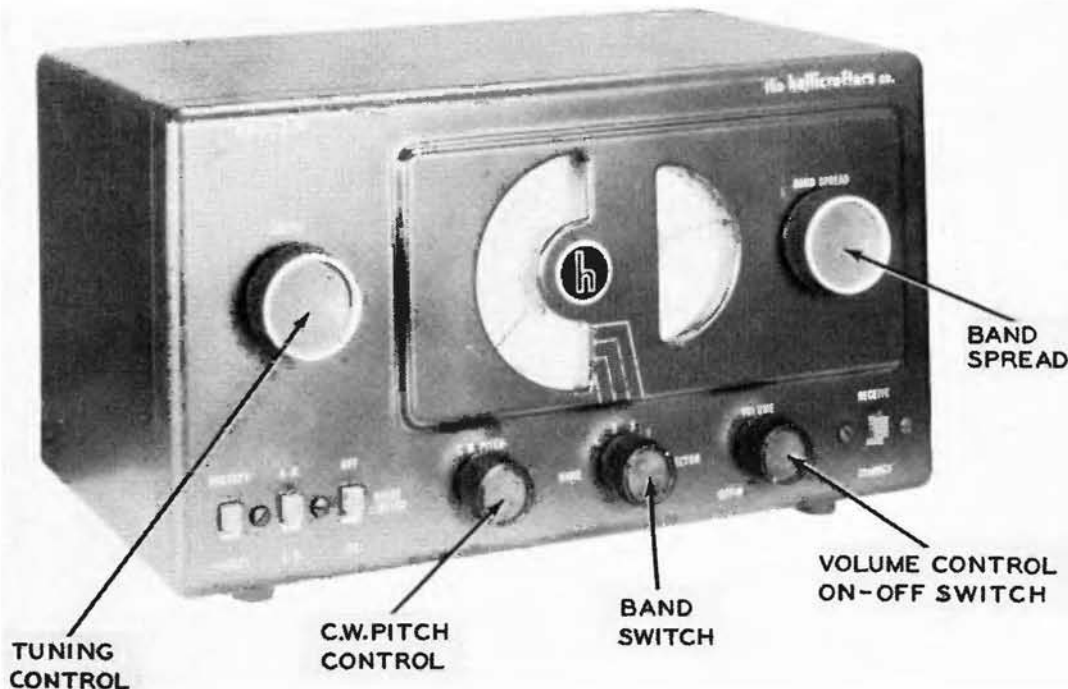


HALLICRAFTERS  
MODEL S-38



HALLICRAFTERS MODEL S-38

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MODEL S-38

TRADE NAME Hallcrafters Model S-38  
 MANUFACTURER Hallcrafters Co., 2611 S. Indiana Ave., Chicago, Illinois  
 TYPE SET AC - DC Superheterodyne - 4 Band Communications Receiver  
 TUBES (SIX) Types 12SA7GT Converter, 12SK7GT 1 $\frac{1}{2}$  Amp., 12SQ7GT Det.-AVC-AF, 12SQ7GT BFO-ANL, 35L6GT Power Output, 35Z5GT Rectifier.  
 POWER SUPPLY 105-125 Volts AC-DC Rating .245 Amps. @ 117 Volts AC  
 TUNING RANGE Band #1- 540-1650KC Band #2- 1650KC-5.0MC Band #3 5.0MC-14.5MC Band #4- 13.5MC-32.0MC

ALIGNMENT INSTRUCTIONS

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
NONE	High side to stator plates of rear section of tuning gang. Low side to "C" on antenna strip.	455KC	"1"	1000KC	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output. Repeat adjustment.
"	"	"	"	"	"	BFO Slug	Turn off 400 $\Omega$ modulation on signal generator. Set CW/AM switch at CW. Remove pitch control knob and adjust slotted screw shaft for zero beat.
390 $\Omega$ carbon res.	High side to "A1" on antenna strip. Low side to "G" on antenna strip.	30MC	"4"	30MC	"	A5,A6	Adjust for maximum output. Rock gang slightly when adjusting A6.
"	"	14MC	"3"	14MC	"	A7,A8	Adjust for maximum output. Rock gang slightly when adjusting A8.
"	"	5MC	"2"	5MC	"	A9	Adjust for maximum output.
"	"	1.8MC	"	1.8MC	"	A10	Adjust for maximum output and repeat A9 at 5MC.
"	"	5MC	"	5MC	"	A11	Adjust for maximum output. Rock gang slightly.
"	"	1500KC	"1"	1500KC	"	A12	Adjust for maximum output.
"	"	600KC	"	600KC	"	A13	Adjust for maximum output and repeat A12 at 1500KC.
"	"	1500KC	"	1500KC	"	A14	Adjust for maximum output. Rock Gang Slightly.
Set receiver controls as follows: "Speaker-Phones" switch at speaker; Volume control at full clockwise (maximum); CW/AM switch at "AM" (except for BFO adjustment); noise limiter switch at "off"; bandspread tuning at "0" (min. cap.); "standby-receive" switch at receive. Adjust output of signal generator no higher than is necessary to obtain output reading. Use insulated alignment screwdriver for adjusting.							

**HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 6, Indiana**

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# PARTS LIST AND DESCRIPTIONS

## TUBES

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		HALLICRAFTERS PART No.	STANDARD REPLACEMENT		
1	Converter	12SA7GT	6AD		
2	IF Amp.	12SK7GT	6N		
3	Det.-AVC-AF	12SG7GT	6C		
4	BFO-ANL	12SQ7GT	6Q		
5	Power Output	35L6GT	7AC		
6	Rectifier	35Z5GT	6AD		

## CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	VOLTS	REPLACEMENT DATA				AEROVOX PART No.	CORNELL-DUBILIER PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
			HALLICRAFTERS PART No.	MALLOY PART No.	SOLAR PART No.	SPRAGUE PART No.			
7(A)	40	150	TC48	TPB-40X30-150	TA-430		EZ44315C	Filter - Red	
(B)	30	150			20-38			Filter - Yellow	
(C)	30	150							
(D)	20	25							
8	.25	200	46AT254J	TP430	TC-25	494--25	D74P25	Cath. Bypass - Blue	
9	.02	400	46AW203J	TP423	TC-12	494--02	D74S2	Line Isolating	
10	.02	600	46AY203J	TP412	TC-12	694--02	D76S2	Line Bypass	
11	.01	400	46AW102J	TP421	TC-11	494--01	D74S1	35L6 Plate Bypass	
12	.005	400	46AW502J	TP408	TC-25	494--005	D76D5	Audio Coupling	
13	.01	400	46AW102J	TP421	TC-11	494--01	D74S1	BFO Plate Bypass	
14	.05	200	46AU503J	TP426	TC-15	494--05	D74S5	IF Cath. Bypass	
15	.25	200	46AT254J	TP430	TC-2	494--25	D74P25	Screen Bypass	
16	.02	400	46AW203J	TP423	TC-12	494--02	D74S2	AVC Filter	
17	.05	200	46AV103J	TP410	TC-11	494--01	D76S1	Ant. Coupling	
18	.05	200	46AV103J	TP410	TC-15	494--05	D74S5	RF Bypass Pwr. Supp.	
19	220	500	CM202A22M	MC240	MO.15-325	1468--00025	S45T25	RF Bypass Diode	
20	220	500	CM202A22M	MC240	MO.15-325	1468--00025	S45T25	BFO Grid Cap.	
21	470	500	CM201A47M	MC245	MO.15-35	1468--00035	S45T35	BFO Fixed Trimmer	
22	2700	500	CM30A27M	MC450	MO.15-325	1467--00025	S45T25	RF Grid Cap.	
23	220	500	CM30A22M	MC440	MO.15-325	1468--00025	S45T25	Fixed Padder	
24	2700	500	CM30A27M	MC450	MO.15-325	1467--00025	S45T25	Osc. Grid Cap.	
25	510	500	CM20A51M	MC245	MO.15-35	1468--00035	S45T35	RF Bypass Rect.	
26	220	500	CM20A22M	MC240	MO.15-325	1468--00025	S45T25	Audio Plate Bypass	
27	1200	500	CM20A12M	MC255	MO.3-81	1468--001	LW5D1	Fixed Trimmer	

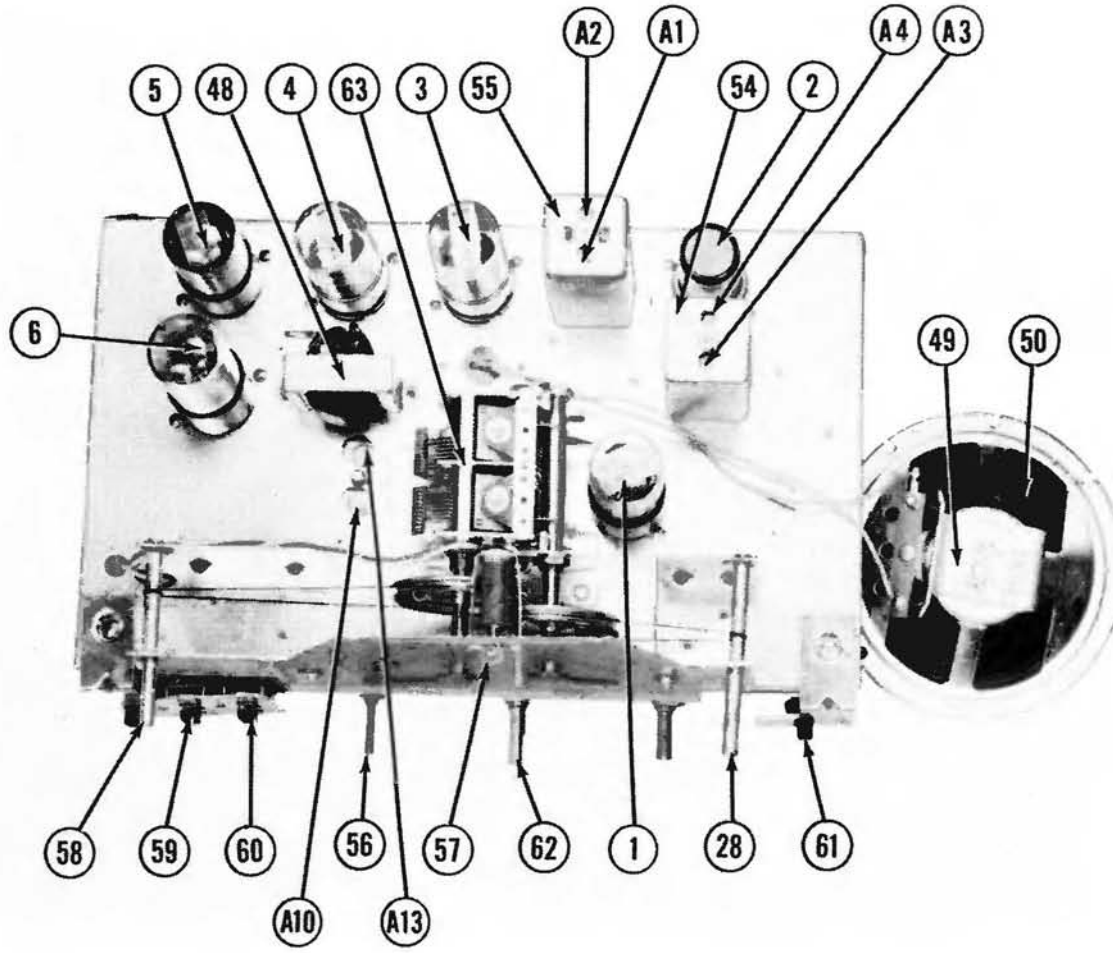
## CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA			CLAROSTAT PART No.	INSTALLATION NOTES
			HALLICRAFTERS PART No.	MALLOY PART No.	IRC PART No.		
28(A)	500K $\Omega$	1	25B094	MP48	D13-133	12-59-1	Volume Control Attach to 28A per instructions.
(B)	Switch		Not req.	Not req.	A	RS-2	
(C)	Switch			MC26	41	SW-4	

## RESISTORS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
			HALLICRAFTERS PART No.	IRC PART No.	
29	10K $\Omega$		RC20A10M	BTS-10K	Br.-Blk.-Or. Ant. Shunt
30	470K $\Omega$		RC20A47M	BTS-470K	Yl.-Vi.-Yl. Converter Grid
31	47K $\Omega$		RC20A47M	5W-E-47	Yl.-Vi.-Blk. Osc. Series Grid
32	22K $\Omega$		RC20A22M	BTS-22K	Red-Red-Or. Osc. Grid
33	2.2 Meg.		RC20A22M	BTS-2.2 Meg.	Red-Red-Grn. AVC Network
34	47K $\Omega$		RC20A47M	BTS-47K	Yl.-Vi.-Or. Diode Load
35	47K $\Omega$		RC20A47M	BTS-47K	Yl.-Vi.-Or. Diode Load
36	47K $\Omega$		RC20A47M	BTS-47K	Yl.-Vi.-Or. Diode Load
37	10 Meg.		RC20A10M	BTS-10 Meg.	Br.-Blk.-blue 1st AF Grid
38	220K $\Omega$		RC20A22M	BTS-220K	Red-Red-Yl. 1st AF plate Load
39	470K $\Omega$		RC20A47M	BTS-470K	Yl.-Vi.-Yl. Output Grid
40	150K $\Omega$		RC20A15M	5W-E-150	Br.-Orn.-Br. Output Latch
41	100K $\Omega$		RC20A10M	5W-E-100	Br.-Blk.-Red Filter
42	630K $\Omega$		RC30A63M	5W-A-38C	Blue-Gray-br.

# CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS (CONTINUED)

ITEM No.	PART No.	DESCRIPTION	RATING		INSTALLATION NOTES
			IMPEDANCE	DC RES.	
			PRI. SEC.	PRI. SEC.	
43	22Ω	RC20A1220Y	1W-1/2	22	Red-Red-Blk. Surge Limiter
44	330Ω	RC20A330Y	1/2W-1/2	330	Or.-Or.-Br. Pilot Light Shunt
45	15Ω	RC20A150Y	1/2W-1/2	15	Br.-Orn.-Blk. Headphone Shunt
46	330Ω	RC20A330Y	1/2W-1/2	330	Or.-White-Br. IF Cathode
47	470Ω	RC20A470Y	1/2W-1/2	470	Yl.-Vl.-Br. 50 Plate Load

## TRANSFORMER (OUTPUT)

ITEM No.	PART No.	DESCRIPTION	RATING		INSTALLATION NOTES
			IMPEDANCE	DC RES.	
			PRI. SEC.	PRI. SEC.	
48	3150Ω	3-15	170Ω	6Ω	IDrill new mounting holes.

## SPEAKER

ITEM No.	PART No.	DESCRIPTION	RATINGS		INSTALLATION NOTES
			FIELD	VC I/F.	
			PRI. SEC.	PRI. SEC.	
49	85C035	ST-105	5-10	5	
50	4-9/16"	5/8"	5/8"	5/8"	NOT READILY REPLACABLE-USE COMPLETE SPEAKER UNIT.

## R F COILS

ITEM No.	USE	DC RES.	REPLACEMENT DATA		INSTALLATION NOTES
			HALLI-CRAFTERS PART No.	MEISSNER PART No.	
		PRI. SEC.	PRI. SEC.		
51 (A)	Band 1 Art. Coil	20Ω	4-5Ω	51C621*	*Wound on same coil form with bands 2,3,4.
51 (B)	"	10	10	"	"
51 (C)	"	10	10	"	"
52	"	10	10	"	"
53 (A)	10cc.	5Ω	5Ω	51C618	**Wound on coil form with bands 2,3,4.
53 (B)	"	5Ω	5Ω	51C622**	"
53 (C)	"	5Ω	5Ω	"	"
53 (D)	"	5Ω	5Ω	"	"
54	Input If	18	00	50C183	"
55	Output If	27Ω	26-5Ω	50S134	"
56	RF Osc. Coil	24-8Ω	24-8Ω	19-8660	"
57		5Ω	5Ω	54B031	"

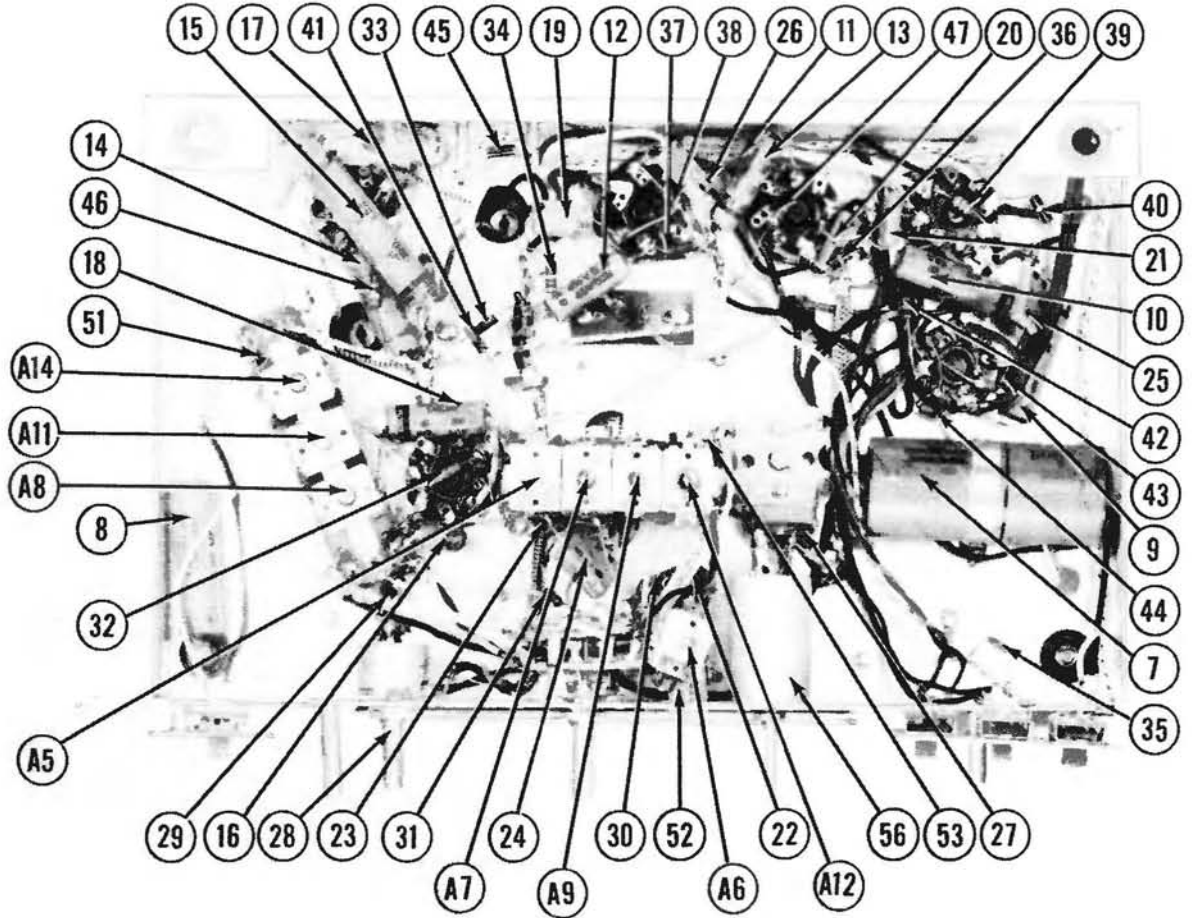
## DIAL LIGHT

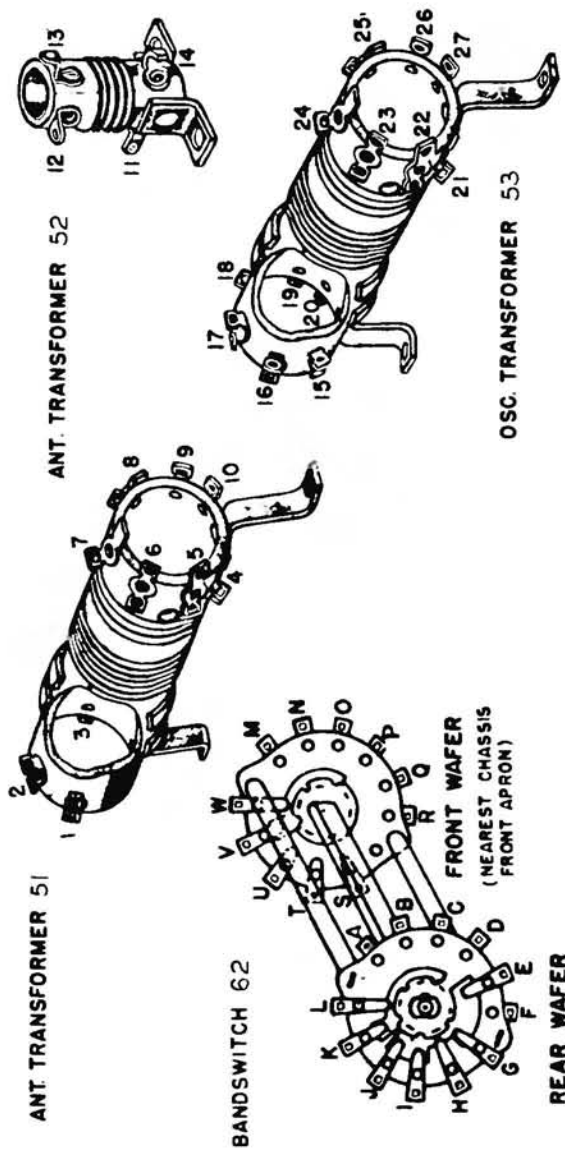
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		INSTALLATION NOTES
					HALLI-CRAFTERS PART No.	MEISSNER PART No.	
57	Rayonet	5-9	0.15	Brown	39A034		Type 47

## MISCELLANEOUS

ITEM No.	PART NAME	HALLI-CRAFTERS PART No.	NOTES
58	Switch	60A243	"SPEAKER-PHONES" SPST
59	"	60A245	"NO-CW" SPST
60	"	60A244	"NOISE LUTTER" SPST
61	"	60A244	"RECEIVE STANDBY" SPST
62	Tuning Cap.	50A240	4 Position Bandswitch
63	Trimmer	44C152	2 Gang Main & Band Spread Ver. Cap.
	"	44C129	AS, A7, A9, A12 Osc. Adjustments
	"	44A039	AS, All, A14 Art. Adjustments
	"	44-152	Antenna Trimmer
A6	Knob	15A049	A10, A13 Osc. Padders
	"	15A065	Volume and Band Switch
	"	15A047	C.W. Pitch Control
	"	83B257	Tuning and Bandspread Controls
	"	225157	Glass

# CHASSIS—BOTTOM VIEW

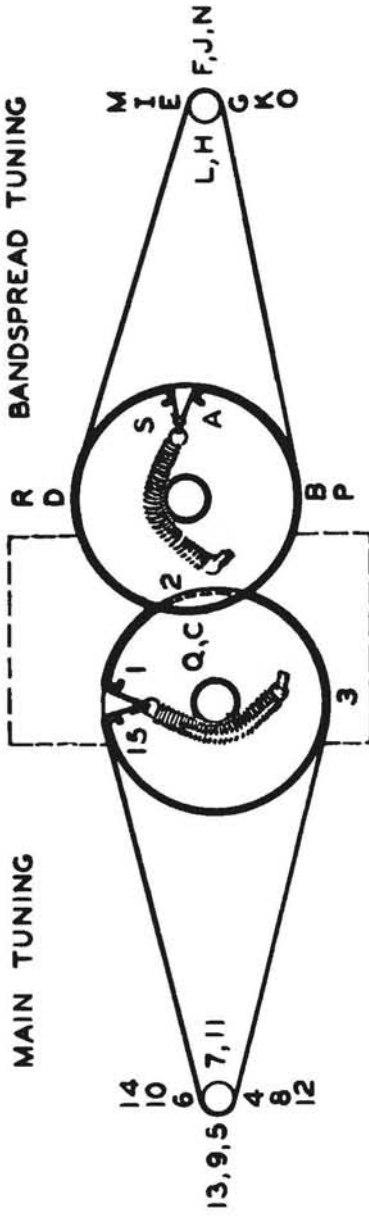




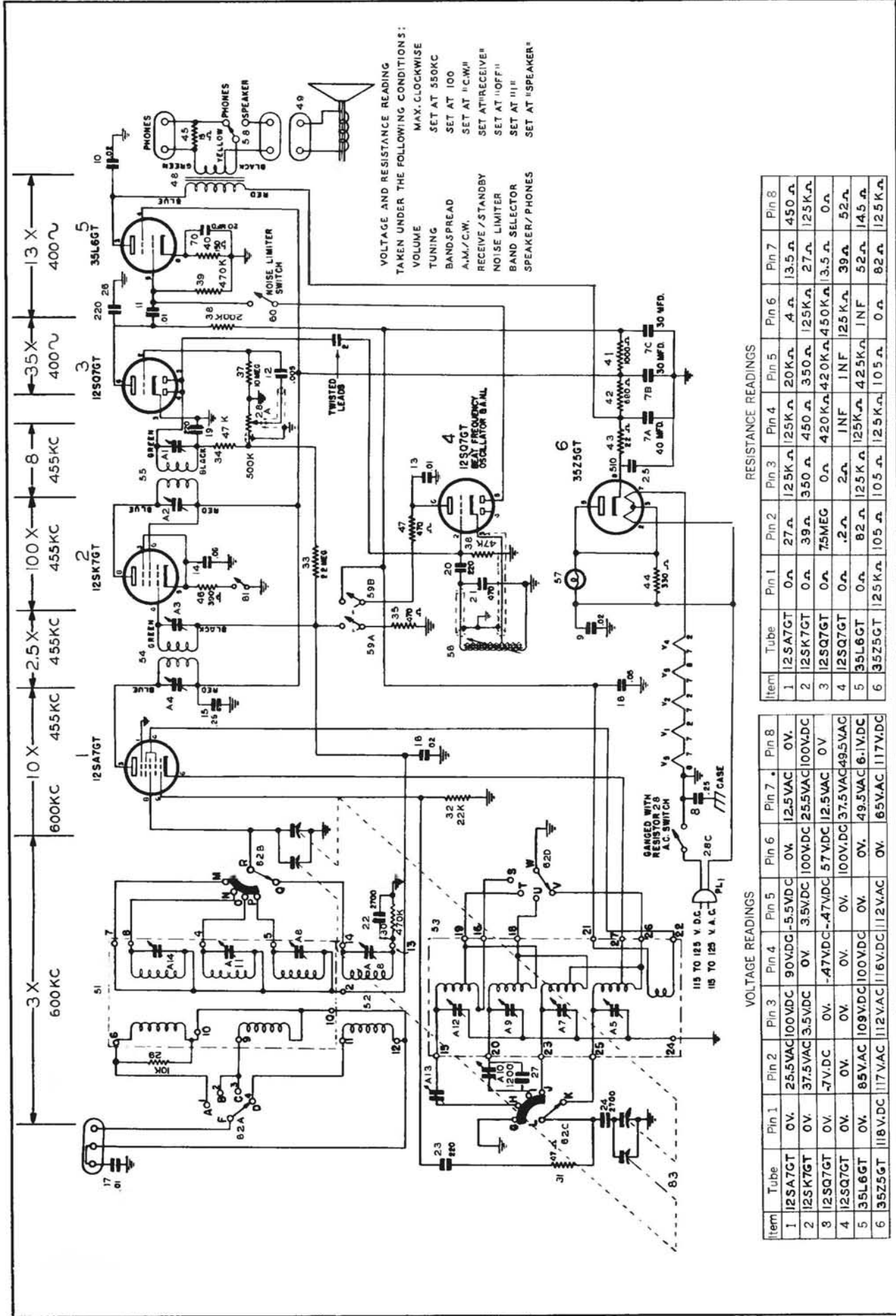
# COIL CONNECTIONS

To restring the main tuning dial cord, cut a 14" length of 30 lb. test dial cord and tie one end of the tension spring of the main tuning capacitor drive pulley at position "1" on the diagram. Following the numbers 1 through 15, wind the cord on the pulley and knob drive shaft. At position "15," stretch the tension spring and tie the cord securely. Cut off the excess cord. Note that two complete turns are wound on the knob drive shaft.

To restring the bandspeed tuning dial cord, cut a 16" length of dial cord and follow the procedure as explained above, except start at position "A" on the diagram and proceed through position "S". Note that the knob drive shaft has two complete turns.



TUNING CAPACITOR FULLY CLOSED (BOTH SECTIONS).  
**DIAL STRINGING PROCEDURE**



VOLTAGE AND RESISTANCE READINGS  
 TAKEN UNDER THE FOLLOWING CONDITIONS:  
 MAX. CLOCKWISE  
 VOLUME SET AT 550KC  
 TUNING SET AT 100  
 BANDSPREAD A.M./C.W.  
 RECEIVE /STANDBY SET AT "C.W."  
 NOISE LIMITER SET AT "OFF"  
 BAND SELECTOR SET AT "H"  
 SPEAKER/PHONES SET AT "SPEAKER"

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0 Ω	27 Ω	125K Ω	25K Ω	20K Ω	4 Ω	13.5 Ω	450 Ω
2	12SK7GT	0 Ω	39 Ω	350 Ω	450 Ω	350 Ω	125K Ω	27 Ω	125K Ω
3	12SQ7GT	0 Ω	75MEG Ω	0 Ω	420K Ω	420K Ω	450K Ω	13.5 Ω	0 Ω
4	12SQ7GT	0 Ω	.2 Ω	2 Ω	INF	INF	125K Ω	39 Ω	52 Ω
5	35L6GT	0 Ω	82 Ω	125K Ω	125K Ω	425K Ω	INF	52 Ω	145 Ω
6	35Z5GT	125K Ω	105 Ω	105 Ω	125K Ω	105 Ω	0 Ω	82 Ω	125K Ω

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	12SA7GT	0V.	25.5VAC	100VDC	90VDC	-5.5VDC	0V.	12.5VAC	0V.
2	12SK7GT	0V.	37.5VAC	3.5VDC	0V.	35VDC	100VDC	25.5VAC	100VDC
3	12SQ7GT	0V.	-7V.DC	0V.	-47VDC	-47VDC	57VDC	12.5VAC	0V.
4	12SQ7GT	0V.	0V.	0V.	0V.	0V.	100VDC	37.5VAC	49.5VAC
5	35L6GT	0V.	85VAC	109VDC	100VDC	0V.	0V.	49.5VAC	6.1V.DC
6	35Z5GT	118V.DC	117VAC	112VAC	116V.DC	112VAC	0V.	65VAC	117V.DC

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of  $\pm 10\%$  in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.