

SCOTT
MODEL 820C

TRADE NAME	Scott Model 820C		
MANUFACTURER	Scott Radio Labs, Inc., 4541 Ravenswood Ave., Chicago, Ill.		
TYPE SET	Television Receiver		
TUBES	Twenty		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATING	1.64 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	Channels 2 thru 13		
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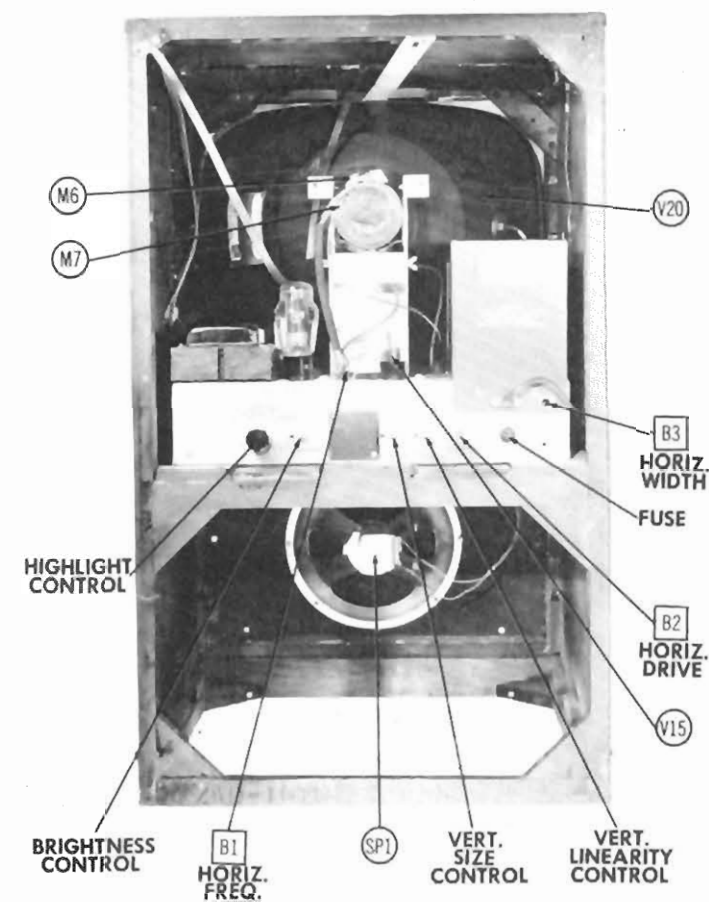
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DATE 9-52

SET 178

FOLDER 9



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B2) to its maximum counter clockwise position without the presence of a vertical white line in the picture.

Adjust the width slug (B3) for a picture slightly wider than enough to fill the picture mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove 4 push on type control knobs from front panel.
2. Remove 7 wood screws. Remove rear cover.
3. Disconnect built in antenna and speaker. Remove 2 wood screws. Remove antenna bracket.
4. Remove 1 wood screw loosening Crt. brace.
5. Remove 2 speaker nuts. Remove speaker.
6. Remove 4 chassis bolts. Remove chassis.

NOTE
FOR REMOVAL OF PICTURE TUBE IT IS NECESSARY TO REMOVE CHASSIS AS OUTLINED ABOVE.

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TRADE NAME	Sc
MANUFACTURER	Sc
TYPE SET	T
TUBES	T

POWER SUPPLY	110
TUNING RANGE-BRC	

Alignment Instruction

Disassembly Instruc

Horizontal Sweep Cir

Parts List and Descr

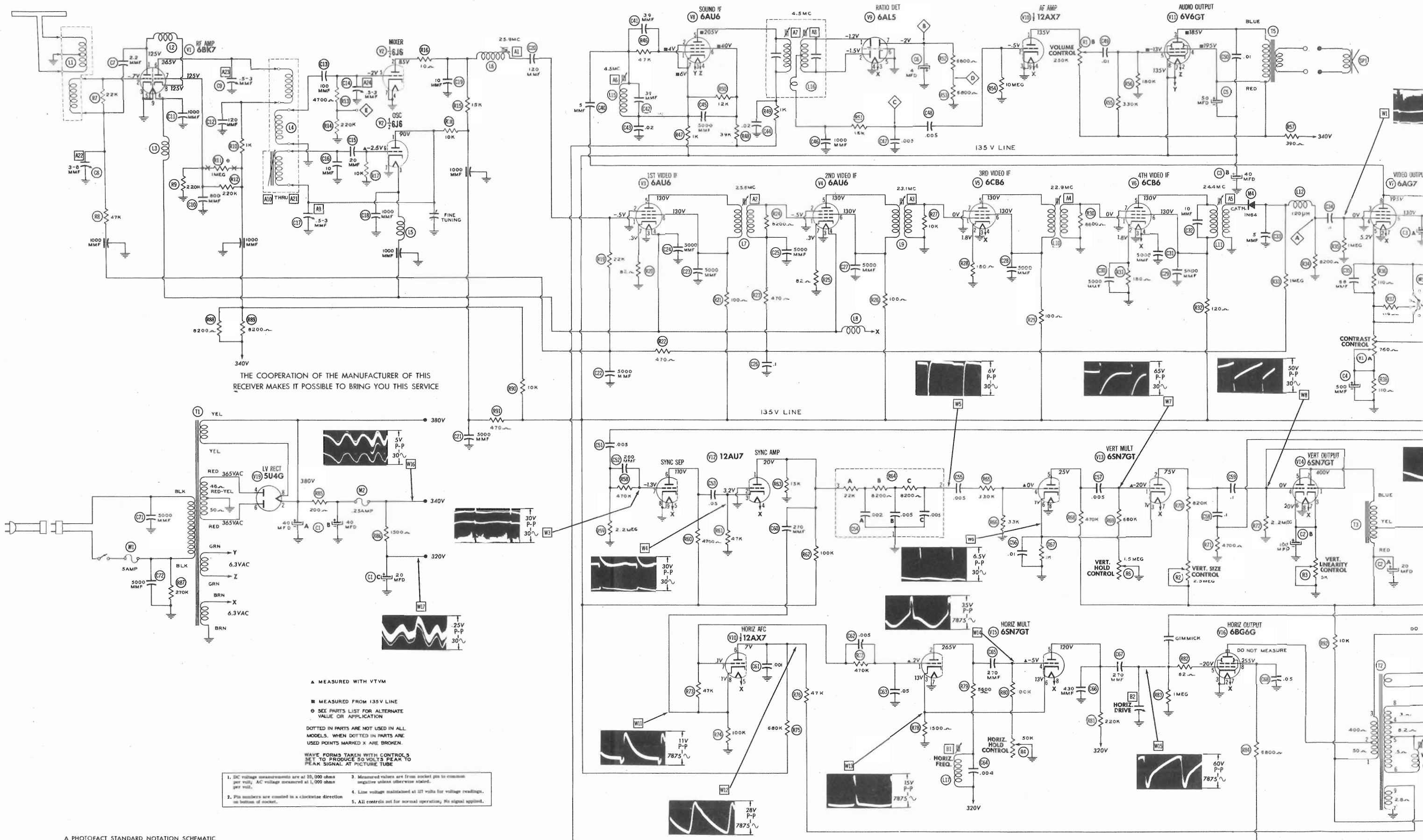
Photographs

Cabinet-Rear

Capacitor and

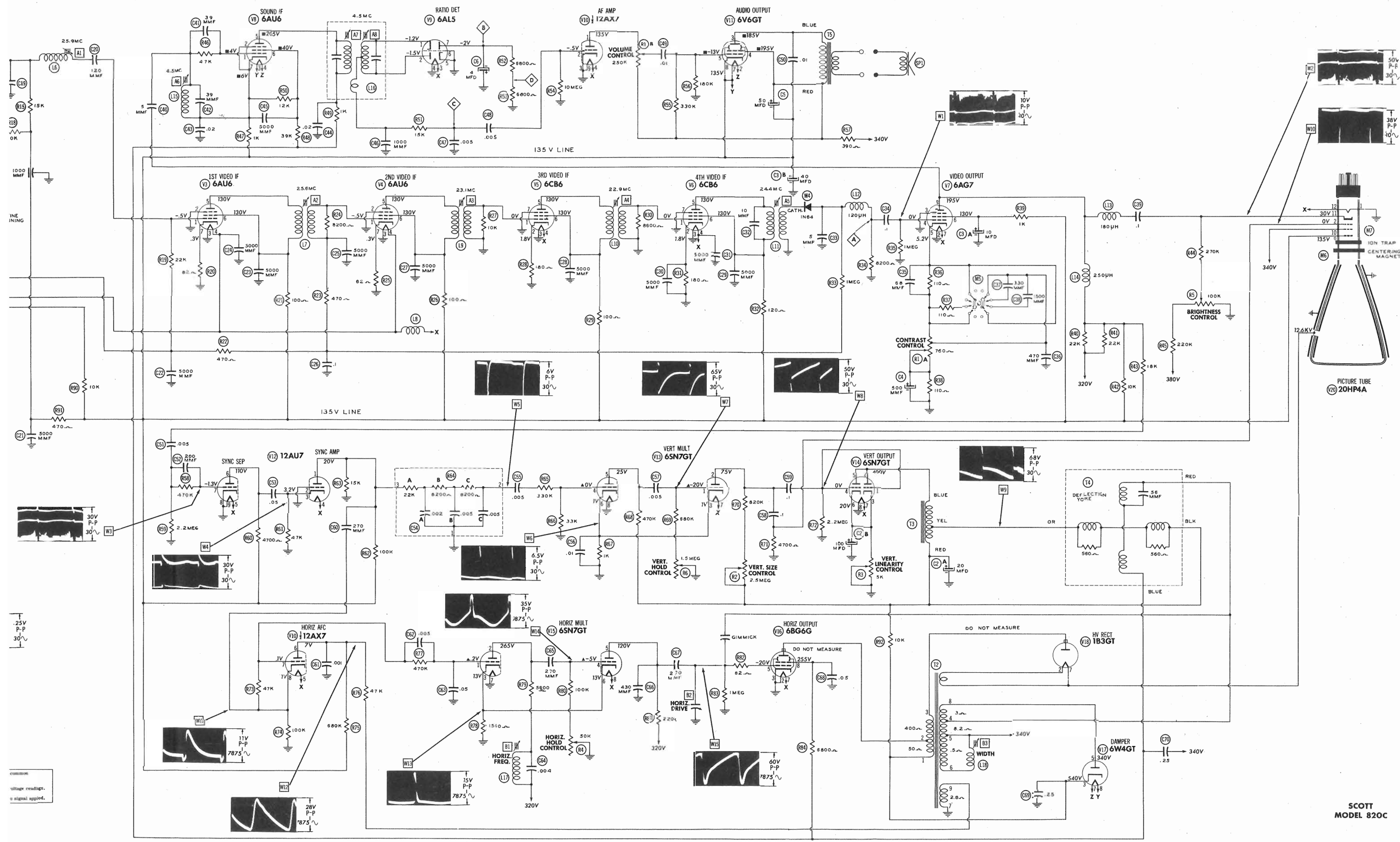
Chassis -Top

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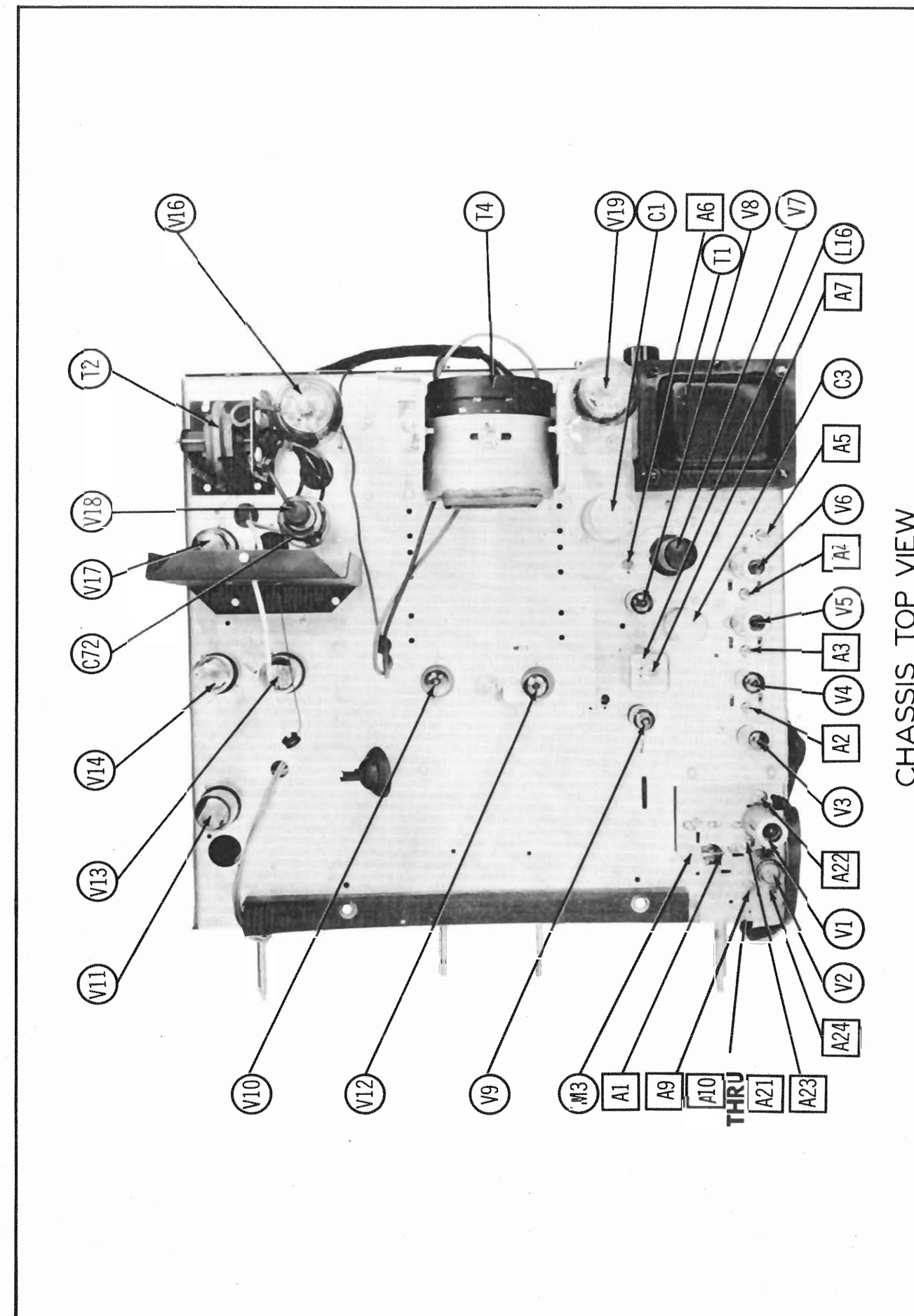
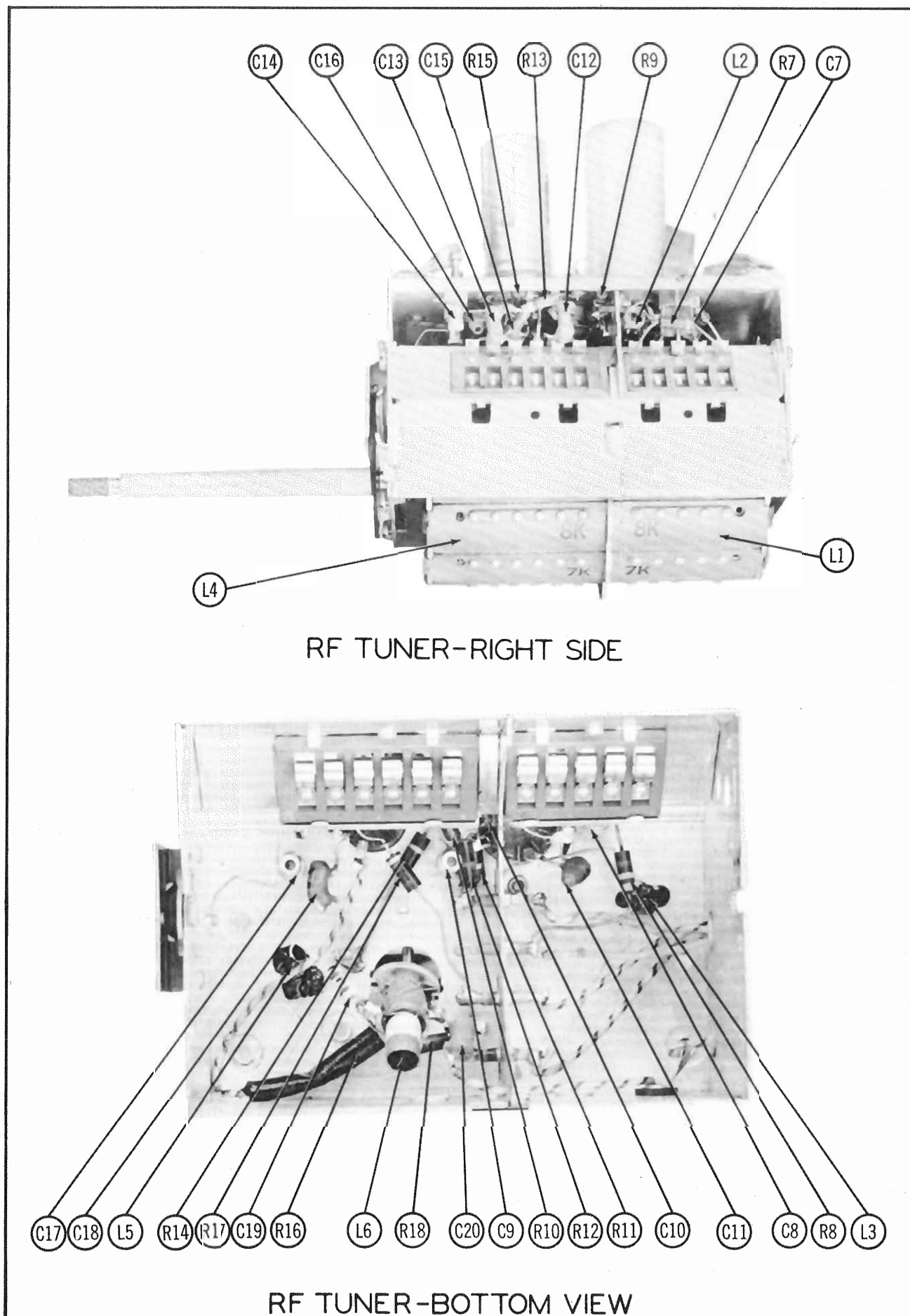


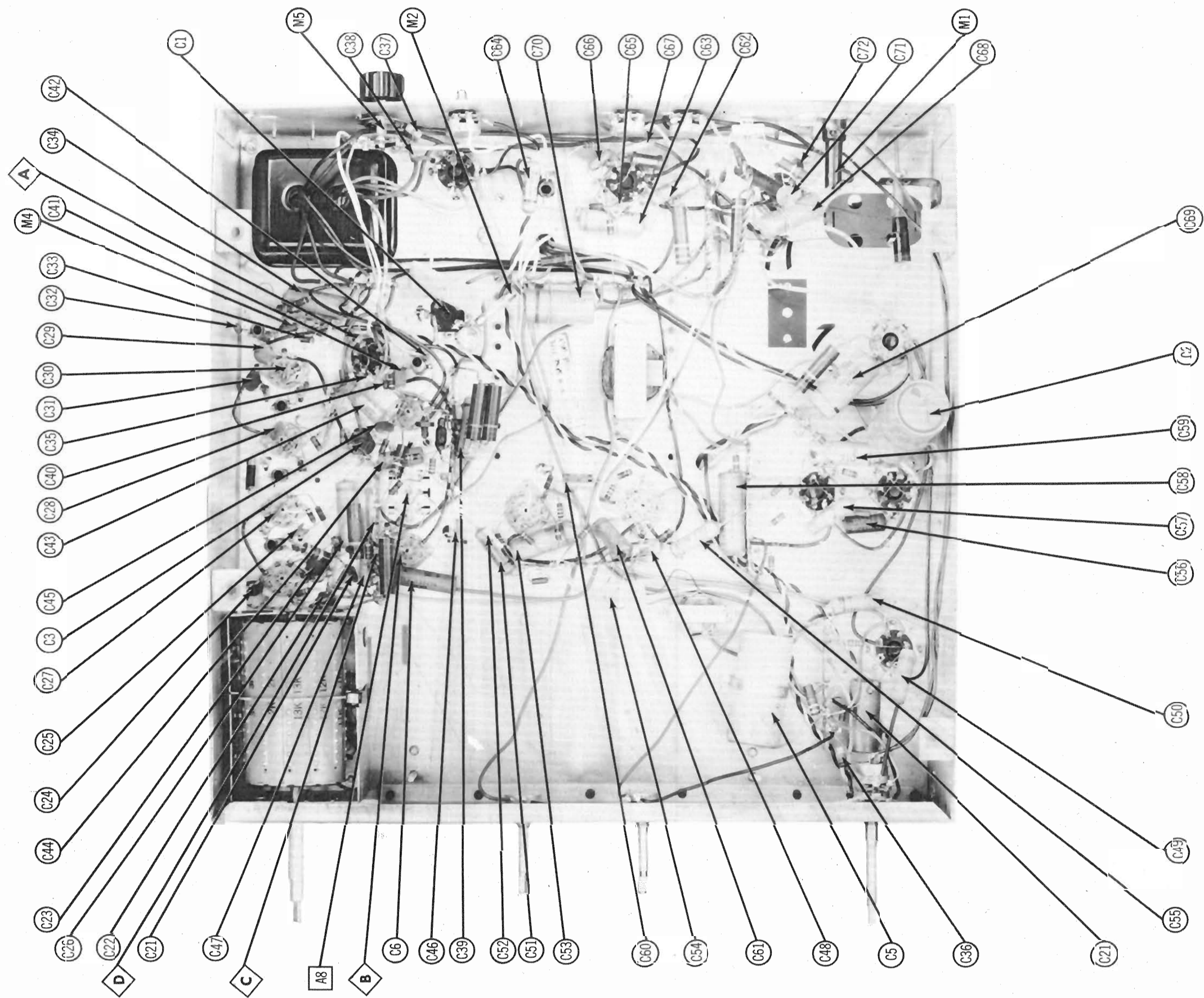
A PHOTOFAC STANDARD NOTATION SCHEMATIC
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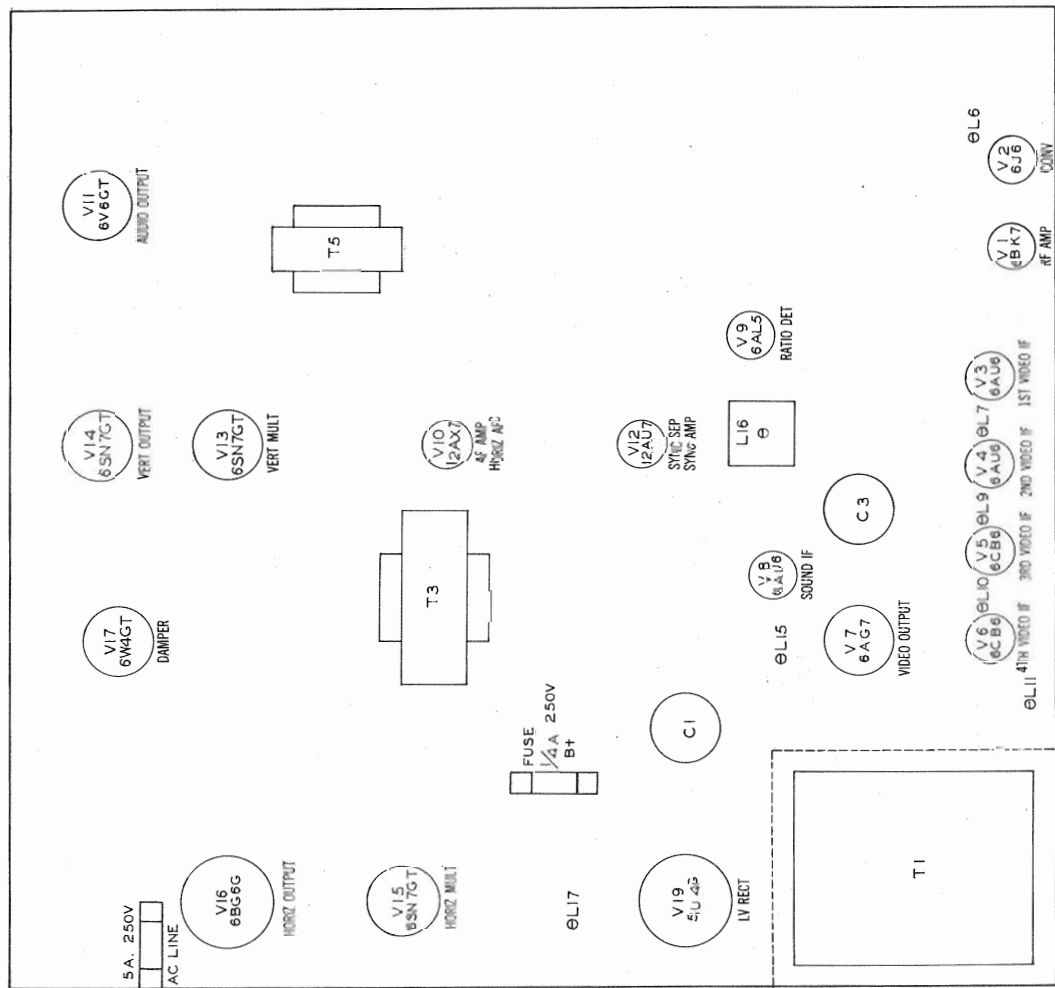
CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

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RESISTANCE MEASUREMENTS

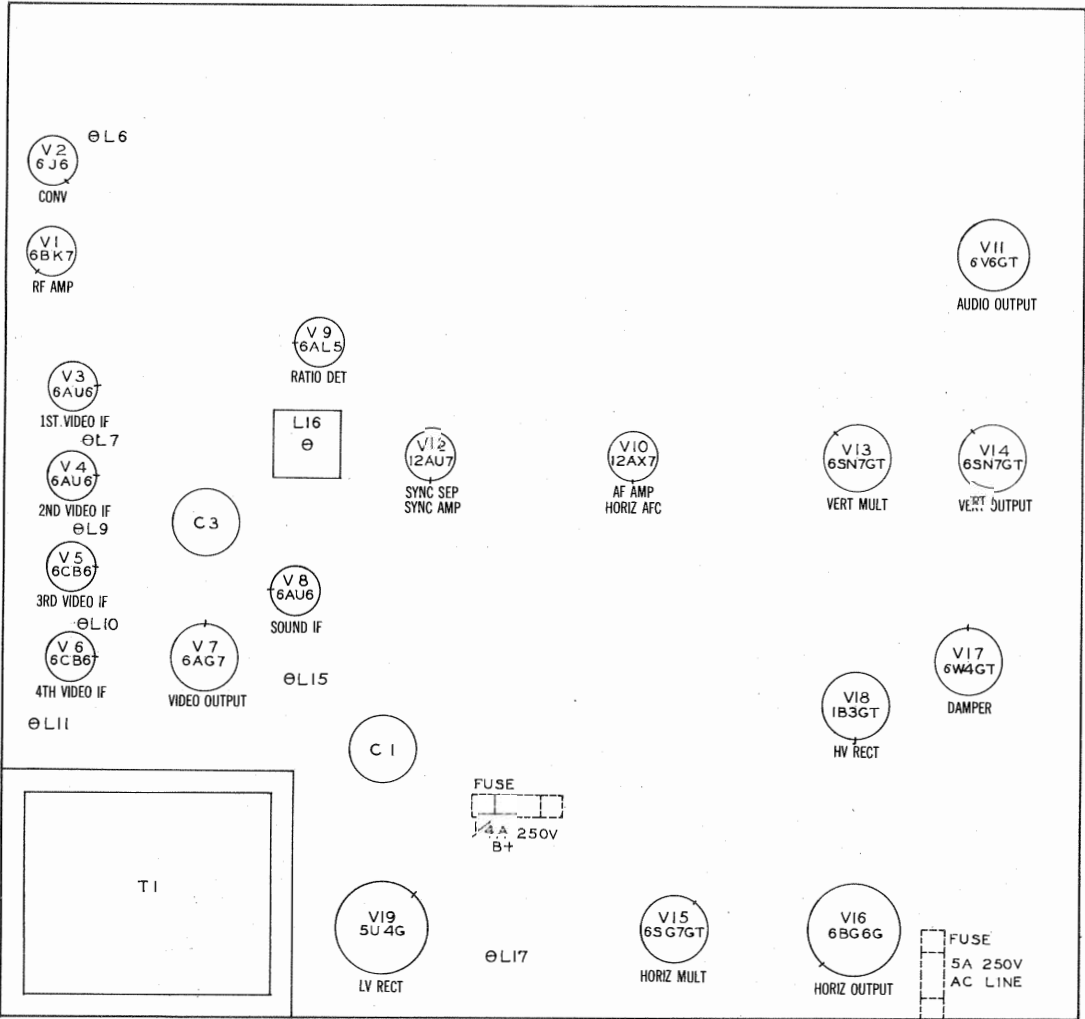
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7	INF	1Meg	0Ω	.1Ω	0Ω	75.3KΩ	110KΩ	INF	0Ω
V 2	6J6	10KΩ	15KΩ	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6AU6	1Meg	0Ω	0Ω	.1Ω	100Ω	100Ω	82Ω		
V 4	6AU6	1Meg	0Ω	0Ω	.1Ω	100Ω	100Ω	82Ω		
V 5	6CB6	.1Ω	180Ω	0Ω	.1Ω	100Ω	100Ω	0Ω		
V 6	6CB6	.1Ω	180Ω	0Ω	.1Ω	120Ω	120Ω	0Ω		
V 7	6AG7	0Ω	0Ω	0Ω	1Meg	500Ω	1KΩ	.1Ω	6.8KΩ	
V 8	6AU6	48KΩ	1KΩ	0Ω	.1Ω	1.2KΩ	9KΩ	1KΩ		
V 9	6AL5	INF	INF	.1Ω	0Ω	0Ω	0Ω	13KΩ		
V 10	12AX7	1250KΩ	10Meg	0Ω	.1Ω	.1Ω	47KΩ	150KΩ	100KΩ	0Ω
V 11	6V6GT	INF	.1Ω	1835Ω	1590Ω	120KΩ	INF	0Ω	35KΩ	
V 12	12AU7	15KΩ	0Ω	47KΩ	.1Ω	.1Ω	4.7KΩ	2.6Meg	0Ω	0Ω
V 13	6SN7GT	1.5Meg	2Meg	1KΩ	33KΩ	480KΩ	1KΩ	.1Ω	0Ω	
V 14	6SN7GT	2.2Meg	11KΩ	1.6KΩ	2.2Meg	11KΩ	1.6KΩ	.1Ω	0Ω	
V 15	6SN7GT	620KΩ	17.3KΩ	1.5KΩ	110KΩ	1220KΩ	1.5KΩ	0Ω	.1Ω	
V 16	6BG6G	INF	0Ω	0Ω	INF	1Meg	INF	.1Ω	17KΩ	TOP CAP #50Ω
V 17	6W4GT	INF	INF	110KΩ	INF	121Ω	INF	.1Ω	0Ω	
V 18	1B3GT	PINS 1 - 8	HAVE	INF	RESISTANCE					TOP CAP #45Ω
V 19	5U4G	INF	50KΩ	INF	46Ω	INF	50Ω	INF	50KΩ	
V 20	20HP4A	0Ω	4.7KΩ	PIN 6 0Ω	PIN 10 1200Ω	PIN 11 300KΩ	PIN 12 .1Ω			

ALL CONTROLS SET FOR NORMAL OPERATION, NO SIGNAL APPLIED
HIGHLIGHT SWITCH SET IN "NORMAL" POSITION
↑ MEASURED FROM PIN 2 of V19.
■ MEASURED FROM 135VDC LINE.



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



TOP VIEW

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE
No Raster, No Sound - V19, Fuse(M1, M2)

LOSS OF PICTURE OR SOUND
No pic., No sound, Has raster - V2, V3, V4, V5, V6, V7, V11
No pic., No sound, Has snow - V1, V2, V3
No pic., Has sound, Has raster - V7, V20
Has pic., No sound - V8, V9, V10, V11

SYNC FAILURE
No Vert. sync. - V2, V13
No Horiz. sync. - V12, V10, V14
No Vert. or Horiz. sync. - V12

SWEEP FAILURE
No raster, has sound - V15, V16, V17, V18, V20
No Vertical deflection - V14
Poor Vert. Linearity or foldover - V13, V14
Poor Horiz. Linearity or foldover - V15, V16, V17
Narrow picture - V15, V16, V17, V19
Vert. off freq. - V12, V13
Horiz. off freq. - V2, V10, V15

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ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT								
The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal multivibrator tube to disable the high voltage.								
VIDEO IF ALIGNMENT								
Remove the converter tube, V2, from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications.								
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS		
Direct	High side to an un-grounded tube shield floating over dummy converter tube. Low side to chassis.	25.9MC (Umod.)	Any	DC probe to point A Common to chassis.	A1	Adjust for maximum deflection. Attenuate generator to maintain 1 volt reading on VTVM.		
"	"	25.6MC	"	"	A2	"		
"	"	23.1MC	"	"	A3	"		
"	"	22.9MC	"	"	A4	"		
"	"	24.4MC	"	"	A5	"		
OVERALL VIDEO IF RESPONSE CHECK								
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.								
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS	
Direct	High side to an un-grounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp.)	21.6MC 22.6MC 26.1MC	Any	Vert amp. thru 10KΩ to point A Low side to chassis.		Check for response curve as per fig.1 with markers as shown. If necessary retouch A1 thru A5 for desired response.	
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM								
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS		
.01MFD	High side to point A Low side to chassis.	4.5MC (Unmod)	Any	DC probe to point B Common to chassis.	A6, A7	Adjust for maximum deflection.		
"	"	"	"	DC probe to point C Common to point B	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.		
SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE								
Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.								
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS	
.01MFD	High side to point A Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point B Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C6. Adjust for curve of maximum amplitude and symmetry as per fig. 2.	
"	"	"	"	"	Vert. amp. to point C Low side to chassis.	A8	Reconnect capacitor C7. Adjust so that 4.5MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.	
OSCILLATOR ALIGNMENT								
Remove the dummy converter tube and replace the original 6J6 in its socket. Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A9. It should be noted that this is an all channel oscillator circuit adjustment and should not be used to correct any individual channel. If adjustment of A9 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Set the fine tuning control to the mid-position of its range.								
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS	
Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC	13	Vert. amp. thru 10KΩ to point A Low side to chassis.	A10	Adjust to place marker at 50% on high frequency side of response curve.	
		207MC (10MC Swp)	205.25MC	12		A11		
		201MC (10MC Swp)	199.25MC	11		A12		
		195MC (10MC Swp)	193.25MC	10		A13		
		189MC (10MC Swp)	187.25MC	9		A14		
		183MC (10MC Swp)	181.25MC	8		A15		
		177MC (10MC Swp)	175.25MC	7		A16		
		85MC (10MC Swp)	83.25MC	6		A17		
		79MC (10MC Swp)	77.25MC	5		A18		
		69MC (10MC Swp)	67.25MC	4		A19		
		63MC (10MC Swp)	61.25MC	3		A20		
		57MC (10MC Swp)	55.25MC	2		A21		

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT							
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10. Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert amp. thru 10KΩ to point A ₂ . Low side to chassis.	A22, A23, A24	Adjust for response curve similar to fig. 4 with markers above 90%.
11. "	"	213MC (10MC Swp)	211.25MC 215.75 MC	13	"		Check for response curve similar to fig. 4. If markers fall below 70% on any channel make slight adjustments of A22, A23 and A24 with channel selector set for that channel. Recheck all channels to see that they have nto been seriously affected.
		201MC (10MC Swp)	199.25MC 203.75MC	11			
		195MC (10MC Swp)	193.25MC 197.75MC	10			
		189MC (10MC Swp)	187.25MC 191.75MC	9			
		183MC (10MC Swp)	181.25MC 185.75MC	8			
		177MC (10MC Swp)	175.25MC 179.75MC	7			
		85MC (10MC Swp)	83.25MC 87.75MC	6			
		79MC (10MC Swp)	77.25MC 81.75MC	5			
		69MC (10MC Swp)	67.25MC 71.75MC	4			
		63MC (10MC Swp)	61.25MC 65.75MC	3			
		57MC (10MC Swp)	55.25MC 59.75MC	2			

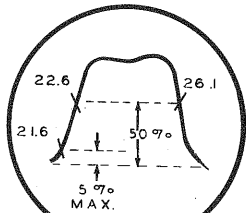


FIG. 1

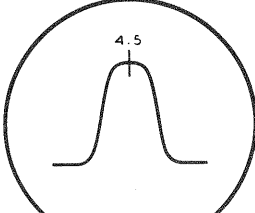


FIG. 2

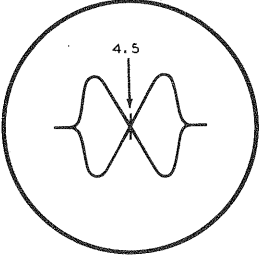


FIG. 3

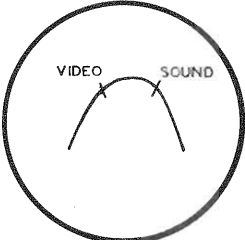
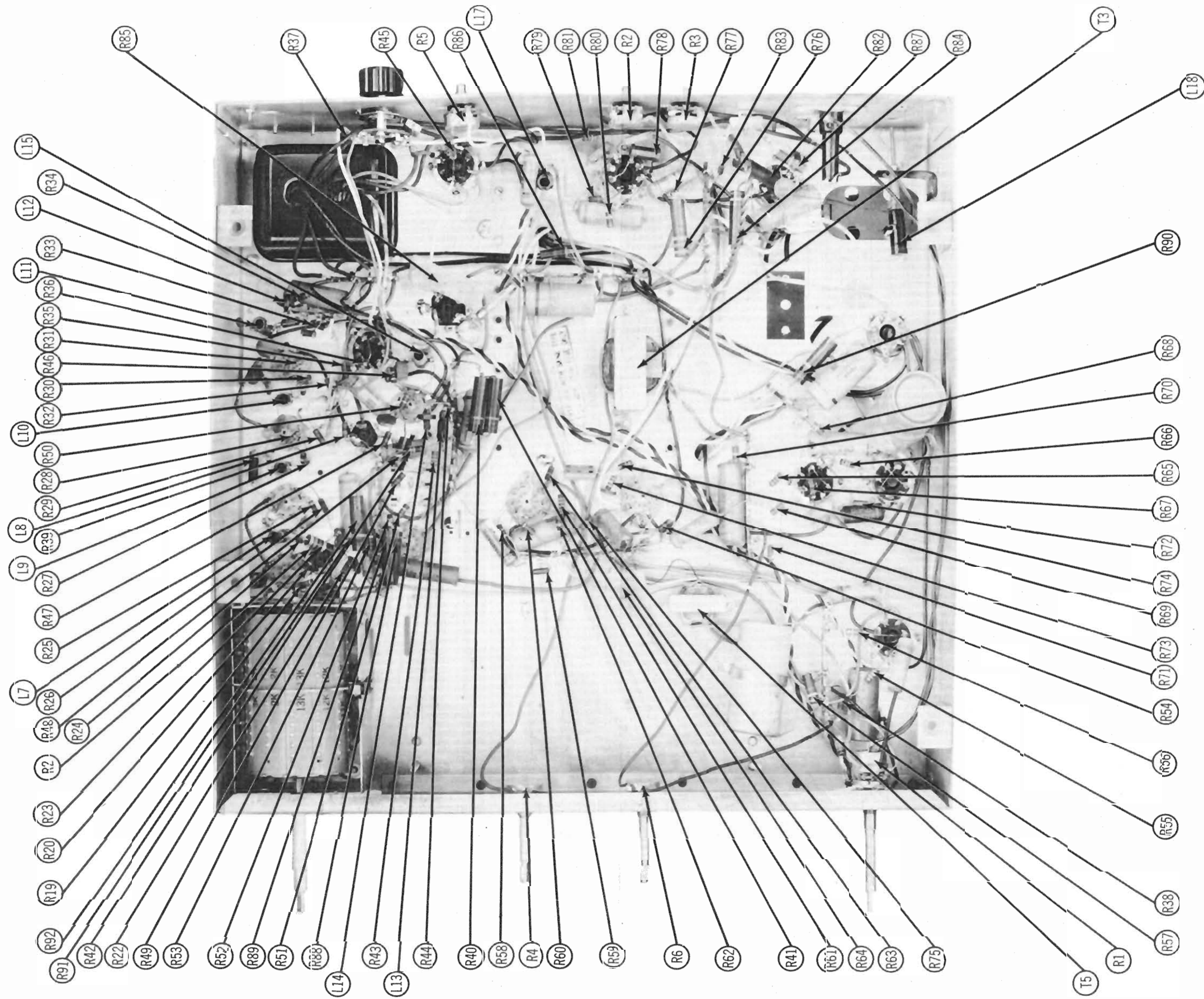


FIG. 4

SCOTT
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CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

SCOTT
MODEL 8.20C

