conv. grid $7.25\times$ at 1000 Kc.

Conv. grid to I.F. grid $41.5\times$ at 455 Kc.

Overall audio $1850\times$ at 1 watt 400 cycles.



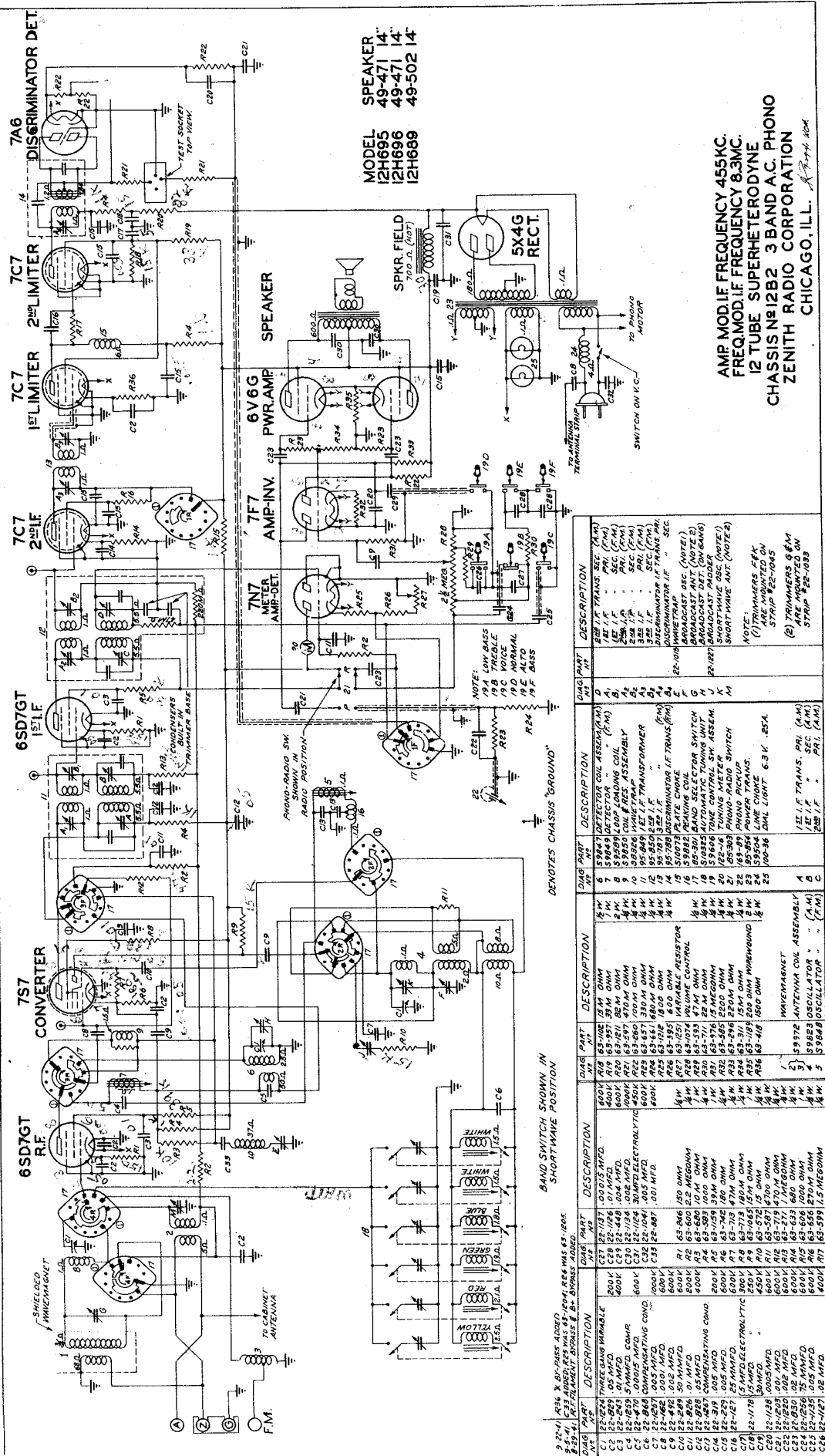
SOCKET VOLTAGES—BOTTOM VIEW



TUBE AND TRIMMER LOCATION

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Con. Grid	0.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I.F.
2	R.F. Grid	0.5 mfd.	455 Kc.	BC	600 Kc.	E	I.F. Trap. Adjust for Minimum I.F. Signal
3	Ant. A and G	400 ohm	18 Mc.	SW	18 Mc.	K	Scale SW Osc. at 18 meg.
4	"	"	15 M.C.	SW	15 M.C.	M	Align SW antenna
5	One turn loop made with generator lead or Radex loop	—	1600 Kc.	BC	1600 Kc.	F	Set BC Osc. to scale. at 1600 Kc.
6		—	1400 Kc.	BC	1400 Kc.	H	Align BC R.F. Stage
7		—	1400 Kc.	BC	1400 Kc.	G	Align broadcast loop
8	"	—	600 Kc.	BC	600 Kc.	J	Rock gang to track BC padder
9	7C7 2nd I.F. Grid Pin Jack III	0.5 mfd.	8.3 Mc.	F.M.	42.5 Mc.	A ₁	Align for max. deflection across 1/2 discrim. load
10	"	"	"	"	"	B ₁	Align for zero Deflection across Full Disc. Load. Repeat Operation No. 9
11	"	"	"	"	"	A ₂ - B ₂	Align for max. deflection across 1/2 discrim. load
12	6SD7GT 1st I.F. Grid Pin Jack II	"	"	"	"	A ₂ - B ₂	Align for max. deflection across 1/2 discrim. load
13	Con. Grid Pin Jack I	"	"	"	"	A ₁ - B ₁	"
14	F.M. Ant. Terminal	100 ohm	46 Mc.	"	46 Mc.	Adjust Osc. Cam Gang Shaft to Scale Osc	Align for zero deflection across full discrim. load
15	"	100 ohm	46 Mc.	"	46 Mc.	Adjust R.F. Cam for FM Tracking	Align for max. deflection across 1/2 discrim. load



AMP MOD.IF FREQUENCY 455KC.
FREQ.MOD.IF FREQUENCY 8.3MC.
I2 TUBE SUPERHETERODYNE
CHASSIS N^o12B2 3 BAND A.C. PHONO
ZENITH RADIO CORPORATION
CHICAGO, ILL. *A. R. 1944 1004*

Models 12H689-12H695-12H696

Chassis No. 12B2 Phono.

Models 12H689-12H695-12H696

Chassis No. 12B2 Phono.

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 150 watts, including Phono motor.

Power output 15 watts.

Tuning Ranges

540 Kc. to 1620 Kc.

5.6 Mc. to 18.5 Mc.

42 Mc to 50 Mc—(FM)

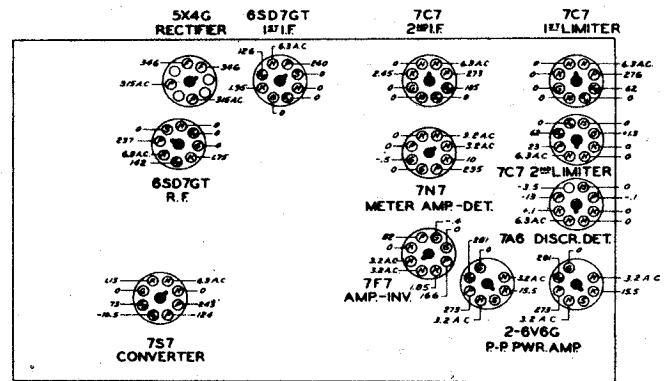
Stage Gains
Bc. and I.F.

Ant. to R.F. grid $8\times$ at 1000 Kc.c.

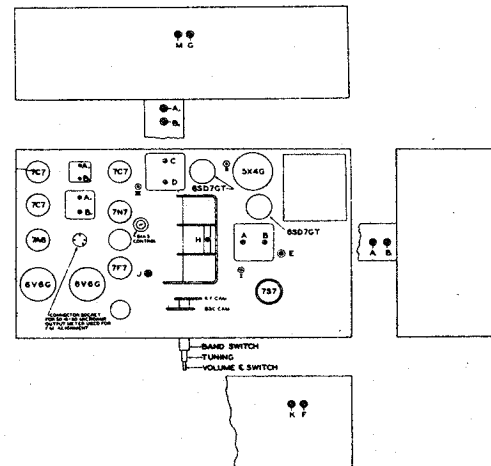
R.F. grid to conv. grid $7.25\times$ at 1000 Kc.

Conv. grid to I.F. grid $41.5\times$ at 455 Kc.

Overall audio $1850\times$ at 1 watt 400 cycles.



SOCKET VOLTAGES—BOTTOM VIEW

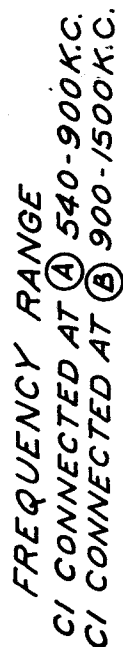


TUBE AND TRIMMER POSITIONS

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Con. Grid	0.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I.F.
2	R.F. Grid	0.5 mfd.	455 Kc.	BC	600 Kc.	E	I.F. Trap. Adjust for Minimum I.F. Signal
3	Ant. A and G	400 ohm	18 Mc.	SW	18 Mc.	K	Scale SW Osc. at 18 meg.
4	"	"	15 M.C.	SW	15 M.C.	M	Align SW antenna
5	One turn loop made with generator lead or Radex loop	—	1600 Kc.	BC	1600 Kc.	F	Set BC Osc. to scale. at 1600 Kc.
6		—	1400 Kc.	BC	1400 Kc.	H	Align BC R.F. Stage
7		—	1400 Kc.	BC	1400 Kc.	G	Align broadcast loop
8	"	—	600 Kc.	BC	600 Kc.	J	Rock gang to track BC padder
9	7C7 2nd I.F. Grid Pin Jack III	0.5 mfd.	8.3 Mc.	F.M.	42.5 Mc.	A ₁	Align for max. deflection across 1/2 discrim. load
10	"	"	"	"	"	B ₁	Align for zero deflection across Full Disc. Load. Repeat Operation No. 9
11	"	"	"	"	"	A ₃ - B ₃	Align for max. deflection across 1/2 discrim. load
12	6SD7GT 1st I.F. Grid Pin Jack II	"	"	"	"	A ₂ - B ₂	Align for max. deflection across 1/2 discrim. load
13	Con. Grid Pin Jack I	"	"	"	"	A ₁ - B ₁	"
14	F.M. Ant. Terminal	100 ohm	46 Mc.	"	46 Mc.	Adjust Osc. Cam Gang Shaft to Scale Osc	Align for zero deflection across full discrim. load
15	"	100 ohm	46 Mc.	"	46 Mc.	Adjust R.F. Cam for FM Tracking	Align for max. deflection across 1/2 discrim. load
16	Adjust Tuning Meter.			F.M.	Clear of signals	Bias Control	Adjust bias for tuning meter.

Remove 2nd I.F. tube (7C7) from socket. Adjust bias control until meter reads exactly center. Replace I.F. tube and check meter behavior on F.M. and A.M. signals.



MODELS
S 9001
S 9002

**PHONOGRAPH OSCILLATOR
ZENITH RADIO CORPORATION
CHICAGO, ILL.** *2-12-41 Rev.*

5-18-41 RCH.

PARTS PRICE LIST

CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE	CHASSIS	CODE
4B02	B	5B04	I	6B02	O	7B01	V
4B03	C	5B05	J	6B03	P	7B02	W
4B04	D	5B06	K	6B04	Q	8B01	X
4B05	E	5B07	B1	6B05	R	10B1	Y
5B01	F	5B13	L	6B06	S	10B2	Z
5B02	G	5B14	M	6B08	T	12A6	A1
5B03	H	6B01	N	6B09	U	12B1	A2
						12B2	A3

DIAL PARTS

Part No.	Model	List Price	Part No.	Model	List Price
12-787	Tuning sleeve support bracket.....V-W	.015	94-327	Fibre bushing.....X-Y-Z-A1-A2-A3	.03
12-911	Dial plate bracket.....C-E-I-K-M	.05	94-339	Bakelite bushing.....X-Y-Z-A2	.03
19-111	Pulley clip.....Misc.	.04	94-371	Pointer pulley bushing (use S9607).....N-R	.04
26-281	Dial scale.....F	.20	97-143	Pointer pulley stud.....N-R	.02
26-283	Dial scale.....P	.35		O-S-T-V-W-X-Y-Z-	
26-285	Dial scale.....G-H-L-M	.25	100-36	Dial light bulb 6.3 V. .25 Amp.....A1-2-3	.09
26-286	Dial scale.....Q	.25	100-67	Dial light bulb 6.3 V. .15 Amp.....F-G-H-L-Q-M	.09
26-290	Split second dial scale.....A3	1.00	100-90	Dial light bulb 3.22 C. .16 Amp.....N-R	.12
26-292	Dial scale.....D	.50	112-287	#6x1/4" Phillips binding head S.T. screw.....D	1.70C
26-294	Dial scale.....B1	.25	117-48	Band switch lever.....A3	.02
26-304	Stationary dial scale (S.W.).....A3	.35	117-60	Band switch lever.....X-Y-Z-A1-A2	.015
26-305	Dial scale.....S	1.00	118-16	Lever connecting link.....X-Y-Z-A3	.01
27-16	Flywheel disc.....A3	1.00	118-21	Band indicator link.....X-Y-Z-A1-A2	.02
27-39	Flywheel disc.....A1-A2	1.00	118-24	Lever connecting link.....A1-A2	.03
27-53	Flywheel disc.....X-Y-Z	1.25	122-15	Tuning meter.....A3	4.25
32-15	Drive belt.....A3	.15	143-39	Flexible coupling.....A3	.60
32-23	Drive belt.....X-Y-Z-A1-A2	.15	148-32	Band switch control arm.....X-Y-Z-A1-A2	.10
59-86	On-off indicator.....D	.05	148-33	Movable scale control arm (1/4" shaft hole).....A3	.30
59-95	Dial pointer.....F	.10	148-38	Movable scale control arm (5/16" shaft hole).....A3	.30
59-98	Dial pointer.....D	.15	188-2	Retaining ring.....X-Y-Z-A1-A2-A3	.01
59-99	Dial pointer.....G-H-L-M-B1	.15	188-24	Retaining ring.....U	.01
59-105	Band indicator.....A1	.25	188-27	Retaining ring.....D-T-V-W	.01
59-118	Dial pointer.....P	.15	188-28	Retaining ring.....A2-A3	.10C
59-119	On-off indicator.....P	.10	188-32	Retaining ring.....Misc.	.85C
59-120	Dial pointer (use S9607).....N-R	.06	188-34	Retaining ring.....B-C-E-I-J-K-N-O-R	.01
59-121	Dial pointer.....T-U-V-W	.15	197-11	Light diffusing cup.....A3	.15
59-122	On-off indicator.....B-C-E-J-K	.10	199-11	Drive pulley rubber sleeve.....A3	.75C
59-124	Band indicator (see S10327).....A3	.40	199-14	Pulley sleeve (brass).....X-Y-Z-A2	.03
59-125	Dial pointer (brass).....X-Y-Z-A2	.20	199-21	Movable scale bumper sleeve.....A3	.03
59-126	Dial pointer.....Q-S	.15	199-27	Rubber sleeve.....A1-A2	.60C
59-127	Frequency indicator pointer.....A3	.15	199-37	Rubber sleeve.....X-Y-Z-A2	.01
59-128	Split second pointer.....A3	.15	S-6220	Drive pulley & clutch assembly (1/4" shaft hole).....A3	.25
61-42	Pointer shaft pulley.....A3	.12	S-7262	Indicator cam & bushing.....D	.05
61-75	Pulley.....D	.10	S-7575	Dial cord & eyelet assembly.....D	.05
61-78	Drive pulley.....F-G-H-L-P-Q-M	.10	S-8354	Dial cord & eyelet assembly.....F-G-H-L-Q-M-B1	.05
61-85	Pointer pulley (use S9607).....N-R	.10	S-8488	Dial light socket & wire assy.....X-Y-Z-A1	.55
76-258	Tuning control shaft.....D	.10	S-8492	Dial cord & eyelet assembly.....X-Y-Z-A1-A2	.10
76-302	Drive shaft.....F	.05	S-8499	Dial pointer & spring assy.....A1	.25
76-304	Tuning control shaft.....P	.06	S-8658	Tuning shaft & bushing assy.....X-Y-Z-A1	.25
76-305	Drive shaft.....T-U-V-W	.10	S-8760	Control arm & link assembly (1/4" shaft hole).....A3	.45
76-307	Volume control shaft.....X-Y-Z-A1	.10	S-9072	Cam assembly.....A1	.15
76-312	Drive shaft.....B1	.06	S-9534	Indicator lever & bushing assy.....P	.05
76-335	Tuning control shaft.....C-E-I-K-N-O-R	.05	S-9545	Dial scale, bracket & lever assembly (26-268).....A1	1.75
76-336	Drive shaft.....G-H-L-Q-M	.05	S-9588	Indicator cam assembly.....B-C-E-I-J-K	.05
76-339	Tuning control shaft.....B-J	.10	S-9592	Pointer & pulley assy. (59-123).....E	.25
76-345	Tuning control shaft.....S	.15	S-9607	Pulley & pointer assembly.....B-C-E-I-J-K-N-O-R	.20
76-351	Volume control shaft.....A3	.20	S-9610	Dial cord & eyelet assembly.....B-C-E-I-J-K-N-O-R	.10
76-355	Volume control shaft.....A2	.20	S-9611	Dial scale, pointer & mounting plate assembly (26-284).....N-O-R	.75
78-325	Dial light socket & wire.....F-G-H-L-Q-M	.20	S-9616	Dial scale & indicator assembly (26-288).....V	.75
78-453	Dial light socket & wire.....N-R	.25	S-9643	Dial scale & indicator assembly (26-293).....U	1.00
	D-T-U-V-W-Z-Y-Z-		S-9653	Dial cord & eyelet assembly.....P	.05
80-69	Dial cord tension spring.....A1-A2	.01	S-9733	Dial cord & eyelet assembly.....B-C-E-I-J-K-N-O-R	.05
80-130	Clutch spring.....A3	.02	S-9742	Dial light socket & wire assy.....T-V-W	.60
80-151	Movable scale return spring.....A3	.02	S-9750	Dial scale & lever assy. (26-297).....X	1.25
80-181	Dial pointer spring.....F	.65C	S-9751	Condenser pulley & rivet assy.....B-C-E-I-J-K-N-O-R	.10
80-183	Indicator spring.....B-C-E-I-J-K	.02	S-9757	Dial scale & bracket assembly (26-287).....T-W	.60
80-207	Indicator spring.....D	.15	S-9758	Dial cord & eyelet assembly.....T-U-V-W	.05
80-209	Dial cord tension spring.....Misc.	.02	S-9784	Dial scale, pointer & mounting plate assembly (26-289).....B-C-J-K	1.25
80-223	Indicator spring.....P	.01	S-9822	Dial scale & lever assy. (26-298).....Y-Z	1.25
80-227	Tuning shaft tension spring.....T-U-V-W	.01	S-9864	Dial scale & plate indicator assembly (26-296).....I	1.00
80-239	Shaft tension spring.....A1-A2-A3	.01	S-9871	Dial light socket & wire assy.....O	.60
80-301	Dial gear spring.....A3	.20			
93-371	Black bakelite washer.....D	.45C			
93-459	Fibre washer.....A3	.01			
93-470	Black washer (fibre).....B-I-J-K	.25C			
93-482	Black bakelite washer.....G-H-L-P-Q-T-U-V-W	.60C			
94-271	Shaft coupling bushing.....X-Y-Z-A1-A2-A3	.06			
94-280	Control arm insulating bushing.....X-Y-Z-A1-A2-A3	.03			
94-282	Volume control shaft insulating bushing.....X-Y-Z-A1-A2-A3	.03			
94-285	Volume control shaft insulating bushing.....X-Y-Z-A1-A2-A3	.03			

PARTS LIST—(Continued)

CHASSIS	CODE
4B02	B
4B03	C
4B04	D
4B05	E
5B01	F
5B02	G
5B03	H

CHASSIS	CODE
5B04	I
5B05	J
5B06	K
5B07	B1
5B13	L
5B14	M
6B01	N

CHASSIS	CODE
6B02	O
6B03	P
6B04	Q
6B05	R
6B06	S
6B08	T
6B09	U

CHASSIS	CODE
7B01	V
7B02	W
8B01	X
10B1	Y
10B2	Z
12A6	A1
12B1	A2
12B2	A3

Part No.	Model	List Price
S-9940	Dial scale & plate assy. (26-306).....E	1.00
S-10021	Dial light socket & wire assy.....S	.60
S-10023	Dial cord & eyelet assembly.....S	.05
S-10035	Intermediate gear assy.....A3	.50
S-10036	Shaft & gear assembly.....A3	.50
S-10038	Shaft & pinion assembly.....A3	.30
S-10067	Cam & bushing assy. (on gang).....A2-A3	.50
S-10186	Dial scale, bracket & link assembly (26-311).....A2	1.25
S-10190	F.M. detector, oscillator coil, tuner shaft & bracket assy.....A2	2.00
S-10197	Dial pointer & spring assembly (Sub. for 59-125).....X-Y-Z	.25
S-10203	Pilot light socket & wire assy.....A2	.50
S-10239	Tuning shaft & bushing assy. (1/4" diameter).....A2	.25
S-10240	Tuning shaft & bushing assy. (5/16" diameter).....A2	.30
S-10300	Pointer shaft, gear & pin.....A3	.60
S-10301	Gear train & bracket assy.....A3	3.25
S-10303	Dial plate & strip assembly.....A3	.90
S-10306	Broadcast band scale assembly (26-302 & 26-303).....A3	1.25
S-10309	F.M. scale assy. (26-300 26-301).....A3	1.25
S-10310	Dial scale & mounting plate assembly complete.....A3	10.50
S-10311	Tuning control shaft assembly (1/4" diameter).....A3	.35
S-10312	Tuning control shaft assembly (5/16" diameter).....A3	.35
S-10316	Drive pulley & clutch assembly (5/16" shaft hole).....A3	.45
S-10319	Control arm & link assembly (5/16" shaft hole).....A3	.55
S-10323	F.M. detector, oscillator coil, tuner shaft & bracket assy.....A3	2.00
S-10326	Pilot light socket & wire assy.....A3	.55
S-10327	Band indicator assembly.....A3	.35
MS-452	Pulley & bracket assembly.....X-Y-Z-A1-A2	.15
MS-586	Pulley & bracket assembly.....T-U-V-W	.10
MS-591	Pulley & bracket assy. (on gang).....X-Y-Z-A1-A2	.10
MS-684	Pulley & bracket assy. (on gang).....S-B1	.15
MS-685	Pulley & bracket assembly.....B-C-E-I-J-K-O	.15
MS-690	Pulley & bracket assembly.....D	.15

COILS AND CHOKES

20-208	Antenna coil.....D	.40
20-237	Antenna coil.....B-C	.40
20-238	Antenna coil.....J-K	.40
20-239	Antenna coil.....I	.40
95-589	1st I.F. transformer.....D	1.25
95-590	2nd I.F. transformer.....D	1.25
95-625	1st I.F. transformer.....Y-Z	1.25
95-696	1st I.F. transformer.....F-G	1.00
95-708	1st I.F. transformer.....T-V-W	1.00
95-709	2nd I.F. transformer.....T-V	1.00
95-720	1st I.F. transformer.....B1	1.00
95-721	2nd I.F. transformer.....B1	1.00
95-765	1st I.F. transformer (455 K.C.).....A1	1.50
95-766	2nd I.F. transformer (455 K.C.).....A1	2.00
95-785	1st I.F. transformer (F.M.).....A1	1.00
95-786	2nd I.F. transformer (F.M.).....A1	1.00
95-787	3rd I.F. transformer (F.M.).....A1-A2-A3	1.00
95-788	Discriminator I.F. transformer (F.M.).....A1-A2-A3	1.50
95-794	2nd I.F. transformer.....F-G	1.00
95-804	1st I.F. transformer.....P	1.00
95-805	2nd I.F. transformer.....P	1.00
95-806	1st I.F. transformer.....N-R	1.00
95-807	2nd I.F. transformer.....N-R	1.00
95-808	1st I.F. transformer.....Q	1.00
95-809	2nd I.F. transformer.....Q	1.00
95-811	1st I.F. transformer.....H-L-M	1.00
95-812	2nd I.F. transformer.....H-L-M	1.00

Part No.	Model	List Price
95-813	Filter choke.....H	.50
95-814	1st I.F. transformer.....B-C-I	1.25
95-815	2nd I.F. transformer.....B-C-I	1.25
95-816	1st I.F. transformer.....J-K	1.00
95-817	2nd I.F. transformer.....J-K	1.25
95-821	1st I.F. transformer.....U	1.25
95-822	2nd I.F. transformer.....U	1.25
95-823	1st I.F. transformer.....O	1.25
95-824	2nd I.F. transformer.....W	1.00
95-825	2nd I.F. transformer.....O	1.25
95-826	1st I.F. transformer.....X	1.25
95-827	2nd I.F. transformer.....X	1.50
95-838	1st I.F. transformer.....E	1.25
95-839	2nd I.F. transformer.....E	1.25
95-841	1st I.F. transformer.....S	1.10
95-842	2nd I.F. transformer.....S	1.10
95-844	2nd I.F. transformer.....Y-Z	1.50
95-849	1st I.F. transformer (1st A.M. & 1st F.M.).....A2-A3	3.00
95-850	2nd I.F. transformer (2nd A.M. & 2nd F.M.).....A2-A3	3.25
95-888	3rd I.F. transformer (F.M.) (used on second release).....A2-A3	1.00
S-5043	Choke assy. (power pack).....D	.25
S-6381	Oscillator coil assy.....D	.65
S-8326	Wave trap coil assembly.....P-T-V-W-X-Y-Z-A1-2-3	.20
S-8359	R.F. Choke & resistor assy.....A1	.25
S-8413	Capacitor assembly.....P	.10
S-8436	Detector coil assembly.....Y-Z	1.25
S-8466	Oscillator coupler coil and terminal.....A1	.25
S-8474	Loading coil assembly (on later releases).....V	.25
S-8730	Oscillator coil assembly.....B1	.60
S-9044	Loading coil assembly.....A1	.50
S-9065	F.M. antenna coil assembly.....A1	.40
S-9066	F.M. detector coil assembly.....A1	.30
S-9074	Oscillator coil assembly.....A1	1.25
S-9075	Antenna coil assembly (S.W.).....A1	1.00
S-9450	Oscillator coil assembly.....F-G-H-L-M	.50
S-9483	Plate choke assembly.....A1	.30
S-9503	F.M. I.F. wave trap assembly.....A1	.30
S-9504	A.C. line choke assembly.....A1-A2-A3	.25
S-9561	Detector coil assembly.....N-R	.35
S-9562	F.M. manual oscillator coil assembly.....A1	.40
S-9563	F.M. manual oscillator coil & bracket assembly.....A1	1.75
S-9570	Detector coil assembly.....I-Q	.50
S-9571	Oscillator coil assembly.....Q	.40
S-9572	Oscillator coil assembly.....P	.35
S-9578	Oscillator coil assembly.....L-R-N	.35
S-9584	Oscillator coil assembly.....B-C	.50
S-9585	R.F. coil assembly.....T-V-W	.50
S-9586	Oscillator coil assembly.....T	1.00
S-9587	Antenna coil assembly.....T-W	.50
S-9589	Antenna loading coil assy.....T-V-W-X-Y-Z-A2-A3	.30
S-9594	F.M. oscillator peaking coil assembly.....A1	.20
S-9597	Oscillator coil assembly.....J-K	.50
S-9622	R.F. coil & resistor assy.....Y-Z	.30
S-9657	Antenna coil assembly.....V	.80
S-9658	Oscillator coil assembly.....V	1.00
S-9659	Oscillator coil assembly.....W	1.00
S-9660	R.F. coil assembly.....O	.65
S-9661	Oscillator coil assembly.....O	.65
S-9688	Antenna coil assembly.....U	1.25
S-9689	Oscillator coil assembly.....U	.90
S-9690	R.F. coil assembly.....U	.75
S-9695	Antenna coil assembly.....X	.65
S-9696	Oscillator coil assembly.....X	1.25
S-9698	Detector coil assembly.....X	.65
S-9746	Oscillator coil assembly.....I	.65
S-9747	Antenna coil assembly.....Y-Z	.65
S-9748	Oscillator coil assembly.....Y-Z	1.10

PARTS LIST—(Continued)

CHASSIS CODE
4B02 B
4B03 C
4B04 D
4B05 E
5B01 F
5B02 G
5B03 H

CHASSIS CODE
5B04 I
5B05 J
5B06 K
5B07 B1
5B13 L
5B14 M
6B01 N

CHASSIS CODE
6B02 O
6B03 P
6B04 Q
6B05 R
6B06 S
6B08 T
6B09 U

CHASSIS CODE
7B01 V
7B02 W
8B01 X
10B1 Y
10B2 Z
12A6 A1
12B1 A2
12B2 A3

Part No.	Model	List Price
S-9823	Oscillator coil assembly.....A2-A3	1.25
S-9829	Oscillator coil assembly.....E	1.00
S-9832	Antenna coil assembly.....E	1.00
S-9834	Detector coil assembly.....S	.60
S-9835	Oscillator coil assembly.....S	.60
S-9847	Detector coil assembly.....A2-A3	.75
S-9848	F.M. oscillator coil assy.....A2-A3	.25
S-9849	F.M. detector coil assy.....A2-A3	.25
S-9850	Resistor choke assembly.....A2-A3	.35
S-9882	F.M. oscillator peaking coil.....A2-A3	.75
S-9935	Gimmie assembly.....E	.10
S-9972	Antenna coil assembly.....A2-A3	.75
S-10073	Peaking coil assembly.....A2-A3	.25

CONDENSERS

22-127	25 mmfd.	600 volt	\$.15
22-138	.2 mfd.	200 volt	.25
22-147	.0005 mfd.	600 volt	.20
22-162	.0001 mfd.	600 volt	.15
22-171	.05 mfd.	600 volt	.20
22-182	.00025 mfd.	600 volt	.20
22-188	.02 mfd.	400 volt	.15
22-196	.01 mfd.	600 volt	.15
22-199	.5 mfd.	200 volt	.40
22-229	.005 mfd.	600 volt	.15
22-243	.01 mfd.	400 volt	.15
22-289	50 mmfd.	600 volt	.15
22-303	5 mmfd.	600 volt	.15
22-319	.005 mfd.	200 volt	.15
22-326	.003 mfd.	400 volt	.15
22-327	.02 mfd.	200 volt	.15
22-348	.001 mfd.	600 volt	.20
22-358	.002 mfd.	600 volt	.30
22-448	.004 mfd.	600 volt	.15
22-458	.006 mfd.	600 volt	.15
22-470	.00015 mfd.	600 volt	.15
22-492	.002 mfd.	600 volt	.15
22-669	.01 mfd.	600 volt	.15
22-684	8 mfd.	150 volt	
	Dry electrolytic.....	B-C-D-I	.35
22-688	Oscillator padder.....	A-1	.30
22-695	Two gang variable.....	D	2.25
22-716	.0005 mfd.	600 volt	.20
22-719	16 mfd.	350 volt	
	Dry electrolytic.....	S	.55
22-742	10 x 15 x 15 mfd. 250 volt dry electrolytic.....	D	1.25
22-825	.1 mfd.	400 volt	.20
22-826	.01 mfd.	200 volt	.15
22-827	.1 mfd.	200 volt	.18
22-828	.05 mfd.	400 volt	.15
22-829	.05 mfd.	200 volt	.15
22-830	.02 mfd.	600 volt	.15
22-846	Automatic tuning trimmer.....	O-T-V-X-Y-Z-A1-A2-A3	.15
22-847	Automatic tuning trimmer.....	O-T-V-X-Y-Z-A1-A2-A3	.20
22-848	Automatic tuning trimmer.....	V-X-Z-A1-A2-A3	.25
22-850	3 section ceramic trimmer.....	X-Y-Z-A1	.50
22-854	.0005 mfd.	600 volt	.15
22-859	Automatic tuning trimmer.....	O-T-V-X-Y-Z-A1-A2-A3	.20
22-868	Silvercap (480 mmfd.).....	O-T-V-X-Y-Z-A1-A2-A3	.30
22-873	Automatic tuning trimmer.....	O-T-V-X-Y-Z-A1-A2-A3	.25
22-887	.001 mfd.	600 volt	.15
22-930	Dual unit padder (fixed).....	U-X	.65
22-953	.0002 mfd.	600 volt	.12
22-954	.00035 mfd.	600 volt	.12
22-961	500 mfd.	15 volt	
	Dry electrolytic.....	D	1.50
22-966	.04 mfd.	600 volt	.20
22-1014	20 x 20 mfd.	150 volt	
	Dry electrolytic.....	N-Q-R	.75
22-1015	Wave trap trimmer.....	O-T-V-W-X-Y-Z-A1-2-3	.15
22-1017	.05 mfd.	200 volt	.15
22-1022	.005 mfd.	600 volt	.30
22-1025	.15 mfd.	200 volt	.15

Part No.	Model	List Price
22-1026	20 x 40 mfd. 150 volt Dry electrolytic.....	H-J-K-L-M-P-B1 .75
22-1027	20 mfd. 25 volt x 20 mfd. 150 volt Dry electrolytic.....	J-K-B1 .65
22-1033	2 section ceramic trimmer.....	A2-A3 .25
22-1034	5 mfd. 450 volt x 15 mfd. 350 volt Dry electrolytic.....	T .75
22-1035	15 mfd. 450 volt x 5 mfd. 450 volt x 15 mfd. 350 volt Dry electrolytic.....	V 1.00
22-1036	14 mfd. 450 volt Dry electrolytic.....	S-T .50
22-1037	Dual padder (fixed).....	V .60
22-1039	Dual unit fixed padder (Oscillator).....	Y-Z-A1 .60
22-1041	.005 mfd. 600 volt.....	.15
22-1042	Single section trimmer.....	S-A1 .15
22-1045	2 section ceramic trimmer.....	X-Y-Z-A1-A2-A3 .25
22-1047	10 mfd. x 20 mfd. x 30 mfd. 150 volt Dry electrolytic.....	U 1.25
22-1049	.03 mfd. 400 volt.....	.15
22-1062	Two gang variable.....	B1 1.75
22-1086	Wave trap trimmer.....	P .15
22-1091	3 section ceramic trimmer.....	V .45
22-1108	20 x 20 mfd. 450 volt Dry electrolytic.....	X-Y-Z 1.25
22-1119	.005 mfd. 1000 volt.....	.20
22-1121	Two gang variable.....	A1 2.50
22-1123	5 mfd. 300 volt Dry electrolytic.....	A1 .40
22-1124	30 mfd. 450 volt Dry electrolytic.....	A1-A2-A3 .75
22-1126	.01 mfd. 400 volt.....	.15
22-1127	.02 mfd. 400 volt.....	.15
22-1129	.0005 mfd. 1000 volt.....	.20
22-1130	15 mmfd. 600 volt.....	.15
22-1134	.002 mfd. 1000 volt.....	.20
22-1135	.005 mfd. 600 volt.....	.15
22-1136	.00025 mfd. 600 volt.....	.15
22-1137	.00015 mfd. 600 volt.....	.15
22-1138	.0005 mfd. 600 volt.....	.15
22-1139	50 mmfd. ceramic.....	A1 .25
22-1140	50 mmfd. ceramic.....	A1 .40
22-1144	4 section ceramic trimmer.....	U .65
22-1145	2 section ceramic trimmer.....	W-T .30
22-1146	50 mmfd. ceramic.....	A1 .35
22-1159	20 mfd. 25 volt x 40 mfd. 25 volt x 40 mfd. 150 volt Dry electrolytic.....	P .75
22-1178	30 mfd. 450 volt x 5 mfd. 300 volt x 15 mfd. 250 volt Dry electrolytic.....	A1-A2-A3 1.25
22-1182	.01 mfd. 400 volt.....	.15
22-1183	.01 mfd. 400 volt.....	.15
22-1185	Two gang variable.....	F 2.00
22-1186	20 mfd. 150 volt x 20 mfd. 150 volt x 30 mfd. 150 volt Dry electrolytic.....	F-G 1.25
22-1187	20 mfd. x 20 mfd. 450 volt x 40 mfd. 35 volt Dry electrolytic.....	W 1.50
22-1189	.00075 mfd. 600 volt.....	.15
22-1193	15 mmfd ceramic.....	A1 .25
22-1200	Two gang variable.....	P 1.75
22-1201	Three gang variable.....	N-Q-R 2.50
22-1203	.001 mfd. 600 volt.....	.15
22-1205	Three gang variable.....	V-W-T 3.25
22-1206	Two gang variable.....	G-H-M 1.75
22-1207	.07 mfd. 200 volt.....	.15
22-1208	Two gang variable.....	E 2.00
22-1209	Two gang variable.....	C 2.00
22-1211	Three section trimmer.....	W-T .60
22-1213	Two gang variable.....	B 2.00
22-1214	Three gang variable.....	I 2.50
22-1215	Two gang variable.....	J 2.00

PARTS LIST—(Continued)

CHARACTER	CODE	CHARACTER	CODE
6802	B	6804	I
6803	C	6805	J
6804	D	6806	K
6805	E	6807	M
6806	F	6808	L
6807	G	6809	M
6808	H	6810	N

CHARACTER	CODE	CHARACTER	CODE
6809	O	6811	P
6810	Q	6812	R
6811	S	6813	T
6812	U		

CHARACTER	CODE	CHARACTER	CODE
7301	V	7302	W
7303	X	7304	Y
7305	Z	7306	A
7307	B	7308	C

Part No.	Model	Price
22-1218 Two gang variable.....	I	3.00
22-1219 Three gang variable.....	U	3.30
22-1218 Three gang variable.....	T	5.75
22-1219 .04 mfd. 200 volt.....		.15
22-1220 .002 mfd. 800 volt.....		.15
22-1221 20 mfd. 250 volt ± 15 mid.		
350 volt Dry electrolytic.....	Q	1.00
22-1222 Three gang variable.....	Q	4.50
22-1223 Three section ceramic trimmer.....	V	.50
22-1224 Three gang variable.....	A3	5.25
22-1225 Single section ceramic trimmer.....	L-U-Y-Z-A3	.15
22-1227 Oscillator pecker (ceramic).....	X-Y-Z-A2-A3	.80
22-1228 3 section ceramic trimmer.....	L	.30
22-1229 Three gang variable.....	Y-Z	4.50
22-1234 200 mfd. 10 volt ± 40 mfd.		
150 mfd. Dry electrolytic.....	T	1.50
22-1235 3 section ceramic trimmer.....	E	.45
22-1240 Single section ceramic trimmer.....	S	.15
22-1241 Three gang variable.....	S	2.50
22-1242 Two gang variable.....	L	1.75
22-1243 Three gang variable.....	A2	5.25
22-1244 75 mfd. 800 volt.....		.15
22-1247 .005 mfd. 1000 volt.....		.20
22-1249 Compensating (5 mfd.).....	A2-A3	.30
22-1250 Compensating (medium).....	A2-A3	.25
22-1271 20 mfd. ± 30 mfd. ± 30 mfd.		
150 volt Dry electrolytic.....	Q	1.25
(Sub. for 22-1100).....		
22-1275 3 section ceramic trimmer.....	V	.50
22-1101 1 section ceramic trimmer.....	Y-Z	.20

RESISTORS

63-150 10M ohm	1/2 watt.....	\$.10
63-151 15M ohm	1 watt.....	.10
63-152 100M ohm	1/2 watt.....	.08
63-258 1M ohm	1/2 watt.....	.07
63-246 150 ohm	1/2 watt.....	.07
63-259 100M ohm	1/2 watt.....	.07
63-271 1 megohm	1/2 watt.....	.07
63-255 220M ohm	1/2 watt.....	.07
63-211 15M ohm	1/2 watt.....	.07
63-215 150M ohm	1/2 watt.....	.07
63-225 3700 ohm	1/2 watt.....	.07
63-245 100M ohm	1/2 watt.....	.15
63-272 15 ohm	1/2 watt.....	.07
63-276 40 ohm	1/2 watt.....	.07
63-277 100 ohm	1/2 watt.....	.07
63-278 220 ohm	1/2 watt.....	.07
63-280 330 ohm	1/2 watt.....	.07
63-281 470 ohm	1/2 watt.....	.07
63-283 1M ohm	1/2 watt.....	.07
63-285 7500 ohm	1/2 watt.....	.07
63-287 4700 ohm	1/2 watt.....	.07
63-289 10M ohm	1/2 watt.....	.07
63-290 15M ohm	1/2 watt.....	.07
63-291 22M ohm	1/2 watt.....	.07
63-292 33M ohm	1/2 watt.....	.07
63-293 47M ohm	1/2 watt.....	.07
63-294 68M ohm	1/2 watt.....	.07
63-295 100M ohm	1/2 watt.....	.07
63-296 200M ohm	1/2 watt.....	.07
63-297 470M ohm	1/2 watt.....	.07
63-298 850 ohm	1/2 watt.....	.07
63-299 1.1 megohm	1/2 watt.....	.07
63-300 2.2 megohm	1/2 watt.....	.07
63-301 3.3 megohm	1/2 watt.....	.07
63-302 4.7 megohm	1/2 watt.....	.07
63-304 10 megohm	1/2 watt.....	.07
63-305 1M ohm	1/2 watt.....	.08
63-306 1M ohm	1 watt.....	.10
63-307 15M ohm	1/2 watt.....	.08
63-315 15 ohm	1/2 watt.....	.07

Part No.		Model	Price
63-320	31 ohm	1/2 watt.....	.07
63-321	38 ohm	1/2 watt.....	.07
63-324	68 ohm	1/2 watt.....	.07
63-327	180 ohm	1/2 watt.....	.07
63-332	5M ohm	1/2 watt.....	.07
63-333	680 ohm	1/2 watt.....	.07
63-334	820 ohm	1/2 watt.....	.07
63-335	3300 ohm	1/2 watt.....	.07
63-337	4700 ohm	1/2 watt.....	.07
63-338	5800 ohm	1/2 watt.....	.07
63-339	8800 ohm	1/2 watt.....	.07
63-340	8500 ohm	1/2 watt.....	.07
63-343	18M ohm	1/2 watt.....	.07
63-346	33M ohm	1/2 watt.....	.07
63-348	47M ohm	1/2 watt.....	.07
63-351	120M ohm	1/2 watt.....	.07
63-354	180M ohm	1/2 watt.....	.07
63-355	220M ohm	1/2 watt.....	.07
63-356	270M ohm	1/2 watt.....	.07
63-357	330M ohm	1/2 watt.....	.07
63-358	390M ohm	1/2 watt.....	.07
63-359	470M ohm	1/2 watt.....	.07
63-360	560M ohm	1/2 watt.....	.07
63-361	680M ohm	1/2 watt.....	.07
63-362	3.9 megohm	1/2 watt.....	.07
63-375	82M ohm	1 watt.....	.10
63-380	10M ohm	1 watt.....	.10
63-382	150 ohm W.W.	1/2 watt..... Insulated	.15
63-387	100 ohm	1/2 watt..... Insulated	.15
63-391	470 ohm	1/2 watt..... Insulated	.15
63-393	1M ohm	1/2 watt..... Insulated	.15
63-394	22M ohm	1/2 watt..... Insulated	.15
63-395	33M ohm	1/2 watt..... Insulated	.15
63-396	47M ohm	1/2 watt..... Insulated	.15
63-397	68M ohm	1/2 watt..... Insulated	.15
63-398	85M ohm	1/2 watt..... Insulated	.15
63-399	100M ohm	1/2 watt..... Insulated	.15
63-400	150M ohm	1/2 watt..... Insulated	.15
63-401	220M ohm	1/2 watt..... Insulated	.15
63-402	330M ohm	1/2 watt..... Insulated	.15
63-403	470M ohm	1/2 watt..... Insulated	.15
63-404	680M ohm	1/2 watt..... Insulated	.15
63-405	850M ohm	1/2 watt..... Insulated	.15
63-406	1.1 megohm	1/2 watt..... Insulated	.15
63-407	1.5 megohm	1/2 watt..... Insulated	.15
63-408	2.2 megohm	1/2 watt..... Insulated	.15
63-409	3.3 megohm	1/2 watt..... Insulated	.15
63-410	4.7 megohm	1/2 watt..... Insulated	.15
63-411	6.2 megohm	1/2 watt..... Insulated	.15
63-412	8.2 megohm	1/2 watt..... Insulated	.15
63-413	10 megohm	1/2 watt..... Insulated	.15
63-414	15 megohm	1/2 watt..... Insulated	.15
63-415	22 megohm	1/2 watt..... Insulated	.15
63-416	33 megohm	1/2 watt..... Insulated	.15
63-417	47 megohm	1/2 watt..... Insulated	.15
63-418	68 megohm	1/2 watt..... Insulated	.15
63-419	85 megohm	1/2 watt..... Insulated	.15
63-420	100 megohm	1/2 watt..... Insulated	.15
63-421	150 megohm	1/2 watt..... Insulated	.15
63-422	220 megohm	1/2 watt..... Insulated	.15
63-423	330 megohm	1/2 watt..... Insulated	.15
63-424	470 megohm	1/2 watt..... Insulated	.15
63-425	680 megohm	1/2 watt..... Insulated	.15
63-426	850 megohm	1/2 watt..... Insulated	.15
63-427	1.1 megohm	1/2 watt..... Insulated	.15
63-428	1.5 megohm	1/2 watt..... Insulated	.15
63-429	2.2 megohm	1/2 watt..... Insulated	.15
63-430	3.3 megohm	1/2 watt..... Insulated	.15
63-431	4.7 megohm	1/2 watt..... Insulated	.15
63-432	6.2 megohm	1/2 watt..... Insulated	.15
63-433	8.2 megohm	1/2 watt..... Insulated	.15
63-434	10 megohm	1/2 watt..... Insulated	.15
63-435	15 megohm	1/2 watt..... Insulated	.15
63-436	22 megohm	1/2 watt..... Insulated	.15
63-437	33 megohm	1/2 watt..... Insulated	.15
63-438	47 megohm	1/2 watt..... Insulated	.15
63-439	68 megohm	1/2 watt..... Insulated	.15
63-440	85 megohm	1/2 watt..... Insulated	.15
63-441	100 megohm	1/2 watt..... Insulated	.15
63-442	150 megohm	1/2 watt..... Insulated	.15
63-443	220 megohm	1/2 watt..... Insulated	.15
63-444	330 megohm	1/2 watt..... Insulated	.15
63-445	470 megohm	1/2 watt..... Insulated	.15
63-446	680 megohm	1/2 watt..... Insulated	.15
63-447	850 megohm	1/2 watt..... Insulated	.15
63-448	1.1 megohm	1/2 watt..... Insulated	.15
63-449	1.5 megohm	1/2 watt..... Insulated	.15
63-450	2.2 megohm	1/2 watt..... Insulated	.15
63-451	3.3 megohm	1/2 watt..... Insulated	.15
63-452	4.7 megohm	1/2 watt..... Insulated	.15
63-453	6.2 megohm	1/2 watt..... Insulated	.15
63-454	8.2 megohm	1/2 watt..... Insulated	.15
63-455	10 megohm	1/2 watt..... Insulated	.15
63-456	15 megohm	1/2 watt..... Insulated	.15
63-457	22 megohm	1/2 watt..... Insulated	.15
63-458	33 megohm	1/2 watt..... Insulated	.15
63-459	47 megohm	1/2 watt..... Insulated	.15
63-460	68 megohm	1/2 watt..... Insulated	.15
63-461	85 megohm	1/2 watt..... Insulated	.15
63-462	100 megohm	1/2 watt..... Insulated	.15
63-463	150 megohm	1/2 watt..... Insulated	.15
63-464	220 megohm	1/2 watt..... Insulated	.15
63-465	330 megohm	1/2 watt..... Insulated	.15
63-466	470 megohm	1/2 watt..... Insulated	.15
63-467	680 megohm	1/2 watt..... Insulated	.15
63-468	850 megohm	1/2 watt..... Insulated	.15
63-469	1.1 megohm	1/2 watt..... Insulated	.15
63-470	1.5 megohm	1/2 watt..... Insulated	.15
63-471	2.2 megohm	1/2 watt..... Insulated	.15
63-472	3.3 megohm	1/2 watt..... Insulated	.15
63-473	4.7 megohm	1/2 watt..... Insulated	.15
63-474	6.2 megohm	1/2 watt..... Insulated	.15
63-475	8.2 megohm	1/2 watt..... Insulated	.15
63-476	10 megohm	1/2 watt..... Insulated	.15
63-477	15 megohm	1/2 watt..... Insulated	.15
63-478	22 megohm	1/2 watt..... Insulated	.15
63-479	33 megohm	1/2 watt..... Insulated	.15
63-480	47 megohm	1/2 watt..... Insulated	.15
63-481	68 megohm	1/2 watt..... Insulated	.15
63-482	85 megohm	1/2 watt..... Insulated	.15
63-483	100 megohm	1/2 watt..... Insulated	.15
63-484	150 megohm	1/2 watt..... Insulated	.15
63-485	220 megohm	1/2 watt..... Insulated	.15
63-486	330 megohm	1/2 watt..... Insulated	.15
63-487	470 megohm	1/2 watt..... Insulated	.15
63-488	680 megohm	1/2 watt..... Insulated	.15
63-489	850 megohm	1/2 watt..... Insulated	.15
63-490	1.1 megohm	1/2 watt..... Insulated	.15
63-491	1.5 megohm	1/2 watt..... Insulated	.15
63-492	2.2 megohm	1/2 watt..... Insulated	.15
63-493	3.3 megohm	1/2 watt..... Insulated	.15
63-494	4.7 megohm	1/2 watt..... Insulated	.15
63-495	6.2 megohm	1/2 watt..... Insulated	.15
63-496	8.2 megohm	1/2 watt..... Insulated	.15
63-497	10 megohm	1/2 watt..... Insulated	.15
63-498	15 megohm	1/2 watt..... Insulated	.15
63-499	22 megohm	1/2 watt..... Insulated	.15
63-500	33 megohm	1/2 watt..... Insulated	.15
63-501	47 megohm	1/2 watt..... Insulated	.15
63-502	68 megohm	1/2 watt..... Insulated	.15
63-503	85 megohm	1/2 watt..... Insulated	.15
63-504	100 megohm	1/2 watt..... Insulated	.15
63-505	150 megohm	1/2 watt..... Insulated	.15
63-506	220 megohm	1/2 watt..... Insulated	.15
63-507	330 megohm	1/2 watt..... Insulated	.15
63-508	470 megohm	1/2 watt..... Insulated	.15
63-509	680 megohm	1/2 watt..... Insulated	.15
63-510	850 megohm	1/2 watt..... Insulated	.15
63-511	1.1 megohm	1/2 watt..... Insulated	.15
63-512	1.5 megohm	1/2 watt..... Insulated	.15
63-513	2.2 megohm	1/2 watt..... Insulated	.15
63-514	3.3 megohm	1/2 watt..... Insulated	.15
63-515	4.7 megohm	1/2 watt..... Insulated	.15
63-516	6.2 megohm	1/2 watt..... Insulated	.15
63-517	8.2 megohm	1/2 watt..... Insulated	.15
63-518	10 megohm	1/2 watt..... Insulated	.15
63-519	15 megohm	1/2 watt..... Insulated	.15
63-520	22 megohm	1/2 watt..... Insulated	.15
63-521	33 megohm	1/2 watt..... Insulated	.15
63-522	47 megohm	1/2 watt..... Insulated	.15
63-523	68 megohm	1/2 watt..... Insulated	.15
63-524	85 megohm	1/2 watt..... Insulated	.15
63-525	100 megohm	1/2 watt..... Insulated	.15
63-526	150 megohm	1/2 watt..... Insulated	.15
63-527	220 megohm	1/2 watt..... Insulated	.15
63-528	330 megohm	1/2 watt..... Insulated	.15
63-529	470 megohm	1/2 watt..... Insulated	.15
63-530	680 megohm	1/2 watt..... Insulated	.15
63-531	850 megohm	1/2 watt..... Insulated	.15
63-532	1.1 megohm	1/2 watt..... Insulated	.15
63-533	1.5 megohm	1/2 watt..... Insulated	.15
63-534	2.2 megohm	1/2 watt..... Insulated	.15
63-535	3.3 megohm	1/2 watt..... Insulated	.15
63-536	4.7 megohm	1/2 watt..... Insulated	.15
63-537	6.2 megohm	1/2 watt..... Insulated	.15
63-538	8.2 megohm	1/2 watt..... Insulated	.15
63-539	10 megohm	1/2 watt..... Insulated	.15
63-540	15 megohm	1/2 watt..... Insulated	.15
63-541	22 megohm	1/2 watt..... Insulated	.15
63-542	33 megohm	1/2 watt..... Insulated	.15
63-543	47 megohm	1/2 watt..... Insulated	.15
63-544	68 megohm	1/2 watt..... Insulated	.15
63-545	85 megohm	1/2 watt..... Insulated	.15
63-546	100 megohm	1/2 watt..... Insulated	.15
63-547	150 megohm	1/2 watt..... Insulated	.15
63-548	220 megohm	1/2 watt..... Insulated	.15
63-549	330 megohm	1/2 watt..... Insulated	.15
63-550	470 megohm	1/2 watt..... Insulated	.15
63-551	680 megohm	1/2 watt..... Insulated	.15
63-552	850 megohm	1/2 watt..... Insulated	.15
63-553	1.1 megohm	1/2 watt..... Insulated	.15
63-554	1.5 megohm	1/2 watt..... Insulated	.15
63-555	2.2 megohm	1/2 watt..... Insulated	.15
63-556	3.3 megohm	1/2 watt..... Insulated	.15
63-557	4.7 megohm	1/2 watt..... Insulated	.15
63-558	6.2 megohm	1/2 watt..... Insulated	.15
63-559	8.2 megohm	1/2 watt..... Insulated	.15
63-560	10 megohm	1/2 watt..... Insulated	.15
63-561	15 megohm	1/2 watt..... Insulated	.15
63-562	22 megohm	1/2 watt..... Insulated	.15
63-563	33 megohm	1/2 watt..... Insulated	.15
63-564	47 megohm	1/2 watt..... Insulated	.15
63-565	68 megohm	1/2 watt..... Insulated	.15
63-566	85 megohm	1/2 watt..... Insulated	.15
63-567	100 megohm	1/2 watt..... Insulated	.15
63-568	150 megohm	1/2 watt..... Insulated	.15
63-569	220 megohm	1/2 watt..... Insulated	.15
63-570	330 megohm	1/2 watt..... Insulated	.15
63-571	470 megohm	1/2 watt..... Insulated	.15
63-572	680 megohm	1/2 watt..... Insulated	.15
63-573	850 megohm	1/2 watt..... Insulated	.15
63-574	1.1 megohm	1/2 watt..... Insulated	.15
63-575	1.5 megohm	1/2 watt..... Insulated	.15
63-576	2.2 megohm	1/2 watt..... Insulated	.15
63-577	3.3 megohm	1/2 watt..... Insulated	.15
63-578	4.7 megohm	1/2 watt..... Insulated	.15
63-579	6.2 megohm	1/2 watt..... Insulated	.15
63-580	8.2 megohm	1/2 watt..... Insulated	.15
63-581	10 megohm	1/2 watt..... Insulated	.15
63-582	15 megohm	1/2 watt..... Insulated	.15
63-583	22 megohm	1/2 watt..... Insulated	.15
63-584	33 megohm	1/2 watt..... Insulated	.15
63-585	47 megohm	1/2 watt..... Insulated	.15
63-586	68 megohm	1/2 watt..... Insulated	.15
63-587	85 megohm	1/2 watt..... Insulated	.15
63-588	100 megohm	1/2 watt..... Insulated	.15
63-589	150 megohm	1/2 watt..... Insulated	.15
63-590	220 megohm	1/2 watt..... Insulated	.15
63-591	330 megohm	1/2 watt..... Insulated	.15
63-592	470 megohm	1/2 watt..... Insulated	.15
63-593	680 megohm	1/2 watt..... Insulated	.15
63-594	850 megohm	1/2 watt..... Insulated	.15
63-595	1.1 megohm	1/2 watt..... Insulated	.15
63-596	1.5 megohm	1/2 watt..... Insulated	.15
63-597	2.2 megohm	1/2 watt..... Insulated	.15
63-598	3.3 megohm	1/2 watt..... Insulated	.15
63-599	4.7 megohm	1/2 watt..... Insulated	.15
63-600	6.2 megohm	1/2 watt..... Insulated	.15
63-601	8.2 megohm	1/2 watt..... Insulated	.15
63-602	10 megohm	1/2 watt..... Insulated	.15
63-603	15 megohm	1/2 watt..... Insulated	.15
63-604	22 megohm	1/2 watt..... Insulated	.15
63-605	33 megohm	1/2 watt..... Insulated	.15
63-606	47 megohm	1/2 watt..... Insulated	.15
63-607	68 megohm	1/2 watt..... Insulated	.15
63-608	85 megohm	1/2 watt..... Insulated	.15
63-609	100 megohm	1/2 watt..... Insulated	.15
63-610	150 megohm	1/2 watt..... Insulated	.15
63-611	220 megohm	1/2 watt..... Insulated	.15
63-612	330 megohm	1/2 watt..... Insulated	.15
63-613	470 megohm	1/2 watt..... Insulated	.15
63-614	680 megohm	1/2 watt..... Insulated	.15
63-615	850 megohm	1/2 watt..... Insulated	.15
63-616	1.1 megohm	1/2 watt..... Insulated	.15
63-617	1.5 megohm	1/2 watt..... Insulated	.15
63-618	2.2 megohm	1/2 watt..... Insulated	.15
63-619	3.3 megohm	1/2 watt..... Insulated	.15
63-620	4.7 megohm	1/2 watt..... Insulated	.15
63-621	6.2 megohm	1/2 watt..... Insulated	.15
63-622	8.2 megohm	1/2 watt..... Insulated	.15
63-623	10 megohm	1/2 watt..... Insulated	.15
63-624	15 megohm	1/2 watt..... Insulated	.15
63-625	22 megohm	1/2 watt..... Insulated	.15
63-626	33 megohm	1/2 watt..... Insulated	.15
63-627	47 megohm	1/2 watt..... Insulated	.15
63-628	68 megohm	1/2 watt..... Insulated	.15
63-629	85 megohm	1/2 watt..... Insulated	.15
63-630	100 megohm	1/2 watt..... Insulated	.15
63-631	150 megohm	1/2 watt..... Insulated	.15
63-632	220 megohm	1/2 watt..... Insulated	.15
63-633	330 megohm	1/2 watt..... Insulated	.15
63-634	470 megohm	1/2 watt..... Insulated	.15
63-635	680 megohm	1/2 watt..... Insulated	.15
63-636	850 megohm	1/2 watt..... Insulated	.15
63-637	1.1 megohm	1/2 watt..... Insulated	.15
63-638	1.5 megohm	1/2 watt..... Insulated	.15
63-639	2.2 megohm	1/2 watt..... Insulated	.15
63-640	3.3 megohm	1/2 watt..... Insulated	.15

PARTS LIST—(Continued)

CHASSIS CODE
4B02 B
4B03 C
4B04 D
4B05 E
5B01 F
5B02 G
5B03 H

CHASSIS CODE
5B04 I
5B05 J
5B06 K
5B07 B1
5B13 L
5B14 M
6B01 N

CHASSIS CODE
6B02 O
6B03 P
6B04 Q
6B05 R
6B06 S
6B08 T
6B09 U

CHASSIS CODE
7B01 V
7B02 W
8B01 X
10B1 Y
10B2 Z
12A6 A1
12B1 A2
12B2 A3

Part No.	Model	List Price
63-1151 16M ohm	1/2 watt..... Insulated	.17
63-1156 1800 ohm	1/2 watt.....	.08
63-1158 100 ohm	1/2 watt.....	.08
63-1159 39M ohm	1 watt.....	.10
63-1160 56M ohm	1 watt..... Insulated	.20
63-1164 300 ohm	1/2 watt..... Insulated	.17
63-1171 75 ohm W.W.	1/2 watt..... Insulated	.20
63-1172 100 ohm W.W.	1/2 watt..... Insulated	.20
63-1173 1500 ohm	1 watt.....	.10
63-1174 420 ohm W.W.	1 1/2 watt..... Insulated	.17
63-1179 1M ohm	1 watt..... Insulated	.20
63-1180 15M ohm	1/2 watt..... Insulated	.17
63-1188 39M ohm	1 watt..... Insulated	.20
63-1189 200 ohm W.W.	2 watt..... Insulated	.30
63-1190 8.8 ohm W.W.	1/2 watt..... Insulated	.20
63-1191 8200 ohm	2 watt.....	.15
63-1192 27M ohm	1 watt..... Insulated	.20
63-1193 5600 ohm	2 watt..... Insulated	.30
63-1194 47M ohm	1 watt..... Insulated	.20
63-1195 470 ohm W.W.	1 1/2 watt..... Insulated	.20
63-1204 3300 ohm	1/4 watt.....	.07
63-1205 1500 ohm	1/4 watt.....	.07
63-1211 82M ohm	2 watt.....	.15
63-1231 Volume control & switch	P	1.50
63-1232 Candohm resistor	P-U	.50
63-1233 Volume control & switch	R	1.50
63-1235 Volume control & switch	C	1.50
63-1236 Volume control & switch	E-I-K	1.50
63-1237 150 ohm W.W.	1/2 watt..... Insulated	.20
63-1238 Volume control & switch	N	1.50
63-1239 Candohm resistor	J-K	.50
63-1240 Volume control & switch	B	1.50
63-1241 Volume control & switch	J	1.50
63-1242 18M ohm	1 1/2 watt..... Insulated	.25
63-1244 Volume control	U	1.00
63-1245 Volume control & switch	O	1.50
63-1246 Volume control & switch	S	1.50
63-1247 Tone control	S	1.00
63-1251 Variable bias resistor	A3	.35
63-1259 Two section candohm	U-P	.35
63-1260 Ziphon resistor 140 ohm	2 watt..... U-P	.15

AUTOMATIC TUNING UNIT ASSEMBLY

S-6928 Automatic tuning coil—red	V	.15
S-6929 Automatic tuning coil—green	V	.15
S-6930 Automatic tuning coil—blue	V	.15
S-7021 Automatic tuning coil—yellow	V-X-Y-Z-A1-A2-A3	.15
S-7536 Automatic tuning coil—silver	V	.15
S-7857 Automatic tuning coil—red	X-Y-Z-A1-A2-A3	.20
S-7858 Automatic tuning coil—green	X-Y-Z-A1-A2-A3	.20
S-7859 Automatic tuning coil—blue	X-Y-Z-A1-A2-A3	.20
S-7860 Automatic tuning coil—silver	A1	.20
S-8495 Automatic tuning unit complete	A1	7.25
S-8685 Automatic tuning coil—yellow (2 dots)	O-T	.15
S-8686 Automatic tuning coil—red (3 dots)	O-T	.15
S-8687 Automatic tuning coil—blue (3 dots)	O-T	.15
S-8688 Automatic tuning coil—white (2 dots)	O-T-X-Y-Z	.15
S-9745 Automatic tuning unit complete	T	5.25
S-9808 Automatic tuning unit complete	V	5.25
S-9873 Automatic tuning unit complete	O	5.25
S-9926 Automatic tuning unit complete	X-Y-Z	7.25
S-10100 Automatic tuning coil assy. (3 white dots)	A2-A3	.20
S-10217 Automatic tuning unit complete	A2	7.25
S-10325 Automatic tuning unit complete	A3	8.00
10-77 Cardboard box	A1	.05
24-284 Cardboard cover	O-T-V	.03
24-287 Cardboard cover	X-Y-Z-A2-A3	.03

Part No.	Model	List Price
68-1 Automatic tuning adjustment wrench	O-T-V-X-Y-Z-A1-2-3	.02
71-8 #6/32 x 5/8" F.H.M.S. (auto-matic mounting)	T-V	.25C
83-711 Automatic coil retaining strip	A1	.02
83-839 Automatic unit fibre strip	A1	.02
83-922 Coil retaining strip	O-T-V	.05
83-923 Coil retaining strip	X-Y-Z-A2-A3	.05
85-237 Automatic tuning switch	A1	2.50
85-275 Automatic tuning switch	T	1.50
85-276 Automatic tuning switch	V	1.75
85-280 Automatic switch	O	2.00
85-286 Automatic switch	X-Y-Z-A2	2.25
85-287 Automatic switch	A3	2.25
112-223 Adjustment screw & core (2 used)	O-T-V-X-Y-Z-A1-2-3	.10
112-292 Adjustment screw & core (2 used)	O-T-V-X-Y-Z-A1-2-3	.10

AUTOMATIC-RADIORGAN ESCUTCHEON ASSEMBLY

S-8407 Radiorgan knob & eyelet—normal	A1	.10
S-8408 Radiorgan knob & eyelet—treble	A1	.10
S-8409 Radiorgan knob & eyelet—alto	A1	.10
S-8410 Radiorgan knob & eyelet—bass	A1	.10
S-8411 Radiorgan knob & eyelet—lo-bass	A1	.10
S-8490 Radiorgan switch contact & strip	A1	.25
S-8541 Automatic tuning escutcheon & knob assembly	A1	1.25
S-8985 Radiorgan knob & eyelet—voice	A1	.10
S-9315 Radiorgan escutcheon & knob assembly	A1	1.25
S-9590 Knob & eyelet assembly	U-V-W-X-Y-Z-A2-3	.10
S-9591 Knob & eyelet assembly	U-V-W-X-Y-Z-A2-3	.10
S-9593 Radiorgan contact strip assy.	T	.25
S-9595 Radiorgan contact & strip assembly	U-W	.25
S-9596 Radiorgan strip & contact assy.	V	.20
S-9606 Radiorgan strip & contact assy.	X-Y-Z-A2-3	.30
S-9818 Radiorgan escutcheon & knob assembly	T	1.00
S-9819 Automatic escutcheon & knob assembly	T	.85
S-9891 Radiorgan escutcheon & knob assembly	V	1.25
S-9892 Automatic tuning escutcheon & knob assembly	V	1.25
S-9995 Radiorgan escutcheon knob assembly (left hand)	U-W	1.00
S-9996 Radiorgan escutcheon knob assembly (right hand)	U-W	1.00
S-10011 Radiorgan escutcheon knob assy.	X-Y-Z	1.65
S-10012 Automatic escutcheon & knob assembly	X-Y-Z-A2-3	1.50
S-10422 Radiorgan escutcheon & knob assembly	A2-A3	1.75
46-345 Automatic tuning knob	A1	.05
46-346 Automatic tuning knob	A1	.05
46-418 Radiorgan knob—voice	J-K-R	.05
46-419 Radiorgan knob—treble	J-K-R	.05
46-420 Radiorgan knob—alto	J-K-R	.05
46-421 Radiorgan knob—bass	J-K-R	.05
46-425 Automatic tuning knob	V-X-Y-Z-A2-A3	.06
46-443 Radiorgan knob—voice (615W)	R	.05
46-444 Radiorgan knob—treble (615W)	R	.05
46-445 Radiorgan knob—alto (615W)	R	.05
46-446 Radiorgan knob—bass (615W)	R	.05
57-906 Automatic tuning escutcheon (tenite)	V	.25
57-907 Automatic tuning escutcheon (tenite)	T	.25
57-908 Radiorgan escutcheon (tenite)	T	.30
57-909 Radiorgan escutcheon (tenite)	V	.30

PARTS LIST—(Continued)

CHASSIS	CODE
4B02	B
4B03	C
4B04	D
4B05	E
5B01	F
5B02	G
5B03	H

CHASSIS	CODE
5B04	I
5B05	J
5B06	K
5B07	B1
5B13	L
5B14	M
6B01	N

CHASSIS	CODE
6B02	O
6B03	P
6B04	Q
6B05	R
6B06	S
6B08	T
6B09	U

CHASSIS	CODE
7B01	V
7B02	W
8B01	X
10B1	Y
10B2	Z
12A6	A1
12B1	A2
12B2	A3

Part No.	Model	List Price
57-911	Tenite escutcheon (left hand).....U-W	.30
57-912	Tenite escutcheon (right hand).....U-W	.30
57-920	Radiorgan escutcheon.....K-R	.25
57-922	Automatic tenite escutcheon.....X-Y-Z-A2-A3	.50
57-923	Radiorgan tenite escutcheon.....X-Y-Z-A2	.60
76-293	Knob shaft.....A1	.02
76-337	Latch shaft.....U-V-W-X-Y-Z-A2-A3	.02
76-338	Knob shaft.....U-V-W	.03
76-342	Knob shaft.....X-Y-Z-A2-A3	.04
80-211	Catch spring.....A1	.25C
80-226	Retaining spring.....A1	.01
80-264	Latch spring.....U-V-W-X-Y-Z-A2-A3	.60C
85-284	Radiorgan switch (left).....K-R	.45
85-285	Radiorgan switch (left).....J	.45
85-288	Radiorgan switch (right).....K-R	.45
85-289	Radiorgan switch (right).....J	.45
94-295	Steel bushing.....K	.03
112-56	#6 x 1/4" Hex Hd. S.T. screw.....V	.45C
114-67	#6/32 x 7/16" Hex Acorn Hd. M.S. K	.35C
114-159	#6 x 1/4" Hex Hd. S.T. screw.....U-W-X-Y-Z-A2-A3	.60C
125-17	Rubber grommet.....K	.015
156-6	Escutcheon catch.....A1	.03
156-10	Latch.....U-V-W-X-Y-Z-A2-A3	.30C

WAVEMAGNET ASSEMBLY

S-8237	Wavemagnet catch assembly.....P	.02
S-8742	Wavemagnet assembly complete (type 21).....B1	1.50
S-9542	Wavemagnet assembly complete (type 16F).....F	1.25
S-9576	Wavemagnet assembly complete (type 16D).....Q	1.00
S-9579	Wavemagnet assembly complete (type 20B).....P	1.50
S-9582	Wavemagnet assembly complete (type 16G).....N	1.25
S-9599	Wavemagnet assembly complete (type 16H).....H-M	1.50
S-9619	Wavemagnet assembly complete (type 16K).....G	1.25
S-9621	Wavemagnet assembly complete (type 18F) (632).....T-V	3.00
S-9685	Wavemagnet assembly complete (type 17B).....O	2.00
S-9727	Wavemagnet assembly complete (type 16J).....R	1.00
S-9798	Wavemagnet assembly complete (type 19U) (657).....V-W	3.50
S-9833	Wavemagnet assembly complete (type 19V).....Y	4.00
S-9836	Wavemagnet assembly complete (type 19R).....A1	3.25
S-9839	Wavemagnet assembly complete (type 19Q) (661).....X	4.00
S-9879	Wavemagnet assembly complete (type 16M).....L	2.00
S-9885	Wavemagnet assembly complete (type 18H) (646).....T	3.50
S-9886	Wavemagnet assembly complete (type 19S) (656).....T	4.00
S-9898	Wavemagnet assembly complete (type 16N) (683).....S	2.50
S-9906	Wavemagnet assembly complete (type 16L) (684).....S	2.50
S-10058	Wavemagnet assembly complete (type 19T) (695-596-670).....A2-A3	4.00
S-10059	Wavemagnet assembly complete (type 19X).....Z	4.00
S-10071	Wavemagnet assembly complete (type 19W) (687-688).....S	4.00
S-10072	Antenna loading coil assy.....L	.30
S-10136	Wavemagnet assembly complete (type 19Y) (647).....X	3.75

Part No.	Model	List Price
S-10139	Wavemagnet assembly complete (type 18J) (682).....W	3.00
S-10153	Wavemagnet assembly complete (type 18G) (681).....W	3.00
S-10195	Wavemagnet assembly complete (type 19T-2) (689).....A3	4.00
S-10382	Wavemagnet assembly complete (type 19V-3) (650).....A2	3.75
12-747	Wavemagnet mounting bracket (687).....S-T-V-W-X-Y-A2	.20
12-792	Wavemagnet mounting bracket (632).....T	.02
12-904	Wavemagnet mounting bracket (632) (2 used).....T	.02
22-1226	Single section ceramic trimmer.....L	.15
24-236	Wavemagnet cardboard cover.....S-T-V-W	.15
24-238	Cardboard cover (661).....X-Y-Z-A1-A2	.15
40-16	Wavemagnet hinge.....P	.10
54-133	#6/32 cap nut (646).....T	.02
54-136	#8/32 x 5/16" cap nut—bronze.....P	1.75C
54-141	Speed nut (656).....T-V-X-Y-Z-A1-2-3	.01
57-859	Wavemagnet switch plate.....P	.10
58-83	Five prong plug.....Y-Z-A2-A3	.10
58-84	Four prong plug.....T-V-W-X-A1	.05
58-88	Three prong plug.....S	.05
70-7	#6 x 1/2" R.H.W.S. (wavemagnet mounting).....T-V	.40C
70-72	#6 x 3/8" R.H.W.S......H-L-M	.40C
80-198	Wavemagnet mounting spacer.....S-T-V-W	.01
85-225	Wavemagnet switch.....P	.20
112-232	#10 x 1" B.H. sheet metal screw (687).....S-T-V-W-X-Y-A2	.01
114-125	#6 x 2 1/2" Hex Hd. slotted S.T. screw.....G-F-Q	.02
114-137	#6/32 x 2 1/16" Hex Hd. M.S. brass (632).....T	.03
114-138	#6/32 x 2 1/8" Hex Hd. M.S. (646).....T	.03
114-139	#6/32 x 2 1/4" Hex Hd. M.S. brass (632).....T	.03
114-141	#6/32 x 9/16" Hex Hd. M.S. (646).....T	.04
114-158	#6 x 2 1/4" Hex Hd. S.T. screw.....N	.015
147-98	Wavemagnet mounting spacer.....G-Q	.01
147-99	Wavemagnet mounting spacer.....G-Q	.01
147-114	Wavemagnet mounting spacer.....N-O	.50C
147-115	Wavemagnet mounting spacer.....N-O	.50C
197-10	Suction cup.....P	.04
199-25	Rubber sleeve.....T-V-W	.015
199-26	Rubber sleeve.....S-T-V-W-X-Y-Z-A1-2-3	.02

F. M. AUTOMATIC TUNING & ESCUTCHEON ASSEMBLY

S-9069	Oscillator coil assembly.....A1	.30
S-9070	Oscillator coil assembly (2 used).....A1	.30
S-9316	F.M. tuning escutcheon & knob assembly (#1-2-3 knobs) (left).....A1	1.25
S-9317	F.M. tuning escutcheon & knob assembly (#4-5 manual knobs) (right).....A1	1.25
S-9344	Oscillator coil assembly.....A1	.30
S-9345	Oscillator coil assembly.....A1	.30
S-9383	F.M. tuning escutcheon assembly (57-849).....A1	1.60
S-9531	F.M. automatic tuning unit assembly complete.....A1	7.50
46-356	Knob marked #1.....A1	.10
46-357	Knob marked #2.....A1	.10
46-358	Knob marked #3.....A1	.10
46-359	Knob marked #4.....A1	.10
46-360	Knob marked #5.....A1	.10
46-361	Knob marked manual.....A1	.10
56-74	Retaining pin.....A1	.05
76-293	Knob shaft.....A1	.02
80-224	Spring.....A1	.50C

PARTS LIST—(Continued)

CHASSIS	CODE
4B02	B
4B03	C
4B04	D
4B05	E
5B01	F
5B02	G
5B03	H

CHASSIS	CODE
5B04	I
5B05	J
5B06	K
5B07	B1
5B13	L
5B14	M
6B01	N

CHASSIS	CODE
6B02	O
6B03	P
6B04	Q
6B05	R
6B06	S
6B08	T
6B09	U

CHASSIS	CODE
7B01	V
7B02	W
8B01	X
10B1	Y
10B2	Z
12A6	A1
12B1	A2
12B2	A3

Part No.	Model	List Price
80-229	Retaining pin spring.....A1	.60C
83-711	Coil retaining strip.....A1	.02
83-766	Rubber strip.....A1	.02
83-900	Fibre strip.....A1	.03
85-263	F.M. automatic tuning switch.....A1	3.00
93-510	Ceramic washer.....A1	.015
149-18	Core & screw assembly.....A1	.15
188-32	Retaining ring.....A1	.85C

PHONO PARTS

19-123	Record changer mtg. clip (C).....L-S-W	.08
29-16	8" turntable (680X).....M	1.00
29-18	8" turntable (683).....H-S	1.00
29-20	10" turntable.....L-S-W	1.50
29-25	9" (686J-681JJ-682JJ).....WL	1.25
29-26	9" turntable.....Z-A1-A3	1.25
29-27	9" turntable.....Z	1.25
36-20	Cabinet door handle (682).....W	.85
46-239	Radio-phono switch knob.....A1	.05
46-441	Phono switch knob (S10079).....W	.20
46-447	Phono-radio switch knob.....H-L-M	.10
46-453	Phono-radio switch knob.....A3	.05
46-461	Release knob (681).....W	.40
46-462	Release knob (682).....W	.10
52-188	Motor cable & plug.....H-L-M	.20
52-227	Motor cable & plug.....S	.25
54-31	#10/32 x 3/8" Hex nut (record changer mounting).....W	.35C
54-113	#410 speed nut (pickup rest).....H-M	.45C
54-113	#1078 speed nut (turntable retaining).....H-L-S-W-A3-M	.02
54-144	#125 speed nut (motor mtg.).....H-M-S	.01
54-157	Record changer mounting nut.....Z-A3	.05
54-183	Record changer mtg. clip (686J).....L	.06
56-84	Phono needle.....W	
56-88	Phono needle.....L-S	
56-93	Release knob escutcheon pin (681).....W	.20C
57-777	Motor switch plate (686J).....L-W	.05
57-846	Radio-phono escutcheon.....A1	.03
57-856	Motor switch plate.....H-M-S	.65
57-944	Phono-radio escutcheon.....A3	.40
57-946	Release knob escutcheon plate (681).....W	.30
58-85	Three prong plug.....W-Z-A1-A3	.05
58-86	Two prong plug.....H-L-M-S	.10
69-38	#8/32 x 3/4" R.H.M.S.—N.P. (motor mounting).....H-M	.50C
69-129	#10/32 x 1" R.H.M.S. (record changer mounting) (681).....W	.30C
70-104	#8 x 1 1/4" R.H.W.S. (handle mounting) (682).....W	.01
76-367	Push button shaft) (682).....W	.03
80-278	Main spring (681).....W	.30
80-279	Release spring (681).....W	.03
80-280	Record changer mounting spring.....L-S-W	.04
80-285	Record changer mounting spring.....Z-A3	.05
80-286	Record changer mounting spring.....Z-A3	.05
85-191	Motor switch.....H-M-S	.25
85-282	Phono-radio switch.....H-L-M	.45
85-283	Phono switch (see S9824).....A1	
85-305	Air check (682).....W	.50
85-309	Air check (681).....W	.50
97-137	Phono switch lever stud.....Z-A1-A3	.10
112-337	Record changer mounting bolt.....L-S-W	.06
112-346	Record changer mounting screw (686J).....L	.09
125-31	Rubber grommet (record changer mounting).....W	.03
141-80	Phono motor—115 volt 60 cycle (680X).....M	6.00
141-81	Phono motor—115 volt 50 cycle.....M	7.75
141-83	Phono motor—115 volt 60 cycle.....H-S	6.00
141-84	Phono motor—115 volt 50 cycle.....H	7.75

Part No.	Model	List Price
142-46	Crystal cartridge & permanent sapphire needle (LP-21).....Z	8.00*
142-47	Tone arm, cartridge & needle**.....H-M	6.50*
142-49	Crystal cartridge with permanent sapphire needle.....A1-A3	8.00*
142-53	Tone arm, cartridge & needle** (683).....S	6.50*
142-54	Crystal cartridge (99-182S).....W	4.00*
142-55	Crystal cartridge only (N-1).....S	3.80*
Note—** Cartridge not replaceable separately.		
148-31	Phono switch lever arm.....Z-A1	.04
148-34	Phono switch lever arm.....A3	.05
156-14	Door latch (682).....W	.05
156-15	Latch hook (682).....W	.04
169-65	Automatic record changer 60 cycle.....A1	45.00
169-68	Automatic record changer 60 cycle (681J-682J).....W	40.00
169-70	Automatic record changer 60 cycle (686J).....L	40.00
169-74	Automatic record changer 60 cycle.....L-S	40.00
169-76	Automatic record changer 60 cycle (681-682).....W	40.00
169-78	Automatic record changer 60 cycle.....S	40.00
169-80	Automatic record changer 60 cycle.....Z	50.00
169-83	Automatic record changer 60 cycle (695-696).....A3	50.00
169-86	Automatic record changer 60 cycle (681JJ-682JJ).....W	40.00
169-87	Automatic record changer 60 cycle (685).....W	40.00
169-89	Automatic record changer 60 cycle (689).....A3	50.00
197-8	Rubber suction cup (686J).....L	.04
202-282	Instruction book.....Z-A1-A3	.10
202-283	Instruction sheet.....Z	.02
202-301	Phono instruction book.....L-S-W	.02
S-8393	Phono switch arm & sleeve assy.....W	\$.10
S-9824	Phono switch arm & bracket assy.....A1	.30
S-9968	Phono latch bracket & hook (682).....W	.25
S-9969	Record changer lift assy. (682).....W	7.50
S-10051	Phono switch & bracket assy.....Z-A3	.50
S-10156	Air check bracket & clamp assy.....W	.30
S-10175	Record changer lift assy. (681).....W	9.00

MISCELLANEOUS

2-35	Cabinet back (610-611).....F-G	.05
2-35W	Cabinet back (610W-611W).....F-G-H	.10
2-48	Cabinet back.....H-M	.10
2-63	Cabinet back (614).....N	.05
2-63W	Cabinet back (614W).....N	.05
2-64	Cabinet back.....Q	.05
2-64W	Cabinet back (612W).....Q	.05
2-65	Cabinet back (615).....R	.05
2-65W	Cabinet back (615W).....R	.05
2-66	Cabinet back (627).....G	.10
2-67	Cabinet back (628).....Q	.05
2-68	Cabinet back (629).....N	.05
2-69	Cabinet back (630).....R	.10
2-71	Cabinet back.....B	.05
2-72	Cabinet back.....O	.10
2-73	Cabinet back (632).....T-V	.10
2-78	Cabinet back (634).....V	.15
2-79	Cabinet back (683-684).....L-S	.10
2-81	Cabinet back (682).....W	.30
14-697	Model 610 bakelite cabinet.....F	
14-697W	Model 610W bakelite cabinet.....F	
14-709	Model 614 bakelite cabinet.....N	
14-709W	Model 614W bakelite cabinet.....N	
14-710	Model 611 bakelite cabinet.....G	

PARTS LIST—(Continued)

CHASSIS	CODE
4B02	B
4B03	C
4B04	D
4B05	E
5B01	F
5B02	G
5B03	H

CHASSIS	CODE
5B04	I
5B05	J
5B06	K
5B07	Bl
5B13	L
5B14	M
6B01	N

CHASSIS	CODE
6B02	O
6B03	P
6B04	Q
6B05	R
6B06	S
6B08	T
6B09	U

CHASSIS	CODE
7B01	V
7B02	W
8B01	X
10B1	Y
10B2	Z
12A6	A1
12B1	A2
12B2	A3

Part No.	Model	List Price
14-710W	Model 611W bakelite cabinet.....G	
14-713	Model 612 bakelite cabinet.....Q	
14-713W	Model 612W bakelite cabinet.....Q	
14-714	Model 615 bakelite cabinet.....R	
14-714W	Model 615W bakelite cabinet.....R	
14-723	Model 616 bakelite cabinet.....B	
14-724	Model 617 bakelite cabinet.....J	
15-34	Battery cable plug cap.....J-K-P-U-B1	.05
19-59	Battery clip—positive.....D	.15
19-60	Battery clip—negative.....D	.15
23-15	Antenna strip connector.....	.02
24-285	Automatic adjustment screw cover.....O	.60
24-286	Radiorgan switch cover.....O	.65
36-28	Cabinet handle (614-615).....N-R-Q	.40
36-19	Cabinet handle (614-615W).....N-R-Q	.40
46-277Y	Tuning & volume control knob (610W).....F	.10
46-327	Tuning & volume control knob.....F	.10
46-349	Band switch knob.....X-Y-Z-A1-2-3	.15
46-350	Dummy knob (S8540).....V-A2	.20
46-395	Tuning & volume control knob (627-628).....G-H-L-M-Q	.10
46-413	Tuning & volume control knob.....B-C-E-I-J-K-N-O-R	.10
46-413Y	Tuning & volume control knob (614W).....N-R	.10
46-415	Tuning & volume control knob (611-612).....G-Q-S	.10
46-415Y	Tuning & volume control knob (611W-612W).....G-Q-S	.10
46-416	Tuning & volume control knob.....P	.10
46-418	Radiorgan knob—voice.....E-I	.05
46-419	Radiorgan knob—treble.....E-I	.05
46-420	Radiorgan knob—alto.....E-I	.05
46-421	Radiorgan knob—bass.....E-I	.05
46-422	Band switch knob.....U-V	.15
46-423	Volume control knob (S9815).....T-U-V-W-X-Y-Z-A2-3	.20
46-426	Tuning control knob (S9816).....T-U-V-W-A2	.15
46-435	Automatic tuning & radiorgan knob.....O	.05
46-439	Dummy knob (S9817).....T	.20
46-440	Band switch knob.....T	.20
46-441	Phono switch knob (S10079).....W	.20
46-442	Band switch knob (S10080).....W	.20
46-447	Phono-radio switch knob.....H-L-M	.10
46-448	Band switch knob.....E	.15
46-449	Tuning & volume control knob.....D	.10
46-450	Tuning control knob.....Bl	.10
46-451	Volume control knob.....Bl	.10
46-452	Tuning control knob (S10013).....X-Y-Z-A2-A3	.20
46-453	Phono-radio switch knob.....Z-A3	.05
46-454	Phono-radio switch knob.....S	.10
46-454Y	Phono-radio switch knob (688).....S	.10
49-385	4" Dynamic speaker.....Q	3.50
	206-385 Output transformer.....Q	1.25
	207-385 Field coil (not replaceable).....Q	1.00
49-394	10" P.M. speaker (660).....U	10.00
	206-394 Output transformer.....U	2.00
	208-394 Cone & voice coil.....U	2.50
49-397	12" Dynamic speaker (657R).....	8.50
	206-397 Output transformer.....	1.50
	207-397 Field coil.....	2.75
	208-397 Cone & voice coil.....	3.50
49-408	4" P.M. speaker.....Bl	3.50
	206-408 Output transformer.....Bl	1.25
	208-408 Cone & voice coil.....Bl	1.00
49-416	14" Dynamic speaker.....Y	10.00
	206-416 Output transformer.....Y	2.00
	207-416 Field coil.....Y	2.75
	208-416 Cone & voice coil.....Y	4.00
49-439*	4" Dynamic speaker.....F-G	3.00
	208-439 Cone & voice coil.....F-G	1.00

*Note: Field winding is used as primary of output transformer. Secondary to match voice coil is wound over the field coil (not replaceable).

Part No.	Model	List Price
49-442	14" Dynamic speaker.....Z	10.00
	206-442 Output transformer.....Z	2.00
	207-442 Field coil.....Z	2.75
	208-442 Cone & voice coil.....Z	4.00
49-445	5 1/4" P.M. speaker.....P	4.50
	206-445 Output transformer.....P	1.25
	208-445 Cone & voice coil.....P	1.50
49-448	5" Dynamic speaker.....N-R	4.00
	206-448 Output transformer.....N-R	1.25
	207-448 Field coil (not replaceable).....N-R	1.25
	208-448 Cone & voice coil.....N-R	1.25
49-449	5" P.M. speaker.....B	4.50
	206-449 Output transformer.....B	1.25
	208-449 Cone & voice coil.....B	1.25
49-450	6 1/2" P.M. speaker (635).....C-E-I	5.50
	206-450 Output transformer.....C-E-I	1.25
	208-450 Cone & voice coil.....C-E-I	1.50
49-451	4" P.M. speaker.....H	3.50
	206-451 Output transformer.....H	1.25
	208-451 Cone & voice coil.....H	1.00
49-453	12" Dynamic speaker.....A1	12.00
	206-453 Output transformer.....A1	2.00
	207-453 Field coil.....A1	2.75
	208-453 Cone & voice coil.....A1	3.50
49-454	5" P.M. speaker.....J	4.50
	206-454 Output transformer.....J	1.25
	208-454 Cone & voice coil.....J	1.25
49-455	6 1/2" P.M. speaker.....K	5.50
	206-455 Output transformer.....K	1.25
	208-455 Cone & voice coil.....K	1.50
49-456	5" Dynamic speaker.....O	4.00
206-456	Output transformer.....O	1.25
	207-456 Field coil (not replaceable).....O	1.25
	208-456 Cone & voice coil.....O	1.25
49-457	12" Dynamic speaker (657).....V	8.00
	206-457 Output transformer.....V	1.50
	207-457 Field coil.....V	2.75
	208-457 Cone & voice coil.....V	3.50
49-459	8" Dynamic speaker (646).....T	6.00
	206-459 Output transformer.....T	1.50
	207-459 Field coil (not replaceable).....T	2.00
	208-459 Cone & voice coil.....T	2.00
49-460	6" Dynamic speaker (632).....T-V	5.00
	206-460 Output transformer.....T-V	1.25
	207-460 Field coil (not replaceable).....T-V	1.50
	208-460 Cone & voice coil.....T-V	1.50
49-461	8" P.M. speaker (658).....C	7.50
	206-461 Output transformer.....C	1.50
	208-461 Cone & voice coil.....C	2.00
49-464	8" P.M. speaker (638).....U	8.00
	206-464 Output transformer.....U	1.50
	208-464 Cone & voice coil.....U	2.00
49-465	10" Dynamic speaker (656-687-688).....S-T	7.00
	206-465 Output transformer.....S-T	1.50
	207-465 Field coil.....S-T	1.75
	208-465 Cone & voice coil.....S-T	2.50
49-466	14" Dynamic speaker (661).....X	12.00
	206-466 Output transformer.....X	2.50
	207-466 Field coil (not replaceable).....X	4.00
	208-466 Cone & voice coil.....X	4.00
49-467	5" Dynamic speaker (683).....S	4.00
	206-467 Output transformer.....S	1.25
	207-467 Field coil (not replaceable).....S	1.25
	208-467 Cone & voice coil.....S	1.25
49-469	6" Dynamic speaker (684).....S	5.00
	206-469 Output transformer.....S	1.25
	207-469 Field coil (not replaceable).....S	1.50
	208-469 Cone & voice coil.....S	1.50
49-470	10" Dynamic speaker (682).....W	9.00
	206-470 Output transformer.....W	1.65
	207-470 Field coil.....W	2.75
	208-470 Cone & voice coil.....W	2.50
49-471	14" Dynamic speaker (670-695-696).....A2-A3	12.00
	208-471 Output transformer.....A2-A3	2.50

PARTS LIST—(Continued)

CHASSIS CODE			CHASSIS CODE			CHASSIS CODE			CHASSIS CODE		
4B02	B		5B04	I		6B02	O		7B01	V	
4B03	C		5B05	J		6B03	P		7B02	W	
4B04	D		5B06	K		6B04	Q		8B01	X	
4B05	E		5B07	L		6B05	R		10B1	Y	
5B01	F		5B13	L		6B06	S		10B2	Z	
5B02	G		5B14	M		6B08	T		12A6	A1	
5B03	H		6B01	N		6B09	U		12B1	A2	
									12B2	A3	
Part No.	Model	List Price	Part No.	Model	List Price						
	207-471 Field coil (not replaceable)		78-329	Socket—octal base tube (12SA7G).....Q	.10						
	208-471 Cone & voice coil.....A2-A3	4.00	78-333	Socket—octal base tube (35Z5G).....Q	.10						
	Diffuser cone for 49-471.....A2-A3	.40	78-343	Socket—loktal tube 1NL5.....P	.15						
49-473	6½" P.M. speaker.....D	5.50	78-344	Socket—loktal tube 1LH4.....P	.15						
	206-473 Output transformer.....D	1.25	78-346	Socket—wavemagnet plug (5 prong).....Y-Z-A2-A3	.10						
	208-473 Cone & voice coil.....D	1.50	78-347	Socket—octal tube 117Z6G.....P-B1	.10						
49-474	8" Dynamic speaker (681).....W	6.50	78-348	Socket—battery cable.....J-K-B1	.05						
	206-474 Output transformer.....W	1.65	78-349	Socket—wavemagnet plug.....T-V-W-X-A1-A2-A3	.05						
	207-474 Field coil (not replaceable)		78-351	Socket—speaker plug.....P	.05						
	208-474 Cone & voice coil.....W	2.00	78-353	Socket—pickup lead.....W-Z-A1-A2-A3	.03						
49-475	14" Dynamic speaker (685).....W	12.00	78-354	Socket—octal tube.....B-C-E-I	.10						
	206-475 Output transformer.....W	2.50	78-363	Socket—wavemagnet plug (3 prong).....S	.05						
	207-475 Field coil (not replaceable)		78-364	Socket—phono pickup.....H-L-M-S	.05						
	208-475 Cone & voice coil.....W	4.00	78-367	Socket—loktal tube (1LA6).....B1	.15						
49-479	4" Dynamic speaker (680X).....M	3.75	78-368	Socket—loktal tube (1LN5).....B1	.15						
	206-479 Output transformer.....M	1.25	78-369	Socket—loktal tube (1LH4).....B1	.15						
	207-479 Field coil (not replaceable)		78-370	Socket—loktal tube (LB4).....B1	.15						
	208-479 Cone & voice coil.....M	1.00	78-371	Socket—loktal tube.....H-L-M-P	.15						
49-480	5" Dynamic speaker.....L	4.00	78-373	Socket—octal tube (5 contact).....N-O-R-S-V	.10						
	206-480 Output transformer.....L	1.25	78-374	Socket—octal tube (6 contact).....J-K-O-P-S-A2	.10						
	207-480 Field coil (not replaceable)		78-376	Socket—octal tube (8 contact).....I-S-U-W-A1-A2-A3	.10						
	208-480 Cone & voice coil.....L	1.25	78-382	Socket—octal tube (7 contact).....E-I-U-A1-A3	.10						
49-485	5" P.M. speaker (sub. for 49-445).....P	5.00	78-383	Socket—octal tube (7 contact).....N-R	.10						
	206-485 Output transformer.....P	1.25	78-396	Socket—battery cable.....P-U	.10						
	208-485 Cone & voice coil.....P	1.25	78-397	Socket—octal base tube 3Q5G.....P	.10						
49-487	8" Dynamic speaker (647).....X	7.00	78-400	Socket—loktal tube (6 contact).....A2	.15						
	206-487 Output transformer.....X	1.50	78-401	Socket—loktal tube (8 contact).....J-K-N-O-T-V-W-A1-2-3	.15						
	207-487 Field coil (not replaceable)		78-410	Socket—loktal tube.....X-Y-Z-A1	.15						
	208-487 Cone & voice coil.....X	2.00	78-436	Socket—miniature tube 1R5.....E	.15						
49-502	14" Dynamic speaker (689).....A3	12.00	78-443	Socket—phono.....A1	.10						
	206-502 Output transformer.....A3	2.50	78-444	Socket—octal base tube (8 contact).....F-G-H-L-Q-X-Y	.10						
	207-502 Field coil (not replaceable)		78-445	Socket—octal tube (6 contact).....P-U-W-X-Y-Z	.10						
	208-502 Cone & voice coil.....A3	4.00	78-446	Socket—loktal tube (7 contact).....P	.15						
	Diffuser cone for 49-502.....A3	.40	78-447	Socket—octal tube (7 contact).....F-G-Q-T-W-Y-Z	.10						
49-503	12" Dynamic speaker (650).....A2	11.50	78-448	Socket—octal tube (5 contact).....F-G-H-L-T-V-X	.10						
	206-503 Output transformer.....A2	1.65	78-449	Socket—octal tube (7 contact).....F-G-H-L-Q-X-Y-Z	.10						
	207-503 Field coil (not replaceable)		78-456	Socket—loktal tube (7 contact).....J-K	.15						
	208-503 Cone & voice coil.....A2	3.50	78-457	Socket—loktal tube.....N-R	.15						
49-505	6" Dynamic speaker (633R-634R).....	5.00	78-461	Socket—phono plug.....W-Z-A3	.05						
206-505	Output transformer.....	1.50	80-198	Chassis mounting spring (single).....X-Y-Z-A1-2-3	.01						
	207-505 Field coil (not replaceable)		80-199	Chassis mounting spring (double).....X-Y-Z-A1-2-3	.01						
	208-505 Cone & voice coil.....	1.50	83-798	Pin jack terminal strip (on gang).....P	.15						
52-144	Speaker cable.....L	.35	83-832	Pin jack terminal strip.....B1	.15						
52-190	Speaker cable.....C-D-E-I-K	.15	83-943	Antenna ground strip.....A2-A3	.20						
54-161	Speed nut.....F-G-Q	.50C	85-171	Power switch.....U-W	.25						
5711A	Antenna lead marker.....	.02	85-234	Band selector switch.....A1	2.50						
5711G	Ground lead marker.....	.02	85-242	Power change-over switch.....B1	.60						
57-920	Radiorgan escutcheon (2 used).....E-I	.25	85-254	Power change-over switch.....J-K	.40						
57-926	Tenite escutcheon (2 used).....O	.20	85-257	Tone control switch.....N	.20						
57-944	Radio-phono escutcheon.....Z	.40	85-272	Power change-over switch.....P	.75						
58-74	Battery cable plug.....B-C-E-I	.10	85-277	Radiorgan switch.....O	1.00						
68-1	Automatic tuning adjustment wrench.....	.02	85-278	Band selector switch.....T	1.25						
70-22	#8 x 1½" R.H.W.S. (646) (chassis mounting).....T	.75C	85-279	Band switch.....E	.60						
70-52	#6 x¾" R.H.W.S. (brass).....P	.60C	85-282	Phono-radio switch.....H-L-M	.45						
70-69	#2 x¾" oval Hd. W.S. (bronze).....	.30C	85-284	Radiorgan switch (left).....E-I	.45						
70-83	#6 x½" washer Hd. W.S. (bronze) (627).....	.45C	85-288	Radiorgan switch (right).....E-I	.45						
71-8	#6/32 x¾" F.H.M.S.....A1-A2-A3	.25C	85-290	Band selector switch.....V	1.50						
72-43	#2 x¾" flat Hd. W.S. (escutcheon mounting).....U-V-W-X-Y-A2-A3	.50C	85-291	Band selector switch.....W	1.50						
72-47	#2 x½" F.H.W.S.....O	.50C	85-292	Band selector switch.....U	1.50						
72-73	#2 x¾" flat Hd. W.S. (escutcheon mounting).....Z	.50C	85-294	Band selector switch.....X	1.50						
78-128	Socket—speaker.....Misc.	.10	85-296	Band selector switch.....Y-Z	1.75						
78-141	Socket—vibrator.....D	.10	85-297	Phono-radio switch.....S	.50						
78-190	Socket—speaker plug.....U	.10	85-299	Power change-over switch (on later releases).....P	.55						
78-229	Socket—electrolytic condenser.....Misc.	.02	85-301	Band selector switch.....A3	2.50						
78-246	Socket—1A7G.....D	.10	85-302	Band selector switch.....A2	2.50						
78-247	Socket—1N5G.....D	.10	93-126	#8 Shakeproof lockwasher (handle mounting).....Q	.30C						
78-248	Socket—1H5G.....D	.10	93-168	Rubber shoulder washer.....T-W-X-A2	.05						
78-273	Socket—1Q5G.....D	.10	93-215	Rubber washer.....T-U-V-W	.05						
			93-258	Brown felt washer (629).....E-I-K-N-O-R	.65C						

PARTS LIST—(Continued)

CHASSIS	CODE
4B02	B
4B03	C
4B04	D
4B05	E
5B01	F
5B02	G
5B03	H

CHASSIS	CODE
5B04	I
5B05	J
5B06	K
5B07	Bl
5B13	L
5B14	M
6B01	N

CHASSIS	CODE
6B02	O
6B03	P
6B04	Q
6B05	R
6B06	S
6B08	T
6B09	U

CHASSIS	CODE
7B01	V
7B02	W
8B01	X
10B1	Y
10B2	Z
12A6	A1
12B1	A2
12B2	A3

Part No.	Model	List Price
93-320	Brown felt washer..... F-G-H-L-Q-S	.50C
93-392	Brown felt washer..... D-P	.01
93-475	Brown felt washer..... X-Y-Z-A1-2-3	.015
93-485	#8 finishing washer (bronze) (601D)..... P	.50C
93-486	#8 finishing washer (brass plate)..... P	.60C
93-546	Brown felt washer..... N-R	.50C
95-635	Power transformer..... D	1.75
95-710	Power transformer..... T-V	3.50
95-724	Power transformer—25 cycle..... S	9.50
95-725	Power transformer—25 cycle..... T-V	7.25
95-756	Power transformer..... W-X	4.50
95-818	Power transformer..... A1	5.00
95-828*	Power transformer..... O	3.00
*Note: No 25 cycle transformer for 6B02 chassis.		
95-833	Power transformer..... Y-Z	6.00
95-840	Power transformer..... S	3.50
95-843	Power transformer..... A2	6.00
95-853	Power transformer—25 cycle..... Y-Z	15.00
95-854	Power transformer..... A3	6.50
95-855	Power transformer—25 cycle..... A1-A3	15.00
95-856	Power transformer—25 cycle..... W-X	11.00
95-864	Power transformer—25 cycle..... A2	15.00
95-882	Power transformer..... 7B01-R only	4.00
110-96	Speaker grill cloth..... P	.25
100-97	Speaker grill cloth..... Bl	.25
112-25	1/4-20 x 7/8" Hex washer Hd. M.S. X-Y-Z-A1-2-3	.04
112-230	#6/32 x 1" ornamental Hd. M.S. (bronze)..... P	.45C
112-273	#8 x 3/4" oval B.H. sheet metal screw (bronze)..... B-F-G-I-N-R	.80C
112-283	#8/32 x 3/8" washer Hd. M.S. (handle retaining) (614)..... N-Q-R	.50C
112-290	#8 x 1" oval Phillips Hd. S.T. screw (bronze) (601D)..... P	.02
112-291	#8 x 1" oval Phillips Hd. S.T. screw (brass plate)..... P	.02
114-40	#10/32 x 7/8" Hex washer Hd. M.S. D-T-U-V-W	.60C
114-61	#10/32 x 1 1/2" Hex washer Hd. M.S. (646)..... T-W	.03
114-85	#10/32 x 1 1/8" Hex washer Hd. M.S. (682)..... W	.65C
114-128	#10 x 1 1/16" Hex washer Hd. S.T. (684)..... S-T-U-V-W	.015
114-132	#10 x 1 1/8" Hex washer Hd. S.T. (646)..... T-W	.04
114-133	#10 x 1 1/4" Hex washer Hd. S.T. (682)..... W	.02
114-134	#8/32 x 1 1/16" Hex washer Hd. S.T. screw	.01
114-142	#8 x 7/8" Hex washer Hd. S.T. screw	.01
114-143	#6/32 x 1 1/2" Hex Hd. slotted M.S. (683-684)..... S	.01
114-148	#10 x 7/8" Hex washer Hd. S.T. (683)..... S	.01
114-158	#6 x 2 1/4" Hex Hd. S.T. screw..... O	.015
114-166	#10 x 1 1/16" Hex washer Hd. S.T. (687-688)..... S	.02
125-17	Rubber grommet..... D-E-I-O	.015
126-239	Tube shield..... V-X-Y-Z	.10
126-379	Tube shield..... D-U	.05
126-382	Tube shield..... D-U	.06
149-17	Core and screw assembly..... A1	.15
156-11	Spring catch (male)..... Bl	.15

Part No.	Model	List Price
156-12	Spring catch (female)..... Bl	.15
159-14	Dial crystal retaining button..... B-I-N-R	.65C
159-20	Cinch plug button—bronze..... H-M-S	.05
159-27	Cinch plug button (646)..... T-X-A2	.10
159-29	Plug button—bronze (601D)..... P	.03
159-33	Plug button—brass plate..... P	.03
159-35	Snap button..... D	.65C
159-42	Back retaining button..... B-F-G-N-Q-R	.01
166-17	Rubber bumper (2 used)..... A1	.10
190-17	Synchronous vibrator..... D	4.95
192-53	Dial crystal..... F	.20
192-65	Dial crystal..... P	.25
192-66	Dial crystal..... B-I-N-R	.30
192-67	Dial crystal..... G-Q	.20
192-69	Dial crystal (629)..... C-E-I-K-N-O-R	.35
192-71	Dial crystal..... H-L-M-B1	.25
192-72	Dial crystal..... D	.20
192-74	Dial crystal..... S	.30
196-34	Dial crystal gasket (5D625)..... F	.01
196-49	Dial crystal gasket (627)..... G-H-L-M-Q	.02
196-50	Dial crystal gasket..... D	.02
196-51	Dial crystal gasket..... S	.03
196-56	Dial gasket 650)..... A2	.15
202-262	Instruction book..... F	.03
202-274	Instruction book..... G	.02
202-275	Instruction book..... Q	.02
202-276	Instruction book..... N	.03
202-277	Instruction book..... P	.05
202-278	Instruction book..... R	.03
202-279	Instruction book..... A1	.25
202-280	Instruction book..... T	.25
202-281	Instruction book..... B	.03
202-284	Instruction book..... J-K	.04
202-285	Instruction book..... H-M	.04
202-286	Instruction book..... D	.10
202-287	Instruction book..... V	.25
202-288	Instruction book..... O	.20
202-289	Instruction book..... Bl	.02
202-290	Instruction book..... I	.05
202-291	Instruction book..... Y	.25
202-292	Instruction book..... U	.10
202-293	Instruction book..... E	.05
202-296	Instruction book..... S	.02
202-297	Instruction book..... X	.25
202-298	Instruction book..... L	.03
202-299	Instruction book..... W	.05
202-300	Instruction book..... Z	.25
202-304	Instruction book..... A3	.30
202-313	Insrtuction book..... A2	.30
S-8365	Dial escutcheon assembly..... A1	3.50
57-828	dial escutcheon..... A1	.35
192-55	dial glass..... A1	.35
196-31	dial glass gasket..... A1	.15
S-8539	Volume control Knob assembly (46-352)..... A1	.15
S-8540	Dummy knob (46-350)..... U-A1	.20
S-9580	Dial escutcheon assembly..... T-U-V-W	2.50
57-905	dial escutcheon plate..... T-U-V-W	2.00
192-68	dial escutcheon glass..... T-U-V-W	.35
196-47	dial escutcheon glass gasket..... T-U-V-W	.15
S-9644	Dial escutcheon assembly..... A3	4.00
57-925	escutcheon plate..... A3	2.50
57-943	name plate..... A3	.60
94-378	rubber bushing..... A3	.02
126-416	escutcheon shield..... A3	.30
192-70	escutcheon glass..... A3	.40
196-48	escutcheon glass gasket..... A3	.15
S-9683	Dial escutcheon assembly..... X-Y-Z-A2	3.00
57-925	dial escutcheon plate..... X-Y-Z-A2	2.50
192-73	dial escutcheon glass..... X-Y-Z-A2	.35
196-48	escutcheon glass gasket..... X-Y-Z-A2	.15
S-10390	Dial gasket assembly (647)..... X	.20

All Price List—Subject to Regular Discount and Change Without Notice (Except those marked*).

S-2
SERVICE MANUAL
AUTOMATIC RECORD CHANGER

●

GENERAL INSTRUCTIONS
OPERATING INSTRUCTIONS
SERVICE NOTES
PARTS LIST

●

PART NO. 169-65-80-83-89

USED IN ZENITH MODELS
10S690 — 12H678 — 12H679
12H689 — 12H695 — 12H696

ZENITH RADIO CORPORATION

CHICAGO, ILL.

See separate "Operating Instruction Sheet", supplied with each changer for the customer's use. These instructions explain the correct method of loading, unloading, and playing the changer.

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I. SETTING UP RECORD CHANGER MECHANISM

Two screws are used to hold the record changer mechanism during shipping; these two screws (a, a, Fig. IV) MUST be removed so that the changer floats freely on its mounting springs. The two holes in the metal sub-panel can be covered by means of the two small matching plug buttons accompanying the machine. If the turntable has been packed separately, it will be necessary to place it over the center spindle and gently press it down, taking care that the motor idler wheel (Fig. IV, Item 66) is not damaged and being sure

that the turntable properly engages the drive pin (Fig. IV, point b).

The mounting parts, supplied with the standard Model "B" changer, are shown in their proper positions in Fig. VII. (NOTE: Some models use only the upper mounting springs and special studs.)

The changer panel assembly must float freely on the mounting springs at all times during normal playing operation.

II. GENERAL FUNCTION OF THE RECORD CHANGER

A. MANUAL PLAYBACK

With the switch knob (see Fig. IV, Item 67) in the "Manual" position, this changer is designed to operate as a single record-player and as such can be used to play individual records of any diameter up to and including 12". The turntable is equipped with a retractable pin (Fig. III, Item 60) so that it is possible to play home recordings as well. Moving the switch knob to the "Manual" position starts the turntable and locks out all of the automatic features of the record changer. The tone arm must be lifted by hand and placed on the record; after the record is played it is necessary to remove the tone arm by hand. During any of the time that the record is being played, it is possible to move the tone arm in or out on the record at will; it is also possible to play either "inside out" or "outside in" recordings.

B. AUTOMATIC OPERATION

The changer is designed to change automatically, EITHER fourteen 10" records or ten 12" records at one loading. After the changer has been properly loaded (see separate operating instruction sheet), moving the switch knob to the "Reject" position and releasing is all that is necessary to set the changer in automatic operation. The switch knob will return from the "Reject" position to the "Automatic" position of its own accord and the machine will change and play the entire loading of records without further attention. After playing all the records which have been loaded, the machine will continue to repeat the last record until it is turned off.

An individual record may be rejected by moving the switch knob to the "Reject" position and again releasing it. This may be done at any time after the needle has come to rest on a record. It is not necessary to hold the switch knob in the "Reject" posi-

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tion; merely move it to that position momentarily after which the knob will return to the "Automatic" position of its own accord.

A "Rest" position of the tone arm has been provided in order to facilitate unloading the changer (see separate operating instruction sheet). This position of the tone arm is obtained by lifting it from the record being played and moving it to the extreme outside position. The tone arm will latch into place along the outside edge of the changer sub-panel and remain there even though the switch knob is in the "Automatic" posi-

tion and the turntable still running. (NOTE: If the tone arm has played the record far enough, lifting the tone arm or moving it out will trip the automatic mechanism. Allow the mechanism to go through its change cycle and the needle to come down on the next record without hindrance after which the tone arm may be moved to the "Rest" position). If the tone arm is in the "Rest" position and the switch knob in the "Automatic" position, it is merely necessary to momentarily move the switch knob to the "Reject" position and release it in order to again set the changer into automatic operation.

III. METHOD OF OPERATION

The record changer belongs to the general classification of the mutilated gear type. This means that during the time that a record is being played the large die cast gear (see Fig. I, Item 1) and all associated mechanism is at rest.

Under the condition of manual operation, the automatic operation of the mechanism is locked out so that the trip mechanism

is inoperative and so that the tone arm is free.

Under automatic conditions, the tone arm is controlled during the change cycle by means of the various cams, acting through levers, on the large drive gear (see Fig. I, Item 1) which also synchronizes, through the drive link, the movement of the selector arms.

IV. LUBRICATION

A. MOTOR

The motor is equipped with oilless bearing and requires no lubrication.

B. TURNTABLE SPINDLE BEARINGS

Turntable spindle bearings are lubricated at the factory and do not require any lubrication for one year. After one year they should be oiled with

one or two drops of a light grade oil. Do not over-oil!

The top bearing can be oiled by lifting off the turntable. Make sure, when replacing the turntable, that the pin in the Turntable Spindle slips into the slot on the bottom surface of the turntable hub. Also, care should be taken not to damage the Motor Idler Pulley.

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Never under any circumstance allow oil to come in contact with Motor Idler Pulley.

C. SQUEAK DUE TO RECORDS RUBBING ON TURNTABLE SPINDLE

This can be eliminated by gently lining up the stack of records.

V. TONE ARM INDEXING ON 10" AND 12" RECORDS

In general the pickup indexing is accomplished by the tone arm locator lever (Fig. II, Item 31) engaging the 12" reset lever (Fig. II, Item 37). Setting the selector arms for 10" or 12" records moves the 12" reset lever so that it serves as a stop for the tone arm locator lever at either point "c" (FIG. II) for 12" records or point "d" (Fig. II) for 10" records. Since the tone arm locator lever is a single piece of metal, the distance between the 10" setting at "d" and the 12" setting at "c" is fixed; it is only necessary to properly adjust the tone arm indexing for one size record. The steps in making this adjustment are as follows:

1. With the switch knob in the "off" position, move the tone arm to the "rest" position so that its outer edge is approximately lined up with the extreme outside edge of the record changer panel.
2. Loosen the hex-head cap screw on the under side of the record changer panel (see Fig. II, Item 28) slightly.
3. Line up the outer edge of the tone arm with the outer edge of the record changer panel by eye. This is a preliminary ad-

justment to obtain approximately correct indexing.

4. Place a 12" record on the turntable, put the machine into automatic operation by pulling the switch knob to the "Reject" position and releasing it and note the point at which the needle FIRST strikes the margin of the 12" record. (The word "first" is used to indicate the fact that after the needle has touched the record, the booster spring will attempt to move the needle in toward the center. Proper setting of the tone arm indexing position is concerned only with the point at which the needle first makes contact with the record; for this reason it may be advisable to slow down the movement of the tone arm by partially holding the turntable so that the action may be more readily observed during adjustment.)
5. If the needle did not strike the record approximately an eighth of an inch in from the outside edge, move the tone arm in the desired direction a slight amount by slipping the tone arm lever (see Fig. II, Item 25) which has been previously

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loosened at the hex-head cap screw (see Fig. II, Item 28).

6. After obtaining a correct indexing of the tone arm on the 12" diameter records, check the indexing on a 10" diameter record

and tighten the hex-head cap screw firmly.

NOTE: Incorrect action of the booster spring or Tone Arm Retard Lever may produce the effect of improper tone arm indexing. (See Section VIII-B).

VI. TONE ARM ADJUSTMENTS (OTHER THAN INDEXING)

A. NEEDLE PRESSURE

The needle pressure is controlled by means of the counter-balance spring (see Fig. VI) at the rear of the arm. The spring tension has been set to provide the needle pressure necessary for correct operation of the pickup. Should it be necessary to make adjustment of this counter balance spring, it is generally advisable to contact your factory service department for the correct needle pressure; be sure to include the part number stamped on the under side of the crystal cartridge and the model number of the set. Care should be taken that the counter-balance spring does not rub against the inside of the tone arm skirt or any associated parts in such a way that it impedes or binds the free vertical movement of the tone arm. (CAUTION: It is a popular fallacy that it is possible to prolong needle and record life by reducing the needle pressure on a given pickup below those pressures recommended by the manufacturer. Any such attempt will probably increase record and needle wear as well as seriously impair the tone quality of the instrument. The correct needle pressure is a function of

the crystal and tone arm design and cannot be satisfactorily changed for a given set of component parts.)

B. TONE ARM HEIGHT ADJUSTMENTS

The Tone Arm Height Adjustment Screw (Fig. VI) controls only the height of the tone arm when it is in the playing position with no record on the turntable. The correct setting of this adjustment screw is that which, under the above condition, allows the tone arm to descend until the needle point is very slightly below the level of the turntable surface.

The Tone Arm Adjustment Screw should not be used to adjust the height to which the tone arm rises during a change cycle; this height is controlled solely by the length of the Tone Arm Lift Pin (Fig. VI).

C. TONE ARM HINGE ADJUSTMENTS

Should the tone arm hinge show evidence of binding or impeding the free vertical movement of the tone arm, it may be necessary to replace this part (Fig. III, Item 58) (as pointed out above, binding may also be due to rubbing of the counter-balance spring).

VII. "AUTOMATIC" TRIP ADJUSTMENTS

This changer incorporates a dual trip to insure positive cut-off on various types of records.

A. MINIMUM CIRCLE DIAMETER TRIP

After the tone arm has played in far enough so that the distance of the needle from the center spindle is approximately 1-7/8", the record changer will trip regardless of whether or not there is a cutoff or eccentric groove on the record. This type of trip is known as "a minimum diameter circle trip." The diameter of this minimum circle is set at the factory to be approximately 3-3/4". Variations in adjustment or readjustment of this operation can be obtained by moving the position of the trip shoe (see Fig. II, Item 29) slightly. The trip shoe is

locked in position by means of a screw when the adjustment has been satisfactorily completed. This screw must be adjusted thru a hole cut in the main drive gear, when the machine is not in a change cycle. (See point e, Fig. I.)

B. ECCENTRIC GROOVE TRIP

In order to make the trip action of the changer mechanism operate under various conditions, a second tripping device has been included which operates due to any outward movement of the tone arm after it has played to within approximately 2-1/2" of the center spindle. This trip is actuated by a small dog and ratchet combination (see Fig. II, Item 44) and is adjusted at the factory.

VIII. "BOOSTER" SPRING ADJUSTMENTS

A. BOOSTER SPRING SETTING

The function of the booster spring (Fig. II, Item 30) is to move the needle from the margin of the record into the first groove automatically. Most present day records have what is known as a "lead-in groove" which automatically carries the needle from the margin of the record into the record grooves. In the case of the older type records, and particularly those of the mechanically recorded type which have no lead-in grooves, the booster spring supplies just enough pressure to move the needle across the margin to the record grooves. This booster spring is built into the tone arm locator lever (see Fig. II, Item 31) and consists of a single piece of light spring

wire (see Fig. II, Item 30). The side pressure exerted by this spring should be just sufficient so that the needle will move across the margin of a record which contains no lead-in groove. After any adjustment of this booster spring, check its operation on both 10" and 12" records to make sure that it functions properly. Do not increase the operating pressure of the booster spring to such a point that it tends to make the needle slide across the first few record grooves. Access to the booster spring can be obtained when the tone arm is in the "Rest" position, with the switch knob turned off, by moving the tone arm locator lever assembly out toward the edge of the changer sub-panel with the finger. Adjustment of the spring tension

should be made with a pair of light pliers or with the fingers. The tension, measured at the point of contact between the booster spring (Fig. II, Item 30) and the tone arm lever (Fig. II, Item 25) is set at the factory to values between seven and fifteen grams depending upon the type of needle and cartridge used (cartridges requiring extremely light needle pressure also require a light booster spring tension.) CAUTION: The Shielded Pickup Lead Wire (Fig. II, Item 22) must have sufficient slack between the tone arm and the point where the tone arm lead enters the sub-panel to permit free sidewise movement of the tone arm; otherwise the action of the booster spring may be overcome or overemphasized. This lead must be checked before attempting any booster spring adjustments.

B. TONE ARM RETARD LEVER ADJUSTMENTS

The function of the Tone Arm Retard Lever (Fig. II, Item 49) is to provide a smooth motion of the tone arm as it moves from the outer edge of the panel in towards the edge of the record to be played, during an automatic change cycle.

An additional function of the tone arm retard lever is to prevent action of the booster spring (Fig. II, Item 30) until the needle has lowered onto the outer edge of the record to be played. Insufficient tension of the Tone Arm Retard Lever Spring (Fig. II, Item 47) will permit action of the booster spring before the needle comes to rest on the record, giving the effect of incorrect tone arm indexing. Excessive pressure of the tone arm retard lever spring will cause rough, jerky action of the tone arm as it moves from the outer edge of the changer panel.

IX. ACTION OF THE SWITCH KNOB

In general, the switch knob controls both the tone arm action and the electrical "On-Off" switch. In all positions of the switch knob, excepting the "Off" position, the electrical circuit through the switch is closed.

A. "OFF" POSITION

With the switch knob in the "Off" position, the tone arm will lock at the extreme outside edge of the changer panel. This position of the tone arm logically accompanies the "Off" position of the electrical switch in order to facilitate the loading or unloading of records either for auto-

matic or manual operation. This locked position of the tone arm results from the engagement of the tone arm latch lever (Fig. II, Item 24) with the projection on the tone arm lever (Fig. II, Item 25, Point f).

B. "MANUAL" POSITION

When the switch knob is thrown to the "Manual" position, the electrical switch circuit is closed and the tone arm is freed from its locked position due to the action of the projection on the Manual and Reject lever (Fig. II, Item 20) which partially disengages the tone arm latch at

point "f" (see Fig. II). At the same time the tone arm locator lever (Fig. II, Item 31) is held at point "g" (Fig. II) by the upper slide (for enlarged view see Fig. VIII). In this position, it is essential that the engagement between the upper slide and tone arm locator lever be positive as shown in sketch (Fig. VIII). In all other positions of the switch knob, the upper slide is held by the main control slide (Fig. II, Item 36) so that it cannot engage the tone arm locator lever at point "g." The purpose of the spring (Fig. II, Item 32, also see Fig. VIII) attached to the upper slide is to provide a means whereby the engagement at point "g" may be made should the switch knob be moved to the "Manual" position when the tone arm lever (Fig. II, Item 25) is not in the outward position. (Such an action would occur when the switch knob is moved from the "Automatic" position to the "Manual" position while a record is being played). The tone arm locator lever (Fig. II, Item 31) would then be against either the 10" or 12" indexing stop, and as the tone arm is swung into the outside rest position, the tone arm locator (Fig. II, Item 31) must be able to catch at point "g" (see Fig. VIII).

When the tone arm is in the "Rest" position and the switch knob is thrown to "Manual", it is essential that the sequence be carefully observed between the action of the latch lever (Fig. II, Item 24) and the upper slide (Fig. II, point "g"). The latter should be in a position to provide a positive stop for the tone arm locator lever BEFORE the latch lever releases the tone

arm lever (Fig. II, Item 25); otherwise the tone arm will be scraped across the turntable. Also, it is essential that the engagement at "g" be such that there is a hooking action (see Fig. VIII) at this point in order to prevent the tone arm locator (Fig. II, Item 31) and tone arm from sweeping toward the center when the switch is moved out of the manual position.

In addition to the action of the switch knob on both the tone arm latch at point "f" and tone arm locator locking at point "g" when the switch knob is moved to the "Manual" position, there is an additional action of the control lever (Fig. II, Item 36) through the Manual and Reject Lever (Fig. II, Item 20) which restrains the trip dog from acting. This latter operation results in the tone arm being freed from the automatic tripping action which occurs in all positions of the switch knob other than the "Manual" position. It is only necessary that the Manual and Reject Lever so engage the clutch engagement lever (Fig. II, Item 41) that the latter cannot drop sufficiently far to engage any of the lower projections of the pinion gear.

C. "AUTOMATIC" POSITION

With the switch knob in the "Automatic" position, the tone arm latch lever (Fig. II, Item 24) will lock the arm at point "f" (Fig. II) at any time when the tone arm is moved to the outside position. This tone arm latch is released during a change cycle through its engagement at point "h" (Fig. II) with the drive gear. As noted above

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under B, the tone arm locator (Fig. II, Item 31) and the upper slide (Fig. II, Item 36) hook together at point "g" during manual operation. When the switch knob is then thrown into "Automatic" or "Reject" position, these two parts completely disengage during the next change cycle due to the cam action of the main drive gear which forces the tone arm lever to the outer edge of the sub-panel and allows the upper slide (Fig. II, Item 36) to clear the tone arm locator lever at point "g". See also Fig. VIII.

The tone arm locator lever provides the 10" or 12" indexing for the tone arm during automatic operation by its engagement with the 12" reset lever (Fig. II, Item 37). The two levers must hook securely behind the projecting tip on the tone arm locator lever (as shown at point "c" on Fig. II) when the 12" record is being played. This is to prevent the tone arm locator lever and also the tone arm from sweeping toward the center should the 12" setting of the selector arm blade be changed to 10" while the tone arm is

playing on the outside of a 12" record. (See Section X also).

D. "REJECT" POSITION

When the switch knob is thrown to the "Reject" position, it acts through levers (Fig. II, Item 36, Item 20) and the trip lever (Fig. II, Item 44) clearing the clutch engagement lever (Fig. II, Item 41) so that it will drop down and engage one of the lower projections of the pinion gear and thus set into operation the automatic change mechanism. In the "Reject" position of the switch knob, the roller lever and roller assembly (Fig. I, Item 6) together with its spring (Fig. I, Item 9) is intended to exert a continuous pressure on the main control slide (Fig. II, Item 36) so that as soon as the switch knob is released, the latter will be returned to the "Automatic" position. Failure of the switch knob to return to the "Automatic" position when released can result from improper action at this point, as well as binding of the main control slide at various bearing surfaces.

X. "SELECTOR ARM" ADJUSTMENTS

Under all ordinary conditions it should not be necessary to make any adjustment of the selector blades themselves. Should such an adjustment become necessary it can best be accomplished by using a standard make of record of the proper diameter and of average thickness for gauging the selector blades (Fig. III, Items 54 and 55). The setting of these blades can be accomplished by means of a pair of long nosed pliers and is

correct when the blades lift slightly upon engaging a record of average thickness.

The position of the selector arm (Fig. III, Item 54) controls the tone arm indexing for 10" or 12" records through its engagement with the 12" set rod at point "k" (Fig. III). Motion of the 12" set rod is transmitted through the changer base panel to the 12" reset lever (Fig. II, Item 37). Sufficient tension is

provided through the spring (Fig. II, Item 38) to maintain a hooking action between two levers (Fig. II, Item 31 and 37) at point "p". This is to prevent the tone arm locator lever and

also the tone arm from sweeping toward the center should the 12" setting of the selector arm be changed while the tone arm is playing on the outside of a 12" record.

XI. MISCELLANEOUS MECHANICAL NOTES

A. "FEEDBACK" OR "HOWL" OR "MICROPHONISM"

1. Inspect the under side of the panel to make sure that the changer does not come into contact with any part of the cabinet at any point other than at the four corners where it rests on the mounting springs. Also check to be sure that the studs (Fig. I, Item 14) do not rub against the side of the holes of the cabinet panel.
2. A tendency toward microphonism may be due to any one or all of the four mounting springs being drawn down too tightly; loosening these mounting springs will reduce any tendency toward feedback.

It should be remembered that there is no disadvantage in any phonograph equipment which tends to become microphonic at volume control settings above those in the usable range. That is, if the set does not feed-back up to the volume control settings at which distortion appears when playing an average record, it will operate satisfactorily.

B. "RUMBLE"

1. Remove the turntable and inspect the rubber rimmed

motor idler pulley (Fig. IV, Item 66) for flat or worn spots which would tend to jar the turntable.

2. With the turntable removed, rotate the turntable spindle to be sure that it turns smoothly.

C. "WOW" OR "SPEED VARIATION"

1. Remove the turntable and rotate the turntable spindle (Fig. II, Item 40) with the fingers to determine whether it tends to bind. High friction at this point may be sufficient to cause the motor to slow down instantaneously. Apply ONLY a drop or two of light oil to the two spindle bearings. If the turntable shaft is bent to such an extent that replacement is necessary, it is recommended that the entire Spindle and Pinion Gear Assembly (Fig. II, Item 39, Also Fig. V) be replaced instead of replacing only the spindle assembly. This Spindle and Pinion Gear Assembly (see Fig. V) is fitted with precision machines at the factory, thus insuring proper clearances and smooth operation.

D. REPEATED TRIPPING

1. Turn off the changer during a change cycle so that the clutch engagement lever (Fig. II, Item 41) may be moved up and down with the finger. This clutch engagement lever should lock into the up position due to its engagement with the trip lever (Fig. II, Item 44) at the point "m". If this engagement is not positive, inspect the bearing point of the trip lever (Fig. II, Item 44) for evidences of dirt or binding. A more positive engagement may be obtained by strengthening the spring (Fig. II, Item 50). CAUTION: This spring tension must be JUST SUFFICIENT to lock the clutch engagement lever in the up position. Excessive tension of the spring will result in failure to trip.
2. Repeated tripping may also be due to the fact that the switch knob does not return to the "Automatic" position when released. This condition can result from binding of the roller lever (Fig. I, Item 6) on its bearing, insufficient tension in spring (Fig. I, Item 9), or excessive friction or binding in the motion of the control lever (Fig. II, Item 36).

E. FAILURE TO TRIP

1. Turn off the changer during a change cycle so

that the clutch engagement lever (Fig. II, Item 41) may be actuated with the finger while the trip lever is being held away, so that the engagement lever does not lock in the "up" position. The clutch engagement lever must not stick in the up position due to binding at any point. CAUTION: It is not advisable to use any lubricant at the bearing point of the clutch engagement lever (Fig. II, Item 51); this bearing is intended to be a loose fit, run dry, and operate due to gravity.

2. Excessive pressure on spring (Fig. II, Item 50) would tend to make the needle jump out of the cut-off groove of the record (see paragraph D-1 above) and prevent tripping.
3. The Shielded Pickup Lead Wire (Fig. II, Item 22) must have sufficient slack between the tone arm and the point where the tone arm lead enters the sub-panel to permit free sidewise movement of the tone arm. The Shielded Lead should be so positioned that it loosely rests near the tone arm post immediately below the point at which it leaves the tone arm bracket. Under no circumstances should the Shielded Wire be fastened in place, pulled taut, or restrict free tone arm movement. This is particularly important in

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machines which use extremely light pressure pickup cartridges.

F. INSUFFICIENT POWER TO COMPLETE A CHANGE CYCLE

1. Inspect the bearing of the main drive gear (Fig. I, Item 1) for excessive friction or binding.
2. Inspect the selector arm bearings for excessive friction or binding.

G. JAMMING OF THE MECHANISM

1. Should the changer jam at any time during a change cycle for some reason other than jamming of the selector arms with the records being changed, remove the records and attempt to free the machine by rotating the turntable in a reverse direction through a quarter turn. If the jam is apparently cleared by such action, the machine should be checked by operating it automatically several time, but with no records.
2. If the jam does not clear by rotating the turntable in a reverse direction, inspect the underside of the changer panel for damaged or missing parts.
3. Inspect the meshing of the drive gear (Fig. I,

Item 1) with the pinion gear (Fig. I, Item 11). If the two gears do not mesh (that is, if they are not so timed as to fit together properly) it is probably due to the fact that the clutch engagement lever (Fig. II, Item 41) has been damaged or bent. This clutch engagement lever is intended to so contact one of the lower projections on the pinion gear (Fig. I, Item 11) that the teeth of this pinion gear (Fig. I, Item 11) and the teeth of the main drive gear (Fig. I, Item 1) be timed to fit together properly whenever the mechanism starts a change cycle. If the clutch engagement lever (Fig. II, Item 41) is bent, it may be straightened until, by trial, the two gears mesh properly when the changer is tripped. It is advisable that the changer mechanism be operated by hand so that this timing or meshing between the two gears can be more closely observed during any adjustments or inspections.

H. TONE ARM DOES NOT INDEX CORRECTLY

Refer to Sections V and VIII, for complete information on setting of tone arm.

XII. STANDARD MODEL "B" RECORD CHANGER PARTS LIST

Particular models vary slightly from the standard model. It is suggested that

your factory service department be consulted for special parts not shown in this listing.

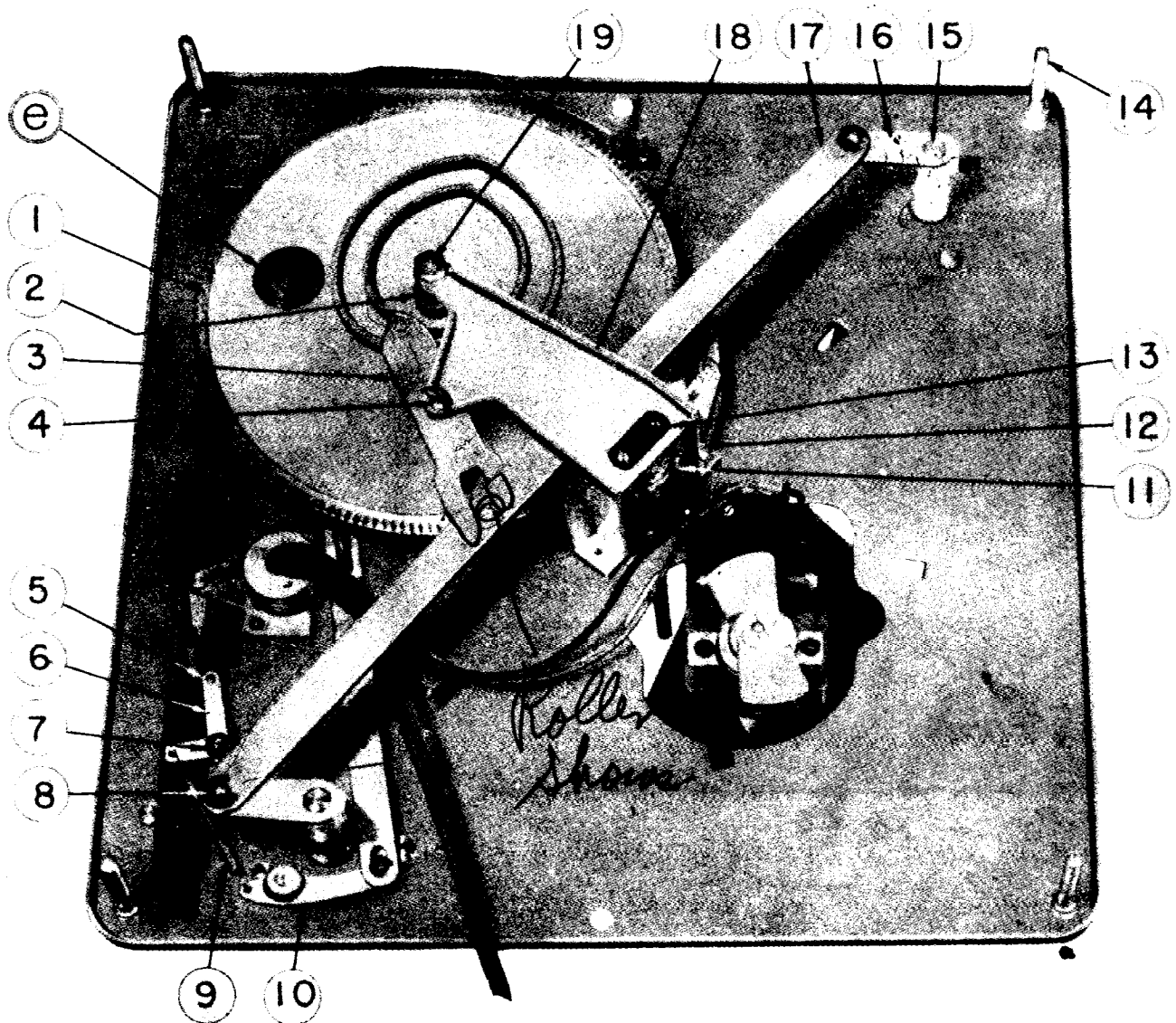
Service Manual Automatic Record Changer

NOTE: Several assemblies listed in this manual should be bought only as assemblies, since these require special tools and precision adjustment which the factory is equipped to provide, thus insuring satisfactory operation of the changer mechanism. These assemblies are as follows:

Drive Gear Assembly (Fig. I, Item 1)
Roller Lever Assembly (Fig. I, Item 6)
12" Reset Arm Assembly (Fig. I, Item 10)
Selector Shaft Assembly (Fig. I, Item 15)
Drive Crank Assembly (Fig. I, Item 16)
Tone Arm Lever Assembly (Fig. II, Item 25)

Tone Arm Locator Assembly (Fig. II, Item 31)
Switch Plate Assembly (Fig. II, Item 35)
Control Lever Assembly (Fig. II, Item 36)
Spindle and Pinion Gear Assembly (Fig. II, Item 39 and Fig. V)
Trip Lever Assembly (Fig. II, Item 44)
Selector Arm and Blade Assembly No. 1 (Fig. III, Item 54)
Selector Arm and Blade Assembly No. 2 (Fig. III, Item 55)
Tone Arm Mounting Assembly (Fig. III, Item 58 and Fig. VI)
Motor Assembly (Fig. IV, Item 63)

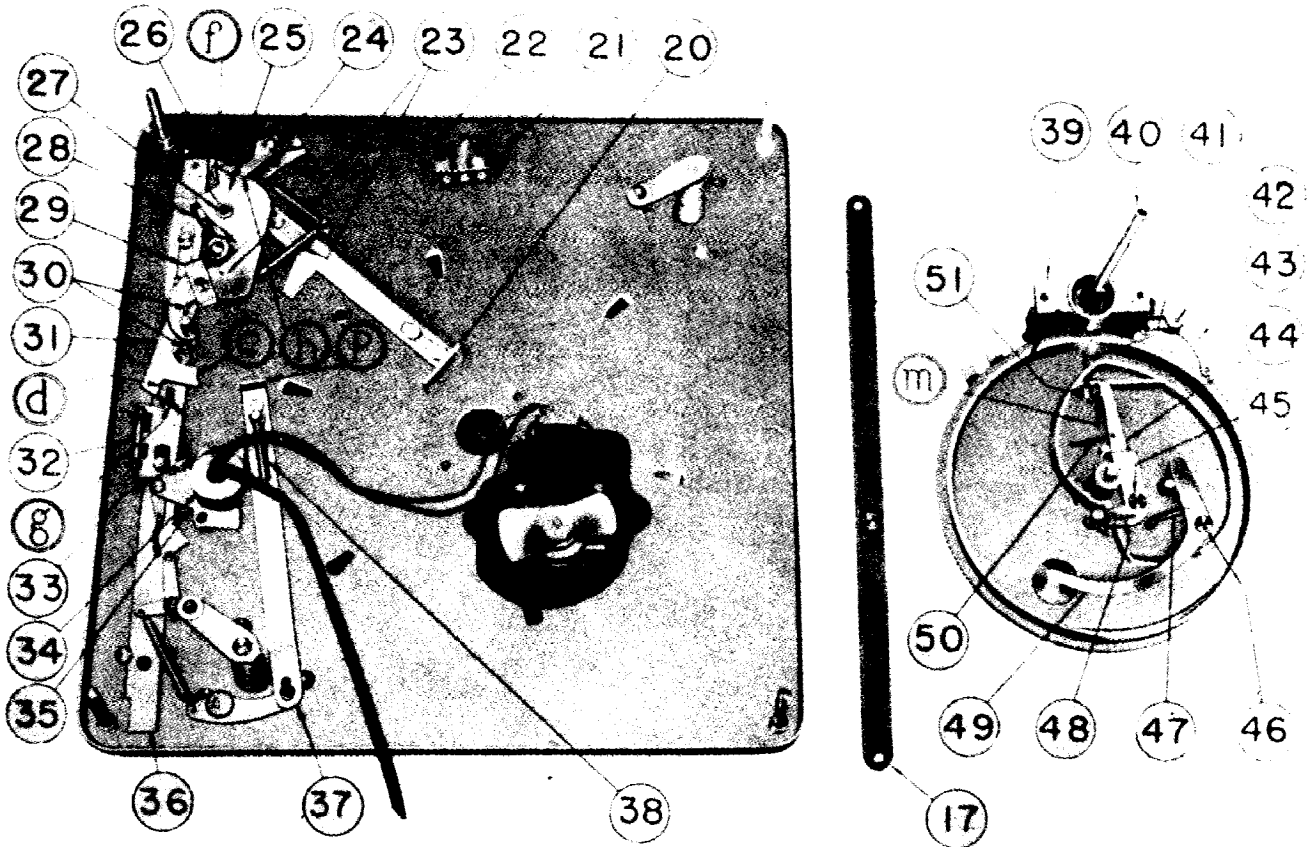
FIGURE 1 - UNDERSIDE VIEW OF CHANGER MECHANISM



ITEM NO.	PART NO.	DESCRIPTION	NO. USED
1	B-27356-A	- Drive Gear Assembly.	1
2	B-27050	- Fiber Thrust Washer.	1
3	B-27098(*)	- Cam Drive Link Assembly.	1
4	B-27053(*)	- Cam Drive Link Stud.	1
5	B-27094	- Roller	1
6	B-27349-A	- Roller Lever Assembly.	1
7	J-22021	- 1/8" Snap Washer	3
8	H-20065	- 3/16" Snap Washer.	3
9	B-27093	- Roller Lever and 12" Set Arm Spring.	1
10	B-27129-A	- 12" Reset Arm Assembly	1
11	B-27045(*)	- Pinion Gear.	1
12	B-27048(*)	- Stop Lever Spring.	1
13	J-22096(*)	- Thrust Plate	1
14	B-27085	- Panel Mounting Stud.	4
15	B-27346-A	- Selector Shaft Assembly.	2
16	B-27345-A	- Drive Crank Assembly	2
17	B-27347-A(*)	- Drive Link Assembly.	1
18	B-27131-A(*)	- Spindle Housing and Bushing Assembly	1
19	B-27049	- Drive Gear Shaft	1

(*) See Fig. V for Detail Assembly

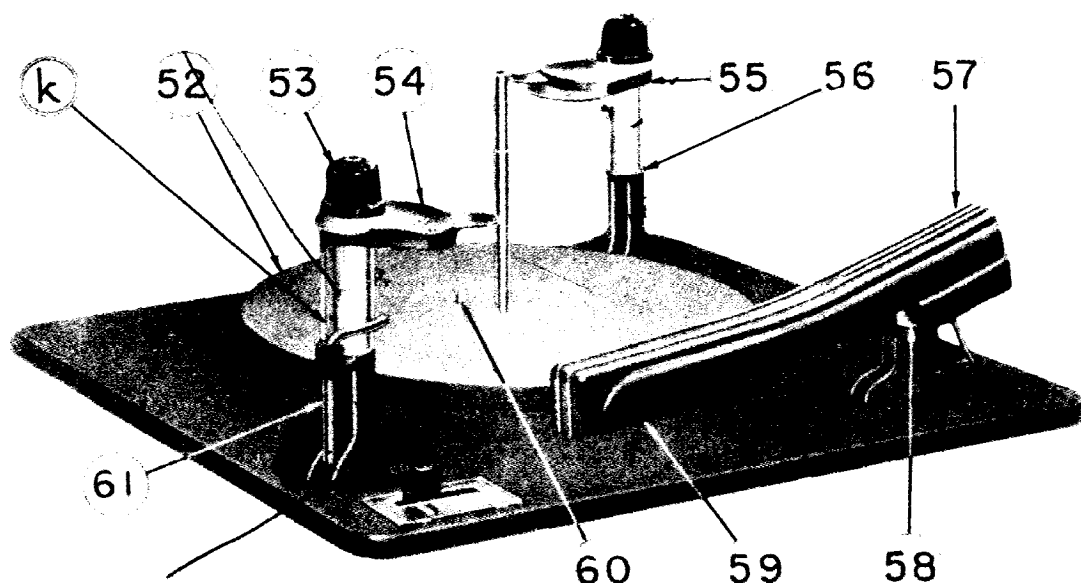
FIGURE 11 - UNDERSIDE VIEW OF CHANGER MECHANISM, DISASSEMBLED



ITEM NO.	PART NO.	DESCRIPTION	NO. USED	ITEM NO.	PART NO.	DESCRIPTION	NO. USED
20	B-27029	- Manual and Reject Lever. . .	1	37	B-27075	- 12" Reset Lever.	1
21	10069	- Terminal Strip.	1	38	J-22121	- 12" Reset Lever Spring. . .	1
22	J-22136	- Shielded Wire.	1	39	B-27130A(*)	- Spindle and Pinion Gear Assembly.	1
23	J-22094	- Tone Arm Locator (and Latch) Spring.	2	40	J-22406(*)	- Turntable Spindle Assembly. .	1
24	B-27030	- Tone Arm Latch Lever.	1	41	B-27057	- Clutch Engagement Lever. . .	1
25	B-27352-A	- Tone Arm Lever Assembly. . .	1	42	B-27047(*)	- Stop Lever Pivot Pin.	1
26	B-27028	- Connecting Link.	1	43	B-27097(*)	- Drive Gear Stop Lever Assembly.	1
27	B-27005	- Tone Arm Lift Pin.	1	44	B-27351-A	- Trip Lever Assembly.	1
28	71177	- Cap Screw 1/4"-20.	1	45	B-27060	- Trip Lever Shoulder Screw. .	1
29	B-27038	- Trip Shoe.	1	46	B-27088	- Retard Lever Shoulder Screw. .	1
30	H-20129	- Booster Spring.	1	47	B-27067	- Retard Lever Spring.	1
31	B-27353-A	- Tone Arm Locator Assembly. .	1	48	B-27065	- Trip Dog Spring.	1
32	B-27085	- Upper Slide Spring.	1	49	B-27065	- Tone Arm Retard Lever.	1
33	J-22365	- Lower Slide Spring.	1	50	B-27092	- Trip Lever Spring.	1
34	B-27026	- A.C. Switch.	1	51	B-27058	- Clutch Engagement Lever Pin. .	1
35	B-27354-A	- Switch Plate Assembly.	1				
36	B-27355-A	- Control Lever Assembly. . . .	1				

(*) See Fig. V for Detail Assembly View

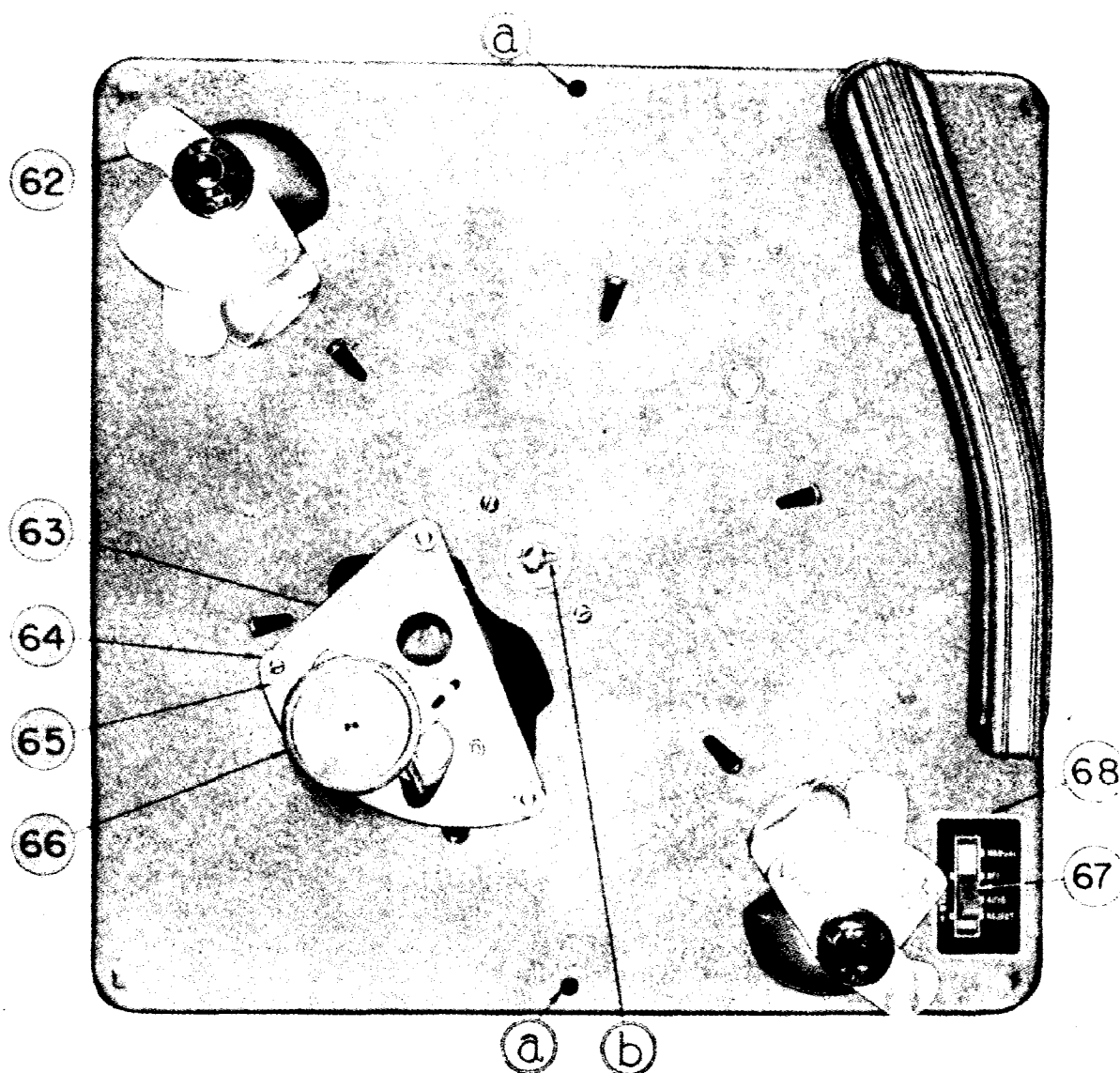
FIGURE III - TOP VIEW OF RECORD CHANGER



ITEM NO.	PART NO.	DESCRIPTION	NO. USED
52	J-22278	- Turntable.	1
53	B-27079	- Control Knob	2
54	B-27132-A	- Selector Arm and Blade Assembly No. 1.	1
55	B-27133-A	- Selector Arm and Blade Assembly No. 2.	1
56	H-20014	- Thrust Washer.	4
57	B-27507	- Tone Arm	1
58	B-27137-A(*)	- Tone Arm Mounting Assembly . . .	1
59	B-27090	- Tone Arm Cartridge	1
60		- Retractable Pin.	1
61	J-22063	- 12" Set Rod.	1

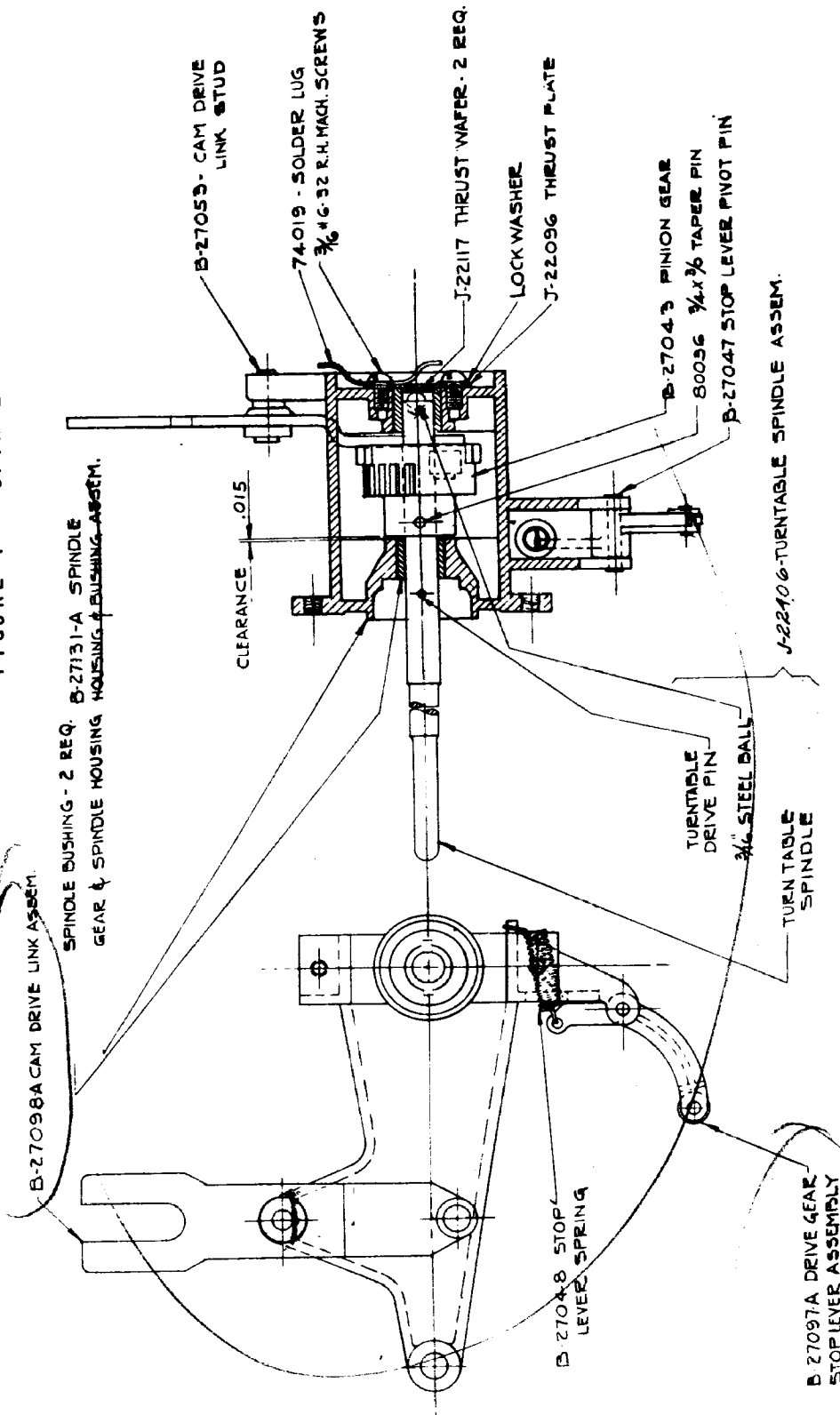
(*) See Detailed Assembly View Fig. VI

FIGURE IV - TOP VIEW OF RECORD CHANGER, DISASSEMBLED



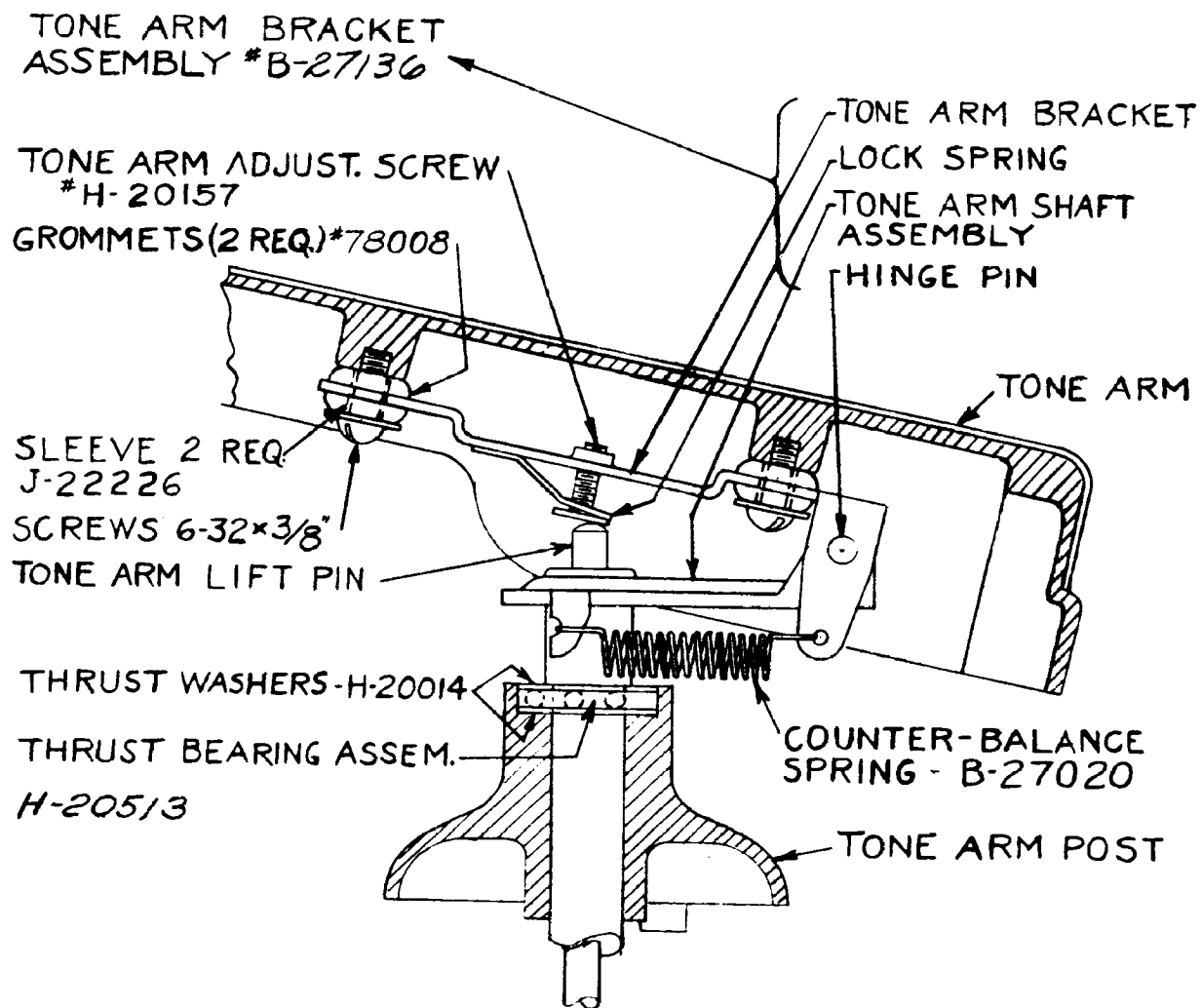
ITEM NO.	PART NO.	DESCRIPTION	NO. USED
62	I-22099	- 12" Selector Blade.	2
63	B-27110	- Motor Assembly.	1
64	J-22266	- Motor Mounting Bushings	3
65	J-22144	- Motor Grommet	3
66	J-22143	- Motor Idler Pulley.	1
67	B-27018	- Switch Control Knob	1
68	B-27074	- Control Escutcheon.	1

FIGURE V - SPINDLE AND HOUSING ASSEMBLY



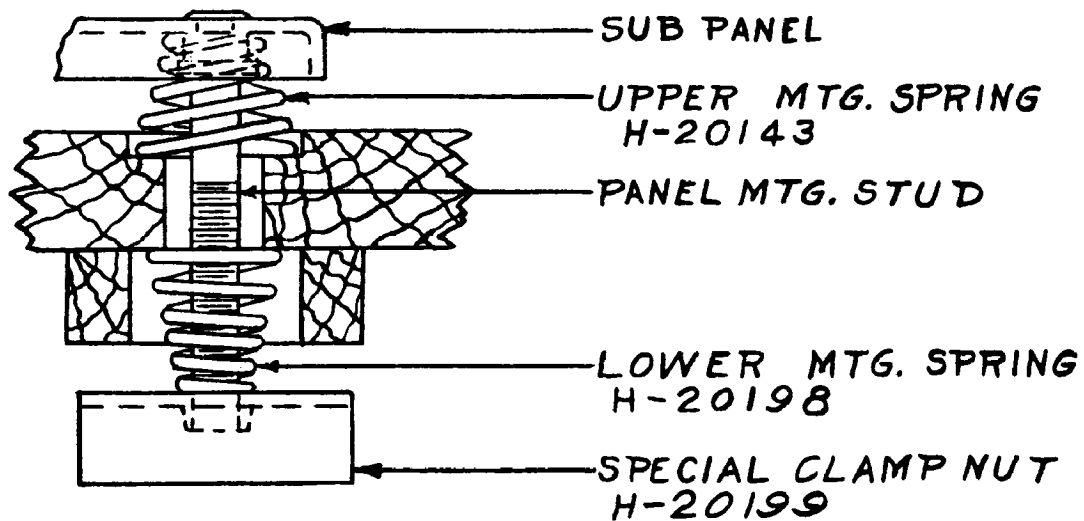
ITEM NO.	PART NO.	DESCRIPTION	NO. USED	ITEM NO.	PART NO.	DESCRIPTION	NO. USED
1	11266	- Steel Ball.	1	10	B-27048	- Spring.	1
2	74019	- Solder Lug.	1	11	B-27053	- Cam Drive Link Stud . .	1
3	80036	- Taper Pin	1	12	B-27097	- Drive Gear Stop Lever Assembly.	1
4	J-22087	- Turntable Drive Pin . .	1	13	B-27098	- Cam Drive Link Assem-bly	1
5	J-22096	- Thrust Plate.	1	14	B-27131	- Spindle Housing and Bushing Assembly. . .	1
6	J-22117	- Thrust Wafer.	2				
7	J-22148	- Turntable Spindle . .	1				
8	B-27043	- Pinion Gear	1				
9	B-27047	- Stop Lever Pivot Pin.	1				

FIGURE VI - TONE ARM MOUNTING ASSEMBLY



ITEM NO.	PART NO.	DESCRIPTION	NO. USED
1	78008	- Grommet.	2
2	H-20014	- Thrust Washer.	2
3	H-20157	- Tone Arm Adjusting Screw	1
4	H-20513	- Thrust Bearing Assembly.	1
5	J-22226	- Sleeve	2
6	B-27020	- Counter Balance Spring	1
7	B-27136	- Tone Arm Bracket Assembly.	1

FIGURE VII - MOUNTING PARTS

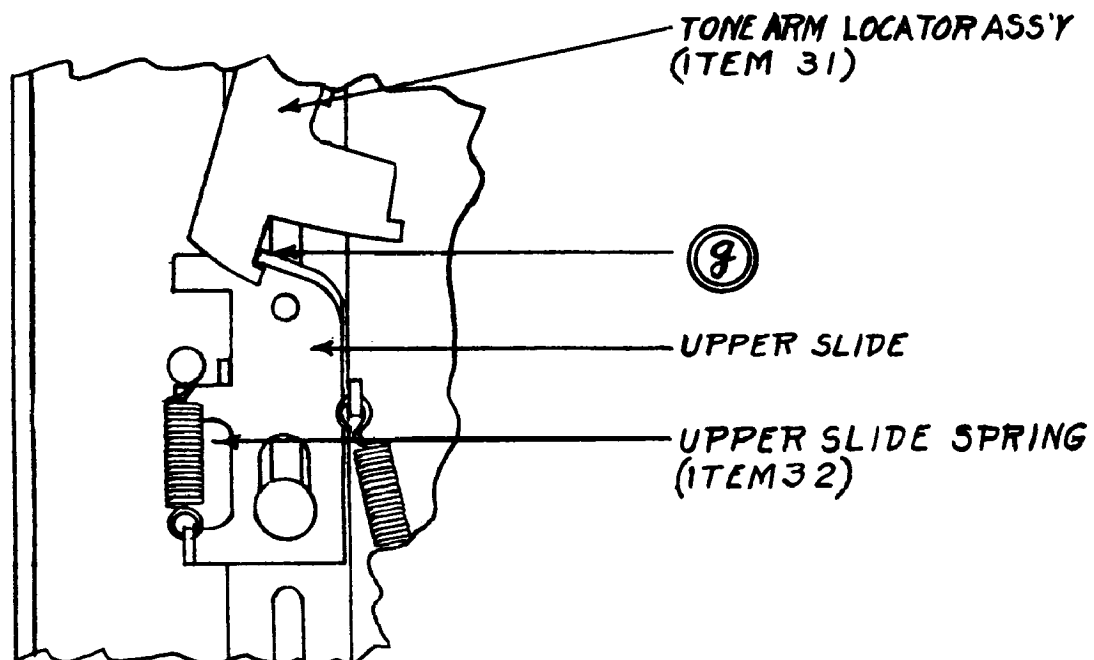


PART NO.	DESCRIPTION	NO. USED
H-20143	- Upper Mounting Spring	4
H-20198	- Lower Mounting Spring	4
H-20199	- Special Clamp Nut	4

(Panel Mounting Stud shown on Fig. I, Item 14)

(NOTE: Some models use only the Upper Mounting Spring)

FIGURE VIII - SKETCH SHOWING LOCKING OF LOCATOR LEVER IN MANUAL POSITION



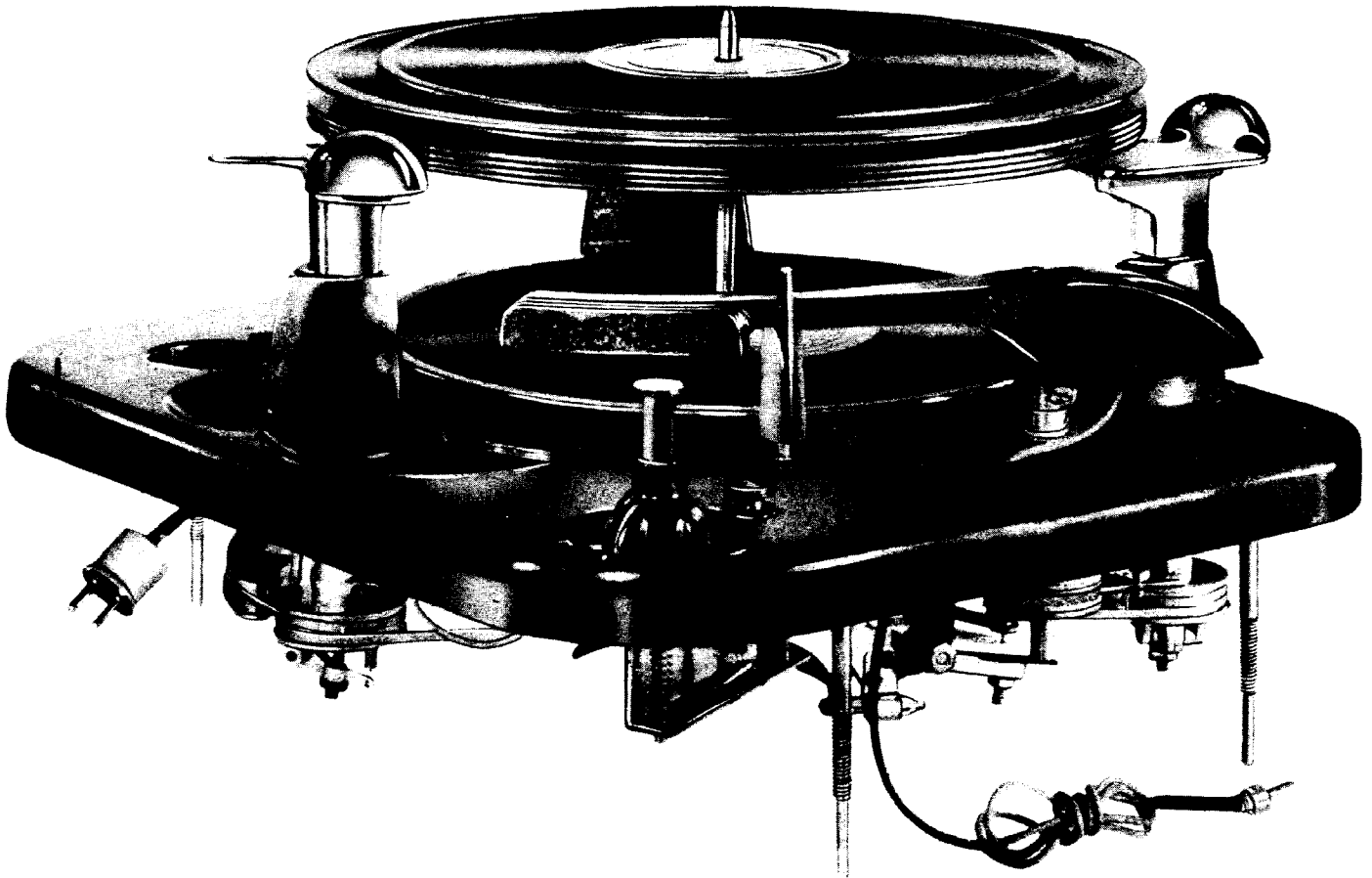


SERVICE MANUAL W-5

DELUXE AUTOMATIC RECORD CHANGER

(Patents Pending)

USED IN MODELS 22H698 AND 22H699



TO THE SERVICE MAN

This service manual has been designed for the purpose of assisting the service man as far as possible, in his work of caring for the record changer mechanism, whether he is called to remedy some difficulty which has appeared in the field or to assure its continued satisfactory operation. For his convenience, the operating instructions supplied to the user may be summarized as follows:

The deluxe record changer automatically plays sixteen 10" records or twelve 12" records at one set-up, or fourteen 10" and 12" records inter-mixed. Each of the three posts has two plates; the lower one on which the records rest is the shelf plate, the upper one is the selector plate which takes from the bottom of the stack the next record to be played

and releases it to the turntable. To load for automatic operation, see that all three shelf plates are turned down toward the turntable, then place the stack of records to be played over the turntable spindle so that they rest on the three shelf plates.

Then see that pointer on control switch is set on "A" (automatic), and press "start" button to put changer in operation. (What are here called the selector plates of the changer are commonly known among service men as "blades" or "knives", names which are best avoided when talking to the user, as they may convey an exaggerated impression of sharpness or danger in the movement of these parts.)

To reject a record (or to start a change cycle as for testing purposes), simply press the "reject" button at any

time while needle is upon a record. To play manually, turn shelf plates up, set pointer on "M" (for manual), then place a record on turntable and press "start" button to switch on motor, then place pick-up arm into position on record.

The changer can be turned off at any time by pressing down on stop button. If changer is left running, no damage will be done, as it will shut off automatically after the last record has been played.

REPLACEMENT PARTS

When ordering parts for this mechanism refer to the part number and model number of the entire mechanism, as shown on bottom view photo, in addition to the numbers and names of the parts shown in the illustrations.

ILLUSTRATIONS

The illustrations show all the vital parts of the changer. Code numbers are used to refer to parts shown in the numbered figures on the two photos, the numbered figures referred to are complete assemblies, the replacement parts list shows the complete assembly and below it are the component parts that can be supplied. Parts that are not listed cannot be separately supplied, therefore, order the assembly containing them.

OILING (reprinted from operating instructions)

The changer should be lubricated once a year with a few drops of good light machine oil at each of the following points:

Two oil wicks on motor bearings.

Turntable spindle bearings.

All other bearing points.

(CAUTION: Never oil the friction clutch at any time, as it will cause slippage.)

TO CHECK OILING

(a) If squeaks are heard, compare the squeak with and without a load of records; any stack of records in motion is likely to squeak a little against a pin through their center. This can be corrected by rubbing a little wax on the turntable spindle.

(b) "Caution": Do not oil felt washers on the two idler wheels as centrifugal force will throw the excessive oil out over the edge of idler wheel and cause loss of traction to turntable. (The purpose of the felt washer is to silence the idler

wheel operation and should not be used as an oil wick.

(c) Check the two oil wicks on the motor to see that they are thoroughly saturated.

(d) Check lubrication on turntable spindle bearings. The top bearings can be oiled by removing turntable (When replacing turntable, care should be taken not to injure rubber idler wheels.) Then oil lower bearings from below.

(e) Check lubrication at all other bearing points.

REPLACING MOTOR:

The service mechanic may be called upon to adapt the changer to a different power supply. For this purpose, or in case of any serious fault within motor, remove entire motor (Fig. 27) from the changer and replace it with a suitable new motor. See that motor frame is well grounded by wire. (In ordering a replacement motor, specify the power supply and give model number, also make and model number of phono-radio or other type of installation.)

TROUBLE SHOOTING:

Cases of failure to operate satisfactorily will generally be found due to either neglect of proper lubrication, to tampering with the mechanism after it leaves the factory, or to injuries accidentally sustained as by external vibration or by impact of some heavy object. In addition, there is always the possibility that any kind of spring may "go dead" (cease to operate without any visible breakage), even though the utmost factory precautions are taken against it -- or that set screws may work loose due to external vibration. For tightening set screws, an Allen (hexagon) wrench is required. Be sure that set screws are properly seated on the holes or flats provided. Damage from tampering is likely to take the form of bent parts. Never bend any part during examination.

Among the principal trouble symptoms to which such causes may give rise, are the following:

(1) MECHANISM IS SLOW IN STARTING, OR MOTOR GETS HOT

- (a) Check lubrication. Oil if necessary. See oiling instructions.
- (b) Check voltage. Line voltage may be abnormally low or high.
- (c) Motor windings damaged. If windings are found damaged, remove motor and return it to factory for repair or replacement.

- (2) MOTOR FAILS TO RUN, EVEN WHEN IT IS ENTIRELY DISCONNECTED FROM OTHER WIRING AND PROPER VOLTAGE IS APPLIED DIRECTLY TO THE TWO ENDS OF ITS WINDINGS

This indicates trouble in motor windings. Unless damage is easily seen and repaired, replace motor, as above described.

- (3) MOTOR IS SLOW IN STARTING

- (a) Changer may have been in a very cold place and may not yet have reached room temperature. Give it a fair chance to get warmed up before concluding that motor is defective and proceed as in Paragraph 2 above.
- (b) The changer is equipped with a constant speed self-starting motor. Under all normal conditions it starts automatically and runs at correct speed.

- (4) SQUEAKS OR OTHER NOISES, DURING PLAYING OF RECORDS

Check oiling as directed above. (If squeaks are heard, they will usually be found to come from the records - not from the mechanism.)

See "To check oiling".

- (5) CHANGER IS NOISY WHEN IN CYCLE

Check oiling. Also see if any part has become loose or bent and is rubbing against a moving part.

- (6) MOTION OF PICK-UP TOWARD TURNTABLE SPINDLE WILL NOT TRIP CHANGER MECHANISM

See that control switch pointer is not set on "M" (MANUAL).

- (7) PRESSING PUSH BUTTON DOES NOT TRIP CHANGER MECHANISM

- (a) See that control switch pointer is not set on "M" (Manual).
- (b) Check control switch assembly (Fig. 17) to see whether there is an obstruction or a bent or loose part. Also check for loose set screws in switch knob.
- (c) Follow through on action from the push button to switch latch (90) and see that every part is operating properly.

- (8) SETTING POINTER ON "M" (MANUAL) FAILS TO PUT CHANGER MECHANISM OUT OF ACTION SO AS TO ENABLE MANUAL OPERATION

- (a) Check for loose set screw in control switch knob.
- (b) Also check for loose or bent parts and be sure that manual latch (91) is holding the trip link rod to keep it from moving.

- (9) TONE ARM FALLS OFF RECORD

Needle lands too close to edge of record. Not adjusted in far enough. (Check Adjustment #1.)

- (10) TONE ARM VARIES WHEN SET DOWN ON RECORD

- (a) Check for loose clamp screw in tone arm shaft head, may be loose on the tone arm shaft (73).
- (b) Be sure that stop lever engages the eccentric adjusting cams for both 10" and 12", holding them securely until needle has landed on record. (Check Adjustment #8.)

- (11) TONE ARM LANDS TOO FAR IN OR OUT ON RECORD

- (a) Due to not measuring properly. (see paragraph 10 above.)
- (b) If tone arm lands in middle of record and unit continues cycling. (Check Adjustment #8.)

- (12) NEEDLE LANDS PROPERLY ON RECORD, BUT FAILS TO MOVE OVER INTO RECORD STARTING GROOVE

- (a) Pick-up cord may be holding arm at back end, binding its action.
- (b) Check Adjustment #8.

- (13) NEEDLE LANDS PROPERLY ON RECORD BUT SLIDES IN ON RECORD

- (a) No needle in pick-up cartridge.
- (b) Broken permanent sapphire point in LP type cartridge.

(14) TONE ARM RAISES BUT FAILS TO SWING PROPERLY

Check Adjustment #9 & #10.

(15) TONE ARM FAILS TO CLEAR STACK OF 16 - 10" RECORDS

Check Adjustment #2.

(16) TONE ARM LANDS FOR 10" RECORD EVEN ON A 12" RECORD

Check Adjustments #5 and #6.

(17) CHANGER CONTINUES CYCLING

(a) Probably no clearance between hook end on trip lever, and lug on intermediate gear (50) due to being bent. Straighten, if possible, or replace with new trip lever.

(b) See paragraph #11 above.

(18) MOTOR CONTINUES OPERATING

Mercury switch (67) (See Fig. 14) may be out of level, probably caused by cabinet that changer is mounted in standing at an angle. Adjust mercury switch (67) by slightly loosening screws (66), adjust switch bracket (68), and tighten screws.

(19) RECORD IS DRIVEN BUT NOT HEARD OR NOT HEARD WITH PROPER VOLUME

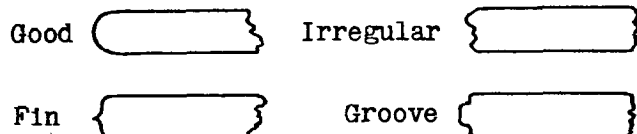
(a) See that pick-up cord is properly plugged in.

(b) Check amplifier and speaker and connections to them thoroughly.

(c) Check pick-up cartridge, and replace with new one if found to be defective.

(20) RECORD JAMS

(a) Most slicing trouble (record jams) is due to off-size or defective records, and is no fault of the record changer or record changer adjustments. Properly manufactured recordings have a uniform semi-circular edge which can be successfully handled by a record changer even though the records vary considerably in thickness.



Cross section of record edge showing a perfect record and three imperfect edges.

Records that prove troublesome in the selecting or slicing process can usually be corrected by using a piece of fine sand paper or emery cloth to round up the edges.

(b) If it is suspected that changer plates are in need of adjustment, check Adjustment #3.

(21) 12" RECORD IS NOT DROPPED BY ONE OF THE CHANGER PLATES

Check Adjustment #5.

(22) ONE OR MORE CHANGER PLATES RELEASE TWO RECORDS AT A TIME

Check Adjustment #3.

(23) RECORDS DROP UNEVENLY FROM CHANGER PLATES TO TURNTABLE

Check Adjustment #7.

(24) CHANGER FAILS TO SHUT OFF AUTOMATICALLY AFTER PLAYING LAST RECORD

Check Adjustments #4 and #9.

(25) TURNTABLE IS TIGHT

This turntable is assembled to the turntable spindle cone with a taper lock fit in the center. To remove turntable, grasp with both hands, at the same time pulling upward while it is revolving.

(26) MOTOR RUMBLE HEARD IN RECORD REPRODUCTION

(a) Shipping screw not removed from motor as instructed.

(b) Check motor leads. They may be pulled too tight, not allowing motor to float properly.

CAUTION:

If Pickup cartridge has a permanent point sapphire needle, utmost care must be taken to avoid breakage. Should the needle be broken it is necessary to replace the entire cartridge. Never attempt to remove permanent point sapphire needle from the cartridge since it is an integral part and cannot be removed without damaging the cartridge. Needles can only be replaced in cartridges having a needle screw.

Convenient Reference

Large service stations having more frequent occasion to service the Deluxe Changer, can obtain a second copy of this manual upon request to the manufacturer.

ADJUSTMENTS

Adjustments Nos. 1, 2, and 3 can be made from above. Changer need not be removed from cabinet. All adjustments are correctly made at the factory and ordinarily need never be altered. However, should it become necessary to readjust due to accident or tampering, proceed as follows:

Adjustment #1: ADJUSTING LANDING POSITION OF NEEDLE ON THE RECORD

The position at which needle lands on record can be adjusted by inserting screw driver through needle landing adjusting hole just in back of tone arm (shown in Fig. 1). For adjusting the needle landing on a 10" record, insert screw driver into slot in 10" adjusting stud. For adjusting the needle landing on a 12" record, insert screw driver into the slot in 12" adjusting stud (See Fig. 2). Turn very slightly clockwise or counter-clockwise to move needle landing in or out. The factory adjustment of the needle landing is $1/8$ " in from the outer edge of the record. (See Fig. 1).

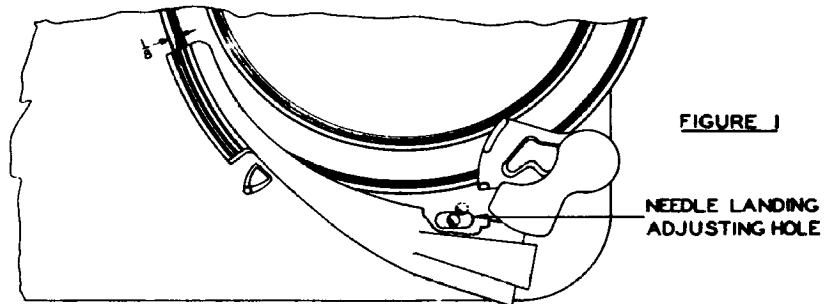


FIGURE 1

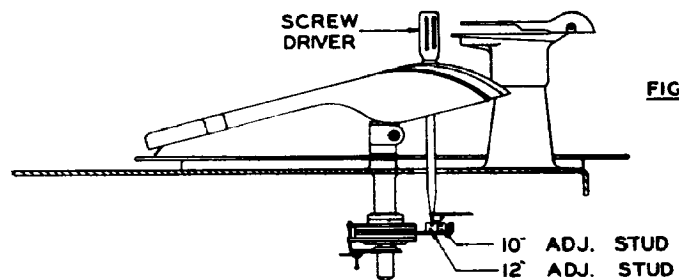


FIGURE 2

Adjustment #2: TONE ARM HEIGHT ADJUSTMENT

To adjust, insert screw driver into adjusting screw (6) through tone arm height adjusting hole in tone arm (1), shown above; to increase height to which tone arm rises, turn screw clockwise; to lower, turn counter-clockwise. The tone arm elevating pin (12) presses against this screw which should be adjusted so that the distance between the point of needle (in tone arm (1)) and the turntable is $1-3/8$ " to $1-1/2$ ", which is the equivalent of approximately sixteen 10" records.

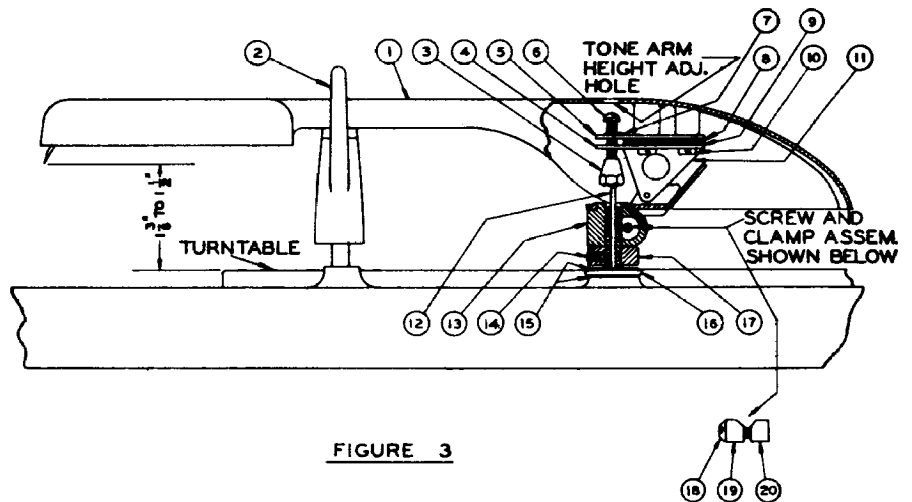


FIGURE 3

Adjustment #3: ADJUSTMENT FOR CHANGER PLATES

To adjust the distance between the selector plate (21) and the shelf plate (23) for 10" records, first select a 10" record that is approximately .070" thick. Then position it on changer and start a change cycle to revolve changer plates. Stop the turntable by hand just as the selector plate (21) is about to touch the record, and shut off the motor (See Fig. 4). Then slowly revolve the turntable by hand, allowing selector plate to contact edge of record so that it just slides over record, touching the surface lightly. Check all three selector plates, and if any adjustment is necessary, it can be done by inserting a #10 Allen wrench in the adjusting set screws (29). Turn set screw slightly clockwise to raise the selector plate and counter-clockwise to lower it. The set screws for adjusting the 10" record setting, and the 12" record setting are shown above in Fig. 5. To adjust for 12" records, select a 12" record that is approximately .090" thick, then follow same procedure as for adjusting 10" records. After correct adjustments have been made, tighten the locking collars (30) securely.

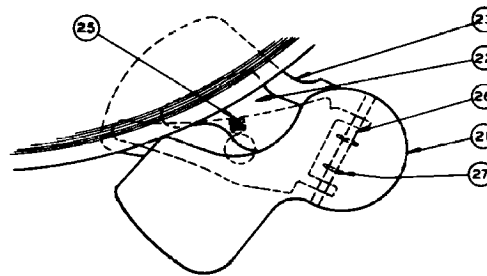


FIG. 4

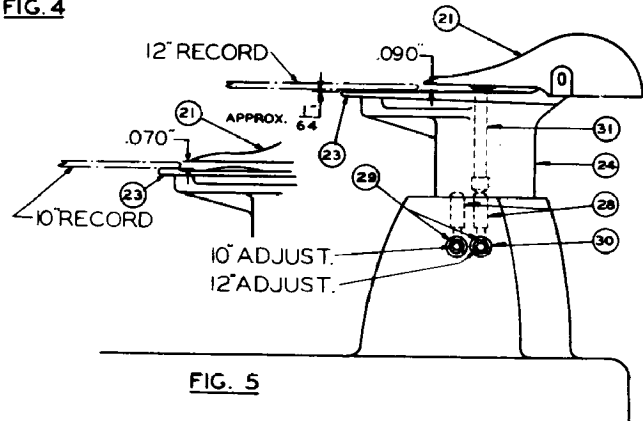


FIG. 5

The following adjustments cannot be made from above, and therefore, it may be necessary, due to position of changer, to remove it from cabinet.

Adjustment #4: NO-RECORD SELECTING LEVER ADJUSTMENT

First be sure that spring tension on spring (33) is strong enough to lift the center blade raising pin (34) properly and fully, but not so strong that one 10" record will not fully depress pin and lever (See Fig. 7). Then, with set screw loose in no-record selecting lever (32) (See Fig. 6) and pin held down by weight of one 10" record, slide no-record selecting lever (32) into position so that it will just clear under lower edge of the lower cam setting lever (79) by approximately 1/64" clearance (See Fig. 7). Then tighten set screw and check adjustment with and without a record, also be sure that without a record, the fin on no-record selecting lever (32) swings above cam setting lever (79) and portion of lever (32), indicated by arrow on Fig. 7, sweeps stop lever on cam setting lever into position shown in Fig. 15.

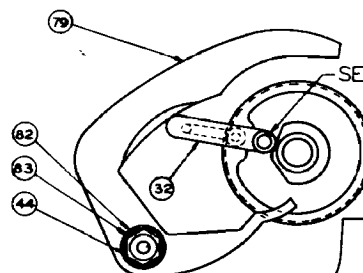


FIG. 6

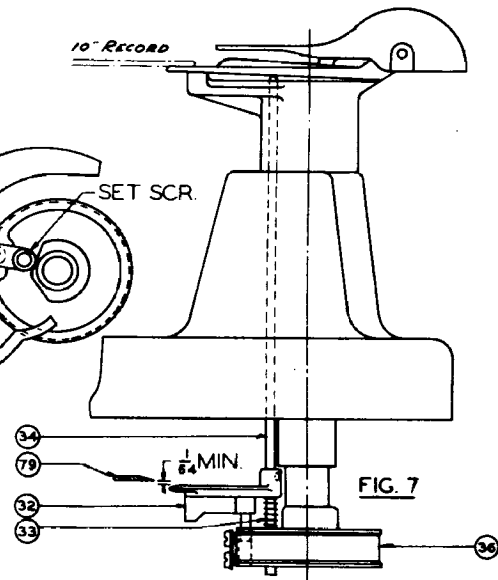


FIG. 7

Adjustment #5: LIFTER LEVER DIFFERENTIAL ADJUSTMENT

Place a 12" record over the turntable spindle so that the record rests on the center changer plate (22). Then check the center plate lifter lever (35) and see that point of this lever will just slide inside of center arm lifter cam (37). (See Fig. 8). Then place a 10" record under the 12" record so that the 10" record will rest on shelf plate (23) and the 12" record will then touch center plate (22) which presses down center pin (41) and moves lifter lever (35) closer to outside face of lifter cam (37) than it would be without the 12" record on top of the 10" record (See Fig. 10). The lifter lever (35) should then follow the outside of the center arm lifter cam (37) (See Fig. 9). If it is necessary to re-adjust, this can be done by means of adjusting screw (45) and lock nut (44) to balance out the contact of lifter lever (35) on both sides of cam (37) in relation to starting point of cam (See Fig. 10).

Adjustment #6: LIFTER LEVER CLEARANCE ADJUSTMENT

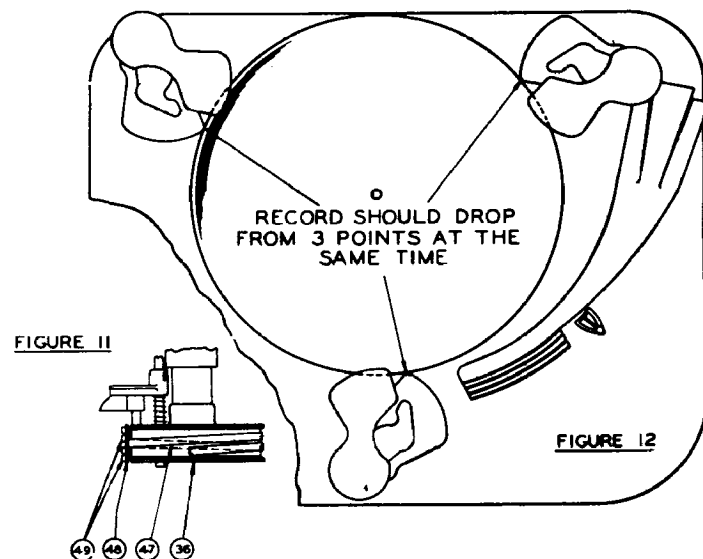
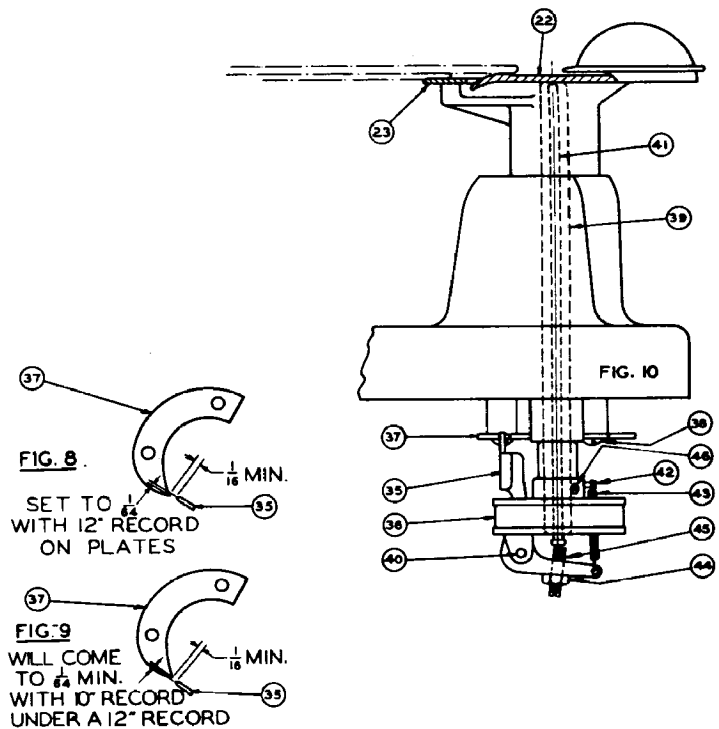
Check the distance between the leading edges of the center plate lifter lever (35) and center arm lifter cam (37) with a 12" record resting on the shelf plates. It should be a minimum of $1/16"$. (See Fig. 8). It should not be necessary to check this adjustment unless the tape clamp screws (49) on the pulley (36) have been loosened. (See Fig. 11). To re-adjust after screws have been loosened, first set pulley so that when the slack in the tape line is taken up in the direction of forward motion of the tape segment (See Fig. 25 Bottom view photo), there will be the necessary $1/16"$ minimum dimension as shown in Figs. 8 and 9.

NOTE: If this adjustment is "off", most likely changer plate synchronization will also be off. Check adjustment #7.

Adjustment #7: CHANGER PLATE SYNCHRONIZATION

The synchronization of changer plates can be checked by placing one 10" record on the shelf plates. Then start a change cycle allowing it to continue until plates are just about ready to release the record. It can then be determined which plate is either slow or fast (See Fig. 12). This plate can then be adjusted by loosening the tap clamp screws (49) on the tape clamp plate (48) which hold the tape (47) from slipping on the pulley (36) (See Fig. 11). Then slightly move changer plate whatever is necessary to synchronize it with the other two plates so that record will drop evenly. Then tighten tape clamp screws (49) securely. (Also check adjustment #6).

NOTE: Tape line (47) should have a very slight amount of slack. Check by grasping tape line with thumb and index finger and moving it in and out approximately $5/8"$ with a moderate pressure.



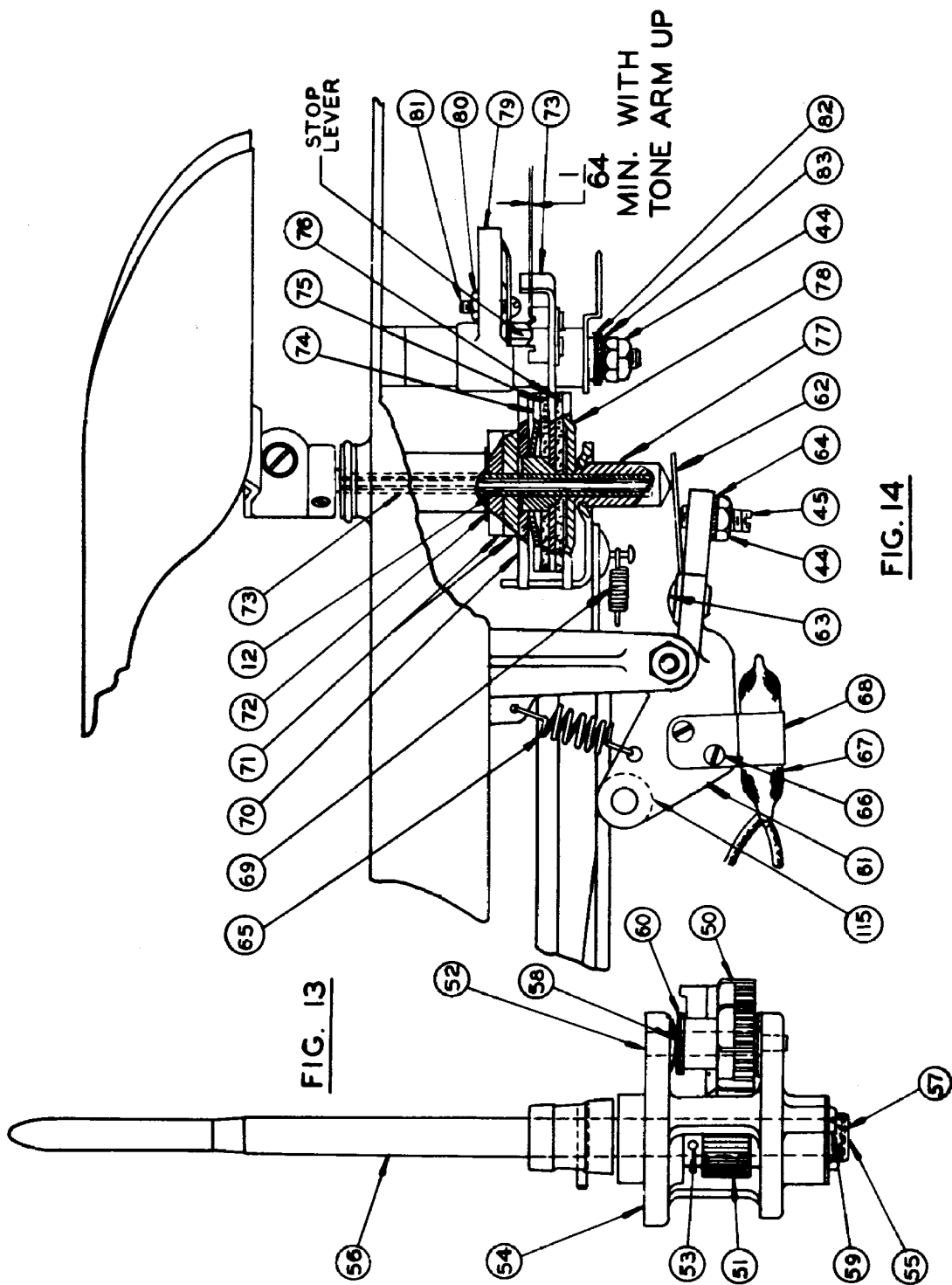


FIG. 14

FIG. 13

Adjustment #8: SETTING CAM ADJUSTMENT

First start a change cycle and release 10" record to turntable, then shut off power supply to motor when stop lever is contacting stud, on location plate (73).

Then, by means of the adjusting screw (81) set stop lever so that there will be approximately 1/64" minimum overlap on eccentric studs. If there is not enough overlap, the stop lever will slide off instead of holding onto eccentric studs, while measuring tone arm (1) landing position. If there is too much overlap, then stop lever will not release tone arm and allow it to track in on record after change cycle is completed.

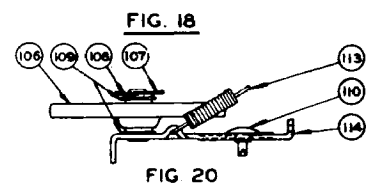
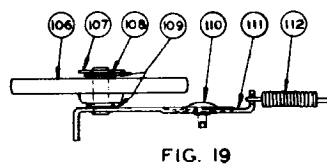
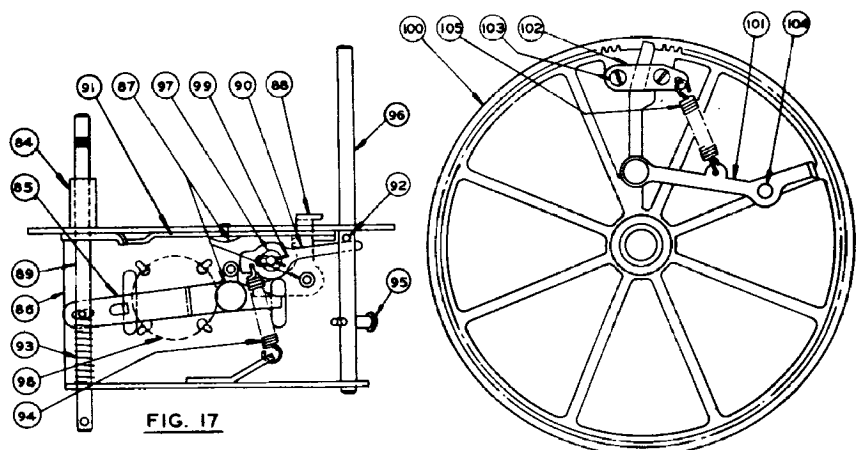
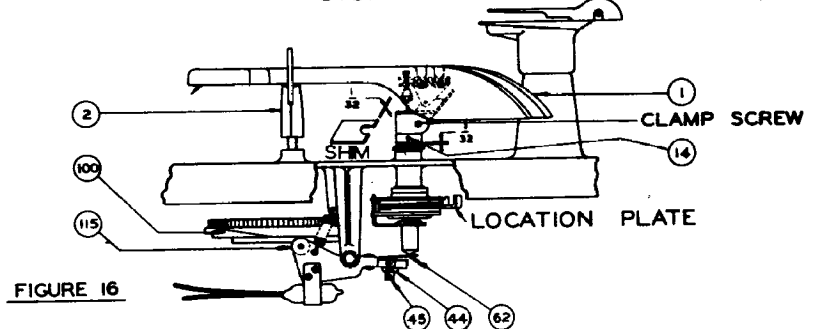
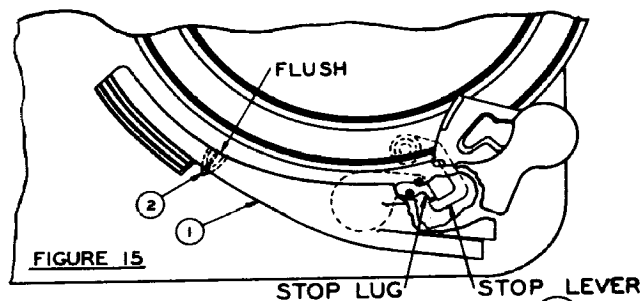
Adjustment #9: TONE ARM SWING ADJUSTMENT

First slightly loosen clamp screw on tone arm pivot assembly (See Fig. 16). Then start a change cycle and shut off power supply to motor when tone arm (1) is being held in stop position above the tone arm rest (2), and stop lever (on setting cam assembly) is contacting stop lug on locator plate (which is part of the tone arm shaft assembly (73)). (See Fig. 16). Align tone arm (1) flush with tone arm rest (2) as shown in Fig. 15, and tighten clamp screw. Then check action of tone arm and adjust needle landing as in adjustment #1, if necessary.

CAUTION: Never attempt to loosen set screw (14) except when it is necessary to disassemble clutch for replacement of parts. Be sure that vertical clearance of $1/32"$ (as shown above, between shaft collar and bearing washer) is allowed when reassembling. This is accomplished by inserting a $1/32"$ shim between the shaft collar and bearing washer. Then, with clutch assembly in high position as mentioned above, tighten set screw in collar to shaft, and remove shim.

Adjustment #10: RAISING LEVER PRESSURE ADJUSTMENT

To make this adjustment, first start a change cycle, then shut off power supply to motor when roller (115) is at the highest point on the cam gear (100), then loosen lock nut (44) and turn adjusting screw (45) under flat lifter spring (62) clockwise, until tone arm elevating pin (12) and tone arm shaft (73) (See Fig. 14) are completely raised, holding clutch assembly firmly in the high position and only slightly deflecting the flat spring (62) (See Fig. 16). Then tighten lock nut (44) securely and check operation.



Red Caution tag and
Motor shipping screw
(See Fig. 27)

Idler Wheel Assembly
(See Figs. 19 & 20)

Cutter Rest Mtg. Hole

Trip Lever
(See Fig. 14) (72)

Recorder Mtg. Holes

Changer Blade Assembly
(See Fig. 5)

Needle Landing Adj. Hole

Trip Arm Assembly
(See Fig. 24)

Tone Arm Assembly
(See Fig. 3)

Stop Button
(Fig. 21)

Start-Reject Button
(Fig. 22)

Top View

Control Post Pulley Assem.
(Figs. 7 & 10)

Setting Cam Assembly
(Fig. 14)

Clutch Assembly
(Fig. 14)

Raising Lever Assembly
(Fig. 14)

Model No. and Part No.

Control Switch Assembly
(Fig. 17)

Mounting Stud
(Fig. 28)

Tape
(Fig. 11)

Motor Assembly
(Fig. 27)

Swing Lever Assembly
(Fig. 23)

T.T.Spindle & Hsg.Assem.
(Fig. 13)

Tape Segment Assem.
(Fig. 25)

Cam Gear Assem.
(Fig. 18)

Trip Lever Latch
(Fig. 26)

Bottom View

REPLACEMENT PARTS LIST

Loc. No.	Part No.	Part Name	Loc. No.	Part No.	Part Name
<u>Fig. 3</u>			<u>Fig. 10--Continued</u>		
1		Tone arm assembly(give Model No.) Pickup cord (give model No.)	46	26A087	8-32x1/4 Cone point - Allen socket, headless set screw
2	12A907	Tone arm rest		26A156	8-32x1/4 cup point - Allen socket, headless set screw
3	12A966	Tone arm adj. screw nut	<u>Fig. 11</u>		
4	12A920	Tone arm blank	47	12A675	Tape
5	12A919	Tone arm blank	48	12A676	Tape clamp
6	26A229	Adjusting screw	49	26A093	Tape clamp screws
7	12A984	Tone arm spring		#5	Internal tooth lockwasher
8	12A922	Tone arm spacer	<u>Fig. 13</u>		
9	12A921	Tone arm spacer	11A913		T.T. spindle & housing <u>assembly</u>
10	26A021	Screw	50	11A912	Intermediate gear
11	12A923	Tone arm bracket	51	12A558	Drive pinion gear
12	12A909	Tone arm elevating pin	52	12A561	Idler gear shaft
13	12A918	Tone arm pivot assembly	53	12A832	Drive pinion pin
14	26A008	8-32x.218 Headless set screw	54	17A217	T.T. spindle housing
15	12A692	Bearing race washer	55	17A213	Spindle housing end cap
16	11A781	Bearing assembly	56	17A223	T.T. spindle and cone assembly
17	11A919	Tone arm shaft collar assembly	57	17A1355	Thrust disc
18	26A079	6-32x1/2" R.H.M.S.	58	25A048	Intermediate gear thrust washer
19	12A625	Swivel head clamp sleeve	59	26A176	4-36x1/4 B.H.M.S.
20	12A631	Swivel head clamp	60	25A064	Fish paper washer
	26A054	4-40x5/16" R.H.S.T. screw		26A098	8-32x3/8 fil. H.M.S. for mounting
	M93	Plug (cinch)	<u>Fig. 14</u>		
	21A128	Cartridge support	11A898		Raising lever assembly
<u>Fig. 5</u>			61	11A897	Raising lever & bushing assembly
	11A894	Changer plate assembly	115	12A060	Cam roller
21	12B846	Upper changer plate		12A669	Cam roller stud
22	12B847	Center changer plate	62	12A859	Raising lever flat spring
23	12B848	Lower changer plate	44	26A077	10-32 hex nut
24	12B603	Changer plate bracket	45	26A085	10-32x5/8" headless set screw
25	26A087	8-32x1/4 Headless set screw	63		R-3311x5/16" Rivet
26	12A658	Plate hinge pin	64	#1110	Shakeproof lock washer
27	50A030	Spring clip	65	12A916	Raising lever spring
28	12A663	Adjusting pin	66	26A049	4-40x3/16" B.H.S.T. screw
29	26A090	Adj. set screw	67	32A026	Mercury switch
30	26A382	Adj. set screw lock nut	68	12A987	Mercury switch bracket
31	12A906	Lifter pin		26A062	Raising lever trunnion screw
<u>Fig. 7</u>				26A077	10-32 hex nut
	11B916	Control post pulley assembly	#10		Kantlink lockwasher
32	12A674	No-record selecting lever	<u>Fig. 14</u>		
33	12A668	Selecting lever spring	Clutch Assembly		
34	12A905	No-record raising pin	69	12A703	Lead-in spring
	26A011	8-32x3/16" headless set screw	70	12A815	Tone arm top friction disc
<u>Fig. 10</u>			71	25A058	Clutch washer
35	11A759	Center blade lifter assembly	72	12A803	Trip lever
36	12B607	Post pulley	12	12A909	Tone arm elev. pin
37	12A661	Center blade lifter cam	73	11A902	Tone arm shaft assembly
38	26A127	8-32x3/8" R.H.S.T. P.K. mounting screw	74	12A807	Trip & replace lever
39	12A665	Blade post stem	75	12A685	Cork friction disc (large)
40	12A667	Blade pivot pin			
41	12A672	Center blade raising pin			
42	12A673	Lifter spring pin			
43	12A700	Center blade lifter spring			
44	26A077	10-32 hex nut			
45	26A085	10-32x5/8" headless set screw			

REPLACEMENT PARTS LIST--Continued

Loc. No.	Part No.	Part Name	Loc. No.	Part No.	Part Name
<u>Fig. 14--Continued</u>			<u>Fig. 21</u>		
76	12A636	Cork friction disc (small)	12A908		Stop button
77	11A904	Swing lever assembly	11A917		Stop spring & pin assembly
78	12A813	Tone arm bottom friction cup	26A020		6-32x1/4 B.H.S.T. screw
<u>Fig. 14</u>			26A210		6-32x3/16 R.H.S.T. P.K. screw
<u>Fig. 17</u>			<u>Fig. 22</u>		
	11A900	Setting cam assembly	12A613		Start & reject push button
79	11A899	Setting cam bushing & lever assembly	26A155		Switch knob (give model no.)
80	12A078	6-32 hex nut			8-32x3/8 Headless set screw
81	26A079	6-32x1/2" R.H.M.S.	<u>Fig. 23</u>		
82	25A057	Washer	77	11A904	Swing lever assembly
83	25A048	Spring washer		11A903	Clutch lever assembly
44	26A077	10-32 Hex nut		12A576	Rivet
<u>Fig. 18</u>				12A812	Swing lever
	11B896	Control switch assembly		12A837	Cam pin
84	11A746	Manual arm assembly		12A852	Tone arm swing link
85	11A748	Switch lever assembly		27A006	Shoulder rivet
86	11A824	Switch base & spring brkt. assembly		27A007	Shoulder rivet
87	12A066	Shoulder rivet		12A060	Lift roller
88	12A618	Trip kick lever		12A915	Swing lever spring
89	12A620	Push button stem	<u>Fig. 24</u>		
90	12A621	Switch latch		11A914	Trip arm assembly
91	12A623	Manual latch		12A1028	Trip link
92	12A681	Cam pin		12A751	Trip arm spring
93	12A701	Push button stem spring		25A014	Washer - brass
94	12A720	Spring		50A034	Spring clip
95	12A835	Switch cam roller	<u>Fig. 25</u>		
	12A836	Switch cam roller pin		11B753	Tape segment assembly
96	12A886	Tone arm rest shaft		11B785	Tape segment & bushing assembly
97	25A026	Trigger spacer		12A060	Cam roller
98	32A002	AC Switch		26A056	Cam roller stud
99	50A034	Spring clip		26A020	6-32x1/4 screw
	32A3244	AC switch cover		12A547	Retainer washer
	26A127	8-32x3/8" R.H.S.T. P.K. Mounting screw		26A108	Tape segment screw
	26A129	8-32x1/4" R.H.S.T. P.K. Mounting screw		25A024	Washer
<u>Fig. 19</u>				26A027	1/4-20 hex nut
	11A906	Cam gear assembly	<u>Fig. 26</u>		
100	11A905	Cam gear & bushing assembly		12A814	Trip lever latch
101	11A921	Cam latch & trigger assembly		12A1028	Trip link
102	12A656	Latch plate		26A209	Shoulder screw
103	26A029	Latch plate screw	<u>Fig. 27</u>		
104	12A660	Swivel pin	<u>Motor Assembly (give Model No.)</u>		
105	12A700	Spring		25A032	Grommet
	25A024	Washer		25A2519	Grommet washer
	26A027	1/4-20 Hex nut		17A240	Grommet sleeve
<u>Fig. 20</u>				26A220	Motor mounting screw 10-32 xl-1/8 R.H.M.S.
	Idler Wheel Assembly			26A364	Shipping screw
106	17A1769	Idler wheel assembly		78A046	Caution tag
107	17A1363	Spring clip	<u>Fig. 28</u>		
108	25A030	Felt washer	<u>Mounting hardware</u>		
109	25A046	Fish paper washer		12A1016	Mounting stud
110	27A003	Shoulder rivet		12A695	Mounting spring
111	11A833	Idler wheel link & stud assembly		26A027	Mounting nuts
112	12A750	Spring	<u>Main mtg. plate assem. (give Model No.)</u>		
<u>Fig. 20</u>			<u>Turntable assembly (give Model No.)</u>		
113	12A720	Spring		17A047	Turntable spring
114	11A857	Idler wheel link & stud assembly		17A075	Retractable pin
				26A351	#0x1/8" P.K. type "U" drive screw

SERVICE MANUAL

Built for
FORD MOTOR CO.
Detroit, Mich.



Model
6MF690

Made by **ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.**

Electrical Specifications

TUNING RANGE:540-1600 Kc.

INTERMEDIATE FREQUENCY:265 Kc.

SENSITIVITY:3 microvolts at one
watt output.

POWER OUTPUT:5.5 watts measured
at the voice coil.

SPEAKER:6" x 9" oval, instrument
panel mounting.

CURRENT CONSUMPTION: ..7.5 amperes

INSTANTANEOUS CURRENT CON-
SUMPTION DURING AUTOMATIC
CHANGE CYCLE:16.5 amperes

TUBE COMPLEMENT:7A7 R.F.,
7B8 converter, 7A7 I.F., 7B6 Detector
and 1st Audio, 7C5 Power Output, 7Y4
Rectifier.

MR. WARRANTY SERVICE MAN:

The following information has been compiled so that you may service or repair the 1942 Ford receiver with the least amount of time and effort. Read this manual thoroughly and study the contents carefully before attempting any adjustments to restore original performance to the receiver.

Note: Add approximately 10% to the list prices contained herein as per our change notice of September 29, 1941.

IMPORTANT

The Warranty tag must be filled in by the dealer and accompany each receiver when free warranty service is expected by the customer or dealer. Otherwise you are not authorized to do warranty service work.

D A T A

Receiver and Speaker Installation.....see Figures 1 and 2
Motornoise Suppressionsee Figures 3, 4, 5 and 6
Socket Voltagessee Figure 8
Tube Layoutsee Figure 7
Trimmer Locationssee Figures 7 and 8
Schematic Diagram including Coil Resistance Values.....see Page 265

RECEIVER INSTALLATION:

Figures 1 and 2, illustrating the escutcheon plate, control knobs and the installed receiver are given here to facilitate removal and reinstallation of the receiver when service or repairs are necessary.

Remove the Link "B" and loosen the hook bolts "D" to remove the receiver from the car.

NOTE: To set up a station on any automatic position, pull the tuning knob out and tune the receiver as in manual tuning. Press the tuning knob in to its original position after the station has been accurately tuned in.

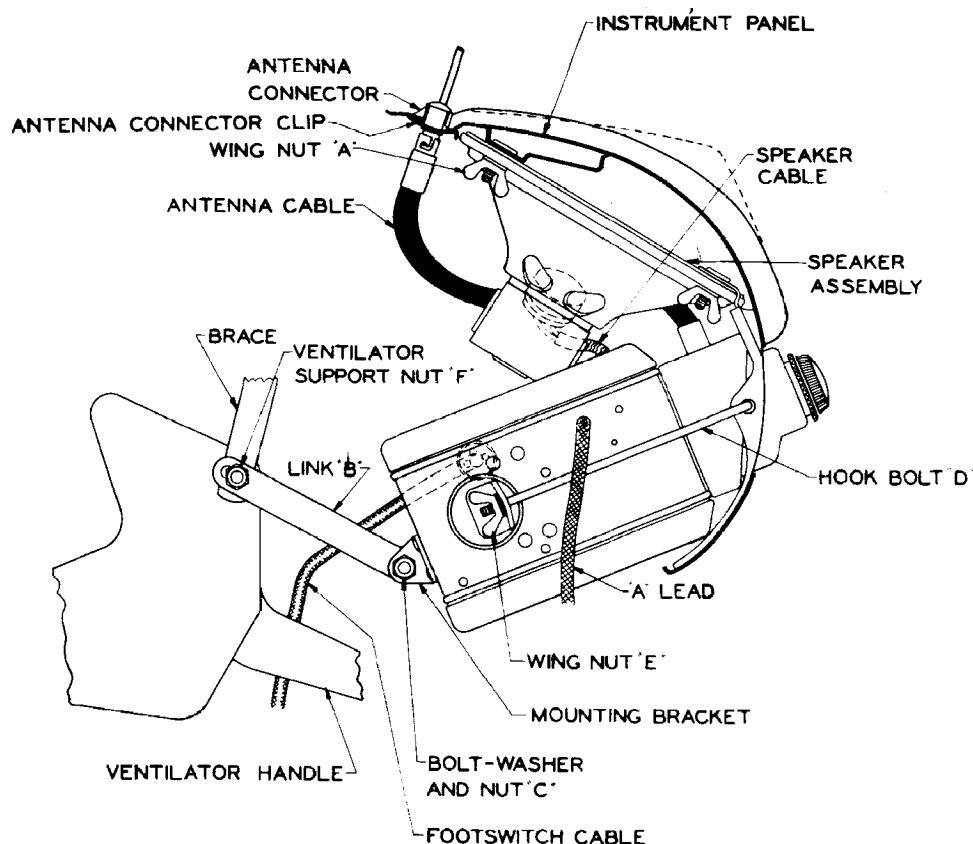


FIG. 1

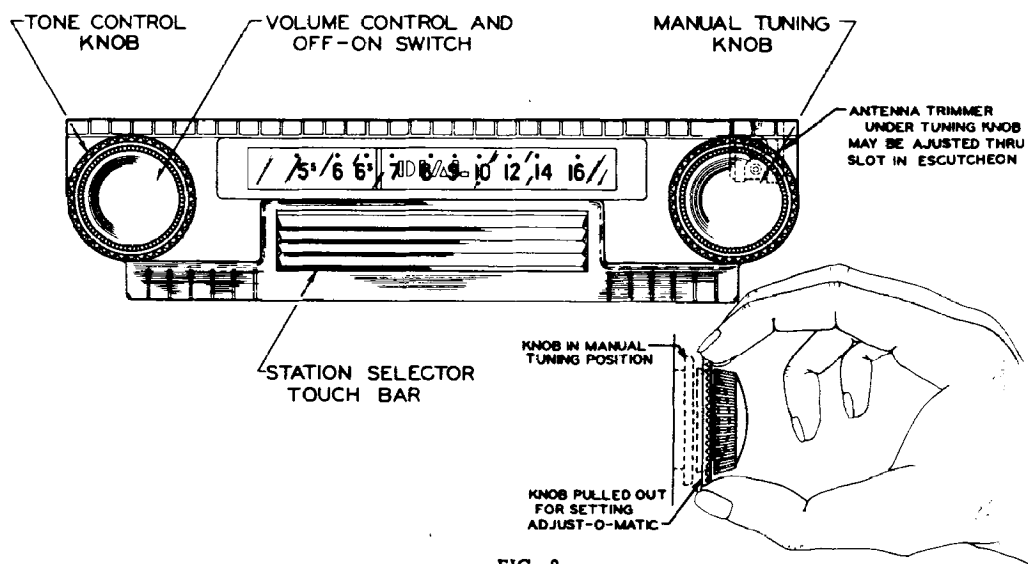


FIG. 2

DELAYED AUTOMATIC MUTING CIRCUIT

Pressing either the Touch-bar or the foot control switch automatically mutes the receiver for the duration of the change cycle. This action is accomplished by applying 6 volts negative to the 7B6 first audio grid through the 1 megohm resistor R-25. (See schematic diagram.) This negative voltage blocks the grid of the 7B6 until the voltage bleeds off through the 15 megohm resistor R-12, when the receiver will again operate normally. **NOTE:** The storage battery in the car must be properly polarized to apply the negative muting voltage to the receiver. If the battery polarity is reversed the receiver will not mute and it may become distorted during the change cycle. Always connect the positive (+) terminal of the storage battery or power supply to the receiver case when checking the receiver.

INTERFERENCE SUPPRESSION

There should be no motornoise or interferences from the ignition circuit, if the receiver has been installed in the car according to the instructions furnished with it. The interference suppression equipment may be checked for proper installation by referring to the following illustrations:

The circuit breaker condenser No. 22-1148 should be installed as shown in Figure 3.

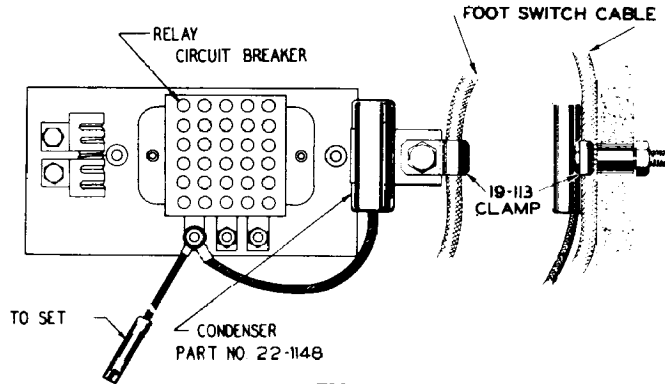


FIG. 3

The voltage regulator condenser No. 22-1148 and the ground strap No. S-9343 should be installed as shown in Figure 4 below.

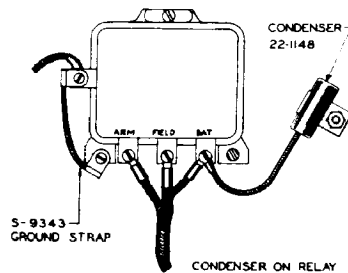


FIG. 4

The distributor primary condenser No. 22-1326 and suppressor with rubber nipple No. S-10408 should be installed as shown above in Figure 5.

The oil gauge condenser No. 22-1326 should be installed as shown in Figure 6.

Note the different locations for 6 and 8 cylinder cars.

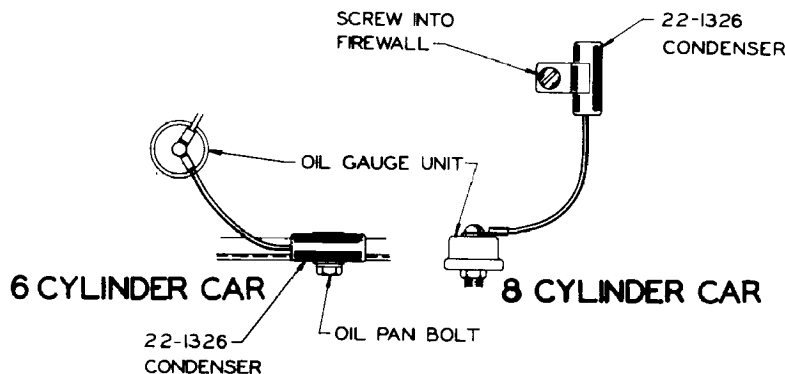


FIG. 6

Check the inside windshield divider trim strip, the antenna connector, and all the instrument panel bolts so they make a good ground contact with the body.

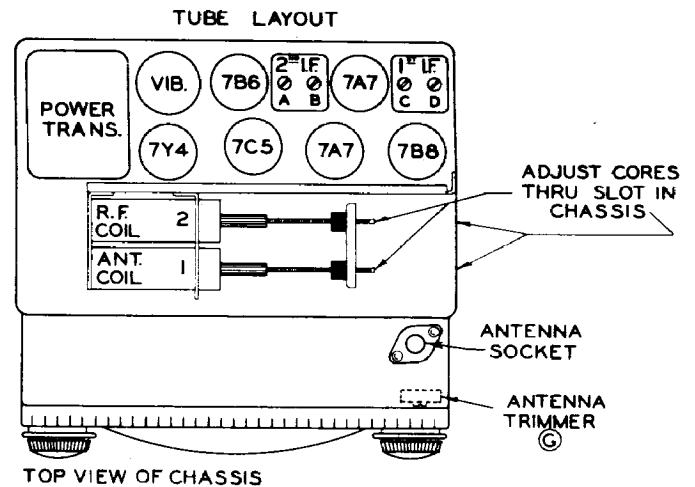


FIG. 7

ALIGNMENT

Maximum performance is dependent upon the accurate alignment of the receiver, so follow the alignment instructions carefully.

CAUTION: Make all alignment adjustments to the receiver with the volume control turned full on. Reduce the signal intensity, if necessary, at the signal generator. Connect the output meter across the voice coil.

I.F. ALIGNMENT PROCEDURE

- 1—Remove the top and bottom covers from the receiver.
- 2—Place the receiver in the Manual tuning position and set the pointer at the low frequency end of the dial. (540 Kc.)
- 3—Set the signal generator at 265 Kc.
- 4—Apply the signal from the generator through a .1 mfd. dummy to the 7B8 converter grid.
- 5—Adjust trimmers A-B-C and D (Fig. 7) for maximum output. Repeat the operation to assure accurate alignment.

R. F. AND OSCILLATOR ALIGNMENT

- 1—Set the signal generator at 1640 Kc.
- 2—Connect the signal generator leads, through the dummy as illustrated in Figure 9, to the antenna receptacle on the receiver.
- 3—Set the receiver dial at 1640 Kc. (Maximum high frequency end of dial.)
- 4—Screw the cores completely out of the antenna, R.F. and oscillator coils.
- 5—Set the oscillator trimmer (F—Fig. 8) at 1640 Kc.
- 6—Peak the R.F. and antenna trimmers (G and H—Fig. 8) for maximum output reading.
- 7—Replace the cores to their approximate original positions in the antenna, R.F. and oscillator coils.
- 8—Set the generator and the receiver dial at 1200 Kc.
- 9—Adjust the oscillator core (6—Fig. 8) to scale at 1200 Kc.
- 10—Adjust the antenna and R.F. cores (1 and 2—Fig. 7) for maximum output reading.
- 11—Set the signal generator at 600 Kc.
- 12—"Rock in" the Shunt oscillator core (4—Fig. 8) for maximum output reading. (Same as rocking in the padder condenser on a ganged condenser receiver.)
- 13—Check the receiver at 1200 Kc. for calibration and gain. If the receiver is off scale or weak, repeat operations 9 and 10.

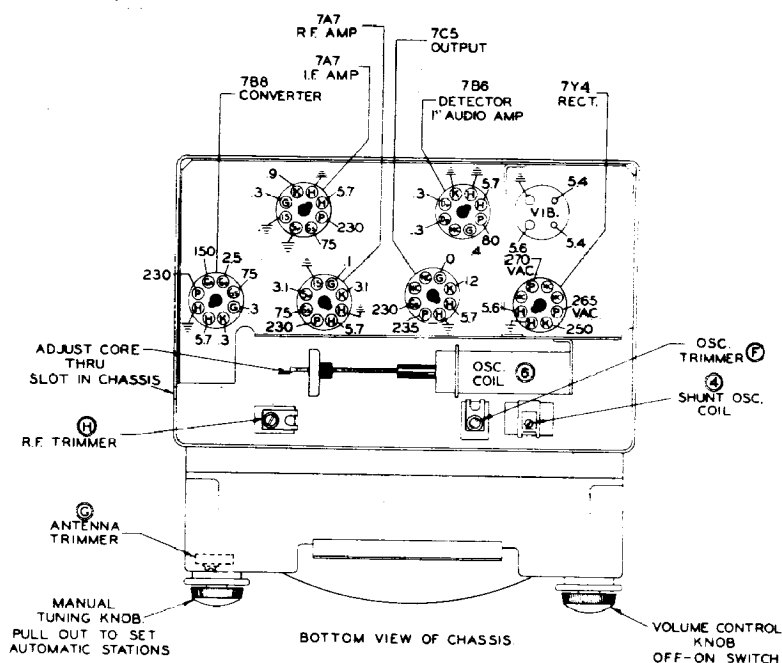


FIG. 8

Figure 8 shows the approximate voltages as measured with a 1000 ohm per volt meter measured between the socket terminals and the chassis. Volume control set at maximum with no signal. Battery Voltage—6.3.

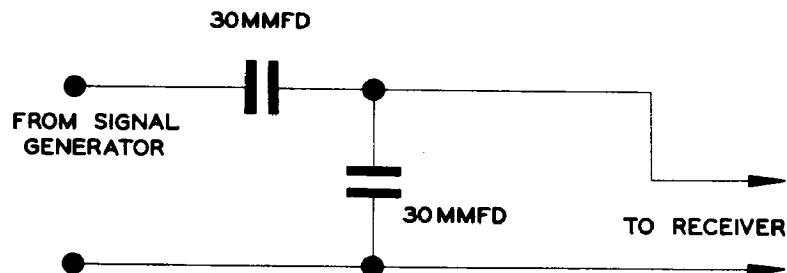


FIG. 9

IMPORTANT: When reinstalling the receiver in the car, allow it to operate for approximately 15 minutes to reach normal operating temperature before checking the antenna trimmer alignment on a weak station at approximately 1200 Kc.

Schematic of a recommended dummy antenna, closely resembling actual antenna capacity, to be used in series with signal generator leads when aligning the R. F. section of the receiver.

PARTS PRICE LIST

MODEL 6MF690 (CHASSIS 6B19)

1942 FORD ADJUST-O-MATIC RADIO

21A-18805-A1

DIAL AND TUNING MECHANISM

12-894	Rear magnet mounting bracket.....	\$.15
19-127	Dial scale mounting clip.....	.01
26-313	Dial scale	.90
34-106	Ratchet	.25
46-470	Station selector bar	.15
46-472	Tone control knob.....	.15
46-474	Volume control knob.....	.10
57-962	Escutcheon plate	1.35
80-232	Knob retaining spring.....	.01
80-272	Ratchet lever spring.....	.02
80-274	Tuning coil return spring.....	.05
80-300	Gear indexing spring.....	.03
83-998	Light beam conductor strip.....	.70
85-308	Station selector switch	.60
100-31	Dial light bulb	.07
100-36	Dial light bulb (manual).....	.09
114-102	No. 6 x 3/8" Hex acorn Hd. S.T. screw (escutcheon mounting)	.50C
114-174	No. 4/40 x 1/4" Hex Hd. S.H. screw (dial scale mounting)	.50C
126-433	Manual dial light shield.....	.01
147-118	Manual automatic bakelite breaker collar	.04
188-34	Tuning shaft retaining ring.....	.01
188-39	Turret screw lock ring.....	.02
188-43	Retaining ring (dial pointer).....	.01
S10110	Front magnet mounting bracket & detent lever spring assembly.....	.20
S10120	Tuning adjustment screw & grommet assembly	.40
S10127	Magnet coil & terminal assembly...	1.00
S10149	Tuning control shaft & gear assembly	.30
S10394	Tuning & trim knob assembly (46-471 & 46-473)	.65
S10409	Ratchet drive lever & spring assembly	.35
S10411	Manual automatic selector switch as- sembly	.25
S10412	Tuning drive bushing & bracket as- sembly	.40
S10415	Turret shaft, screw & stop assembly.	2.00
S10418	Cross arm, magnet core, pointer drive bracket & stud assembly.....	.65
S10426	Manual dial light socket & wire as- sembly	.40
S10427	Light switch, bracket & stud assembly	.25

S10430	Dial pointer & tip assembly.....	.75
S10433	Dial scale background plate, shield & strip assembly	.40
S10584	Dial light socket & wire assembly...	.35
S10657	Selector bar retaining plate & spring assembly	.25

COILS AND CHOKES

20-213	Main hash choke coil.....	.25
20-242	Oscillator series coil	.20
95-819	1st I.F. transformer.....	1.10
95-820	2nd I.F. transformer.....	1.10
S8819	Antenna motor noise choke assembly	.20
S9762	Untuned R.F. coil & core assembly..	.50
S9841	Heater line choke assembly.....	.20
S10063	Oscillator coil & shield assembly...	1.10
S10064	R.F. coil & shield assembly.....	1.40
S10095	Oscillator shunt coil assembly.....	.60
S10393	Motor noise choke coil assembly...	.15

CONDENSERS

22-162	.0001 mfd. 600 volt.....	.15
22-170	.1 mfd. 400 volt.....	.20
22-182	.00025 mfd. 600 volt.....	.20
22-190	.1 mfd. 200 volt.....	.18
22-250	.05 mfd. 200 volt.....	.15
22-906	.005 mfd. 200 volt.....	.15
22-908	.5 mfd. 120 volt.....	.25
22-912	.002 mfd. 600 volt.....	.15
22-1076	Dual spark plate condenser.....	.20
22-1148	Voltage regulator & circuit breaker cond.	.50
22-1170	.01 mfd. 600 volt.....	.15
22-1180	.003 mfd. 200 volt.....	.15
22-1233	20 mfd. 25 volt x 10 mfd. 300 volt x 20 mfd. 350 volt Dry Electrolytic....	1.25
22-1235	Single section ceramic trimmer....	.15
22-1236	Single section ceramic trimmer....	.20
22-1238	.5 mfd. 120 volt.....	.25
22-1244	.004 mfd. 600 volt.....	.20
22-1247	.008 mfd. 1600 volt.....	.20
22-1248	350 mmfd. compensator	.40
22-1270	.02 mfd. 200 volt.....	.15
22-1277	Antenna trimmer	.35
22-1326	Distributor & oil gauge condenser...	.45

RESISTORS

63-271	1 megohm	1/4 watt	.07
63-294	100 ohm	1/4 watt	.07
63-594	68M ohm	1/4 watt	.07
63-596	330M ohm	1/4 watt	.07
63-644	22M ohm	1/4 watt	.07
63-646	33M ohm	1/4 watt	.07
63-718	330M ohm	1/4 watt insulated	.15
63-763	22M ohm	1/4 watt insulated	.15
63-957	33M ohm	1 watt insulated	.20
63-976	15 megohm	1/4 watt	.07
63-1170	1500 ohm W.W.	2 watt insulated	.30
63-1180	15M ohm	1/2 watt insulated	.17
63-1197	82 ohm	1/2 watt	.08
63-1203	270 ohm W.W.	1 watt insulated	.20
63-1258	Tone control, volume control & switch		2.50
63-1267	Sensitivity control		.30
S10408	Distributor suppressor assembly (63-1271)		.50

MISCELLANEOUS

49-491	Dynamic speaker (6" x 9" oval)	5.00
207-491	Field coil (not replaceable)	
208-491	Cone & voice coil assembly	2.00
52-200	Battery cable—fuse to ammeter	.20
52-202	Battery cable—set to fuse	.15
52-241	Speaker cable & plug	.40
52-251	Antenna cable	1.00
78-251	Socket—antenna connector	.10
78-406	Socket—foot switch	.10
78-454	Socket—loktal tube (8 contact)	.15
78-455	Socket—loktal tube (6 contact)	.15
78-467	Socket—loktal tube (5 contact)	.15
78-477	Socket—vibrator	.10
80-291	Muting switch spring	.03
83-1002	Sponge rubber strip (on top cover)	.03
95-880	Power transformer	4.25
95-887	Output transformer	1.25

114-63	No. 6 32 x 3/16" Hex acorn Hd. M.S.-N.P.	.25C
114-118	No. 6 x 3/16" Hex acorn Hd. S.T. screw (statuary bronze)	.45C
114-150	No. 6/32 x 5 32" Hex acorn Hd. MS.	.35C
126-421	Tube shield	.10
136-12	Fuse—20 ampere	.10
190-19	Vibrator	2.95
196-54	Speaker gasket & screen	.65
202-321	Instruction book	.05
S10317	Foot control switch & cable assembly	2.00

MOTOR NOISE SUPPRESSION KIT

S10446	Motor noise suppression kit complete	2.60
S9343	Regulator ground lead assembly	.05
S10408	Distributor suppressor assembly	.50
22-1148	Voltage regulator & circuit breaker cond.	.50
22-1326	Distributor & oil gauge condenser	.45
54-68	5/16-18 Hex nut	.01
93-194	5 16" internal shakeproof lockwasher	.50C
112-323	No. 12 x 1/2" R.H.S.T. screw	1.50C
114-152	5 16-18 Hex Hd. M.S.	.04
147-108	Spacer	.02

SET INSTALLATION KIT

S10447	Set installation kit complete	.50
19-113	Foot switch cable retaining clip	.05
19-114	Foot switch cable retaining clip	.02
54-123	No. 10 24 wing nut	.02
54-157	1/4-20 Hex nut	.05
54-189	No. 8 32 wing nut	.01
93-161	1/4" internal shakeproof lockwasher	.35C
112-310	Foot switch mounting screw	.85C
112-360	Set installation screw	.02
114-175	1/4-20 x 1 2" Hex Hd. M.S.	1.25C
118-30	Set installation link	.15

All Prices List—Subject to Regular Discount and Change Without Notice—9/15/41.

SERVICE MANUAL

Built for
WILLYS OVERLAND
Motors, Inc.
Toledo, Ohio



Model
6MW693

Made by **ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.**

Electrical Specifications

TUNING RANGE	540-1600 Kc.	CURRENT CONSUMPTION ...	7.3 amperes
INTERMEDIATE FREQUENCY.....	265 Kc.	INSTANTANEOUS CURRENT CON-	
SENSITIVITY ..	3 microvolts at 1 watt output	SUMPTION DURING AUTOMATIC	
POWER OUTPUT	4.5 watts measured at	CHANGE CYCLE.....	16.0 amperes
	the voice coil	TUBE COMPLEMENT.....	7A7 R.F.,
SPEAKER.....	7" Firewall mounting		7B8 Converter, 7A7 I.F., 7B6 Detector
			and 1st Audio, 7C5 Power Output, 7Y4 Rectifier.

MR. WARRANTY SERVICE MAN:

The following information has been compiled so that you may service or repair the 1942 Willys Americar receiver with the least amount of time and effort. Read this manual thoroughly and study the contents carefully before attempting any adjustments to restore original performance to the receiver.

NOTE: Add approximately 10% to the list prices contained herein as per our change notice of September 29, 1941.

IMPORTANT

The Warranty tag must be filled in by the dealer and accompany each receiver when free warranty service is expected by the customer or dealer. Otherwise you are not authorized to do warranty service work on a no charge basis.

D A T A

Receiver and Speaker Installation.....	see Figures 1 and 2
Motornoise Suppression	see Figures 4, 5, 6 and 7
Socket Voltages	see Figure 9
Tube Layout	see Figure 8
Trimmer Locations	see Figures 8 and 9
Schematic Diagram including Coil Resistance Values.....	see Page 273

Receiver Installation:

Figures 1 and 2, illustrating the escutcheon plate with the control knobs and the installed receiver are given here to facilitate removal and reinstallation of the receiver when service or repairs are necessary.

Remove the knobs and the slotted set mounting nuts from the front panel and remove the set mounting bolt and spacer from the rear to remove the receiver from the car.

NOTE: To set up a station on any automatic position, pull the tuning knob out and tune the receiver as in manual tuning—Press the tuning knob in to its original position after the station has been accurately tuned in.

CAUTION: The automatic push button or the safety foot switch will not operate to change stations while the tuning knob is pulled out for setting automatic stations.

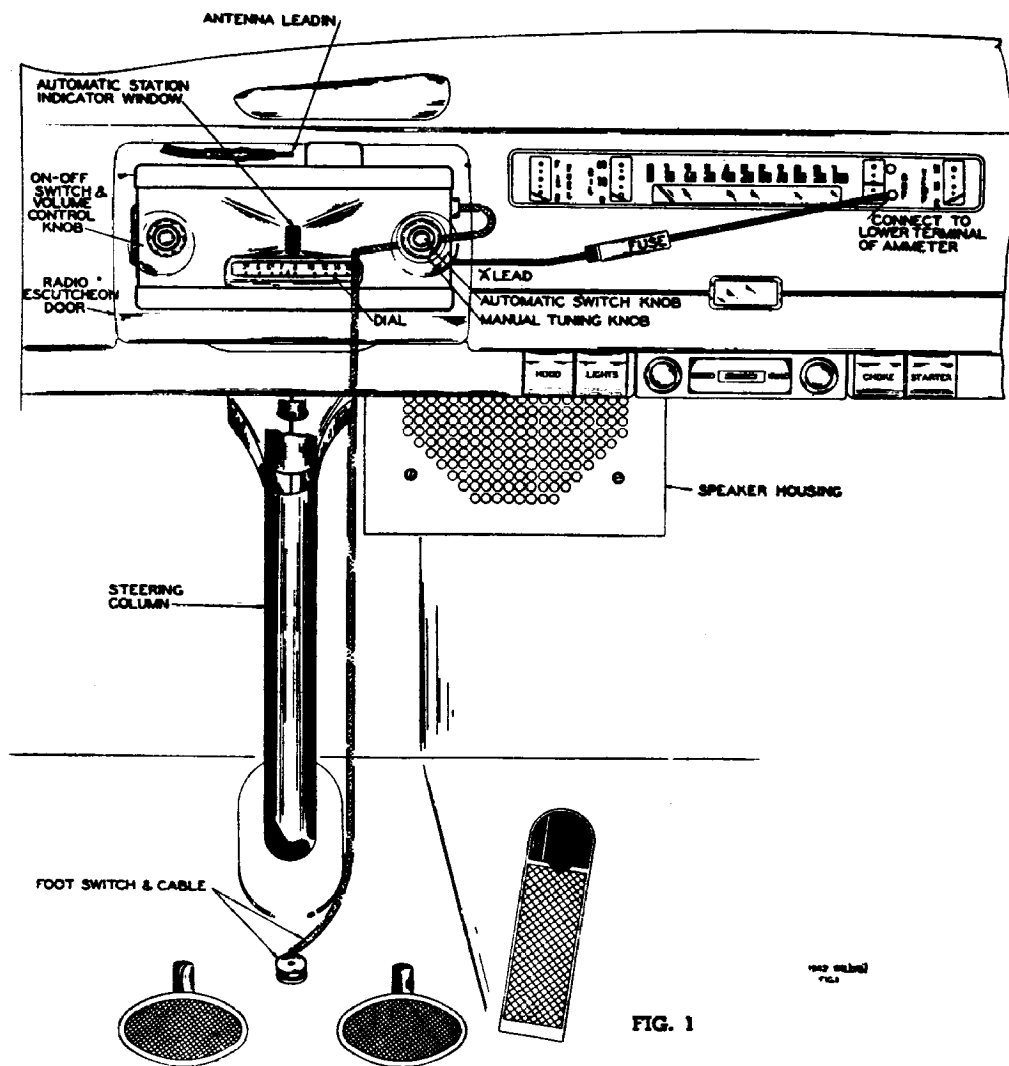


FIG. 1

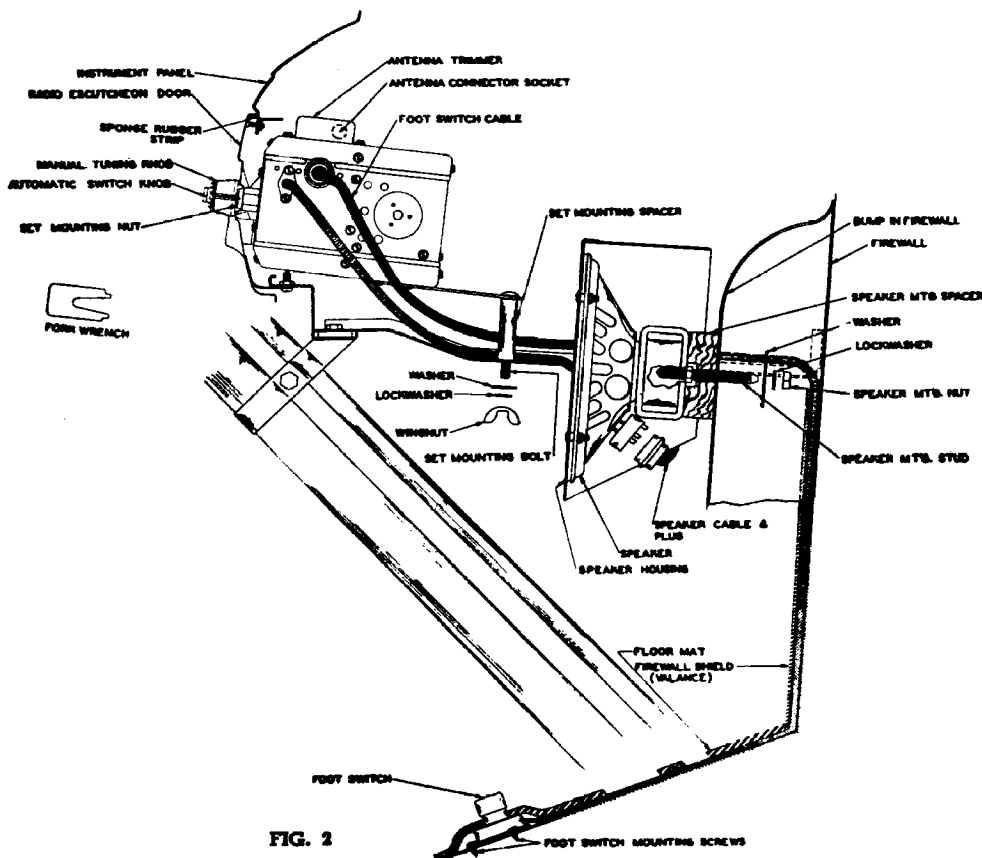


FIG. 2

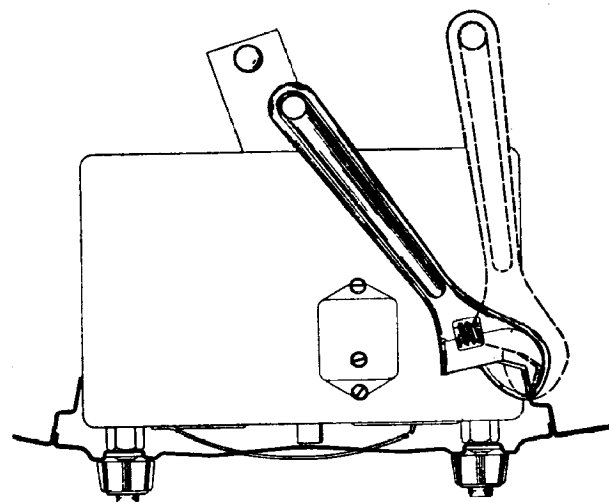


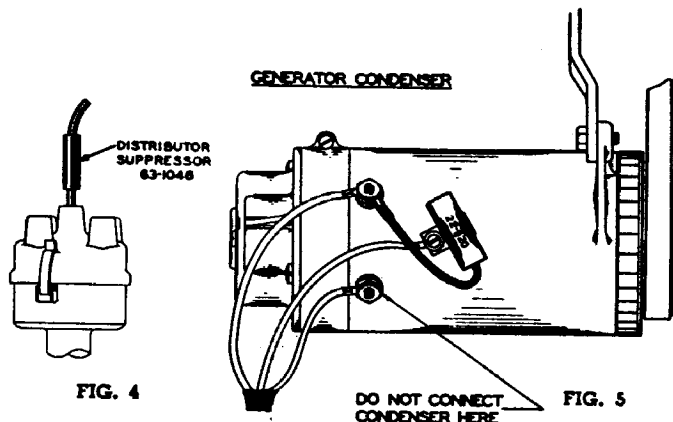
FIG. 3

Figure 3 illustrates the manner in which the glove compartment flange can be bent towards the right to give sufficient clearance for the foot switch cable at the receiver.

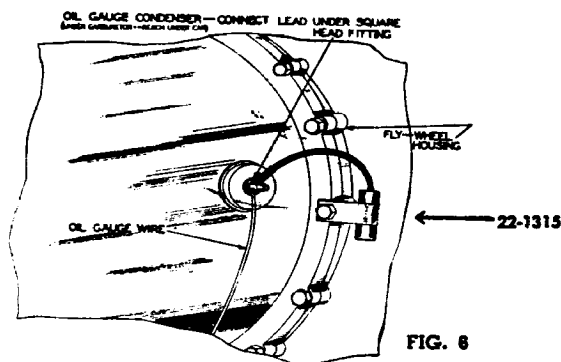
Interference Suppression

There should be no motornoise or interference from the ignition circuit if the receiver has been installed in the car according to the instructions furnished with it. The interference suppression equipment may be checked for proper installation by referring to the following illustrations:

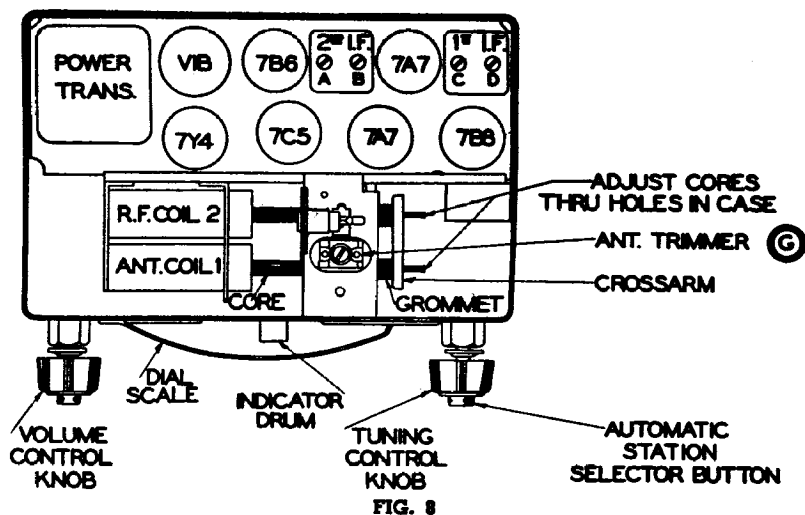
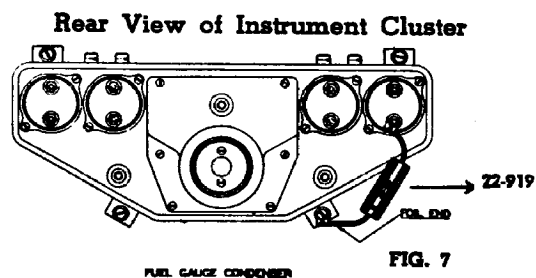
The No. 63-1046 suppressor should be connected as shown in Figure 4. The generator condenser No. 22-920 should be installed as shown in Figure 5.



The oil gauge condenser should be installed under one of the flywheel housing bolts as shown in Figure 6 and connected under the square head fitting, which can be screwed out for this operation.



The No. 22-919 ammeter condenser should be installed as shown in Figure 7.



NOTE: The floor pan assembly screws must be drawn tight so that the star washers cut through the paint to insure a good ground contact—be sure the instrument panel bolts and the receiver mounting bolt and nuts are making a good ground contact with the car body.

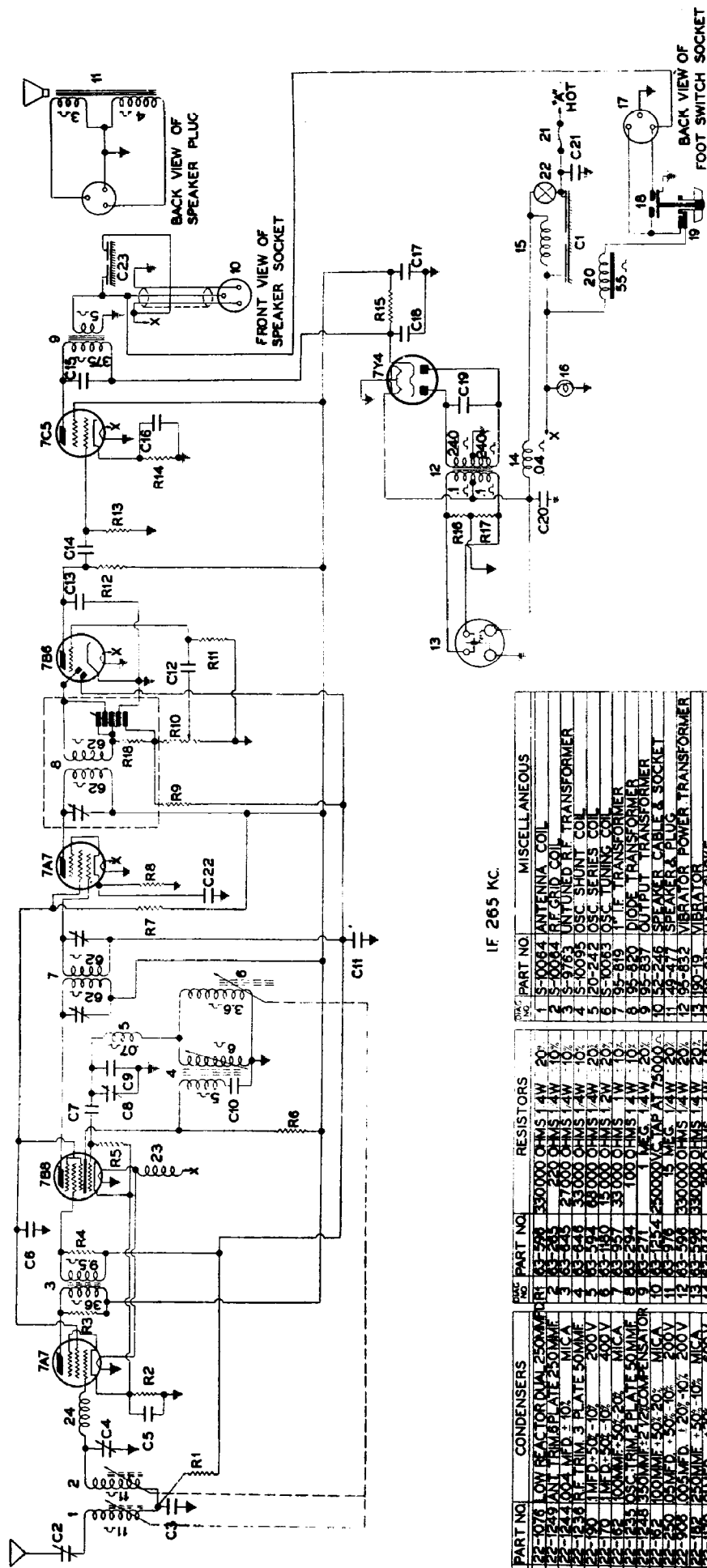
Alignment

Maximum performance is dependent upon the accurate alignment of the receiver, so follow the alignment instructions carefully.

CAUTION: Make all alignment adjustments to the receiver with the volume control turned full on. Reduce the signal intensity at the signal generator. Connect the output meter across the voice coil.

I.F. Alignment Procedure

- 1—Remove the top and bottom covers from the receiver.
- 2—Place the receiver in the Manual tuning position and set the pointer at the low frequency end of the dial (540 Kc.).
- 3—Set the signal generator at 265 Kc.
- 4—Apply the signal from the generator through a .1 mfd. dummy to the 7B8 converter grid.
- 5—Adjust trimmers A-B-C and D (Fig. 8) for maximum output. Repeat the operation to assure accurate alignment.



SCHEMATIC DIAGRAM AND PARTS LIST FOR 1942 WILLYS AMERICAN RECEIVER

IF 265 KC.

CONDENSERS			RESISTORS			MISCELLANEOUS		
PART NO.	DESCRIPTION	VALUE	PART NO.	DESCRIPTION	VALUE	PART NO.	DESCRIPTION	VALUE
1	22-1076	LOW REACTOR DUAL 250MMFD	1	330000 OHMS	1/4 W	1	5-10084	ANTENNA COIL
2	22-1249	ANT. TRIMMER PLATE 250MMFD	2	250 OHMS	1/4 W	2	5-10084	RT GRID COIL TRANSFORMER
3	22-1249	ANT. TRIMMER PLATE 250MMFD	3	250 OHMS	1/4 W	3	5-10084	OSC. SHUNT COIL
4	22-1249	ANT. TRIMMER PLATE 250MMFD	4	250 OHMS	1/4 W	4	5-10084	OSC. SERIES COIL
5	22-1249	ANT. TRIMMER PLATE 250MMFD	5	250 OHMS	1/4 W	5	20-242	OSC. TUNING COIL
6	22-1249	ANT. TRIMMER PLATE 250MMFD	6	250 OHMS	1/4 W	6	5-10084	125K TRANSFORMER
7	22-1249	ANT. TRIMMER PLATE 250MMFD	7	250 OHMS	1/4 W	7	5-10084	125K TRANSFORMER
8	22-1249	ANT. TRIMMER PLATE 250MMFD	8	250 OHMS	1/4 W	8	5-10084	125K TRANSFORMER
9	22-1249	ANT. TRIMMER PLATE 250MMFD	9	250 OHMS	1/4 W	9	5-10084	125K TRANSFORMER
10	22-1249	ANT. TRIMMER PLATE 250MMFD	10	250 OHMS	1/4 W	10	5-10084	125K TRANSFORMER
11	22-1249	ANT. TRIMMER PLATE 250MMFD	11	250 OHMS	1/4 W	11	5-10084	125K TRANSFORMER
12	22-1249	ANT. TRIMMER PLATE 250MMFD	12	250 OHMS	1/4 W	12	5-10084	125K TRANSFORMER
13	22-1249	ANT. TRIMMER PLATE 250MMFD	13	250 OHMS	1/4 W	13	5-10084	125K TRANSFORMER
14	22-1249	ANT. TRIMMER PLATE 250MMFD	14	250 OHMS	1/4 W	14	5-10084	125K TRANSFORMER
15	22-1249	ANT. TRIMMER PLATE 250MMFD	15	250 OHMS	1/4 W	15	5-10084	125K TRANSFORMER
16	22-1249	ANT. TRIMMER PLATE 250MMFD	16	250 OHMS	1/4 W	16	5-10084	125K TRANSFORMER
17	22-1249	ANT. TRIMMER PLATE 250MMFD	17	250 OHMS	1/4 W	17	5-10084	125K TRANSFORMER
18	22-1249	ANT. TRIMMER PLATE 250MMFD	18	250 OHMS	1/4 W	18	5-10084	125K TRANSFORMER
19	22-1249	ANT. TRIMMER PLATE 250MMFD	19	250 OHMS	1/4 W	19	5-10084	125K TRANSFORMER
20	22-1249	ANT. TRIMMER PLATE 250MMFD	20	250 OHMS	1/4 W	20	5-10084	125K TRANSFORMER
21	22-1249	ANT. TRIMMER PLATE 250MMFD	21	250 OHMS	1/4 W	21	5-10084	125K TRANSFORMER
22	22-1249	ANT. TRIMMER PLATE 250MMFD	22	250 OHMS	1/4 W	22	5-10084	125K TRANSFORMER
23	22-1249	ANT. TRIMMER PLATE 250MMFD	23	250 OHMS	1/4 W	23	5-10084	125K TRANSFORMER

PARTS PRICE LIST

MODEL 6MW693 CHASSIS No. 6B21
WILLYS 662481

Dial and Tuning Mechanism

12-894	Rear magnet mounting bracket.....	\$.15
26-307	Manual tuning scale (calibrated)....	.75
26-312	Automatic tuning scale	.10
34-106	Ratchet	.25
34-119	Tuning shaft and gear.....	.45
35-5	Indicator dial drum.....	.15
54-184	Set spacer nut (7/16-28)	.06
57-934	Dial scale background plate.....	.20
59-129	Dial pointer	.10
71-4	Dial scale mounting screw.....	.25C
80-272	Ratchet lever spring.....	.02
80-274	Tuning coil return spring.....	.05
93-354	Retaining washer	.02
100-32	Dial light bulb	.07
126-440	Dial scale shield.....	.30
147-118	Manual automatic bakelite breaker collar	.04
188-34	Tuning shaft retaining ring.....	.01
S10108	Dial light socket and wire assembly	.30
S10109	Ratchet gear drive lever and spring assembly	.35
S10110	Front magnet mounting bracket and detent lever spring assembly.....	.20
S10115	Manual automatic selector switch assembly	.40
S10117	Tuning shaft rear bracket and index spring assembly	.20
S10119	Automatic shaft, gear, screw and stop assembly	2.25
S10120	Tuning adjustment screw and grommet assembly	.40
S10122	Magnet core, pin, cross arm and pointer drive bracket assembly.....	.75
S10127	Magnet coil and terminal assembly..	1.00
S10487	Tuning drive bushing and bracket assembly	.50

Coils and Chokes

20-213	Main hash choke coil	.25
20-242	Oscillator series coil	.20
95-819	1st I.F. transformer.....	1.10
95-820	2nd I.F. transformer.....	1.10
S5844	Motor noise choke coil assembly...	.15
S8819	Antenna motor noise choke assembly	.20
S9762	Untuned R.F. coil and core assembly	.50

S9841	Heater line choke coil assembly....	\$.20
S10063	Oscillator coil and shield assembly	1.10
S10064	R.F. coil and shield assembly.....	1.40
S10095	Oscillator shunt coil assembly.....	.60

Condensers

22-162	.0001 mfd. 600 volt.....	.15
22-170	.1 mfd. 400 volt.....	.20
22-182	.00025 mfd. 600 volt.....	.20
22-190	.1 mfd. 200 volt.....	.18
22-250	.05 mfd. 200 volt.....	.15
22-906	.005 mfd. 200 volt.....	.15
22-908	.5 mfd. 120 volt.....	.25
22-919	Fuel gauge condenser	.40
22-920	Generator condenser	.35
22-1076	Dual spark plate condenser	.20
22-1170	.01 mfd. 600 volt.....	.15
22-1233	20 mfd. 25 volt x 10 mfd. 300 volt x 20 mfd. 350 volt Dry Electrolytic....	1.25
22-1235	Single section ceramic trimmer....	.15
22-1236	Single section ceramic trimmer....	.20
22-1238	.5 mfd. 120 volt.....	.25
22-1244	.004 mfd. 600 volt.....	.20
22-1247	.008 mfd. 1600 volt.....	.20
22-1248	350 mmfd. compensator	.40
22-1249	Antenna trimmer	.25
22-1315	Oil gauge condenser	.55

Resistors

63-265	220 ohm 1/4 watt.....	.07
63-271	1 megohm 1/4 watt.....	.07
63-294	100 ohm 1/4 watt.....	.07
63-594	68M ohm 1/4 watt.....	.07
63-596	330M ohm 1/4 watt.....	.07
63-645	27M ohm 1/4 watt.....	.07
63-646	33M ohm 1/4 watt.....	.07
63-718	330M ohm 1/4 watt insulated ..	.15
63-941	390 ohm W.W.. 1 watt insulated ..	.20
63-957	33M ohm 1 watt insulated ..	.20
63-968	1800 ohm W.W. 2 watt insulated ..	.30
63-976	15 megohm 1/4 watt.....	.07
63-1046	Distributor suppressor	.25
63-1180	15M ohm 1/2 watt insulated ..	.17
63-1197	82 ohm 1/2 watt.....	.08
63-1254	Volume control and switch.....	1.50

Miscellaneous

19-87	Battery lead retaining clip.....	\$.02
43-59	Antenna connector housing	.20
52-197	Battery cable—set to fuse.....	.15
52-200	Battery cable—fuse to ammeter.....	.20
52-246	Speaker cable and plug.....	.60
78-406	Socket—foot switch	.10
78-454	Socket—loktal tube (8 contact).....	.15
78-455	Socket—loktal tube (6 contact).....	.15
78-467	Socket—loktal tube (5 contact).....	.15
78-468	Socket—antenna connector	.15
78-477	Socket—vibrator	.10
95-832	Power transformer	2.50
95-837	Output transformer	1.00
114-63	No. 6/32 x 3/16" Hex. Acorn Hd. M.S.	.25c
114-118	No. 6 x 3/16" Hex. Hd. S.T. screw (statuary bronze)	.45C
126-421	Tube shield	.10
136-12	Fuse—20 ampere	.10
190-19	Vibrator	2.95
202-323	Instruction book	.20
S10103	Antenna trimmer, connector socket and bracket	.75
S10199	Foot control switch and cable assy.	2.00
MS715	Chassis box bottom cover and bracket assembly	.65

Speaker and Speaker Mounting Parts

49-477	7" Dynamic speaker	5.00
	207-477 Field coil (not replaceable)	
	208-477 Cone and voice coil	1.75
54-30	No. 8/32 x 5/16" Hex. nut.....	.25C
93-126	No. 8 Shakeproof lockwasher.....	.30C
112-248	No. 8/32 x 5/8" Oval binding Hd. M.S. (statuary bronze)	.55C
147-85	Speaker mounting spacer	.01
MS718	Speaker housing and cover assembly	1.00
	(Also see parts in Installation Kit)	

Installation Parts

S10480	Installation kit complete	\$2.50
22-919	Fuel gauge condenser	.40
22-920	Generator condenser	.35
22-1315	Oil gauge condenser	.55
54-68	5/16-18 Hex. nut	.01
54-174	Wing nut	.02
63-1046	Distributor suppressor	.25
80-145	Motor hood bond spring	.02
83-971	Sponge rubber strip	.09
83-972	Sponge rubber strip.....	.12
93-139	$\frac{5}{16}$ " external Shakeproof lockwasher	.05
93-161	$\frac{1}{4}$ " external Shakeproof lockwasher	.05
93-444	Speaker installation washer.....	.02
93-577	Steel washer (set mounting).....	.80C
97-151	Speaker mounting stud.....	.10
112-310	Foot switch mounting screw.....	.85C
112-365	No. 8 x $\frac{1}{2}$ " B.H. sheet metal screw..	.90C
144-22	Set mounting bolt	.04
147-119	Speaker installation spacer (wood)..	.10
147-120	Set mounting spacer	.05

Tuning Knob Kit

S10481	Tuning knob kit complete.....	1.50
S10084	Tuning knob, switch knob and shaft assembly	.60
S10085	Volume control knob, dummy knob and shaft assembly	.60
54-171	7/16-28 round nut	.12
68-2	Set installation tool.....	.02

All Prices List—Subject to Regular Discount
and Change Without Notice.

9-15-41 Zenith

SERVICE MANUAL

Built for
NASH MOTORS
Division of Nash-Kelvinator Corp.
Kenosha, Wis.



Model
6MN695

Made by ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.

Electrical Specifications

TUNING RANGE: 540-1600 Kc.

INTERMEDIATE FREQUENCY: 265 Kc.

SENSITIVITY: 3 microvolts at one
watt output.

POWER OUTPUT: 4.5 watts measured
at the voice coil.

SPEAKER: 8" Round, instrument
panel mounting.

CURRENT CONSUMPTION: .. 7.3 amperes

INSTANTANEOUS CURRENT CON-
SUMPTION DURING AUTOMATIC
CHANGE CYCLE: 16.0 amperes

TUBE COMPLEMENT: 7A7 R.F.,
7B8 converter, 7A7 I.F., 7B6 Detector
and 1st Audio, 7C5 Power Output, 7Y4
Rectifier.

MR. WARRANTY SERVICE MAN:

The following information has been compiled so that you may service or repair the 1942 Nash receiver with the least amount of time and effort. Read this manual thoroughly and study the contents carefully before attempting any adjustments to restore original performance to the receiver.

Note: Add approximately 10% to the list prices contained herein as per our change notice of September 29, 1941.

IMPORTANT

The Warranty tag must be filled in by the dealer and accompany each receiver when free warranty service is expected by the customer or dealer. Otherwise you are not authorized to do warranty service work.

DATA

Receiver and Speaker Installation..... see Figures 1 and 2
Motornoise Suppression see Figures 3, 4, 5, 6, 7 and 8
Socket Voltages see Figure 10
Tube Layout see Figure 9
Trimmer Locations see Figures 9 and 10
Schematic Diagram including Coil Resistance Values..... see Page 281

RECEIVER INSTALLATION:

Figures 1 and 2, illustrating the escutcheon plate, control knobs and the installed receiver are given here to facilitate removal and reinstallation of this receiver when service or repairs are necessary.

Remove the control knobs and the set mounting nuts from the front panel and the rear spacer bolt and nut to remove the receiver from the car.

NOTE: To set up a station on any automatic position, pull the tuning knob out and tune the receiver as in manual tuning — Press the tuning knob into its original position after the station has been accurately tuned in.

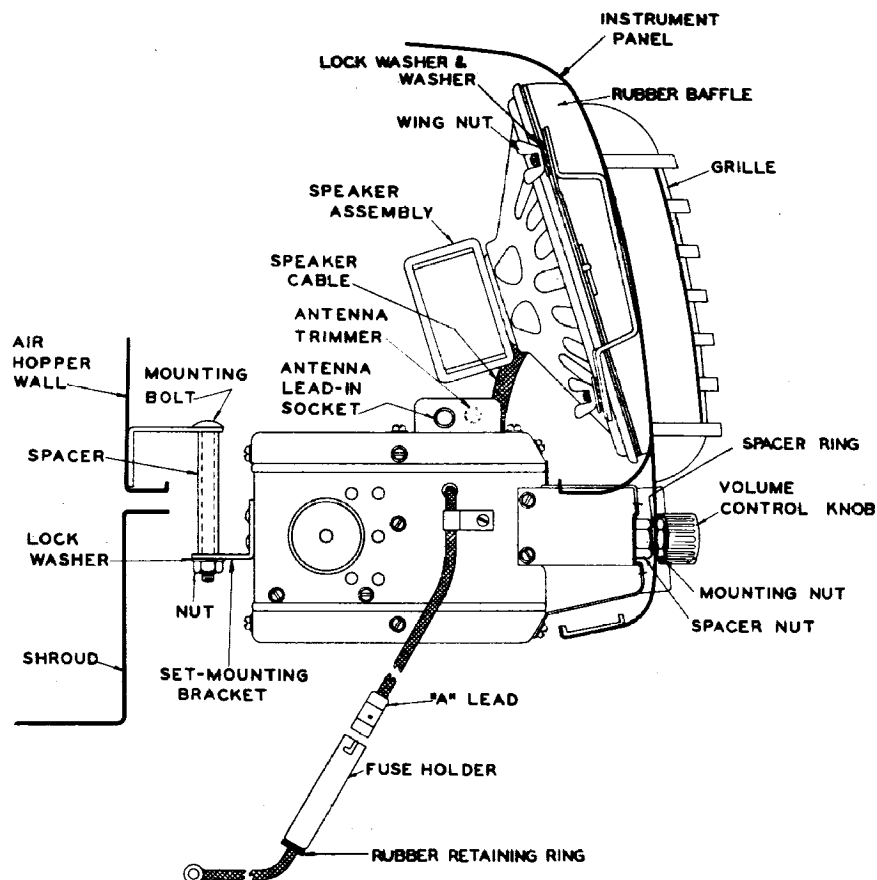


FIG. 1

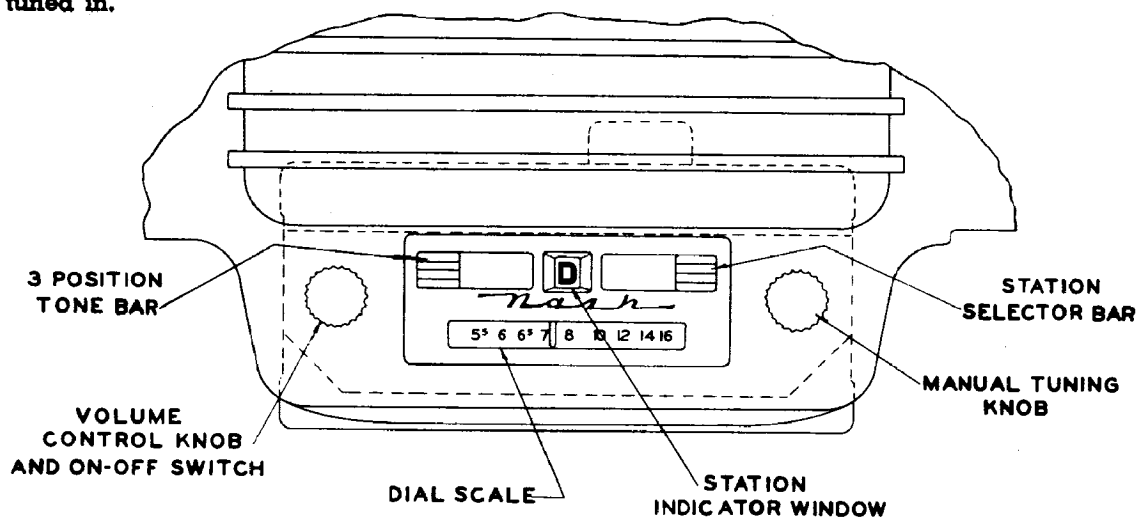


FIG. 2

DELAYED AUTOMATIC MUTING CIRCUIT

Pressing either the Push-bar or the foot control switch automatically mutes the receiver for the duration of the change cycle. This action is accomplished by applying 6 volts negative to the 7B6 first audio grid through the 1 megohm resistor R-25. (See schematic diagram.) This negative voltage blocks the grid of the 7B6 until the voltage bleeds off through the 15 megohm resistor R-12, when the receiver will again operate normally. **NOTE:** The storage battery in the car must be properly polarized to apply the negative muting voltage to the receiver. If the battery polarity is reversed the receiver will not mute and it may become distorted during the change cycle. Always connect the positive (+) terminal of the storage battery or power supply to the receiver case when checking the receiver.

INTERFERENCE SUPPRESSION

There should be no motornoise or interference from the ignition circuit, if the receiver has been installed in the car according to the instructions furnished with it. The interference suppression equipment may be checked for proper installation by referring to the following illustrations:

The generator condenser No. 22-920 should be installed as shown below in Figure 3.

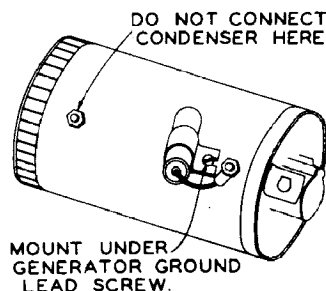


FIG. 3

The distributor suppressor No. 63-1045 should be connected as shown above in Figure 4.

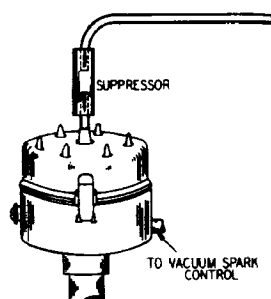


FIG. 4

The No. 22-1322 temperature gauge condenser should be installed as shown below in Figure 5 for Nash 600 series cars and Figure 6 for Ambassador 6 and 8 cylinder cars.

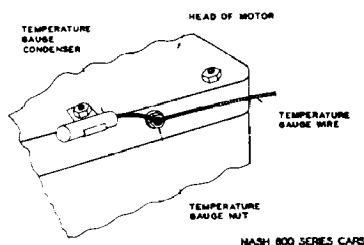


FIG. 5

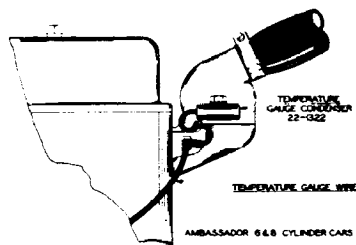


FIG. 6

The Ammeter and fuel gauge condensers No. 22-919 should be installed as shown in Figure 7.

REAR VIEW OF INSTRUMENT CLUSTER

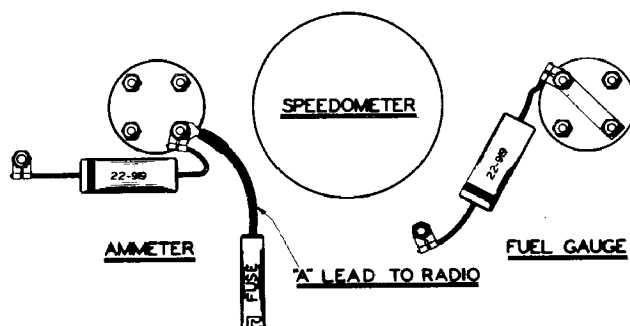


FIG. 7

The Bonnet grounding strip should be installed as shown in Figure 8. Note that the sharp extrusions are facing down toward the front of the car before the bonnet grounding strip is bent back. Make sure the instrument panel bolts and chassis mounting bolts are tight to make a good ground contact with the car body.

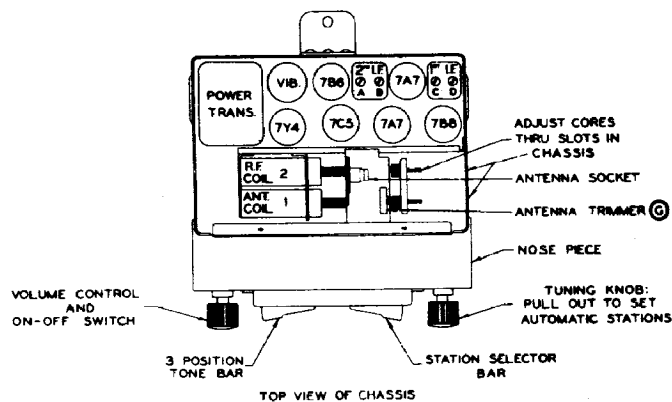


FIG. 9

ALIGNMENT

Maximum performance is dependent upon the accurate alignment of the receiver, so follow the alignment instructions carefully.

CAUTION: Make all alignment adjustments to the receiver with the volume control turned full on. Reduce the signal intensity, if necessary, at the signal generator. Connect the output meter across the voice coil.

I.F. ALIGNMENT PROCEDURE

- 1—Remove the top and bottom covers from the receiver.
- 2—Place the receiver in the Manual tuning position and set the pointer at the low frequency end of the dial. (540 Kc.)
- 3—Set the signal generator at 265 Kc.
- 4—Apply the signal from the generator through a .1 mfd. dummy to the 7B8 converter grid.
- 5—Adjust trimmers A-B-C- and D (Fig. 9) for maximum output. Repeat the operation to assure accurate alignment.

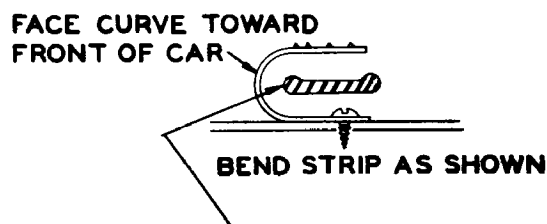


FIG. 8

R. F. AND OSCILLATOR ALIGNMENT

- 1—Set the signal generator at 1640 Kc.
- 2—Connect the signal generator leads, through the dummy as illustrated in Figure 11, to the antenna receptacle on the receiver.
- 3—Set the receiver dial at 1640 Kc. (Maximum high frequency end of dial).
- 4—Screw the cores completely out of the antenna, R.F. and oscillator coils.
- 5—Set the oscillator trimmer (F—Fig. 10) at 1640 Kc.
- 6—Peak the R.F. and antenna trimmers (G and H—Fig. 9-10) for maximum output reading.
- 7—Replace the cores to their approximate original positions in the antenna, R.F. and oscillator coils.
- 8—Set the generator and the receiver dial at 1200 Kc.
- 9—Adjust the oscillator core (6—Fig. 10) to scale at 1200 Kc.
- 10—Adjust the antenna and R.F. cores (1 and 2—Fig. 9) for maximum output reading.
- 11—Set the signal generator at 600 Kc.
- 12—"Rock in" the Shunt oscillator core (4—Fig. 10) for maximum output reading. Same as rocking in the padder condenser on a ganged condenser receiver).
- 13—Check the receiver at 1200 Kc. for calibration and gain. If the receiver is off scale or weak, repeat operations 9 and 10.

IMPORTANT: When reinstalling the receiver in the car, allow it to operate for approximately 15 minutes to reach normal operating temperature before checking the antenna trimmer alignment on a weak station at approximately 1200 Kc.

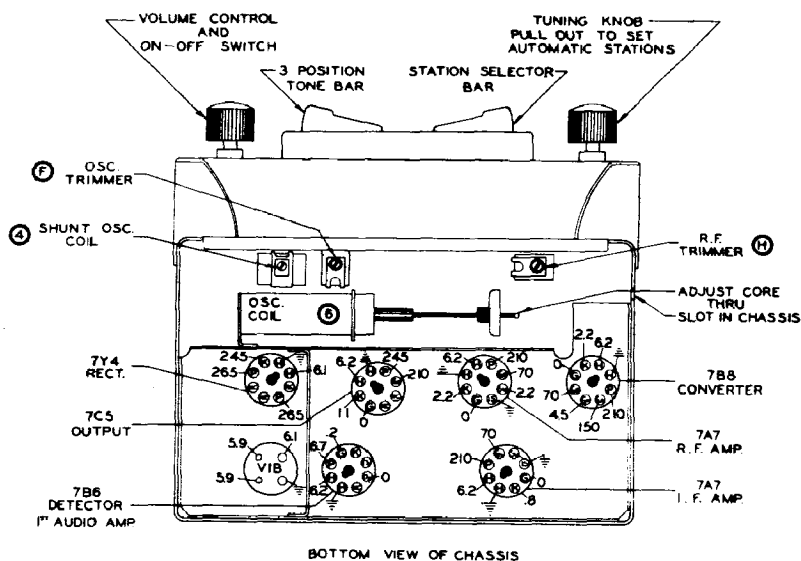


FIG. 10

Figure 10 shows the approximate voltages as measured with a 1000 ohm per volt meter measured between the socket terminals and the chassis. Volume control set at maximum with no signal. Battery Voltage—6.3.

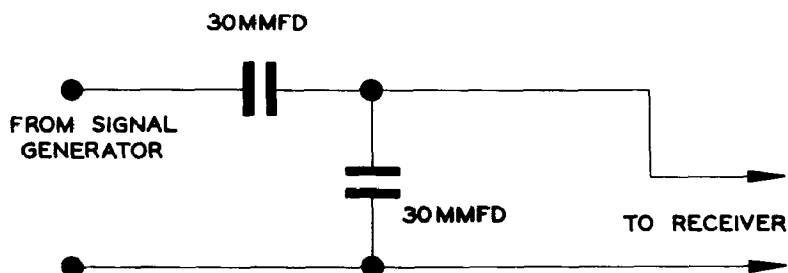


FIG. 11

Schematic of a recommended dummy antenna, closely resembling actual antenna capacity, to be used in series with the signal generator leads when aligning the R.F. section of the receiver.

PARTS PRICE LIST

MODEL 6MN695 (CHASSIS 6B22)

1942 NASH

LONG DISTANCE RADIO

AC-6002

DIAL AND TUNING MECHANISM ASSEMBLY

12-894	Rear magnet mounting bracket.....	\$.15
26-319	Manual tuning scale.....	.70
26-320	Automatic tuning scale	.10
34-106	Ratchet	.25
34-126	Idler gear	.06
35-1	Indicator dial drum	.10
46-487	Selector switch and tone control knob (S10556)	.15
57-967	Escutcheon plate	1.25
57-974	Dial scale background plate	.15
64-25	9-16 Rivet (pivot for 46-487).....	.70C
71-57	No. 4/36 x 1/4" F.H.M.S.....	.30C
80-272	Ratchet lever spring.....	.02
80-274	Tuning coil return spring.....	.05
80-291	Muting switch spring	.03
80-295	Hinge, pin spring (for 46-487).....	.50C
80-300	Gear indexing spring	.03
80-305	Overthrow spring	.05
85-315	Tone control switch.....	.75
85-319	Station selector switch.....	.60
100-32	Dial light bulb.....	.07
147-118	Manual automatic bakelite breaker collar	.04
188-34	Tuning shaft retaining ring.....	.01
188-39	Turret screw lock ring.....	.02
188-43	Retaining ring	.01
S10109	Ratchet gear drive lever and spring assembly	.35
S10110	Front magnet mounting bracket and detent lever spring assembly.....	.20
S10117	Tuning shaft rear bracket and index spring	.20
S10120	Tuning adjustment screw and grommet assembly	.40
S10127	Magnet coil & terminal assembly...	1.00
S10149	Tuning control shaft & gear assembly	.30
S10411	Manual automatic selector switch assembly	.25
S10557	Front housing, knob & spring assembly	1.50
S10598	Tuning drive mounting bracket & bushing	.35
S10601	Cross arm & pointer drive bracket assembly	1.00

S10605	Turret shaft, gear, screw & stop assembly	2.50
S10610	Dial pointer, link & bracket assy. (59-141)	.40
S10615	Indicator drum, idler gear & bracket assy.	.70
S10620	Dial light socket & wire assembly...	.40

COILS AND CHOKES

20-213	Main hash choke coil.....	.25
20-242	Oscillator series coil.....	.20
95-819	1st I.F. transformer.....	1.10
95-820	2nd I.F. transformer	1.10
S5844	Motor noise choke coil assembly...	.15
S8819	Antenna motor noise choke assembly	.20
S9762	Untuned R.F. coil & core assembly...	.50
S9841	Heater line choke assembly.....	.20
S10063	Oscillator coil & shield assembly...	1.10
S10064	R.F. coil & shield assembly.....	1.40
S10095	Oscillator shunt coil assembly	.60

CONDENSERS

22-162	.0001 mfd. 600 volt.....	.15
22-170	.1 mfd. 400 volt.....	.20
22-182	.00025 mfd. 600 volt.....	.20
22-190	.1 mfd. 200 volt.....	.18
22-250	.05 mfd. 200 volt.....	.15
22-838	.005 mfd. 600 volt.....	.15
22-896	.004 mfd. 600 volt.....	.15
22-906	.005 mfd. 200 volt.....	.15
22-908	.5 mfd. 120 volt.....	.25
22-919	Motor noise condenser	.40
22-920	Generator condenser	.35
22-1076	Dual low reactor (.00025 mfd.).....	.20
22-1170	.01 mfd. 600 volt.....	.15
22-1233	10 mfd. 300 volt x 20 mfd. 350 volt x 20 mfd. 25 volt Dry electrolytic.....	1.25
22-1235	Single section ceramic trimmer.....	.15
22-1238	.5 mfd. 120 volt.....	.25
22-1244	.004 mfd. 600 volt.....	.20
22-1247	.008 mfd. 1600 volt.....	.20
22-1248	350 mmfd. compensator.....	.40
22-1270	.02 mfd. 200 volt.....	.15
22-1314	Single section ceramic trimmer (antenna)	.30
22-1322	Temperature gauge condenser	.35
22-1325	Single section ceramic trimmer.....	.25

RESISTORS

63-265	220 ohm	1/4 watt	.07
63-271	1 megohm	1/4 watt	.07
63-294	100 ohm	1/4 watt	.07
63-594	68M ohm	1/4 watt	.07
63-596	330M ohm	1/4 watt	.07
63-645	27M ohm	1/4 watt	.07
63-646	33M ohm	1/4 watt	.07
63-718	330M ohm	1/4 watt insulated	.15
63-763	22M ohm	1/4 watt insulated	.15
63-941	390 ohm W.W.	1 watt insulated	.20
63-957	33M ohm	1 watt insulated	.20
63-968	1800 ohm W.W.	2 watt insulated	.30
63-976	15 megohm	1/4 watt	.07
63-1046	Distributor suppressor		.25
63-1180	15M ohm	1/2 watt insulated	.17
63-1197	82 ohm	1/2 watt	.08
63-1266	Volume control & switch		1.50

MISCELLANEOUS

43-65	Antenna connector housing	.20
52-202	Battery cable—set to fuse	.15
52-203	Battery cable—fuse to ammeter	.15
52-241	Speaker cable & plug	.40
78-406	Socket—foot switch	.10
78-454	Socket—loktal tube (8 contact)	.15
78-455	Socket—loktal tube (6 contact)	.15
78-467	Socket—loktal tube (5 contact)	.15
78-468	Socket—antenna connector	.15
78-477	Socket—vibrator	.10
95-832	Power transformer	2.50
95-886	Output transformer	1.25
114-63	No. 6/32 x 3/16" Hex acorn Hd. M.S.	.25C
114-118	No. 6 x 3/16" Hex acorn Hd. S.T. screw (statuary bronze)	.45C
114-150	No. 6/32 x 5/32" Hex acorn Hd. M.S.	.35C
126-421	Tube shield	.10
136-12	Fuse—20 ampere	.10
190-19	Vibrator	2.95
202-322	Instruction book	.10
S10317	Foot control switch & cable assembly	2.00
S10617	Antenna connector socket & bracket assembly	.35

SPEAKER AND SPEAKER MOUNTING PARTS

49-500	8" Dynamic speaker	4.50
	207-500 Field coil (not replaceable)	
	208-500 Cone & voice coil	2.00
54-30	No. 8/32 x 5/16" Hex nut	.25C
57-862	Speaker mounting plate	.50
93-126	No. 8 Shakeproof lockwasher	.30C
112-298	No. 8/32 x 1/2" binding Hd. M. S.	.60C
147-85	Speaker mounting spacer	.01
196-38	Speaker gasket	.30

MOTOR NOISE SUPPRESSION KIT

S10566	Motor noise suppression kit complete	2.30
S9565	Bond strip assembly	.15
S9567	Bond strip assembly	.15
S9568	Bond strip assembly	.10
22-919	Ammeter & fuel gauge condenser	.40
22-920	Generator condenser	.35
22-1322	Temperature gauge condenser	.35
63-1046	Distributor suppressor	.25
80-145	Motor hood bond spring	.02
9185-80	Braided copper cable—tinned 10"	.05

KNOBS AND INSTALLATION PARTS

S10567	Knobs & set installation kit complete	.75
46-485	Volume control knob	.15
46-486	Tuning control knob (S10558)	.20
54-146	No. 10/32 wing nut	1.50C
54-148	1/4-20 x 1/2" Hex nut	.04
54-172	7/16-28 x 5/8" Hex nut	.01
80-232	Knob retaining spring	.01
93-127	No. 10 Internal Shakeproof lockwasher	.35C
93-173	1/4" Shakeproof lockwasher	.35C
93-416	1/32 x 13/64 x 5/8" steel washer	.50C
112-310	Foot switch mounting screw	.85C
144-20	Set mounting bolt	.03
147-101	Set mounting spacer	.04
188-41	Spacer ring	.70C

All Prices List—Subject to Regular Discount and Change Without Notice—9/15/41.

SERVICE MANUAL

Built for
Lincoln Motor Car Division
FORD MOTOR COMPANY
Dearborn, Michigan
U.S.A.



Model
8ML692

Made by ZENITH RADIO CORPORATION, Chicago, Ill., U.S.A.

Electrical Specifications

TUNING RANGE: 540-1600 Kc.
INTERMEDIATE FREQUENCY: 265 Kc.
SENSITIVITY: 5 microvolts at one
watt output.
POWER OUTPUT: 7 watts measured
at the voice coil.
SPEAKER: 6" x 9" oval, instrument
panel mounting.

CURRENT CONSUMPTION: .. 9.2 amperes
INSTANTANEOUS CURRENT CON-
SUMPTION DURING AUTOMATIC
CHANGE CYCLE: 18.2 amperes
TUBE COMPLEMENT: 7A7 R.F.,
7B8 converter, 7A7 I.F., 7B6 Detector
and 1st Audio, 7A4 Phase Inverter,
2-7C5 Push pull power output. 7Y4 Rec-
tifier.

MR. WARRANTY SERVICE MAN:

The following information has been compiled so that you may service or repair the 1942 Lincoln receiver with the least amount of time and effort. Read this manual thoroughly and study the contents carefully before attempting any adjustments to restore original performance to the receiver.

Note: Add approximately 10% to the list prices contained herein as per our change notice of September 29, 1941.

IMPORTANT

The Warranty tag must be filled in by the dealer and accompany each receiver when free warranty service is expected by the customer or dealer. Otherwise you are not authorized to do warranty service work.

D A T A

Receiver and Speaker Installation.....see Figures 1 and 2
Motornoise Suppressionsee Figures 3, 4, 5, 6, 7 and 8
Socket Voltages see Figure 11
Tube Layout see Figure 9
Trimmer Locations see Figures 9, 10 and 11
Schematic Diagram including Coil Resistance ValuesPage 289

RECEIVER INSTALLATIONS:

Figures 1-1A-2 and 2A, illustrating the escutcheon plate, control knobs and the installed receivers, are given here to facilitate removal and reinstallation of the receivers when service or repairs are necessary.

Remove the tuning and volume control knobs to expose the 8/32 flat head screws that support the receiver at the top. Remove the lower support brackets "D" next and finally loosen the hook bolts "A" to remove the receiver from the car.

NOTE: To set up a station on any automatic position pull the tuning knob out and tune the receiver as in manual tuning. Press the tuning knob in to its original position after the station has been accurately tuned in.

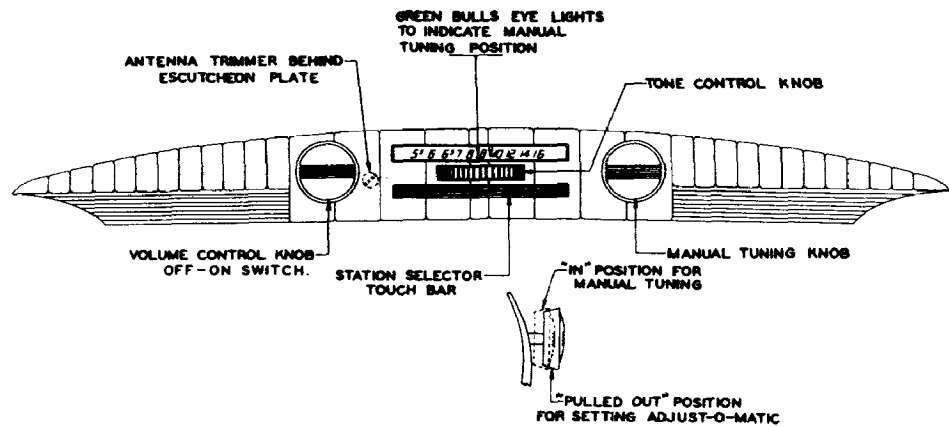


FIG. 1—Zephyr

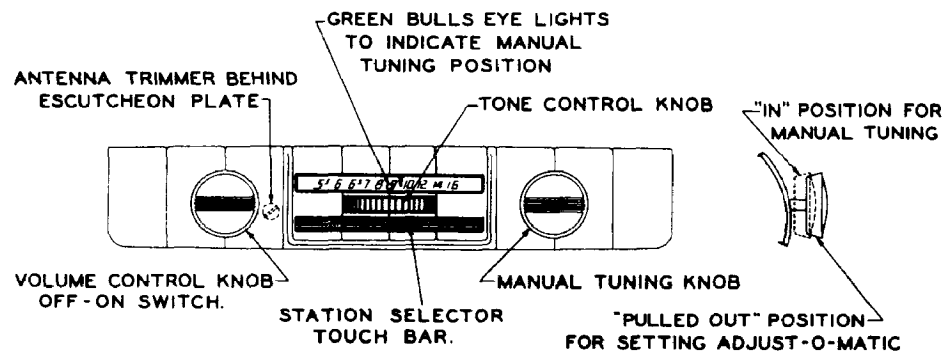


FIG. 1A—Continental

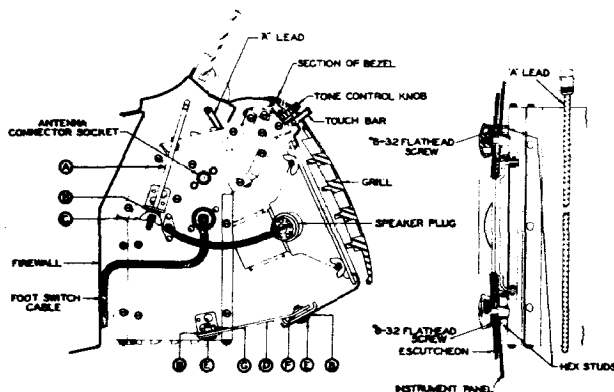


FIG. 2—Zephyr

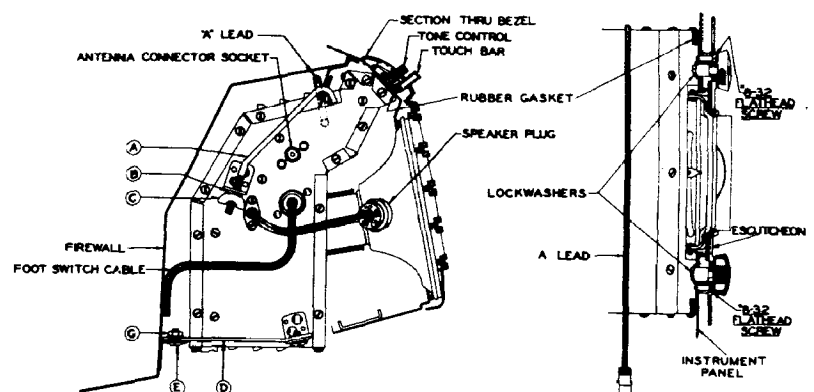


FIG. 2A—Continental

DELAYED AUTOMATIC MUTING CIRCUIT

Pressing either the Touch-bar or the foot control switch automatically mutes the receiver for the duration of the change cycle. This action is accomplished by applying 6 volts negative to the 7B6 first audio grid through the 1 megohm resistor R-25. (See schematic diagram). This negative voltage blocks the grid of the 7B6 until the voltage bleeds off through the 15 megohm resistor R-12, when the receiver will again operate normally. **NOTE:** The storage battery in the car must be properly polarized to apply the negative muting voltage to the receiver. If the battery polarity is reversed the receiver will not mute and it may become distorted during the change cycle. Always connect the positive (+) terminal of the storage battery or power supply to the receiver case when checking the receiver.

INTERFERENCE SUPPRESSION

There should be no motor noise or interference from the ignition circuit, if the receiver has been installed in the car according to the instructions furnished with it. The interference suppression equipment may be checked for proper installation by referring to the following illustrations:

The two distributor condensers No. 22-1147 should be installed as shown in Figure 3 below.

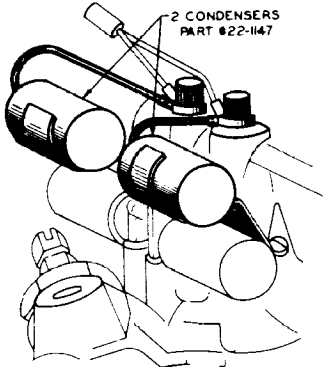


FIG. 3

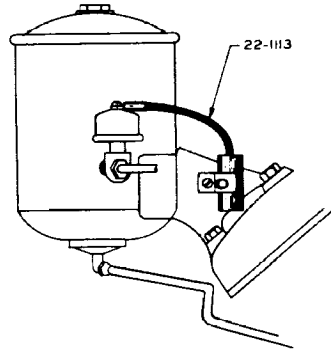


FIG. 4

The oil gauge condenser No. 22-1113 should be installed as shown in Figure 4 above.

The temperature gauge condenser No. 22-1113 should be installed with its bracket fastened under one of the cylinder head bolts as shown in Figure 5 below.

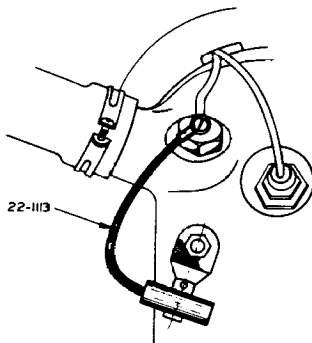


FIG. 5

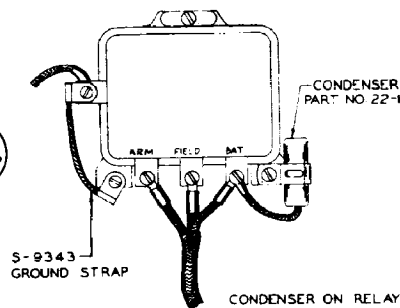


FIG. 6

The No. S-9343 ground strap and the voltage regulator condenser No. 22-1111 should be installed as shown in Figure 6 above. The condenser lead should be connected to the "Batt" terminal.

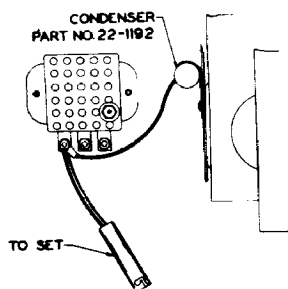
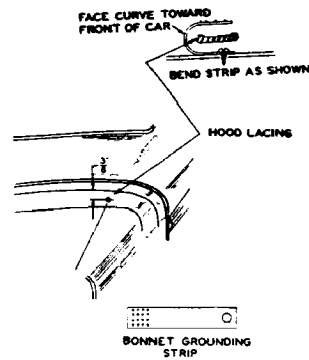


FIG. 7

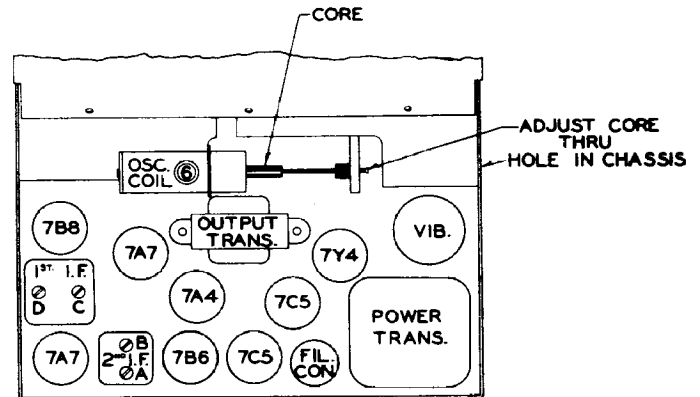
The No. 22-1192 condenser and the "A" lead should be connected together at the terminal strip inside the car above the steering column as shown in Figure 7.

Check the antenna connector and the instrument panel bolts so they make a good ground contact with the car body.



Install the No. 80-145 bonnet grounding strip as illustrated in figure 8.

FIG. 8



TUBE & TRIMMER LAYOUT MOD. 8ML692

FIG. 9

ALIGNMENT

Maximum performance is dependent upon the accurate alignment of the receiver, so follow the alignment instructions carefully.

CAUTION: Make all alignment adjustments to the receiver with the volume control turned full on. Reduce the signal intensity, if necessary, at the signal generator. Connect the output meter across the voice coil.

I.F. ALIGNMENT PROCEDURE

- 1—Remove the top and bottom covers from the receiver.
- 2—Place the receiver in the Manual tuning position and set the pointer at the low frequency end of the dial. (540 Kc.)
- 3—Set the signal generator at 265 Kc.
- 4—Apply the signal from the generator through a .1 mfd. dummy to the 7B8 converter grid.
- 5—Adjust trimmers A-B-C and D (Fig. 9) for maximum output. Repeat the operation to assure accurate alignment.

R. F. AND OSCILLATOR ALIGNMENT

- 1—Set the signal generator at 1640 Kc.
- 2—Connect the signal generator leads, through the dummy as illustrated in Figure 12, to the antenna receptacle on the receiver.
- 3—Set the receiver dial at 1640 Kc. (Maximum high frequency end of dial.)
- 4—Screw the cores completely out of the antenna, R.F. and oscillator coils.
- 5—Set the oscillator trimmer (F—Fig. 10) at 1640 Kc.
- 6—Peak R.F. and antenna trimmers (G—Fig. 10 and H—Fig. 11) for maximum output reading.
- 7—Replace the cores to their approximate original positions in the antenna, R.F. and oscillator coils.
- 8—Set the generator and the receiver dial at 1200 Kc.
- 9—Adjust the oscillator core (No. 6—Fig. 9) to scale at 1200 Kc.
- 10—Adjust the antenna and R.F. cores (No. 1 and No. 2—Fig. 10) for maximum output reading.
- 11—Set the signal generator at 600 Kc.
- 12—"Rock in" the Shunt oscillator core (No. 4—Fig. 10) for maximum output reading. (Same as rocking in the padder condenser on a ganged condenser receiver.)
- 13—Check receiver at 1200 Kc. for calibration and gain. If receiver is off scale or weak, repeat operation 9 and 10.

IMPORTANT: When reinstalling the receiver in the car, allow it to operate for approximately 15 minutes to reach normal operating temperature before checking the antenna trimmer alignment on a weak station at approximately 1200 Kc.

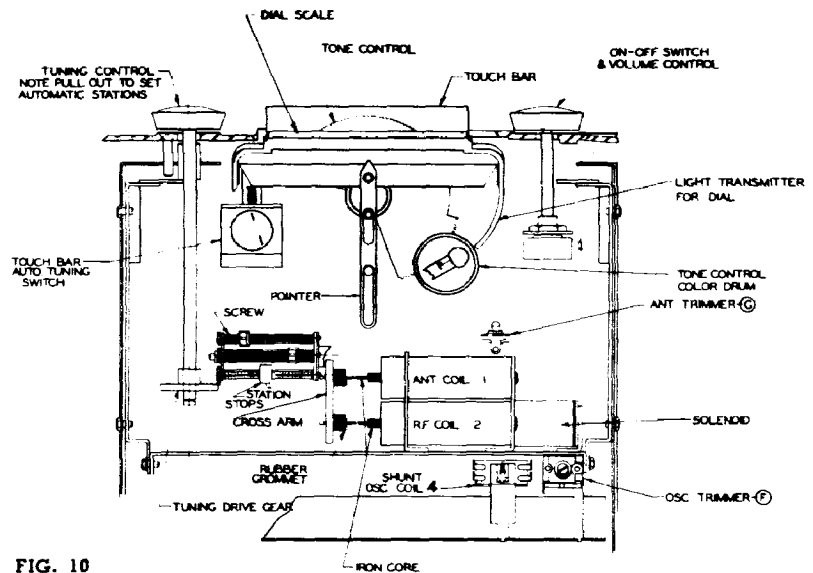
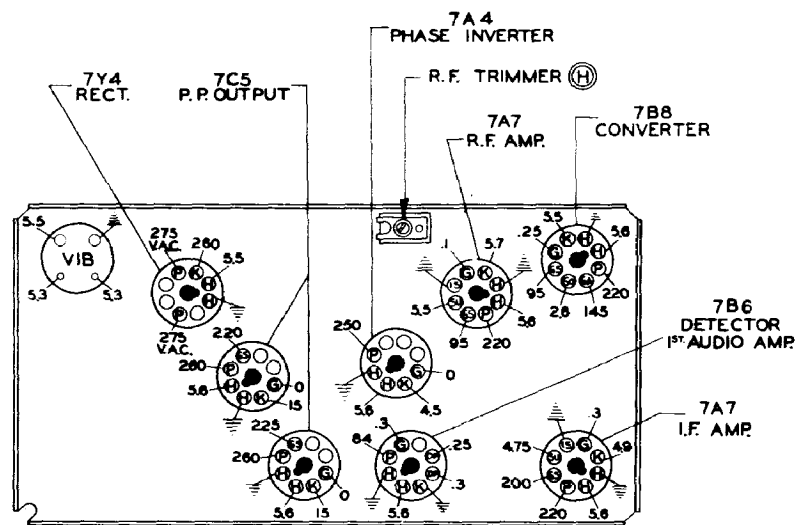


FIG. 10



BOTTOM VIEW OF CHASSIS

FIG. 11

Figure 11 shows the approximate voltages as measured with a 1000 ohm per volt meter measured between the socket terminals and the chassis. Volume control set at maximum with no signal. Battery Voltage—6.3.

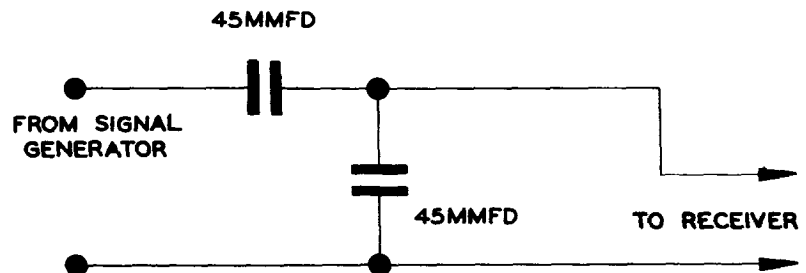
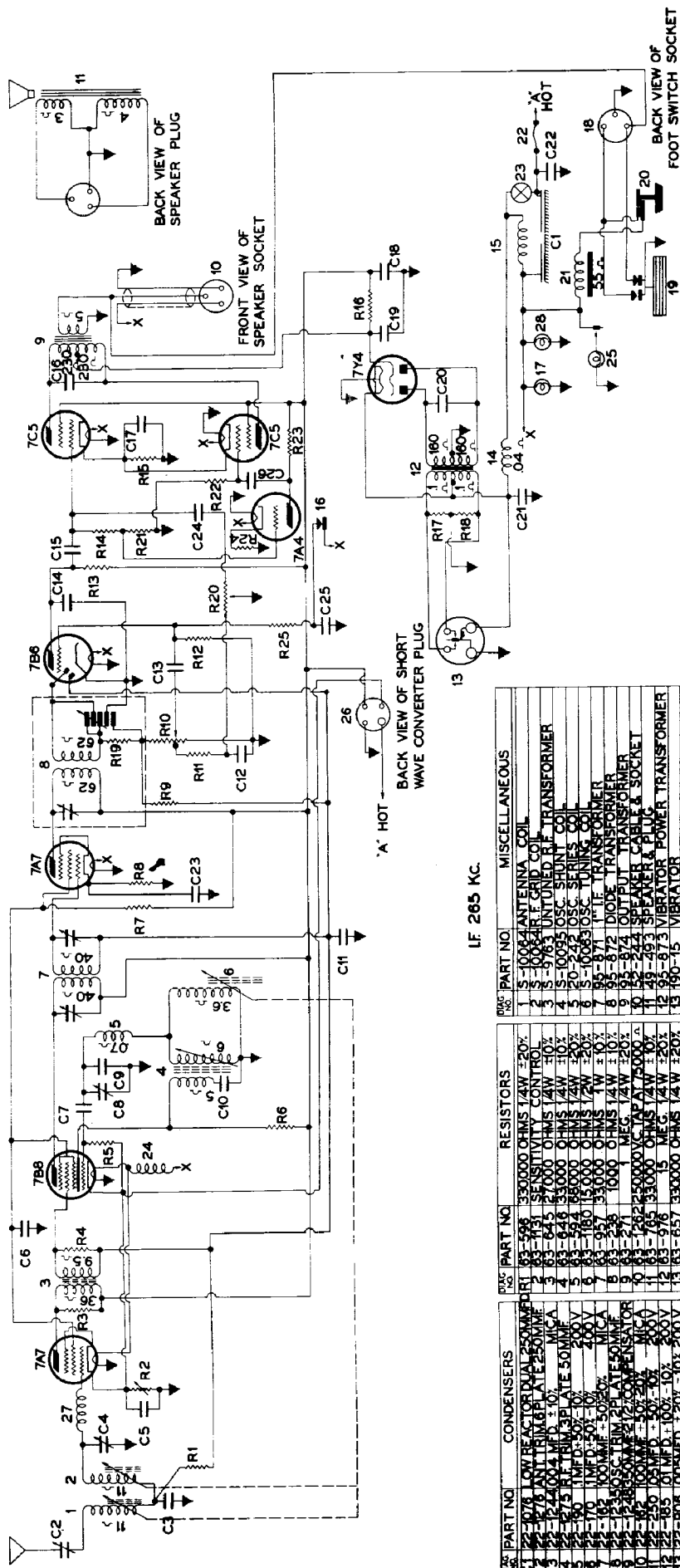


FIG. 12

Schematic of a recommended dummy antenna, closely resembling actual antenna capacity, to be used in series with signal generator leads when aligning the R.F. section of the receiver Fig. 12.



SCHEMATIC DIAGRAM AND PARTS
LIST FOR 1942 LINCOLN-ZEPHYR
RECEIVER

IF 265 KC.

PART NO.	PART NO.	PART NO.	PART NO.
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100
101	102	103	104
105	106	107	108
109	110	111	112
113	114	115	116
117	118	119	120
121	122	123	124
125	126	127	128
129	130	131	132
133	134	135	136
137	138	139	140
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149	150	151	152
153	154	155	156
157	158	159	160
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229	230	231	232
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705	706	707	708
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713	714	715	716
717	718	719	720
721	722	723	724
725	726	727	728
729	730	731	732
733	734	735	736
737	738	739	740
741	742	743	744
745	746	747	748
749	750	751	752
753	754	755	756
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777	778	779	780
781	782	783	784
785	786	787	788
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797	798	799	800
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965	966	967	968
969	970	971	972
973	974	975	976
977	978	979	980
981	982	983	984
985	986	987	988
989	990	991	992
993	994	995	996
997	998	999	1000

PARTS PRICE LIST

MODEL 8ML692 (CHASSIS 8B03)

LINCOLN

1942 ADJUST-O-MATIC RADIO

26H-18805

DIAL AND TUNING MECHANISM

12-894	Rear magnet mounting bracket.....	\$.15
26-314	Dial scale	1.00
34-106	Ratchet	.25
34-122	Tone control gear.....	.03
35-6	Tone control color drum.....	.15
46-478	Volume control knob.....	.20
57-963	Dial scale background plate.....	.60
80-272	Ratchet lever spring.....	.02
80-274	Tuning coil return spring.....	.05
80-300	Gear indexing spring.....	.03
85-308	Station selector switch.....	.60
93-558	Brass washer	.01
97-156	Tone control knob retaining stud....	.30
100-32	Dial light bulb	.07
126-437	Dial light shield	.01
126-438	Dial scale light shield	.005
126-439	Color organ light shield.....	.02
147-118	Manual automatic bakelite breaker collar	.04
187-5	Indicator light rod (lucite).....	.20
188-34	Retaining ring (tuning shaft).....	.01
188-39	Turret screw lock ring.....	.02
188-43	Retaining ring	.01
S10109	Ratchet drive lever & spring assembly	.35
S10110	Front magnet mounting bracket & detent lever spring assembly.....	.20
S10117	Bracket & index spring assembly....	.20
S10120	Tuning adjustment screw & grommet assembly	.40
S10127	Magnet coil & terminal assembly... 1.00	
S10232	Tuning shaft & gear assembly.....	.35
S10411	Manual automatic selector switch assembly	.25
S10415	Turret shaft, screw & stop assembly. 2.00	
S10514	Magnet core, cross arm, pointer drive bracket & stud assembly.....	.90
S10517	Tone control knob assembly (46-476) .45	
S10518	Dial pointer, stud & bushing assy. (59-138)	.30
S10521	Manual dial light socket, switch, bracket and stud assembly.....	.75
S10522	Color organ light socket & wire assembly	.40
S10523	Dial light socket & wire assembly... .40	

S10524	Station selector bar, bracket & stud assembly	.45
S10568	Tuning control knob assembly (46-477)	.35

COILS AND CHOKES

20-213	Main hash choke.....	.25
20-242	Oscillator series coil.....	.20
95-871	1st I. F. transformer.....	1.25
95-872	2nd I. F. transformer.....	1.50
S5844	Motor noise choke assembly.....	.15
S8819	Antenna motor noise choke assembly .20	
S9762	Untuned R. F. coil & core assembly.. .50	
S10063	Oscillator coil & shield assembly.... 1.10	
S10064	R. F. coil & shield assembly	1.40
S10095	Oscillator shunt coil assembly.....	.60
S10506	Heater line choke assembly.....	.30

CONDENSERS

22-162	.0001 mfd.	600 volt.....	.15
22-170	.1 mfd.	400 volt.....	.20
22-182	.00025 mfd.	600 volt.....	.20
22-185	.01 mfd.	200 volt.....	.15
22-190	1 mfd.	200 volt.....	.18
22-250	.05 mfd.	200 volt.....	.15
22-435	.02 mfd.	600 volt.....	.15
22-906	.005 mfd.	200 volt.....	.15
22-908	.5 mfd.	120 volt.....	.25
22-912	.002 mfd.	600 volt.....	.15
22-914	.05 mfd.	600 volt.....	.20
22-1076	Dual spark plate condenser.....		.20
22-1111	Generator condenser		.45
22-1113	Oil & water gauge condenser.....		.35
11-1147	Distributor condenser		.35
22-1192	"A" lead condenser		.50
22-1235	Single section ceramic trimmer....		.15
22-1244	.004 mfd.	600 volt.....	.20
22-1247	.008 mfd.	1600 volt.....	.20
22-1248	350 mmfd. compensator.....		.40
22-1270	.02 mfd.	200 volt.....	.15
22-1272	20 mfd. 25 volt x 20 mfd. 400 volt x 20 mfd. 350 volt dry electrolytic....		1.25
22-1275	Single section ceramic trimmer....		.25
22-1276	Antenna trimmer		.35

RESISTORS

63-238	1M ohm	1/4 watt	.07
63-271	1 megohm	1/4 watt	.07
63-282	2200 ohm	1/4 watt	.07
63-594	68M ohm	1/4 watt	.07
63-596	330M ohm	1/4 watt	.07
63-645	27M ohm	1/4 watt	.07
63-646	33M ohm	1/4 watt	.07
63-647	39 M ohm	1/4 watt	.07
63-648	47M ohm	1/4 watt	.07
63-657	330M ohm	1/4 watt	.07
63-765	33M ohm	1/4 watt insulated	.15
63-957	33M ohm	1 watt insulated	.20
63-976	15 megohm	1/4 watt	.07
63-1131	Sensitivity control		.50
63-1180	15M ohm	1/2 watt insulated	.17
63-1197	82 ohm	1/2 watt	.08
63-1201	1800 ohm W.W.	3 watt insulated	.30
63-1202	330 ohm W.W.	2 watt insulated	.30
63-1261	Tone control		1.00
63-1262	Volume control & switch		1.50

MISCELLANEOUS

49-493	Dynamic speaker (6" x 9" oval)	5.00
207-493	Field coil (not replaceable)	
208-493	Cone & voice coil assembly	2.00
52-200	Battery cable—fuse to ammeter	.20
52-244	Speaker cable and plug	.45
52-253	Battery cable—set to fuse	.20
52-266	Antenna cable	1.70
78-209	Socket—short wave adaptor	.10
78-251	Socket—antenna connector	.10
78-406	Socket—foot switch	.10
78-454	Socket—loktal tube (8 contact)	.15
78-455	Socket—loktal tube (6 contact)	.15
78-467	Socket—loktal tube (5 contact)	.15
78-477	Socket—vibrator	.10
80-246	Power transformer ground spring	.07
80-291	Muting switch spring	.03
83-961	Muting switch insulating strip	.35C
83-962	Muting switch insulating strip	.30C
93-125	No. 6 Internal shakeproof lockwasher	.25C
93-573	Muting switch fibre washer	.03
95-873	Power transformer	3.00
95-874	Output transformer	1.50
114-63	No. 6/32 x 3/16" Hex acorn Hd. M.S.-N.P.	.25C

114-149	No. 6 x 3/16" Hex Hd. S.T. screw-N.P.	.45C
127-39	Muting switch contact	.03
127-40	Muting switch contact	.03
136-12	Fuse—20 ampere	.10
190-15	Vibrator	2.95
202-324	Instruction book	.15
S9462	Foot control switch & cable assembly	2.00

INSTALLATION KIT ASSEMBLY

S10573	Installation kit complete	1.00
12-972	Set installation bracket	.07
19-114	Foot switch cable clip	.02
54-99	No. 12/24 x 7/16" Hex nut	.35C
54-146	No. 10/32 wing nut	1.50C
54-151	No. 12/24 wing nut	1.50C
64-141	Foot switch installation eyelet	.04
71-59	No. 8 32 x 1/2" flat Hd. M.S.-N.P.	.60C
93-340	No. 3/32 x .255 x 1/2" steel washer	.75C
93-372	No. 12 Internal shakeproof lockwasher	.40C
93-524	Foot switch installation washer	.04
97-153	Set installation spacer stud	.15
112-257	No. 4 x 1/4" R.H. sheet metal screw	.50C
112-310	Foot switch mounting screw	.85C
112-342	No. 12/24 x 5/8" B.H.M.S.	.01
112-348	Set installation screw	.09

MOTOR NOISE SUPPRESSION KIT ASSEMBLY

S10574	Motor noise suppression kit complete	2.60
S9343	Regulator ground lead assembly	.05
12-831	Suppressor condenser bracket	1.50C
22-1111	Generator condenser	.45
22-1113	Water & oil gauge condenser	.35
22-1147	Distributor condenser	.35
22-1192	"A" lead condenser	.50
83-916	Bonding strip	.04
114-39	No. 8 x 1/4" Hex Hd. slotted S.T. screw	.50C

TUNING KNOB KIT ASSEMBLY

S10577	Tuning knob kit complete	.55
S10568	Tuning control knob assembly (46-477)	.35
46-478	Volume control knob	.20

All Prices List—Subject to Regular Discount and Change Without Notice—9/15/41.

SERVICE MANUAL

FOR

1942 HUDSON AUTOMOBILE RECEIVER

SPECIFICATIONS AND CIRCUIT FEATURES

MODEL DB-42

PART No. HA-204800

CIRCUIT: 6 Tube Superheterodyne.

TUBE COMPLEMENT: 7A7 R.F., 7B8 Converter, 7A7 I.F., 7B6 Detector, A.V.C., 1st Audio, 7C5 Beam Power Output, 7Y4 Rectifier. Fig. 1.

TUNING RANGE: 540 to 1600 Kilocycles.

AUTOMATIC POSITIONS: 5 plus "Dial."

SPEAKER: 6" Dynamic externally mounted behind instrument panel. Voice coil impedance 3.2 ohms at 400 cycles. Field resistance 4 ohms cold.

tone CONTROL: Variable with bass, high fidelity and voice positions.

POWER OUTPUT: Maximum 4.5 watts. Undistorted 1.5 watts.

VIBRATOR: Non-synchronous.

POWER RATING: Current drain 7.5 amperes. Fuse—20 amperes.

TUNING RATIO: 15 to 1.

SENSITIVITY: 5 microvolts overall.

I. F. FREQUENCY: 265 K.C.

1942 RADIO RECEIVER KIT

Model DB-42 HA-204800

Items included in kit are:

Radio receiver
Mounting bracket, screws, lockwashers
Speaker and bracket assembly
Distributor suppressor
Generator condenser
Temperature gauge condenser
Ignition lock condenser
Bonnet grounding strip
Motor Bond strap
Sheet metal screw
Nut for 6 cyl. cars
Lockwasher

RADIO ANTENNA KITS

HA-205452 60" Telescopic
HA-205450 90" Telescopic
HA-205451 Vacuum Antenna
Antenna
Lead-in
Attaching parts

(See antenna kit for full installation instructions.)

TUBE LAYOUT

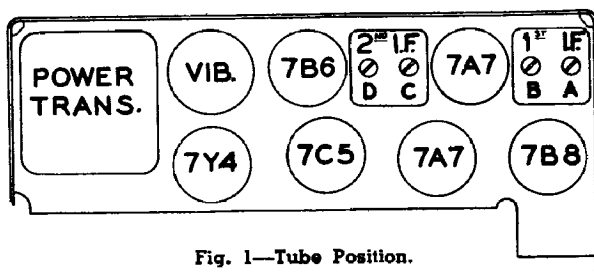


Fig. 1—Tube Position.

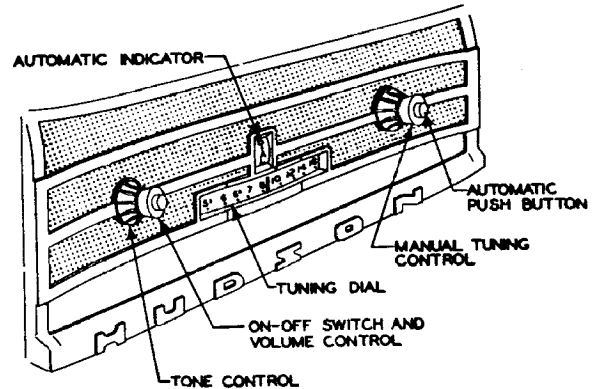


Fig. 2—Operating Controls.

1942 OPERATING INSTRUCTIONS

This radio incorporates the new Hudson Automatic Touch Tuning with Foot Control.

1. **TO TURN RADIO ON**—Rotate left control knob in a clockwise direction and allow receiver to reach operating temperature. (Approximately 60 seconds.)
2. Press the Automatic Push Button several times or until the word DIAL appears on the Automatic Indicator.
3. **MANUAL TUNING** — Turn right hand control knob to tune in stations on the tuning dial. Be sure to tune to point where tone is deepest.
4. **tone CONTROL** — The tone control knob is located behind the volume control knob. Turn in either direction to most pleasing tone position.
5. **VOLUME** — Adjust volume control knob to desired level.

AUTOMATIC TUNING

If not previously set up for Automatic operation by the dealer, proceed as follows:

1. Press the Automatic button in the center of the right hand knob, until Number 1 position appears on the Automatic Indicator.
2. Pull the tuning knob OUT to engage the Automatic mechanism.
3. Select the station desired and tune to its corresponding frequency by rotating the tuning knob. Tune very carefully for deepest and clearest reception.
4. Push the tuning knob IN to its original position. Automatic push button and Foot Control will not operate if tuning knob is left in the OUT position.
5. Follow above procedure in setting automatic positions (i.e. 2, 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 Dial tuning, or any one of the stations selected on the Automatic.

FOOT CONTROL

The foot control button provides a convenient means of automatically tuning the receiver from the floor

board, thus avoiding the necessity of removing the hands from the wheel, or the eyes from the road. Its function is identical to that of the automatic push button in the center of the right hand knob, and therefore requires no set-up or other adjustment.

Press the foot control button all the way down to change stations.

Press lightly to silence radio during conversation.

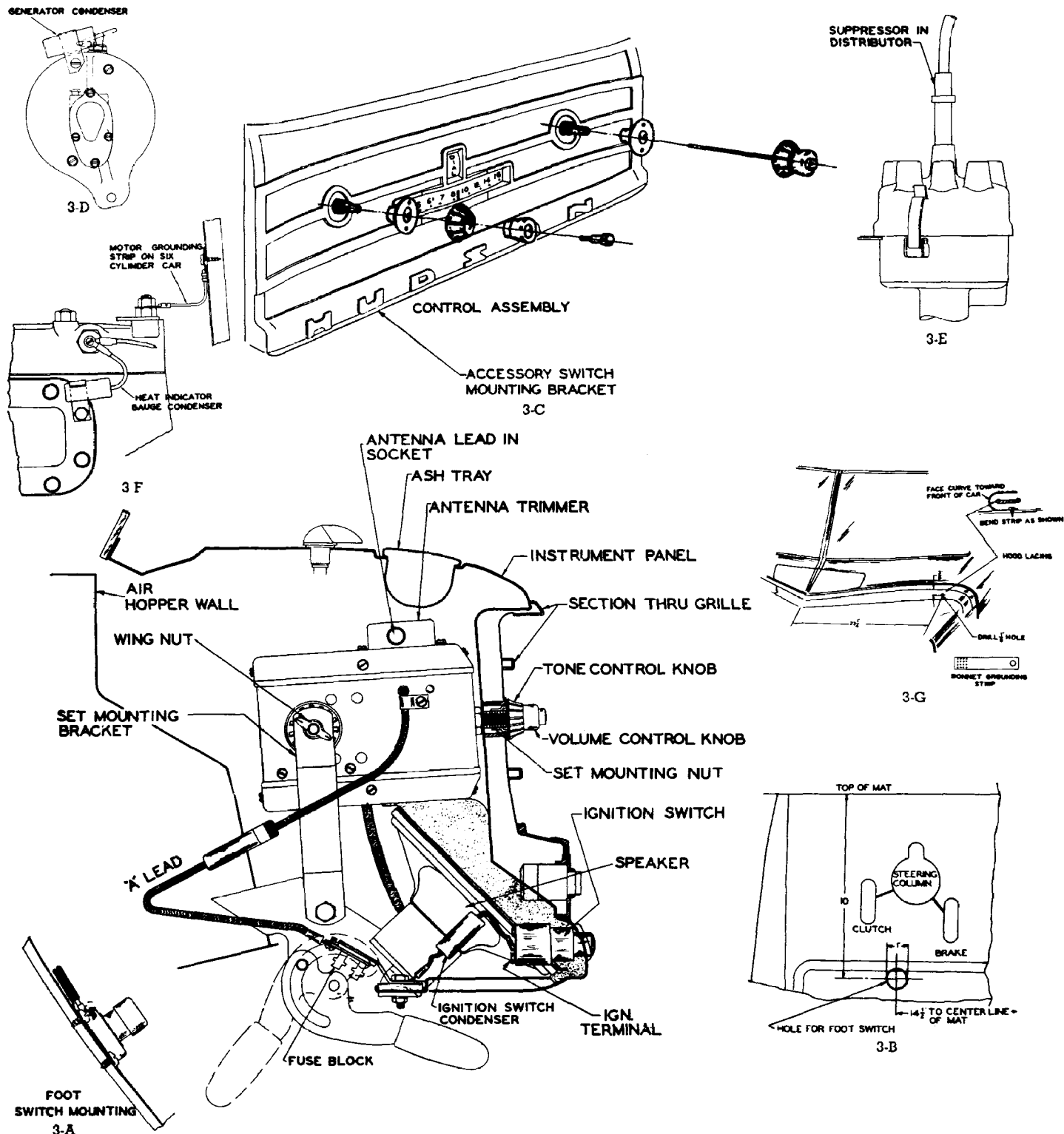


Fig. 3—Mounting Details and Connections.

ANTENNA INSTALLATION INSTRUCTIONS

Complete instructions for installation of the antenna are packed with each antenna kit.

RADIO INSTALLATION INSTRUCTIONS

1. Install antenna.
2. Remove decorative plate in center of grille covering radio opening.
3. Remove floor mat, place foot switch in position and secure with 3 no. 8 R.H. self tapping screws in holes provided as shown in Fig. 3-A.
4. Dress foot switch lead to left of clutch pedal and vertically behind fire wall pad.
5. Loosen and drop accessory switch bracket.
6. Plug foot switch cable in socket provided on right side of receiver and insert receiver from bottom of instrument panel, starting it up in a vertical position, foot switch cable up, until the rear end reaches the top of the air hopper. Bring the front of the receiver forward so that the knob shafts protrude through the shaft openings in the instrument panel.
7. Screw the knob shaft bushing nuts in place with the tips of long nose pliers in holes provided.
8. Attach side mounting bracket by fastening one end to side of receiver case with wing nut. Remove top cowl ventilator hand bracket bolt and replace with $\frac{1}{4}$ "x $\frac{3}{4}$ " M.S. Secure radio bracket to the cowl ventilator handle bracket with flat washer, lock washer and nut. Fig. 3.
9. Remove cardboard protector from speaker unit and fasten speaker and bracket assembly in place with two $\frac{1}{4}$ "x $\frac{3}{4}$ " M.S., flat washers, lock washers and nuts provided, as shown in Fig. 3. Plug speaker cable plug into socket provided on speaker frame.
10. Fasten controls in place as shown in Fig. 3-C. CAUTION—Tuning knob must be placed $\frac{3}{16}$ " away from instrument panel in order to rotate freely in the automatic position.
11. Fasten accessory switch bracket back in place.
12. Remove ash tray assembly and plug antenna lead into socket provided on top of receiver.

13. Fasten "A" lead to fuse block as indicated in Fig. 3.
14. Turn receiver on and tune to a weak station near 1200 K.C. (see instruction card.) Adjust antenna trimmer on top of receiver through ash tray opening for maximum volume. Place ash tray back into instrument panel.
15. Place floor mat on flat surface. Mark and cut one inch hole as shown in Fig. 3-B for foot switch button. Replace mat on car floor.

SUPPRESSION

16. Attach condenser, part No. 22-1262 to rear of generator with machine screw and lockwasher provided. Connect condenser lead to generator "A" terminal, Fig. 3-D.
17. Install suppressor in center hole of distributor cap being sure to make good contact. Place distributor lead in top of suppressor Fig. 3-E.
18. Mount ignition lock condenser part No. 22-1263 under rear left nut holding ventilator handle guide assembly. Connect the other lead to the "AM" terminal of the ignition lock Fig. 3.
19. Attach condenser part No. 22-1260 to the upper rear cap screw on the engine water manifold plate and attach the condenser lead to the heat indicator terminal, Fig. 3-F.
20. Install bonnet grounding spring under hood lacing $23\frac{1}{2}$ " to left of center line of car as shown, using no. 8 sheet metal screw Fig. 3-G.
21. Remove tape from special hole in dash and install flat ground strap from rear cylinder head stud to dash. Fasten it to dash with sheet metal screw and shake proof washer. The ground strap is mounted under the regular stud nut on the eight cylinder cars. The ground strap is placed on top of the regular stud nut on the six cylinder cars and held in place by special nut furnished in kit. Fig. 3-F.

IMPORTANT: Dirt and paint must be carefully removed from contact points to insure good electrical circuit.

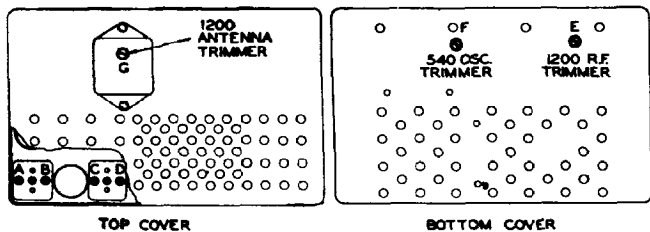


Fig. 4—Trimmer Positions.

ALIGNMENT

CAUTION—Care should be taken while making all adjustments on the receiver to have the volume control turned full on. The signal fed to the receiver through a 30 mmfd. series and 30 mmfd. shunt dummy to the antenna socket of the receiver. The intensity of the signal should be reduced only at the signal generator. Let receiver warm up a while before making adjustments.

L.F.

1. Set signal generator to 265 K.C.
2. Place set in manual tuning position and set dial pointer at 600 K.C.
3. Adjust screws D, C, B and A in sequence for maximum response on the output meter.

R.F.

1. Set signal generator to 540 K.C.
2. Place set in manual tuning position and tune set to the extremity of the dial scale at 540 K.C.
3. Adjust trimmer F, Fig. 4, for maximum response.
4. Set signal generator to 1200 K.C.
5. Tune set to 1200 K.C.
6. Adjust E, Fig. 4, for maximum response.

WARNING: The following adjustments are to be made only if a core or coil is replaced.

OSCILLATOR CORE OR COIL REPLACEMENT ONLY

On all adjustments give set sufficient time to warm up.

1. Replace coil or core.
2. Set signal generator to 540 K.C.
3. Tune the set to the 540 K.C. end of the dial scale.
4. Adjust core for maximum peak.
5. Back off trimmer F, Fig. 4, to $\frac{1}{3}$ of output reading.

6. Repeat operations 4 and 5 until no further gain can be reached by adjusting core.
7. Re-cement core screw with speaker cement.
8. Follow instructions given under general R.F. alignment.

R.F. CORE OR COIL REPLACEMENT ONLY

On all adjustments give set sufficient time to warm up.

1. Replace coil or core.
2. Set the signal generator to 540 K.C.
3. Tune set all the way to low end of 540 K.C. dial scale.
4. Adjust core for maximum response.
5. Back off trimmer (E if R.F. or trimmer G if antenna stage) until output is reduced by approximately one third.
6. Repeat 4 and 5 until no further gain is obtained from core adjustment.
7. Set signal generator to 600 K.C.
8. Tune set to 600 K.C.
9. Adjust trimmer (E if R.F.—G if antenna stage) Fig. 5 for maximum response.
10. Set signal generator to 1400 K.C.
11. Tune set to 1400 K.C.
12. Adjust core for maximum output.
13. Re-cement core screw with speaker cement.
14. Peak set following general instruction given under R.F., alignment.

SOCKET VOLTAGES AS MEASURED WITH 1000 OHM PER VOLT METER TO CHASSIS, VOLUME CONTROL AT MAXIMUM WITH NO SIGNAL. BATTERY 6.3 VOLTS.

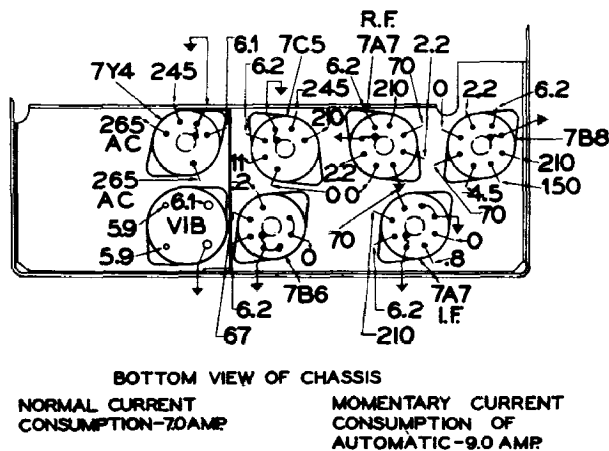


Fig. 5—Socket Voltages.

PARTS LIST

Zenith Part No.	Hudson Part No.	Description	Price
DIAL AND TUNING MECHANISM ASSEMBLY			
34-109	BO 204025	Tuning shaft and gear.....	\$0.35
147-118	BO 204026	Manual automatic bakelite breaker collar	.04
S10115	BO 204027	Manual automatic selector switch assembly	.40
S10117	BO 204028	Tuning shaft rear bracket and index spring	.20
188-34	BO 204029	Tuning shaft retaining ring.....	.01
S10119	BO 204030	Automatic shaft, gear and screw assembly	2.25
35-5	BO 204031	Indicator dial drum	.15
34-113	BO 204032	Ratchet gear	.25
S10109	BO 204033	Ratchet gear drive lever and spring assembly	.35
80-272	BO 204034	Ratchet gear drive return spring....	.02
S10110	BO 204035	Front magnet mounting bracket and detent lever spring assembly	.20
12-894	BO 204036	Rear magnet mounting bracket.....	.15
S10127	BO 204037	Magnet coil and terminal assembly..	1.00
S10122	BO 204038	Magnet core, pin, cross arm and pointer drive bracket assembly.....	.75
80-274	BO 204039	Magnet coil plunger return spring...	.05
59-129	BO 204040	Dial pointer	.10
188-32	BO 204041	Dial pointer retaining ring.....	.85C
S10116	BO 204042	Tuning drive bushing and bracket assembly	.35
26-307	BO 204043	Manual tuning scale (calibrated)....	.75
26-308	BO 204044	Automatic tuning scale	.05
71-4	BO 205284	Dial scale mounting screw.....	.25C
100-32	BO 71641	Dial light bulb	.07
MS704	BO 204045	Dial light shield and background plate	.40
S10120	BO 204046	Tuning adjustment screw and grommet assembly	.40
S10108	BO 204047	Pilot light socket and wire assembly	.30
COILS AND CHOKES			
20-213	BO 204890	Main hash choke coil	.25
20-242	BO 204891	Oscillator series coil	.20
95-819	BO 204892	1st I.F. transformer	1.10
95-820	BO 204893	2nd I.F. transformer	1.10
S5844	BO 204894	Motor noise choke coil assembly....	.15
S9762	BO 204895	Untuned R.F. coil and core assembly	.50
S9841	BO 204896	Heater line choke coil assembly....	.20
S10063	BO 204897	Oscillator coil and shield assembly..	1.10
S10064	BO 204898	R.F. coil and shield assembly.....	1.40
S10095	BO 204899	Oscillator shunt coil assembly.....	.60
CONDENSERS			
22-162	BO 204900	.0001 mfd. 600 volt.....	.15
22-170	BO 204901	.1 mfd. 400 volt.....	.20
22-182	BO 204902	.00025 mfd. 600 volt.....	.20
22-191	BO 204903	.1 mfd. 200 volt.....	.18
22-250	BO 204904	.05 mfd. 200 volt.....	.15
22-838	BO 204905	.005 mfd. 600 volt.....	.15
22-906	BO 204906	.005 mfd. 200 volt.....	.15
22-908	BO 204907	.5 mfd. 120 volt.....	.25

Zenith Part No.	Hudson Part No.	Description	Price
22-1075	BO 204908	.007 mfd. 200 volt.....	.15
22-1076	BO 204909	Dual spark plate condenser.....	.20
22-1170	BO 204910	.01 mfd. 600 volt.....	.15
22-1233	BO 204911	20 mfd. 25 volt x 10 mfd. 300 volt x 20 mfd. 350 volt dry electrolytic....	1.25
22-1235	BO 204912	Single section ceramic trimmer	.15
22-1236	BO 204913	Single section ceramic trimmer	.20
22-1238	BO 204914	.5 mfd. 120 volt.....	.25
22-1244	BO 204915	.004 mfd. 600 volt.....	.20
22-1247	BO 204916	.008 mfd. 1600 volt.....	.20
22-1248	BO 204917	350 mmfd. compensator	.40
22-1249	BO 204918	Antenna trimmer condenser.....	.25
RESISTORS			
63-265	BO 204919	220 ohm 1/4 watt	.07
63-271	BO 204920	1 megohm 1/4 watt	.07
63-294	BO 204921	100 ohm 1/4 watt	.07
63-594	BO 204922	68M ohms 1/4 watt	.07
63-596	BO 204923	330M ohm 1/4 watt	.07
65-607	BO 204924	15M ohm 1/2 watt	.08
63-645	BO 204925	27M ohm 1/4 watt	.07
63-646	BO 204926	33M ohm 1/4 watt	.07
63-763	BO 204927	22M ohm 1/4 watt insulated.....	.15
63-941	BO 204928	390 ohm W.W. 1 watt insulated....	.20
63-957	BO 204929	33M ohm 1 watt insulated.....	.20
63-968	BO 204930	1800 ohm W.W. 2 watt insulated...	.30
63-976	BO 204931	15 megohm 1/4 watt	.07
63-1197	BO 204932	82 ohm 1/2 watt	.08
63-1248	BO 204933	Tone control, volume control and switch	2.50
MISCELLANEOUS			
43-59	BO 204934	Antenna connector housing	.20
52-202	BO 204935	Battery cable—set to fuse holder...	.15
52-203	BO 204936	Battery cable to fuse block	.15
52-226	BO 204937	Speaker cable and plug	.45
78-243	BO 204938	Socket-vibrator	.10
78-406	BO 204939	Socket-foot switch	.10
78-454	BO 204940	Socket-loktal tube (8 contact).....	.15
78-455	BO 204941	Socket-loktal tube (6 contact).....	.15
78-467	BO 204942	Socket-loktal tube (5 contact).....	.15
78-468	BO 204943	Socket-antenna connector	.15
95-832	BO 204944	Power transformer	2.50
95-837	BO 204945	Output transformer	1.00
114-63	BO 205285	6/32 x 3/16" Hex acorn Hd. M.S....	.25C
114-149	BO 205286	6 x 3/16" Hex Hd. S.T. screw.....	.45C
126-421	BO 204946	Tube shield	.10
136-12	BO 18269	Fuse—20 ampere	.10
190-19	BO 204947	Vibrator	2.95
202-295	BO 204948	Instruction book	.01
S10089	BO 204485	Foot control switch and cable assy...	2.00
SPEAKER AND SPEAKER MOUNTING PARTS			
12-937	BO 204020	Speaker support bracket	.25
49-476	BO 204023	6" dynamic speaker	4.25
208-476	BO 204949	Cone and voice assembly.....	1.50
54-30	BO 170567	8/32 x 5/16" Hex nut.....	.25C

PARTS LIST (Continued)

Zenith Part No.	Hudson Part No.	Description	Price
57-945	BO 204022	Speaker cover plate	.75
114-88	BO 205287	8/32 x 1/2" H.H. M.S.....	.45C
114-167	BO 205288	10/32 x 5/16" Hex acorn Hd.....	.60C
196-53	BO 204024	Rubber speaker gasket	.40

INSTALLATION PARTS

S10141	BO 205296	Installation kit complete	2.00
12-938	BO 204021	Set mounting bracket	.15
22-1260	BO 152021	Temperature gauge condenser	.30
22-1262	BO 152022	Generator condenser	.35
22-1263	BO 205280	Ignition condenser	.25
54-157	BZ 70874	1/4-20 x 7/16" Hex nut	.05
54-174	BO 205289	Wing nut	.02
63-1252	BO 205281	Distributor suppressor	.40
80-145	BO 205282	Motor hood bond spring	.02
93-228	BO 205295	Set mounting washer	.40C
112-310	BO 170687	Foot switch mounting screw	.85C
114-87	BO 17304	8 x 1/2" slotted S.T. screw.....	.01

Zenith Part No.	Hudson Part No.	Description	Price
114-168	BZ 70872	1/4"-20 x 3/4" H.H. M.S.....	.02
83-986	BO 204481	Bonnet grounding strip	.25
112-361	BO 71707	#8 self tapping screw	.01
93-575	BO 170395	Lock washer	.01
54-188	BM 6189	Nut (for 6 cyl. cars only).....	.02
93-576	BZ 70673	Lock washer	.01
93-577	BO 12857	Flat washer	.01

TUNING KNOB KIT

S10142	BO 205290	Tuning knob kit complete	1.50
S9901	BO 205291	Tuning knob assembly	.50
46-458	BO 205292	Volume control knob (tenite)	.10
46-459	BO 205293	Tone control knob	.15
46-460	BO 205294	Dummy Knob	.10
54-173	BO 205283	Set mounting nut (trim washer).....	.20

**ALL PRICES LIST — SUBJECT TO REGULAR DISCOUNT AND
CHANGE WITHOUT NOTICE. 7-1-41**

ZENITH RADIO CORPORATION

PHONE
BERKSHIRE 7500

CABLE ADDRESS
"ZENITHRAD"
ALL CODES



TO ALL AUTHORIZED ZENITH WARRANTY SERVICE STATIONS

Subject: Adjustment and maintenance of 1942 automotive
radio tuning units.

The permeability tuning units employed in the 1942 Ford, Lincoln, Nash, Hudson and Willys automotive receivers, manufactured by the Zenith Radio Corporation, are fundamentally alike even though a slight variation in mechanical layout exists in the various chassis; therefore, the operating principle and mechanical adjustments will be the same for all units.

Check all receiver installations thoroughly, when the cars are available, to prevent improper installations which cause many mechanical failures. The most common errors are warped chassis, low battery voltages, high resistance "A" lead connections and loose or dirty chassis contacts which result in poor ground connections.

Study this manual carefully so you are familiar with the operating characteristics of the tuning unit before attempting any repairs or adjustments.

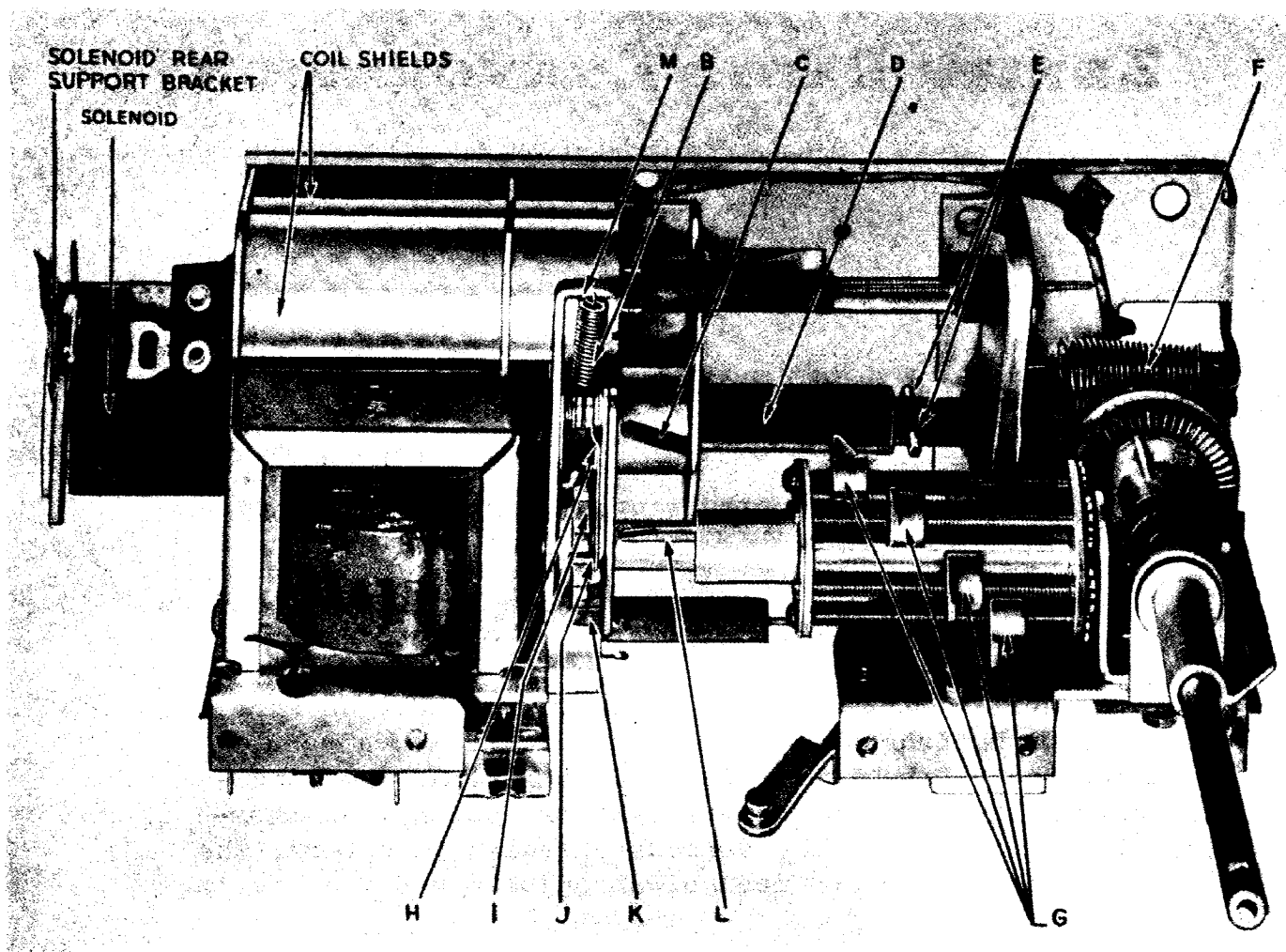


FIGURE 1

OPERATING PRINCIPLE

Pressing the Automatic tuning push button or the foot control switch button allows the A current from the car battery to flow through the solenoid and safety switch to the chassis ground.

When the solenoid is energized it forces the plunger of the cross arm and magnet core assembly from the right, or resting position, to the closed position approaching the solenoid (see Fig. 2). The cross arm and magnet core assembly will remain in the closed position until the push button is released.

When the push button is released the solenoid is no longer energized and the cross arm return spring will draw the cross arm to a resting position determined by the setting of the turret stop (see Fig. 3).

As the cross arm returns to the resting position, the ratchet lever trip pins E force the ratchet lever C upward, turning the turret of the turret assembly 60 degrees (see Fig. 1). This operation places a new turret stop in position for the cross arm to rest against while tuning manually or setting an automatic station.

MAINTENANCE and ADJUSTMENT

Disconnect the carriage return spring at point X (Fig. 3) and operate the cross arm W manually so that the nature of the binding may be readily determined and localized.

CAUTION: Do not stretch the cross arm return spring F (Fig. 1).

Sluggish Carriage Operation

- 1—Check the battery voltage which should be 6.3, A lead, safety switch R (Fig. 2), and the wiring to the solenoid to assure sufficient current (approx. 15 amps.) to operate the solenoid.
- 2—The tuning shaft S (Fig. 2) must be all the way in before the bakelite bushing on it will allow the safety switch to make a good electrical contact.

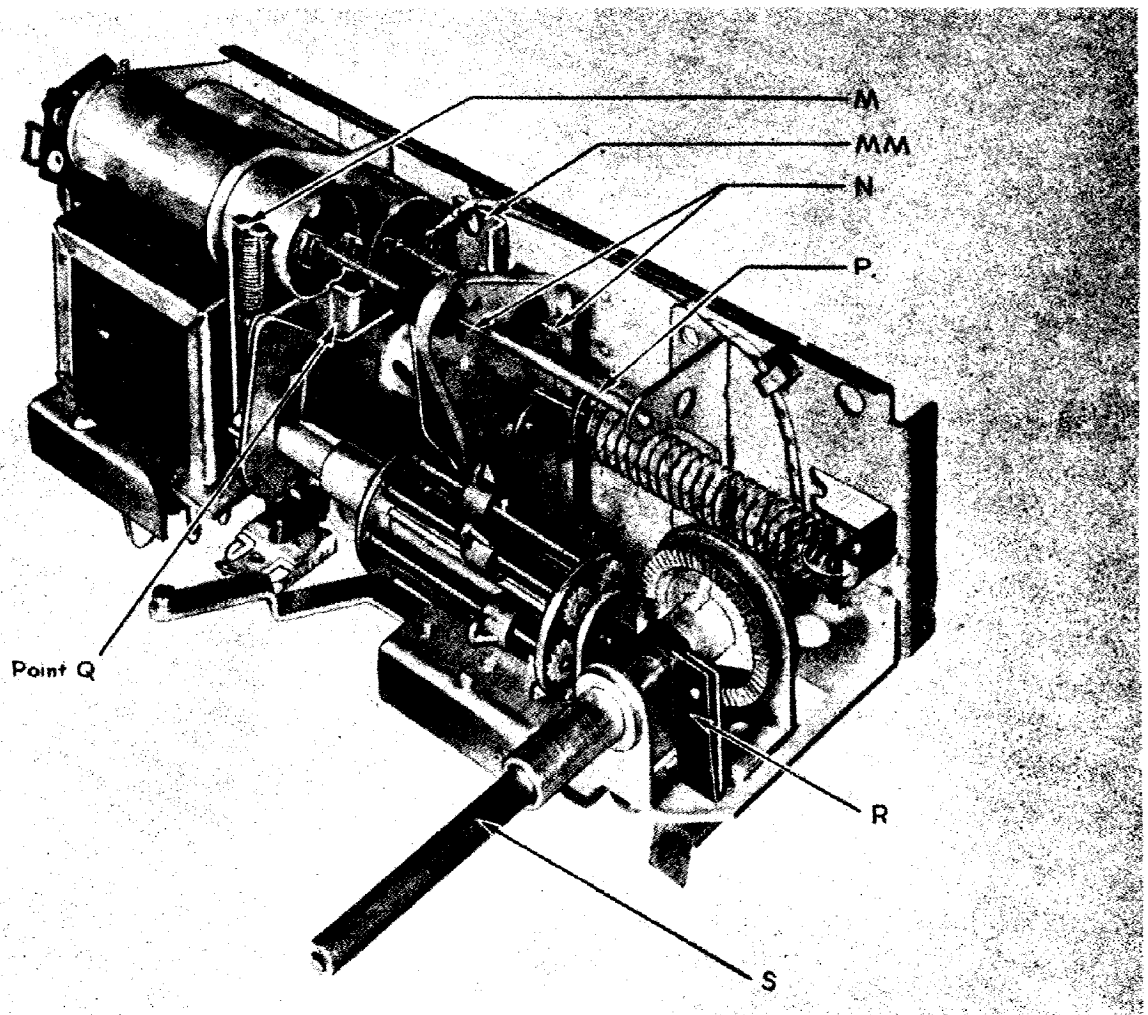


FIGURE 2

- 3—Inspect the mechanism for obstructing wires, etc.
- 4—The tuning cores U must be centered in the coil forms T and the core balancing screws V must be straight to prevent excessive friction from retarding the mechanical action of the cross arm W (see Fig. 3).
- 5—The guide rods P (Fig. 2) must be straight and smooth and must have a slight amount of end play so that they can be turned with the fingers when the cross arm W is in any position of travel.
- 6—Remove any heavy lubricant or grease from the plunger D (Fig. 1) to avoid a tight fit in the solenoid. A light application of lubriplate is sufficient to lubricate the plunger.
- 7—Check all parts of the pointer mechanism, including the dial background, for sufficient clearance and smooth operation.
- 8—A very light application of lubriplate across the top of the carriage return spring will deaden any noticeable vibration by it at the completion of a change cycle.

Cross Arm Sticking At The Closed Position

The most convenient method for determining the reason that causes the cross arm to stick in the closed position or on the return stroke of the change cycle is as follows: Reconnect the cross arm return spring. Then move the cross arm manually to the closed position (Fig. 2) and allow it to return slowly to the point where it sticks. Allow the cross arm to remain in this position while checking the following points for the source of trouble.

- 1—Expansion of the solenoid or a bent front solenoid support bracket, which supports the ratchet lever collar C may cause the collar to bind against the guide rod support bracket MM (Fig. 2). When the ratchet lever binds in this position the spiral slot in C will hold the trip pins E, preventing spring F

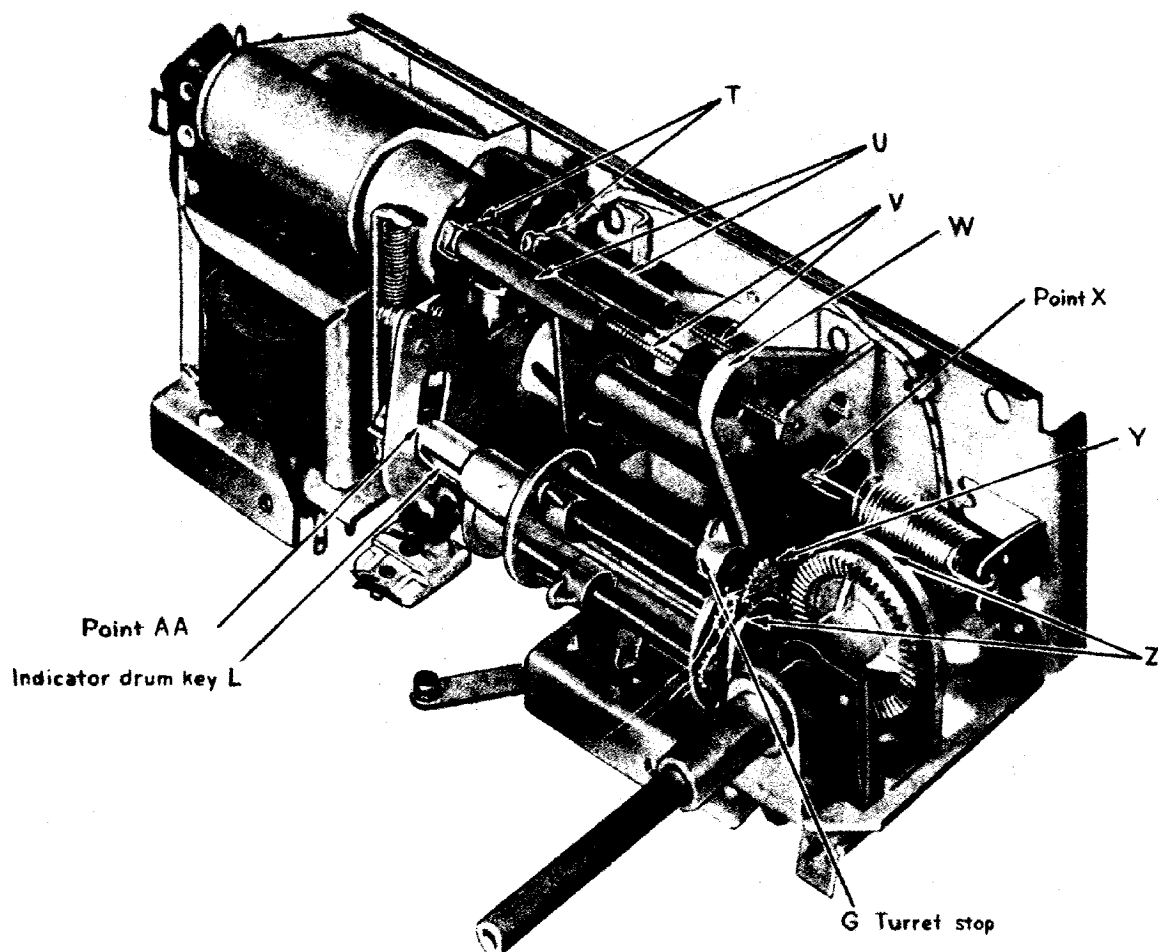


FIGURE 3

from returning the cross arm to the resting position (see Fig. 1). Pressure at Q applied towards the rear of the solenoid with a screw driver will bend the front solenoid support bracket M to relieve the binding.

- 2—The plunger trip pins E may hang up at a burr or a rough edge on the spiral slot in the ratchet lever collar C (Fig. 1). The slot can be burnished smooth by working the pins in and out of the slot a few times while the collar is restrained from turning freely.
- 3—A loose ratchet lever spring B (Fig. 1) will cause the plunger to stick because of the added friction when the ratchet lever rides on the trip pins instead of rising to its normal position.
- 4—The plungers on the Ford and Lincoln tuning units have a slot underneath which permits a brass pin on the ratchet collar to ride in them. (Not illustrated.) The slot and pin prevent the ratchet from turning the turret too far or back lashing. The brass pin may be burnished down to prevent its binding in the plunger slot by working the plunger in and out of the solenoid a few times.
- 5—The indicator drum key L may catch in the ratchet lever opening AA (Fig. 3) if the guide rod support bracket MM (Fig. 2) allows the left end of the turret shaft to excessively protrude through the ratchet lever. Bending the support bracket MM with a pair of long nosed pliers or filing the end of the key will correct this condition.
- 6—Too much clearance between the turret gears Y and the main drive gear S (see Figs. 2 and 3) will allow the gear points to meet and bind instead of meshing properly. Insufficient gear clearance will cause the turret to bind also. Loosen the 2 screws under the support bracket Z to set the bracket for correct gear clearance.
- 7—If the indicator drum binds or the turret support brackets are tight the turret action will be retarded so that the stops G (Fig. 1) will not be in position to intercept the cross arm, thus allowing the cross arm to get behind the stops. The detent lever J (Fig. 1) must be released and the ratchet lever C forced down so that the stop K will clear the ratchet I before rotating the turret manually so that the cross arm may be guided past the turret stops.

PARTS LIST

LINCOLN CHASSIS NO. 8ML692

NOTE! Only the most essential parts, used in the 1942 chassis tuning units, are listed in this bulletin. Refer to the receiver service manual for a complete parts list.

Part No.		List
S10109	Detent lever assembly.....	.39
S10117	Tuning shaft and turret index spring assembly.....	.22
S10120	Tuning core, screw and grommet assembly.....	.44
S10232	Tuning shaft and gear assembly.....	.39
S10415	Turret and stop assembly.....	2.20
S10514	Cross arm and pointer bracket assembly.....	1.00
S10524	Station selector bar, bracket and stud.....	.50
S10558	Tuning knob assembly.....	.39
80-272	Ratchet lever spring.....	.022
80-274	Cross arm return spring.....	.06

FORD CHASSIS NO. 6MF690

Part No.		List
S10120	Tuning core, screw and grommet.....	.44
S10149	Tuning shaft and gear.....	.33
S10394	Tuning knob assembly.....	.71
S10409	Detent lever assembly.....	.39
S10412	Tuning shaft bushing and bracket.....	.44
S10415	Turret and stop assembly.....	2.20
S10418	Cross arm and pointer bracket.....	.71
S10657	Selector bar plate and spring assembly.....	.28
46-470	Selector bar	.17
80-272	Ratchet lever spring.....	.022
80-274	Cross arm return spring.....	.06

NASH CHASSIS NO. 6MN695

Part No.		List
S10109	Detent lever assembly.....	.39
S10117	Tuning shaft bracket and spring assembly.....	.22
S10120	Tuning core, screw and grommet.....	.44
S10149	Tuning shaft and gear.....	.33
S10598	Tuning shaft bushing and bracket assembly.....	.39
S10601	Cross arm and pointer bracket assembly.....	1.10
S10605	Turret and stop assembly.....	2.75
46-486	Tuning knob assembly.....	.22
80-272	Ratchet lever spring.....	.022
80-274	Cross arm return spring.....	.06

HUDSON CHASSIS NO. 6MH699

Part No.		List
S9901	Tuning knob assembly.....	.55
S10109	Ratchet lever assembly.....	.39
S10116	Front tuning shaft and turret support bracket.....	.39
S10117	Rear tuning shaft bracket and spring.....	.22
S10119	Turret and stop assembly.....	2.50
S10120	Tuning core, screw and grommet.....	.44
S10122	Cross arm and pointer bracket assembly.....	.82
34-109	Tuning shaft and gear.....	.39
80-272	Ratchet lever spring.....	.022
80-274	Cross arm return spring.....	.06

WILLYS CHASSIS NO. 6MW693

Part No.		List
S10084	Tuning knob assembly.....	.66
S10109	Detent lever assembly.....	.39
S10117	Rear tuning shaft and spring assembly.....	.22
S10119	Turret and stop assembly.....	2.50
S10120	Tuning core, screw and grommet.....	.44
S10122	Cross arm and pointer bracket assembly.....	.82
S10487	Tuning shaft bushing and bracket.....	.55
34-119	Tuning shaft and gear.....	.50
80-272	Ratchet lever spring.....	.022
80-274	Cross arm return spring.....	.06

SERVICE MANUAL



1942 RECEIVERS

MODEL	CHASSIS	PAGE	MODEL	CHASSIS	PAGE
4K2616	4B02-03	H-10, P. 165	6D2620	6B14	309
5D2611	5B02	H-10, P. 171	6D644	6B14	309
5G2617	5B05-06	H-10, P. 177	7G605	7B04	311
5R680XJ	5B14	H-10, P. 183	12H691	12B2	H-10, P. 213
6D2614	6B01	H-10, P. 185	14H697	14B1	313
6D2612	6B04	H-10, P. 191	22H698	22B1	315-317
6D2615	6B05	H-10, P. 193	22H699	22B1	315-317
6D620	6B14	309	S-9005	6B25	319
			Parts Price List		321

All prices list subject to change without notice

ZENITH RADIO CORPORATION

CHICAGO, U.S.A.

Models 6D620-6D2620-6D644

Chassis No. 6B14

All voltages measured with a 20,000 ohm per volt meter from B minus to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. or D.C. 40 to 60 cycle.

Power consumption 30 watts.

Maximum audio power output 1.25 watts.

Tuning Ranges:

540 Kc. to 1620 Kc.

8.75 Mc. to 12.2 Mc.

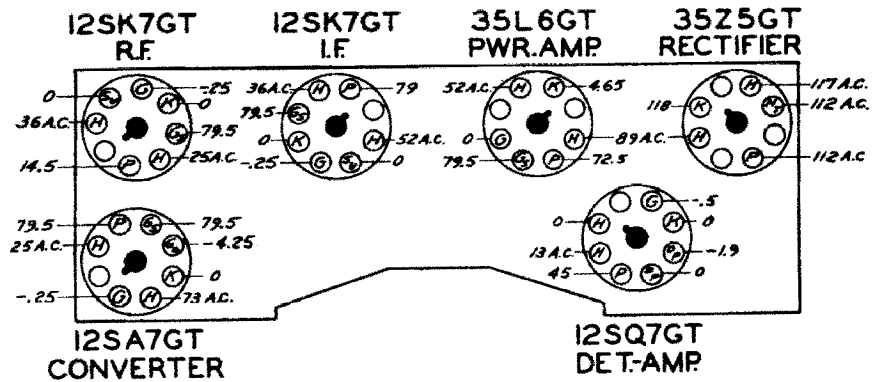
Stage Gains
Bc. and I.F.

Ant. to R.F. grid 5X at 1000 Kc.

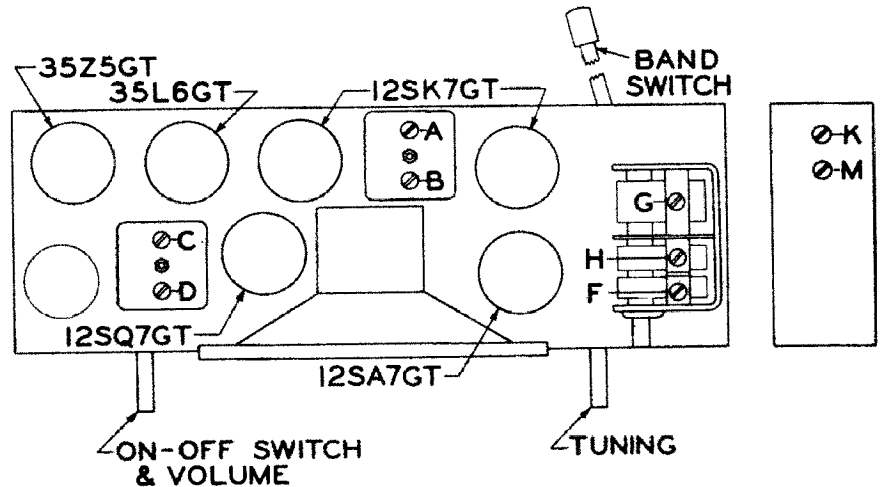
R.F. grid to conv. grid 3.8X at 1000 Kc.

Conv. grid to I.F. grid 75X at 455 Kc.

Overall audio 220X at .25 watt, 400 cycles.



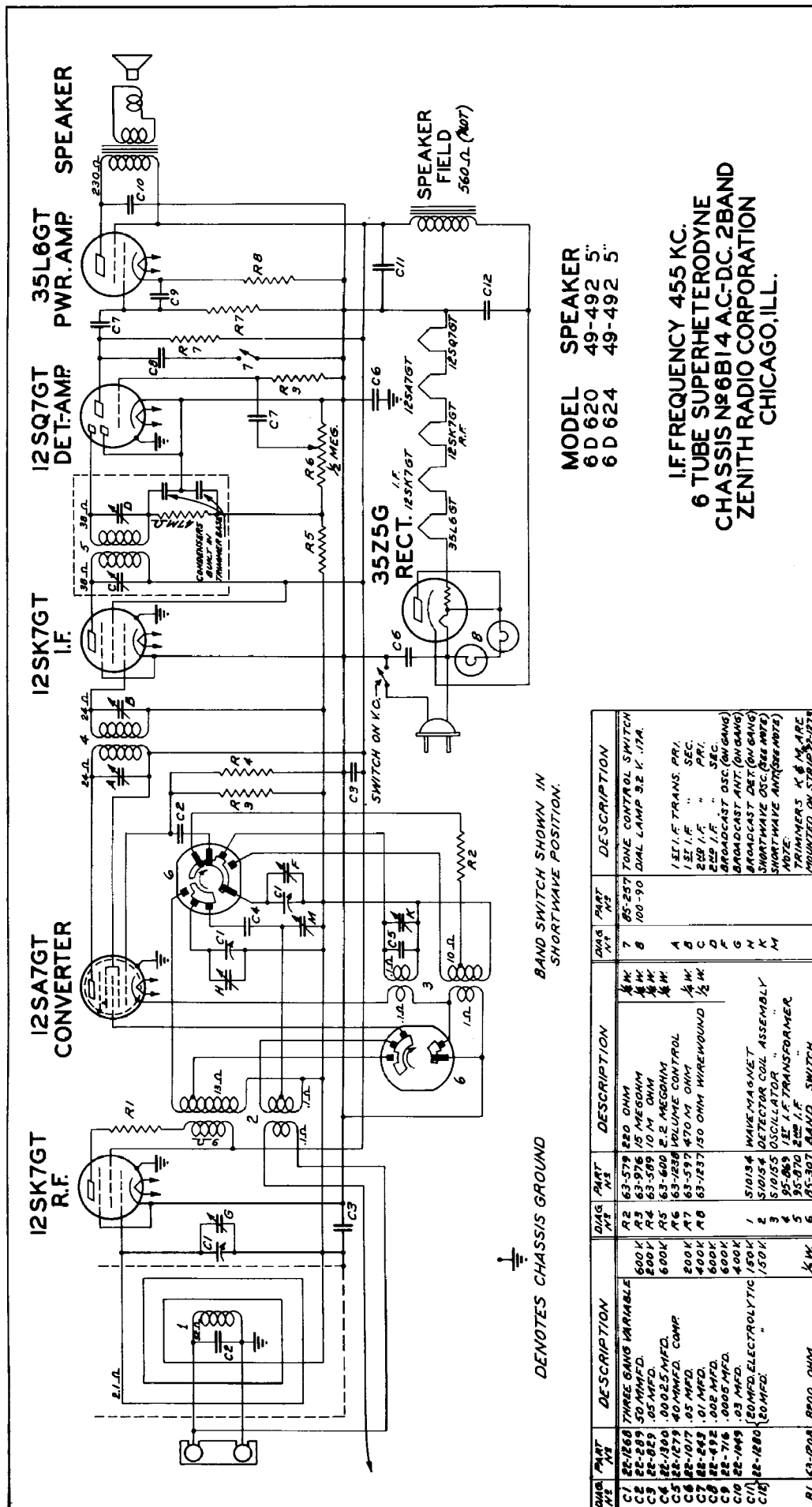
SOCKET VOLTAGES—BOTTOM SIDE UP



TUBE AND TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial at	Trimmers	Purpose
1	Conv. Grid	.5 mfd.	455 Kc.	B.C.	600 Kc.	A, B, C, D	Align I.F.
2	Single Turn Loop Loosely	—	1400 Kc.	B.C.	1400 Kc.	F	Set oscillator to scale
3	Coupled to Wavemagnet	—	1400 Kc.	B.C.	1400 Kc.	H & G	Align R.F. and Ant.
4	Ant.-Gnd.	400 ohms	12 Mc.	S.W.	12 Mc.	K	Set oscillator to scale
5	Ant.-Gnd.	400 ohms	12 Mc.	S.W.	12 Mc.	M	Align Ant.



MODEL SPEAKER
6 D 620 49-492 5"
6 D 624 49-492 5"

I.F. FREQUENCY 455 KC.
6 TUBE SUPERHETERODYNE
CHASSIS N°6B14 AC-DC. 2BAND
ZENITH RADIO CORPORATION
CHICAGO, ILL.

BAND SWITCH SHOWN IN
SHORT WAVE POSITION.

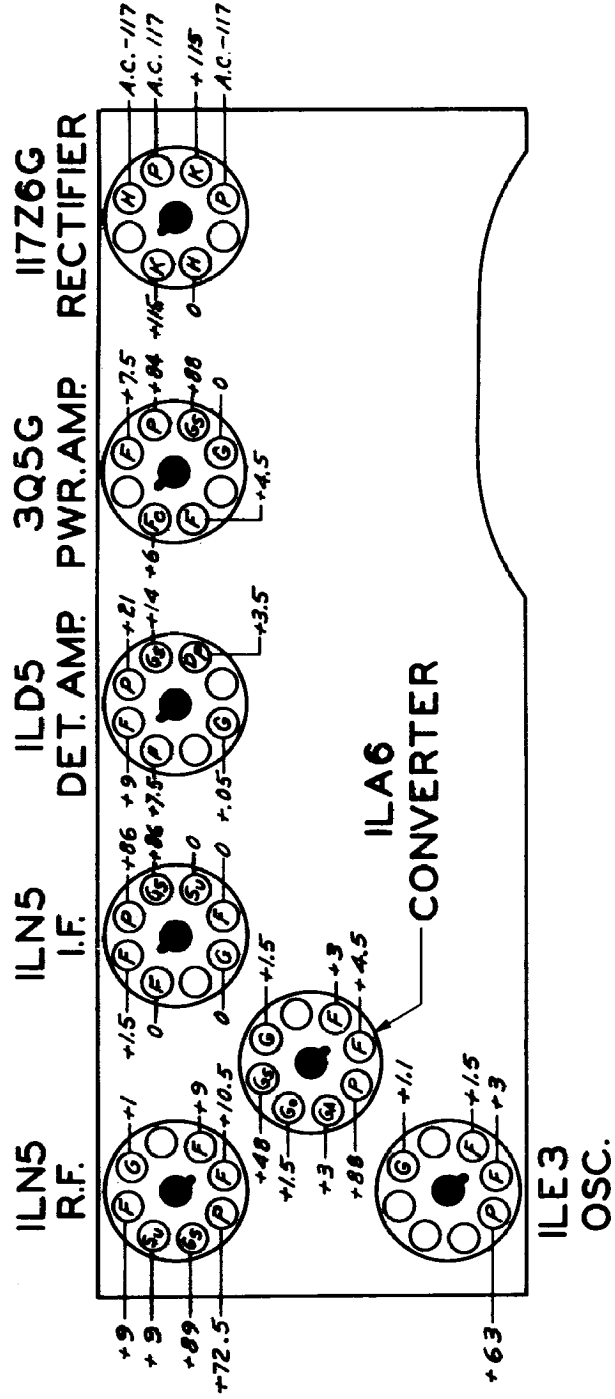
DENOTES CHASSIS GROUND

QWG N°	PART N°	DESCRIPTION	QWG N°	PART N°	DESCRIPTION	QWG N°	PART N°	DESCRIPTION	QWG N°	PART N°	DESCRIPTION
C1	22-1268	THREE GANG VARIABLE	R2	63-579	220 OHM	7	85-257	TONE CONTROL SWITCH			
C2	22-1268	50 MFD.	R3	63-578	15 MEGOHM	8	100-90	DIAL LAMP SEE K-117A.			
C3	22-1268	50 MFD.	R4	63-579	10 M OHM						
C4	22-1268	50 MFD.	R5	63-580	2.2 MEGOHM	A		1 ET I.F. TRANS. PRI.			
C5	22-1279	40 MFD. COMP	R6	63-579	470 M OHM	B		1 ET I.F. " SEC.			
C6	22-1017	50 MFD.	R7	63-579	470 M OHM	C		2ND I.F. " PRI.			
C7	22-1017	50 MFD.	R8	63-1237	150 OHM WIREWOUND	D		2ND I.F. " SEC.			
C8	22-492	0.01 MFD.				E		BROADCAST OSC (BU GANG)			
C9	22-716	0.005 MFD.				F		BROADCAST ANT. (BU GANG)			
C10	22-1049	0.01 MFD.				G		BROADCAST DET. (BU GANG)			
C11	22-1280	20 MFD. ELECTROLYTIC				H		SHORT WAVE OSC. (BU GANG)			
C12	22-1280	20 MFD.				K		SHORT WAVE DET. (BU GANG)			
						M		SHORT WAVE ANT. (BU GANG)			
								NOTE: TRIMMERS X & M ARE MOUNTED ON STRIP 2-1279			
R1	63-1208	2200 OHM									

Parts List and Schematic Diagram for Chassis 6B14

Model 7G605

Chassis 7B04



SOCKET VOLTAGES—BOTTOM SIDE UP

All voltages measured with a 20,000 ohm per volt meter from B minus to socket contact indicated.
All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. or D.C. 25 to 60 cycle or Battery Pack Z-985 and two flashlight cells.

Power consumption 25 watts.

Power output .35 watts.

Tuning ranges:

540 to 1620 Kc.

6.0 to 6.5 Mc.

9.4 to 9.8 Mc.

11.7 to 11.9 Mc.

15.1 to 15.3 Mc.

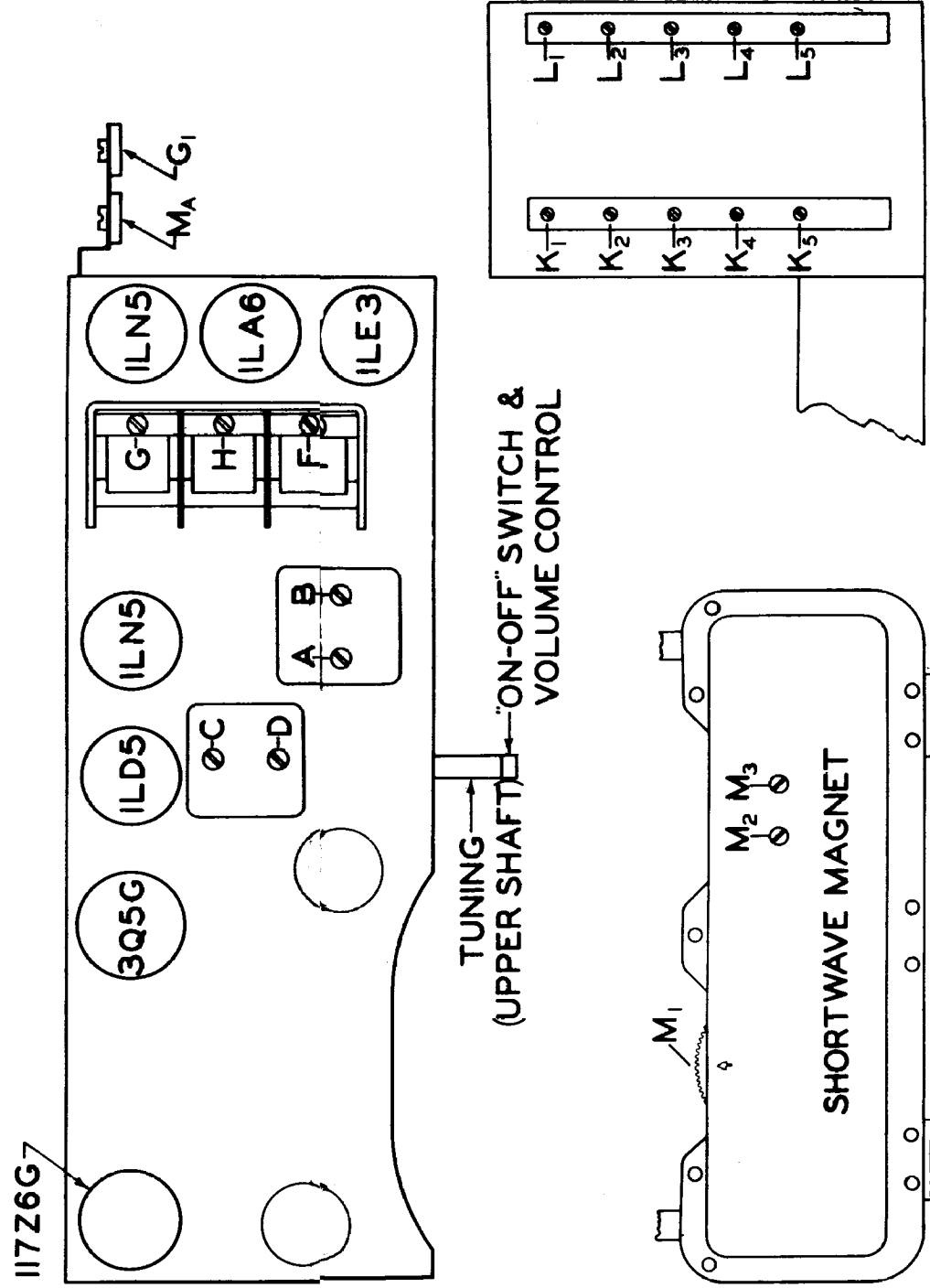
17.6 to 18.0 Mc.

Stage Gains Bc. and I.F.

Ant. to R.F. grid 5X at 1000 Kc.
R.F. grid to conv. grid 9X at 1000 Kc.

Conv. grid to I.F. grid 66X at 455 Kc.

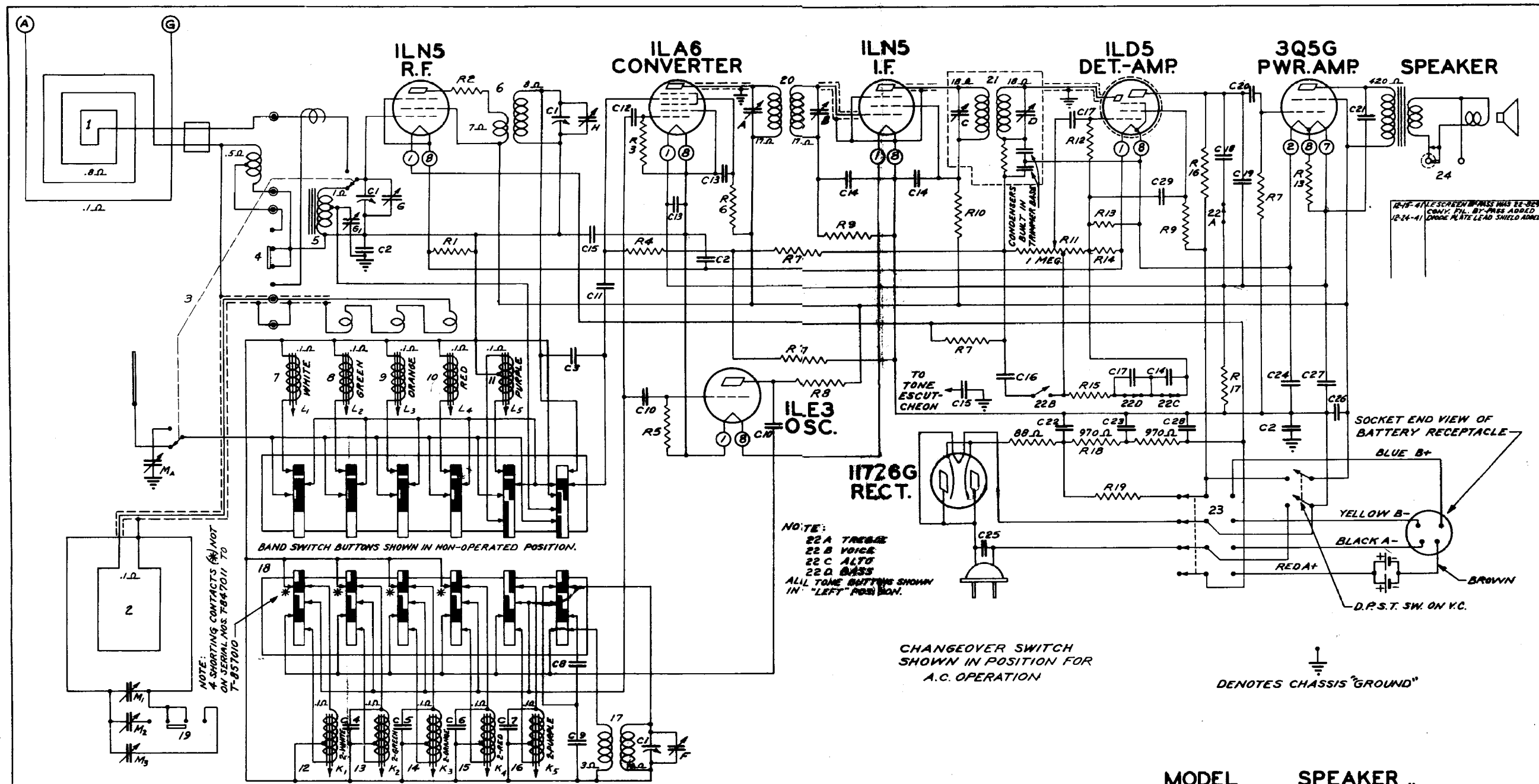
Overall audio 900X at .05 watt, 400 cycles.



TUBE AND TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Conv. grid	.1 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I.F.
2	One Turn Loop Coupled		1600 Kc.	BC	1600 Kc.	F	Set oscillator to scale
3	Loosely to Broadcast		1400 Kc.	BC	1400 Kc.	H	Alignment of detector section
4	Wavemagnet		1400 Kc.	BC	1400 Kc.	G	Alignment of B.C. Wavemagnet
5	3 Feet of Wire		1400 Kc.	BC	1400 Kc.	G ₁	B.C. waverod alignment
6	Approximately		6.2 Mc.	49 Met.	6.2 Mc.	K ₁ -L ₁	Alignment of S.W. Oscillators and Antenna Trimmers
7	1 Foot from		9.6 Mc.	31 Met.	9.6 Mc.	K ₂ -L ₂	
8	Extended		11.8 Mc.	25 Met.	11.8 Mc.	K ₃ -L ₃	
9	Waverod		15.2 Mc.	19 Met.	15.2 Mc.	K ₄ -L ₄	
10			17.8 Mc.	16 Met.	17.8 Mc.	K ₅ -L ₅	Alignment of shortwave magnet
11	One Turn Loop		15.2 Mc.	19 Met.	15.2 Mc.	M ₁ -M ₁₁	
12	Coupled Loosely to Shortwave Magnet.		11.8 Mc.	25 Met.	11.8 Mc.	M ₂	
13	Waverod Collapsed		9.6 Mc.	31 Met.	9.6 Mc.	M ₃	



DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-1308	THREE GANG VARIABLE	C26	22-1282	40MFD. ELECTROLYTIC	1	510680	BROADCAST WAVEMAGNET	24	44-17	PHONE JACK
C2	22-827	.1 MFD.	C27	OR	40MFD. "	2	510682	SHORTWAVE WAVEMAGNET	A		1ST I.F. TRANS. PRI.
C3	22-1130	15 MMFD.	C28	22-1159	20MFD. "	3	85-314	ANTENNA POLE SWITCH	B		1ST I.F. " SEC.
C4	22-1312	100 MMFD. COMP.	C29	22-326	.003 MFD.	4	85-225	WAVEMAGNET SWITCH	C		2ND I.F. TRANS. PRI.
C5	22-1332	200 MMFD. COMP.				5	510670	ANTENNA COIL ASSEM.	D		2ND I.F. " SEC.
C6	22-705	150 MMFD. COMP.	R1	63-596	330M OHM	6	510298	DETECTOR COIL ASSEM.	E		BROADCAST OSC. (ON GANG)
C7	22-702	250 MMFD. COMP.	R2	63-641	10M OHM	7	510284	6MC. ANTENNA COIL ASSEM.	F		BROADCAST ANT. (ON GANG)
C8	22-1311	75 MMFD. COMP.	R3	63-773	180M OHM	8	510289	9MC. " "	G		BROADCAST DET. (ON GANG)
C9	22-1310	50 MMFD. COMP.	R4	63-325	350M OHM	9	510288	12 MC. " "	H		SHORTWAVE OSC. 6 MC.
C10	22-162	.0001 MFD.	R5	63-648	87M OHM	10	510296	15MC. " "	K		SHORTWAVE OSC. 9 MC.
C11	22-327	.02 MFD.	R6	63-592	83M OHM	11	510297	18MC. " "	K1		SHORTWAVE OSC. 12 MC.
C12	22-289	50 MMFD.	R7	63-600	2.2 MEGOHM	12	510281	6MC. OSCILLATOR COIL ASSEM.	K2		SHORTWAVE OSC. 15 MC.
C13	22-829	.05 MFD.	R8	63-761	10M OHM	13	510290	9MC. " "	K3		SHORTWAVE OSC. 18 MC.
C14	22-826	.01 MFD.	R9	63-602	8.7 MEGOHM	14	510285	12 MC. " "	L1		SHORTWAVE DET. 6 MC.
C15	22-1207	.07 MFD.	R10	63-583	1000 OHM	15	510293	15MC. " "	L2		SHORTWAVE DET. 9 MC.
C16	22-887	.001 MFD.	R11	63-1263	VOLUME CONTROL	16	510294	18MC. " "	L3		SHORTWAVE DET. 12 MC.
C17	22-492	.002 MFD.	R12	63-976	15 MEGOHM	17	510295	BC. " "	L4		SHORTWAVE DET. 15 MC.
C18	22-953	.0002 MFD.	R13	63-580	330 OHM	18	85-312	AUTOMATIC BAND SWITCH	L5		SHORTWAVE DET. 18 MC.
C19	22-770	.00015 MFD.	R14	63-577	100 OHM	19	85-322	SHORTWAVE LAMP SWITCH	M1		THINNER (SEE NOTE)
C20	22-196	.01 MFD.	R15	63-594	58M OHM	20	95-862	1ST I.F. TRANSFORMER	M2		CONVERTER (SEE NOTE)
C21	22-448	.004 MFD.	R16	63-271	1 MEGOHM	21	95-863	2ND I.F. TRANSFORMER	M3		THINNER (SEE NOTE)
C22	22-1307	40MFD. ELECTROLYTIC	R17	63-941	390 OHM WIREWOUND	22	85-313	1ST TONE CONTROL SWITCH	M4		THINNER (SEE NOTE)
C23	OR	20MFD. "	R18	63-1264	THREE SECTION CANNON	23	85-311	POWER CHANGEOVER SWITCH	M5		THINNER (SEE NOTE)
C24	22-1330	40MFD. "	R19	63-1136	1800 OHM						
C25	22-869	.05 MFD.									

MODEL 7G605 SPEAKER 49-501 5 1/4"

BATTERY PACK No Z985

110 V. A.C.-DC.- BATTERY PACK
UNIVERSAL PORTABLE
I.F. FREQUENCY 455KC.
7 TUBE SUPERHETERODYNE
CHASSIS No 7B04 6 BAND
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Parts List and Schematic Diagram for Chassis 7B04

Model 14H697

Phono and Recorder

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. 60 cycle.

Power consumption 115 watts.

Phono motor 35 watts additional.

Maximum audio power output 15 watts.

Tuning ranges:

540 to 1620 Kc.

5.6 to 18.4 Mc.

42 to 50 Mc. (F.M.).

Stage Gains

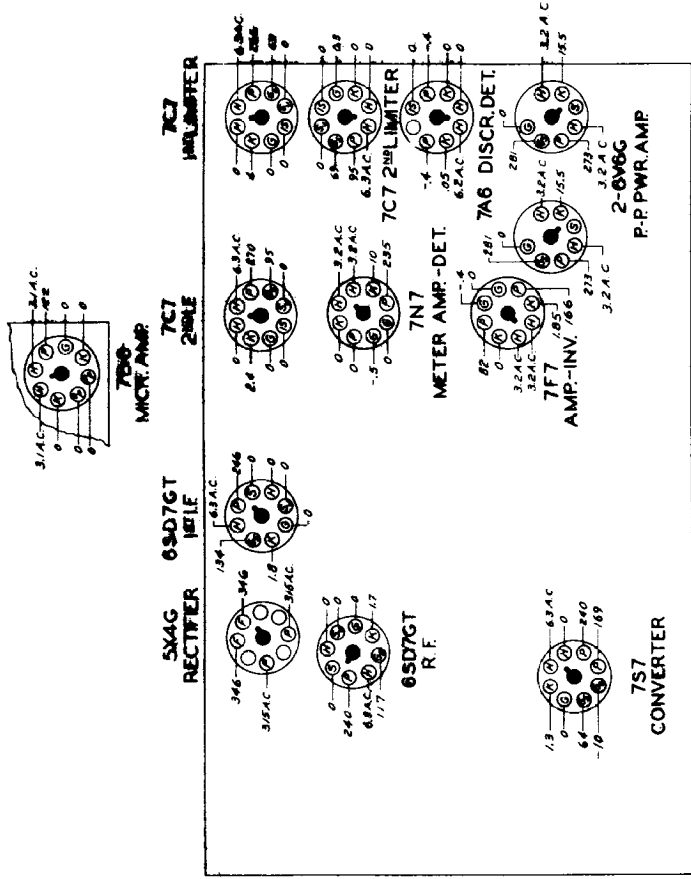
Bc. and I.F.

Ant. to R.F. grid 8X at 1000 Kc.

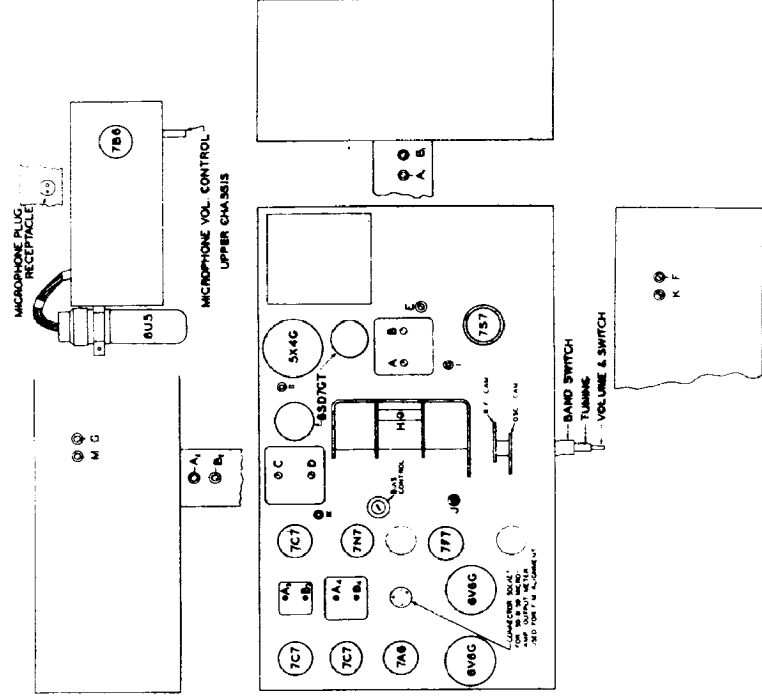
R.F. grid to conv. grid 7X at 1000 Kc.

Conv. grid to I.F. grid 40X at 455 Kc.

Overall audio 1950X at 1 watt, 400 cycles.



SOCKET VOLTAGES—BOTTOM SIDE UP



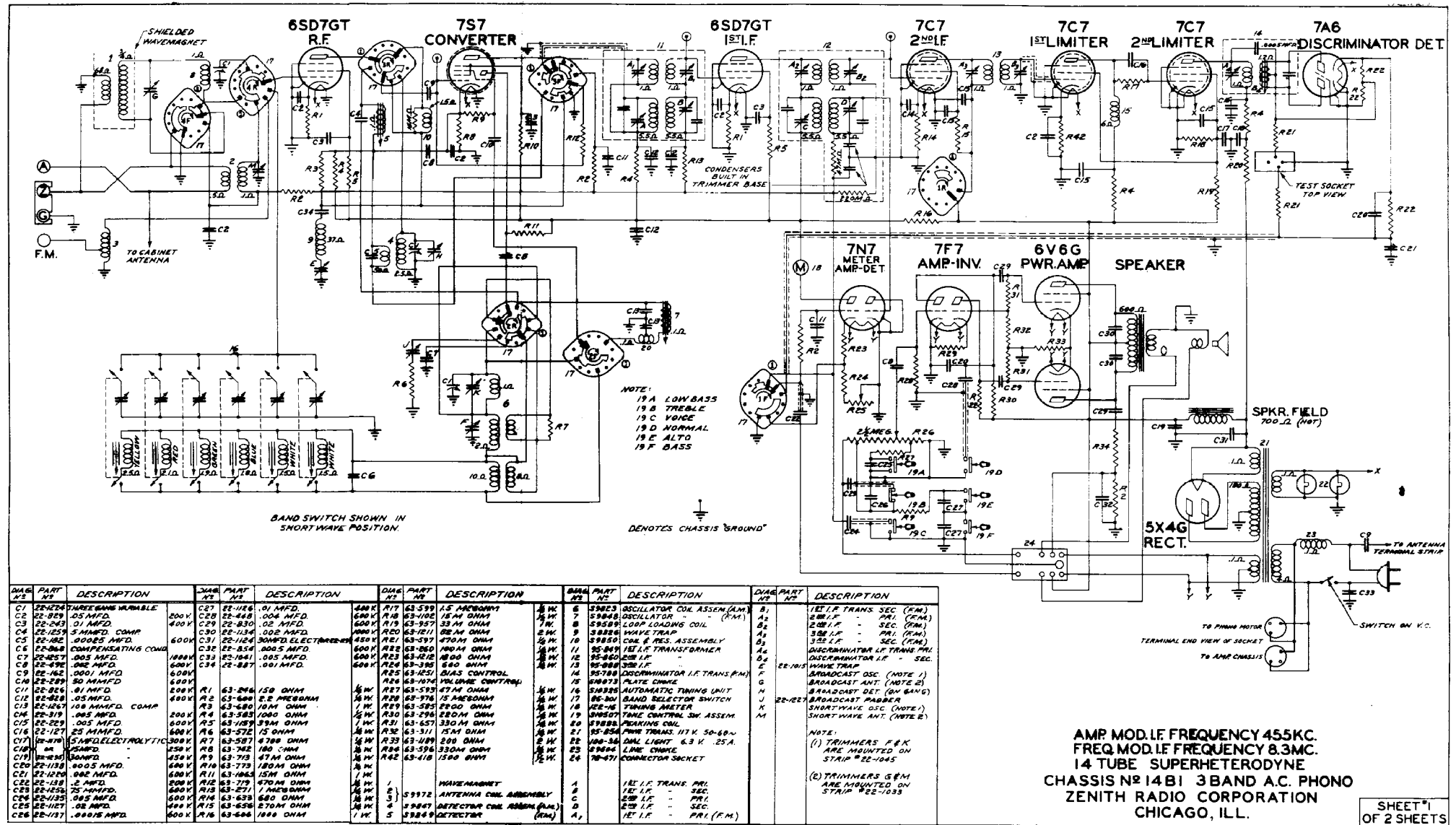
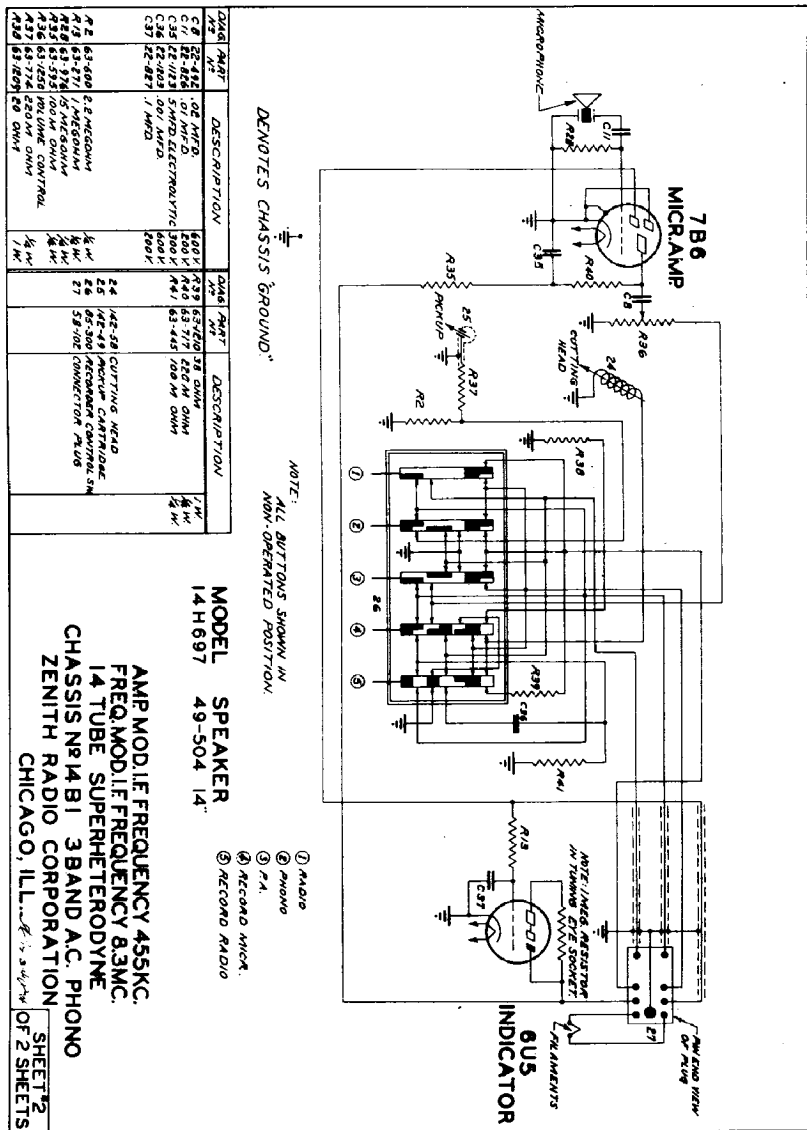
TUBE AND TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Conv. grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align BC I. F.
2	R.F. grid	"	"	"	"	E	I.F. trap adjustment for minimum I.F. signal
3	Ant. Gnd.	400 ohm	18 Mc.	SW	18 Mc.	K	Scale osc. at 18 Mc.
4	"	"	15 Mc.	"	15 Mc.	M	Align SW antenna
5	ONE TURN		1600 Kc.	BC	1600 Kc.	F	Set BC osc. to scale at 1600 Kc.
6	LOOP WITH GENERATOR		1400 Kc.	"	1400 Kc.	H	Align BC R.F. stage
7			1400 Kc.	"	1400 Kc.	G	Align BC loop
8	LEADS		600 Kc.	"	600 Kc.	I	Rock gang to track BC padder
9		.5 mfd.	8.3 Mc.	FM	42.5 Mc.	A ₁	Align for maximum deflection across 1/2 discrim. load
10	7C7 2nd I.F. Grid Pin Jack III	"	"	"	"	B ₁	Align for zero deflection across full discrim. load. Repeat operation No. 9
11		"	"	"	"	A ₂ B ₂	Align for maximum deflection across 1/2 discrim. load
12	6SD7 1st I.F. grid Pin Jack III	"	"	"	"	A ₁ B ₁	Align for maximum deflection across 1/2 discrim. load
13	Conv. grid Pin Jack I	"	"	"	"	A ₁ B ₁	Align for maximum deflection across 1/2 discrim. load
14	F.M. Ant. Ter.	100 ohms	46 Mc.	"	46 Mc.	Adjust osc. cam gang shaft to scale osc.	Align for zero deflection across full discrim. load
15	"	"	"	"	"	Adjust R.F. cam for F.M. tracking	Align for max. deflec. across 1/2 discrim. load
16	Adjust Tuning Meter			"	Clear of Signals	Bias control	Adjust bias for tuning meter

Remove 2nd I.F. tube (7C7) from socket. Adjust bias control until meter reads exactly center. Replace I.F. tube and check meter behavior on F.M. and A.M. signals.

Microphone Amplifier



Parts List and Schematic Diagram

Chassis 14B1

Models 22H698 and 22H699

Chassis 22B1—Phono

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C. 60 cycle.

Power consumption 325 watts.

Phono motor 25 watts additional.

Maximum audio power output 50 watts.

Tuning ranges:

540 to 1620 Kc.

5.6 to 18.5 Mc.

42 to 50 Mc. (F.M.)

Stage Gains

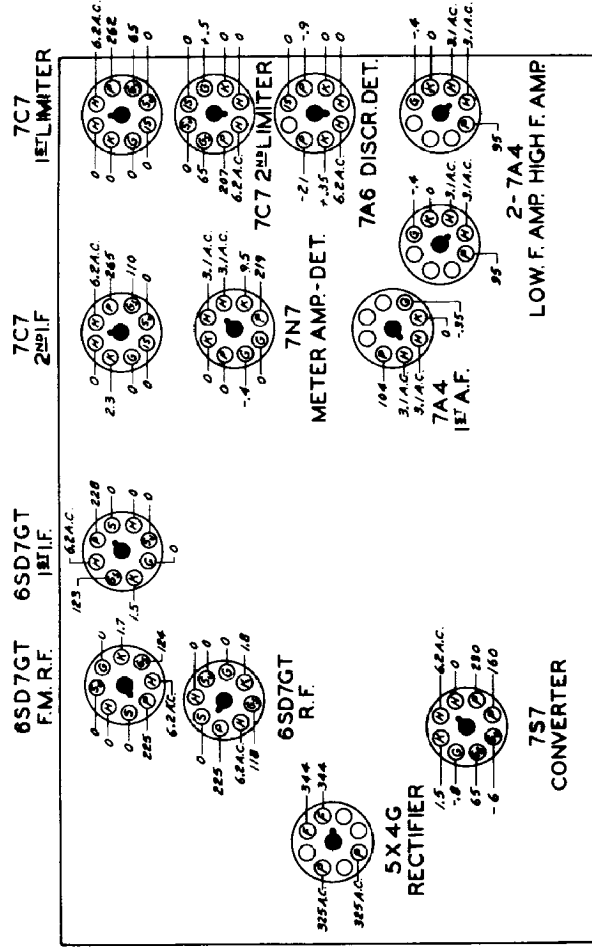
Bc. and I.F.

Ant. to R.F. grid 5X at 1000 Kc.

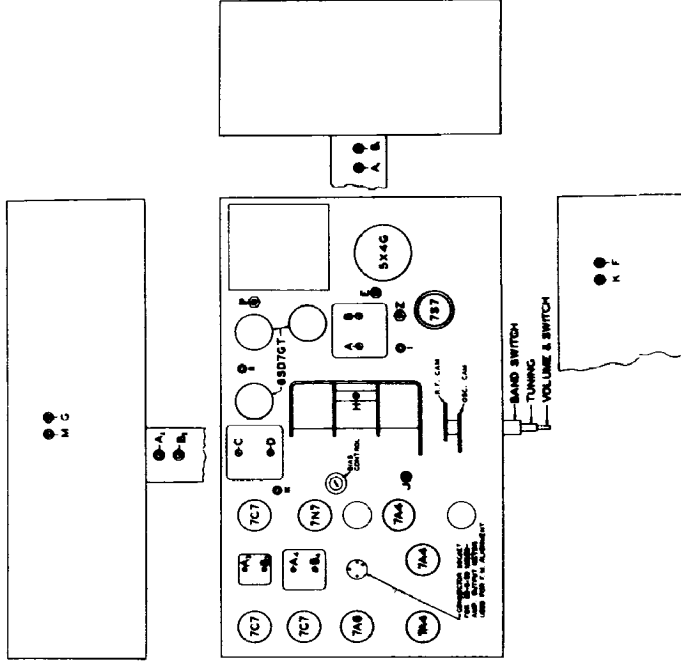
R.F. grid to conv. grid 5X at 1000 Kc.

Conv. grid to I.F. grid 41X at 455 Kc.

Overall audio 1206X at 1 watt.



SOCKET VOLTAGES—BOTTOM SIDE UP



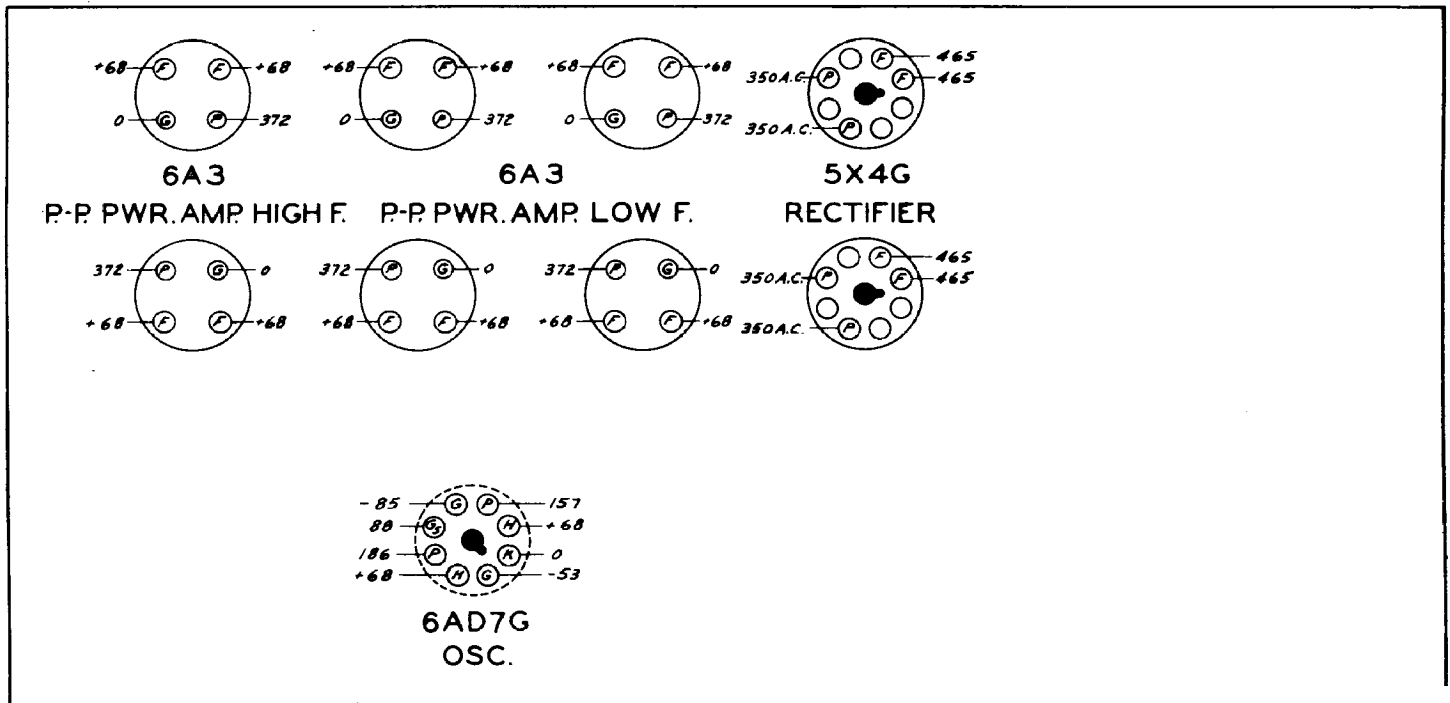
TUBE AND TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

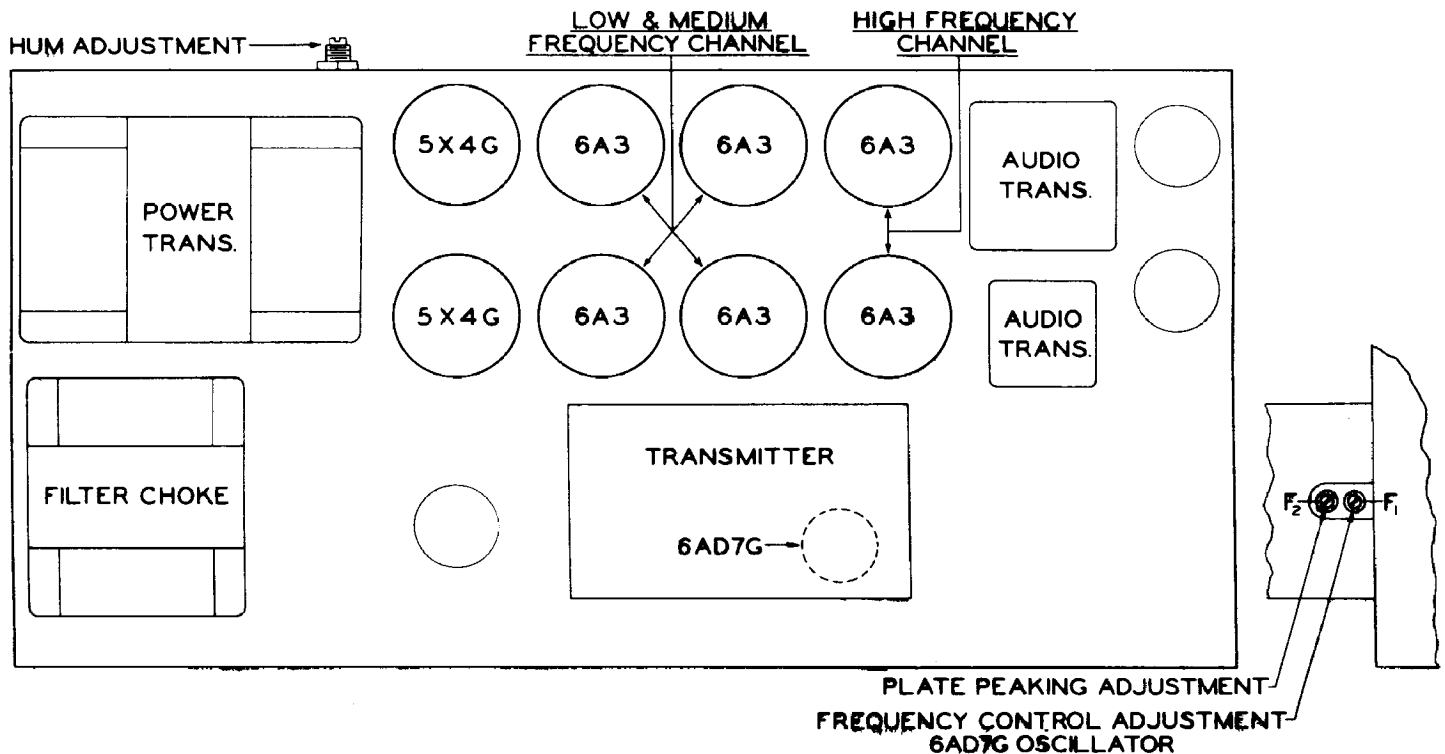
Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Conv. grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align B.C. I.F.
2	R.F. grid	"	"	"	"	E	I.F. trap adjustment for minimum I.F. signal
3	Ant.-Gnd.	400 ohm	18 Mc.	SW	18 Mc.	K	Scale osc. at 18 Mc.
4	"	"	15 Mc.	"	15 Mc.	M	Align SW antenna
5	ONE TURN LOOP MADE WITH GENERATOR LEADS	.5 mfd.	1600 Kc.	BC	1600 Kc.	F	Set BC osc. to scale at 1600 Kc.
6			1400 Kc.	"	1400 Kc.	H	Align BC R.F. stage
7			1400 Kc.	"	1400 Kc.	G	Align BC loop
8			600 Kc.	"	600 Kc.	J	Rock gang to track BC padder
9	7C7 2nd I.F. grid Pin Jack III		8.3 Mc.	F.M.	42.5 Mc.	A ₄	Align for maximum deflection across ½ discrim. load
10	"	"	"	"	"	B ₄	Align for zero deflection across full discriminator load. Repeat operation No. 9
11	"	"	"	"	"	A ₃ -B ₃	Align for maximum deflection across ½ discrim. load
12	6SD7 1st I. F. grid Pin Jack III	"	"	"	"	A ₂ -B ₂	Align for maximum deflection across ½ discrim. load
13	Conv. grid Pin Jack I	"	"	"	"	A ₁ -B ₁	Align for maximum deflection across ½ discrim. load
14	F.M. Ant. Ter.	100 ohm	46 Mc.	"	46 Mc.	Adjust osc. cam gang shaft to scale osc.	Align for zero deflection across full discriminator load
15A	"	"	49 Mc.	"	49 Mc.	Z	Align for maximum deflection across ½ discriminator load
15B	"	"	43 Mc.	"	43 Mc.	P	Align for maximum deflection across ½ discriminator load
16	Adjust Tuning Meter			"	Clear of Sigs	Bias control	Adjust bias for tuning meter
Remove 2nd I.F. tube (7C7) from socket. Adjust bias control until meter reads exactly center. Replace I.F. tube and check meter behavior on F.M. and A.M. signals.							
17	Set hum adjustment for minimum hum level. (Page 317)						

Models 22H698 and 22H699

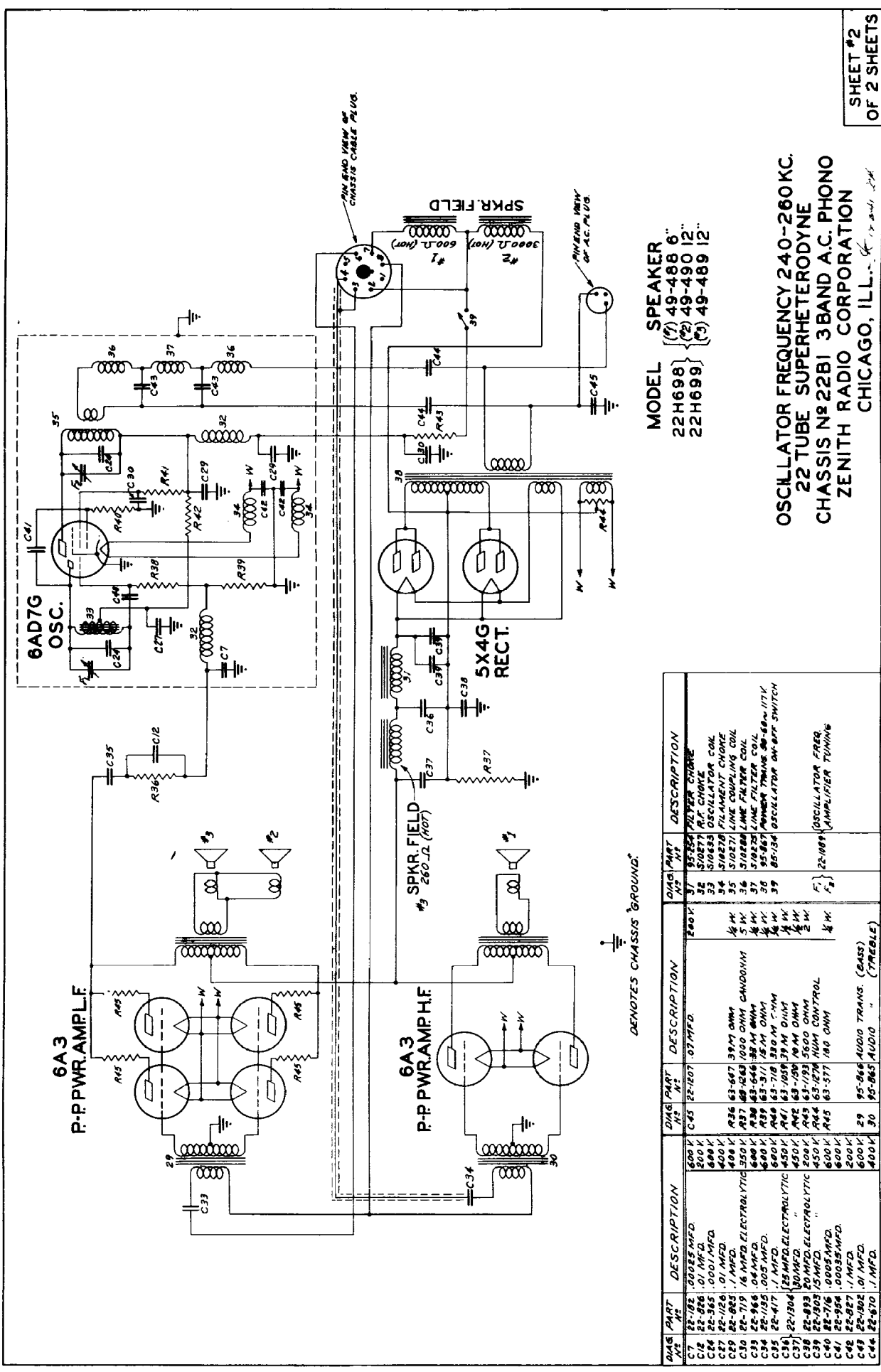
Chassis 22B1—Phono
Audio Amplifier Section



SOCKET VOLTAGES—BOTTOM SIDE UP



TUBE AND TRIMMER LOCATIONS



Parts List and Schematic Diagram
Audio Amplifier Chassis 22B1

DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION
C7	22-182	.00025 MFD.	C45	22-107	.07 MFD.
C8	22-358	.01 MFD.	R26	63-647	39M OHM
C9	22-363	.0001 MFD.	R27	63-648	33M OHM
C10	22-126	.01 MFD.	R28	63-649	33M OHM
C11	22-719	.15 MFD. ELECTROLYTIC	R29	63-511	15M OHM
C12	22-864	.04 MFD.	R30	63-511	15M OHM
C13	22-135	.005 MFD.	R31	63-511	15M OHM
C14	22-417	.1 MFD.	R32	63-511	15M OHM
C15	22-1304	.05 MFD. ELECTROLYTIC	R33	63-511	15M OHM
C16	22-493	.01 MFD.	R34	63-1058	39M OHM
C17	22-1903	.01 MFD.	R35	63-1058	39M OHM
C18	22-1903	.01 MFD.	R36	63-1058	39M OHM
C19	22-1903	.01 MFD.	R37	63-1058	39M OHM
C20	22-1903	.01 MFD.	R38	63-1058	39M OHM
C21	22-1903	.01 MFD.	R39	63-1058	39M OHM
C22	22-1903	.01 MFD.	R40	63-1058	39M OHM
C23	22-1903	.01 MFD.	R41	63-1058	39M OHM
C24	22-1903	.01 MFD.	R42	63-1058	39M OHM
C25	22-1903	.01 MFD.	R43	63-1058	39M OHM
C26	22-1903	.01 MFD.	R44	63-1058	39M OHM
C27	22-1903	.01 MFD.	R45	63-1058	39M OHM
C28	22-1903	.01 MFD.	R46	63-1058	39M OHM
C29	22-1903	.01 MFD.	R47	63-1058	39M OHM
C30	22-1903	.01 MFD.	R48	63-1058	39M OHM
C31	22-1903	.01 MFD.	R49	63-1058	39M OHM
C32	22-1903	.01 MFD.	R50	63-1058	39M OHM
C33	22-1903	.01 MFD.	R51	63-1058	39M OHM
C34	22-1903	.01 MFD.	R52	63-1058	39M OHM
C35	22-1903	.01 MFD.	R53	63-1058	39M OHM
C36	22-1903	.01 MFD.	R54	63-1058	39M OHM
C37	22-1903	.01 MFD.	R55	63-1058	39M OHM
C38	22-1903	.01 MFD.	R56	63-1058	39M OHM
C39	22-1903	.01 MFD.	R57	63-1058	39M OHM
C40	22-1903	.01 MFD.	R58	63-1058	39M OHM
C41	22-1903	.01 MFD.	R59	63-1058	39M OHM
C42	22-1903	.01 MFD.	R60	63-1058	39M OHM
C43	22-1903	.01 MFD.	R61	63-1058	39M OHM
C44	22-1903	.01 MFD.	R62	63-1058	39M OHM

Model S-9005

Chassis No. 6B25

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

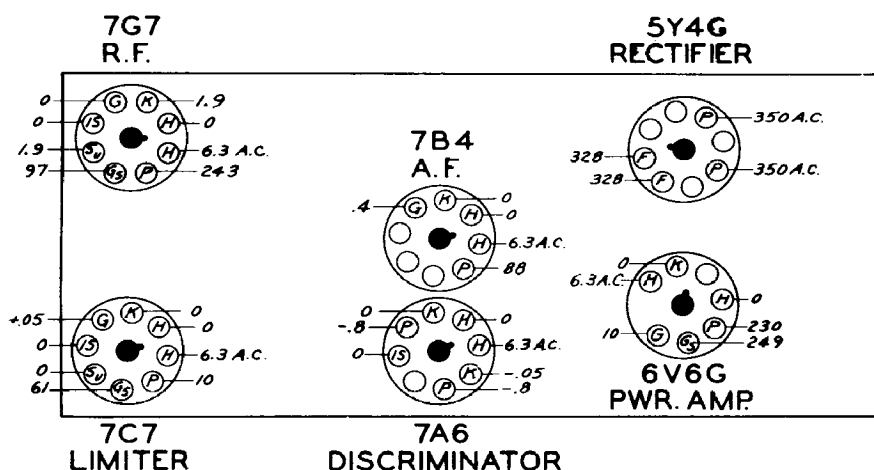
All voltages are positive D.C. unless marked otherwise.

Volume control full on.

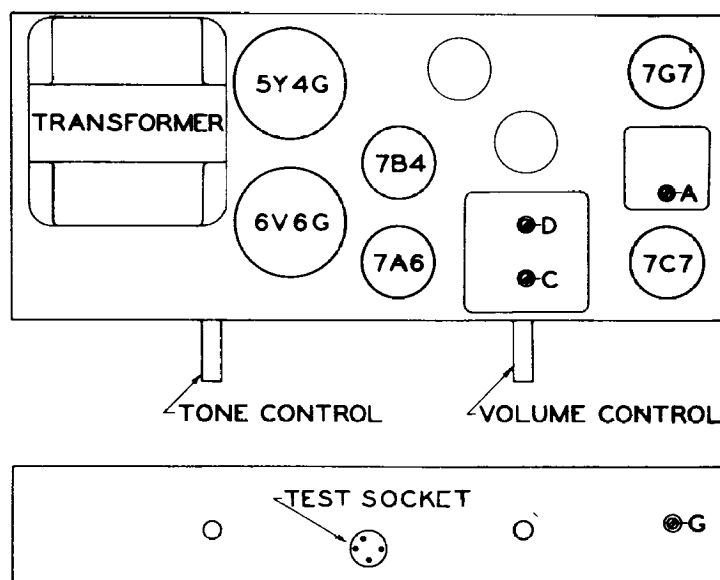
Line voltage 117 A.C. 60 cycle.

Power consumption 80 watts.

Maximum audio power output 6 watts.



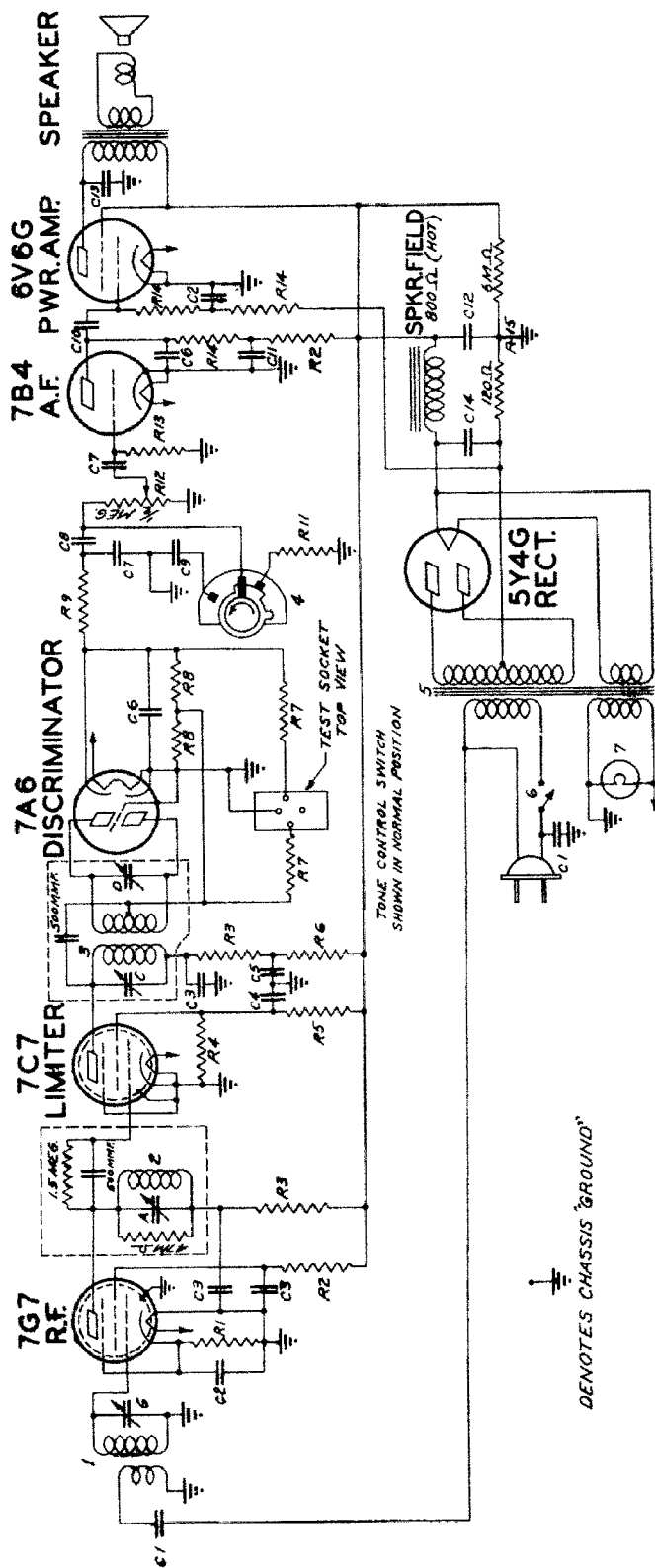
SOCKET VOLTAGES



TRIMMER LOCATIONS

ALIGNMENT PROCEDURE

Operation	Connect oscillator to	Dummy Antenna	Input Sig. Frequency	Trimmers	Purpose
1	Coil side of Cl. See Schematic	.5 mfd.	250 Kc.	C	Align for max. deflec. across 1/2 discrim. load
2	"	"	"	D	Align for zero deflec. across full discrim. load
3	"	"	"	A	Align for max. deflec. across 1/2 discrim. load
4	"	"	"	G	Align for max. deflec. across 1/2 discrim. load
5	Repeat step No. 2 and then remove oscillator leads.				
6	If the tone quality of the remote speaker is impaired, the frequency of the 6AD7G transmitter will have to be reset in the following manner: Align F ₁ (see 22B1 trimmer locations) for zero deflection across the full discriminator load of the remote receiver and then align F ₂ for maximum deflection across 1/2 of the discriminator load. If F ₂ tunes broad it is an indication that the remote speaker is located too close to the transmitter and the action of the limiter is masking the correct peak adjustment.				



MODEL S9005
SPEAKER 49-506 10"

REMOTE SPEAKER UNIT
F.M. CARRIER FREQ. 240-260 K.C.
CHASSIS N88B25 110VAC.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

Model S-9005 Chassis No. 8985

QWG. NO.	PART NO.	DESCRIPTION	QWG. NO.	PART NO.	DESCRIPTION	QWG. NO.	PART NO.	DESCRIPTION	QWG. NO.	PART NO.	DESCRIPTION
1	22-471	.07 MFD.	11	63-744	570 OHM	21	20-172	R.F. COIL	A	22-463	R.F. PLATE DISCRIMINATOR PRI.
2	22-472	.1 MFD.	12	63-595	100M OHM	22	95-079	DISCRIMINATOR TRANS.	C		DISCRIMINATOR SEC.
3	22-485	500K ELECTROLYTIC	13	63-583	1000 OHM	23	95-081	DISCRIMINATOR TRANS.	D		R.F. AMPLIFIER
4	22-491	100K ELECTROLYTIC	14	63-102	15M OHM	24	95-310	TONE CONTROL SWITCH	G		
5	22-496	500K ELECTROLYTIC	15	63-957	33M OHM	25	95-083	POWER TRANS. 117V 50-00-0			
6	22-497	500K ELECTROLYTIC	16	63-679	22M OHM	26	95-191	POWER SWITCH			
7	22-498	500K ELECTROLYTIC	17	63-271	1 MEG OHM	27	100-36	DUAL LIGHT 6.3K .25 A.			
8	22-499	500K ELECTROLYTIC	18	63-280	100M OHM						
9	22-500	500K ELECTROLYTIC	19	63-579	47M OHM						
10	22-501	500K ELECTROLYTIC	20	63-649	56M OHM						
11	22-502	500K ELECTROLYTIC	21	63-1276	VOLUME CONTROL						
12	22-503	500K ELECTROLYTIC	22	63-976	15 MEG OHM						
13	22-504	500K ELECTROLYTIC	23	63-296	220M OHM						
14	22-505	500K ELECTROLYTIC	24	63-296	220M OHM						
15	22-506	500K ELECTROLYTIC	25	63-1269	7M5 SECTION GANDOHM						

PARTS PRICE LIST

CHASSIS
6B14
6B25
7B04

CODE
A
B
C

CHASSIS
12B2 (See H10 for Chassis Parts)
14B1
22B1

CODE
D
E
F

DIAL PARTS

Part No.	Model	List Price
26-290	Split second dial scale.....E-F	\$ 1.10
26-304	Stationary dial scale (SW).....E-F	.39
26-318	Dial scale.....C	.60
27-16	Flywheel disc.....E-F	1.10
32-15	Drive belt.....E-F	.17
59-119	OFF-ON indicator.....C	.11
59-124	Band indicator (See S10327).....E-F	
59-127	Frequency indicator pointer.....E	.17
59-128	Split second pointer.....E	.17
59-135	Frequency indicator pointer.....F	.35
59-136	Split second pointer.....F	.35
59-143	Dial pointer.....C	.35
61-42	Pointer shaft pulley.....E-F	.14
76-304	Dial drive shaft.....C	.07
76-335	Tuning control shaft.....A	.06
76-351	Volume control shaft.....E-F	.22
78-453	Dial light socket and wire.....A	.28
80-130	Clutch spring.....E-F	.022
80-151	Movable scale return spring.....E-F	.022
80-209	Dial cord tension spring.....A-C	.022
80-239	Shaft tension spring.....E-F	.011
80-275	OFF-ON indicator tension spring.....C	.015
80-301	Dial gear spring.....E-F	.22
93-338	Movable scale spring washer.....F	.55C
93-459	Fibre washer.....E-F	.011
93-482	Black bakelite washer.....C	.66C
94-271	Shaft coupling bushing.....E-F	.07
94-280	Control arm fibre insulating bushing.....E-F	.033
94-282	Tuning shaft fibre insulating bushing.....E-F	.033
94-285	Tuning shaft bakelite insulating bushing.....E-F	.033
94-327	Fibre bushing.....E-F	.033
100-36	Dial light bulb 6.3 volt .25 Amp.....E-F	.10
100-90	Dial light bulb 3.2 volt .16 Amp.....A	.14
117-48	Band switch lever.....E-F	.022
118-16	Lever connecting link.....E-F	.011
122-16	Tuning meter.....E-F	4.70
143-39	Flexible coupling.....E-F	.66
148-33	Movable scale control arm.....E-F	.33
188-2	Retaining ring.....E-F	.011
188-28	Retaining ring.....E-F	.11C
188-32	Retaining ring.....A-C-F	.94C
188-34	Retaining ring.....A	.011
197-11	Dial light diffusing cup.....E-F	.17
199-11	Drive pulley rubber sleeve.....E-F	.82C
199-21	Movable scale rubber bumper sleeve.....E-F	.033
S-6220	Drive pulley and clutch assembly.....E-F	.28
S-8760	Control arm and link assembly.....E-F	.50
S-9534	Indicator lever and bushing assembly.....C	.06
S-9592	Pointer and pulley assembly.....A	.28
S-9610	Dial cord and eyelet assembly.....A	.11
S-9733	Dial cord and eyelet assembly (short).....A	.06
S-9751	Condenser pulley and rivet assembly.....A	.11
S-10035	Intermediate gear assembly.....E-F	.55
S-10036	Shaft and gear assembly.....E-F	.55
S-10038	Shaft and pinion assembly.....E-F	.33
S-10067	Cam and bushing assembly (on gang).....E	.55
S-10068	Cam and bushing assembly (on gang).....F	.45
S-10300	Pointer shaft, gear & pin assembly.....E-F	.66
S-10301	Gear train and bracket assembly.....E-F	3.60
S-10303	Dial plate and strip assembly.....E-F	1.00
S-10306	BC band scale assembly (26-302 & 303).....E-F	1.40
S-10309	FM band scale assembly (26-300 & 301).....E-F	1.40
S-10310	Dial scale & mounting plate assy. complete.....E-F	11.55
S-10311	Tuning control shaft assembly complete.....E-F	.39
S-10323	FM detector, oscillator coil, tuner shaft and bracket assembly.....E	2.20
S-10326	Pilot light socket and wire assembly.....E	.61
S-10327	Band indicator assembly (59-124).....E-F	.39
S-10495	Dial scale and mounting plate assembly (26-316).....A	1.40
S-10539	Dial light socket and wire.....F	.70

COILS AND CHOKES

Part No.	Model	List Price
S-10705	Dial cord and eyelet assembly.....C	.08
MS-454	Bushing and washer assembly.....F	.25
MS-727	Drive pulley and bracket assy. (on gang).....C	.17
20-172	R.F. coil.....B	\$.55
95-788	Discriminator IF transformer (FM).....E-F	1.65
95-849	1st IF transformer (1st AM & 1st FM).....E-F	3.30
95-850	2nd IF transformer (2nd AM & 2nd FM).....E-F	3.60
95-862	1st IF transformer.....C	1.35
95-863	2nd IF transformer.....C	1.50
95-869	1st IF transformer.....A	1.40
95-870	2nd IF transformer.....A	1.40
95-888	3rd IF transformer (FM).....E-F	1.10
95-890	1st IF transformer.....B	2.00
95-891	2nd IF transformer.....B	2.50
S-8326	Wave trap coil assembly.....E-F	.22
S-8413	Gimmick assembly.....C	.11
S-9066	FM detector coil assy. (plate peaking).....F	.33
S-9504	AC line choke assembly.....E	.28
S-9562	FM manual oscillator coil assembly.....F	.44
S-9583	Wavemagnet loading coil assembly.....E-F	.33
S-9823	Oscillator coil assembly.....E-F	1.40
S-9847	Detector coil assembly.....E-F	.82
S-9848	FM Oscillator coil assembly.....E	.28
S-9849	FM detector coil assembly.....E	.28
S-9850	Resistor choke assembly.....E-F	.39
S-9882	FM oscillator peaking coil assembly.....E	.82
S-9972	Antenna coil assembly.....E	.82
S-10073	Peaking coil assembly (FM-IF).....E-F	.28
S-10154	RF coil assembly.....A	1.65
S-10155	Oscillator coil assembly.....A	1.40
S-10267	Antenna coil assembly.....F	.70
S-10281	6 Mc. oscillator coil assembly.....C	.65
S-10284	6 Mc. antenna coil assembly.....C	.50
S-10285	12 Mc. oscillator coil assembly.....C	.65
S-10288	12 Mc. antenna coil assembly.....C	.65
S-10289	9 Mc. antenna coil assembly.....C	.65
S-10290	9 Mc. oscillator coil assembly.....C	.65
S-10293	15 Mc. oscillator coil assembly.....C	.65
S-10294	18 Mc. oscillator coil assembly.....C	.65
S-10295	BC oscillator coil assembly.....C	.60
S-10296	15 Mc. antenna coil assembly.....C	.65
S-10297	18 Mc. antenna coil assembly.....C	.60
S-10298	Detector coil assembly.....C	.65
S-10313	AC line choke assembly.....F	.70
S-10538	FM manual oscillator coil & bracket assembly.....F	1.30
S-10670	Antenna coil assembly (on telescope ant.).....C	.85
S-10681	FM grid peaking coil assembly.....F	.25
22-127	25 mmfd. 600 volt.....	\$.17
22-138	.2 mfd. 200 volt.....	.28
22-162	100 mmfd. 600 volt.....	.17
22-182	.00025 mfd. 600 volt.....	.22
22-188	.02 mfd. 400 volt.....	.17
22-196	.01 mfd. 600 volt.....	.17
22-199	.5 mfd. 200 volt.....	.44
22-229	.005 mfd. 600 volt.....	.17
22-242	.00075 mfd. 600 volt.....	.22
22-243	.01 mfd. 400 volt.....	.17
22-288	.003 mfd. 600 volt.....	.17
22-289	50 mmfd. 600 volt.....	.17
22-319	.005 mfd. 200 volt.....	.17
22-326	.003 mfd. 400 volt.....	.17
22-327	.02 mfd. 200 volt.....	.17
22-365	100 mmfd. 600 volt.....	.17
22-417	.1 mfd. 600 volt.....	.22
22-448	.004 mfd. 600 volt.....	.17
22-463	Single section padder.....B	.39
22-470	.00015 mfd. 600 volt.....	.17
22-492	.002 mfd. 600 volt.....	.17
22-670	.1 mfd. 400 volt.....	.22
22-671	.07 mfd. 600 volt.....	.22
22-676	Special fused type by-pass.....B	.20
22-702	250 mmfd. Ceramic compensator.....C	.28
22-705	150 mmfd. Ceramic compensator.....C	.50
22-716	.0005 mfd. 600 volt.....	.22
22-719	16 mfd. 350 volt dry electrolytic.....F	.61
22-825	.1 mfd. 400 volt.....	.22
22-826	.01 mfd. 200 volt.....	.17

CONDENSERS

PARTS LIST—(Continued)

Part No.	CHASSIS	CODE	Model	List Price	Part No.	CHASSIS	CODE	Model	List Price
22-827	6B14	A	.1 mfd. 200 volt.....	.20	63-325	12B2 (See H10 for Chassis Parts)	D	150M ohm 1/4 watt.....	.08
22-828	6B25	B	.05 mfd. 400 volt.....	.17	63-395	14B1	E	600 ohm 1/4 watt.....	.08
22-829	7B04	C	.05 mfd. 200 volt.....	.17	63-418	22B1	F	1500 ohm 1/2 watt.....	.09
22-830			.02 mfd. 600 volt.....	.17	63-445			100M ohm 1/4 watt.....	.17
22-846			Automatic tuning trimmer.....	.17	63-464			1 megohm 1/4 watt.....	.17
22-847			Automatic tuning trimmer.....	.22	63-572			15 ohm 1/4 watt.....	.08
22-848			Automatic tuning trimmer.....	.28	63-577			100 ohm 1/4 watt.....	.08
22-854			.0005 mfd. 600 volt.....	.17	63-579			220 ohm 1/4 watt.....	.08
22-859			Automatic tuning trimmer.....	.22	63-580			330 ohm 1/4 watt.....	.08
22-868			480 mmfd. compensator.....	.33	63-583			1M ohm 1/4 watt.....	.08
22-869			.05 mfd. 400 volt.....	.17	63-585			2200 ohm 1/4 watt.....	.08
22-873			Automatic tuning trimmer.....	.28	63-587			4700 ohms 1/4 watt.....	.08
22-887			.001 mfd. 600 volt.....	.17	63-589			10M ohm 1/4 watt.....	.08
22-893			20 mfd. 200 volt dry electrolytic.....	.94	63-590			15M ohm 1/4 watt.....	.08
22-953			200 mmfd. 600 volt.....	.14	63-592			33M ohm 1/4 watt.....	.08
22-954			.00035 mfd. 600 volt.....	.14	63-593			47M ohm 1/4 watt.....	.08
22-966			.04 mfd. 600 volt.....	.22	63-594			68M ohm 1/4 watt.....	.08
22-991			16 mfd. 350 volt x 16 mfd. 200 volt dry electrolytic.....	1.10	63-595			100M ohm 1/4 watt.....	.08
22-1015			Wavetrap trimmer.....	.17	63-596			330M ohm 1/4 watt.....	.08
22-1017			.05 mfd. 200 volt.....	.17	63-597			47M ohm 1/4 watt.....	.08
22-1033			2 Section ceramic trimmer.....	.28	63-599			1.5 megohm 1/4 watt.....	.08
22-1041			.005 mfd. 600 volt.....	.17	63-600			2.2 megohm 1/4 watt.....	.08
22-1045			2 Section ceramic trimmer.....	.28	63-602			4.7 megohm 1/4 watt.....	.08
22-1049			.03 mfd. 400 volt.....	.17	63-604			10 megohm 1/4 watt.....	.08
22-1089			2 Section ceramic trimmer.....	.39	63-606			1M ohm 1 watt.....	.11
22-1123			5 mfd. 300 volt dry electrolytic.....	.44	63-633			680 ohm 1/4 watt.....	.08
22-1124			30 mfd. 450 volt dry electrolytic.....	.82	63-637			4700 ohm 1/4 watt.....	.08
22-1126			.01 mfd. 400 volt.....	.17	63-641			10M ohm 1/4 watt.....	.08
22-1127			.02 mfd. 400 volt.....	.17	63-646			33M ohm 1/4 watt.....	.08
22-1130			15 mmfd. 600 volt.....	.17	63-647			39M ohm 1/4 watt.....	.08
22-1134			.002 mfd. 1000 volt.....	.22	63-648			47M ohm 1/4 watt.....	.08
22-1135			.005 mfd. 600 volt.....	.17	63-649			56M ohm 1/4 watt.....	.08
22-1136			.00025 mfd. 600 volt.....	.17	63-652			120M ohm 1/4 watt.....	.08
22-1137			.00015 mfd. 600 volt.....	.17	63-656			270 ohm 1/4 watt.....	.08
22-1138			.0005 mfd. 600 volt.....	.17	63-657			330M ohm 1/4 watt.....	.08
22-1139			50 mmfd. compensator.....	.28	63-659			470 ohm 1/4 watt.....	.08
22-1146			50 mmfd. compensator.....	.39	63-661			680M ohm 1/4 watt.....	.08
22-1159			40 mfd. 150 volt x 40 mfd. 25 volt x 20 mfd. 25 volt dry electrolytic (or 22-1282).....	.82	63-679			82M ohm 1 watt.....	.11
22-1178			5 mfd. 300 volt x 15 mfd. 250 volt x 30 mfd. 450 volt dry electrolytic.....	1.40	63-680			10M ohm 1 watt.....	.11
22-1193			15 mmfd. compensator.....	.28	63-713			47M ohm 1/4 watt.....	.17
22-1203			.001 mfd. 600 volt.....	.17	63-717			220M ohm 1/4 watt.....	.17
22-1207			.07 mfd. 200 volt.....	.17	63-718			330M ohm 1/4 watt.....	.17
22-1220			.002 mfd. 600 volt.....	.17	63-719			470M ohm 1/4 watt.....	.17
22-1224			3 Gang variable.....	5.80	63-742			180 ohm 1/4 watt.....	.17
22-1227			Oscillator padder.....	.33	63-744			270 ohm 1/4 watt.....	.17
22-1230			2 Section ceramic trimmer.....	.33	63-761			10M ohm 1/4 watt.....	.17
22-1256			75 mmfd. 600 volt.....	.17	63-767			47M ohm 1/4 watt.....	.17
22-1257			.005 mfd. 1000 volt.....	.22	63-773			180M ohm 1/4 watt.....	.17
22-1259			5 mmfd. compensator.....	.33	63-774			220M ohm 1/4 watt.....	.17
22-1267			100 mmfd. compensator.....	.28	63-941			390 ohm W. W. 1 watt.....	.22
22-1268			3 Gang variable.....	2.75	63-957			33M ohm 1 watt.....	.22
22-1273			2 Section ceramic trimmer.....	.44	63-976			15 megohm 1/4 watt.....	.08
22-1279			40 mmfd. compensator.....	.22	63-1059			39M ohm 1/2 watt.....	.19
22-1280			20 x 20 mfd. 150 volt dry electrolytic.....	1.10	63-1065			15M ohm 1 watt.....	.22
22-1300			.00025 mfd. 600 volt.....	.22	63-1074			Volume control switch.....	1.65
22-1302			.01 mfd. 600 volt.....	.20	63-1094			33 ohm W. W. 1 watt.....	.22
22-1303			15 mfd. 450 volt dry elec.....	1.25	63-1102			15M ohm 1/2 watt.....	.19
22-1304			25 x 30 mfd. 450 volt dry electrolytic.....	1.75	63-1151			16M ohm 1/2 watt.....	.09
22-1307			20 mfd. 150 volt x 40 mfd. 150 volt x 40 mfd. 25 volt dry electrolytic (or 22-1330).....	1.50	63-1156			1800 ohm 1 watt.....	.11
22-1308			3 Gang variable.....	3.75	63-1159			39M ohm 1 watt.....	.22
22-1310			50 mmfd. compensator.....	.30	63-1188			39M ohm 1 watt.....	.22
22-1311			75 mmfd. compensator.....	.30	63-1189			200 ohm W. W. 2 watt.....	.33
22-1312			100 mmfd. compensator.....	.35	63-1193			5600 ohm 2 watt.....	.33
22-1320			50 mfd. 450 volt dry electrolytic.....	2.10	63-1208			8200 ohm 1/2 watt.....	.19
22-1321			30 mfd. 450 volt x 20 mfd. 300 volt dry electrolytic condenser.....	2.00	63-1209			20 ohm W. W. 1 watt.....	.22
22-1329			3 Section trimmer (short wavemagnet).....	.70	63-1210			38 ohm W. W. 1 watt.....	.22
22-1331			10 mmfd. compensator.....	.30	63-1211			82M ohm 2 watt.....	.17
22-1332			200 mmfd. compensator.....	.40	63-1212			1800 ohm 1/4 watt.....	.08
S-5765			Line coupling condenser kit.....	.80	63-1237			150 ohm W. W. 1/2 watt.....	.22
63-150			10M ohm 1/2 watt.....	.09	63-1238			Volume control and switch.....	1.65
63-246			150 ohm 1/4 watt.....	.08	63-1250			Volume control (recorder unit).....	1.10
63-260			100M ohm 1/4 watt.....	.08	63-1251			Variable bias control.....	.39
63-271			1 megohm 1/4 watt.....	.08	63-1263			Candohm.....	.50
63-296			220M ohm 1/4 watt.....	.08	63-1264			3 Section candohm.....	.85
63-311			15M ohm 1/4 watt.....	.08	63-1265			Volume control and switch.....	1.65

RESISTORS

AUTOMATIC TUNING UNIT ASSEMBLY

S-7021	Automatic tuning coil assy. (yellow).....	E-F	.17
S-7857	Automatic tuning coil assy. (red) (or S-6928).....	E-F	.22
S-7858	Automatic tuning coil assy. (green) (or S-6929).....	E-F	.22
S-7859	Automatic tuning coil assy. (blue).....	E-F	.22

PARTS LIST—(Continued)

CHASSIS			CHASSIS		
8B14			12B2 (See H10 for Chassis Parts)		
8B25			14B1		
7B04			22B1		
Part No.	Model	List Price	Part No.	Model	List Price
S-10100	Automatic tuning coil assy. (3 white dots).....E-F	.22	46-452	Tuning control knob (S-10013).....E-F	.22
S-10325	Automatic tuning unit complete.....E-F	8.80	46-453	Band switch knob.....A	.06
24-287	Automatic cardboard cover.....E-F	.033	46-492	Band switch knob.....F	1.00
68-1	Automatic tuning adjustment wrench.....E-F	.022	46-501	Band switch knob (6 used).....C	.10
71-8	#6/32 x 3/8" FHMS (auto. switch mtg.).....E-F	.28C	49-488	6" Dynamic speaker.....F	6.75
83-923	Coil retaining strip.....E-F	.06	206-488	Output transformer.....F	1.85
85-287	Automatic tuning switch.....E-F	2.50	207-488	Field coil (not replaceable).....F	
112-223	Adjustment screw & core (4 used).....E-F	.11	208-488	Cone and voice coil.....F	1.75
112-292	Adjustment screw & core (2 used).....E-F	.11	49-483	12" Dynamic speaker.....F	25.00
112-359	Adjustment screw & core (10 used).....E-F	.15	206-489	Output transformer.....F	3.65
(For trimmers, see condenser list) C			207-489	Field coil.....F	4.80
AUTOMATIC-RADIOORGAN ESCUTCHEON ASSEMBLY			208-489	Cone and voice coil.....F	7.00
S-9590	Radiorgan knob and eyelet.....E-F	.11	49-490	12" Dynamic speaker (less output trans.).....F	21.00
S-9591	Radiorgan knob and eyelet.....E-F	.11	207-490	Field coil.....F	4.40
S-9606	Radiorgan strip and contact assembly.....E-F	.33	208-490	Cone and voice coil.....F	7.00
S-10011	Radiorgan escutcheon and knob assembly complete.....F	1.85	49-492	5" Dynamic speaker.....A	5.10
S-10012	Automatic escutcheon and knob assembly complete.....E-F	1.65	206-492	Output transformer.....A	1.40
S-10422	Radiorgan escutcheon and knob assembly complete.....E	1.95	207-492	Field coil (not replaceable).....A	
S-10701	Radiorgan switch and shield cable assembly complete.....C	1.60	208-492	Cone and voice coil.....A	1.40
46-425	Automatic knob (6 used).....E-F	.07	49-504	14" Dynamic speaker.....E	14.00
57-922	Automatic tenite escutcheon.....E-F	.55	206-504	Output transformer.....E	2.95
57-923	Radiorgan tenite escutcheon.....E-F	.66	207-504	Field coil (not replaceable).....E	
57-969	Radiorgan escutcheon.....C	.70	208-504	Cone and voice coil.....E	4.40
76-337	Latch shaft.....E-F	.022	Diffuser cone for 49-504.....E		1.50
76-342	Knob shaft.....E-F	.044	40-506	10" Dynamic speaker.....B	10.20
80-264	Latch spring.....E-F	.66C	206-506	Output transformer.....B	2.15
83-984	Rubber strip.....F	.033	207-506	Field coil.....B	3.75
85-313	Radiorgan switch (4 used).....C	.15	208-506	Cone and voice coil.....B	2.85
114-159	#6 x 1/4" Hex head ST screw.....E-F	.66C	49-509	5" PM speaker.....C	6.00
156-10	Latch.....E-F	.33C	206-509	Output transformer.....C	1.65
FM AUTOMATIC TUNING UNIT ASSEMBLY			208-509	Cone and voice coil.....C	1.60
S-9069	Oscillator coil assembly.....F	.33	49-511	10" Dynamic speaker (49-503 also used).....12H691	10.20
S-9070	Oscillator coil assembly (2 used).....F	.33	206-511	Output transformer.....12H691	2.15
S-9344	Oscillator coil assembly.....F	.33	207-511	Field coil.....12H691	3.75
S-9345	Oscillator coil assembly.....F	.33	208-511	Cone and voice coil.....12H691	2.85
S-10534	FM automatic tuning unit complete.....F	8.00	Speaker cable and plug.....C		.50
83-711	Coil retaining strip.....F	.022	57-836	OFF-ON switch plate.....B	.71
83-900	Fibre strip.....F	.033	57-839	Wavemagnet switch plate (on chassis).....C	.11
85-306	FM automatic tuning switch.....F	3.50	57-949	FM automatic escutcheon plate (2 used).....F	1.75
93-510	Ceramic washer.....F	.02	57-953	Wavemagnet switch plate (on chassis).....F	.50
149-18	Core and screw assembly (5 used).....F	.17	57-955	Phono-radio switch plate.....F	1.50
FM TUNING ESCUTCHEON ASSEMBLY			57-976	Band switch escutcheon.....C	.85
S-10585	FM automatic switch escutcheon and knob assembly complete (right) (Manual).....F	\$1.50	68-1	Automatic tuning wrench.....E-F	.022
S-10586	FM automatic switch escutcheon and knob assembly complete (left).....F	1.50	70-83	#8 x 1/2" washer head WS (stairway, bronze).....A	.50C
46-425	Automatic tuning knob.....F	.07	70-103	#2 x 3/8" ovalhead WS (phono-radio SW Escutcheon).....F	.01
57-948	FM automatic escutcheon (left).....F	.70	72-43	#2 x 3/8" FHWS (escutcheon mounting).....E	.55C
57-978	FM automatic escutcheon (right) (manual).....F	.75	78-128	Socket—speaker plug.....B	.11
76-363	Escutcheon shaft.....F	.11	78-229	Socket—electrolytic condenser.....B-C-E-F	.022
80-211	Escutcheon latch spring.....F	.28C	78-274	Socket—electrolytic condenser.....B	.022
83-966	Sponge rubber strip.....F	.04	78-346	Socket—wavemagnet plug (5 prong).....E-F	.11
83-1006	Sponge rubber strip (2 used).....F	.03	78-349	Socket (4 contact).....B-E-F	.06
156-16	Escutcheon latch.....F	.60	78-353	Socket—single contact.....E-F	.033
MISCELLANEOUS			78-373	Socket—octal tube (5 contact).....A	.11
2-84	Cabinet back.....6D620	.11	78-374	Socket—octal tube (6 contact).....B-C-E	.11
2-84W	Cabinet back.....6D620W	.11	78-376	Socket—octal tube (8 contact).....A-B-E-F	.11
2-86	Cabinet back.....6D644	.11	78-383	Socket—octal tube (7 contact).....A	.11
14-797	Model 620 bakelite cabinet.....5.25		78-396	Socket—battery cable.....C	.11
14-797W	Model 620W bakelite cabinet.....6.05		78-400	Socket—loktal tube (6 contact).....B-F	.17
15-34	Battery cable plug cap.....C	.06	78-401	Socket—loktal tube (8 contact).....B-C-E-F	.17
23-15	Antenna strip connector.....A-E-F	.022	78-443	Socket—double plug.....E-F	.11
36-18	Cabinet handle.....6D620	.44	78-444	Socket—octal (speaker plug).....E-F	.11
36-19	Cabinet handle.....6D620W	.44	78-456	Socket—loktal tube (7 contact).....C-F	.17
39-10	Special Zenith Headphone (no adaptor needed).....C		78-471	Socket—adaptor (9 contact).....E	.25
44-17	Headphone jack.....C	.22	78-486	Socket—loktal tube (8 contact).....C	.17
46-349	Band switch knob.....E	.17	80-198	Chassis mounting spring (single).....E-F	.011
46-350	Tuning control knob (S-8540).....E	.22	80-199	Chassis mounting spring (double).....E-F	.011
46-413	Volume and tuning control knob.....A	.11	83-943	Antenna ground terminal strip.....E-F	.22
46-413Y	Volume and tuning control knob.....6D620W	.11	83-980	Pin-jack terminal strip (on gang).....C	.25
46-415	Tone and volume control knob.....B	.11	85-191	AC switch.....B	.28
46-416	Tuning control knob (2 used).....C	.11	85-225	Wavemagnet switch (on chassis).....C	.22
46-423	Volume control knob (S-9815).....E-F	.22	85-238	FM antenna switch (SPDT).....F	.17
			85-257	Tone control switch.....A	.22
			85-301	Band switch.....E-F	2.75
			85-307	Band switch.....A	.94
			85-311	Power change-over switch.....C	.75
			85-312	Automatic tuning switch.....C	4.50
			85-318	Tone control switch.....B	.50
			91-392	SW antenna hank.....A	.08
			93-258	Brown felt washer.....6D644	.71C
			93-475	Brown felt washer.....E-F	.02
			93-553	Black felt washer.....C	.55C
			95-854	Power transformer—117 volt 50-60 cycle.....E	7.15
			95-879	Power transformer—117 volt 50-60 cycle.....F	7.00
			95-883	Power transformer—117 volt 50-60 cycle.....B	7.50
			97-137	Phono-switch lever stud.....F	.11
			100-36	Dial light bulb 6.3 volt .25 Amp.....B	.10
			110-101	Grill cloth (sailboat design).....C	.25
			110-103	Grill cloth (bomber design).....C	.30
			112-25	1/4-20 x 1 1/2" Hex washerhead MS.....E-F	.044
			112-273	#8 x 3/4" Oval binding head sheet metal screw.....A	.88C

PARTS LIST—(Continued)

Part No.	CHASSIS	CODE	Model	List Price
112-283	8B14	A	#8/32 x 3/8" washerhead MS.	.55C
112-290	8B25	B	#8 x 1" oval Phillips head type Z	
	7B04	C	ST screw	.022
114-41		C	1/4-20 x 1 1/4" Hex washerhead MS.	.011
114-99		B-F	1/4-20 x 2 1/4" Hex washerhead MS.	.04
114-134		12H691	#8 x 1-1/16" Hex washerhead	
			ST screw	.011
114-148		6D644	#10 x 7/8" Hex washerhead	
			ST screw	.011
126-379		C	Tube shield	.06
126-426		C-E-F	Electrolytic condenser shield	.11
148-34		A	Phono-radio switch lever arm	.06
159-14		F	Dial crystal retaining button	.11C
159-27		A	Plug button	.11
159-42		12H691	Cabinet back retaining button	.011
192-66		A	Dial crystal	.33
192-69		6D620	Dial crystal	.39
192-76		6D644	Dial crystal	.25
202-314		C	Instruction book	.90
202-320		F	Instruction book	.11
202-325		A	Instruction book	1.00
202-333		E	Instruction book	.01
202-339		B	Instruction book	.20
202-341		C	Call letter tab booklet	.40
202-344		F	Call letter tab booklet	.35
202-351		E	Operating instruction card	.15
S-9363		C	Battery retainer bracket assembly	.28
S-9644		C	Dial escutcheon assembly complete	4.40
		E	57-925 escutcheon plate	2.75
		E	57-943 name plate	.66
		E	94-378 rubber bushing	.022
		E	126-416 escutcheon shield	.33
		E	192-70 escutcheon glass	.44
		E	196-48 escutcheon glass gasket	.17
S-10146		E	Dial escutcheon assembly complete	12.00
		F	57-954 escutcheon plate	10.00
		F	57-956 name plate	1.50
		F	126-416 escutcheon shield	.33
		F	192-70 dial glass	.44
		F	196-46 dial glass gasket	.17
S-10457		F	OFF-ON indicator and lens assembly	1.50
S-10639		B	Pilot light socket and wire assembly	.75

WAVEMAGNET PARTS

S-8237	Wavemagnet catch assembly	C		.022
S-10134	Wavemagnet assembly complete (type 16P)	A		2.20
S-10282	Wavemagnet assembly complete (type 19-V2)	F		3.50
S-10330	Telescopic antenna assembly (5 section)	C		5.00
S-10392	Wavemagnet assembly complete (type 19T-3)	E		4.25
S-10680	Wavemagnet assembly (BC)	C		3.25
S-10682	Wavemagnet assembly (SW)	C		4.00
S-10712	Telescopic antenna support bracket and terminal strip assembly	C		.25
S-10713	Telescopic antenna, coil, switch and wire assembly complete	C		7.75
S-10715	Wavemagnet and SW magnet assembly complete (type 20C)	C		7.50
S-10720	Wavemagnet assembly complete (type 18K)	12H691		3.30
19-125	Telescopic antenna mounting clip	C		.02
19-126	Telescopic antenna mounting clip	C		.04
24-238	Wavemagnet cardboard cover	E-F		.17
34-127	Fibre gear (SW magnet)	C		.15
40-18	Wavemagnet hinge	C		.05
54-136	#8/32 x 5/16" cap nut (statuary bronze)	C		1.95C
54-141	Speednut	E-F		.011
58-83	5 Prong wavemagnet plug	D-E-F		.11
80-297	Switch mounting spring (telescopic antenna)	C		.70C
85-314	Antenna switch (telescopic antenna)	C		.60
85-322	Wavemagnet switch (SW magnet)	C		.25
112-364	#10/32 shoulder screw (telescopic antenna)	C		.10
114-158	#6 x 2 1/4" Hex head ST screw	A		.02
184-7	Antenna ball (telescopic antenna)	C		.15
197-12	Rubber suction cup	C		.08
199-26	Rubber sleeve	E-F		.022

PHONO AND RECORDER PARTS

4-397	Microphone base	E		\$ 2.20
15-40	Plug cap (recorder control unit)	E		.12
19-32	Socket retaining clip (phono compartment light)	E		.011
24-293	Record changer bottom cover	12H691		.15
24-307	Phono drawer bottom cover	22H698		.70
24-308	Phono drawer bottom cover	22H699		.40
24-310	Bottom cover (recorder control unit)	E		.20
29-20	10 Inch turntable (used with 169-97)	12H691		1.65
29-24	10 Inch turntable	E		2.75
29-28	10 Inch turntable	F		3.50
29-29	9 Inch turntable (used with 169-104)	12H691		1.65
46-422	Volume control knob (recorder control unit)	E		.17
46-435	Recorder control unit switch knob (5 used)	E		.06
46-453	Phono-radio switch knob	D-F		.06
46-461	Phono release knob	12H691		.44
54-31	#10/32 x 3/8" Hex nut (record changer mtg.)	D		.39C
54-157	Record changer mounting nut	E-F		.06
56-78	Recorder stylus	E		.22C
56-93	Phono release escutcheon pin	D		1.50
57-941	Recorder control unit escutcheon	E		.44
57-944	Phono-radio escutcheon	D		.33
57-945	Release knob escutcheon	D		

Part No.	CHASSIS	CODE	Model	List Price
58-85	12B2 (See H10 for Chassis Parts)	D	3 Prong plug	.06
58-94	14B1	E	4 Prong plug	.11
58-102	22B1	F	Connector plug (9 prong)	.17
63-1250		E	Volume control (recorder control unit)	1.10
72-53		E	#12 x 1 1/4" F.H.W.S. (record changer mtg.)	.022
78-230		D	Tuning eye socket & cable	.61
78-401		E	Socket—loktal tube (8 contact)	.17
78-402		E	Socket (4 contact)	.11
78-408		E	Socket (2 contact)	.06
78-482		E	Socket and wire (phono compartment)	.30
80-278		E	Main spring	.33
80-279		12H691	Release spring	.033
80-280		12H691	Record changer mounting spring	.044
80-286		12H691	Record changer mounting spring	.06
80-293		E	Record changer mounting spring	.04
85-203		E	AC switch (phono compartment)	.61
85-300		E	Recorder control switch	2.75
85-309		12H691	Air check	.55
97-137		D-F	Phono switch lever stud	.11
98-1		E	Microphone only	11.00
98-2		E	Microphone cartridge & rubber ring	7.70
100-88		E	Phono compartment bulb (frosted)	.28
112-337		12H691	Record changer mounting screw	.07
112-357		F	Record changer mounting screw	.50
114-40		12H691	#10/32 x 7/8" Hex washerhead MS.	.66C
142-49		E	Crystal cartridge & permanent Sapphire needle (LP-6)	8.80*
142-58		12H691-E-F	Recorder cutting head only (96-36A3)	11.50*
148-34		D-F	Phono-radio switch lever arm	.06
159-14		E	Snap button (recorder control unit)	.71C
169-92		E	Automatic record changer—60 cycle	110.00
169-94		F	Automatic record changer & recorder (60 cycle)	100.00
169-97		E	Automatic record changer—60 cycle	45.00
169-104		12H691	Automatic record changer—60 cycle	45.00
202-301		12H691	Phono instruction book	.022
202-337		12H691	Phono instruction book	.10
202-342		F	Phono recorder instruction sheet	.07
S-9050		E	Microphone assembly complete	13.20
S-9824		F	Phono switch assembly (85-283)	.33
S-10156		E	Air check bracket & clamp assembly	.33
S-10286		12H691	Slide assembly (right) (phono drawer)	1.25
S-10287		F	Slide assembly (left) (phono drawer)	1.25
S-10683		12H691	Record changer lift assembly	8.00
MS-745		12H691	Phono release screw assembly	.10

*Denotes special discount.

POWER PACK UNIT (22B1)

22-182	.00025 mfd.	600 volt	F	\$.22
22-365	100 mmfd.	600 volt	F	.17
		(sub. 22-162)	F	.17
22-417	.1 mfd.	600 volt	F	.22
22-670	.1 mfd.	400 volt	F	.22
22-716	.0005 mfd.	600 volt	F	.22
22-719	.16 mfd.	350 volt dry electrolytic	F	.61
22-825	.1 mfd.	400 volt	F	.22
22-826	.01 mfd.	200 volt	F	.17
22-827	.01 mfd.	200 volt	F	.20
22-828	.05 mfd.	400 volt	F	.17
22-893	20 mfd.	200 volt dry electrolytic	F	.94
22-954	.00035 mfd.	600 volt	F	.14
22-966	.04 mfd.	600 volt	F	.22
22-1089	Two section ceramic trimmer	F		.39
22-1126	.01 mfd.	400 volt	F	.17
22-1135	.005 mfd.	600 volt	F	.17
22-1207	.07 mfd.	200 volt	F	.17
22-1302	.01 mfd.	600 volt	F	.20
22-1303	15 mfd.	450 volt dry electrolytic	F	1.25
22-1304	25 mfd. x 30 mfd.	450 volt dry elec.	F	1.75
57-965	ON-OFF switch plate	F		.15
58-85	Three prong plug	F		.06
58-106	Seven prong plug	F		.20
63-150	10M ohm	1/2 watt	F	.09
63-311	15M ohm	1/4 watt	F	.08
63-646	33M ohm	1/4 watt	F	.08
63-647	39M ohm	1/4 watt	F	.08
63-718	330M ohm	1/4 watt insulated	F	.17
63-1059	39M ohm	1/2 watt insulated	F	.19
63-1193	5600 ohm	2 watt insulated	F	.33
63-1263	Candohm	F		.50
63-1270	Variable hum control	F		1.65
78-142	Socket—speaker plug (7 contact)	F		.11
78-274	Socket—electrolytic condenser	F		.022
78-281	Socket—four contact (6A3)	F		.11
78-376	Socket—octal tube (8 contact)	F		.11
78-478	Socket—six contact (speaker)	F		.11
85-134	Remote speaker switch	F		.17
95-254	Power choke	F		7.15
95-865	Driver transformer	F		2.50
95-866	Driver transformer	F		3.80
95-867	Power transformer—50-60 cycle—117 V.	F		10.50
S-10271	Line coupling coil assembly	F		.55
S-10275	Line filter coil assembly	F		.35
S-10277	Filter choke coil assembly	F		.35
S-10278	Filament choke coil assembly	F		.50
S-10280	Line filter coil assembly	F		.50
S-10633	Oscillator coil assembly	F		1.00

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10S590	Phono Manual		2	97	S-8500	Record Player		2	30
10S599	1941	10A2R	2	144	S-8500Z	Record Player		2	84
10S599	Phono Manual		2	153	S-8501	Record Player		2	30
10S668	1941	10B1	2	207	S-8501Z	Record Player		2	84
10S669	1941	10B1	2	207	S-9000	Record Player		2	84
10S690	1941	10B2	2	207	S-9000	Wireless Record Player		2	93
10S690	Phono Manual		2	225	S-9001	Record Player		2	214
12H650	1942	12B1	2	211	S-9002	Record Player		2	214
12H670	1942	12B1	2	211	S-9005		6B25	2	319
12H671	1942	12B1	2	211	Readjustment of Tuning Units (42 Automotive Receivers)				
12H678	1942	12A6	2	209					
12H678	Phono Manual		2	225					
12H679	1942	12A6	2	209	Record Changer	E-1		2	93
12H679	Phono Manual		2	225	Record Changer	W-2		2	97
12H689	1942	12B2	2	213	Record Changer & Recorder	S-1		2	11
12H689	Phono Manual		2	225					
12H691	1942	12B2	2	213	Record Changer	W-3		2	119
					Record Changer	W-4		2	153
					Record Changer	S-2		2	225
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