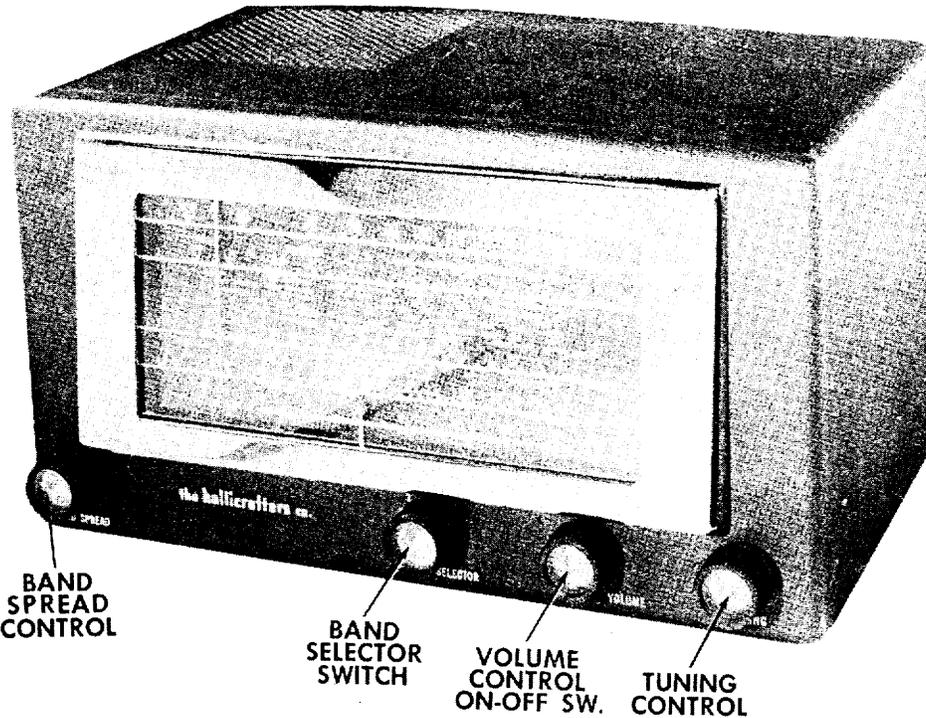




HALLICTRAFTERS
MODEL 5R10A



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TRADE NAME	Hallicrafters Model 5R10A		
MANUFACTURER	Hallicrafters C., Inc., 4401 W. 5th Ave., Chicago Ill.		
TYPE SET	AC-DC Operated Multi-Band Superheterodyne Receiver		
TUBES (five)	Types 12SA7 Conv., 12SK7 IF Amp., 12SQ7 Det. -AVC-AF Amp. 50L6GT Power Output, 35Z5GT Rectifier		
POWER SUPPLY	105-125 Volts AC-DC	RATING	.25 Amp. @ 117 Volts AC
TUNING RANGE	(Band #1) 540-1650KC, (Band #2) 1,65-5.1MC, (Band #3) 5-14.5 MC, (Band#4) 13-31 MC		

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to the reference mark to the left of 55 on the BC scale.
To set band spread pointer, turn bandspread tuning gang fully open and set pointer to the reference scale.
The RMA dummy antenna referred to in the alignment table consists of a 200 MMF capacitor in series with a 20 microhenry choke which is shunted by a 400MMF capacitor in series with a 400Ω carbon resistor.
Turn the bandspread dial to zero on the reference scale.

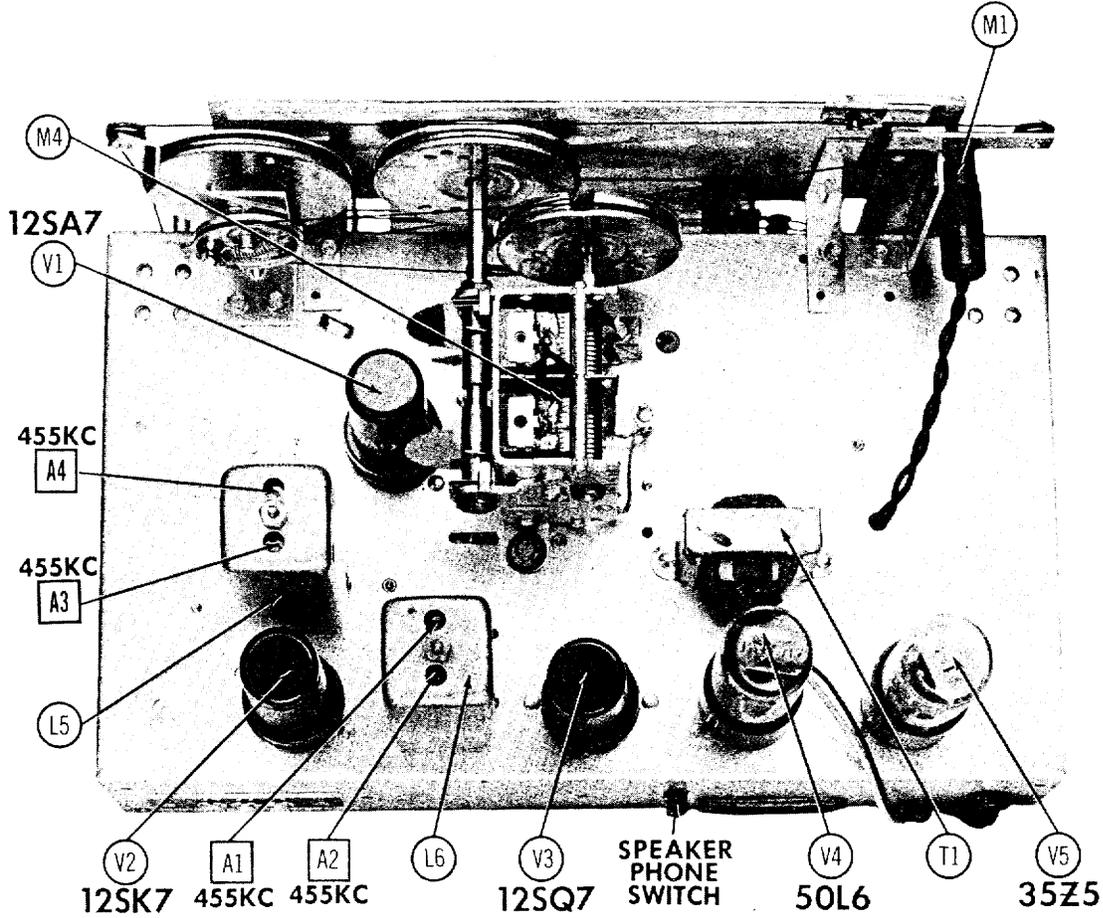
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1. .01MFD	High side to stator on front section of tuning gang. Low side to chassis.	455KC (400Ω Mod.)	1	1000KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .0001MFD to reduce hum modulation.
2. RMA	High side thru dummy to antenna terminal A1(connect jumper between A2 and G) Low side to chassis.	30MC	4	30MC	"	A5, A6	Adjust for maximum output. Rock tuning gang while adjusting A6.
3. "	"	14MC	3	14MC	"	A7, A8	Adjust for max. output. Rock tuning gang while adjusting A7.
4. "	"	5MC	2	5MC	"	A9, A10	Adjust for maximum output. Rock tuning gang while adjusting A9.
5. "	"	1500KC	1	1500KC	"	A11, A12	Adjust for maximum output.
6. "	"	600KC	1	600KC	"	A13	Repeat steps 5&6 until no further improvements can be made.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

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CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS
TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		BTMA BASE TYPE	INSTALLATION NOTES
		HALICRAFTER PART No.	STANDARD REPLACEMENT		
V1	Converter	90X12SA7	12SA7	8R	
V2	IF Amplifier	90X12SK7	12SK7	8N	
V3	Detector-AVC-AF Amplifier	90X12SQ7GT	12SQ7GT	8Q	
V4	Power Output	90X50L6CT	50L6CT	7AC	
V5	Rectifier	90X35Z5GT	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.	VOLT	REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES	
			HALICRAFTER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	ERIE PART No.		SPRAGUE PART No.
C1A	60	150	48B091	PRS150/40-40		EZ55515C		TVA-3451	Filter (Red)
B	40	150		PRS25/25				TVA-1205	Filter (Yellow)
C	40	150							Decoupling (Yellow)
D	20	25						MS-23	Output Cathode (Blue)
C2	2700	500	47X30B272J	1464-0003	D6-221	IR5D3	5W5T25	GP2K-221	Fixed Padder
C3	220	500	7E20221K5	1466-00025	DD-502	1D5D5	1D5D5	811-005	RF Coupling
C4	5000	500	47A168	BPD-005		5R5T25	5R5T25	MS-23	Conv. Plate Dec.
C5	220	500	47X20B221K	1469-00025		1R5D3	1R5D3	MS-23	Osc. Grid Cap.
C6	3000	500	47X30B302J	1464-0003		1R5D5	1R5D5	5HK-D5	Fixed Padder
C7	2200	500	47X30B222J	1464-0025	DD-502	1D5D5	1D5D5	6TM-S2	Fixed Padder
C8	5000	500	47A168	BPD-005		PTE6S2	PTE6S2	6TM-S1	Osc. Feedback
C9	.02	600	46AY203J	P688-02	DF-203	PTE6S1	PTE6S1	6TM-P1	AVC Filter
C10	.1	600	46A2104J	P688-01	DF-104	PTE6S1	PTE6S1	6TM-S5	IF Amp. Decoupling
C11	.05	200	46A1503J	P688-05	DF-503	PTE4S5	PTE4S5	2TM-S5	IF Amp. Cathode Bypass
C12	220	500	47B20221K5	1468-00025	D6-221	5W5T25	5W5T25	1R-M-325	Diode RF Filter
C13A	220	500			D6-221	S1220	S1220	GP2K-221	Diode RF Filter
B	.002	600	46A151	P688-002	D6-202	PTE6D2	PTE6D2	GP2K-333-202	Audio Coupling
C1	220	500			D6-221	5W5T25	5W5T25	GP2K-221	Audio Coupling
D1	.005	600	46AZ103J	P688-005	D6-202	PTE6D5	PTE6D5	GP2K-333-502	AF Amp. Plate
C14	.01	600	46AY203J	P688-01	D6-103	PTE6S1	PTE6S1	6TM-S1	Audio Coupling
C15	.02	600	46AY203J	P688-02	DF-203	PTE6S2	PTE6S2	6TM-S2	Power Output Plate
C16	.02	400	46B2031G	P488-02	DF-203	IPTE4S2	IPTE4S2	4TM-S2	Line Filter
C17	.05	600	46AY503J	P688-05	DF-503	PTE6S5	PTE6S5	6TM-S5	Line Isolation

† Some models use 100MMF in this application (Part No. 47X220B10K)

CONTROLS

ITEM No.	RATING RESIST-ANCE	WATTS	REPLACEMENT DATA			INSTALLATION NOTES
			Hallicrafters PART No.	IRC PART No.	CENTRALAB PART No.	
RIA	2 Meg	1/4	25B896	Q13-139	AN-76	Volume Control
B	Shaft		Not Req.	RS-2	AK-3	Attach to RIA per instructions
C	Switch		Not Req.	76-1	K-155	Attach to RIA per instructions

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING	REPLACEMENT DATA		IDENTIFICATION CODES
		RESISTANCE	WATTS	
R2	10KΩ	23X20X103M	BTS-10K	Antenna Coil Shunt.
R3	470KΩ	23X20X474M	BTS-470K	Converter Grid.
R4	2.2Meg	23X20X225M	BTS-2.2Meg	AFC Network
R5	2.2Meg	23X20X225M	BTS-2.2Meg	AFC Network
R6	22KΩ	23X20X223M	BTS-22K	Oscillator Grid
R7	15Ω	23X20X150M		Parasitic Suppressor-See note
R8	22Ω	23X20X220M		Parasitic Suppressor
R9	390Ω	23X20X391K	BTS-390	IF Cathode
R10	390Ω	23X20X391K	BTS-390	IF Amplifier Decoupling
R11	470KΩ	23X20X473M	BTS-47K	Diode Filter
R12	470KΩ	23X20X473M	BTS-470K	Diode Filter
R13	10Meg	23X20X106M	BTS-10Meg	AF Amplifier Grid
R14	220KΩ	23X20X224M	BTS-220K	AF Amplifier Plate
R15	470KΩ	23X20X474M	BTS-470K	Output Grid
R16	150Ω	23X20X151K	BTS-150K	Output Cathode
R17	220Ω	23X20X221M	BTA-220	Filter
R18	1000Ω	23X20X102Q	BTS-1000	Filter
R19	22Ω	23X20X220M		Surge Limiter
R20	15Ω	23X20X150Q		Head Phone Shunt
R21	15Ω	23X20X150Q		Series Dial Light

NOTE: Some models use 10Ω resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		IMPEDANCE	DC RES.	Hallcrafters	STANCOR	
T1	1.7KΩ 3.2Ω 147Ω .8Ω	PRI. SEC.	PRI. SEC.	PART No.	PART No.	CHICAGO PART No.
				55A127	A-9876	A2928 R0-2

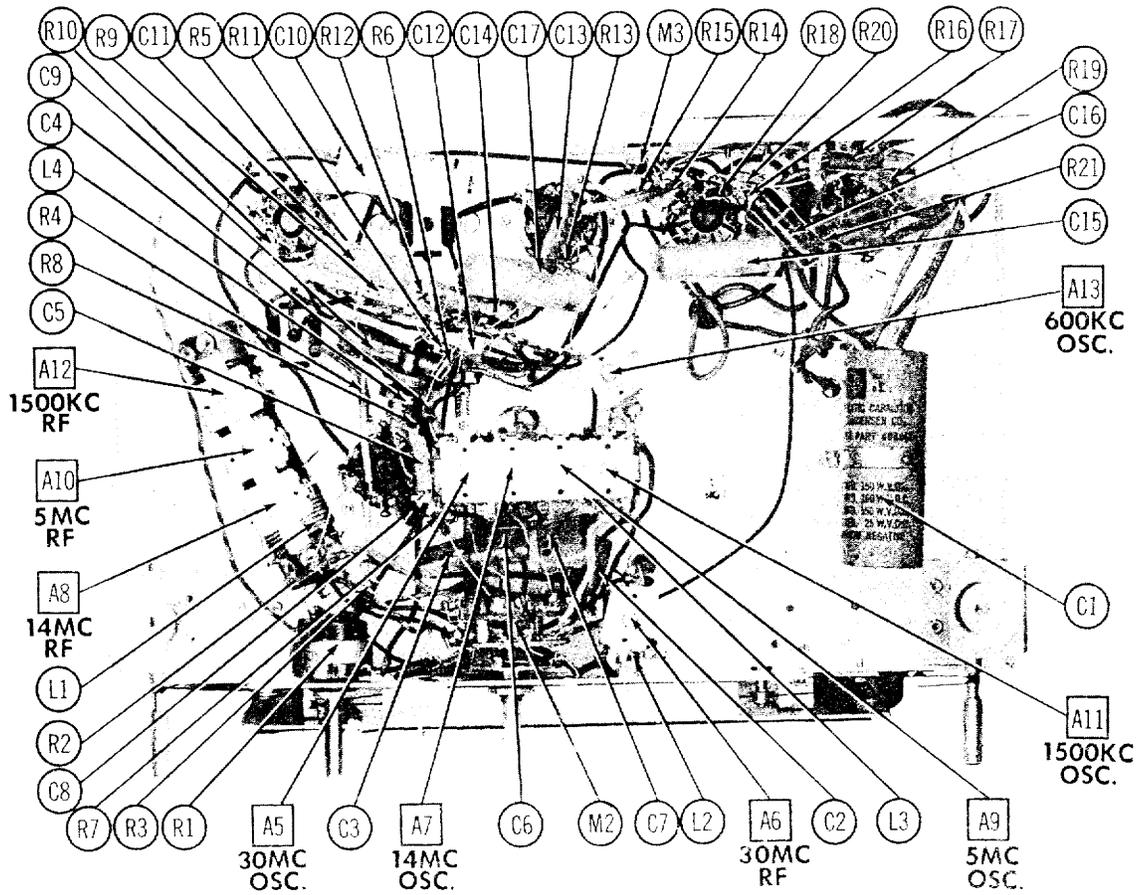
SPEAKER

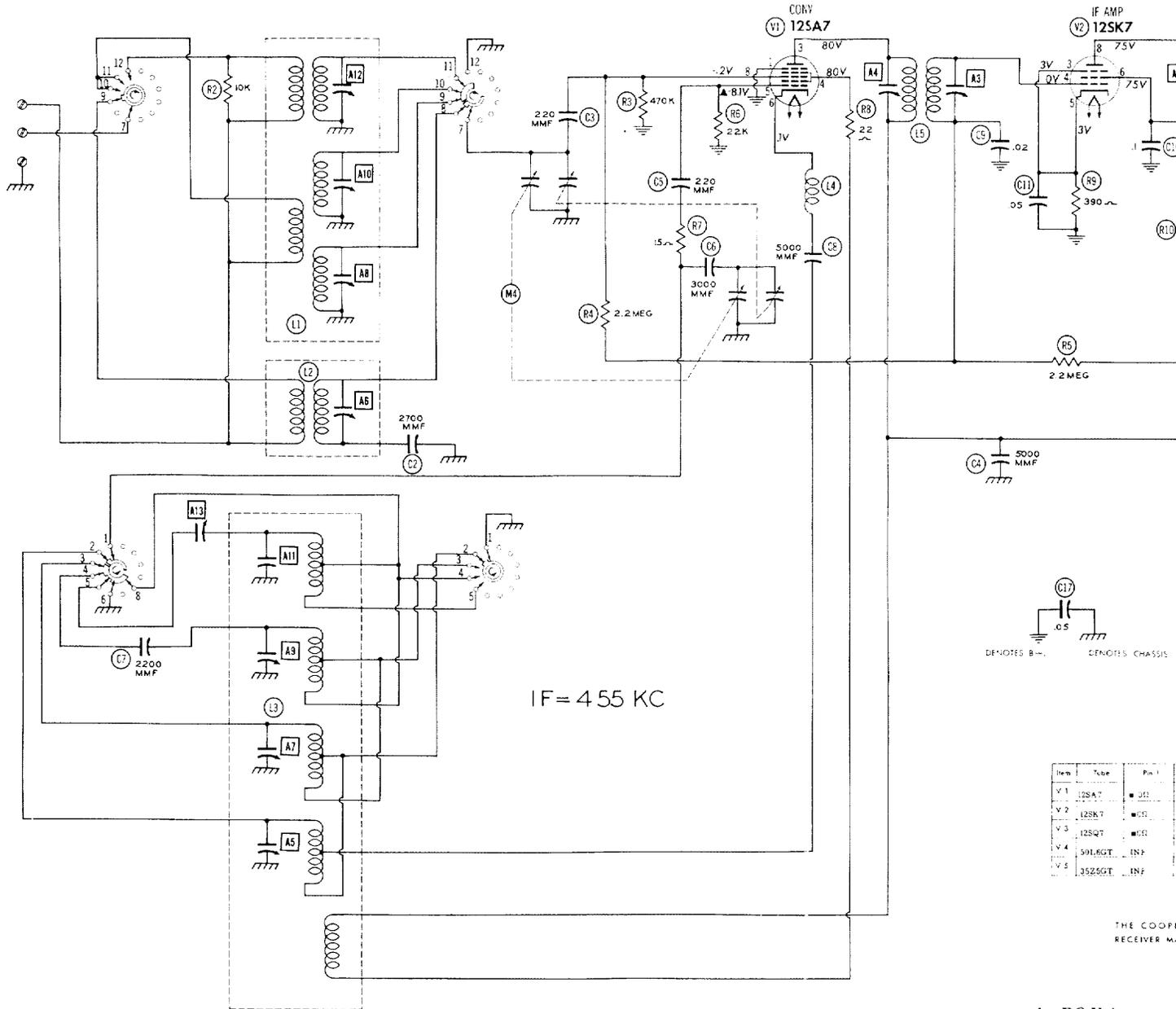
ITEM No.	RATINGS	REPLACEMENT DATA				NOTES
		FIELD	V. C. IMP.	Hallcrafters	JENSEN	
SP1	P. M.	3.2Ω	85C030	5A1	ST-105 Mod P5-X	QUAM PART No.
SP2	4 1/2 in.	9/16 in.				

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		DC RES.	Hallcrafters	MERIT	CHICAGO	
L1A	Ant. Coil	27Ω	003	51C821		Band 1
L1B	Ant. Coil	10Ω	003	51B1915		Band 2
L2	Ant. Coil	2Ω	003	51C822		Band 3
L3A	Ant. Coil	2.4Ω	003	53A107		Band 4
L3B	Osc. Coil	20Ω	003	50B163		Band 1
L3C	Osc. Coil	20Ω	003	50B164		Band 2
L3D	Osc. Coil	20Ω	003	50B164		Band 3
L4	Osc. Coil	9.3Ω	203			Band 4
L5	RF Choke	203	203			Tap at 2C
L6	Output IF	203	203			Tap at 2A

CHASSIS—BOTTOM VIEW



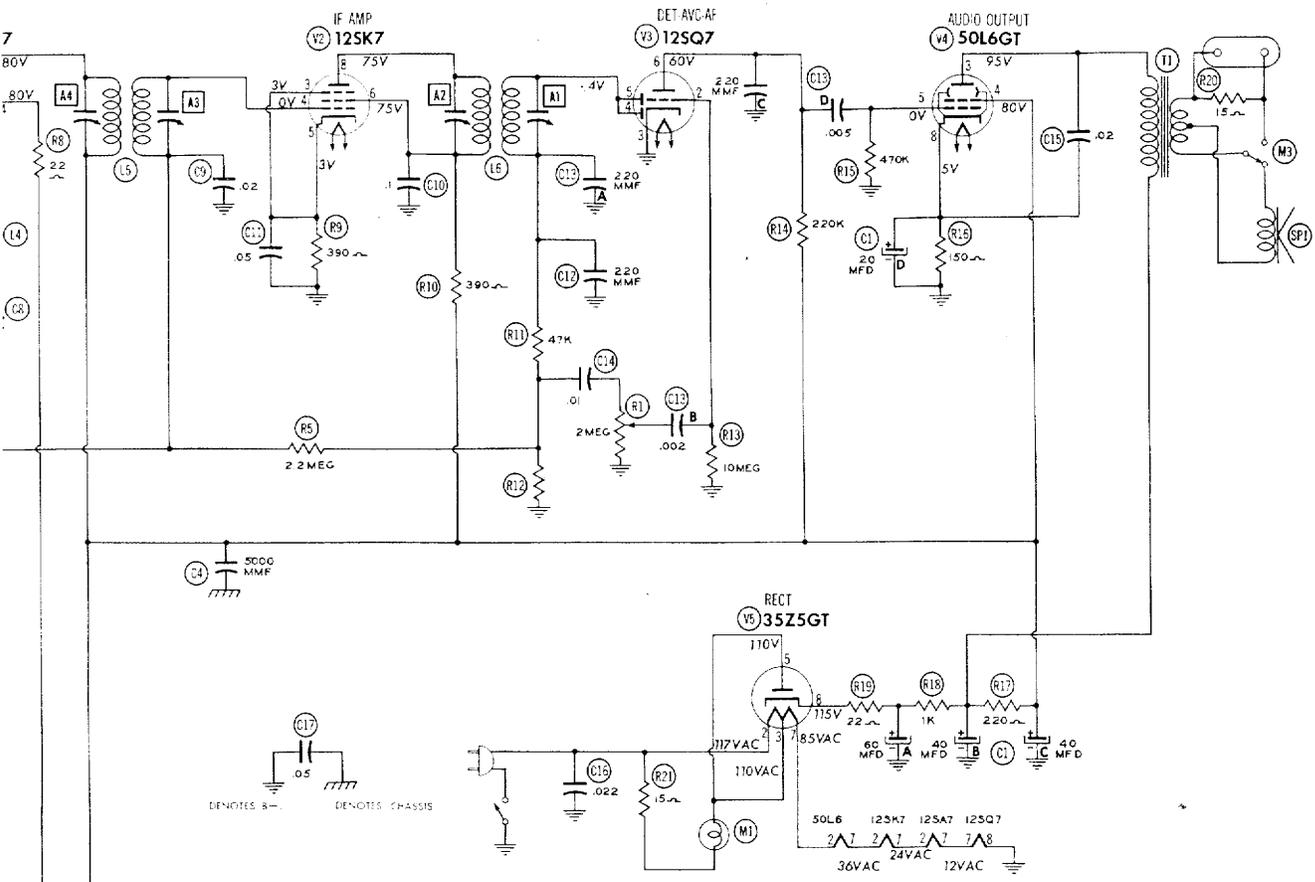


⊕ DENOTES B-; ⊕ DENOTES CHASSIS

Item	Tube	Pin 1
V 1	12SA7	⊕ G1
V 2	12SK7	⊕ G1
V 3	12SQ7	⊕ G1
V 4	50L6GT	⊕ G1
V 5	35Z5GT	⊕ G1

THE COOPER RECEIVER M7

1. DC Voltage measured at 1.00
2. Socket connection
3. Measured values
4. Line voltage maximum
5. Nominal tolerance ± 10% in voltage
6. Volume control



DENOTES GND
 DENOTES CHASSIS

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	25A7	■ C1	840	11.2KΩ	11.3KΩ	22 KΩ	160	120	470KΩ
V 2	12SK7	■ G1	360	360Ω	1.25MΩ	390Ω	11.5KΩ	240	11.6KΩ
V 3	12SQ7	■ G1	10MΩ	70	515KΩ	515KΩ	1220KΩ	120	0Ω
V 4	50L6GT	1NF	860	15MΩ	11.2KΩ	470KΩ	0Ω	360	150Ω
V 5	35Z5GT	1NF	120	105Ω	105Ω	0Ω	1NF	850	49KΩ

* TAKEN WITH VACUUM TUBE VOLTMETER
 ALL MEASUREMENTS TAKEN IN BC BAND (1)
 † MEASURED FROM PIN 8 OF V5
 ■ MEASURED FROM CHASSIS

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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

