

PILOT
MODEL TV-37

TRADE NAME Pilot, Model TV-37
 MANUFACTURER Pilot Radio Corp., 37-06 36th St., Long Island City, New York
 TYPE SET Television Receiver
 TUBES Twenty-one

POWER SUPPLY 105-125 Volts, 60 Cycle AC
 TUNING RANGE Channels 2 through 13 RATING .45 Amps @ 117 Volts

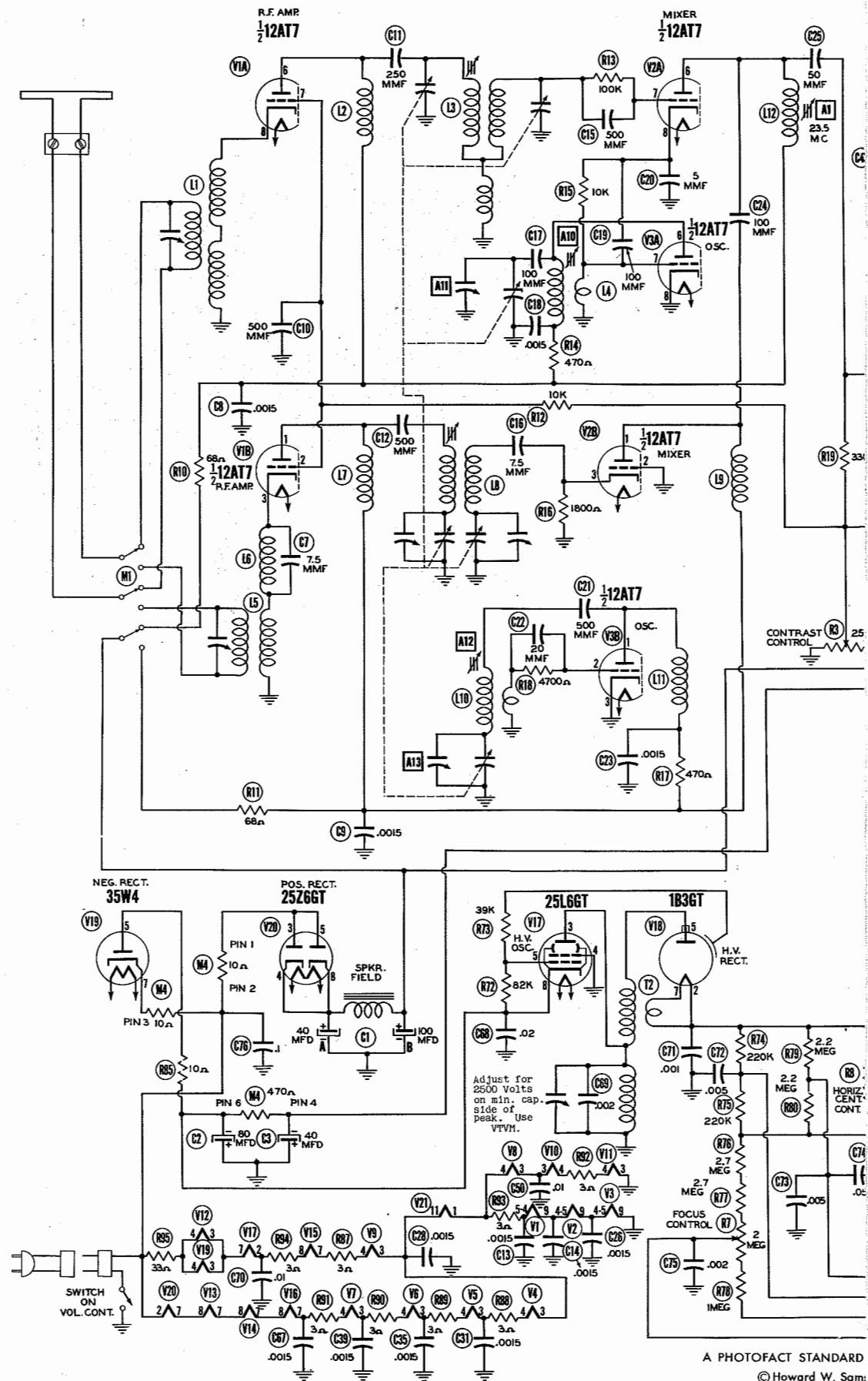
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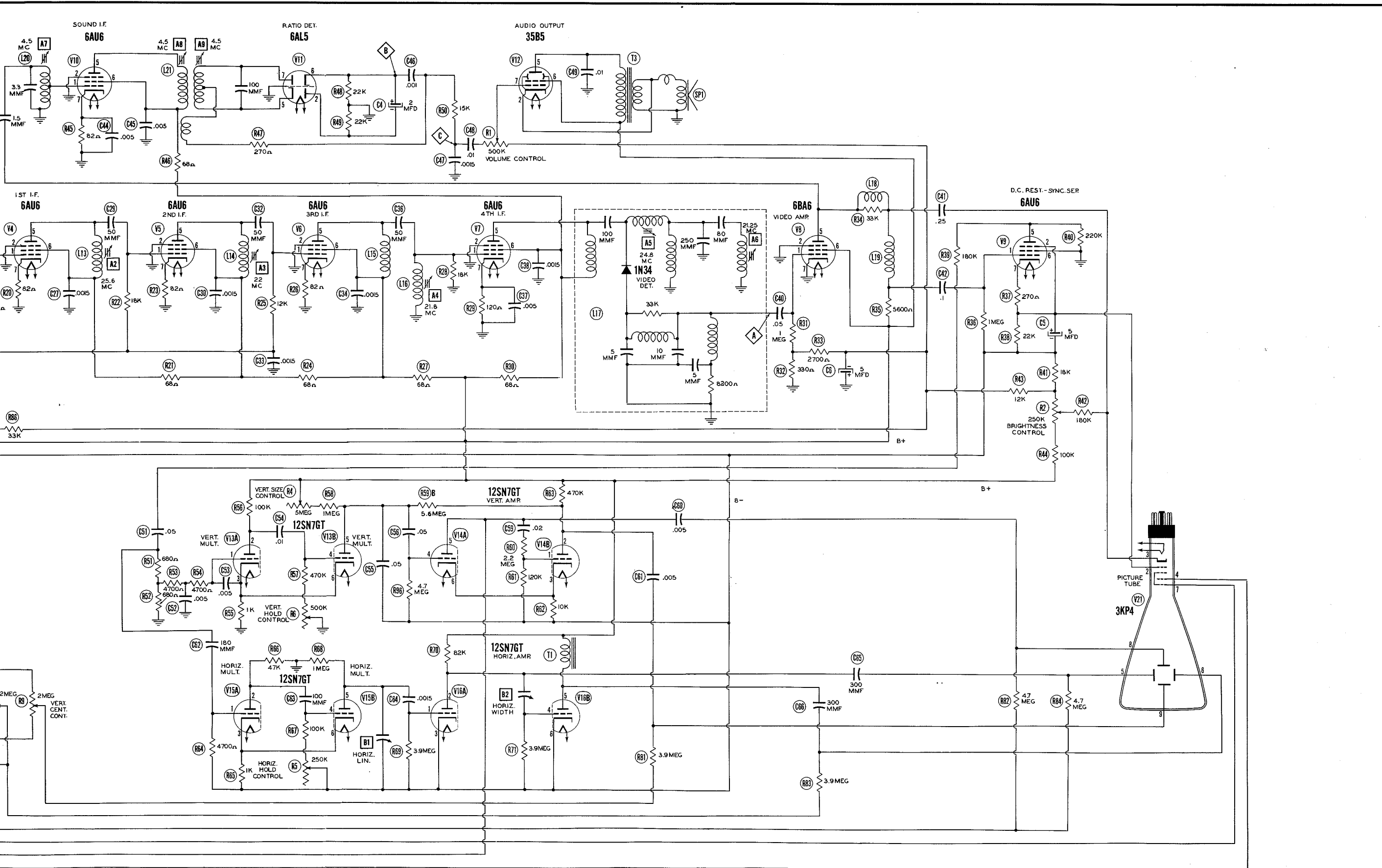
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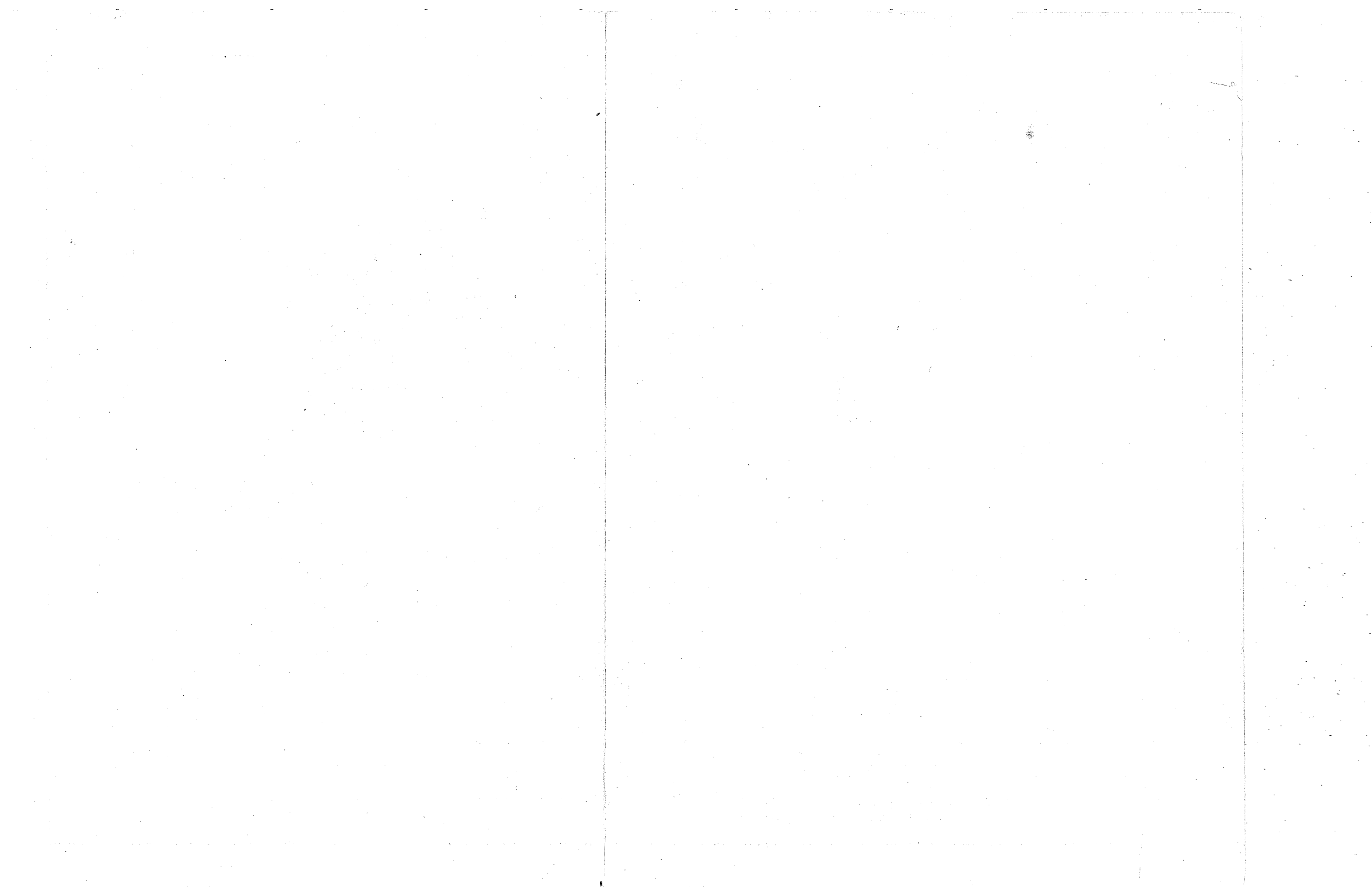
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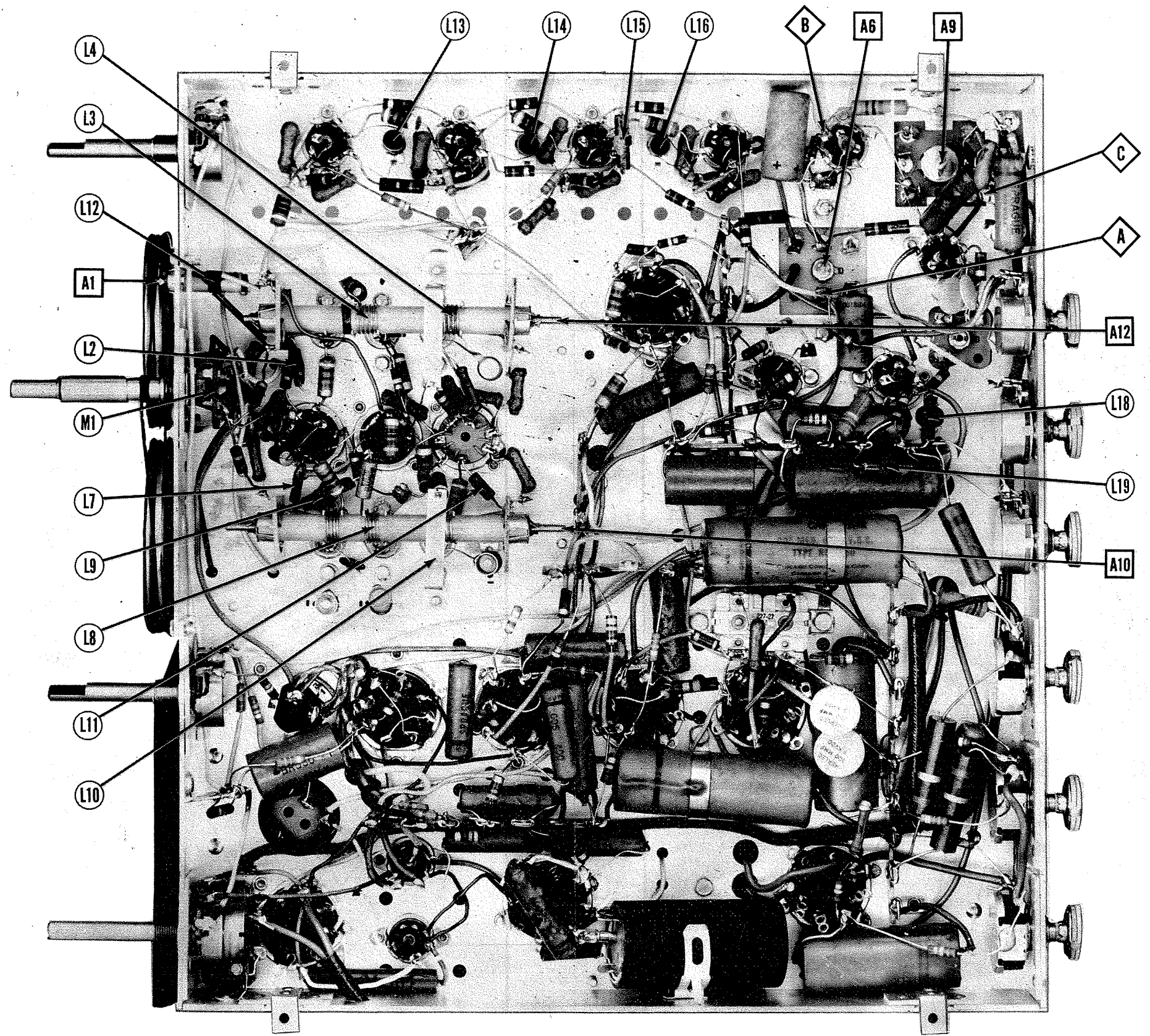




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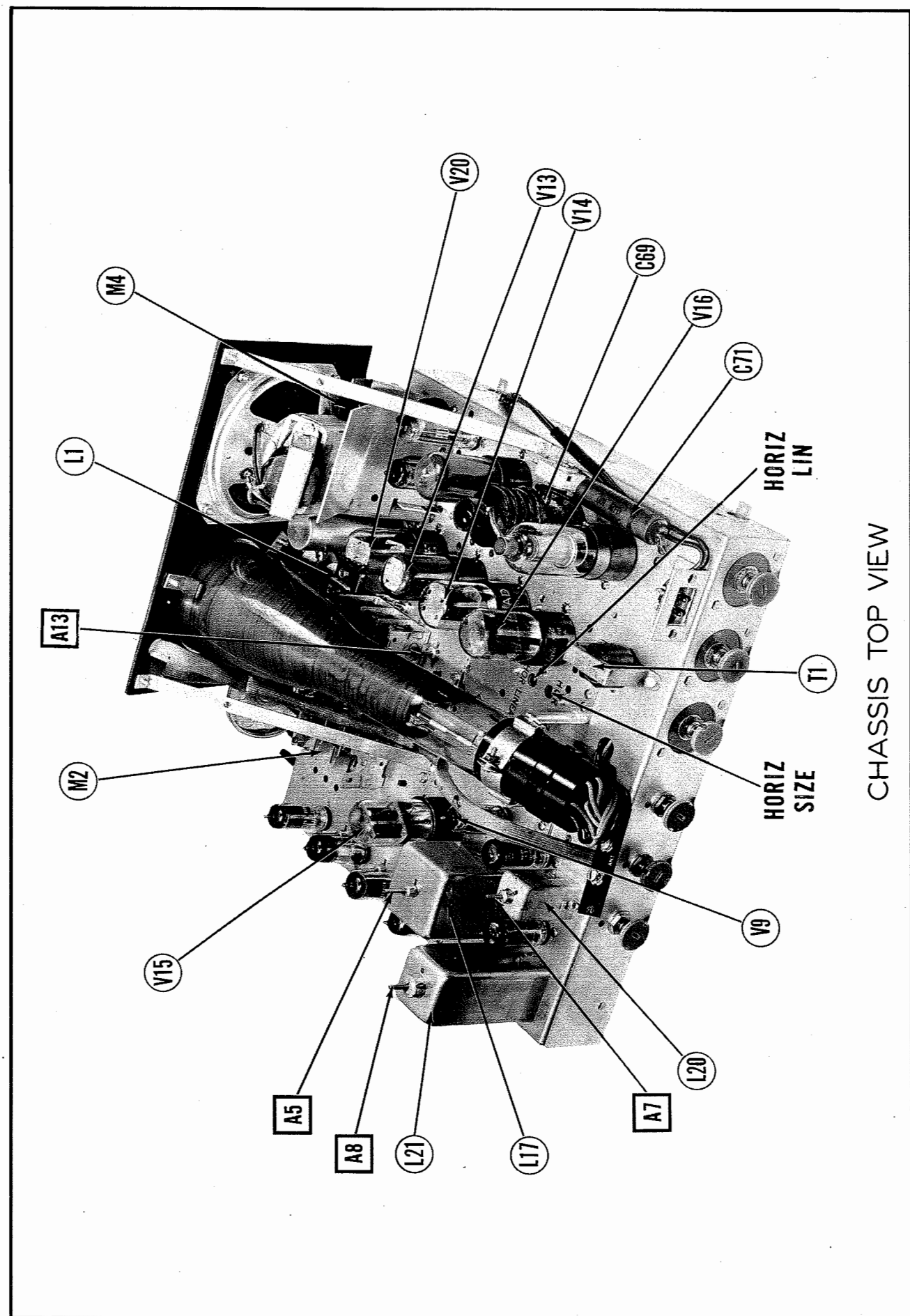
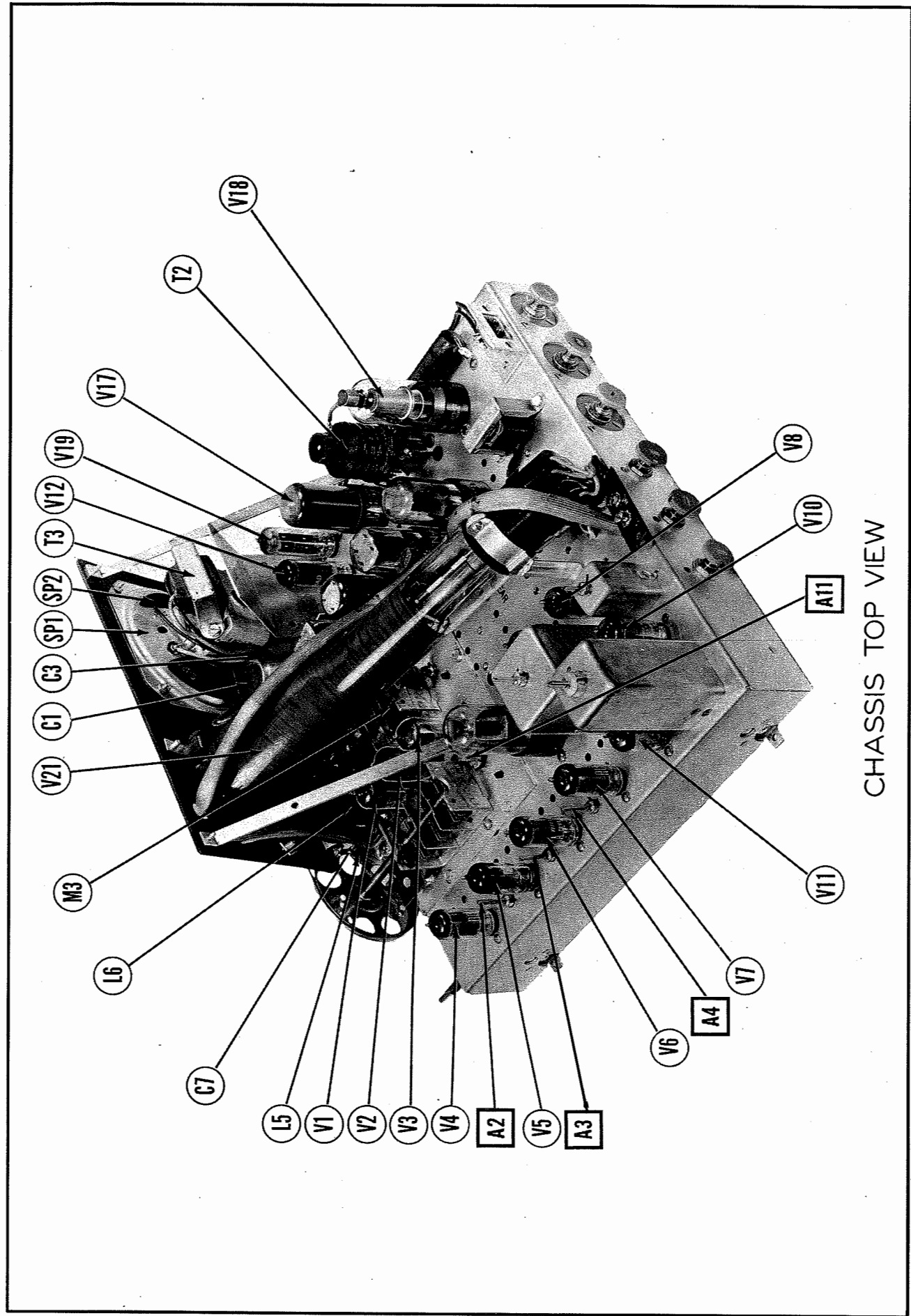
THE COOPERATION OF THE MANUFACTURER OF THIS
 RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE





CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PILOT
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ALIGNMENT INSTRUCTIONS

VIDEO IF ALIGNMENT

Set contrast control to approximately 3/4 of its rotation toward maximum. Disable the local oscillator by shorting filament pins 4, 5, and 9 of V3. (Even though this receiver incorporates a series filament string, shorting this filament will not overload the other tubes enough to damage them.) If the video IF strip is badly misaligned or oscillating, proceed as follows. If only a retouch alignment is required, proceed as outlined in the alignment table. Connect the VTVM to point A and the signal generator to the 4th video IF amplifier grid (Pin 1 of V7). Feed in an unmodulated 21.25MC signal and adjust A6 for minimum. Tune signal generator to 24.8MC and adjust A5 for maximum. Now move the signal generator to the grid of the preceding stage and adjust A4 at 21.6MC for maximum. Continue this procedure of backing up stage by stage and as another circuit is added, align it at its proper frequency. This operation normally removes oscillations due to malalignment. It is recommended after peaking each adjustment, to reduce the signal generator output to zero. The VTVM reading should drop to zero also; if not, this will indicate the stage is oscillating. In some cases of severe oscillation it may be necessary to shunt the grid ahead of the signal generator connection with a 1000MMF capacitor.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Couple the signal generator high side to several turns of hook-up wire around the mixer tube. Low side of generator to chassis.	23.5MC	Any	DC Probe to Point A Common to Chassis.	A1	Adjust for maximum deflection.
2.	"	25.6MC	"	"	A2	" " " "
3.	"	22.0MC	"	"	A3	" " " "
4.	"	21.6MC	"	"	A4	" " " "
5.	"	24.8MC	"	"	A5	" " " "
6.	"	21.25MC	"	"	A6	Adjust for minimum deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier of the oscilloscope for horizontal deflection.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Coupled loop of wire around mixer tube.	25MC (10MC Sweep)	25.75MC 22.0MC 21.25MC	Any	Vert. Amp. to Point A Low side to chassis.		Check response pattern and see that markers appear as in Fig. 1. If necessary, slightly retouch A1 thru A5 to properly place markers.

SOUND IF ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	High side to Point A. Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point A Common to Chassis.	A7, A8	Adjust for maximum deflection.
9.	"	"	"	DC Probe to Point A Common to Chassis.	A9	Adjust for zero reading. A positive and negative will be obtained on either side of the correct setting.

OSCILLATOR ALIGNMENT

The RF Amp and mixer circuits are preset at the factory and are very stable and normally will not require alignment in the field. To align the oscillator circuits connect a .01MFD capacitor from point A to the high side of the volume control. Set the contrast control at 3/4 of its full rotation.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	Direct Across Antenna Terminals.	80MC (Unmod.)	Low band tuning cap fully closed.		A10	Adjust for zero beat in speaker.
11.	"	110MC (Unmod.)	Tuning cap fully open.		A11	Adjust for zero beat in speaker.
12.	"	200MC (Unmod.)	High band tuning cap fully closed.		A12	" " " " " "
13.	"	239MC (Unmod.)	Tuning cap fully open.		A13	" " " " " "

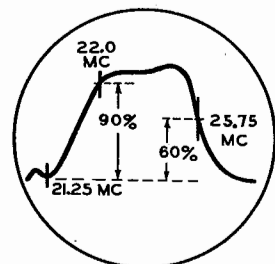
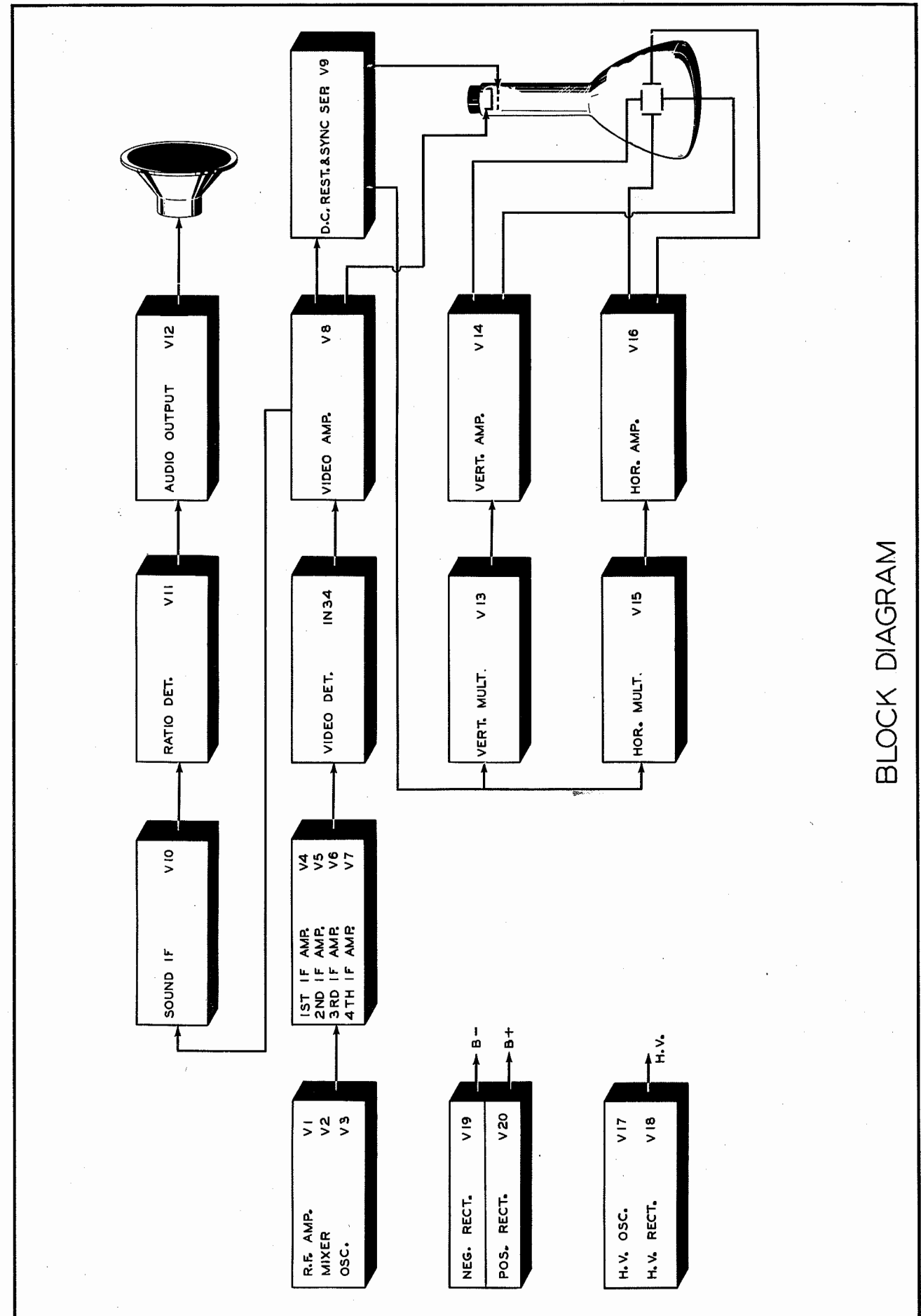


FIG. 1



BLOCK DIAGRAM

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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		
V1	12AT7	112V.DC	-4.3V.DC	OV	20V.AC	112V.DC	-4.3V.DC	OV	12V.AC			
V2	12AT7	112V.DC	OV	2.6V.DC	13V.AC	112V.DC	-2V.DC	OV	6.5V.AC			
V3	12AT7	105V.DC	\$5.8V.DC	OV	6.5V.AC	105V.DC	\$-2.2K.DC	OV	OV			
V4	6AU6	-4.4V.DC	OV	28V.AC	35V.AC	112V.DC	112V.DC	OV				
V5	6AU6	-4.1V.DC	OV	35V.AC	42V.AC	112V.DC	112V.DC	OV				
V6	6AU6	-4.3V.DC	OV	43V.AC	50V.AC	112V.DC	112V.DC	OV				
V7	6AU6	OV	OV	50V.AC	55V.AC	112V.DC	112V.DC	.8V.DC				
V8	6BA6	-1V.DC	OV	14V.AC	21V.AC	42V.DC	112V.DC	OV				
V9	6AU6	11.8V.DC	113V.DC	28V.AC	35V.AC	112V.DC	1125V.DC	113V.DC				
V10	6AU6	OV	OV	14V.AC	8V.AC	112V.DC	112V.DC	.7V.DC				
V11	6AL5	.5V.DC	-3V.DC	OV	7V.AC	OV	OV	OV				
V12	35B5	-10V.DC	OV	75V.AC	108V.AC	105V.DC	113V.DC	-10V.DC				
V13	12SN7GT	OV	27V.DC	OV	OV	2.5V.DC	OV	80V.AC	93V.AC			
V14	12SN7GT	5.8V.DC	120V.DC	16V.DC	14.8V.DC	225V.DC	16V.DC	70V.AC	80V.AC			
V15	12SN7GT	10V.DC	55V.DC	11V.DC	19V.DC	32V.DC	11V.DC	36V.AC	50V.AC			
V16	12SN7GT	.5V.DC	95V.DC	9.2V.DC	240V.DC	240V.DC	9.2V.DC	55V.AC	70V.AC			
V17	25L6GT	OV	50V.AC	125V.DC	125V.DC	-5.3V.DC	OV	75V.AC	OV			
V18	1R3GT											
V19	35M4											
V20	25Z6GT											
PINS		1	2	3	4	5	6	7	8	9	10	11
V21	3KP4	21VAC	113VDC	118VDC	*	*	*	*	*	*	OV	28VAC

† Measured from pin 5 of V19
 * Do not measure. Cannot make an accurate measurement, due to high impedance of circuit.
 § Taken with vacuum tube voltmeter

RESISTANCE READINGS

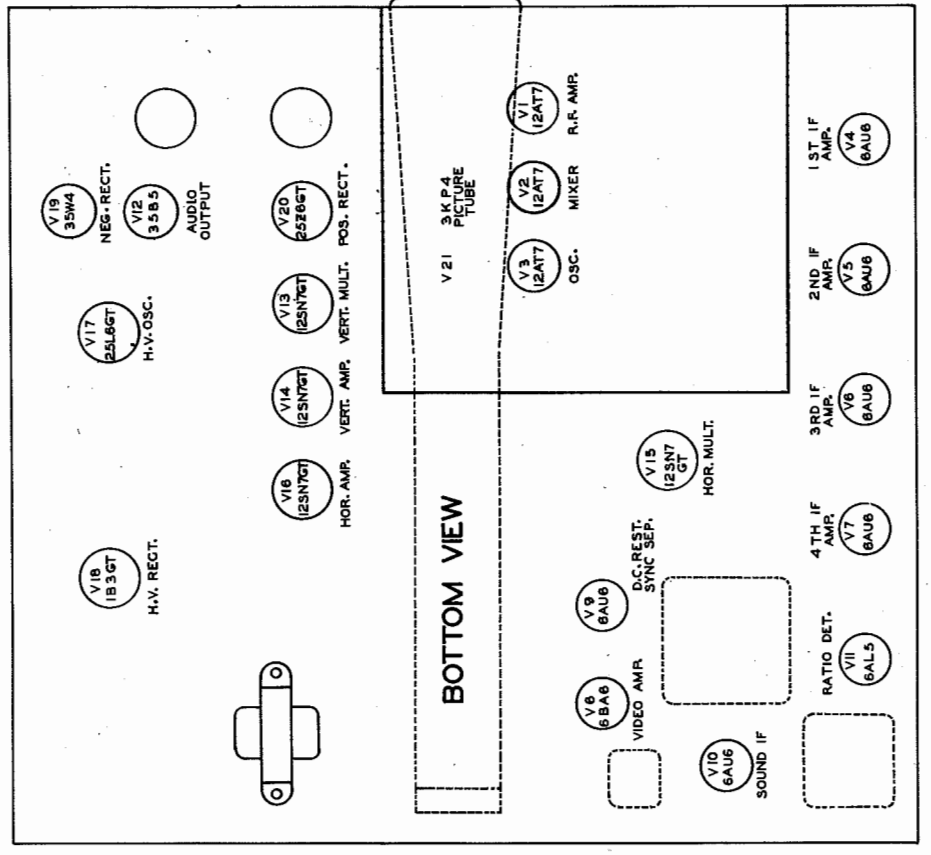
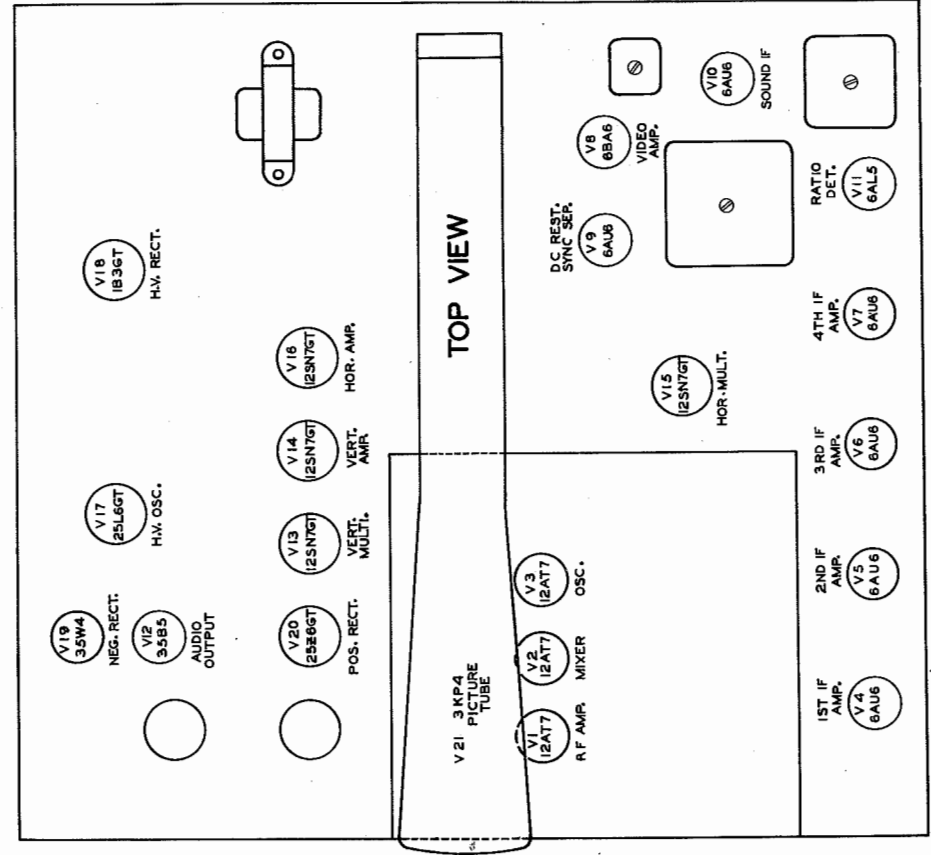
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9		
V1	12AT7	*220Ω	28KΩ	1Ω	6Ω		*200Ω	28KΩ	0Ω	4.5Ω		
V2	12AT7	*220Ω	0Ω	1800Ω	4.5Ω	4.5Ω	*200Ω	100KΩ	0Ω	2.5Ω		
V3	12AT7	*700Ω	4.7KΩ	0Ω	2.5Ω	2.5Ω	*700Ω	10KΩ	0Ω	0Ω		
V4	6AU6	20KΩ	0Ω	8Ω	12Ω	*360Ω	*360Ω	8Ω				
V5	6AU6	33KΩ	0Ω	15Ω	18Ω	*280Ω	*280Ω	8Ω				
V6	6AU6	28KΩ	0Ω	20Ω	23Ω	*220Ω	*220Ω	8Ω				
V7	6AU6	.2Ω	0Ω	28Ω	28Ω	*220Ω	*220Ω	120Ω				
V8	6BA6	1Meg.	0Ω	6Ω	7Ω	*5.5KΩ	*140Ω	0Ω				
V9	6AU6	11Meg.	122KΩ	8Ω	12Ω	220KΩ	0Ω	122KΩ				
V10	6AU6	1.2Ω	0Ω	6Ω	4.8Ω	280Ω	280Ω	8Ω				
V11	6AL5	22KΩ	22KΩ	0Ω	2.8Ω	Inf.	0Ω	Inf.				
V12	35B5	2.8KΩ	.5Ω	33Ω	40Ω	*500Ω	*140Ω	2.8KΩ				
V13	12SN7GT	9KΩ	*100KΩ	1000Ω	820KΩ	*3Meg.	*650KΩ	36Ω	40Ω			
V14	12SN7GT	1120KΩ	*470KΩ	110KΩ	14.7Meg.	*8.2Meg.	110KΩ	33Ω	36Ω			
V15	12SN7GT	14.7KΩ	47KΩ	11400Ω	1100KΩ	116Ω	11400Ω	15Ω	20Ω			
V16	12SN7GT	13.5Meg.	*92KΩ	1470Ω	13.5Meg.	*470Ω	1470Ω	30Ω	35Ω			
V17	25L6GT	Inf.	22Ω	.2Ω	0Ω	175KΩ	Inf.	32Ω	10Ω			
V18	1R3GT	Inf.	Inf.	Inf.	*200KΩ	Inf.	Inf.	Inf.	Inf.			
V19	35M4	Inf.	Inf.	33Ω	40Ω	33KΩ	40Ω	54Ω				
V20	25Z6GT	0Ω	46Ω	54Ω	120KΩ	54Ω	500Ω	40Ω	120KΩ			
PINS		1	2	3	4	5	6	7	8	9	10	11
V21	3KP4	122KΩ	*250KΩ	†4 Meg.	†5.5 Meg.	†4.4 Meg.	†200KΩ	†5.5Meg.	†4.4 Meg.	Inf.	8Ω	

* Measured from pin 8 of V20
 † Measured from pin 2 of V18
 ‡ Measured from pin 5 of V19

- 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.

PILOT MODEL TV-37

TUBE PLACEMENT CHART



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATING		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	PILOT PART No.	JENSEN PART No.	QUAM PART No.	
SP1	150Ω	3.1Ω			*	* Supplied on request. Give field resistance and direct current.
SP2	CONE DIA. 3 7/8"	V. C. DIA. 9/16"				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		PILOT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.					
T1	330Ω						Hor. Amp. Plate Choke

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	PILOT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T2	22Ω	280Ω	0Ω					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		PILOT PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T3	4600Ω	3.1Ω	360Ω	.5Ω	A-3877	RO-8	A-2930		

MISCELLANEOUS

ITEM No.	PART NAME	PILOT PART No.	NOTES
M1	Band Switch	100-66	
M2	Tuning Gang		
M3	Tuning Gang		
M4	Ballast Tube		

WIDTH AND HORIZONTAL LINEARITY ADJUSTMENTS

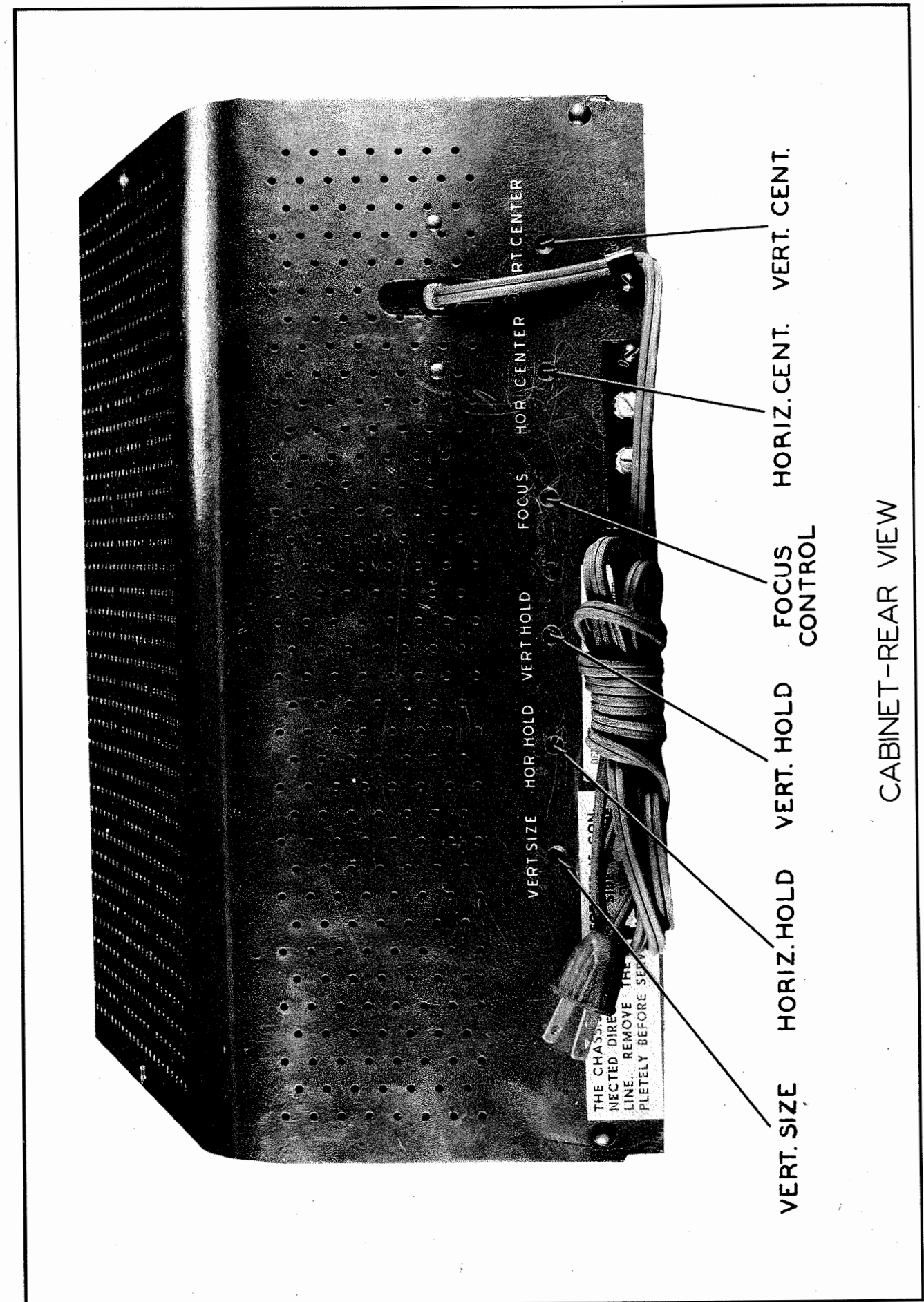
Turn horizontal linearity trimmer B1 counter-clockwise as far as possible without crowding left side of the picture. Then adjust B2 (width control) until picture just fills the mask horizontally.

HEIGHT AND VERTICAL LINEARITY ADJUSTMENTS

Adjust the height control until the picture fills the mask vertically. If the vertical linearity is not satisfactory exchange the 1.2 megohm resistor (R59A) connected between the plate circuit of the first vertical amplifier and the "negative going" supply for a larger or smaller valued resistor, until the linearity is improved. This is done on early production models. Later production models employ a different method of feedback to improve vertical linearity.

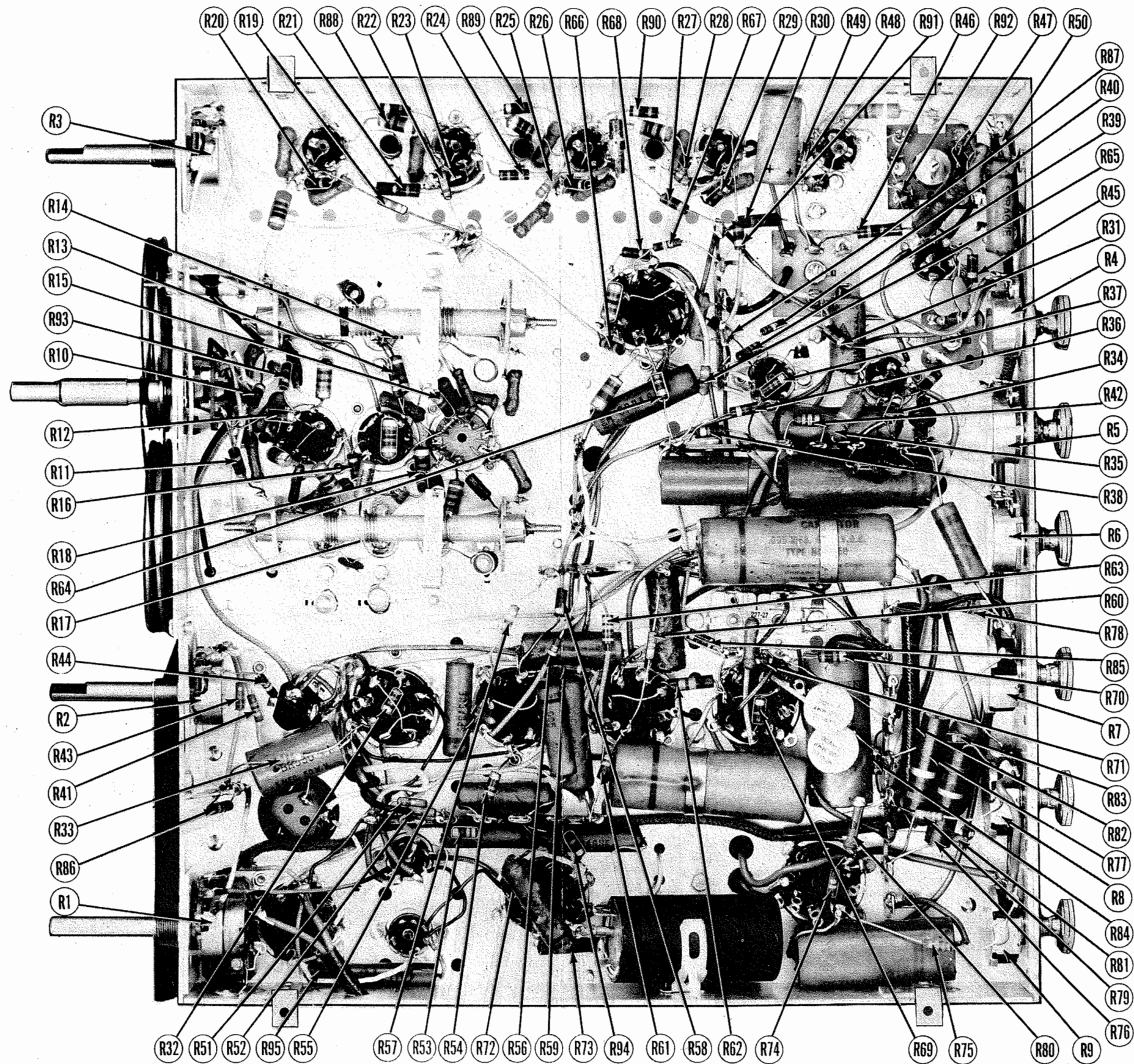
DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type and one set screw type control knobs.
2. Remove four wood screws holding bottom chassis plate to cabinet.
3. Pull power cord interlock back to disengage it.
4. Lift cabinet up off chassis.
5. Remove four wood screws holding chassis to bottom plate.
6. Remove two wood screws holding antenna strip. Remove chassis.



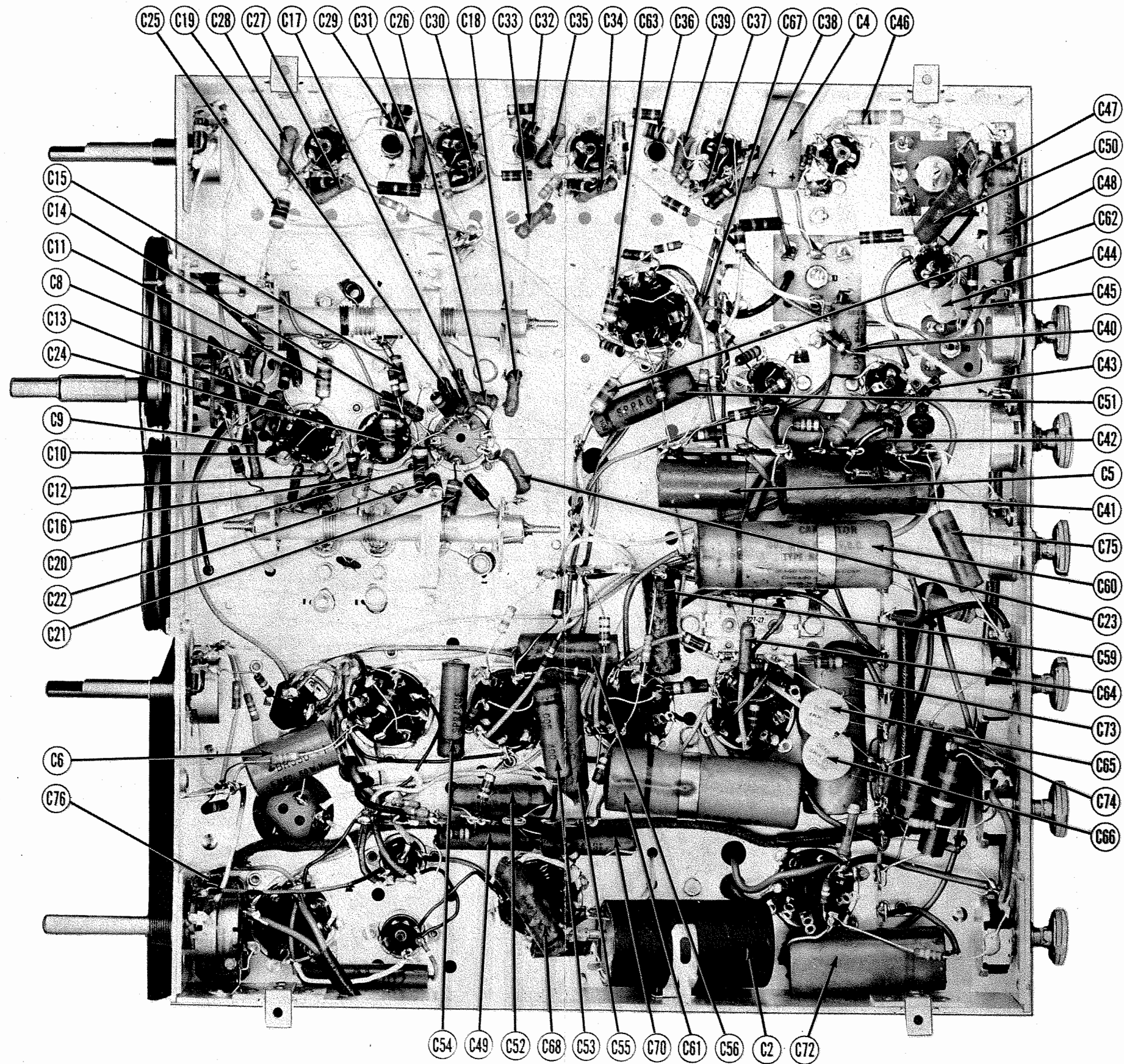
CABINET-REAR VIEW

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CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

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CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

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