

CABINET-REAR VIEW

## DISASSEMBLY INSTRUCTIONS

### CHASSIS REMOVAL

1. Remove rear cover (10 screws) and remove 6 control knobs from front of cabinet.
2. Disconnect antenna wires from terminal board and power plug to convergence board picture tube socket. Disconnect 5 wires from yoke assembly, a red, blue, yellow, yellow/black, and blue gun, and magnet ground from chassis. Disconnect speaker wires from output transformer.
3. Remove 4 screws from bottom of cabinet and 2 bolts from UHF and VHF tuner brace. Remove chassis and tuners.

### PICTURE TUBE REMOVAL

1. Follow "Chassis Removal" instructions and remove convergence yoke and picture tube yoke assembly.
2. Lay cabinet face down on soft protective surface, remove 4 screws from picture tube shield, and remove shield.
3. Remove grounding spring from picture tube, loosen screws on picture tube mounting strap, and remove picture tube.

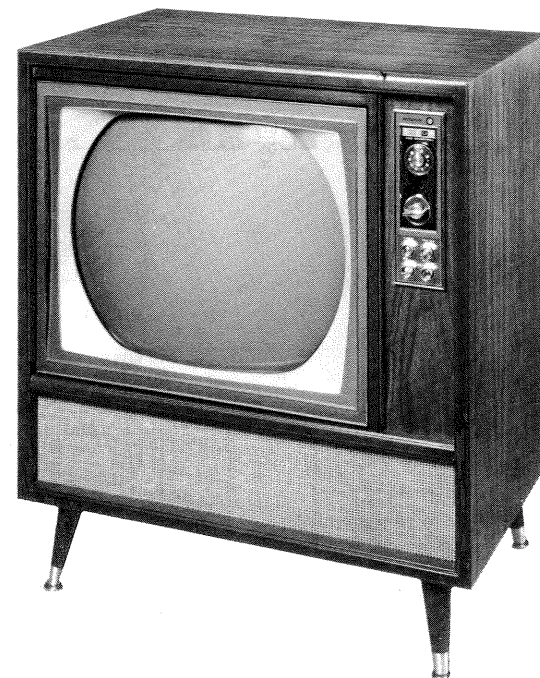
SET 751 FOLDER 3

WESTINGHOUSE  
CHASSIS V-2476-1

PHOTOFACT® Folder

with CIRCUITRACE™

WESTINGHOUSE  
CHASSIS V-2476-1



MODEL H-CK6120

TRADE NAME	Westinghouse Models H-CT6105, H-CK6110/6111/6112/6113/6120/6121/6130/6140/6142/6143 ..... Chassis V-2476-1		
SUPPLIER	For current address, see Master Index.		
TYPE SET	Color Television Receiver		
TUBES	VHF: Twenty-Six, UHF: One Transistor		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	295 Watts, 3.08 Amps. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		

## SERVICING IN THE FIELD

### SAFETY GLASS

The safety glass is an integral part of the picture tube.

by the proper setting of the Horizontal Oscillator coil (Wave-form slug, B1).

### FUSE OR FUSE DEVICE

A 2½" length of fuse wire is used for filament protection. (For location, see M1 in photo "Chassis - Bottom View".)

### HORIZONTAL LINEARITY

The linearity may be varied by a Horizontal Efficiency Coll. (See "Tube Placement Chart" for location.)

A Circuit Breaker is used for low voltage power supply protection and may be reset by depressing the reset button. (See "Tube Placement Chart" for location.)

### CENTERING

Centering is accomplished by a Horizontal and Vertical Centering control located at rear of set.

### VHF OSCILLATOR ADJUSTMENT

The fine tuning mechanically engages osc. slug for adjustment (one slug for each channel).

### FOCUS

The focus may be varied by means of a Focus Control. (See "Tube Placement Chart" for location.)

### AGC

The AGC may be varied by means of an AGC Control. (See "Tube Placement Chart" for location.)

### HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the horizontal hold is accomplished

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



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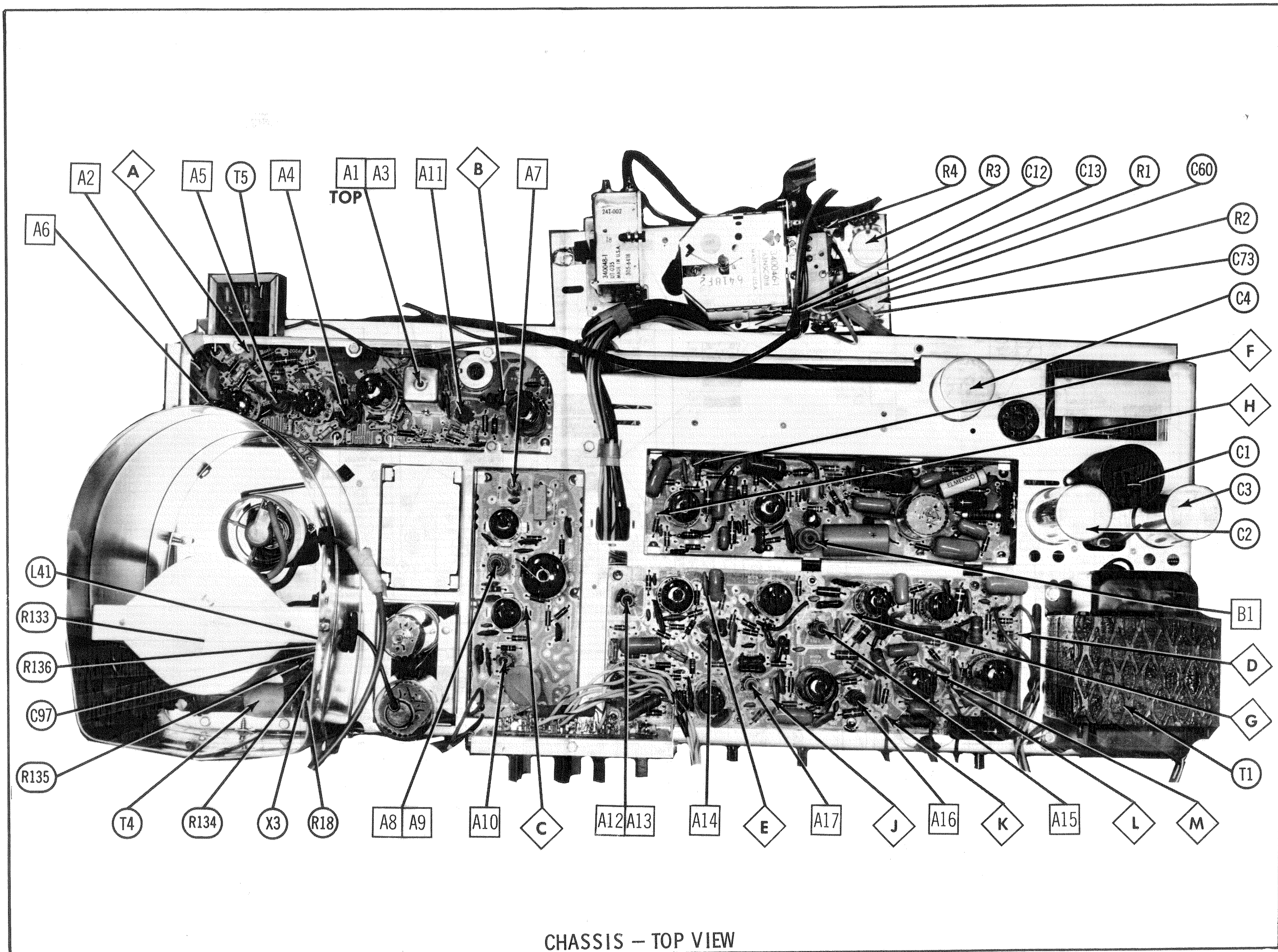
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DATE 4-65

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CHASSIS — TOP VIEW

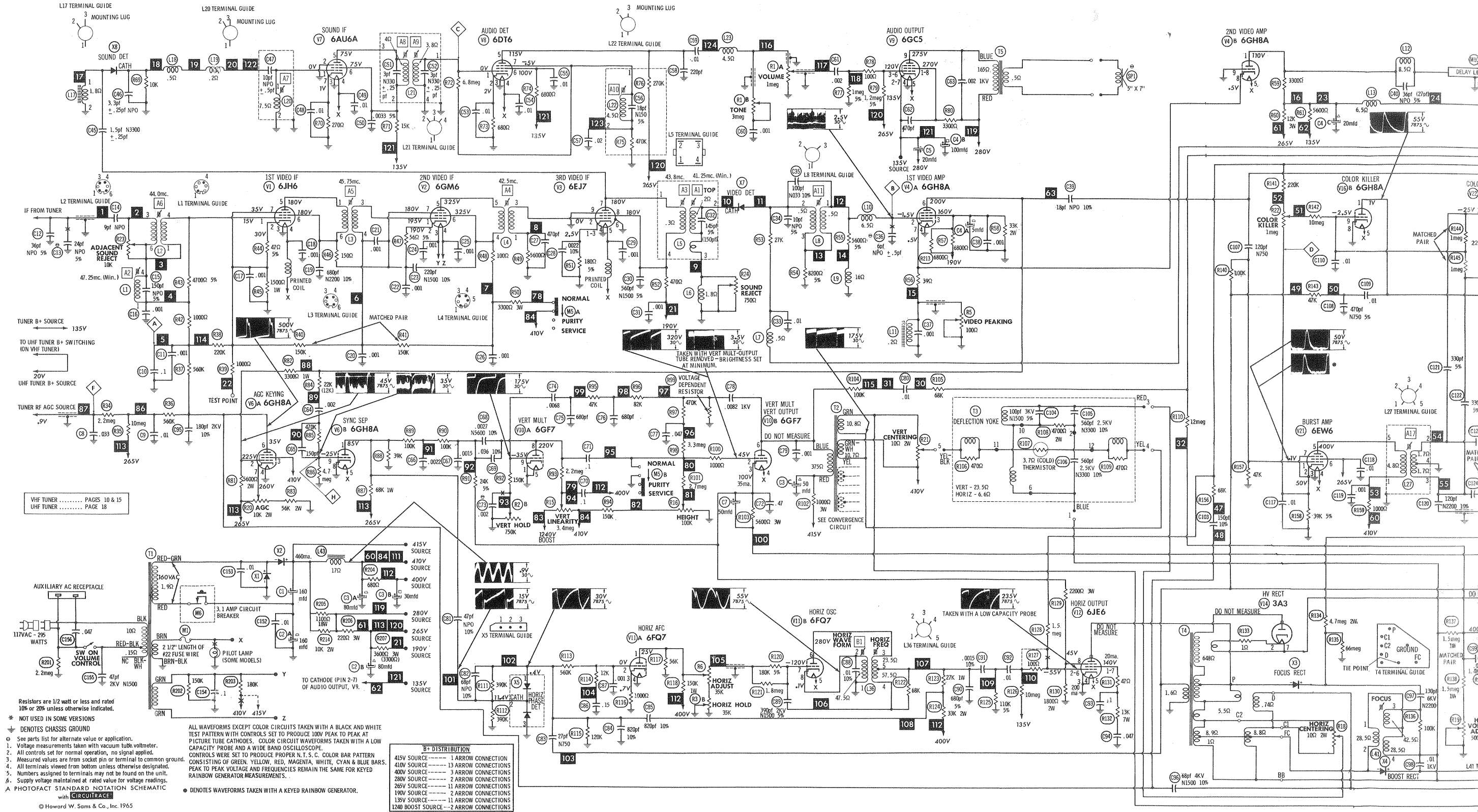
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FOLDER 3

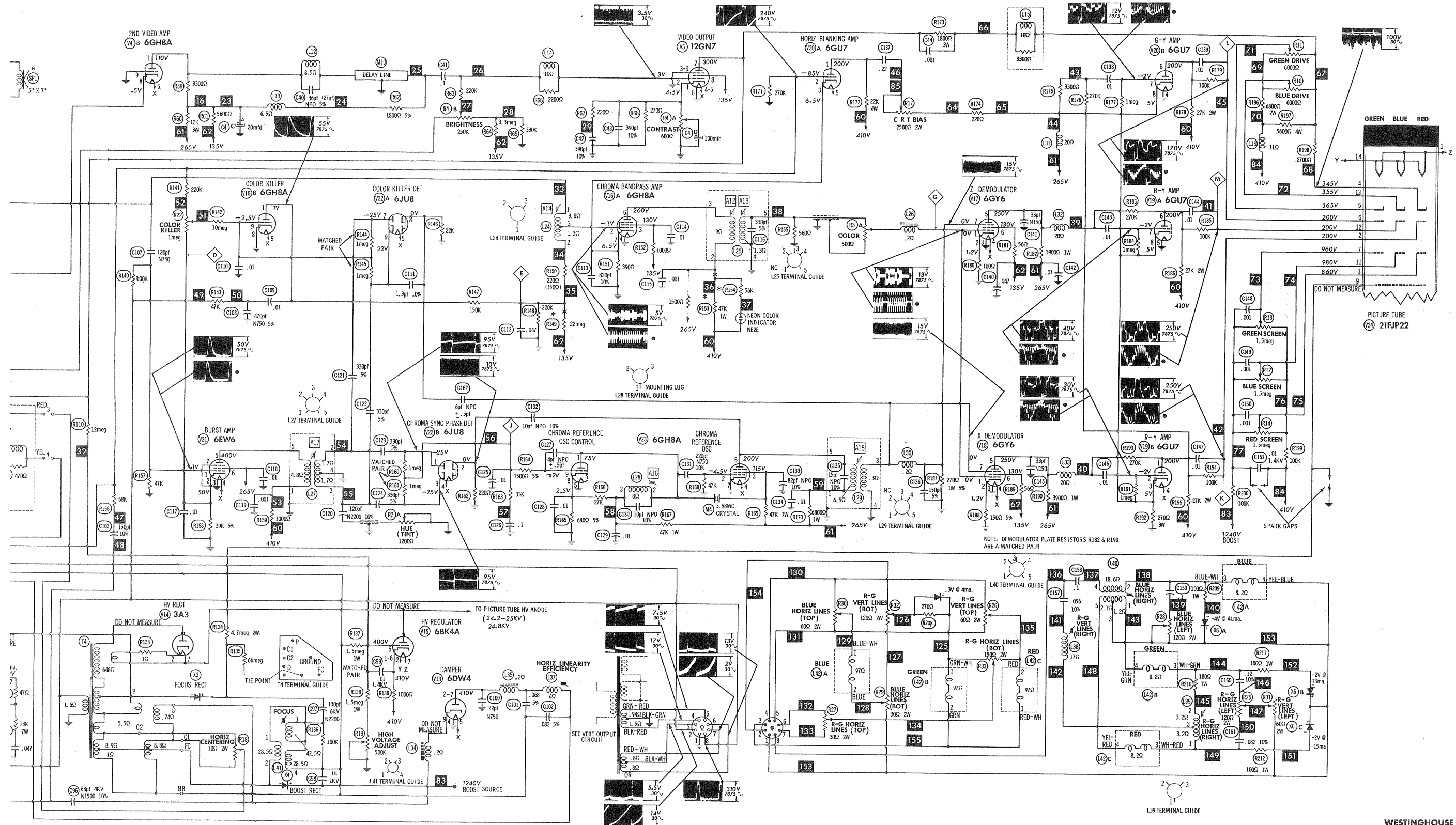
- M
- BLUE DRIVE
- BLUE SCREEN
- SOUND REJECT
- HORIZ CENTERING
- FOCUS
- HI-VOLTAGE ADJ
- ADJACENT SOUND REJECT
- HORIZ LINEARITY (EFF)
- QUADRATURE COIL

CHASSIS REMOVAL

1. Remove rear cover (10 screws) and front of cabinet.
2. Disconnect antenna wires from convergence board picture tube so yoke assembly, a red, blue, yellow, magnet ground from chassis. Disconnect transformer.
3. Remove 4 screws from bottom of VHF tuner brace. Remove chassis

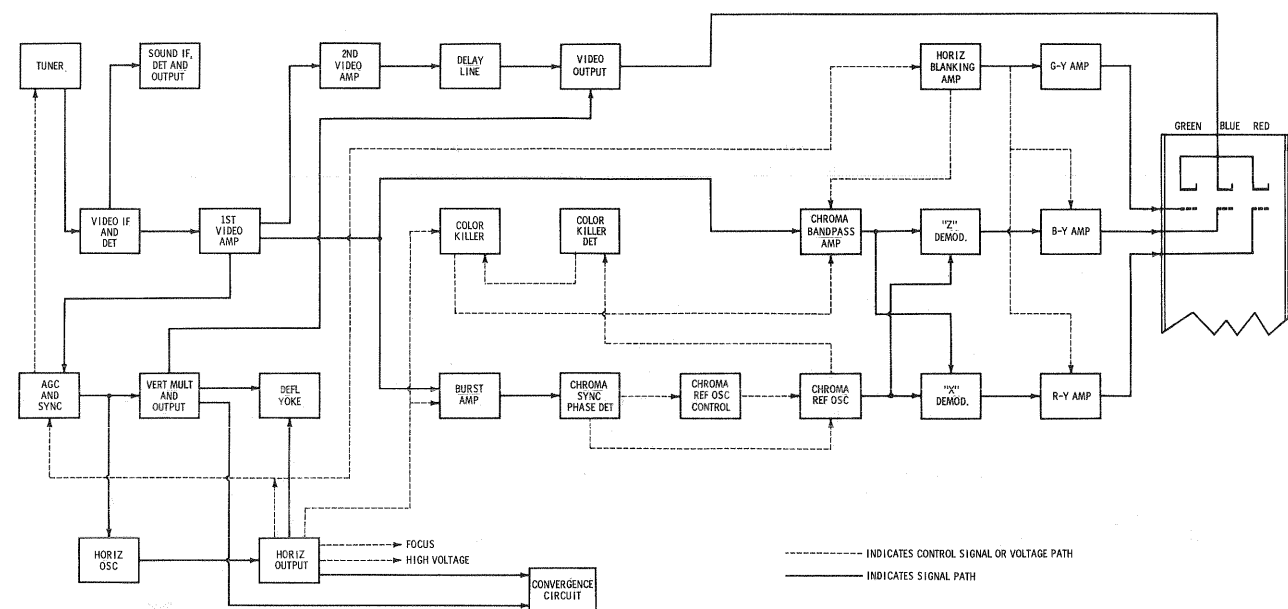
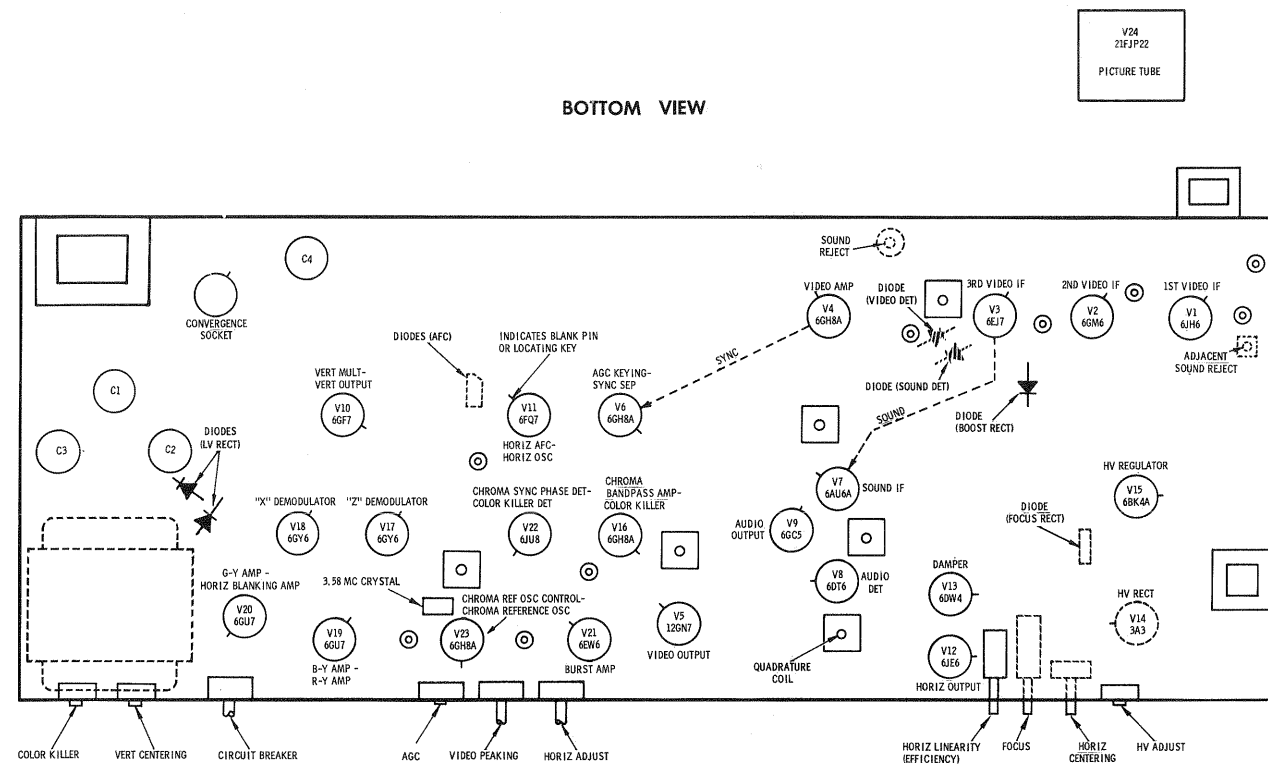






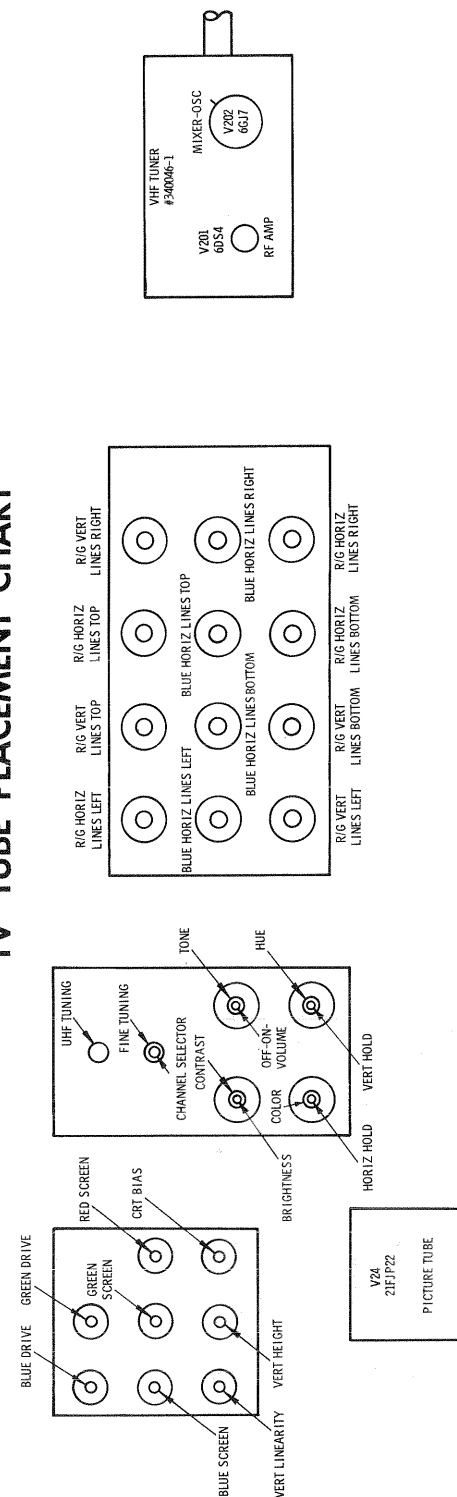


### TV TUBE PLACEMENT CHART

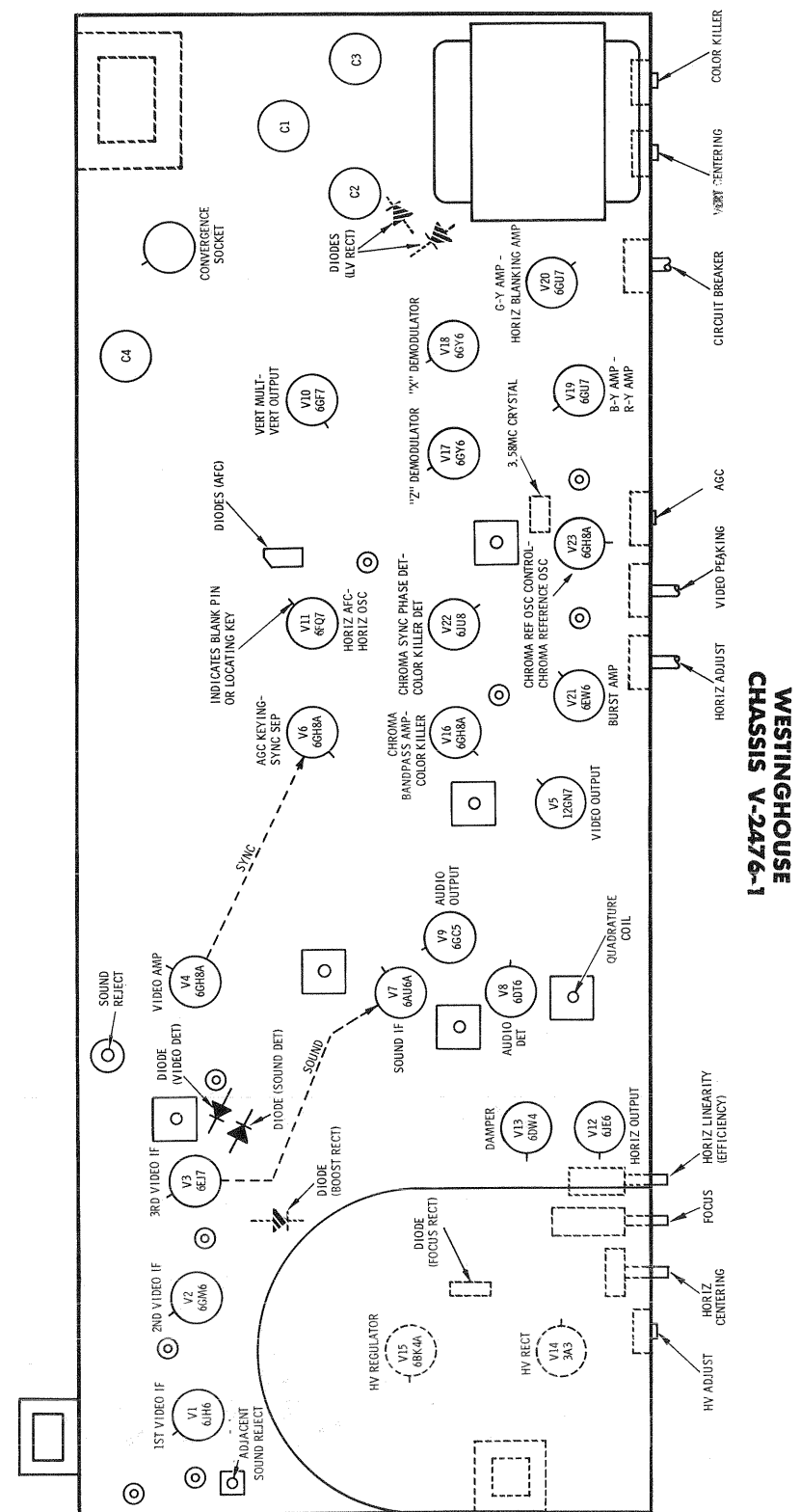


### BLOCK DIAGRAM

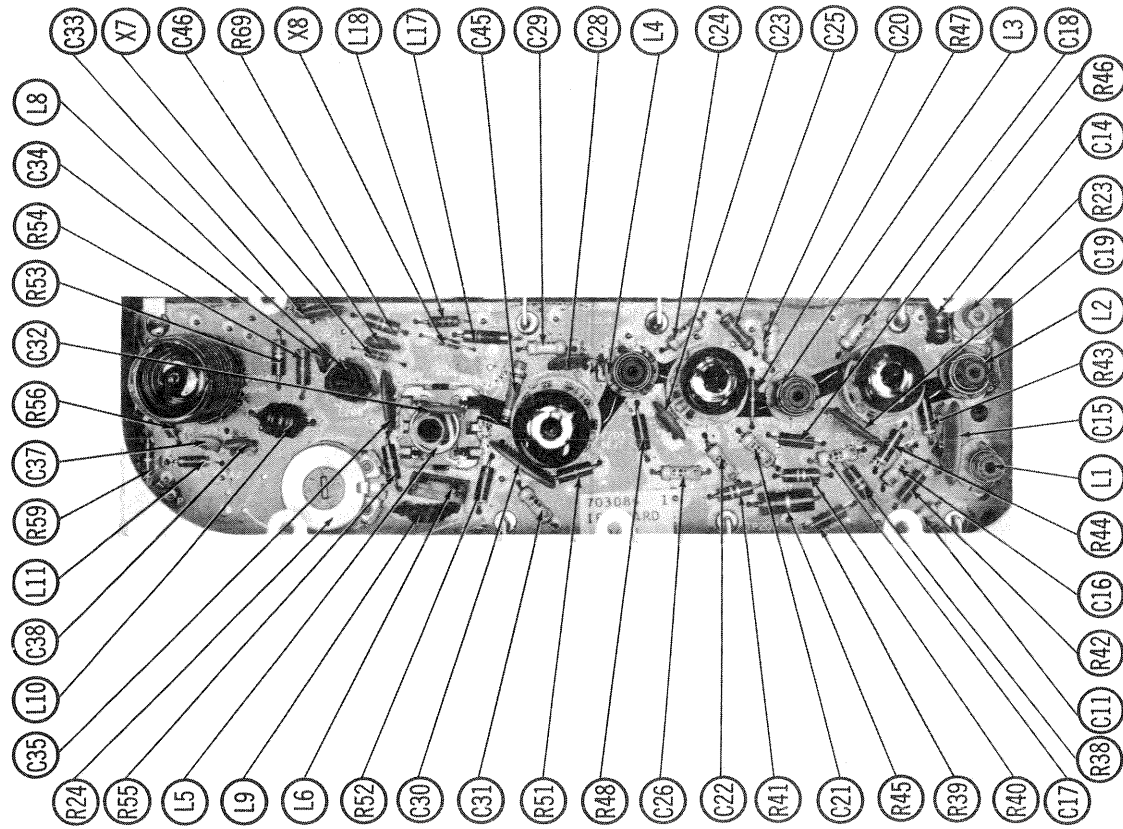
## TV TUBE PLACEMENT CHART



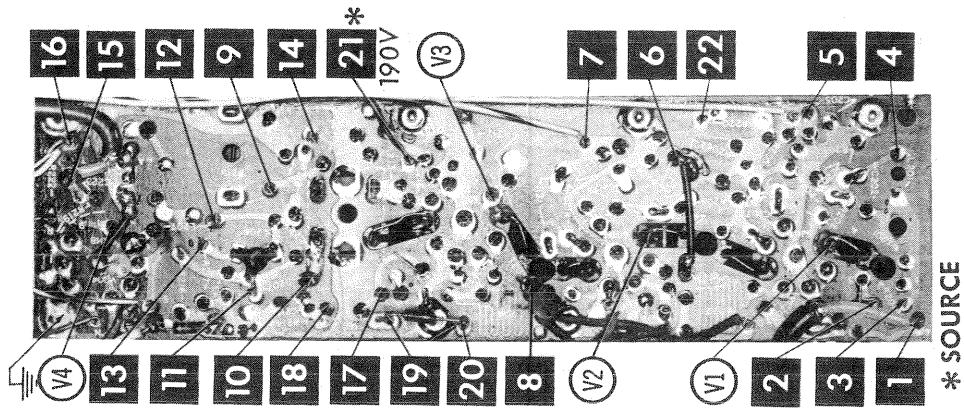
**TOP VIEW**



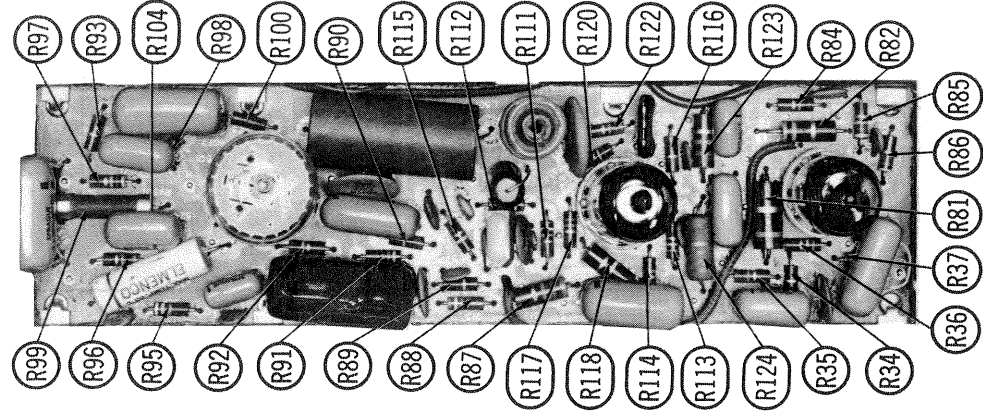
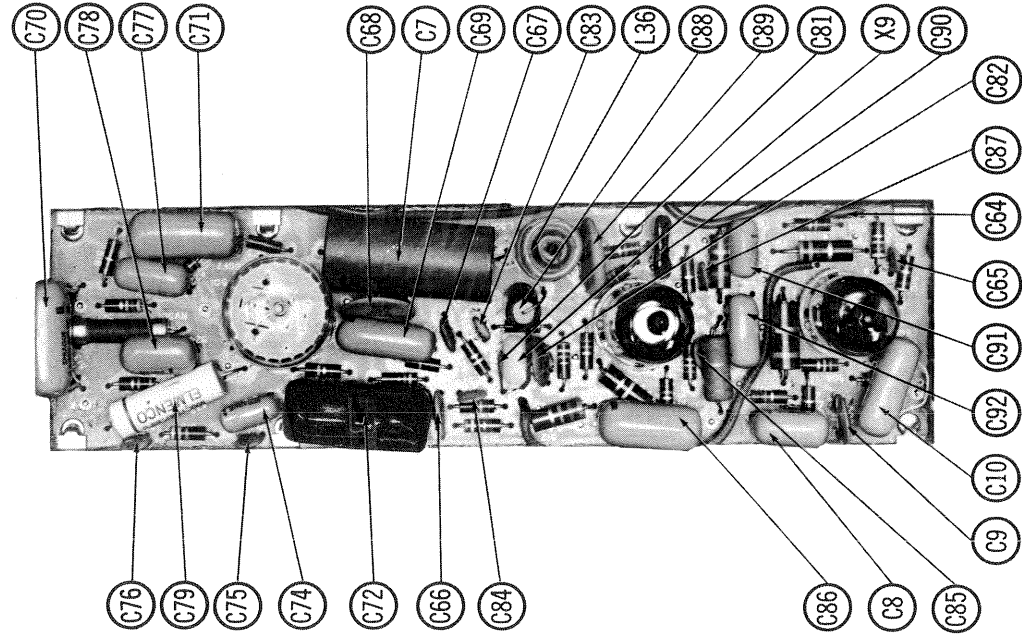
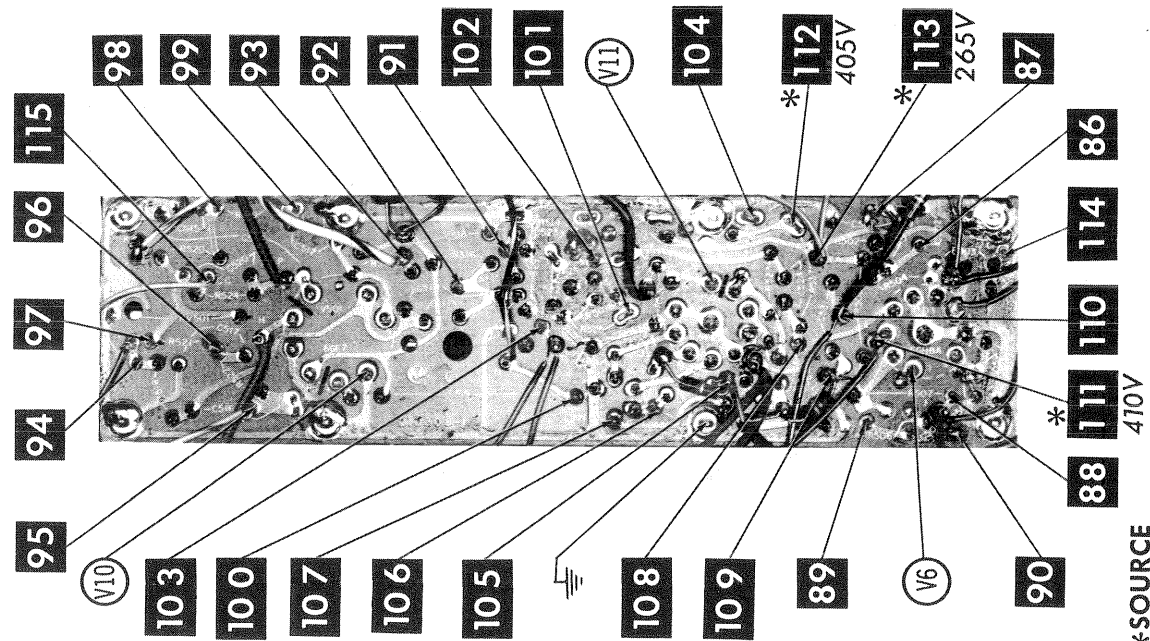
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



VIDEO IF PRINTED BOARD



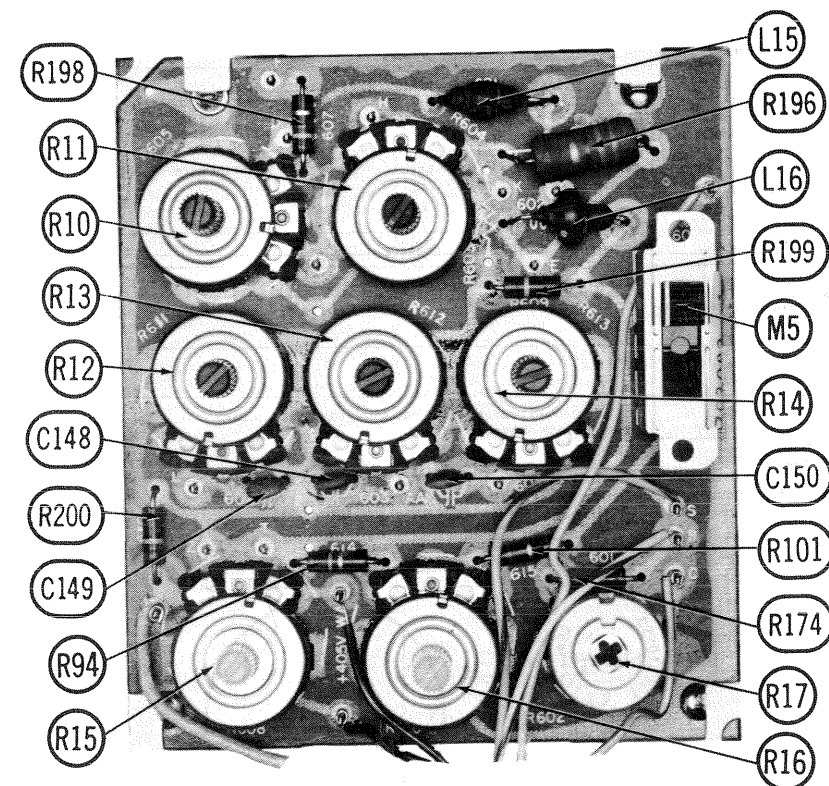
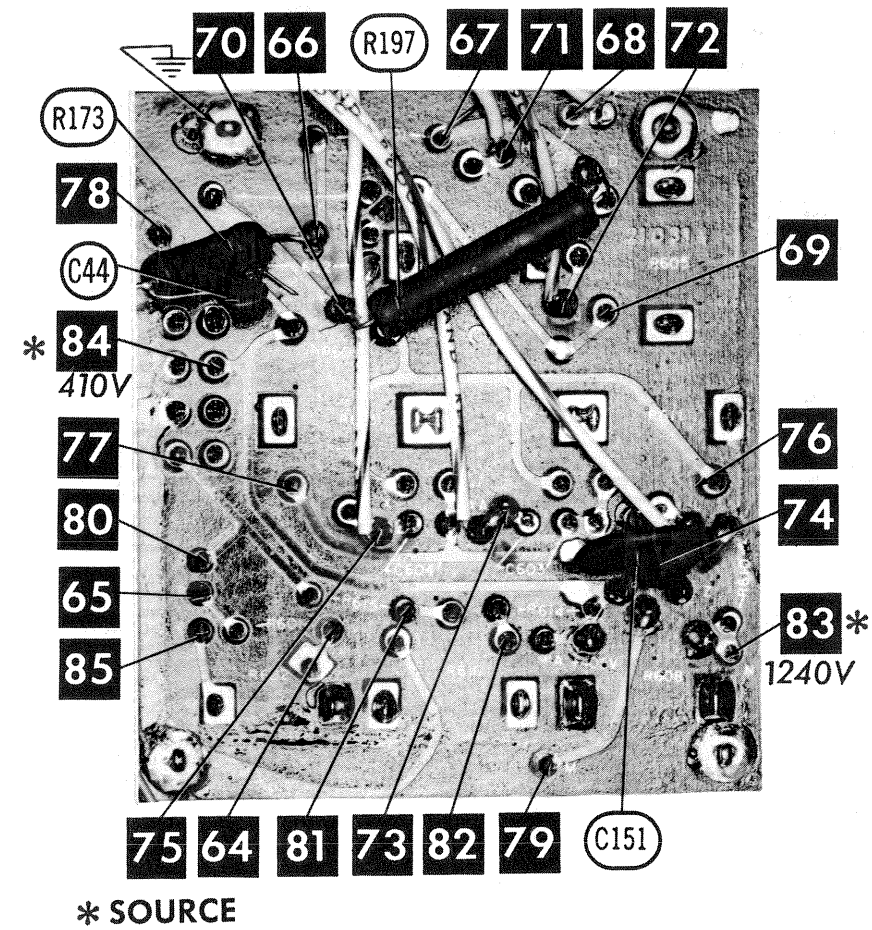
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



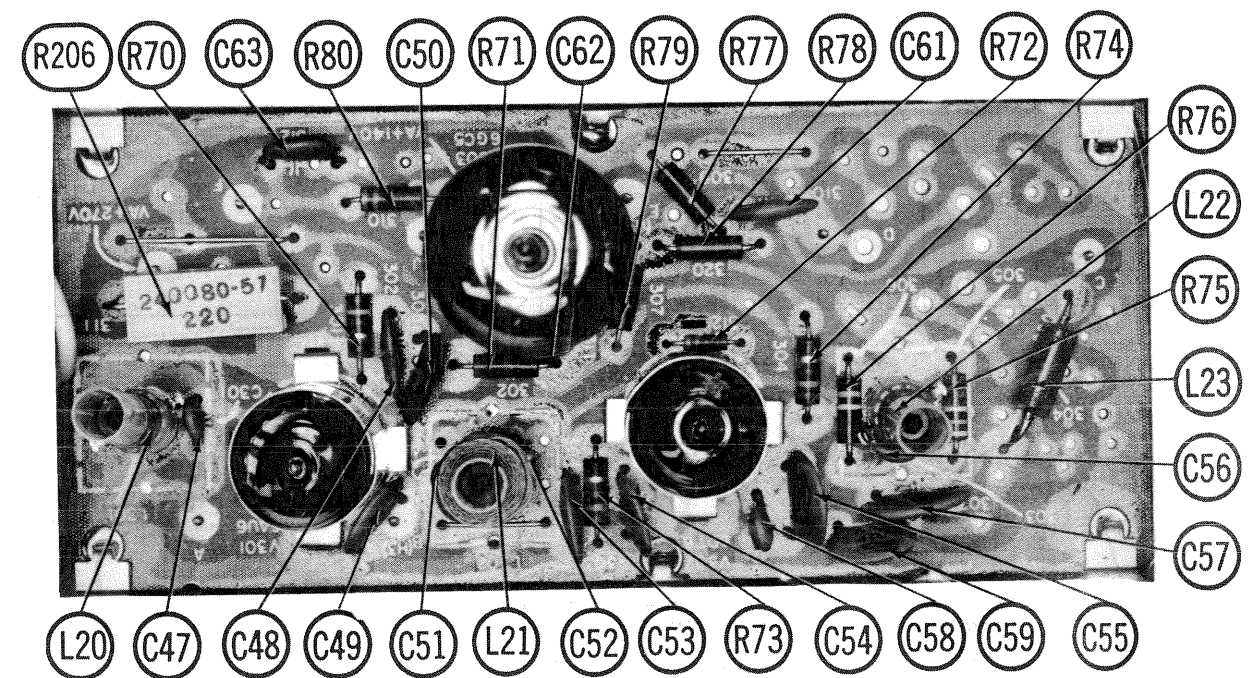
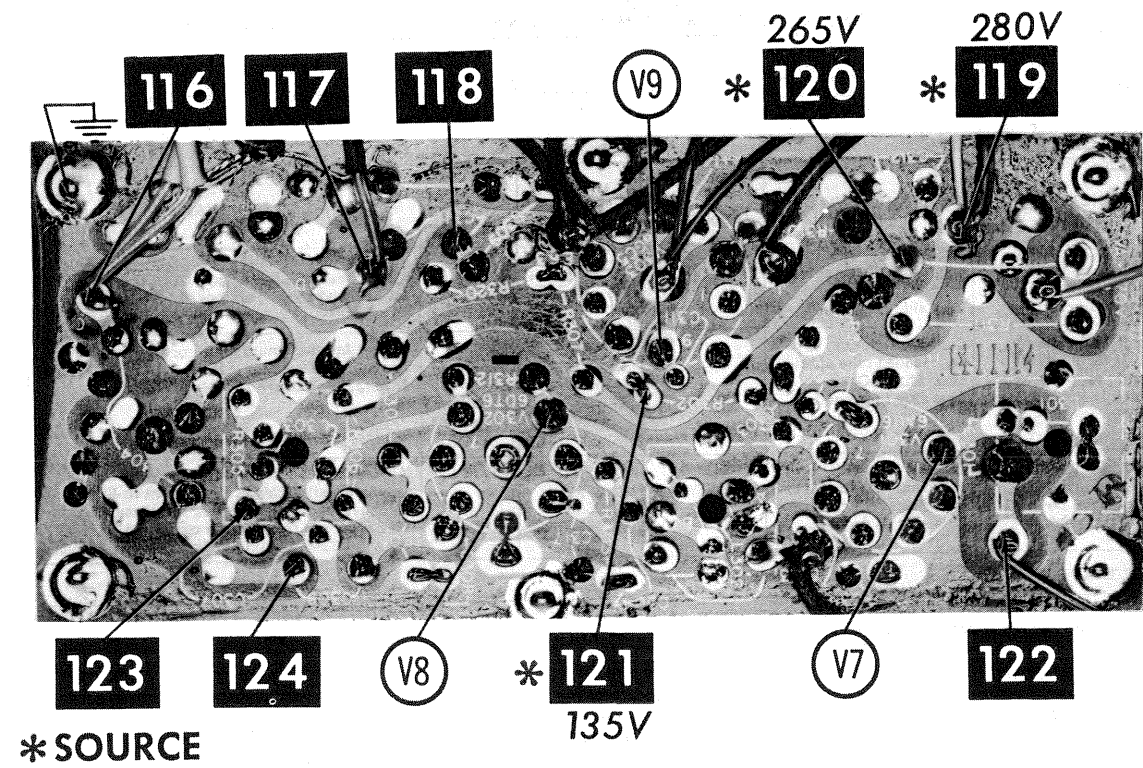
SWEEP PRINTED BOARD

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CONTROL PANEL



SOUND IF PRINTED BOARD



ALIGNMENT INSTRUCTIONS

Use an isolation transformer and maintain voltage at 117 volts. Allow a 20-minute warm-up period for the receiver and test equipment.  
Suggested Alignment Tools: A1 thru A11 ..... GENERAL CEMENT #8606, 8869, 9302 ... WALSCO #2511, 2543, 2588  
Mixer Plate Coil ... GENERAL CEMENT #9296, 9297, 9300 ... WALSCO #2510, 2511, 2547

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough generator output to provide a usable indication. Note: Response may vary slightly from those shown. Connect a variable bias supply to the IF AGC line (point A) and adjust to obtain a response curve which shows no indication of overload. Disable Oscillator section of Mixer-Osc. Set the Channel Selector to any non-interfering channel.

	INDICATOR	GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	ADJUST	REMARKS
1.	Connect DC probe of a VTVM thru a 47K resistor to point B. Common to ground.	Connect high side to ungrounded tube shield over Mixer-Osc. Low side to ground.		41.25MC 47.25MC	A1, R24 A2, R23	Adjust for MINIMUM. Keep cores of L5 (A1) and L1 (A2) at coil end away from board.
2.	Connect DC probe of a VTVM thru a 47K resistor to point B. Common to ground.	Connect high side to ungrounded tube shield over Mixer-Osc. Low side to ground.		43.8MC 42.5MC 45.75MC 44.0MC	A3 A4 A5 A6, Mixer Plate Coil	Adjust for maximum with core nearest printed board end of coil for A3 and with core farthest from printed board for A4, A5, and A6.
3.	Connect vertical input of a scope to point B. Low side to ground.	Connect high side to ungrounded tube shield over Mixer-Osc. Low side to ground.	44MC (10MC Sweep)	41.25MC 42.17MC 44.25MC 45.75MC 47.25MC		Adjust for maximum gain and symmetry of response with markers as shown in Figure 1. In order to obtain a proper response, it may be necessary to slightly retouch A3, A4, A5, A6 and Mixer Plate Coil for optimum response.

4.5 MC TRAP ALIGNMENT

Tune in a strong TV signal and set the Contrast at maximum. Adjust the Fine Tuning until a beat pattern is visible on the screen. Adjust A11 for MINIMUM beat interference.

SOUND IF ALIGNMENT

Connect a VTVM thru a detector probe to point C. Tune in a TV station and adjust A7, A8 and A9 for maximum deflection. Remove VTVM. Reduce the signal at the antenna terminals until distortion occurs in the sound. Adjust A10 clockwise from the fully out position to the second peak for maximum sound. Continue to reduce the signal and adjust A10 for MINIMUM distortion and maximum sound until no further improvement can be made.

CHROMA BANDPASS ALIGNMENT

Suggested Alignment Tools: A12, A13, A14 ... GENERAL CEMENT #8606, 8606L, 8869 ... WALSCO #2543, 2544, 2583  
The following alignment will require the use of an RF Modulator (RCA WG304A or equivalent). Connect a -15 volt supply to point D. Connect a -2 volt supply to point E. Connect a -15 volt supply to point F. Connect a -40 volt supply to pin 2 of horizontal blanking amp. (V20). Positive of all supplies to ground. Connect a jumper from point G to ground. Turn the color intensity to maximum. Open cathode circuit of horizontal output tube.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	High side thru .1mfd to grid of Bandpass Amp. (V16). Low side to ground.	3.58MC (3-5MC Sweep)	3.08MC 4.08MC		Vert. Amp. thru detector probe to pin 1 of demodulators point D, low side to ground.	A12, A13	Adjust for response curve similar to Fig. 2.
5.	High side of sweep gen. to Video Sweep Input of RF demodulator. High side of signal generator (set @ 47.75MC) to picture carrier input. Output of RF modulator to mixer grid test point on tuner. Low side to ground.	Sweep generator to 3MC (6MC Sweep)			"	A14	Adjust for response curve similar to Fig. 3. If necessary retouch A12 to flatten top of response.

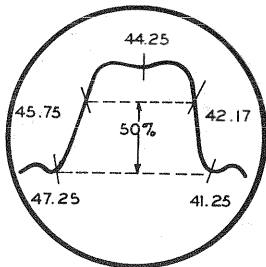


FIG. 1

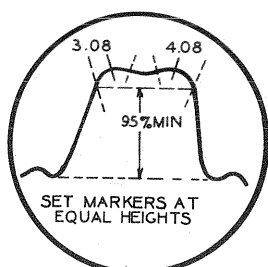


FIG. 2

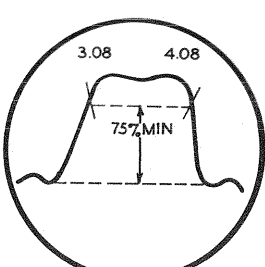


FIG. 3

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

CONNECT:  
A 0-500MA meter in series with cathode lead of horizontal output tube.  
A .47mfd capacitor across meter.  
A VTVM across HV Regulator Tube (6BK4A) Cathode Resistor, R139 (1000Ω).  
A VTVM through a high voltage probe to picture tube anode connector, point H to ground.  
A short across Horizontal Oscillator Cathode coil (pin 8 to ground).

Tune in a TV station and set all controls for normal operation. Adjust the Horizontal Hold control until the picture floats with blanking bars vertical. Remove the short from the Horizontal Oscillator Cathode and adjust B1 until the picture floats horizontally. Remove the short from point B. Adjust the Horizontal Linearity coil for MINIMUM current in the Horizontal Output tube (should not exceed 210MA).

Adjust the High Voltage control for 24KV on picture tube anode with normal brightness. Check the voltage on the VTVM across the HV Regulator Tube Cathode Resistor. This voltage should not be less than .85V. If voltage is less than .85V, turn Horizontal Linearity Slug one-half turn clockwise. Check to see that Horizontal Output current does not exceed 210MA.

Adjust Focus, Height and Vertical Linearity controls.

AGC ADJUSTMENT

Tune in a strong TV station and advance the AGC control until instability appears in the picture (pulling, jitter, overload, etc.). Reduce the control to the point just below the instability and check all available stations for proper AGC action.

COLOR AFC ALIGNMENT

Suggested Alignment Tools:  
A15, A6, A17 ..... GENERAL CEMENT #8606, 8606L, 8869  
WALSCO #2543, 2544, 2586

Set the Killer Threshold control to fully counterclockwise. Set the Tint control to the center of its range.

Connect a color bar generator to the antenna terminals. Adjust receiver for normal color reception. Short pin 1 of Burst Amp. (V21) to ground.

Connect DC Probe of VTVM through 470K to pin 1 of Phase Detector (V22). Adjust A15 for maximum deflection on VTVM. If no reading is obtained, oscillator is not operating. Adjust A16 to start oscillator,

CONVERGENCE ADJUSTMENTS

Step	Control	Use To Converge (or straighten)	
1.			Perform Center Dot Convergence using convergence magnets. If more range is needed, reverse magnet holder in clip. See Fig. A.
2.	R-G Vertical Lines, Top	Red and Green Vertical bars at Top of screen.	Touch up both controls for best convergence from top to bottom along vertical center line (Fig. B).
3.	R-G Horizontal Lines, Top	Red and Green Horizontal bars at Top of screen.	
4.	R-G Horizontal Lines, Top	Red and Green Horizontal bars at Top of screen.	Touch up both controls for best convergence of horizontal bars along vertical center line (Fig. B).
5.	R-G Horizontal Lines, Bottom	Red and Green Horizontal bars at Bottom of screen.	
6.	Blue Horizontal Lines, Top	Blue Horizontal bars at Top of screen.	Touch up both controls for best convergence of horizontal bars along vertical center line (Fig. C).
7.	Blue Horizontal Lines, Bottom	Blue Horizontal bars at Bottom of screen.	
8.			Perform center dot static convergence (Fig. A).
9.	Blue Horizontal Lines, Right	Blue horizontal bars at right side of screen.	Touch up both controls for best convergence along horizontal center line (Fig. D).
10.	Blue Horizontal Lines, Left	Blue horizontal bars at left side of screen.	
11.	R-G Vertical Lines, Right	Red and Green Vertical lines at right side of screen.	(Fig. E)
12.	R-G Horizontal Lines, Right	Red and Green Horizontal bars at right side of screen.	Use control to converge blue bar with red and green bars on right side of screen (Fig. E). (Fig. E)
13.	R-G Vertical Lines, Left	Red and Green Vertical bars at left side of screen.	
14.	R-G Horizontal Lines, Left	Red and Green Horizontal bars at left side of screen.	Use control to converge blue bar with red and green bars at left side of screen (Fig. E).

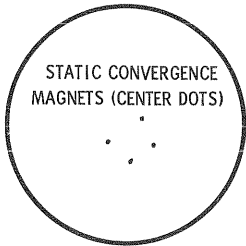


FIG. A

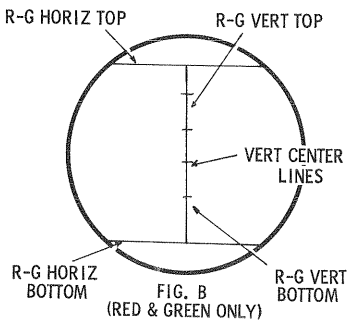


FIG. B

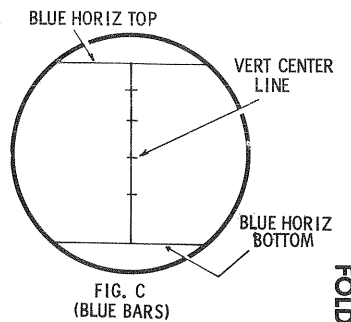


FIG. C

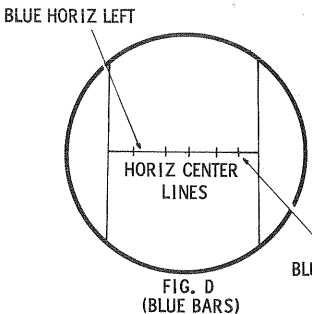


FIG. D

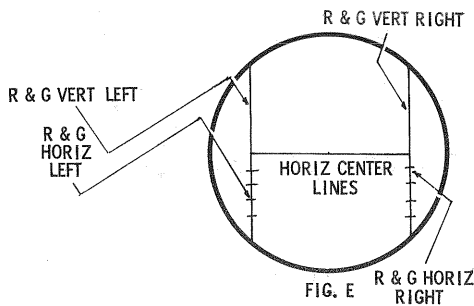


FIG. E

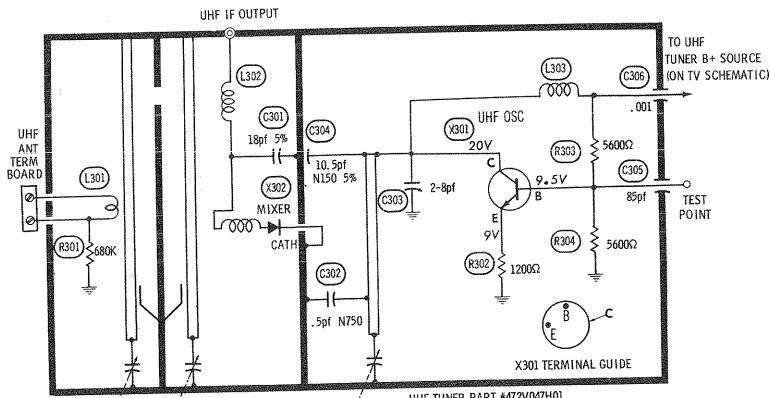
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CHASSIS V-2476-1

FOLDER 3

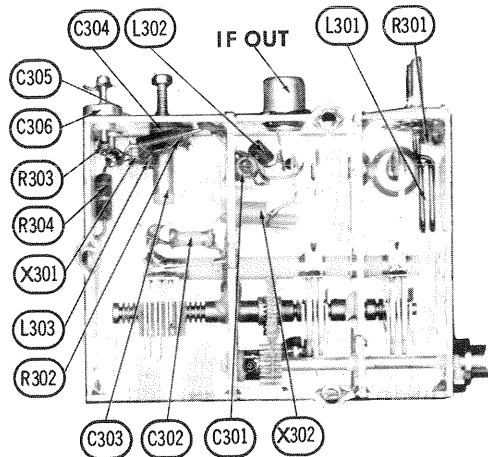
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12
V1	6JH6	220K	1547Ω	FIL	FIL	▲ 206Ω	▲ 206Ω	1500Ω					
V2	6GM6	80K	INF	FIL	FIL	† 3400Ω	† 3400Ω	▲ 56Ω					
V3	6EJ7	180Ω	5600Ω	180Ω	FIL	FIL	0Ω	† 5000Ω	† 5000Ω	0Ω			
V4	6GH8A	● 7500Ω	1200Ω	#† 7000Ω	FIL	FIL	† 10K	39Ω	39Ω	0Ω			
V5	12GN7	190Ω	400K	0Ω	FIL	FIL	FIL	† 5800Ω	● 0Ω	0Ω			
V6	6GH8A	† 30K	† 6800Ω	† 15Ω	FIL	FIL	750K	† 3000Ω	0Ω	4.7meg			
V7	6AU6A	7.5Ω	0Ω	FIL	FIL	● 15K	● 15K	270Ω					
V8	6DT6	3.8Ω	680Ω	FIL	FIL	● 270K	● 6800Ω	470K					
V9	6GC5	† 4400Ω	#† 16K	† 560K	FIL	FIL	† 560K	#† 16K	† 4400Ω	† 1265Ω			
V10	6GF7	0Ω	3.3meg	2400Ω	FIL	FIL	† 1375Ω	NC	† 3.2meg	510K			
V11	6FQ7	† 34K	660K	1000Ω	FIL	FIL	† 60K	210K	47Ω	0Ω			
V12	6JE6	† 13K	1.5meg	0Ω	FIL	FIL	1.5meg	† 13K	1400Ω	NC			TOP CAP † 23Ω
V13	6DW4	NC	† 26Ω	NC	FIL	FIL	NC	† 26Ω	NC	3meg			
V14	3A3		PINS 1 THRU 8 HAVE INFINITE RESISTANCE										TOP CAP † 671Ω TOP CAP INF
V15	6BK4A	† 1000Ω	FIL	TP	NC	1.4meg	† 1000Ω	FIL	NC				
V16	6GH8A	370K	220K	● 1000Ω	FIL	FIL	† 47K	390Ω	0Ω	11meg			
V17	6GY6	85Ω	100Ω	FIL	FIL	† 5500Ω	● 56Ω	2Ω					
V18	6GY6	85Ω	150Ω	FIL	FIL	† 5500Ω	● 56Ω	.6Ω					
V19	6GU7	† 23K	1meg	270Ω	FIL	FIL	† 23K	1meg	270Ω	0Ω			
V20	6GU7	† 22K	230K	390Ω	FIL	FIL	† 23K	1meg	270Ω	0Ω			
V21	6EW6	35K	38K	FIL	FIL	† 1100Ω	† 1300Ω	38K					
V22	6JU8	INF	220K	INF	FIL	FIL	0Ω	12meg	22K	12meg			
V23	6GH8A	#† 26K	47K	† 50K	FIL	FIL	† 8300Ω	0Ω	680Ω	INF			
V24	21FJP22	FIL	† 127K	† 300K	† 6500Ω	† 4500Ω	† 127K	† 300K	NC	4.7meg	NC	† 300K	† 127K
						Pin 13 † 4000Ω	Pin 14 FIL						
V201	6DS4	NC	3.4meg	NC	● 3900Ω	NC	NC	0Ω	NC	FIL	NC	FIL	
V202	6GJ7	0Ω	220K	0Ω	FIL	FIL	● 1000Ω	● 22K	● 4700Ω	47K			

# THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.  
† MEASURED FROM OUTPUT OF X2.  
‡ MEASURED FROM PIN 9 OF V13.  
NC NO CONNECTION  
TP TIE POINT  
▲ MEASURED FROM PIN 2 OF V2.  
● MEASURED FROM PINS 2 - 7 OF V9.

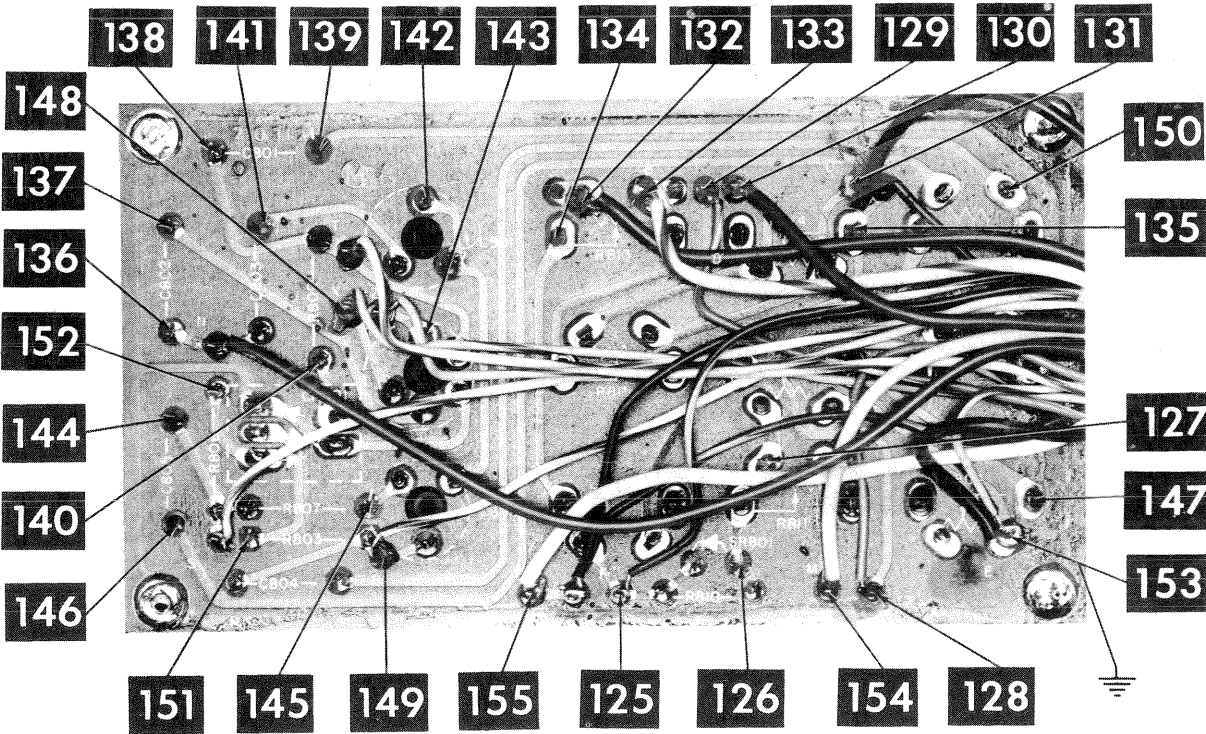
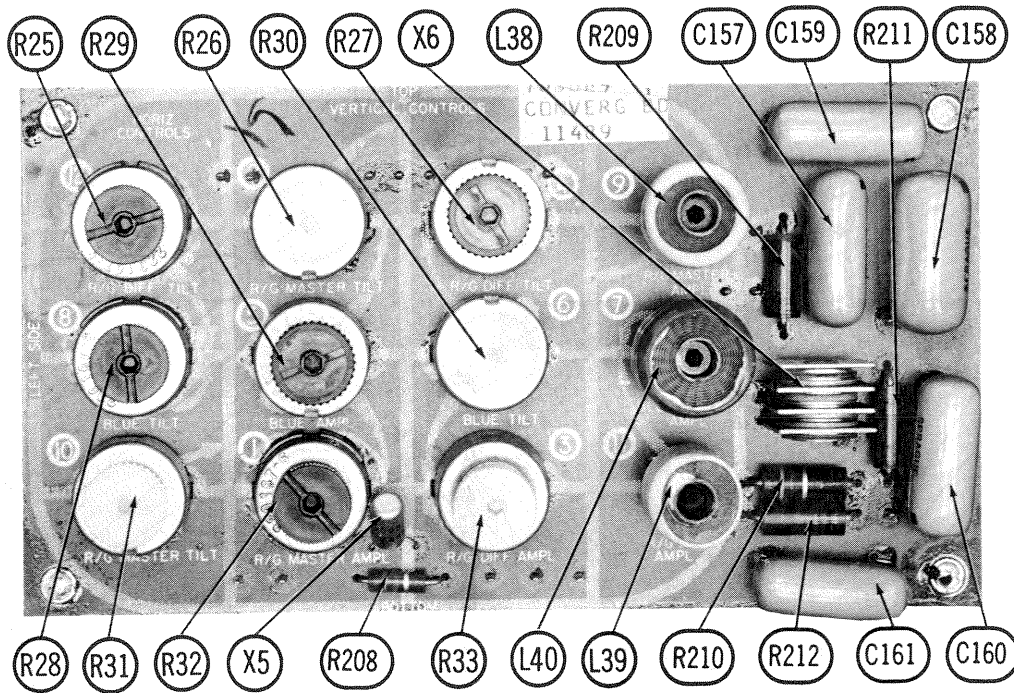


A PHOTOFACT STANDARD NOTATION SCHEMATIC  
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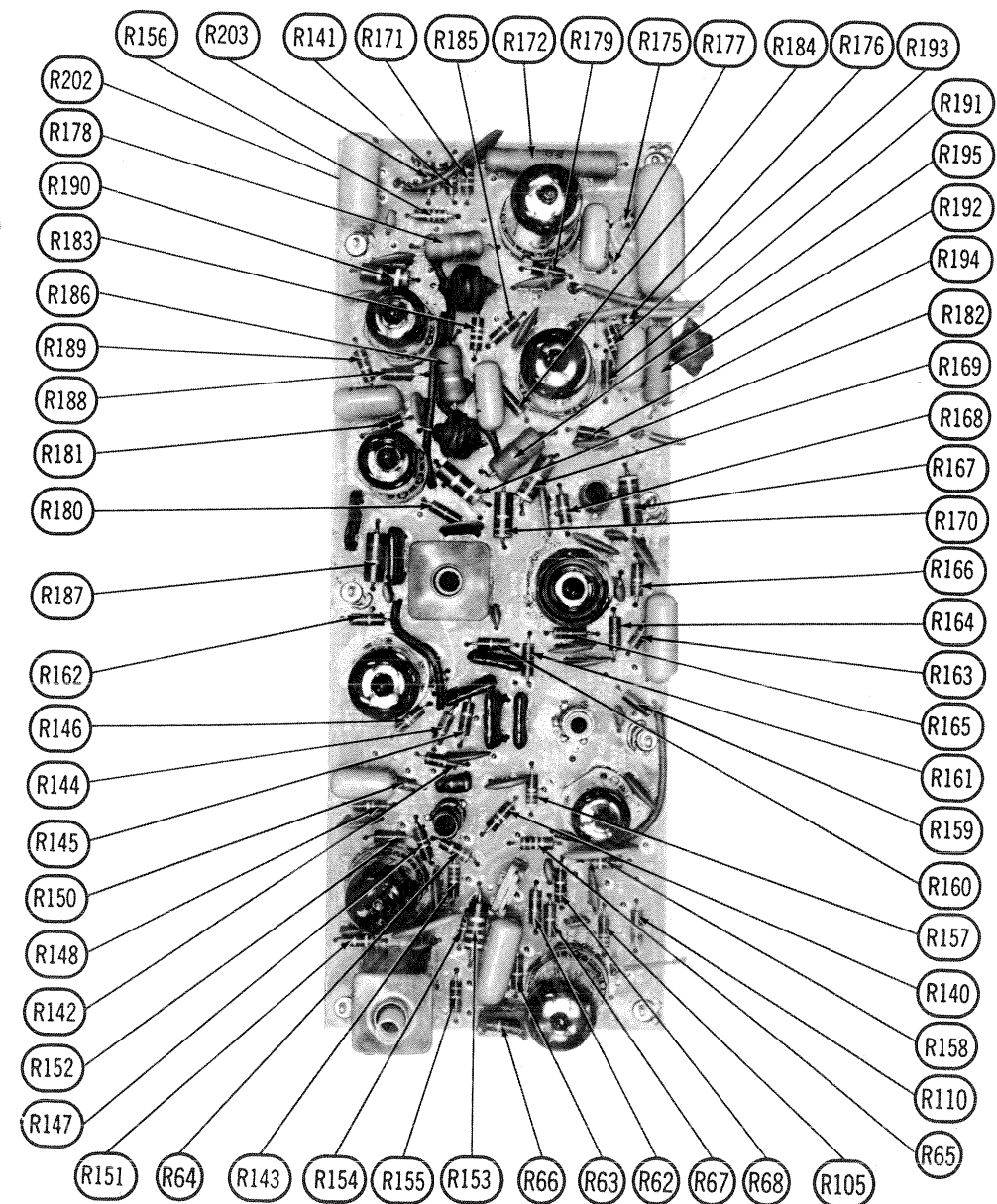
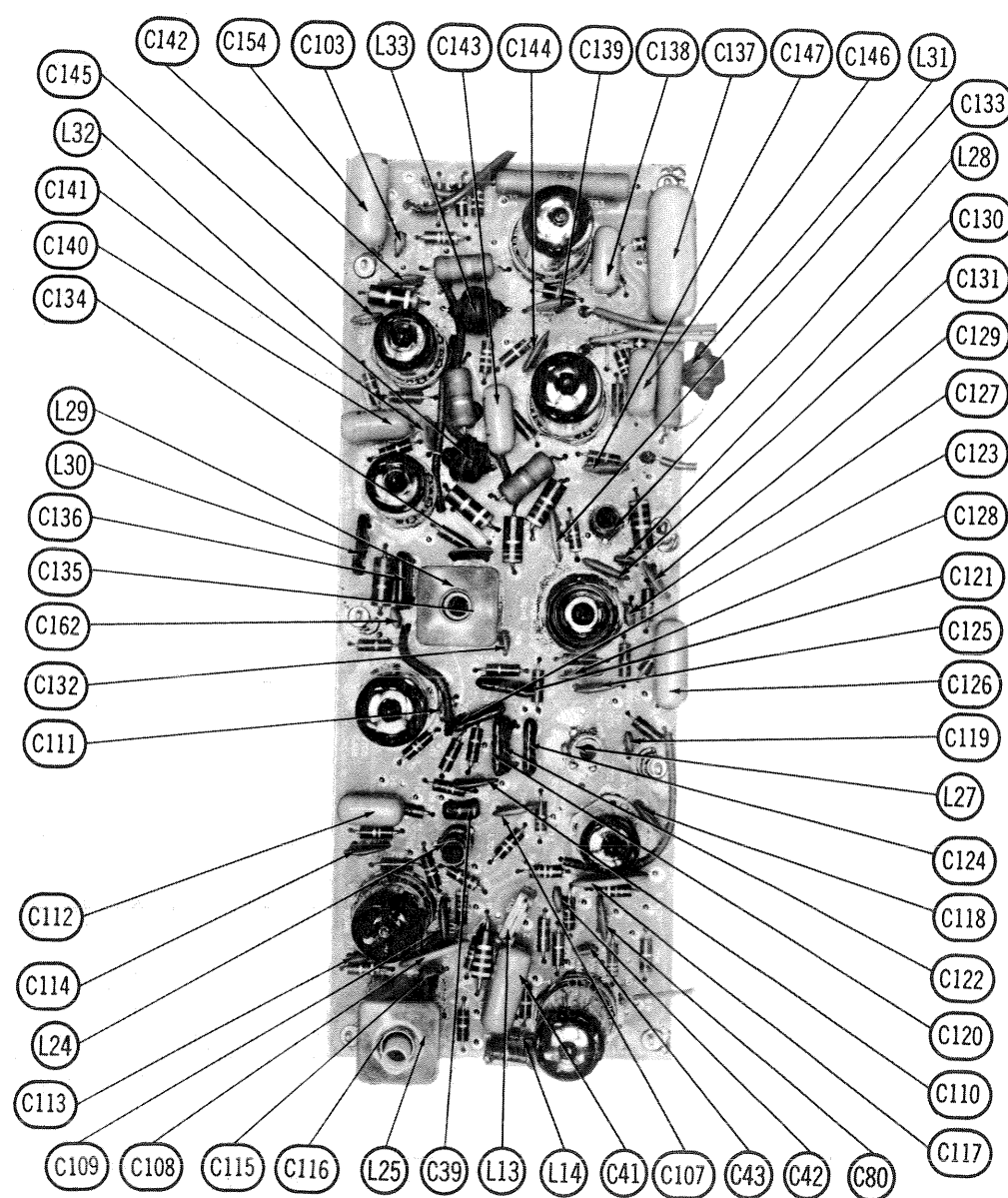
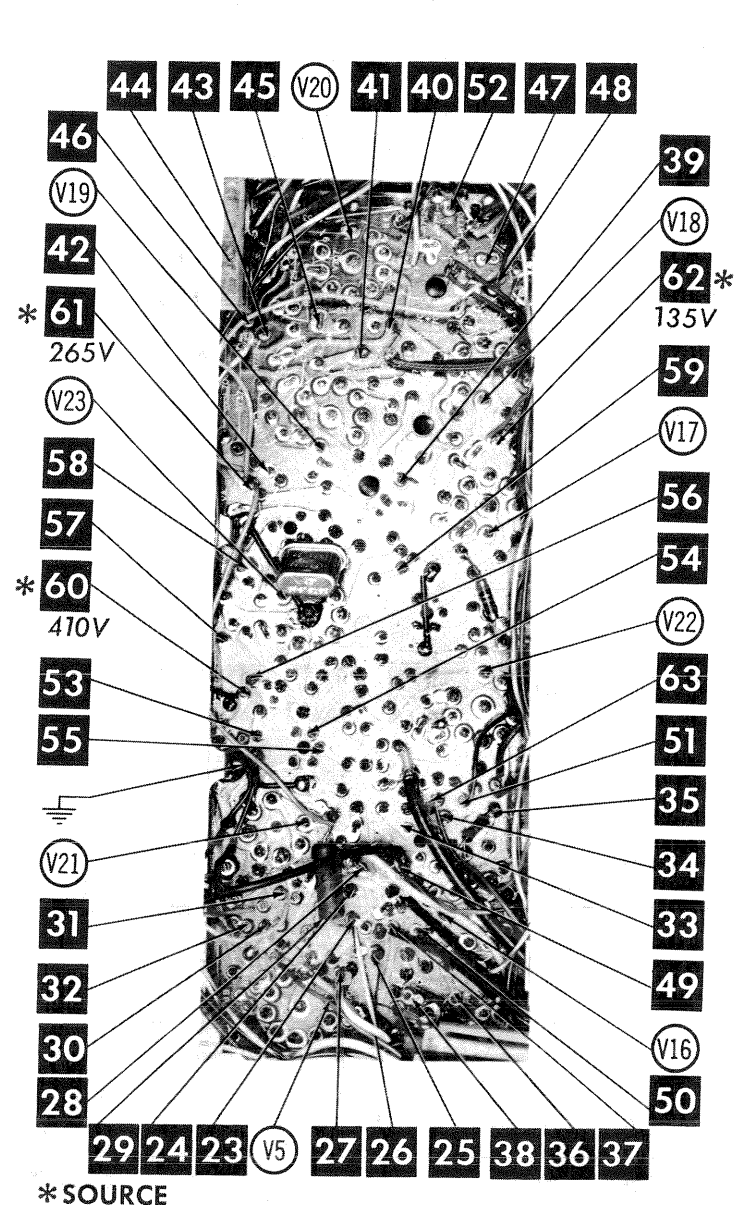


UHF TUNER 472V047H01

A Howard W. Sams CIRCUITRACE Photo



CONVERGENCE PANEL

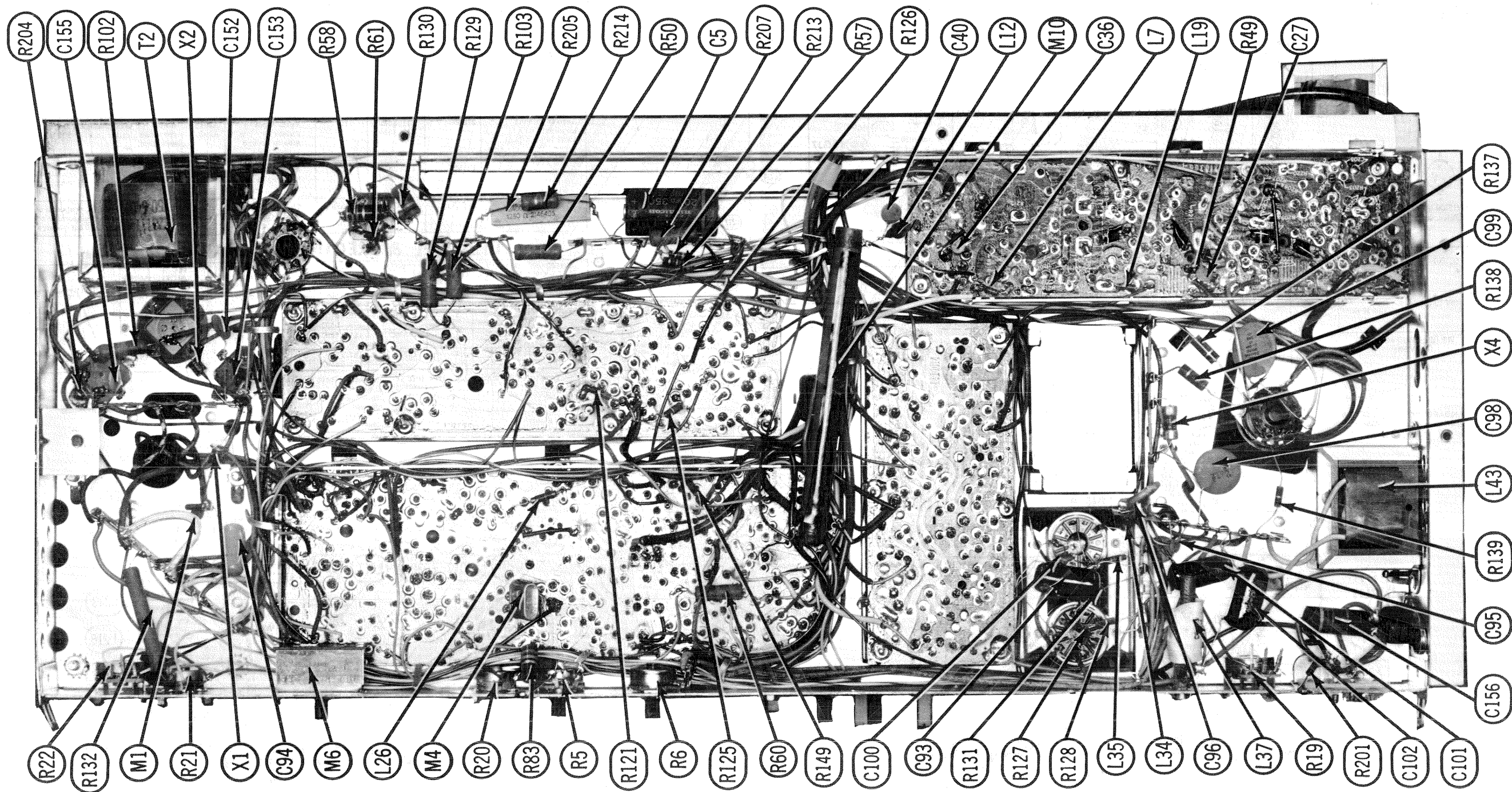


COLOR CIRCUIT PRINTED BOARD

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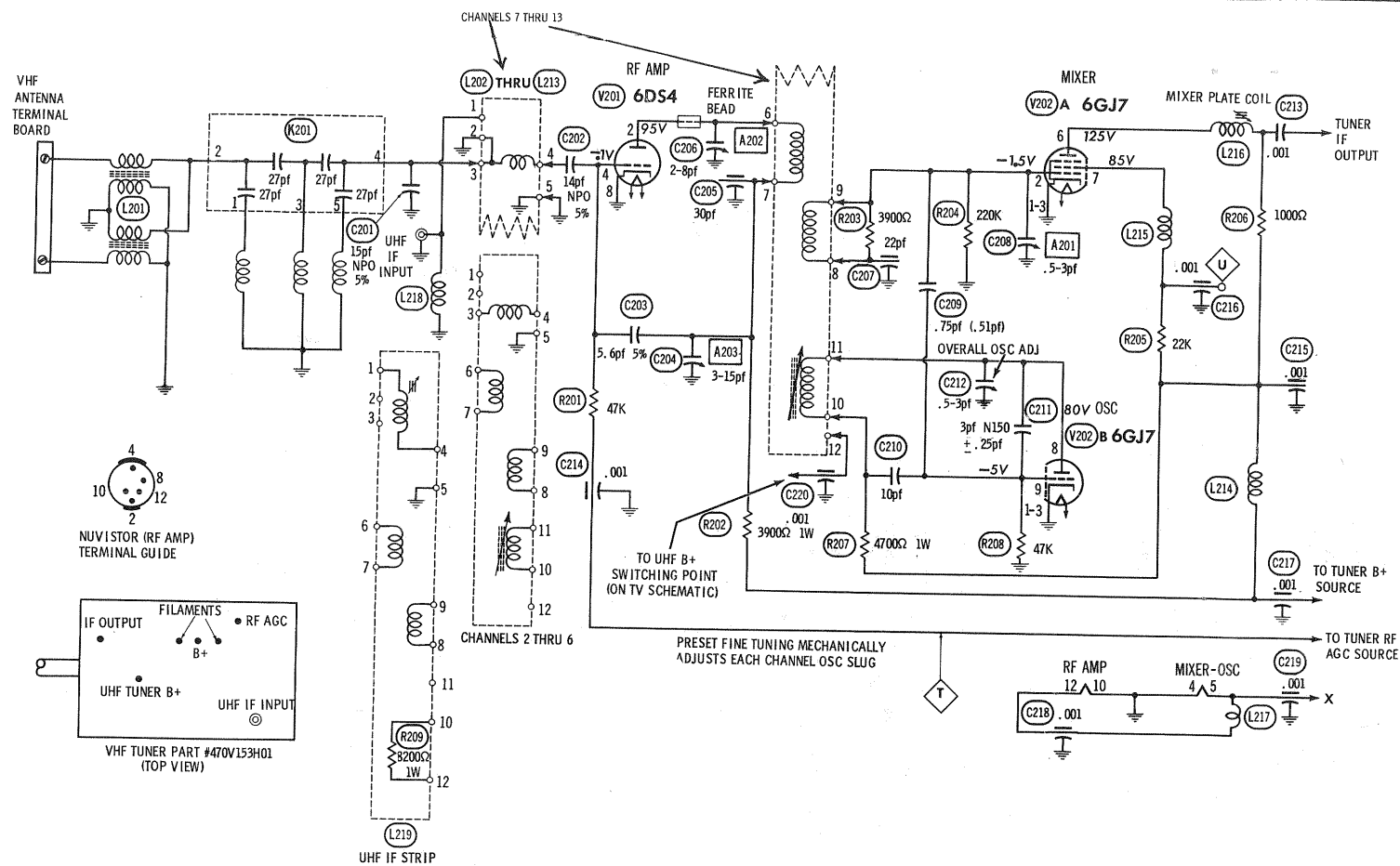




CHASSIS — BOTTOM VIEW

WESTINGHOUSE  
CHASSIS V-2476-1

FOLDER 3



## VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201 thru A203 ... GENERAL CEMENT #8868, 8987, 9089 ... WALSCO #2531-X, 2541, 2587

### OSCILLATOR ADJUSTMENTS

The oscillator for each channel is preset by means of the fine tuning control. Adjust fine tuning for best picture and sound on each channel. If any channel cannot be properly tuned in with the fine tuning, adjust overall oscillator adjustment and recheck all available channels.

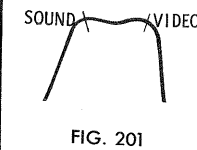
### RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use 10MC sweep unless otherwise noted. Connect a variable bias to the RF AGC line at point T. Adjust bias to obtain response curve which shows no indication of overloading.

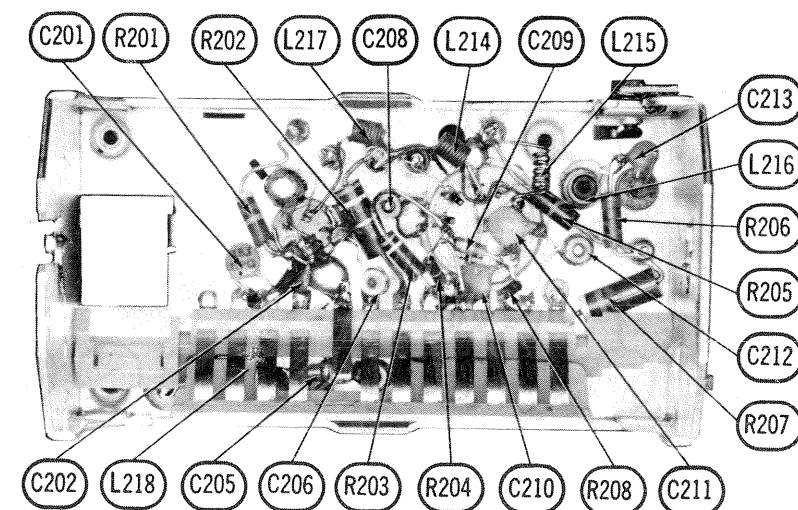
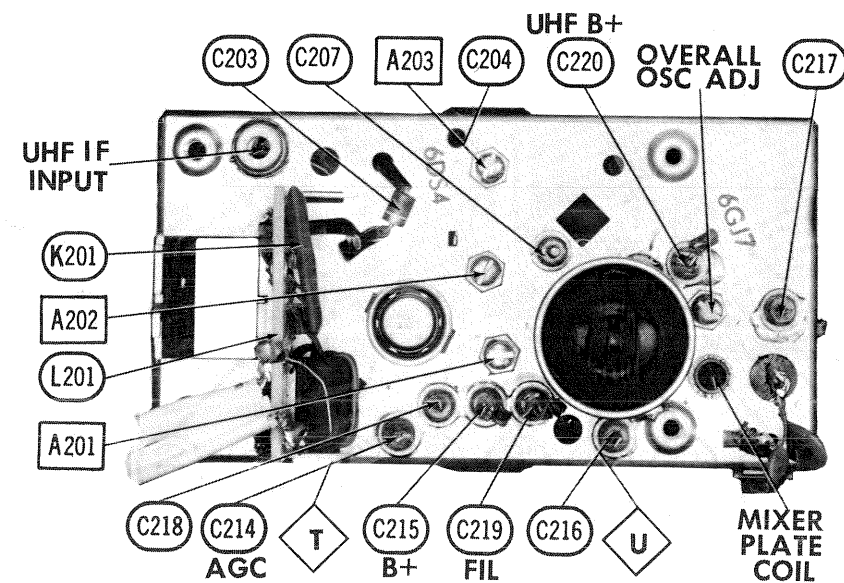
SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point U, low side to ground.	A201, A202	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
2. "	195MC	193.25MC 197.75MC	10	Across Video Det. load resistor.	A203	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3. "	See Chart	See Chart	12 thru 2	Vert. Input to Point U, low side to ground.		Decrease bias. Check response on all channels and make compromise adjustments of A201 and A202 if required.

## CHANNEL & FREQUENCY CHART

SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL
57MC	55.25MC 59.75MC	2	85MC	83.25MC 87.75MC	6	195MC	193.25MC 197.75MC	10
63MC	61.25MC 65.75MC	3	177MC	175.25MC 179.75MC	7	201MC	199.25MC 203.75MC	11
69MC	67.25MC 71.75MC	4	183MC	181.25MC 185.75MC	8	207MC	205.25MC 209.75MC	12
79MC	77.25MC 81.75MC	5	189MC	187.25MC 191.75MC	9	213MC	211.25MC 215.75MC	13



Tune to a UHF station and adjust UHF IF Input Coil for best picture and sound.



13 POSITION TURRET-TYPE VHF TUNER 470V153H01

WESTINGHOUSE  
CHASSIS V-2476-1

FOLDER 3



PARTS LIST AND DESCRIPTION (CONTINUED)

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

\* TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Westinghouse PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	Vert. Output	690V045H51 (320111-4)		VO-700C		A-305X	① Remove two 270Ω resistors.
T3	Yoke (Horiz. 12.4MH) 70° (Vert. 40MH)	690V032H46 (380947-1)		DY-90AC ①		YC-300-1 ②	② Remove two 560Ω resistors.
T4	Horiz. Output	690V045H55 (361084-1)					

\* COMPONENT CONNECTION DATA

ORIGINAL → REPLACEMENT ↓	HV TRANSFORMER		VERTICAL OUTPUT										YOKE				
	Original Connections		Original Connections										Original Connections				
MERIT			Blue	Red	Grn	Yel	Grn	Whi	Blk	Blk	Grn	Red	1	3	4	5	
STANCOR			Blue	Red	Grn	Yel	Grn	Whi	Blk	Blk	Grn	Red	1	3	4	5	
THORDARSON			Blue	Red	Grn	Yel	Grn	Whi	Blk	Blk	Grn	Red	1	3	4	5	
TRIAD			Blue	Red	Grn	Yel	Grn	Whi	Blk	Blk	Grn	Red	1	3	4	5	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRL	SEC.	Westinghouse PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	3000Ω	3-4Ω	690V045H52	A-3018	A-3849	26550	S-67X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				Westinghouse PART No.	QUAM PART No.	
SP1	5"X7"	PM	3-4Ω	690V045H31		Used in Models H-CK6120/6121/6130.
	6" x 9"	PM		690V045H87		Used in Models H-CK6140/6142/6143.
	6" x 9"	PM		690V045H22		Used in Models H-CK6110/6111/6112/6113.
	3"	PM		690V045H23		Used in Models H-CK6110/6111/6112/6113.
	5" x 7"	PM	3-4Ω	690V045H31		Used in Models H-CK6120/6121/6130.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				BUSS PART No.
			Westinghouse PART No.	LITTELFUSE PART No.	FUSE	HOLDER	
M1		2½" length of #22 wire					

MISCELLANEOUS

ITEM No.	PART NAME	Westinghouse PART No.	NOTES
M2	VHF Tuner	470V153H01	
M3	UHF Tuner	472V047H01	
M4	Crystal	690V038H25	STANDARD KOLLSMAN REPLACEMENT UT037
M5	Switch	690V045H85	3.58MC Oscillator Service (Normal-Purity-Service)
M6	Circuit Breaker	690V037H90	3.1 Amp.
M7	Magnet	690V045H83	Static Convergence (3 required)
M8	Magnet	690V038H41	Purity Ring
M9	Magnet Assembly	690V045H80	Blue Lateral
M10	Delay Line	690V038H24	

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Mask	690V045H21	Knob - Contrast, Tone, Color, Hue	690V045H30
Knob - VHF Channel Selector	690V045H25	Knob - Focus	690V045H78
Knob - VHF Fine Tuning	690V045H26	Disc - VHF Channel Indicator	690V045H29
Knob - UHF Channel Selector	690V045H07	Dial - UHF Channel Indicator	690V045H28
Knob - Brightness, On/Off/Volume, Horizontal Hold, Vertical Hold	690V045H29	Eacutcheon Assembly	690V045H24

WIRING DATA

High Voltage Lead .....	Use BELDEN No. 8869 (17KV) or 8888 (25KV)
Shielded Hook-up Wire .....	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire .....	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord (Interlock Type) .....	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
300Ω Tuner Input Lead .....	Use BELDEN No. 8225
300Ω Antenna Lead-in .....	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable .....	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

VHF TUNER PARTS LIST AND DESCRIPTION

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6DS4	V202	Mixer - Osc.	6GJ7

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C201	15 NPO 5%	#217V005A89 #690V049H54 #690V004H18 #690V032H41 #690V013H15		DTZ-15	C10Q15C		CNO415	10TCC-Q15
C202	15 NPO 5%			DTZ-15	C10Q15C		CNO415	10TCC-Q15
C203	5-6							
C204	3-15							
C205	30			829-10				
C206	2-8			829-3		CV-1	CT565	
C207	22							
C208	.5-3							
C209	.75pf							
C210	10							
C211	3 N150 .25pf	#690V013H17	DI-10	DD-100	LA10Q1-SL	CCD-100	GP410	10TS-Q10 10TCP-V30
C212	.5-3							
C213	.001		BPD-001	DD-102	BYA10D1	CCD-102	B210	5HK-D10
C214	.001		EF-001	MFT-1000		CCF-102	CT280A	
C215	.001		EF-001	MFT-1000		CCF-102	CT280A	
C216	.001		EF-001	MFT-1000		CCF-102	CT280A	
C217	.001		EF-001	MFT-1000		CCF-102	CT280A	
C218	.001		EF-001	MFT-1000		CCF-102	CT280A	
C219	.001		EF-001	MFT-1000		CCF-102	CT280A	
C220	.001		EF-001	MFT-1000		CCF-102	CT280A	

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.  
# Westinghouse Part Number † Alternate Value

COILS (RF-IF)

ITEM No.	USE	Westinghouse PART No.	NOTES	ITEM No.	USE	Westinghouse PART No.	NOTES
L201	Ant. Matching	690V049H53		L211	Ant., RF, Mixer, Osc.	690V049H71	Channel 11 Strip
L202	Ant., RF, Mixer, Osc.	690V049H62	Channel 2 Strip	L212	"	690V049H72	" 12 "
L203	"	690V049H63	" 3 "	L213	"	690V049H73	" 13 "
L204	"	690V049H64	" 4 "	L214	RF Choke		
L205	"	690V049H65	" 5 "	L215	RF Choke		
L206	"	690V049H66	" 6 "	L216	Mixer Plate	690V049H48	
L207	"	690V049H67	" 7 "	L217	Fl. Choke		
L208	"	690V049H68	" 8 "	L218	RF Choke		
L209	"	690V049H69	" 9 "	L219	UHF Strip	690V049H77	Ant., RF, Mixer, R209
L210	"	690V049H70	" 10 "				

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Westinghouse PART No.	REPLACEMENT DATA
K201	Antenna Network	27pf, 27pf, 27pf, 27pf	13P-010-01	

UHF TUNER PARTS LIST AND DESCRIPTION

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES	Westinghouse Part No.
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.		
X301		UHF Oscillator				NPN	690V049H81

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES GENERAL ELECTRIC PART No.
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X302		V-8634-3					1N82A

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C301	18 5%	#690V013H36		829-10				
C302	.5pf N750	#690V013H44						
C303	2-8	#690V032H41						
C304	10-5 N150 5%	#690V013H09						
C305	85	#690V004H71						
C306	.001		EF-001	MFT-1000		CCF-102	CT280A	

# Westinghouse Part Number

COILS (RF-IF)

ITEM No.	USE	Westinghouse PART No.	NOTES	ITEM No.	USE	Westinghouse PART No.	NOTES
L301	Ant. Input	690V049H95		L303	RF Choke	690V049H97	
L302	IF Output	690V049H96					

PARTS LIST AND DESCRIPTION

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6JH6	V15	HV Regulator	6BK4A
V2	2nd Video IF Amp.	6GM6	V16	Chroma Bandpass Amp. - Color Killer	6GH8A
V3	3rd Video IF Amp.	6EJ7	V17	"Z" Demodulator	6CY8
V4	Video Amp.	6GH8A	V18	"X" Demodulator	6CY8
V5	Video Output	12GN7	V19	B-Y Amp. - R-Y Amp.	6GU7
V6	Sound IF Amp. - Sync Sep.	6CH8A	V20	G-Y Amp. - Horiz. Blanking Amp.	6GU7
V7	Audio Detector	6AU6A	V21	Burst Amp.	6EW6
V8	Audio Output	6DT9	V22	Chroma Sync Phase Det. - Color Killer Det.	6JU8
V9	Vert. Mult. - Vert. Output	6GF7	V23	Chroma Ref. Osc. Control - Chroma Reverence Osc.	6GH8A
V10	Horiz. AFC - Horiz. Osc.	6FQ7			
V11	Horiz. Output	6JE6			
V12	Damper	6DW4			
V13					
V14	HV Rectifier	3A3			

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	Westinghouse PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V24	21FJP22	21FJP22 ①	21FJP22 ①	21FJP22 ② RE21FJP22 ③	① Aluminized ② Silver Screen "85" ③ Color Brite "85"

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES GENERAL ELECTRIC PART No.
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X1	.46A	690V038H22	1N1697	1N1085 or A500	1N1764 or 1N2864	60H or F-6	
X2	.46A	690V038H22	1N1697	1N1085 or A500	1N1764 or 1N2864	60H or F-6	
X3		690V039H18	GEGR-1		CR208	PG33-140H-Q	
X4		690V039H17	GEGR-2		CR203	PG33-18H-Q	
X5	4MA	690V039H52	1N1692	A100 or D100	1N2859 or 1N3754	20H or F-2	
X6A	41MA	690V039H54	GEGR-3	A50 or D50	1N2858	S-648 or S-654	
B	13MA			A50 or D50	1N2858		
C	15MA			A50 or D50	1N2858		
X7		690V037H91					1N80
X8		690V037H91					1N60
X9		690V038H23					6GC1

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	Westinghouse PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	GENERAL INSTRUMENT PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	160	250	690V037H64 (270071-3)	AFH51-37-25③	AA0315 ①	XC1-19 ①	TMS-1480 ①	WP131.5 ①	TVLS-1541*①
C2A	160	250	690V045H76 (270071-3)	AFH2-99-95	AA0315	XC1-19	TMS-1570	FP253	TVLS-2808 *
C3A	80	450	690V045H76 (270071-6)	AFH3-46	BR80-450	QT1-21	TD-80-450	FP378.4	TVL-3793
	30	450	690V045H77 (270071-7)		CC0370	XC3-32	TMT-3763		
C4A	5	350	690V045H74 (270021-100)	AFH4-56-90	DD0473	XC4-11	TMQ-4283	FP420.29A	TVL-4625
	100	200							
B	20	200							
C	20	25							
D	20	350	690V045H75 (270027-20)	PRS1735	BR20-350	QT1-9	TD-20-350	TC65	TVA-1608
C5	50	150	690V045H75 (270027-39)	PRS1480	BR50-150	QT1-17	TD-50-150	TC49	TVA-1414



# FIXED CAPACITORS (cont)

# PARTS LIST AND DESCRIPTION (CONTINUED)

Replacement parts shown may be superseded by the availability of newly introduced replacements.  
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

## FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
C156	.047 600V		P688N-047	DD-503	PM6847	6DP-3-473	GEM6147	6TM-547
C157	.086 400V 10%		BE8856	DF-104	PM4566	4DP-3-563	PVC4156	4PS-566
C158	.1 400V		P488N-1	DF-104	PM4P11	4DP-3-104	GEM401	4TM-P10
C159	.1 200V		P288N-1	DF-104	PM4P12	2DP-3-104	GEM201	2TM-P10
C160	.12 200V 10%							
C161	.082 200V 10%					6DP-4-823		6PS-882
C162	6 NPO ±.5pf	#950373-6098						10TCC-V56

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer. † Alternate Value  
① Not used in some versions. # Westinghouse Part Number

## CONTROLS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			Westinghouse PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Tone	3meg	690V045H60	F2-3meg		† QJ-1860	†† UE4554S
B	Volume, Switch	1meg		R2-1meg, FFS011, RP111 (1), KR-8			
R2A	Hue	1200Ω	690V045H62	F5-1500, R1-750K, FFS011, RFS103	P-1500-V, R-750K-S, CP-013, FR-104	† QJ-1861	● UE4551
B	Vert. Hold	750K		F1-500, R1-50K, FFS011, RFS103	P-500-S, R-50K-S, CP-013, FR-104	† QJ-1862	● UE4552
R3A	Color	500Ω	690V045H63	F5-750, R1-250K, FFS011, RFS103	P-750-V, R-250K-S, CP-013, FR-104	† QJ-1863	● UE4553
B	Horiz. Hold	35K		F1-100, SNK010 or (B-1)			
R4A	Contrast	600Ω	690V045H61	F1-100, SNK010 or (B-1)			
B	Brightness	250K					
R5	Video Peaking	100Ω	690V045H64	F1-100, SNK010 or (B-1)			
R6	Horiz. Adjust	35K	690V054H36	F1-50K, SNK010 or (B-31)	B47-50K-S		
R10	Blue Drive	8000Ω	690V045H67	F1-7500, SNK012, AK-40			
R11	Green Drive	6000Ω	690V045H66	F1-7500, SNK012, AK-40			
R12	Blue Screen	1.5meg	690V045H69	F1-1.5meg, SNK012, AK-40			
R13	Green Screen	1.5meg	690V045H68	F1-1.5meg, SNK012, AK-40			
R14	Red Screen	1.5meg	690V045H70	F1-1.5meg, SNK012, AK-40			
R15	Vert. Linearity	3.4meg	690V045H71	F1-3meg, SNK012, AK-40			
R16	Height	100K	690V045H72	F1-100K, SNK012, AK-40			
R17	CRT Bias	2500Ω 2W	690V045H73	V-3000	U39-3000		
R18	Horiz. Centering	100Ω 2W	690V054H37				
R19	High Voltage Adjust	500K	690V037H01	TT-59 or (F1-500K, SNK010)	B47-500K-S		
R20	AGC	10K 2W	690V045H65	WN-103 or (WW-103)	A43-10K, FK9-1/2		
R21	Vert. Centering	10Ω 2W	690V037H03	V-10 ④ or (WN-100)	U39-10 ④		
R22	Color Killer	1meg	690V037H13	TT-49 or (F1-1meg, SNK010)	B47-1meg-S		
R23	Adjacent Sound Reject	10K	690V037H18				
R24	Sound Reject	750Ω	690V037H19	F1-750, SNK010, AK-40	B47-750-S ②		
R25	R & G Horiz. Lines (Left)	120Ω 2W	690V307H20	V-120	U39-125		
R26	R & G Vert. Lines (Top)	60Ω 2W	690V037H21	V-60	U39-75		
R27	R & G Horiz. Lines (Top)	30Ω 2W	690V037H22	V-30	U39-50		
R28	Blue Horiz. Lines (Left)	120Ω 2W	690V037H20	V-120	U39-125		
R29	Blue Horiz. Lines (Bottom)	30Ω 2W	690V037H22	V-30	U39-50		
R30	Blue Horiz. Lines (Top)	60Ω 2W	690V037H21	V-60	U39-75		
R31	R & G Vert. Lines (Left)	60Ω 2W	690V037H21	V-60	U39-75		
R32	R & G Vert. Lines (Bottom)	120Ω 2W	690V037H20	V-120	U39-125		
R33	R & G Horiz. Lines (Bottom)	150Ω 2W	690V038H20	V-150	U39-150		

†† "STA-LOC" Equivalent: FA36A, RUP16A, OS687  
† "STA-LOC" Equivalent: FA152R, RUT54L, OS687, IS1187  
† "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts: B13-140, P22-021 (Panel), "SNAPTROL" Equivalent: BU4, CF8, CR12, SR81 (1), K.  
\* "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts: B17-208, P22-021 (Panel), "SNAPTROL" Equivalent: BU4, CF8, CR12, SR3, DC1.  
\* "SNAPTROL" Equivalent: BU4, CF4, CR7, SF2, SR3, DC1.  
\* "CONCENTRIKIT" Equivalent: K-15 Kit with Base Elements and Shafts: B17-105, P22-021 (Panel), "SNAPTROL" Equivalent: BU4, CF36, CR10, SF2, SR3, DC1.  
① Cut inner shaft to required length.  
② Cut off shaft and bend terminals back to facilitate wiring.  
③ Use Base Element with "PC" terminals.

## RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R50	3300Ω 3W	PW5-3300	3G-3300	#690V037H98	R133	1Ω 10%	BWH 1	WS 1	#690V043H39
R60	12K 3W	PW5-12K	3G-12K	#251V014H30	R172	22K 4W	1A-22.5K		#251V014H09
R99	V.D.R. †			#690V038H13	R173	1800Ω 3W	PW5-1750	5W-SQ-1750	#690V054H35
R102	1000Ω 3W	PW5-1000	3G-1000	#690V038H74	R182	270Ω 3W	PW5-250	5W-SQ-250	#690V038H17
R103	5600Ω 3W		3G-5600	#690V038H12	R197	5600Ω	MR 4	4G-5600	#690V054H36
R107	3.7Ω (Cold) Thermistor				R205	1100Ω 18W	2C-1200	20W-SQ-1100	#251V020H59
R129	2200Ω 3W	PW5-2250	5W-SQ-2250	#690V039H30	R206	220Ω 3W		4G-3600	#690V054H34
R132	13K 7W	PW10-12.5K	10W-SQ-12.5K	#690V037H97	R207	3600Ω 3W	PW5-3500		

† Voltage Dependent Resistor

# Westinghouse Part Number

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		Westinghouse PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.	
L1	47.25MC Trap	690V037H43					
L2	1st Video IF	690V037H31					
L3	2nd Video IF	690V039H58					
L4	3rd Video IF	690V037H33					
L5	4th Video IF/41.25MC Trap	690V037H34					
L6	RF Choke (12uh)		BC-566	72F125AP	RTC-8522	TA343	
L7	RF Choke (1.8uh)	690V037H44	BC-562	74F186AP	RTC-8516	T990	
L8	4.5MC Trap	690V037H46				TA264	
L9	Peaking (820uh)	690V039H61	BC-679	6146	RTC-8582	T355	
L10	Peaking (62uh)	690V045H39	TV-193	6110	RTC-8573	T338	
L11	RF Choke (5.6uh)	690V045H38	BC-565	74F566AP	RTC-8519	T820	
L12	Peaking (82uh)	690V045H56	TV-193	6110	RTC-8573	T338	
L13	Peaking (150uh)	690V045H41	BC-671	72F154AP	RTC-8575	T343	
L14	Peaking (120uh)	690V045H40	BC-670	6153	RTC-8585	T342	
L15	Peaking (145uh)	690V045H57 ①	TV-193	72F154AP	RTC-8575	TA347	① Wound on 3300Ω resistor.
L16	Peaking (310uh)	690V045H58	TV-199	6155	RTC-8516	T990	* Shunt with 3300Ω resistor.
L17	RF Choke (12uh)	690V037H44	BC-566	72F125AP	RTC-8522	TA820	
L18	RF Choke (1.8uh)	690V037H40	BC-562	74F186AP	RTC-8516	T990	
L19	RF Choke (5.6uh)	690V037H40	BC-565	74F566AP	RTC-8519	T820	
L20	Sound Takeoff	690V045H34					
L21	Sound Interstage	690V045H35					
L22	Quadrature	690V045H36					
L23	RF Choke (21uh)	690V045H37	TV-192	6152	RTC-8584	T300	
L24	Chroma Takeoff	690V045H42					
L25	Chroma Bandpass	690V045H44					
L26	RF Choke (5.6uh)	690V037H40	BC-565	74F566AP	RTC-8519	T820	
L27	Burst Amp.	690V045H45					
L28	3.58MC Osc. Contr.	690V045H43					
L29	3.58MC Osc. Output	690V045H46					
L30	RF Choke (10uh)	690V037H52	BC-566	72F105AP	RTC-8522	T860	
L31	Peaking (820uh)	690V037H53				T871	
L32	Peaking (620uh)	690V037H53				T871	
L33	Peaking (620uh)	690V037H53				T871	
L34	RF Choke (5.6uh)	690V037H40	BC-565	74F566AP	RTC-8519	T820	
L35	RF Choke (5.6uh)	690V037H40	BC-565	74F566AP	RTC-8519	T820	

## COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA					
		Westinghouse PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON PART No.	WORKMAN PART No.
L36A	Horiz. Osc. (Freq.) & B Waveform (Sinewave)	690V045H59 (360960-2B)					TB177
L37	Horiz. Linearity (Effic.) (.9MH-5MH)	690V045H54 (361022-3)					
L38	Dynamic Convergence R/G Master Amp. (Right Side R/G Vert. Lines) (3.5MH-7.4MH)	690V045H47 (361092-1)					T149
L39	Dynamic Convergence R/G Diff. Amp. (Right Side R/G Horiz. Lines) (1.14MH-5MH)	690V045H49 (361092-3)					
L40	Dynamic Convergence Blue Master Amp. (Right Side Blue Horiz. Lines) (Pri. 3.75MH-.89MH) (Sec. .17MH-.2MH)	690V045H48 (361092-2)					
L41	Focus	690V045H53 (360957-4)					
L42	Convergence Yoke A Blue Section B Green Section C Red Section	690V045H52 (360946-3)					

## FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	Westinghouse PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L43	.3ADC	17Ω	.4 Hy.	690V037H41	C-4133	C-2708	26C81	C-40X	

## TRANSFORMER (POWER)

ITEM No.	RATING	REPLACEMENT DATA					NOTES
		Westinghouse PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	128VAC Tap @ 3A	160VAC @ .46A DC	6.3VAC @ 2.2A	690V045H50	P-9000C	26R150	R-300

WESTINGHOUSE CHASSIS V-2476-1

FOLDER 3