

HALLICRAFTERS MODELS
T61, T64, T67, 509, 510

HALLICRAFTERS MODEL T67

TRADE NAME Hallicrafters Models, T61, T64, T67, 509, 510
 MANUFACTURER The Hallicrafters Co., 5th & Kostner Ave., Chicago 24, Illinois
 TYPE SET Television Receiver
 TUBES Twenty-three

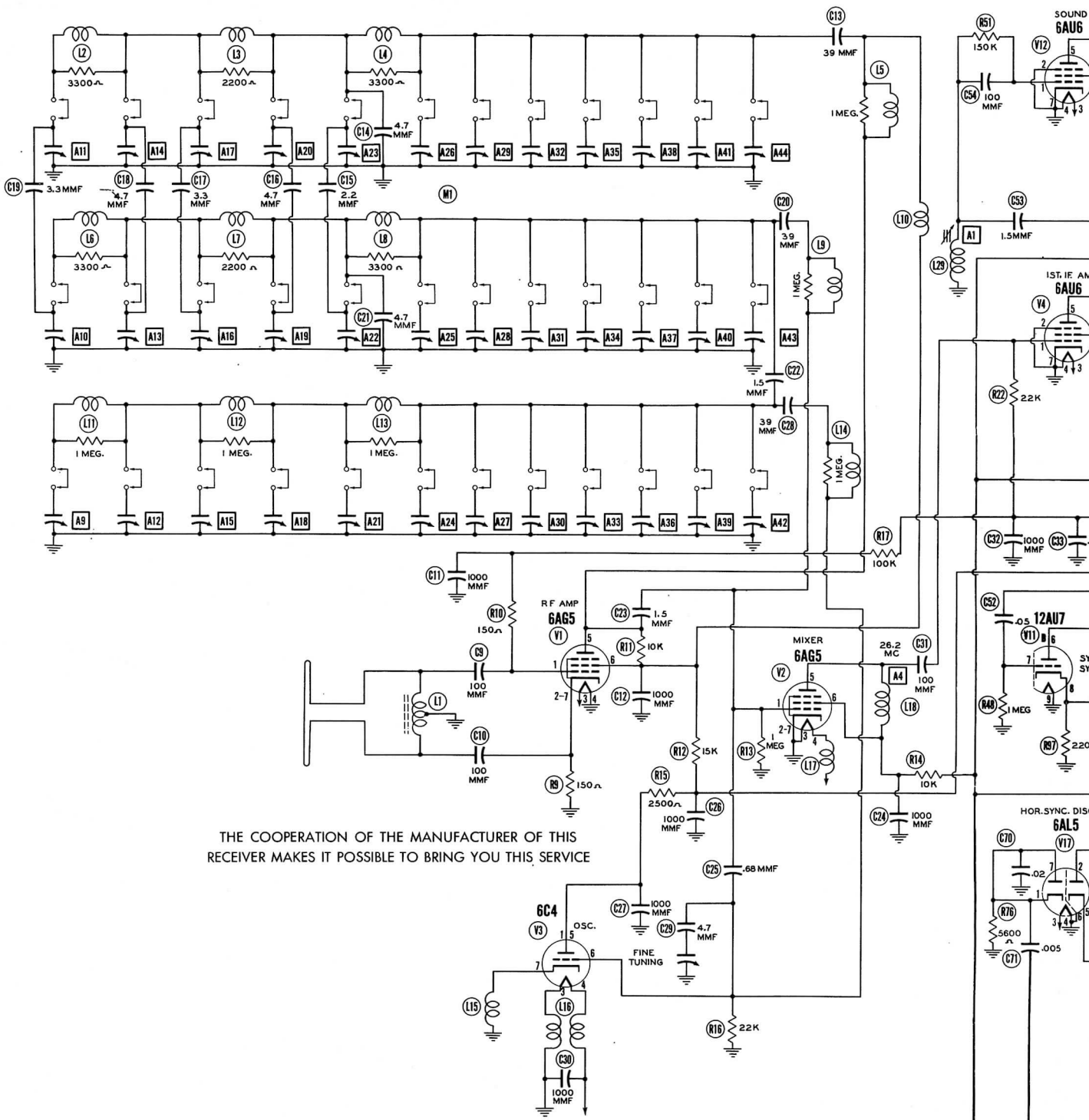
POWER SUPPLY 105-125 Volts, 60 Cycles AC RATING: 1.81 Amps. @ 117 Volts
 TUNING RANGE—Channels 2 through 13

		INDEX	
		Page	Page
Alignment Instructions	6,7	Photographs (continued)	
Block Diagram	13	RF Alignment Points	10
Disassembly Instructions	7	Resistor Identification	12,17
Parts List and Description	14,15,16	Trans., Inductor and Alignment Identification	4,9
Photographs		Schematic	2
Cabinet—Rear View	16	Sweep Circuit Adjustments	7
Capacitor Identification	11,18	Tube Placement Chart	5
Chassis—Top View	3,13	Voltage and Resistance Measurements	8
Power Supply Chassis	19		

HOWARD W. SAMS & CO., INC. • Indianapolis 7, Indiana

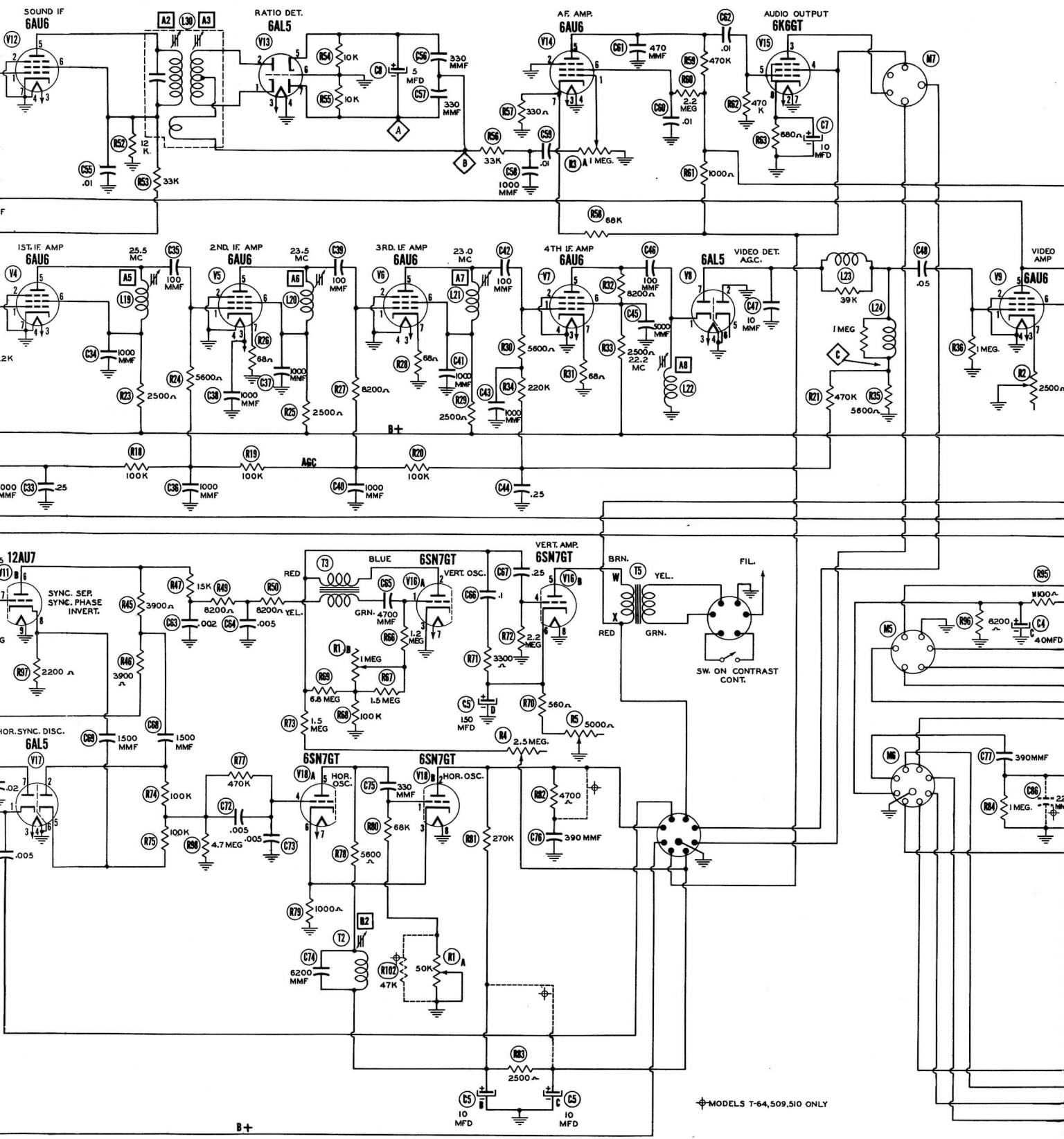
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
 "Reproduction or use, without express permission, of editorial or pictorial con-

tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis 7, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



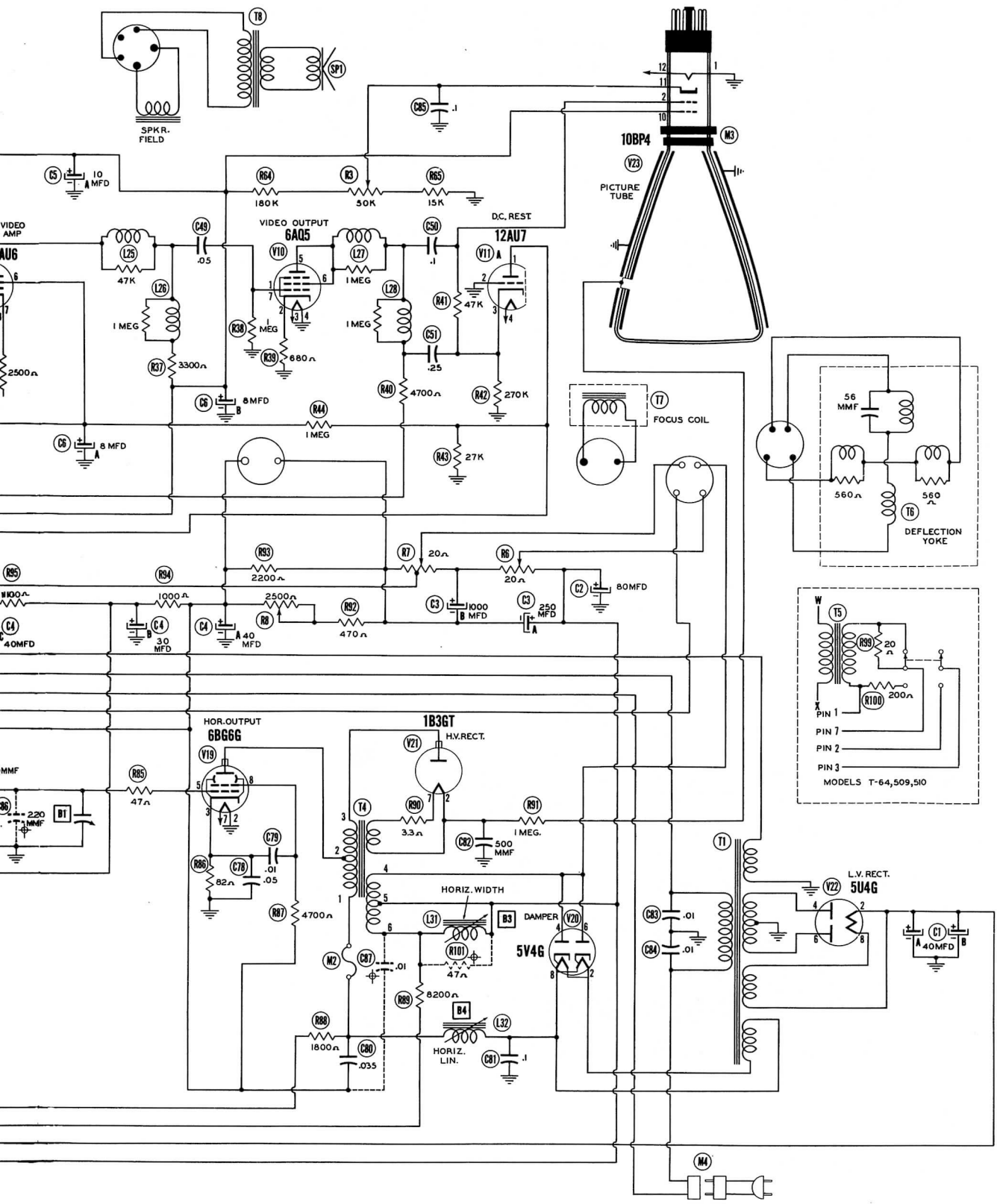
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFAC STANDARD NOTATION SCHEMATIC
 © Howard W. Sams & Co., Inc. 1949

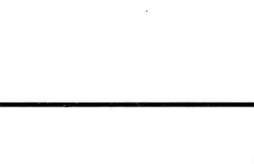
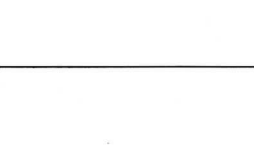
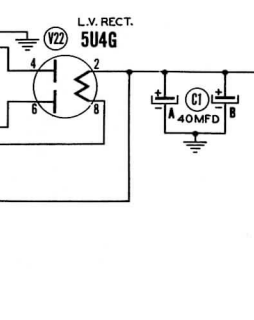
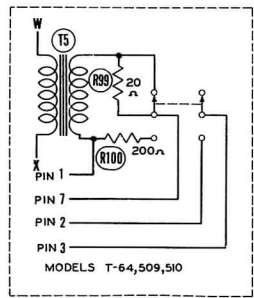
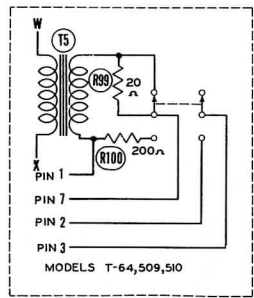


MODELS T-64, 509, 510 ONLY

B+



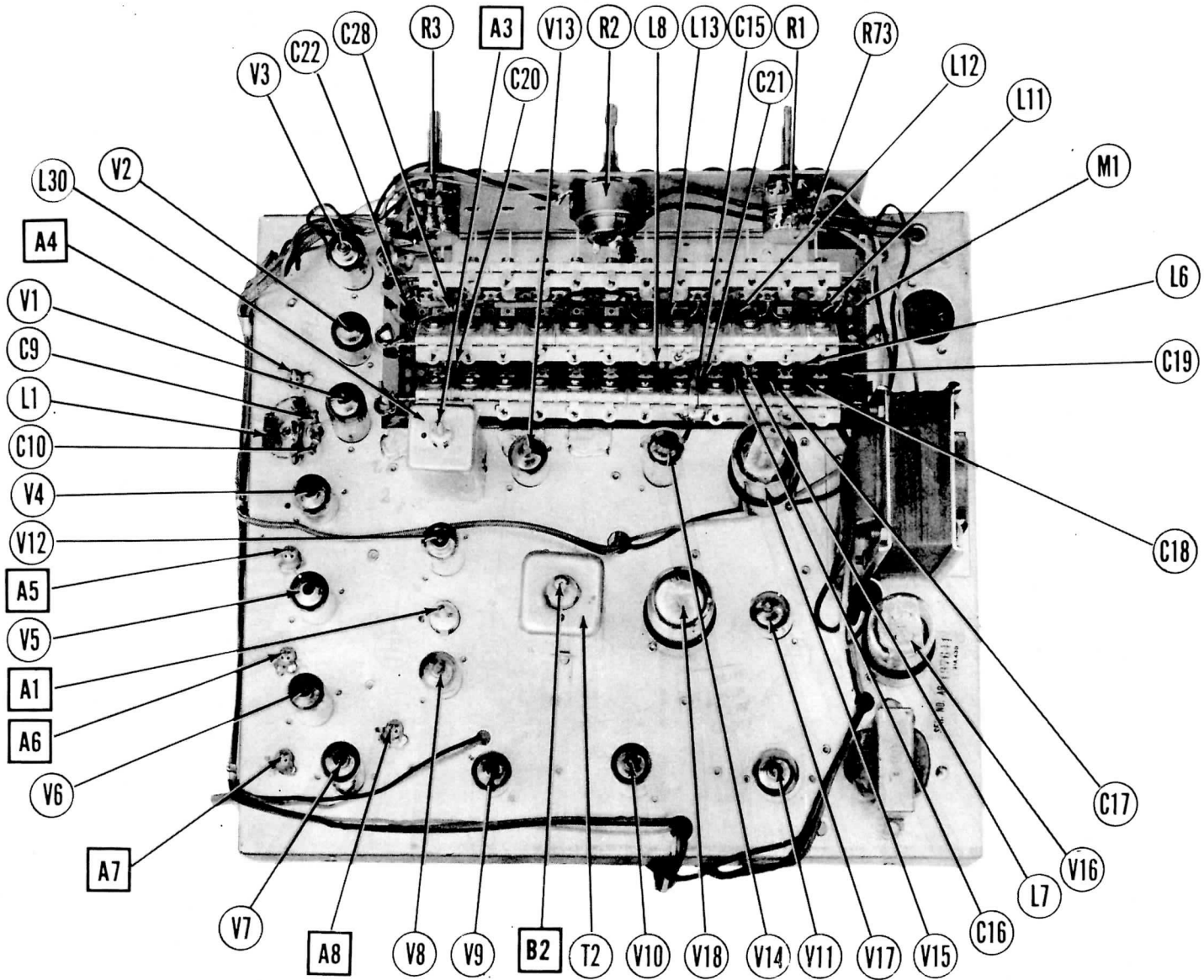
**HALLICRAFTERS MODELS
T61, T64, T67, 509, 510**

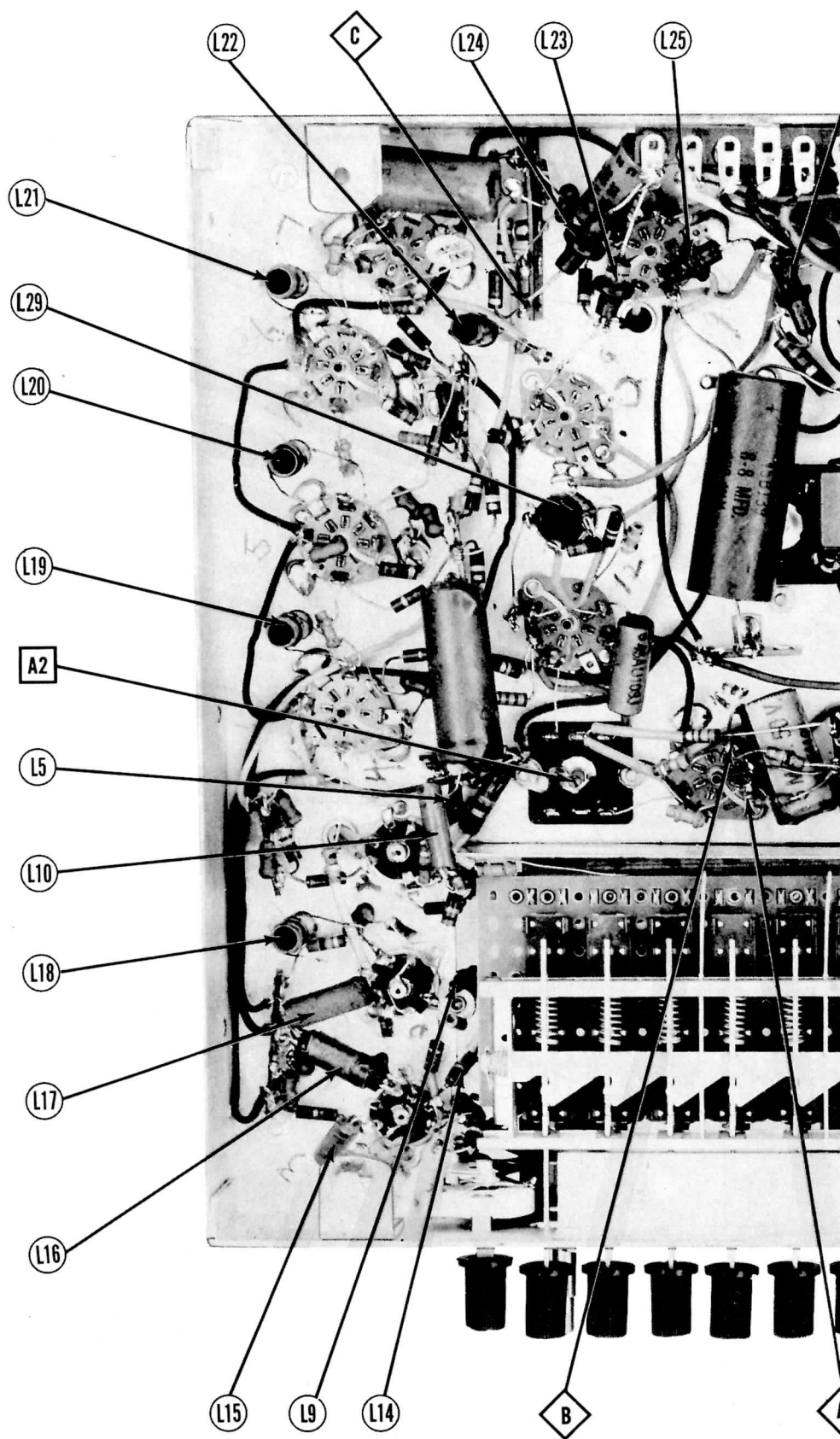


MODELS T-64, 509, 510

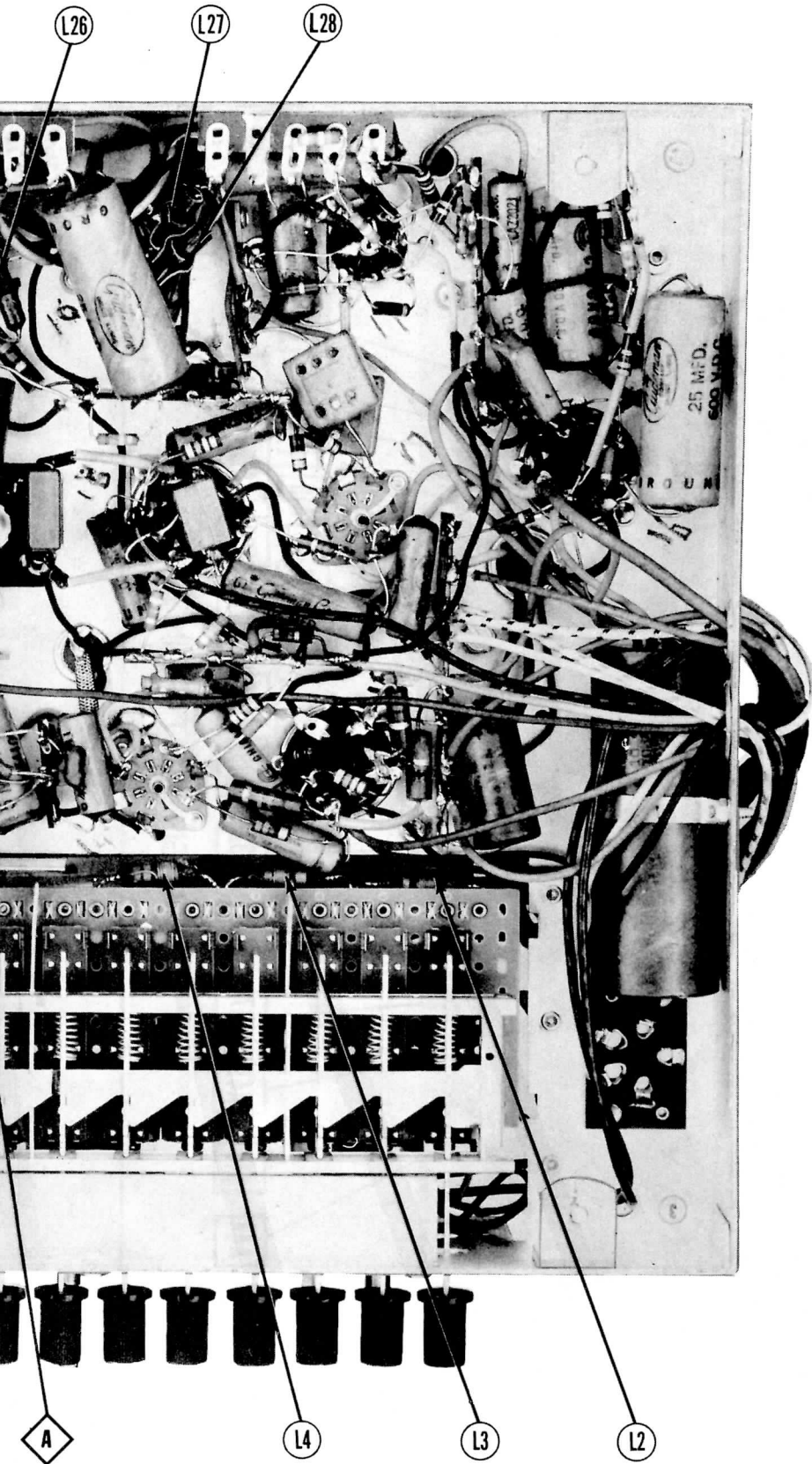
**HALLICRAFTERS MODELS
161, 164, 167, 509, 510**

CHASSIS TOP VIEW

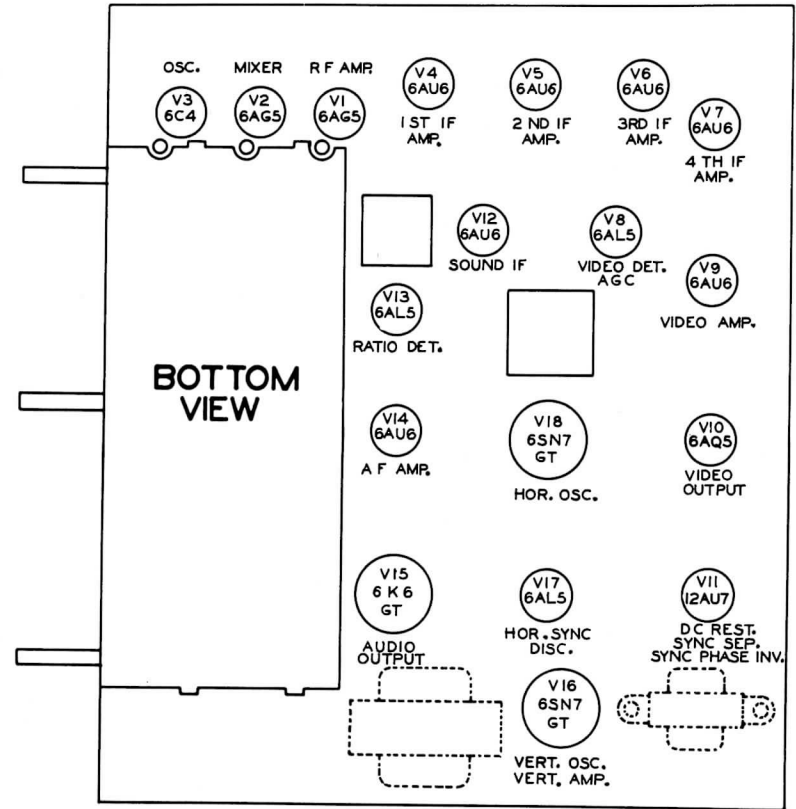
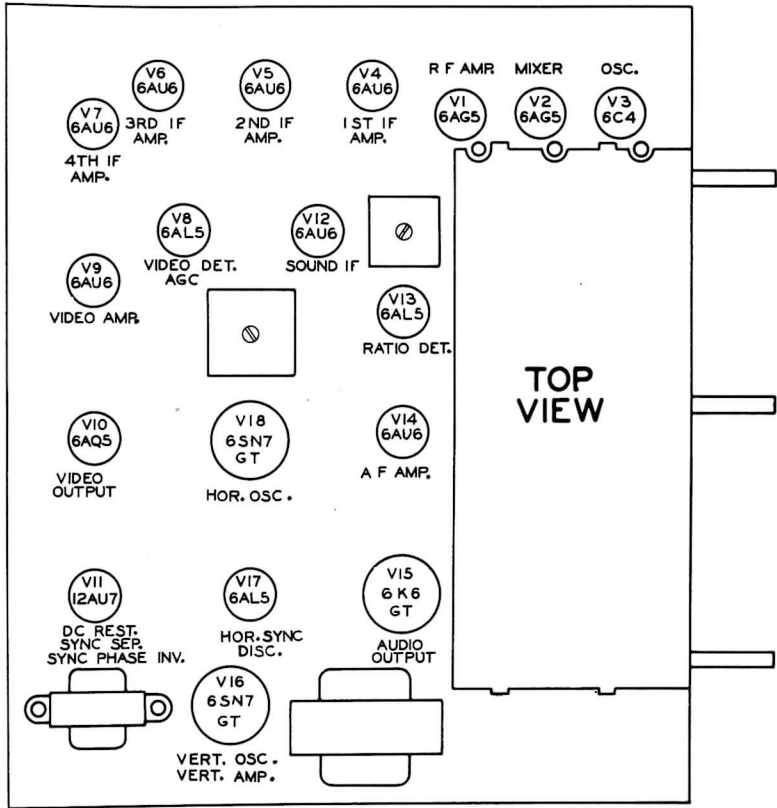




CHASSIS BOTTOM VIEW-TRANS.,INDUCT



RECTOR AND ALIGNMENT IDENTIFICATION



TUBE PLACEMENT CHART

HALLICRAFTERS MODELS
161, 164, 167, 509, 510

ALIGNMENT INSTRUCTIONS

SOUND IF ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. 5000MMF	High side to pin 1 (Grid) 6AU6 (V9). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to pin 7 6AL5 (V13) point ⊗ Common lead to chassis.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to give approximately 1 volt reading on VTVM.
2. 5000MMF	"	"	"	DC Probe to Point ⊗ Common to chassis.	A3	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

Shift the frequency of the signal generator either side of 4.5MC and slightly readjust A2 for approximately equal peaks. For best results, use only enough signal generator output to give one volt peaks. Retouch A3 for null point.

VIDEO IF ALIGNMENT

Remove oscillator tube V3 (6C4) before aligning the IF coils to prevent any possible spurious beats which might give improper alignment.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3. Two 150Ω carbon res.	Insert resistor in each generator lead and connect across antenna terminal.	26.2MC 25.5MC 25.5MC 23.0MC 22.2MC 26.2MC	2 " " " "	DC Probe to point ⊗ Common to chassis.	A4 A5 A6 A7 A8 A4	Adjust the five IF coils at their listed frequencies for maximum deflection keeping signal generator level at such a point to maintain approximately a two volt reading on VTVM. Repeak A4 at 26.2MC with a signal generator attenuated to give 1 volt reading on VTVM.

Tune the signal generator from 21MC thru 26.25MC, attenuated to give a 1 1/2 volt reading on VTVM at the peaks. Plot IF Response curve. Check readings at 21.75MC, 26.25MC and the dip between peaks. See Figure 1 for correct response curve.

OVERALL IF RESPONSE CHECK

Connect synchronized sweep voltage from signal generator to horizontal amplifier in scope to obtain horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4. 5000MMF	High side to pin 1 (Grid) 6AK5 (V2). Low side to chassis	24MC (10MC Sweep)	21.75MC 26.25MC	2	Vert. Amp. to Point ⊗ Low side to chassis.		If necessary, slightly retouch A4, A5, A6, A7 and A8 to obtain pattern similar to Figure 1. Check to see that markers fall at proper points.

RF ALIGNMENT

The local oscillator operates 24.5MC above the center frequency of each TV channel. To set the local oscillator a separate "BFO" generator set at 24.5MC is used to obtain a zero, beat with this difference frequency. Couple the "BFO" generator to the receiver by connecting the output lead to a coil of hookup wire wrapped around the video detector tube (V8). Set the fine tuning control to the center of its capacity range.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	BFO GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5. Two 150Ω carbon res.	Across antenna terminals with 150Ω resistor in each generator lead.	57MC	24.5MC	2	DC Probe to point ⊗ Common to chassis.	A9	Connect .01MFD capacitor between pin 2 (Grid) of the 10BP4 picture tube (V23) and pin 1 (Grid) of 6AU6 audio Amp. (V14). Adjust A9 for rough audio beat in speaker. Disconnect the .01MFD capacitor.
6. Two 150Ω carbon res.	"	"	Off	"	"	A10, A11	Adjust for maximum deflection.
7. Two 150Ω carbon res.	"	63MC	24.5MC	3	"	A12	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
8. Two 150Ω carbon res.	"	"	Off	"	"	A13, A14	Adjust for maximum deflection.
9. Two 150Ω carbon res.	"	69MC	24.5MC	4	"	A15	Reconnect .01MFD capacitors as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
10. Two 150Ω carbon res.	"	"	Off	"	"	A16, A17	Adjust for maximum deflection.
11. Two 150Ω carbon res.	"	79MC	24.5MC	5	"	A18	Reconnect .01MFD capacitors as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
12. Two 150Ω carbon res.	"	"	Off	"	"	A19, A20	Adjust for maximum deflection.
13. Two 150Ω carbon res.	"	85MC	24.5MC	6	"	A21	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
14. Two 150Ω carbon res.	"	"	Off	"	"	A22, A23	Adjust for maximum deflection.
15. Two 150Ω carbon res.	"	177MC	24.5MC	7	"	A24	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
16. Two 150Ω carbon res.	"	"	Off	"	"	A25, A26	Adjust for maximum deflection.
17. Two 150Ω carbon res.	"	183MC	24.5MC	8	"	A27	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
18. Two 150Ω carbon res.	"	"	Off	"	"	A28, A29	Adjust for maximum deflection.

RF ALIGNMENT (CONT.)

19.	Two 150Ω carbon res.	"	189MC	24.5MC	9	"	A30	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
20.	Two 150Ω carbon res.	"	"	Off	"	"	A31, A32	Adjust for maximum deflection.
21.	Two 150Ω carbon res.	"	195MC	24.5MC	10	"	A33	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
22.	Two 150Ω carbon res.	"	"	Off	"	"	A34, A35	Adjust for maximum deflection.
23.	Two 150Ω carbon res.	"	201MC	24.5MC	11	"	A36	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
24.	Two 150Ω carbon res.	"	"	Off	"	"	A37, A38	Adjust for maximum deflection.
25.	Two 150Ω carbon res.	"	207MC	24.5MC	12	"	A39	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
26.	Two 150Ω carbon res.	"	"	Off	"	"	A40, A41	Adjust for maximum deflection.
27.	Two 150Ω carbon res.	"	213MC	24.5MC	13	"	A42	Reconnect .01MFD capacitor as in step 5 and adjust for rough audio beat. Remove .01MFD capacitor.
28.	Two 150Ω carbon res.	"	"	Off	"	"	A43, A44	Adjust for maximum deflection.

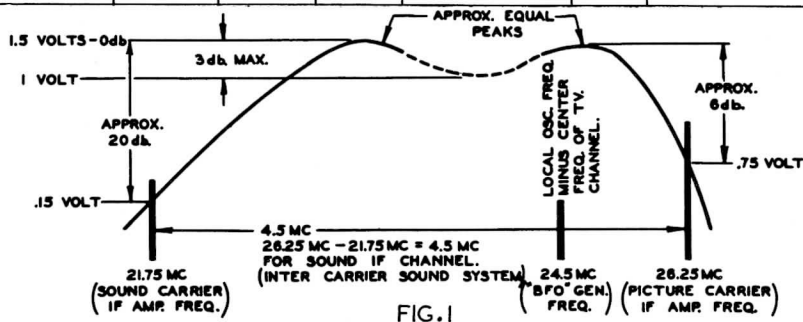


FIG. 1

DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs.
2. Remove screws holding back cover. Remove back cover.
3. Remove two plugs from power supply chassis and disconnect deflection coil and focus coil plug.
4. Remove four screws holding power supply chassis. Remove power supply.
5. Remove speaker plug from chassis.
6. Remove four 11/32" hex nuts holding speaker. Remove speaker.
7. Remove four screws holding tuner chassis. Remove chassis.

VERTICAL SWEEP CIRCUIT ADJUSTMENT

1. Turn the vertical centering and height controls so test pattern fills mask properly in the vertical plane.
2. Adjust the vertical linearity control for proper vertical symmetry of test pattern. Slight readjustment at vertical centering and height controls may be necessary.

HORIZONTAL SWEEP CIRCUIT ADJUSTMENT

1. Turn the horizontal drive adjustment (B1) clockwise as far as possible without crowding the right hand side of the test pattern. Insufficient horizontal drive will cause the raster to fall short of filling the mask horizontally.
If it is not possible to "hold" the test pattern horizontally by adjustment of the horizontal hold control, set the horizontal hold control at the midpoint of its rotation and adjust the horizontal oscillator adjustment screw (B2) until picture "sync" horizontally.
2. Adjust the horizontal centering control and the width adjustment (B3) until test pattern fills the mask properly in the horizontal plane.
3. Set the horizontal linearity adjustment (B4) so the test pattern is symmetrical from left to right. Slight readjustment of the horizontal drive trimmer (B1) may be necessary when making this adjustment.

**HALLCRAFTERS MODELS
T61, T64, T67, 509, 510**

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.3VDC	.7VDC	6.3VAC	0V	120VDC	115VDC	.7VDC		
V 2	6AG5	-.7VDC	0V	0V	6.3VAC	70VDC	70VDC	0V		
V 3	6C4	150VDC	0V	6.3VAC	0V	150VDC	§-1.6VDC	0V		
V 4	6AU6	-.8VDC	0V	6.3VAC	0V	130VDC	130VDC	0V		
V 5	6AU6	-.3VDC	0V	6.3VAC	0V	130VDC	130VDC	.5VDC		
V 6	6AU6	-.3VDC	0V	6.3VAC	0V	130VDC	130VDC	.5VDC		
V 7	6AU6	-.5VDC	0V	6.3VAC	0V	135VDC	130VDC	.5VDC		
V 8	6AL5	0V	0V	6.3VAC	0V	.5VDC	0V	-1.8VDC		
V 9	6AU6	0V	0V	6.3VAC	0V	190VDC	145VDC	4VDC		
V 10	6AQ5	0V	13VDC	6.3VAC	0V	215VDC	215VDC	0V		
V 11	12AU7	3.8VDC	0V	.8VDC	6.3VAC	6.3VAC	125VDC	0V	5.2VDC	0V
V 12	6AU6	-.3VDC	0V	6.3VAC	0V	32VDC	32VDC	0V		
V 13	6AL5	0V	0V	6.3VAC	0V	.1VDC	0V	-.2VDC		
V 14	6AU6	0V	0V	6.3VAC	0V	95VDC	25VDC	.9VDC		
V 15	6K6GT	0V	0V	208VDC	215VDC	0V	0V	6.3VAC	15VDC	
V 16	6SN7GT	.3VDC	2VDC 4.4VDC	0V	0V	320VDC	7VDC 13VDC	6.3VAC	0V	
V 17	6AL5	0V	0V	6.3VAC	0V	.7VDC	0V	-.4VDC		
V 18	6SN7GT	-5.6VDC	125VDC	10VDC	.1VDC	335VDC	10VDC	6.3VAC	0V	
V 19	6BG6G	0V	0V	7VDC	0V	-1.2VDC	0V	6.3VAC	250VDC	TOP CAP †
V 20	5V4G	0V	435VDC	0V	360VDC	0V	360VDC	0V	435VDC	
V 21	1B3GT	† DO NOT MEASURE								
V 22	5U4G	0V	370VDC	0V	350VAC	0V	350VAC	0V	370VDC	
V 23	10BP4	0V	.7VDC	PIN 10 195VDC	PIN 11 50VDC	PIN 12 6.3VAC				

† Do Not Measure

§ Taken with vacuum tube voltmeter.

RESISTANCE READINGS

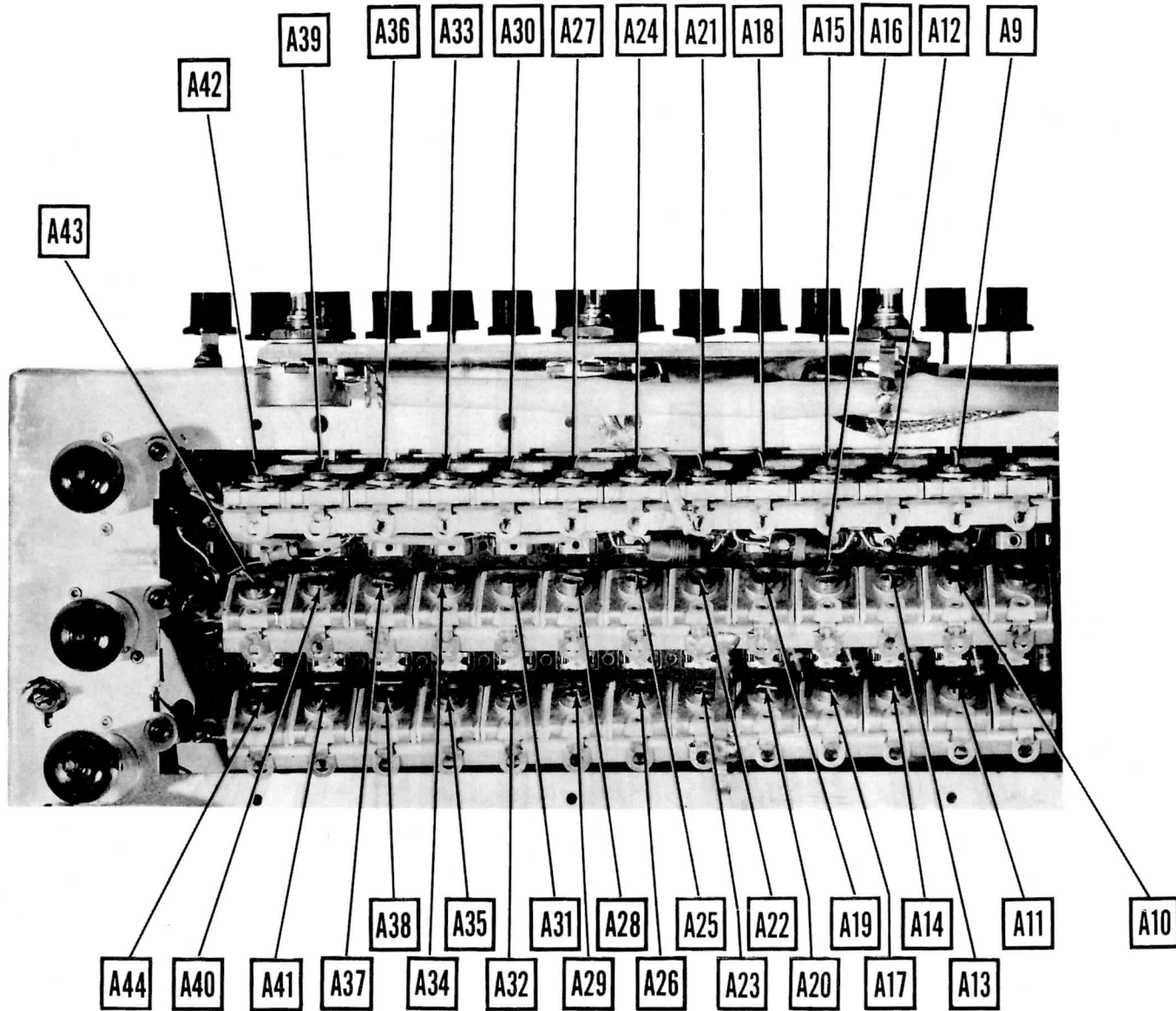
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	850KΩ	150Ω	.2Ω	0Ω	*18KΩ	*18KΩ	150Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.2Ω	*12.5KΩ	*12.5KΩ	0Ω		
V 3	6C4	*5KΩ	Inf.	.2Ω	.2Ω	*5KΩ	22KΩ	2Ω		
V 4	6AU6	750KΩ	0Ω	.2Ω	0Ω	*5KΩ	*5KΩ	0Ω		
V 5	6AU6	650KΩ	0Ω	.2Ω	0Ω	*5KΩ	*5KΩ	68Ω		
V 6	6AU6	550KΩ	0Ω	.2Ω	0Ω	*5KΩ	*5KΩ	68Ω		
V 7	6AU6	680KΩ	0Ω	.2Ω	0Ω	*13KΩ	*5KΩ	68Ω		
V 8	6AL5	.2Ω	0Ω	.2Ω	0Ω	Inf.	0Ω	5.6KΩ		
V 9	6AU6	1 Meg.	0Ω	.2Ω	0Ω	*5.8KΩ	*2.2KΩ	2.5KΩ		
V 10	6AQ5	1 Meg.	680Ω	.2Ω	0Ω	*5.5KΩ	*5.5KΩ	1 Meg.		
V 11	12AU7	*35KΩ	0Ω	270KΩ	.2Ω	.2Ω	*10KΩ	1 Meg.	2.2KΩ	0Ω
V 12	6AU6	150KΩ	0Ω	.2Ω	0Ω	*14KΩ	*14KΩ	0Ω		
V 13	6AL5	Inf.	Inf.	.2Ω	0Ω	10KΩ	0Ω	10KΩ		
V 14	6AU6	35Ω	0Ω	.2Ω	0Ω	*470KΩ	*2.2Meg.	330Ω		
V 15	6K6GT	0Ω	0Ω	*1500Ω	*1300Ω	470KΩ	Inf.	.2Ω	680Ω	
V 16	6SN7GT	1.2 Meg.	†2.8Meg. †1.5Meg.	0Ω	2.2 Meg.	*900Ω	5.8KΩ 580Ω	.2Ω	0Ω	
V 17	6AL5	6KΩ	6KΩ	.2Ω	0Ω	4.7Meg.	0Ω	4.7 Meg.		
V 18	6SN7GT	120KΩ	†280KΩ	1000Ω	5 Meg.	†10KΩ	1000Ω	.2Ω	0Ω	
V 19	6BG6G	Inf.	0Ω	82Ω	Inf.	1 Meg.	Inf.	.2Ω	*5KΩ	TOP CAP †230Ω
V 20	5V4G	Inf.	†0Ω	Inf.	65Ω	Inf.	65Ω	Inf.	†0Ω	
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †380Ω
V 22	5U4G	Inf.	8KΩ	Inf.	28Ω	Inf.	30Ω	Inf.	8KΩ	
V 23	10BP4	0Ω	300KΩ	PIN 10 *2.2KΩ	PIN 11 50KΩ	PIN 12 .2Ω				

* Measured from pin 2 of V22

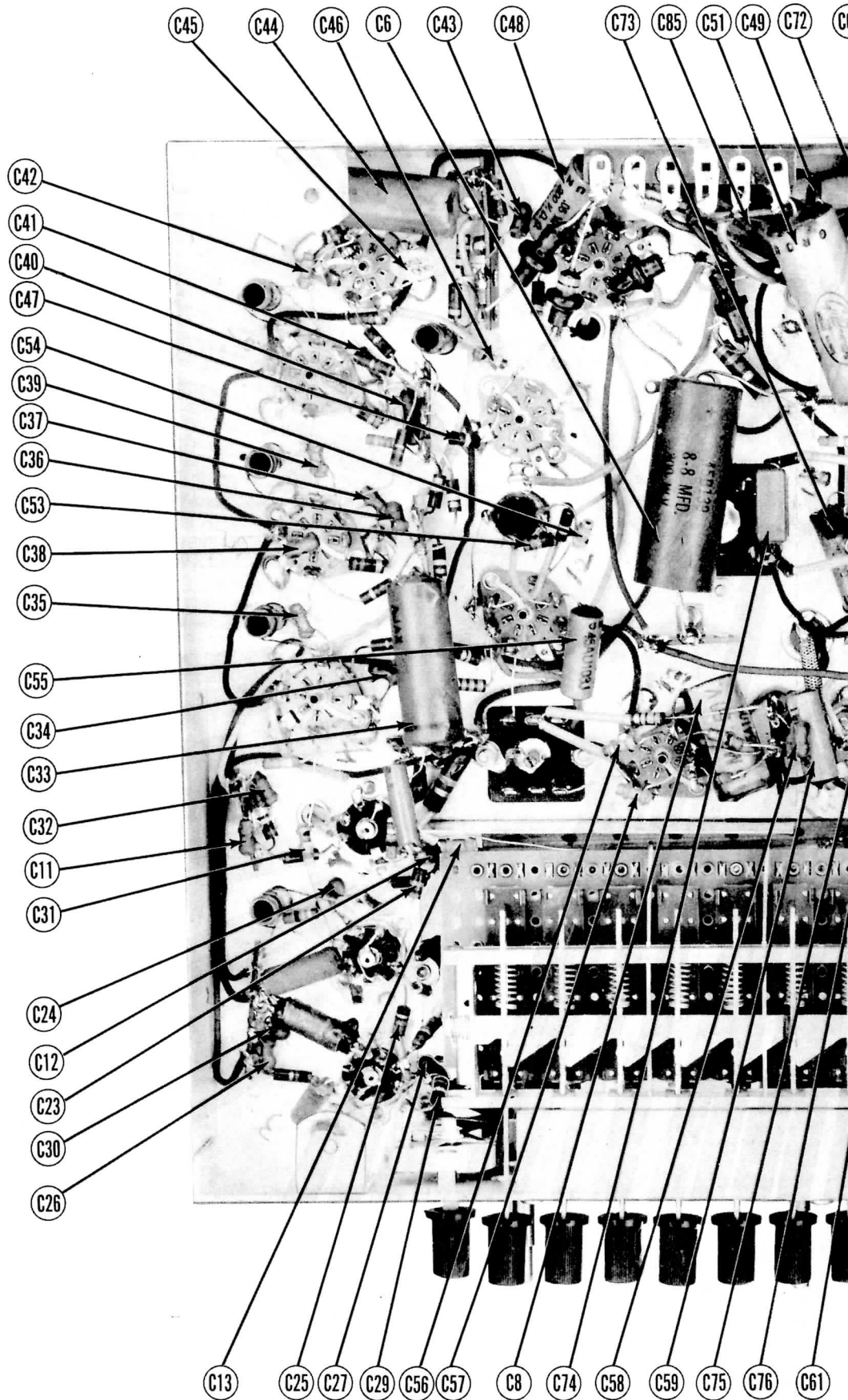
† Measured from pin 8 of V20

- DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
- Pin numbers are counted in a clockwise direction on bottom of socket.
- Measured values are from socket pin to common negative unless otherwise stated.

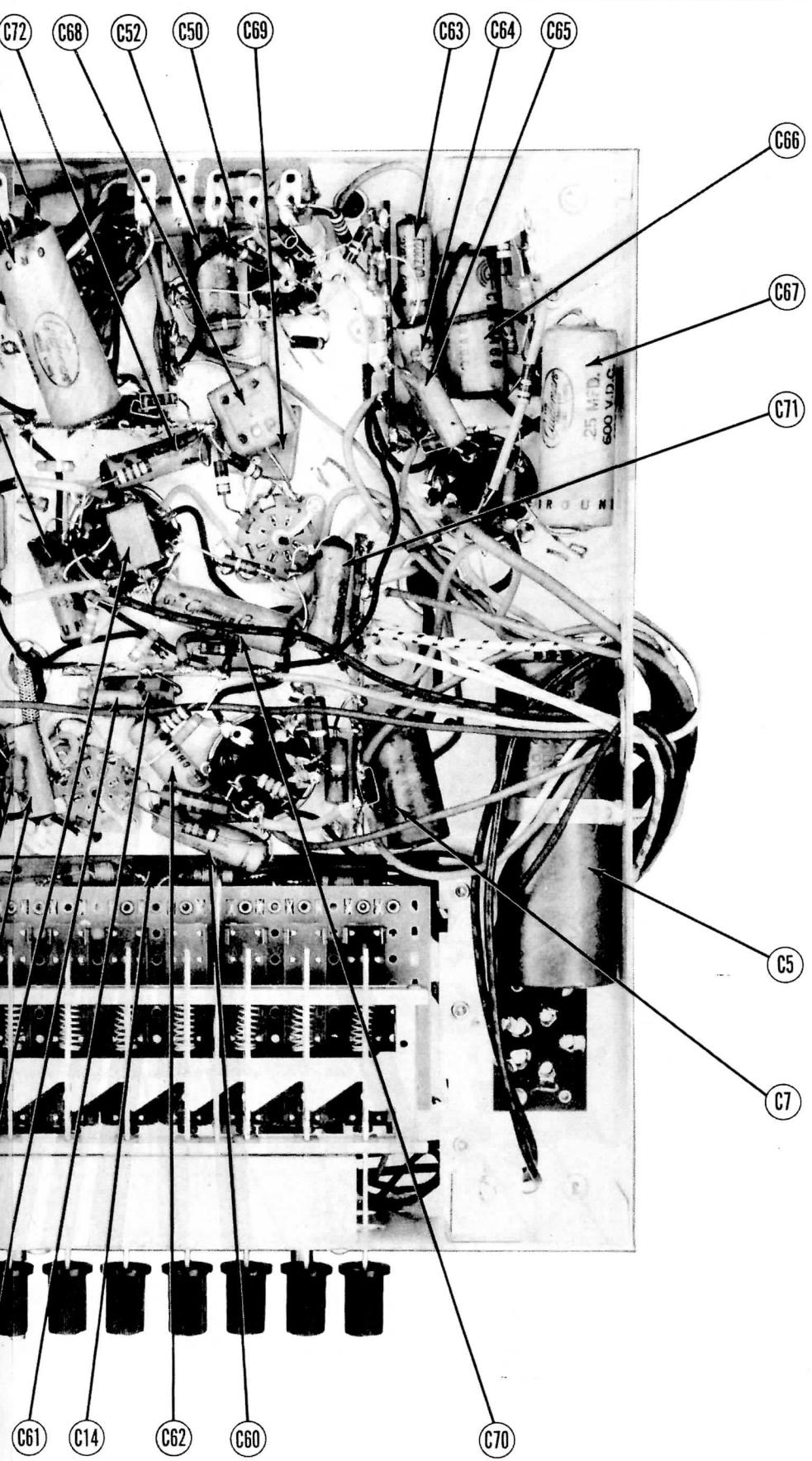
- Line voltage maintained at 117 volts for voltage readings.
- Front panels controls set at minimum.
- Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



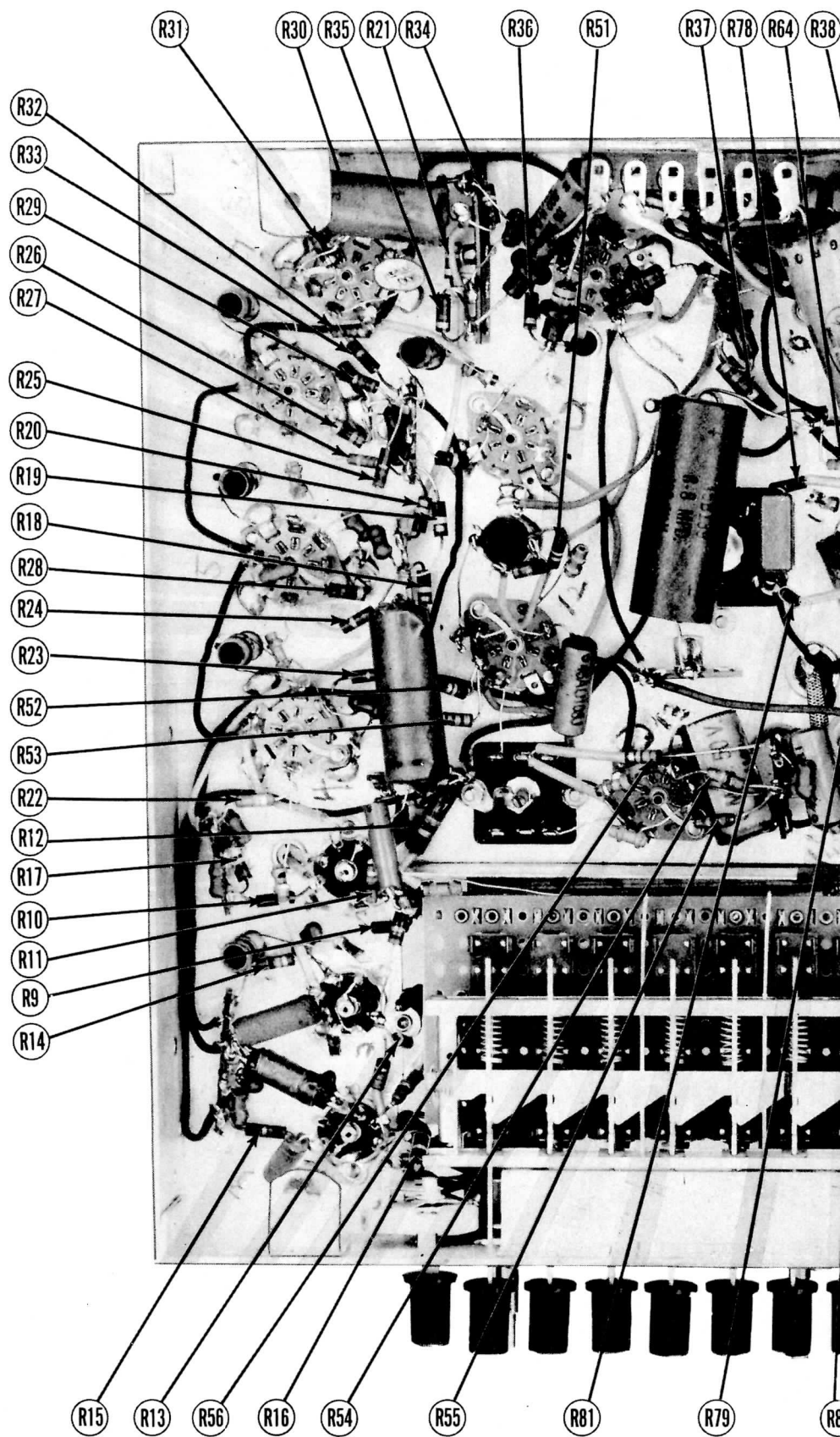
RF ALIGNMENT POINTS



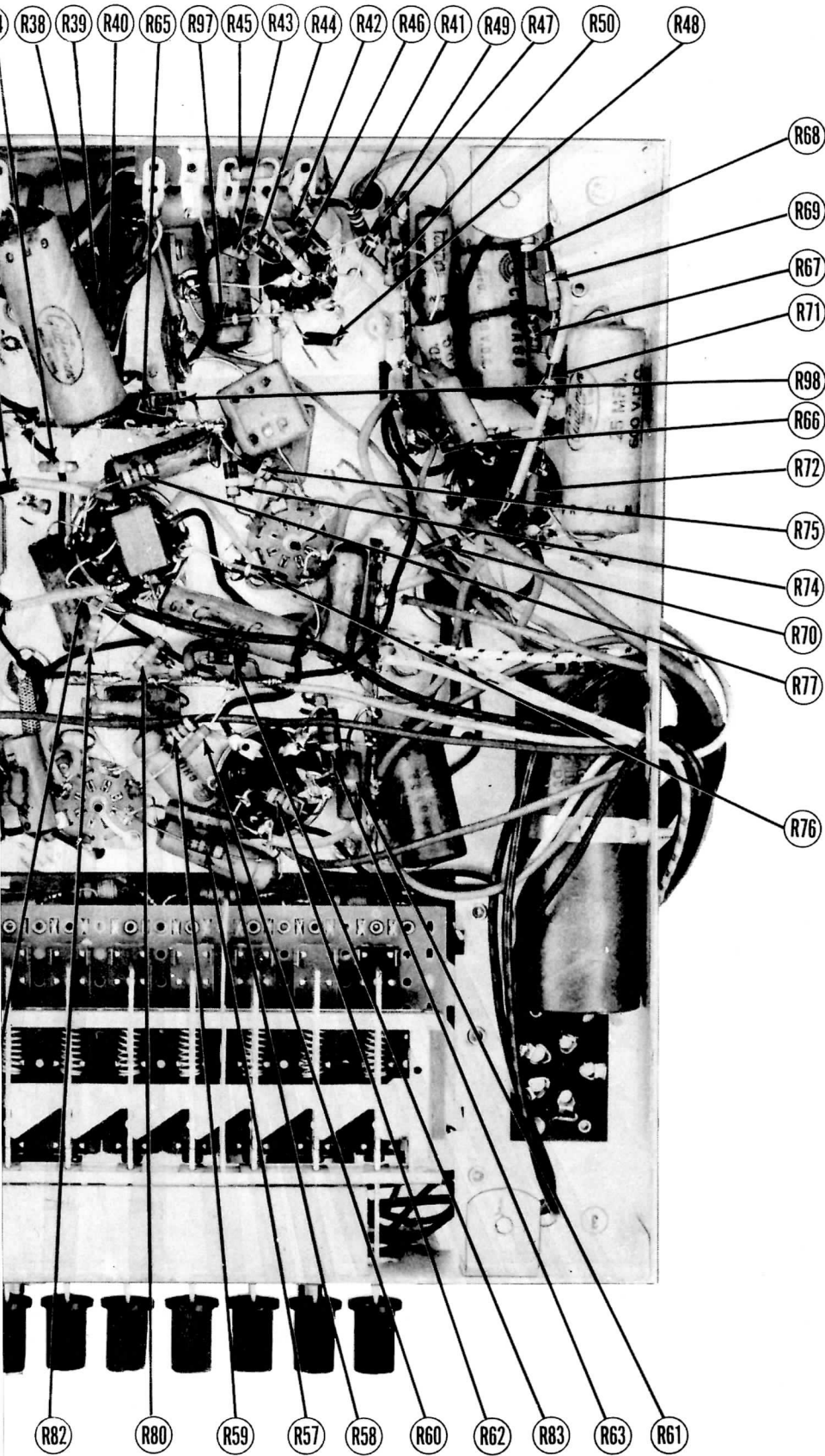
CHASSIS BOTTOM VIEW-CAP.



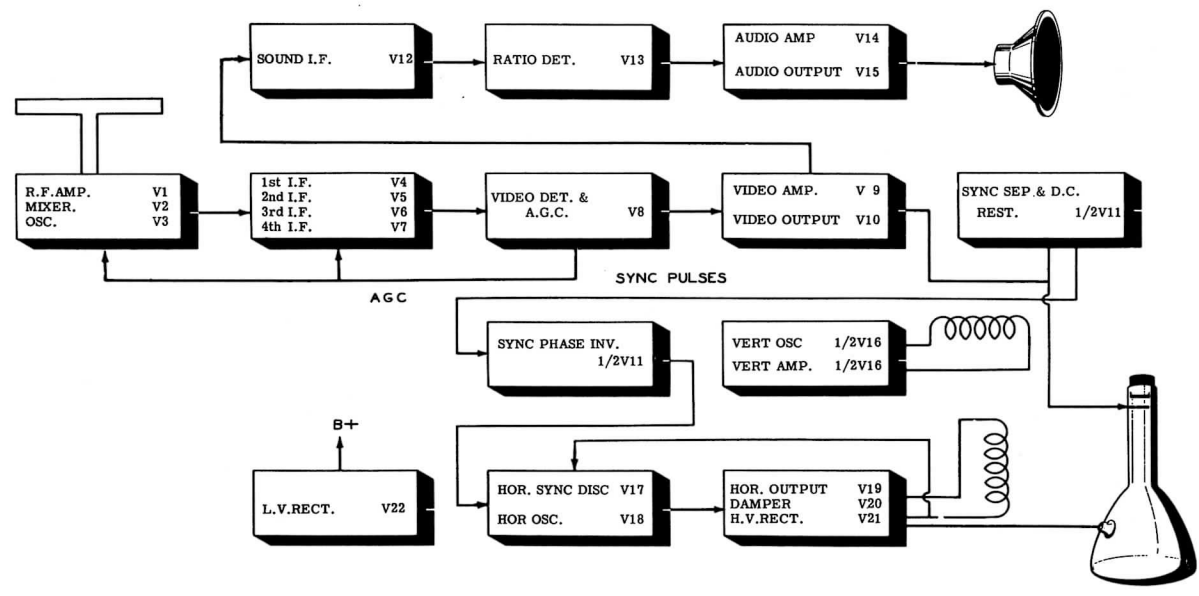
CAPACITOR IDENTIFICATION



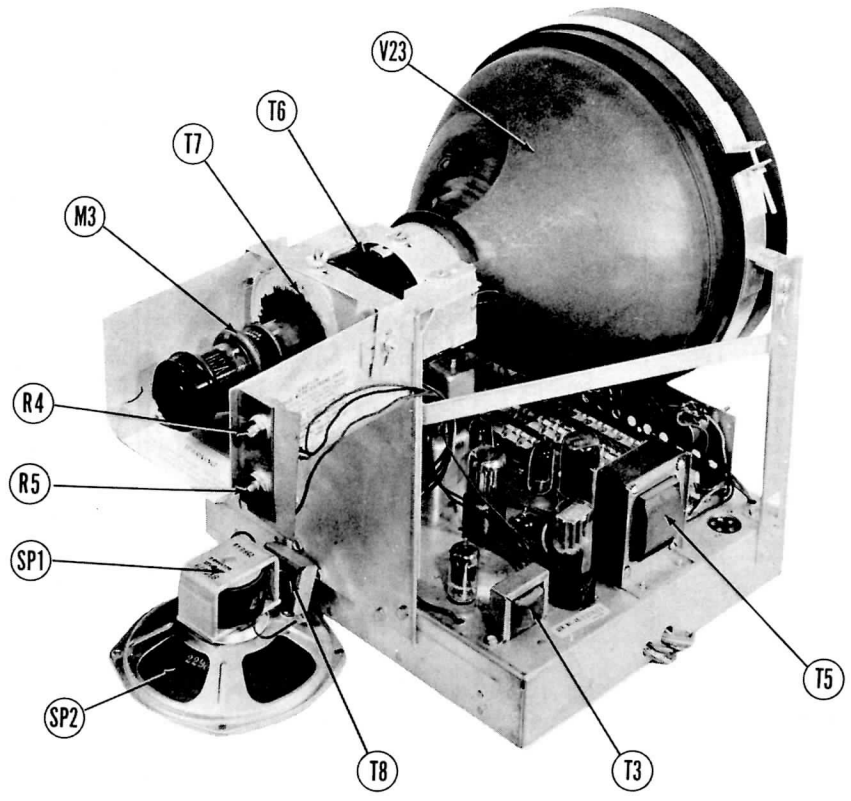
CHASSIS BOTTOM VIEW-RE



- RESISTOR IDENTIFICATION



BLOCK DIAGRAM



CHASSIS TOP VIEW

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		HALLICRAFT. PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6AG5	6AG5	7BD	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6C4	6C4	6B3	
V4	1st IF Amp.	6AU6	6AU6	7BK	
V5	2nd IF Amp.	6AU6	6AU6	7BK	
V6	3rd IF Amp.	6AU6	6AU6	7BK	
V7	4th IF Amp.	6AU6	6AU6	7BK	
V8	Video DET.-AGC	6AL5	6AL5	6BT	
V9	Video Amp.	6AU6	6AU6	7BK	
V10	Video Output	6AQ5	6AQ5	7BZ	
V11	DC Rest.-Sync. Sep.-Sync.				
	Phase Inv.	12AU7	12AU7	9A	
V12	Sound IF	6AU6	6AU6	7BK	
V13	Ratio Det.	6AL5	6AL5	6BT	
V14	AF Amp.	6AU6	6AU6	7BK	
V15	Audio Output	6K6GT	6K6GT	7B	
V16	Vert. Osc.-Vert. Amp.	6SN7GT	6SN7GT	8BD	
V17	Hor. Sync. Disc.	6AL5	6AL5	6BT	
V18	Hor. Osc.	6SN7GT	6SN7GT	8BD	
V19	Hor. Output	6BG6G	6BG6G	5BT	
V20	Damper	5V4G	5V4G	5L	
V21	HV Rect.	1B3GT	1B3GT	3C	
V22	LV Rect.	5U4G	5U4G	5T	
V23	Picture Tube	10BP4	10BP4	12D	

ITEM No.	RATING		REPLACEMENT DATA		
	CAP.	VOLT	HALLICRAFT. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.
C66	.1	600	46AY104J	P688-1	GT6P1
C67	.25	600	46AX254J	684-25	GT6P25
C68	1500	500	CM30A152K	1467-0015	1W5D15
C69	1500	500	CM30A152K	1467-0015	1W5D15
C70	.02	600	46AZ03J	P688-02	GT6S2
C71	.005	600	46AZ502J	P688-005	GT6D5
C72	.005	600	46AZ502J	P688-005	GT6D5
C73	.005	600	46AZ502J	P688-005	GT6D5
C74	6200	500	CM35C622J		
C75	330	500	CM20A331K	1469-00035	5R5T3
C76	390		CM20A391M	1468-0004	5W5T4
C77	390	500	47B20391K5	1468-0004	5W5T4
C78	.05	200	46AU503J	P288-05	GT2S5
C79	.01	600	46AY503J	P688-01	GT6S1
C80	.035	600	46AY353J	P688-033	
C81	.1	600	46AY104J	P688-1	GT6P1
C82	500	10000	47A178		
C83	.01	600	46BR103L6	P688-01	GT6S1
C84	.01	600	46BR103L6	P688-01	GT6S1
C85	.1	200	46AU104J	P288-1	GT2P1
C86	220	500	CM20A221M	1468-00025	5W5T25
C87	.01	600	46AZ103J	P688-01	GT6S1

* Not used in all models.
 † Some models use .05MFF in this application.
 ‡ When either item C56 or C57 are replaced
 † Models T64, 509, 510 use 220MFF in this application.
 * Models T64, 509, 510 only.

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		REPLACEMENT DATA					IDENTIFICATION CODES AND INSTALLATION NOTES	
	CAP.	VOLT	HALLICRAFT. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.		SPRAGUE PART No.
C1A	40	450	45B137	AFH88J	EDJ			TVL-64	Filter Red
B	40	450			10118				"
C2	80	450	45B136	AFH16J	E210074			TVL-9	"
C3A	250	10	45B134	PRS12/250	E210095			TVL-66	Hor. Cent. Cont. Byp.
B	1000	6		PRS6/1000					Vert. Cent. Cont. Byp.
C4A	40	350	45B138		EZ10106			TVL-54	Filter Red
B	30	250							Filter Yellow
C	40	150							Filter Blue
C5A	10	450	45B135	AFH30B	EZ10090				Filter Blue
B	10	450							Filter Red
C	10	450							Filter Red
D	150	50							Vert. Amp. Cath. Byp. Yel Filter
C6A	8	300	45B139	PRSA450/8-8	BRD1145			TVA-25	
B	8	300							
C7	5	25							
C8	100	50	45A121	PRS25/16	BR102A			TVA-5	Output Cath. Bypass
C9	100		45A109	PRS150/4	BR550			TVA-13	Stabilizing Cap.
C10	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-51	RF Coupling
C11	1000		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	"
C12	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	AGC Filter
C13	39		47B20390K5	1468-0004	5W5Q4	GP2L-001	MW.5-21	LFM-44	RF Decoupling
C14	4.7		47A160-4			NPOK-5			Fixed Padder
C15	2.2		47A160-6			NPOK-5			RF Coupling
C16	4.7		47A160-6			NPOK-5			"
C17	3.3		47A160-5			NPOK-3			"
C18	4.7		47A160-6			NPOK-5			"
C19	3.3		47A160-5			NPOK-3			"
C20	39		47B20390K5	1468-0004	5W5Q4		MO.5-44	LFM-44	"
C21	4.7		47A160-6			NPOK-5			Fixed Padder
C22	1.5		47A160-3			NPOK-1.5			Osc. Coupling
C23	1.5		47A160-3			NPOK-1.5			RF Coupling
C24	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	Mixer Decoupling
C25	.68		47A160-1						Osc. Coupling
C26	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	RF Bypass
C27	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	Osc. Plate Bypass
C28	39		47B20390K5	1468-0004	5W5Q4		MO.5-44	LFM-44	Osc. Grid Cap.
C29	4.7		47A160-6			NPOK-5			Fixed Padder
C30	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	Osc. Fil. Bypass
C31	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	IF Coupling
C32	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	AGC Filter
C33	.25	200	46AT254J	P488-25	GT2P25			TC-2	"
C34	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	1st IF Decoupling
C35	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	IF Coupling
C36	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	AGC Filter
C37	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	2nd IF Decoupling
C38	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	2nd IF Fil. Bypass *
C39	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	IF Coupling
C40	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	AGC Filter
C41	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	3rd IF Decoupling
C42	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	IF Coupling
C43	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	AGC Filter
C44	.25	200	46AT254J	P488-25	GT2P25			TC-2	"
C45	5000		47A168	1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	4th IF Decoupling
C46	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	IF Coupling
C47	10		47A160-11	1468-0001	5W5Q1	GP1K-10	MO.5-41	MS-41	Diode Filter
C48	.05	200	46AU503J	P288-05	GT2S5	ST-4-05	TM-15	TM-15	Video Coupling
C49	.05	600	46AY503J	P688-05	GT6S5	ST-6-05	TM-15	TM-15	"
C50	.1	600	46AY104J	P688-1	GT6P1	ST-6-1	TM-1	TM-1	"
C51	.25	600	46AX254J	684-25	GT6P25	ST-6-25	TC-2	TC-2	"
C52	.05	600	46AY503J	P688-05	GT6S5	ST-6-05	TM-15	TM-15	Sync. Coupling
C53	1.5		47A160-3			NPOK-1.5			Sound IF Coupling
C54	100		47B20101K5	1468-0001	5W5T1	GP1K-100	MO.5-31	LFM-31	"
C55	.01	200	46AU103J	P288-01	GT2S1	GP2-335-01	ST-4-01	TM-11	Sound IF Decoupling
C56	330		47B20331K5	1468-0003	5W5T3	GP2K-300	MO.5-33	LFM-335	Diode Load Cap †
C57	330		47B20331K5	1468-0003	5W5T3	GP2K-300	MO.5-33	LFM-335	Diode Load Cap †
C58	1000		47B20A102N	1468-001	1W5D1	GP2L-001	MW.5-21	LFM-21	B-emphasis
C59	.01	200	46AU103J	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C60	.01	600	46A2103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	AF Screen Bypass
C61	470	500	CM20A471M	1468-0005	5W5T5	GP2K-500	MO.5-35	LFM-35	AF Plate Bypass
C62	.01	600	46A2103J	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C63	.002	600	46A2202J	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Integrator Net.
C64	.005	600	46A2502J	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	"
C65	4700	500	CM35A472K	1464-005	1DR5D5				Vert. Osc. Grid Cap.

ITEM No.	RATING		REPLACEMENT DATA		
	RESISTANCE	WATTS	HALLICRAFT. PART No.	IRC PART No.	CLAR PART No.
R1A	50KΩ	‡	25B788		
B	1 Meg.	‡			
R2A	2500Ω	‡	25B789		
B	Shaft	‡	Not Req.		
C	Switch	‡	Not Req.		
R3A	1 Meg.	‡	25B787		
B	50KΩ	‡			
R4A	2.5Meg.	‡	25B768		AM-8
B	Shaft	‡	Not Req.		KSS-3
R5A	5000Ω	‡	25B769	D11-114	AM-1
B	Shaft	‡	Not Req.	E	KSS-3
R6	20Ω	2	25B707	W-20	58-2
R7	20Ω	2	25B706	W20x10	
R8	2500Ω	4	25B708		58-2

ITEM No.	RATING		REPLACEMENT DATA	
	RESISTANCE	WATTS	HALLICRAFT. PART No.	IRC PART No.
R9	150Ω	‡	RC20AE151K	
R10	150Ω	‡	RC20AE151K	
R11	10KΩ	‡	RC20AE103K	BTS-10K
R12	15KΩ	‡	RC20AE153K	BTA-15K
R13	1 Meg.	‡	RC20AE105M	
R14	10KΩ	‡	RC20AE103K	BTS-10K
R15	2500Ω	‡	RC20AE222K	BTS-2200-5
R16	22KΩ	‡	RC20AE223K	
R17	100KΩ	‡	RC20AE104K	BTS-100K
R18	100KΩ	‡	RC20AE104K	BTS-100K
R19	100KΩ	‡	RC20AE104K	BTS-100K
R20	100KΩ	‡	RC20AE104K	BTS-100K
R21	470KΩ	‡	RC20AE474K	BTS-470K
R22	22KΩ	‡	RC20AE223K	BTS-22K
R23	2500Ω	‡	RC20AE222K	BTS-2200-1
R24	5600Ω	‡	RC20AE562K	
R25	2500Ω	‡	RC20AE222K	BTS-2200
R26	68Ω	‡	RC20AE680K	
R27	8200Ω	‡	RC20AE822K	BTS-8200
R28	68Ω	‡	RC20AE680K	
R29	2500Ω	‡	RC20AE222K	BTS-2200
R30	5600Ω	‡	RC20AE562K	
R31	68Ω	‡	RC20AE680K	
R32	8200Ω	‡	RC20AE822K	BTS-8200
R33	2500Ω	‡	RC20AE222K	BTS-2200-1
R34	220KΩ	‡	RC20AE224K	BTS-220K
R35	5600Ω	‡	RC20AE562K	BTS-5600
R36	1 Meg.	‡	RC20AE105M	BTS-1 Meg.
R37	3300Ω	‡	RC30AE332K	BTA-3300
R38	1 Meg.	‡	RC20AE105M	BTS-1 Meg.
R39	680Ω	‡	RC20AE681K	BTS-680
R40	470Ω	‡	RC40AE473K	BT-2-4700
R41	47KΩ	‡	RC20AE473K	BTS-47K
R42	270KΩ	‡	RC20AE274K	BTS-27K
R4				

DESCRIPTIONS

No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
	ST-6-1	FM-1	Vert. Discharge
15	ST-6-25	TC-2	Vert. Coupling
	MW.5-215	LFM-215	Hor. Sync. Coupling
15	MW.5-215	LFM-215	"
	ST-6-02	FM-12	Voltage Divider
5	ST-6-005	FM-25	AFC Feedback
5	ST-6-005	FM-25	Hor. Sync. Coupling
5	ST-6-005	FM-25	Voltage Divider
			Fixed Trimmer
0	MOS.5-33	YS-33	Hor. Osc. Feedback
	MO.5-34	LFM-34	Hor. Discharge
	MO.5-34	LFM-34	Hor. Sync. Coupling
	ST-4-05	FM-15	Hor. Amp. Cath. Byp. *
-01	ST-6-01	FM-11	Hor. Amp. Screen Byp. Damper Filter
	ST-6-1	FM-1	"
	ST-6-01	FM-11	HV Filter
	ST-6-01	FM-11	Line Filter
	ST-2-1	FM-1	Pic. Tube Cath. Dec.
0	MO.5-325	LFM-325	Voltage Divider **
-01	ST-6-01	FM-11	Fixed Trimmer **

Use both with capacitors of equal value.
Installation.

S

INSTALLATION NOTES

Horiz. Hold Control } Dual Concentric
Vert. Hold Control }
Contrast Control }
Attach to R2A Per Instructions
Volume Control } Dual Concentric
Brightness Control }
Light Control }
Attach to R4A Per Instructions
Vert. Linearity Control
Attach to R5A Per Instructions
Horiz. Centering Control
Vert. Centering Control tapped @ 10Ω
Focus Control

S

IDENTIFICATION CODES

RESISTORS ARE ±10% UNLESS OTHERWISE STATED.

Cathode
Grid
Plate
Age Dropping
Grid
Decoupling
Plate
Grid
Network
Filter
IF Grid
IF Decoupling
IF Grid
IF Decoupling
IF Cathode
IF Grid
IF Cathode
IF Decoupling
IF Grid
IF Cathode
IF Plate
IF Decoupling
Network
Det. Diode Load
Amp. Grid
Amp. Plate
Output Grid
Output Cathode
Output Plate
Pre Tube Grid
Storer Cathode
Age Divider
Amp. Plate
Phase Inv. Plate
Rator
Phase Inv. Grid
Rator
IF Grid
Age Divider
Det. Diode Load
Phase
Age Divider
Plate
Screen
Coupling
t Grid
t Cathode
Age Divider

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	HALLICRAFT PART No.	IRC PART No.	
R65	15KΩ	↓	RC20AE153K	BTS-15K	Voltage Divider
R66	1.2 Meg.	↓	RC20AE125K	BTS-1.2 Meg.	Vert. Osc. Grid
R67	1.5 Meg.	↓	RC20AE155K	BTS-1.5 Meg.	"
R68	100KΩ	↓	RC20AE104K	BTS-100K	Voltage Divider
R69	6.8 Meg.	↓	RC20AE685K	BTS-6.8 Meg.	"
R70	560Ω	↓	RC20AE561K	BTS-560	Vert. Amp. Cathode **
R71	3300Ω	↓	RC20AE332K	BTS-3300	Vert. Peaking
R72	2.2 Meg.	↓	RC20AE225M	BTS-2.2 Meg.	Vert. Amp. Grid
R73	1.5 Meg.	↓	RC20AE155K	BTS-1.5 Meg.	Vert. Amp. Plate
R74	100KΩ	↓	RC20AE104K	BTS-100K	Horiz. Sync. Disc. Load
R75	100KΩ	↓	RC20AE104K	BTS-100K	"
R76	5600Ω	↓	RC20AE562K	BTS-5600	Feedback Network
R77	470KΩ	↓	RC20AE474K	BTS-470K	AFC Filter
R78	5600Ω	↓	RC20AE562K	BTS-5600	Horiz. Osc. Plate *
R79	1000Ω	↓	RC20AE102K	BTS-1000	Horiz. Osc. Cathode
R80	68KΩ	↓	RC20AE683K	BTS-68K	Horiz. Osc. Grid
R81	270KΩ	↓	RC20AE274K	BTS-270K	Horiz. Osc. Plate
R82	4700Ω	↓	RC20AE472K	BTS-4700	Horiz. Peaking **
R83	2500Ω	↓	RC20AE222K	BTS-2200-5%	Filter **
R84	1 Meg.	↓	RC20AE105M	BTS-1 Meg.	Horiz. Output Grid †
R85	47Ω	↓	RC20AE470K		Parasitic Suppressor
R86	82Ω	↓	RC30AE820K		Horiz. Output Cathode †
R87	4700Ω	2	RC40AE472K	BT-2-4700	Horiz. Output Screen † †
R88	1800Ω	2	RC40AE182K	BT-2-1800	Filter † †
R89	8200Ω	1	RC20AE822K	BTA-8200	Feedback Network #
R90	3.2Ω	↓	RC20AE033M		HV Rectifier Filament
R91	1 Meg.	2	RC40AE105M		HV Filter
R92	470Ω	2	RC40AE471K	BT-2-470	Series Focus Control
R93	2200Ω	1	RC30AE222K	BTA-2200	Focus Coil Shunt
R94	1000Ω	20	24BH102D	DG-1000	Filter
R95	1100Ω	20	24BH112D		"
R96	8200Ω	10	24BG822E	AB-8000	Bleeder
R97	2200Ω	↓	RC20AE222K	BTS-2200	Sync. Phase Inv. Cathode
R98	4.7 Meg.	↓	RC20AE475K	BTS-4.7 Meg.	Hor. Sync. Disc. Load # #
R99	200Ω	↓	RC30AE200J		Vert. Deflection Shunt # #
R100	200Ω	↓	RC30AE201J		Vert. Deflection Shunt # #
R101	47Ω	↓	RC30AE470K		Width Control Shunt # #
R102	47KΩ	↓	RC20AE473K	BTS-47K	Hor. Hold Control Shunt # #

** Not used in models T-64, 509, 510
 * Models T-64, 509, 510 use 6800Ω in this application
 † Models T-64, 509, 510 use 100KΩ in this application
 ‡ Models T-64, 509, 510 use 56Ω in this application
 † † Models T-64, 509, 510 use 2200Ω 2W in this application
 ‡ ‡ Models T-64, 509, 510 use 220Ω in this application
 # Models T-64, 509, 510 use 1000Ω in this application
 # # Used in models T64, 509, 510 only.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ 1.81A	680VCT @ .23 ADC	5VAC @ 3A	5VAC @ 2A	52C170	P-81531 #	TP-410	

† Drill new mounting holes.
Add series resistor to reduce plate voltage.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE	SEC.	HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
T2	40Ω		50B411				
T3	120Ω	1400Ω	55B115	A-8111	TB0-1	A-3000	Hor. Osc. Coil
T4	360Ω Tap @ 200Ω	SEC. 1 11.5Ω Tap @ .5Ω	55C113	A-8117	TFB-1		Vert. Block Osc. Trans. Hor. Output Trans.
T5	590Ω	7Ω	55C114	A-8115	TS0-1	A-3035	Vert. Output Trans.
T6A	14Ω		53B140	DY-1			Hor. Deflection Yoke
T7	68Ω			FC-10			Vert. Deflection Yoke
	260Ω		51A1065				Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE	DC RES.	PRI.	SEC.	HALLICRAFTERS PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
T8	9KΩ	3.2Ω	280Ω	.4Ω	Part of 85C079	A-8114	R0-16	A-2900	

SPEAKER

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	HALLICRAFTERS PART No.	JENSEN PART No.	QUAM PART No.	
SP1	65Ω	3.2Ω	85C079			
SP2	5 7/8"	9/16"				

HALLICRAFTERS MODELS
T61, T64, T67, 509, 510

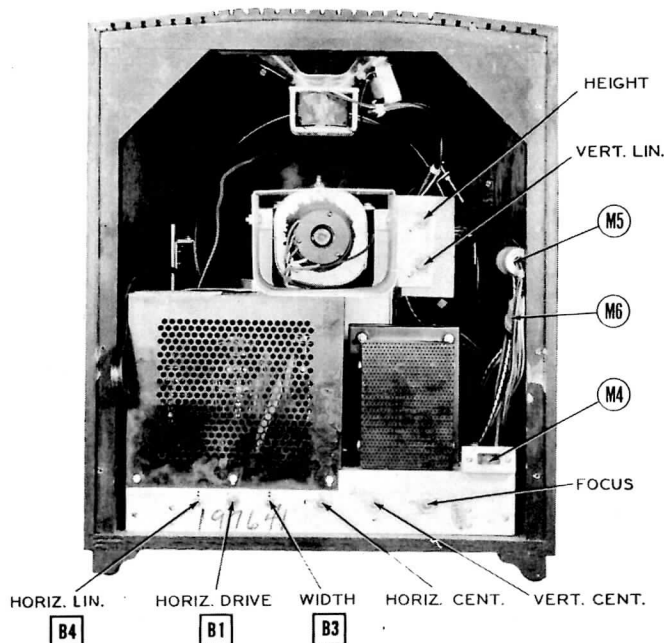
PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

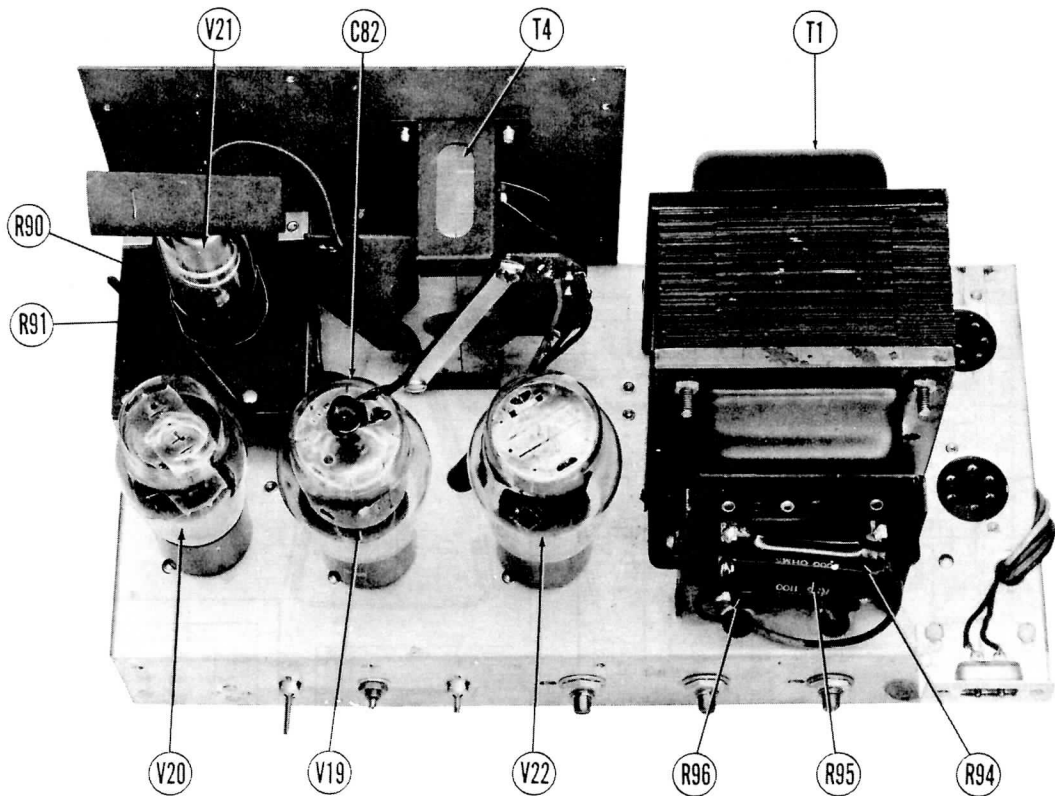
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	HALLICRAFT.	MEISSNER	
				PART No.	PART No.	
L1	Ant. Input	0Ω		51A1039		
L2	RF Plate	0Ω		51A1048		Wound on 3.3KΩ, 1 Watt resistor
L3	RF Plate	0Ω		51A1051		Wound on 2.2KΩ, 1 Watt resistor
L4	RF Plate	0Ω		51A1050		Wound on 3.3KΩ, 1 Watt resistor
L5	RF Plate	0Ω		51A1049		Wound on 1 Meg, 1/2 Watt resistor
L6	Mixer Grid	0Ω		51A1048		Wound on 3.3KΩ, 1 Watt resistor
L7	Mixer Grid	0Ω		51A1047		Wound on 2.2KΩ, 1 Watt resistor
L8	Mixer Grid	0Ω		51A1046		Wound on 3.3KΩ, 1 Watt resistor
L9	Mixer Grid	0Ω		51A1041		Wound on 1 Meg, 1/2 Watt resistor
L10	RF Choke	2Ω		53B008		
L11	Osc. Coil	0Ω		51A1044		Wound on 1 Meg, 1 Watt resistor
L12	Osc. Coil	0Ω		51A1043		Wound on 1 Meg, 1 Watt resistor
L13	Osc. Coil	0Ω		51A1042		Wound on 1 Meg, 1 Watt resistor
L14	Osc. Coil	0Ω		51A1041		Wound on 1/Meg, 1/2 Watt resistor
L15	RF Cath.Chk	2Ω		53B008		
L16	Fil.Choke	.5Ω	.5Ω	51A133		
L17	Fil.Choke	.5Ω		53A009		
L18	1st IF	.2Ω		50A372-1		
L19	2nd IF	.2Ω		50A372-1		
L20	3rd IF	.2Ω		50A372-1		
L21	4th IF	.2Ω		50A372-1		
L22	Video Det.	.2Ω		50A372-1		
L23	Peaking	10Ω		51A1079		Wound on 39KΩ resistor
L24	Peaking	11Ω		51A1080		Wound on 1 Meg resistor
L25	Peaking	10Ω		51A1087		Wound on 56KΩ resistor
L26	Peaking	6Ω		51A1082		Wound on 1 Meg resistor
L27	Peaking	8.5Ω		51A1086		Wound on 1 Meg resistor
L28	Peaking	6.5Ω		51A1082		Wound on 1 Meg resistor
L29	Sound Trap	4.8Ω		51A1037		
L30	Ratio Det.	4.8Ω	1Ω	50B406		
L31	Width Control	.5Ω		51B1072		
L32	Horiz. Linearity control	34Ω		51B1071		

MISCELLANEOUS

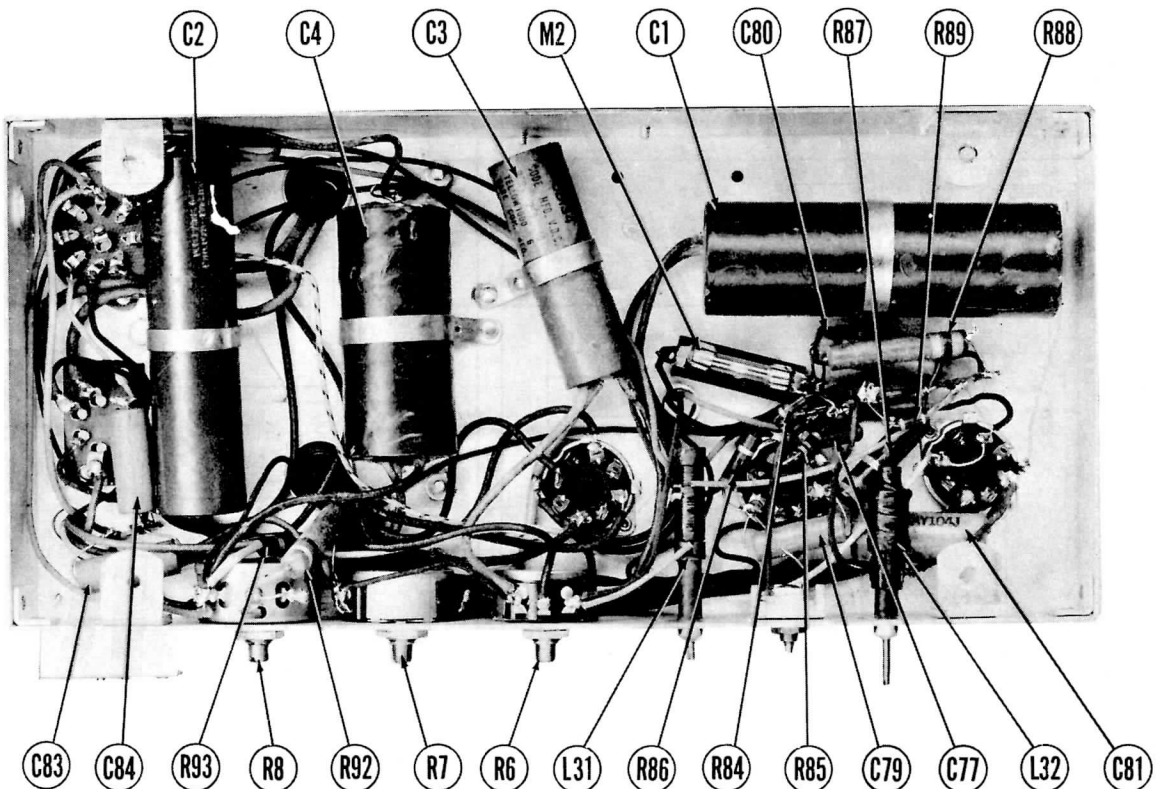
ITEM No.	PART NAME	HALLICRAFTERS. PART No.	NOTES
M1	Channel Selector Assy	41X12104	Includes PB switch, trimmers, coils, etc. Type 3AG, 1/4 Amp.
M2	Fuse	39A334	
M3	Ion Trap	21B083	AC Power 6 Pin (Power) Octal (Power) T-64, 509, 510 only 9 Pin (Power) 5 Pin (Speaker) Picture Tube Picture Tube
M4	Socket	10A286	
M5A	Socket	6A312	
M5B	Socket	6A313	
M6	Socket	10A303	Vertical and Volume controls (Front Section) Horiz. and Brightness Controls (Rear Section) Contrast control Pushbuttons and fine tuning control Circle-Normal Switch, DPDT.
M7	Socket	6B309	
	Escutcheon	7E079	
	Safety Glass	22C220	
	Knob	15B147	
	Knob	15B146	
	Knob	15B148	
	Knob	17A041-2	
	Switch	60A347	



CABINET-REAR VIEW



POWER SUPPLY CHASSIS-TOP VIEW



POWER SUPPLY CHASSIS-BOTTOM VIEW