

CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

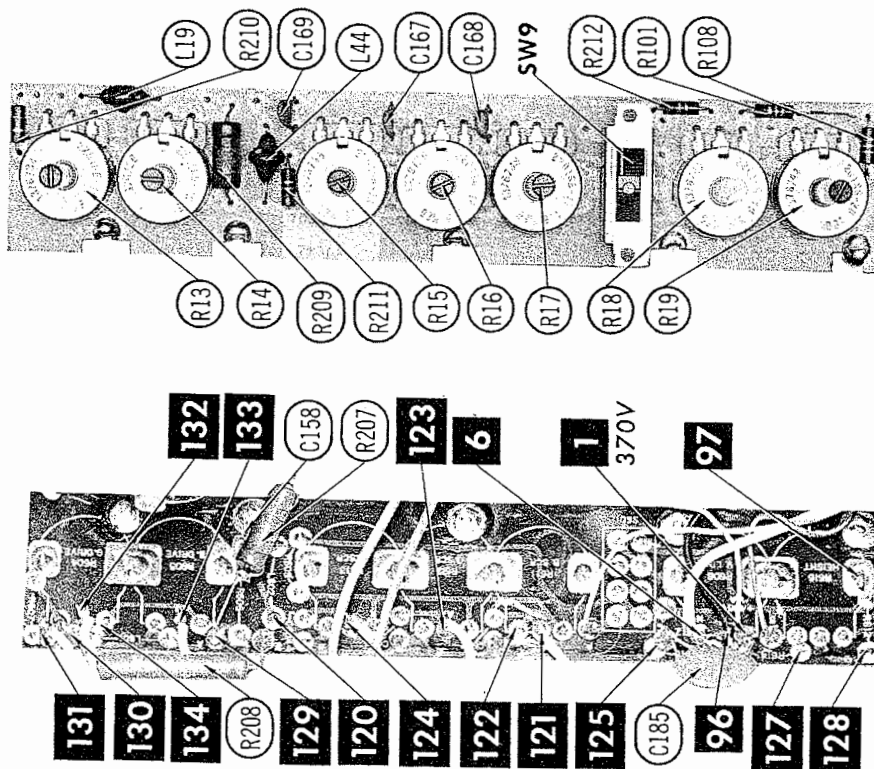
NOTE: Shorting plug located in left rear of cabinet to be used when operating chassis outside of cabinet.

1. Remove 4 screws and release 8 thumb screws holding back cover and disconnect antenna leads. Remove all control knobs from the cabinet.
2. Remove picture tube socket, high voltage anode lead, yoke plug, speaker plugs, remote plugs, and tuner plugs. Remove convergence board plugs, degaussing plugs, and antenna leads.
3. Remove 3 screws holding chassis and lift chassis out of the cabinet.

Remove 1 screw holding remote chassis and lift chassis out. Remove from the cabinet 2 clutch head screws holding tuners and 2 nuts holding tuners from the rear. Lift tuners out and remount on chassis.

PICTURE TUBE REMOVAL

1. Follow "Chassis Removal" procedure. Lay set face down on a soft protective surface.
2. Remove 8 screws holding picture tube and lift tube out of the cabinet. Remove convergence magnet, yoke, and 4 screws holding degaussing coil and shield.



CONTROL PRINTED CIRCUIT BOARD

A Howard W. Sams **CIRCUITRACE** Photo

SET 984 FOLDER 1

PHOTOFACT® Folder

with **CIRCUITRACE**

For Supplier Address See PHOTOFACT Index

MAGNAVOX CHASSIS T931-01-AA thru T931-19-AA, T931-23-AA/-25-AA/-26-AA

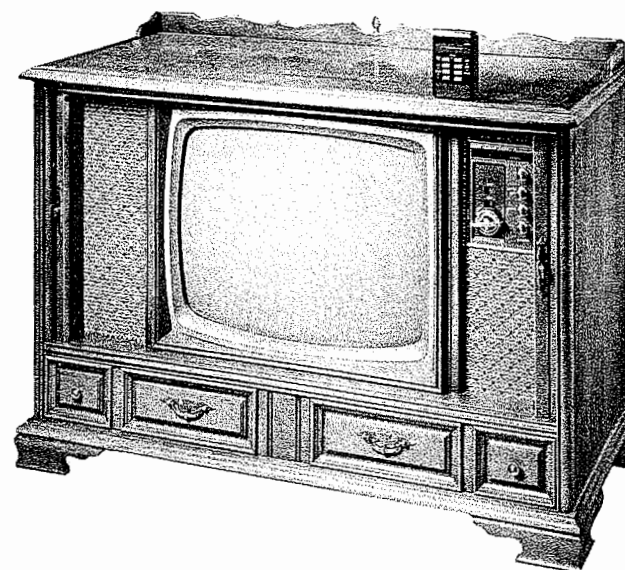
COLOR TV

IMPORTANT FILING NOTICE

Some models covered by this PHOTOFACT Folder employ chassis in addition to the TV chassis. PHOTOFACT Folders covering these additional chassis are packaged immediately behind this Folder and should be filed with this Folder in the yellow filing jacket provided. For specific coverage see index below.

INDEX

Remote Control Transmitter 704041-1,
Receiver 704044-1 thru -10...SET 984-1-A



REPRESENTATIVE MODEL USING CHASSIS T931-11-AA

SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set.

Check high-voltage regulation and adjust to correct value.

Be sure shields and rear cover are in place and secure.

Beware of shock from high voltage or AC line. Discharge high voltage to HV cage only.

Use extreme care when handling picture tube. Do not bump, scratch, or exert undue strain.

SERVICING IN THE FIELD

SAFETY GLASS

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

FUSE OR FUSE DEVICE

A 3" length of #22 fuse wire is used for filament protection. (For location, see F2 in photo "Chassis - Bottom View".)

A Circuit Breaker is used for low voltage power supply protection and may be reset by depressing the reset button. (See photo "Cabinet - Rear View" for location.)

VHF OSCILLATOR ADJUSTMENT

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

AGC

The AGC may be varied by means of an AGC control. (See photo "Cabinet - Rear View" for location.)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Waveform coil. (See Horizontal Waveform in photo "Cabinet - Rear View" for location.)

FOCUS

The focus may be varied by means of a Focus coil. (See photo "Cabinet - Rear View" for location.)

REMEMBER TO ASK— "What else needs fixing?"

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

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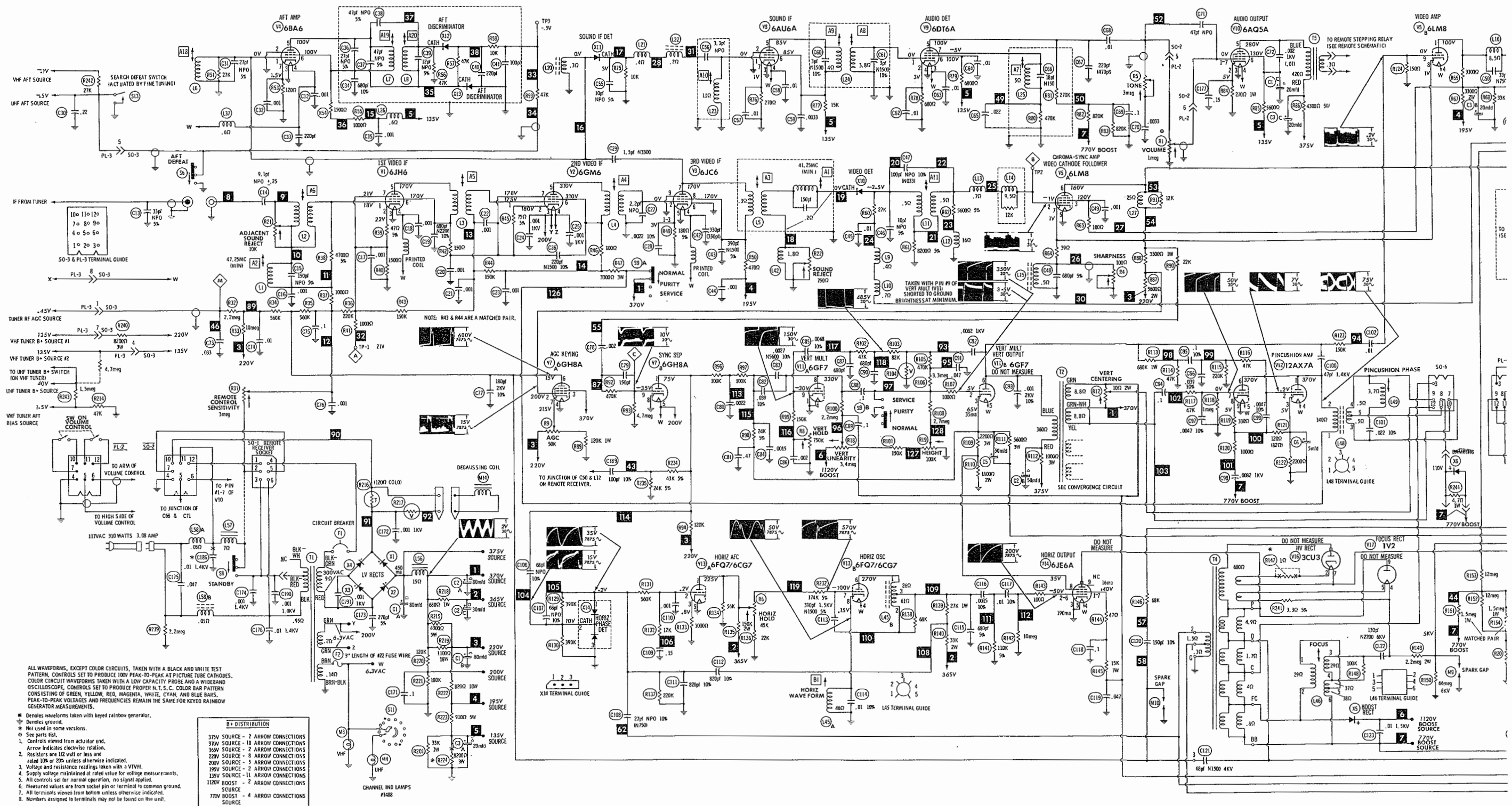
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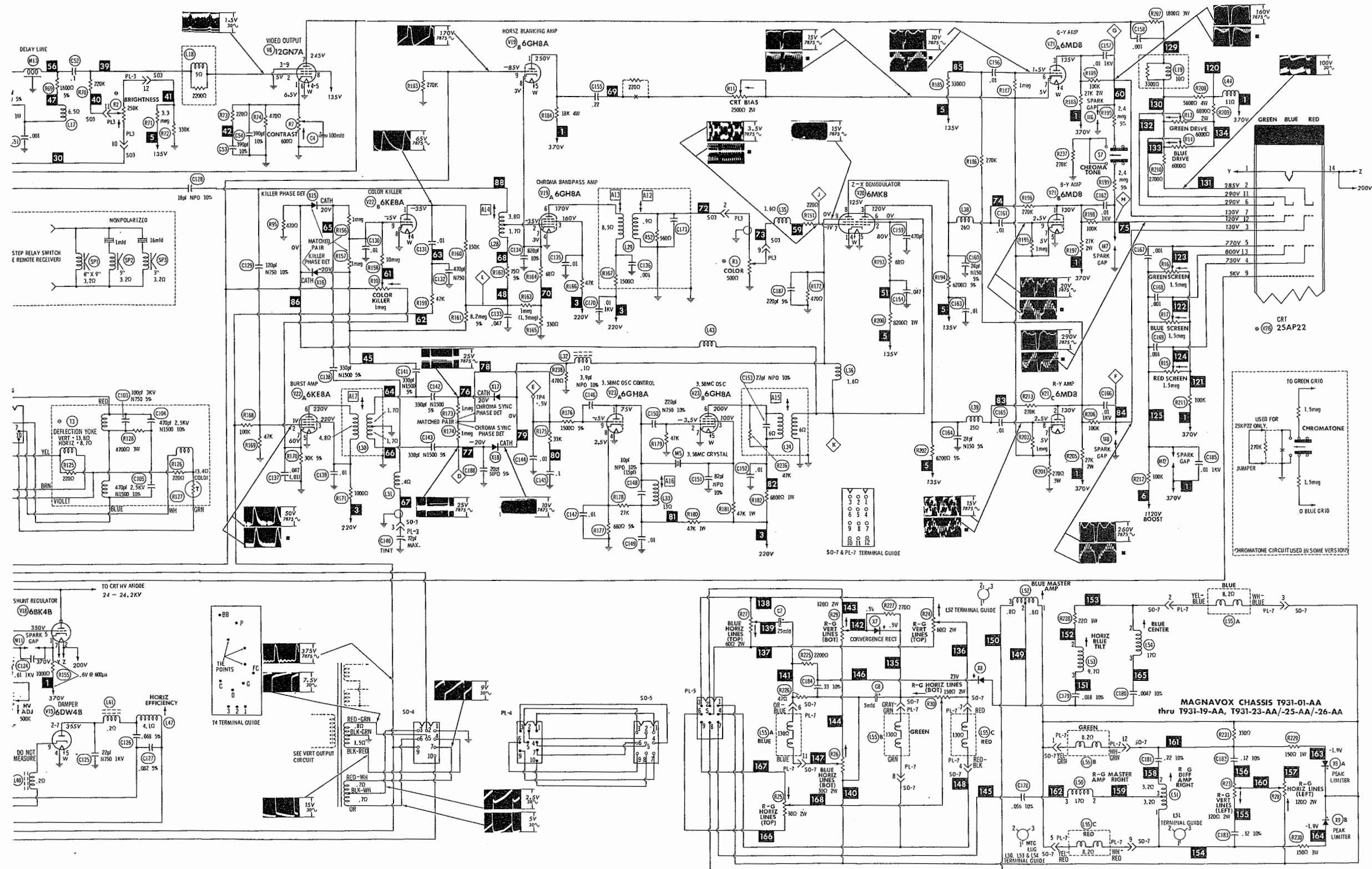
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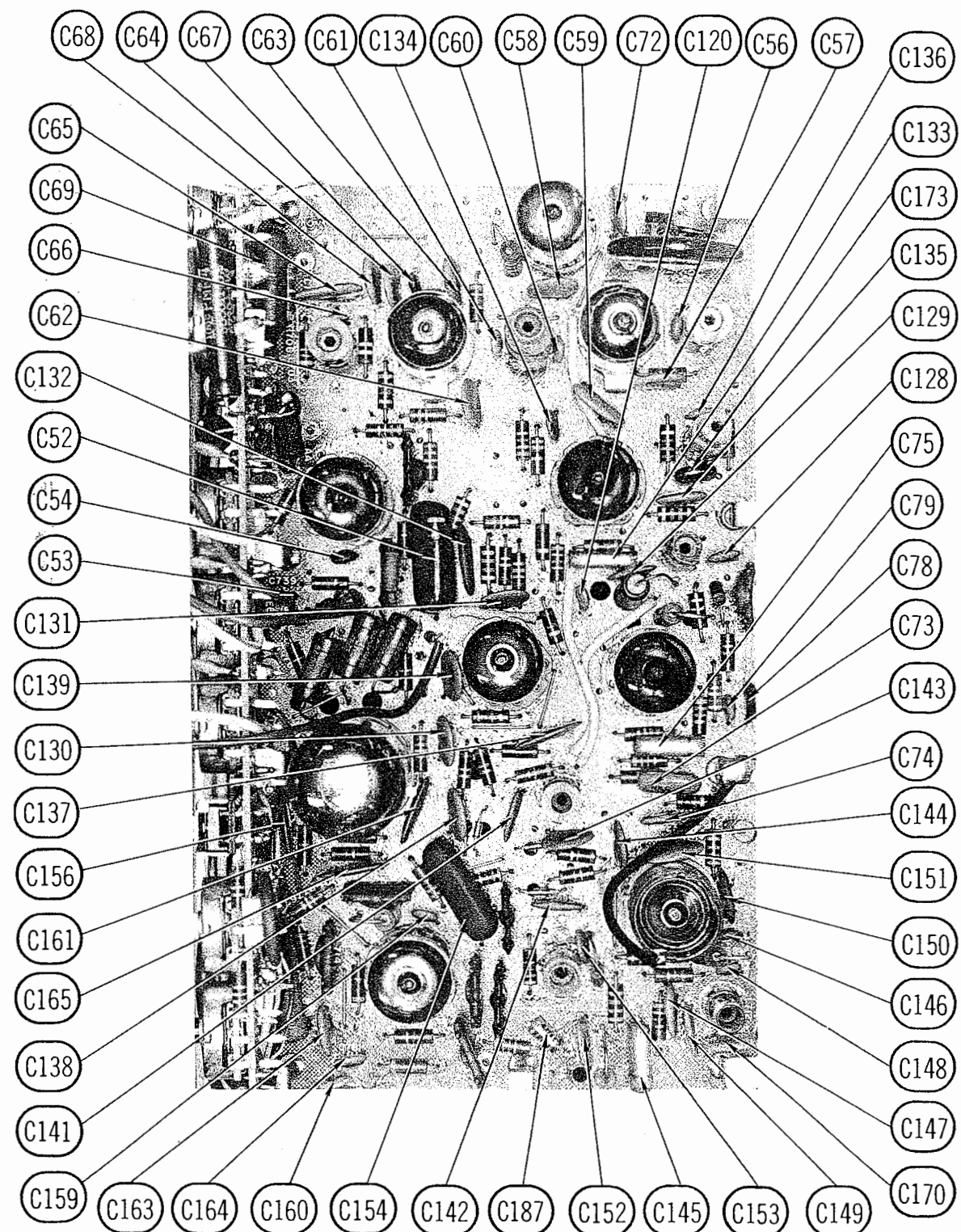
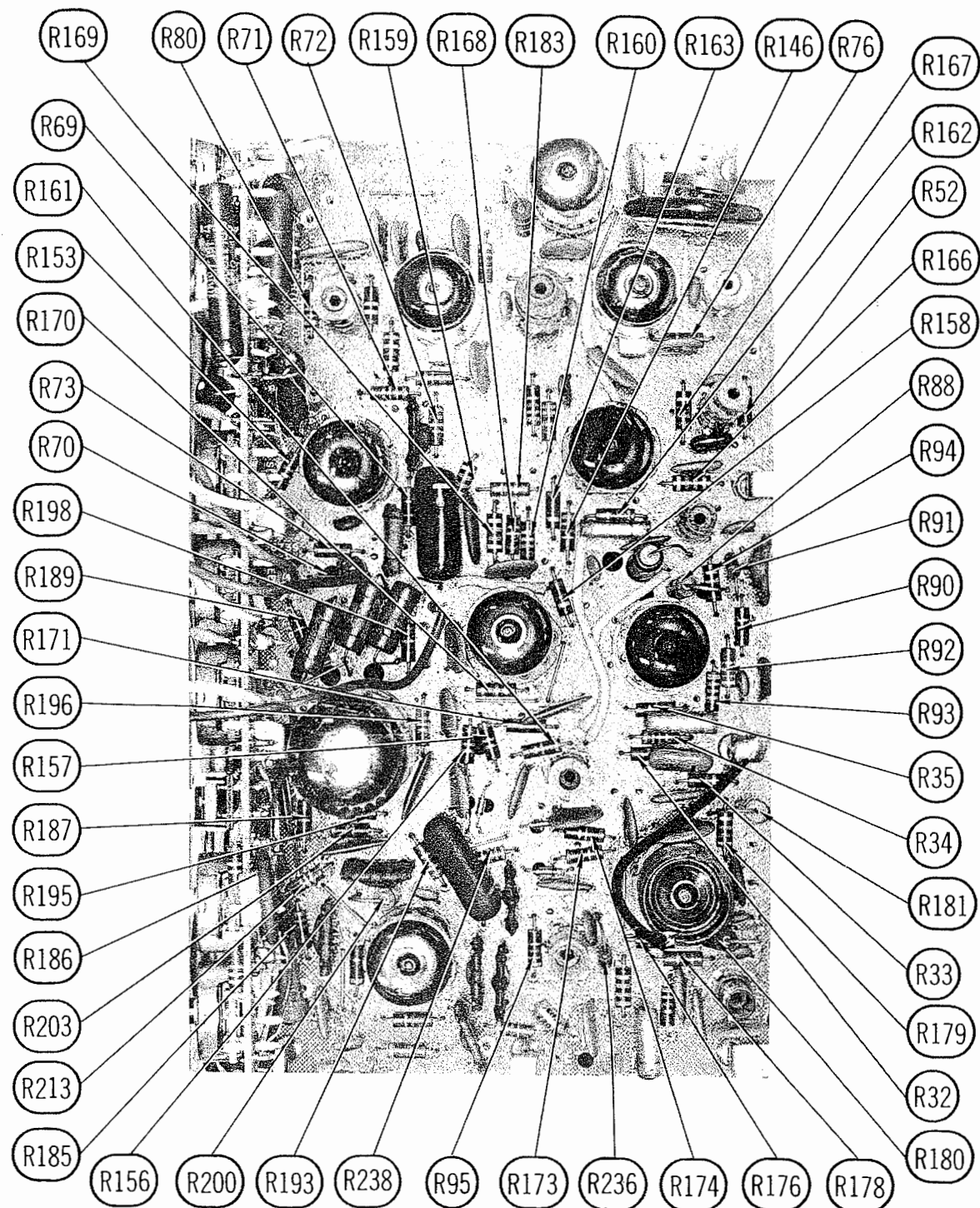
SET 984 FOLDER 1

MAGNAVOX CHASSIS T931-01-AA thru T931-19-AA, T931-23-AA/-25-AA/-26-AA

SET 984 FOLDER 1





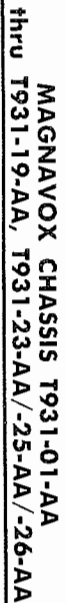


VIDEO OUTPUT AUDIO-AGC SYNC SEP. - CHROMA BOARD

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	TOP CAP
V1	6JH6	220K	1550Ω	FIL	FIL	225Ω ▲	225Ω ▲	1500Ω						
V2	6GM6	82K	INFINITE	FIL	FIL	3400Ω †	3400Ω †	75Ω ▲						
V3	6JC6A	180Ω	0Ω	180Ω	FIL	FIL	0Ω	2200Ω †	2200Ω †	0Ω				
V4	6BA6	0Ω	0Ω	FIL	FIL	5100Ω †	5100Ω †	120Ω						
V5	6LM8	7000Ω †	1300Ω *	5000Ω †	FIL	FIL	11K †	42Ω	42Ω	150Ω				
V6	12GN7A	235Ω	350K	0Ω	FIL	FIL	FIL	5400Ω †	2400Ω †	0Ω				
V7	6GH8A	40K †	7000Ω †	17Ω †	FIL	FIL	700K	22K	0Ω	4.7meg				
V8	6AU6A	12Ω	0Ω	FIL	FIL	17K †	17K †	270Ω						
V9	6DT6A	4.4Ω	680Ω	FIL	FIL	1meg †	10K †	470K						
V10	6AQ5A	250K	270Ω	FIL	FIL	5200Ω †	9000Ω †	NC						
V11	6GF7	0Ω	3meg	2400Ω	FIL	FIL	1420Ω †	NC	3.5meg	480K				
V12	12AX7A	160Ω †	270K	2200Ω	FIL	FIL	160Ω †	1meg	2600Ω	FIL				
V13	6FQ7/ 6CG7	23K	750K	1000Ω	FIL	FIL	65K †	230K	51Ω	0Ω				
V14	6JE6A	15K †	10meg	0Ω	FIL	FIL	10meg	15K †	1500Ω	NC				5.1Ω †
V15	6DW4B	NC	30Ω †	NC	FIL	FIL	NC	30Ω †	NC	1meg				
V16	3CU3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE												740Ω †
V17	1V2	NC	NC	NC	68meg	68meg	TP	NC	NC	5.1Ω †				
V18	6BK4B	1000Ω †	FIL	NC	NC	900K	NC	FIL	NC					INFINITE
V19	6GH8A	19K †	1.5meg	52K †	FIL	FIL	2500Ω †	400Ω	400Ω	220K				
V20	6MK8	0Ω	11K †	8500Ω †	FIL	FIL	.8Ω	225Ω	8600Ω †	2.7Ω				
V21	6MD8	26K †	25K †	28K †	FIL	FIL	1meg	270Ω	1meg	1meg				
V22	6KE8A	1.6meg	34K	2100Ω	FIL	FIL	2100Ω	30K	0Ω	2.5meg *				
V23	6GH8A	20K †	47K	53K †	FIL	FIL	9000Ω †	0Ω	680Ω	3meg *				
V24	25AP22	FIL	6700Ω †	120K †	620K †	630K †	4300Ω †	120K †	NC	66meg	NC	4600Ω †	130K †	
												PIN 13 520K †	PIN 14 FIL	
V201	6HQ5	3.8meg	0Ω	FIL	FIL	11K †	0Ω	0Ω						
V202	6HB7	0Ω	280K	0Ω	FIL	FIL	3700Ω †	27K †	7500Ω †	10K				
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	TOP CAP

NC NO CONNECTION
TP TIE POINT

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.		
<u>SWEEP</u>	<u>LOSS OF PICTURE OR SOUND</u>	<u>COLOR</u> (B/W reception operating normally.)
No raster, has sound V13 thru V16 & V18	No pic, no sound, no raster	No color X15 thru X18, V19 & V22
No vert. deflection V11	No pic, no sound, has raster	Weak color X15 thru X18, V19 thru V22
Poor vert. lin. or foldover V11	No pic, no sound, has snow	No color sync X15 thru X18, V22 & V23
Poor horiz. lin. or foldover V14 & V15	No pic, has sound, has raster	No blue V20 & V21
Narrow picture X1 thru X4, V13, V14, V15	No pic, has sound, no raster	No red V20 & V21
Vert. off freq. V11	Has pic, no sound	Incorrect hue (tint) X15 thru X18, V20 & V22
Horiz. off freq. X14 & V14	Overloaded picture	
<u>RASTER</u>	<u>SYNC</u>	<u>FOCUS</u>
No blue, has R/G (yellow) raster	No vert. sync	Poor focus V17
No red, has B/G (cyan) raster	No horiz. sync	
No green, has R/B (magenta) raster	No vert. or horiz. sync	

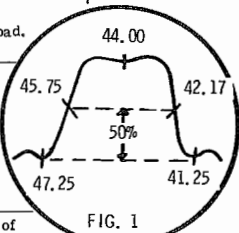


ALIGNMENT INSTRUCTIONS

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 A14 .. GENERAL CEMENT #8606, 8606L, 8869 .. WALSCO #2543, 2544, 2588

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 Ⓢ) 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 Ⓢ. Common to ground.	Connect high side to ungrounded tube shield over Mixer-Osc. Low side to ground.		41.25MC 47.25MC	A1, R22 A2, R21	Adjust for MINIMUM.
2. Connect vertical input of a scope to point Ⓢ. 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 44.00MC 45.75MC 47.25MC	A3, A4, A5, A6, Mixer Plate Coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 1.



SOUND IF ALIGNMENT

Tune in a station and adjust A7 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce signal while aligning for undistorted output by adjusting A8, A9 and A10.

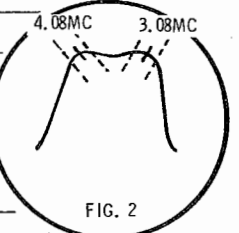
4.5 MC TRAP ALIGNMENT

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.

CHROMA BANDPASS ALIGNMENT

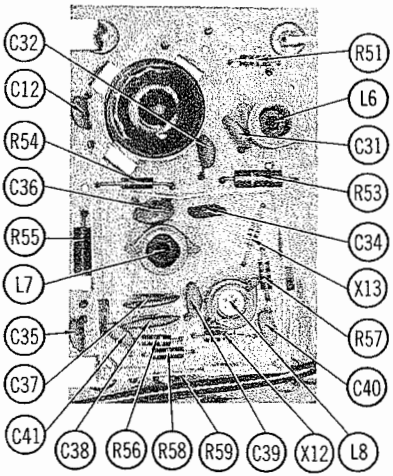
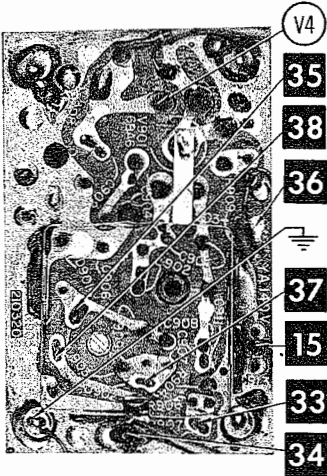
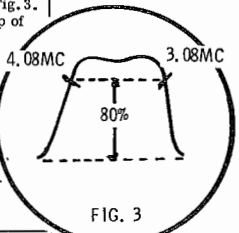
The following alignment will require the use of an RF Modulator (RCA WG304A or equivalent). Connect a -40 volt supply to Point Ⓢ, connect a -2 volt supply to Point Ⓢ, connect a -15 volt supply to Point Ⓢ, positive of all supplies to ground. Connect a jumper from Point Ⓢ to ground. Turn the color intensity to maximum. Remove the Horizontal Output tube and connect a 1500Ω, 100W Resistor from 370V source to ground.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3. Connect high side thru .1mfd to grid of Bandpass Amp. Low side to ground.	3.58MC (3-5MC Sweep)	3.08MC 4.08MC		Vert. Amp. thru Detector Probe to pin 7 of demodulators Point Ⓢ. Low side to ground.	A12, A13	Adjust for response curve similar to Fig. 2.
4. High side of sweep gen. to Video Sweep Input of RF modulator. High side of signal gen. (set at 45.75MC) 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.



TUNER AFT ALIGNMENT

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
Connect high side to ungrounded tube shield over Mixer-Oscillator, low side to ground.	45.75MC 47.25MC			Vert. input to Point Ⓢ, low side to ground.	A18	Detune A20 by backing slug out. Adjust maximum gain between 45.75MC and 47.25MC markers.
"	45.75MC			"	A19	Adjust for maximum response at 45.75MC.
"	45.75MC			"	A20	Adjust for marker at crossover point.



AFT PRINTED BOARD

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 through a high voltage probe to picture tube anode connector.
Point Ⓢ 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 the blanking bars vertical. Remove the short from the horizontal oscillator cathode and adjust B1 until the picture "floats" horizontally. Remove the short from Point Ⓢ. Adjust the horizontal efficiency coil for MINIMUM current in the horizontal output tube (should not exceed 230ma).

Adjust the high voltage control for 25KV on picture tube anode with MINIMUM brightness. Check to see that horizontal output current does not exceed 230ma. If foldover occurs in picture, adjust horizontal efficiency clockwise to eliminate foldover while checking to make sure horizontal output current does not exceed 230ma.

Adjust Focus, Height and Vertical Linearity controls.

COLOR AFC ALIGNMENT

Set the Color Killer 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 2 of V22, Burst Amp., to ground.

Connect DC probe of VTVM through 470K to Point Ⓢ, low side to ground. Adjust A15 for maximum deflection on VTVM. If no reading is obtained, oscillator is not operating. Adjust A16 to start oscillator, then adjust A15 for maximum. Remove the short from Point Ⓢ. Adjust A16 for maximum deflection on VTVM. Make sure oscillator is running and locked in.

Short Point Ⓢ to ground. Remove VTVM. Adjust A17 until color bars stand still or drift slowly. Remove the short from Point Ⓢ and check to see that the color bars will sync with a low level input signal. If necessary, retouch A17 for best hold.

Connect the vertical input of a scope to Point Ⓢ. Check for proper waveform with the color bar generator being used. See waveform on schematic for pattern obtained from a standard NTSC signal. Check the range of the Tint control. The bars should move 30° either side of proper signal. If necessary, retouch A17 for proper range of control.

Check for proper waveform at G-Y and B-Y outputs (Points Ⓢ and Ⓢ). Tune in a weak signal or reduce the signal at the antenna terminals to obtain a snowy picture. Adjust the Color Killer control to eliminate color in the snow. Check with a color signal to make sure the killer is not eliminating picture coloring.

PURITY ADJUSTMENTS

Perform Step 1 of "Convergence Adjustments". If the picture tube appears to be magnetized, use a degaussing coil to demagnetize tube and mounting brackets. Set the Service switch in the Purity position.

Connect the Blue and Green grids of the picture tube through individual 100K resistors to ground. Loosen the deflection yoke and move it rearward until it is against the convergence yoke assembly.

Adjust the tabs on the Purity magnet and rotate the assembly until a red spot appears at the center of the picture tube. Slide the deflection yoke forward to obtain a uniform red over entire picture tube face. A low power microscope is useful to observe the beam landings.

GRAY SCALE ADJUSTMENTS

Set the Brightness, CRT Bias and the screen controls fully counterclockwise. Set the Chromatone switch in the Off position. Set the Blue and Green Drive controls fully clockwise and the Service switch in Service position. Advance the screen controls one at a time until each produces a barely visible line. If one or more controls fail to produce a line, leave that screen control at maximum and advance the CRT Bias control until a barely visible line appears. Then readjust the other two screen controls for a barely visible line. Set the Service switch in Normal position and the Brightness control for normal brightness. Adjust the Blue and Green Video Drive controls to eliminate coloring in light and dark areas of the picture.

Turn Brightness and Contrast controls to maximum (fully clockwise). Adjust the CRT Bias control until the picture blooms (distorts), then reduce the control to the point just below where the picture returns to normal.

DYNAMIC PINCUSHION ADJUSTMENTS

The side pincushion is a fixed correction and no adjustments are provided on this chassis. Top and bottom pincushion is factory adjusted and readjustment is seldom needed. If necessary, top pincushion may be corrected by adjusting for straight horizontal lines at the top of the screen.

Connect a crosshatch generator to the antenna terminals and adjust set for a normal crosshatch pattern. Adjust the Pincushion Phase coil, L49, for a straight horizontal line at top of the screen.

AGC ADJUSTMENT

Tune in a strong TV station and advance 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.

CONVERGENCE ADJUSTMENTS

Step	Control	Use to Converge (or Straighten)	Remarks
1.			Perform Center Dot Convergence using convergence magnets. See Fig. A.
2.	R-G Vertical Lines, Top (R-G Master Tilt)	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 Vertical Lines, Bottom (R-G Master Amp)	Red and Green Vertical bars at bottom of screen.	
4.	R-G Horizontal Lines, Top (R-G Diff. Tilt)	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 (R-G Diff. Amp)	Red and Green Horizontal bars at bottom of screen.	
6.	Blue Horizontal Lines, Top (Blue Tilt)	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 Amp)	Blue Horizontal bars at bottom of screen.	
8.			Perform Center Dot Static Convergence (Fig. A).
9.	Blue Horizontal Lines, Right (Blue Master Amp)	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 Tilt)	Blue Horizontal bars at left side of screen.	
11.	R-G Vertical Lines, Right (R-G Master)	Red and Green Vertical bars at right side of screen.	(Fig. E)
12.	R-G Horizontal Lines, Right (R-G Diff. Amp)	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).
13.	R-G Vertical Lines, Left (R-G Master Tilt)	Red and Green Vertical bars at left side of screen.	(Fig. E)
14.	R-G Horizontal Lines, Left (R-G Diff. Tilt)	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).

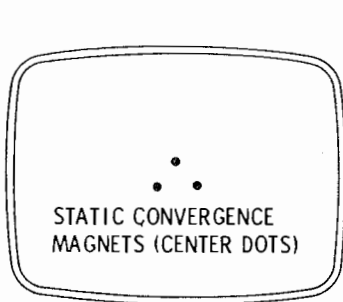


FIG. A

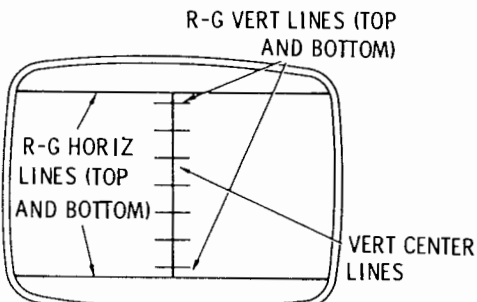


FIG. B
(RED AND GREEN ONLY)

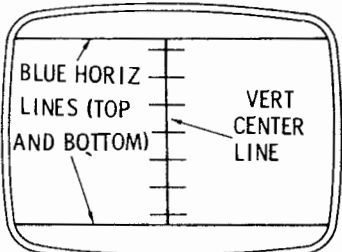


FIG. C
(BLUE BARS)

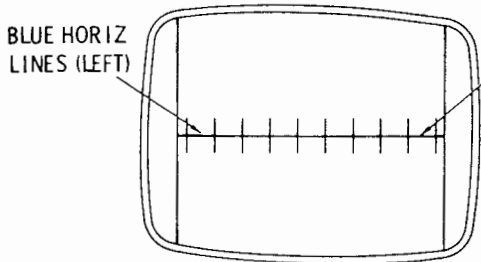


FIG. D
(BLUE BARS)

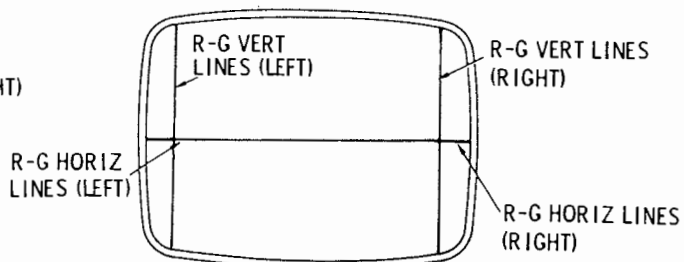
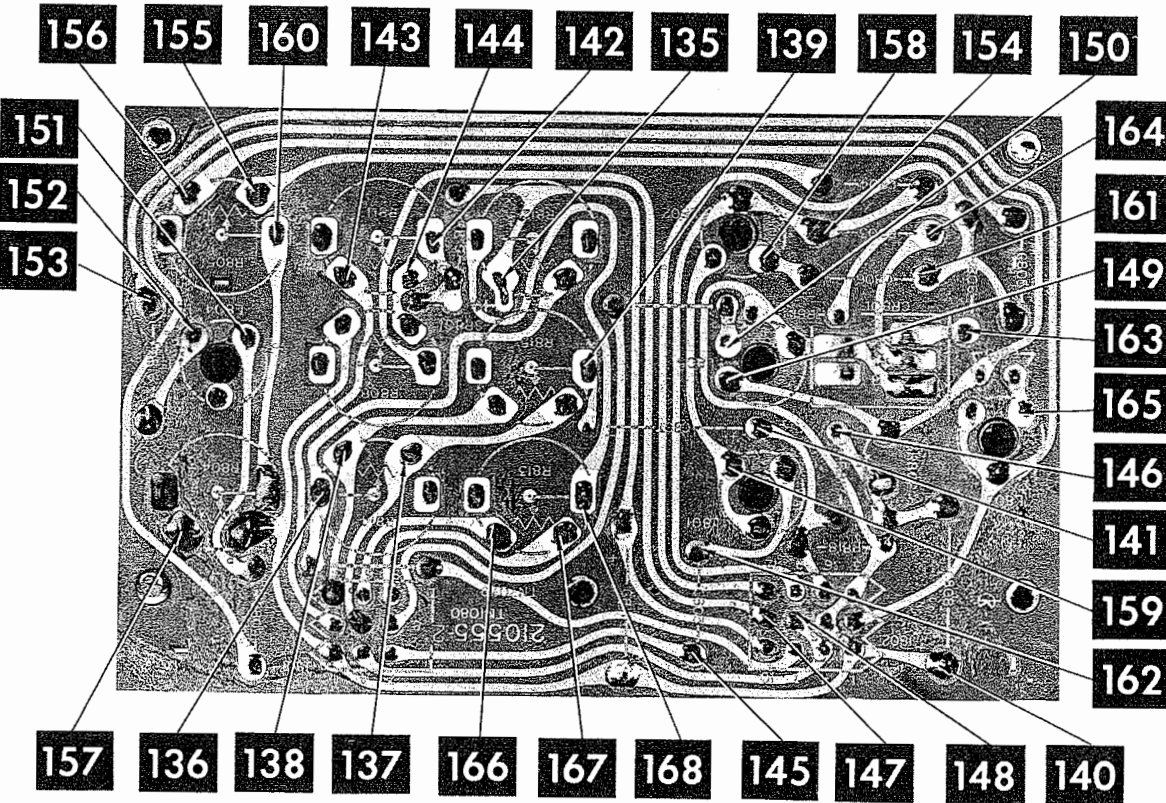
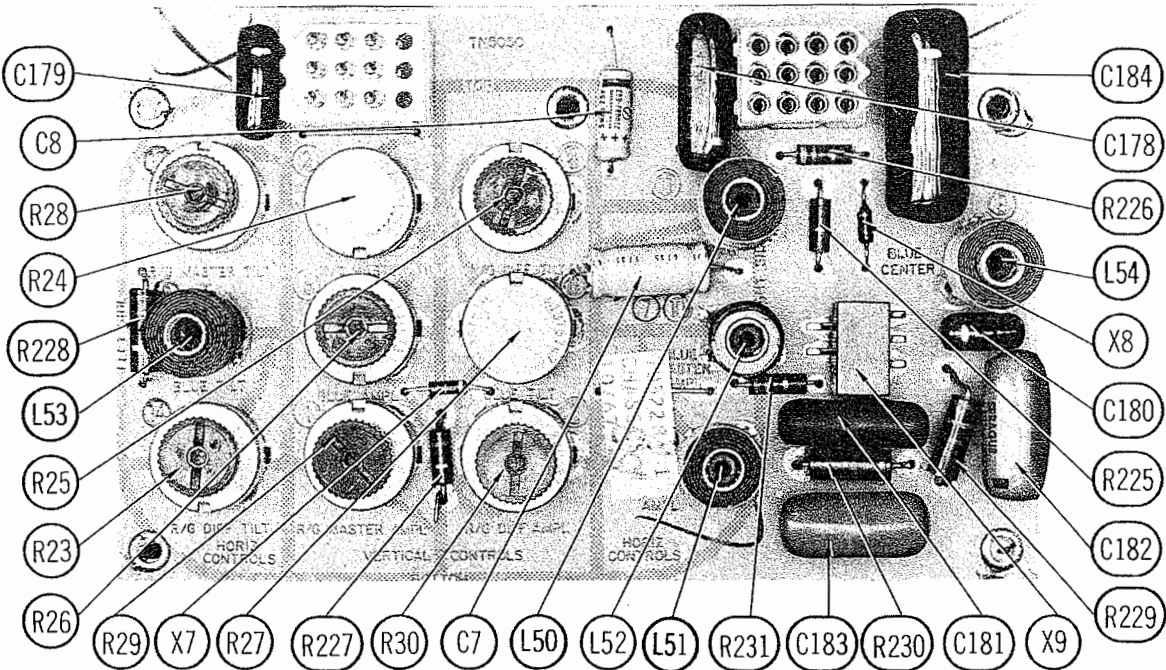


FIG. E

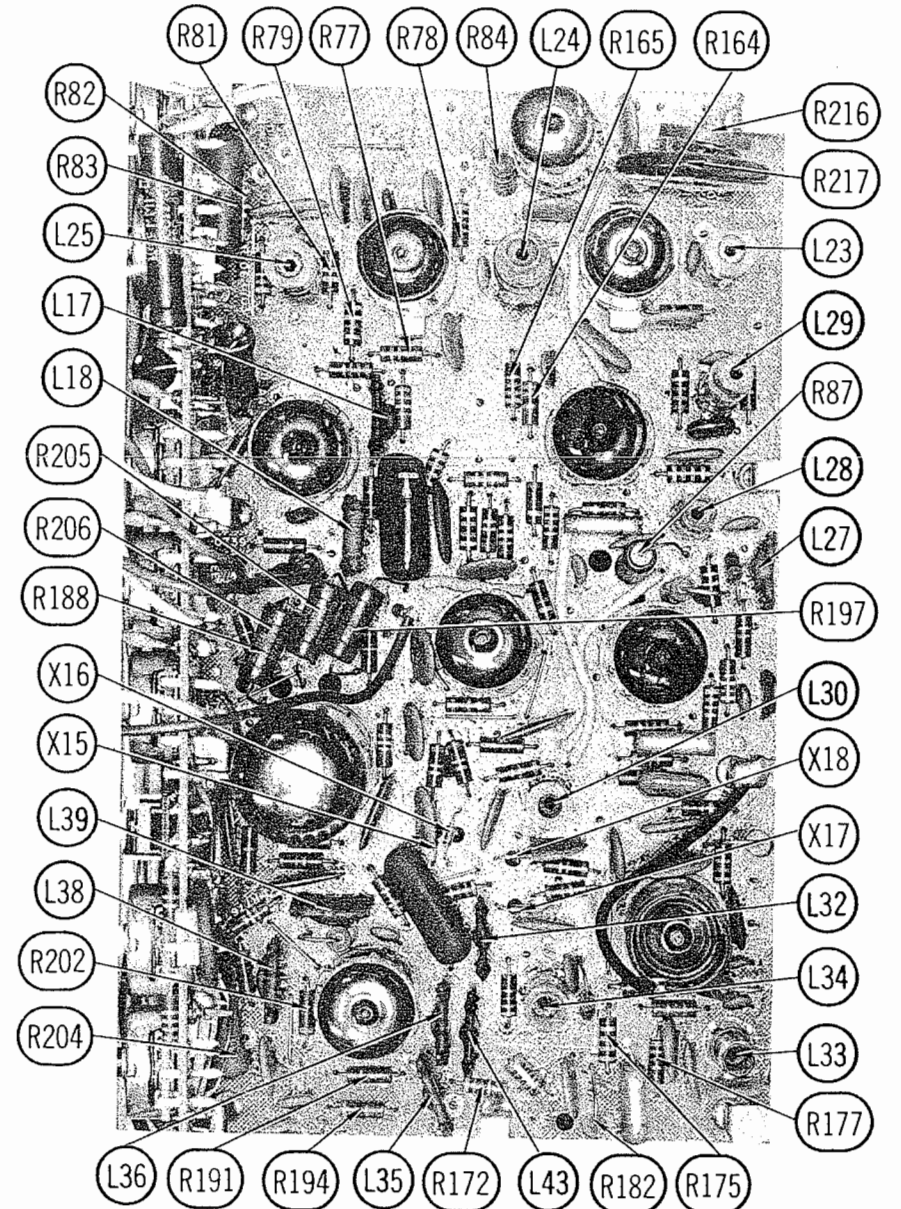
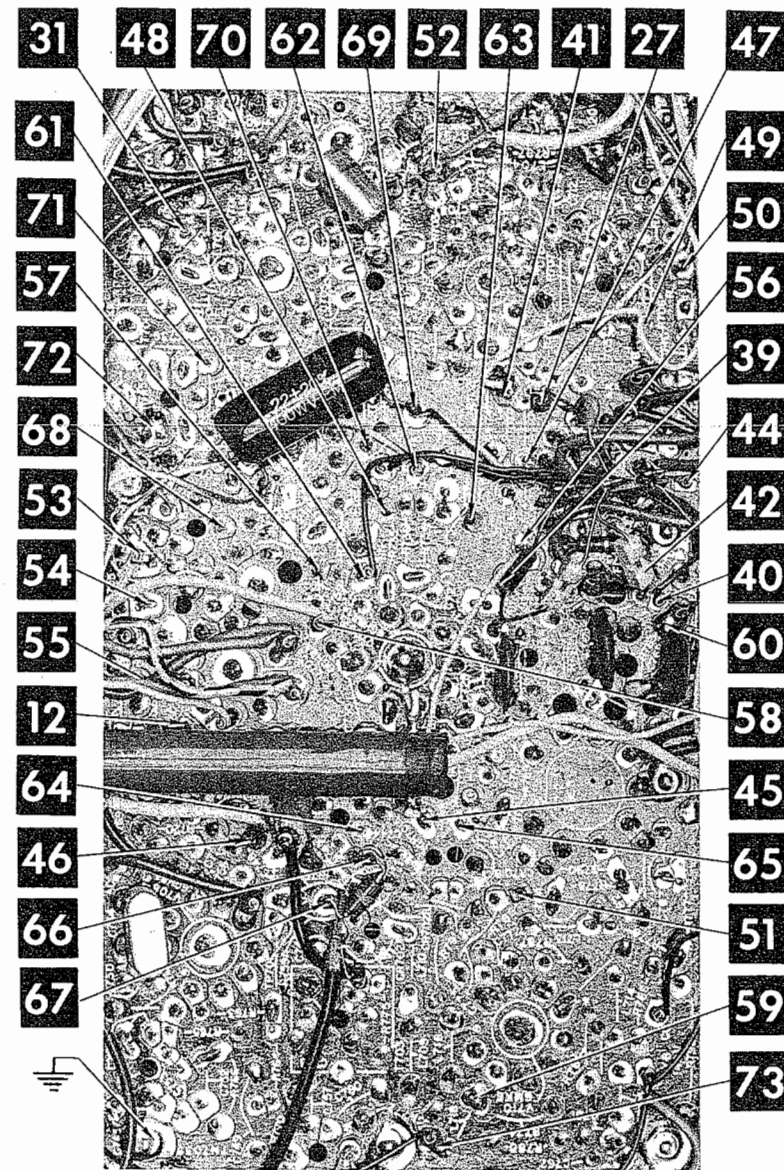
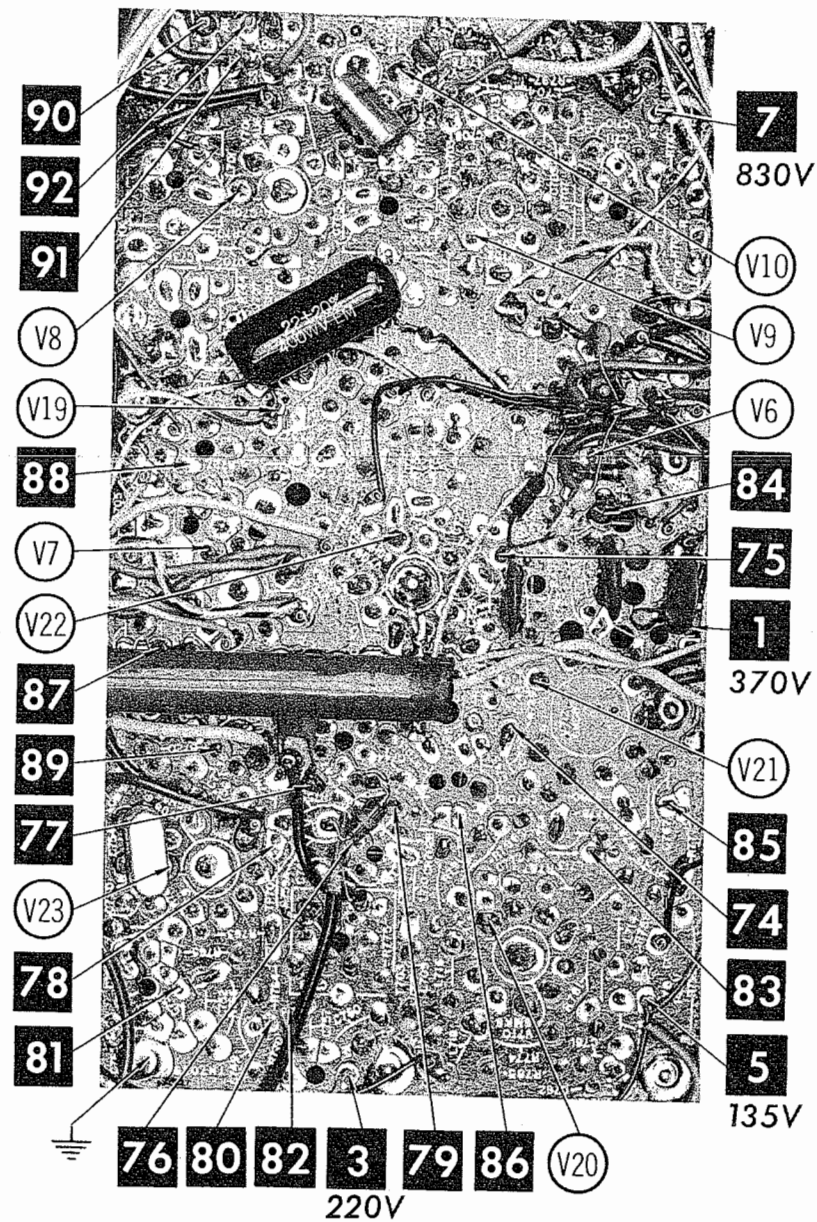


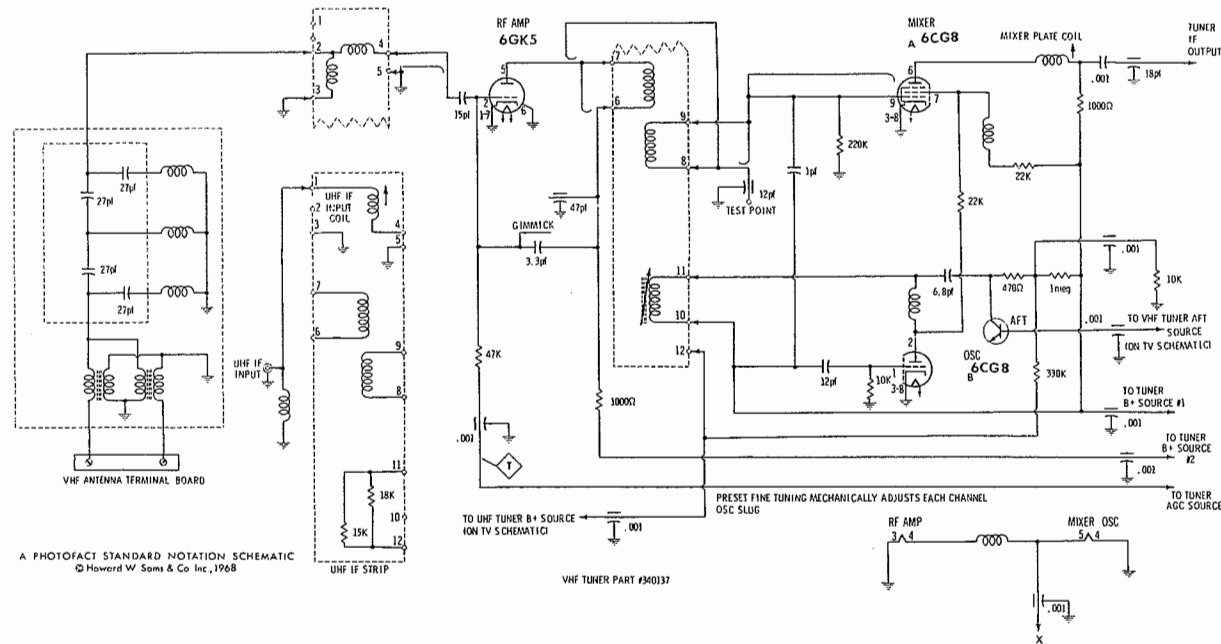
A Howard W. Sams CIRCUITRACE® Photo

CONVERGENCE BOARD

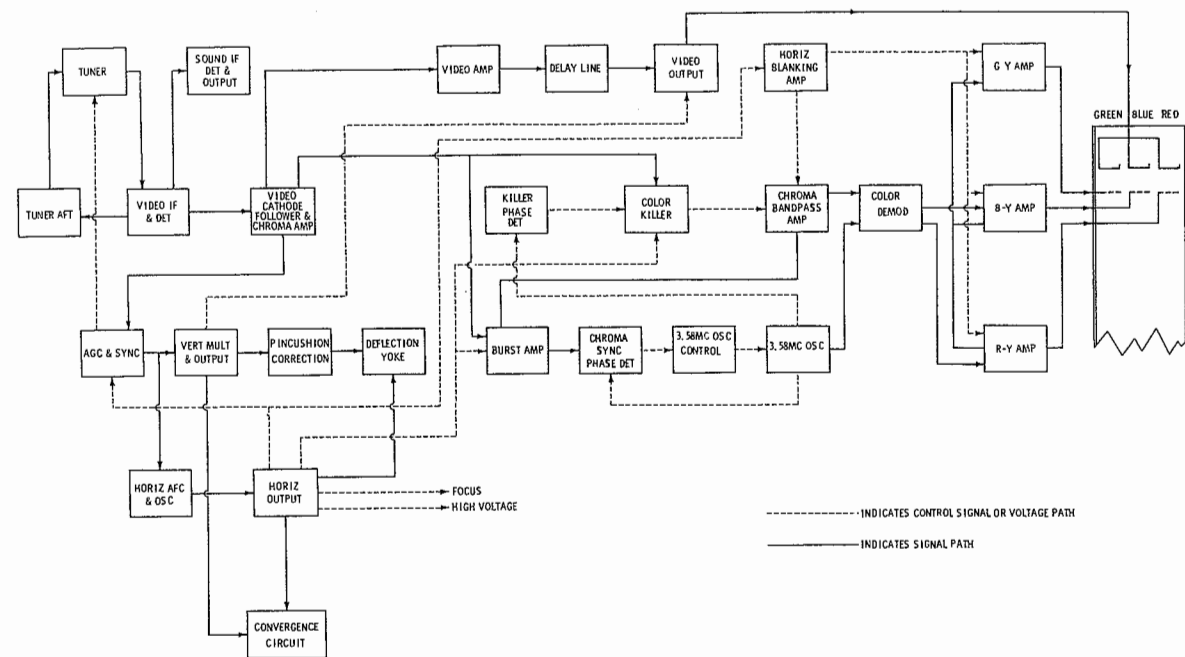
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thru 1931-19-AA, 1931-23-AA/-25-AA/-26-AA

FOLDER 1

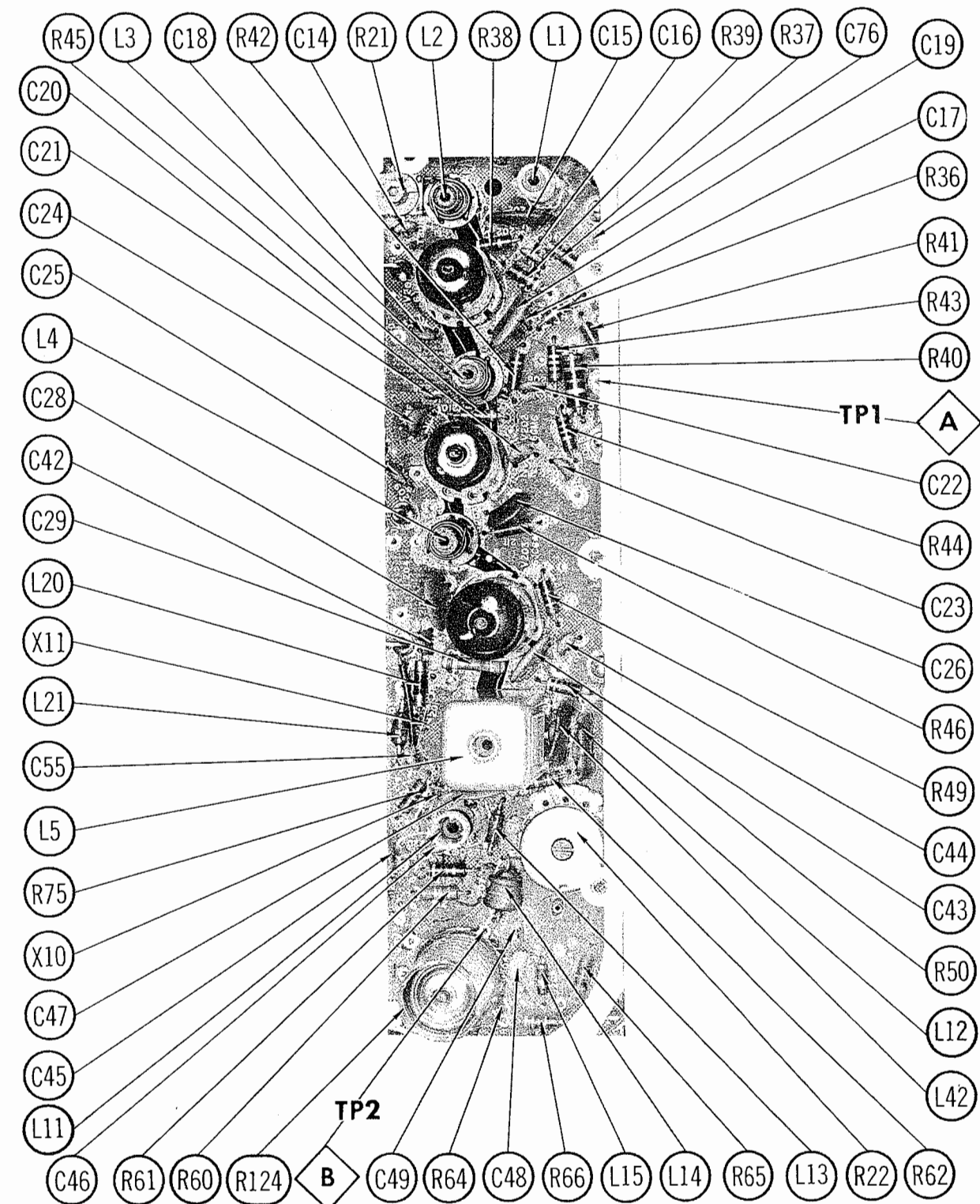




VHF TUNER 340137-1



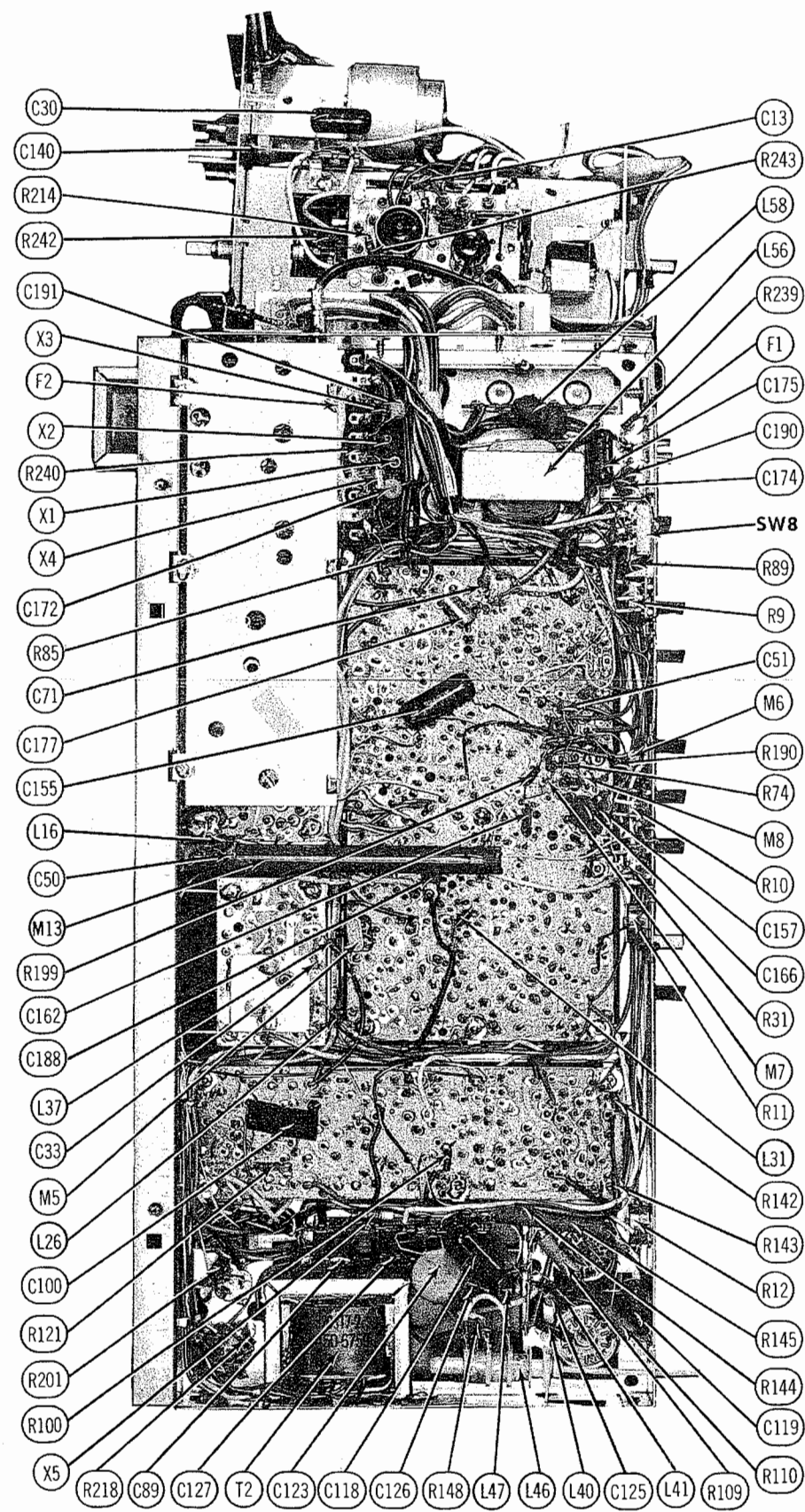
BLOCK DIAGRAM



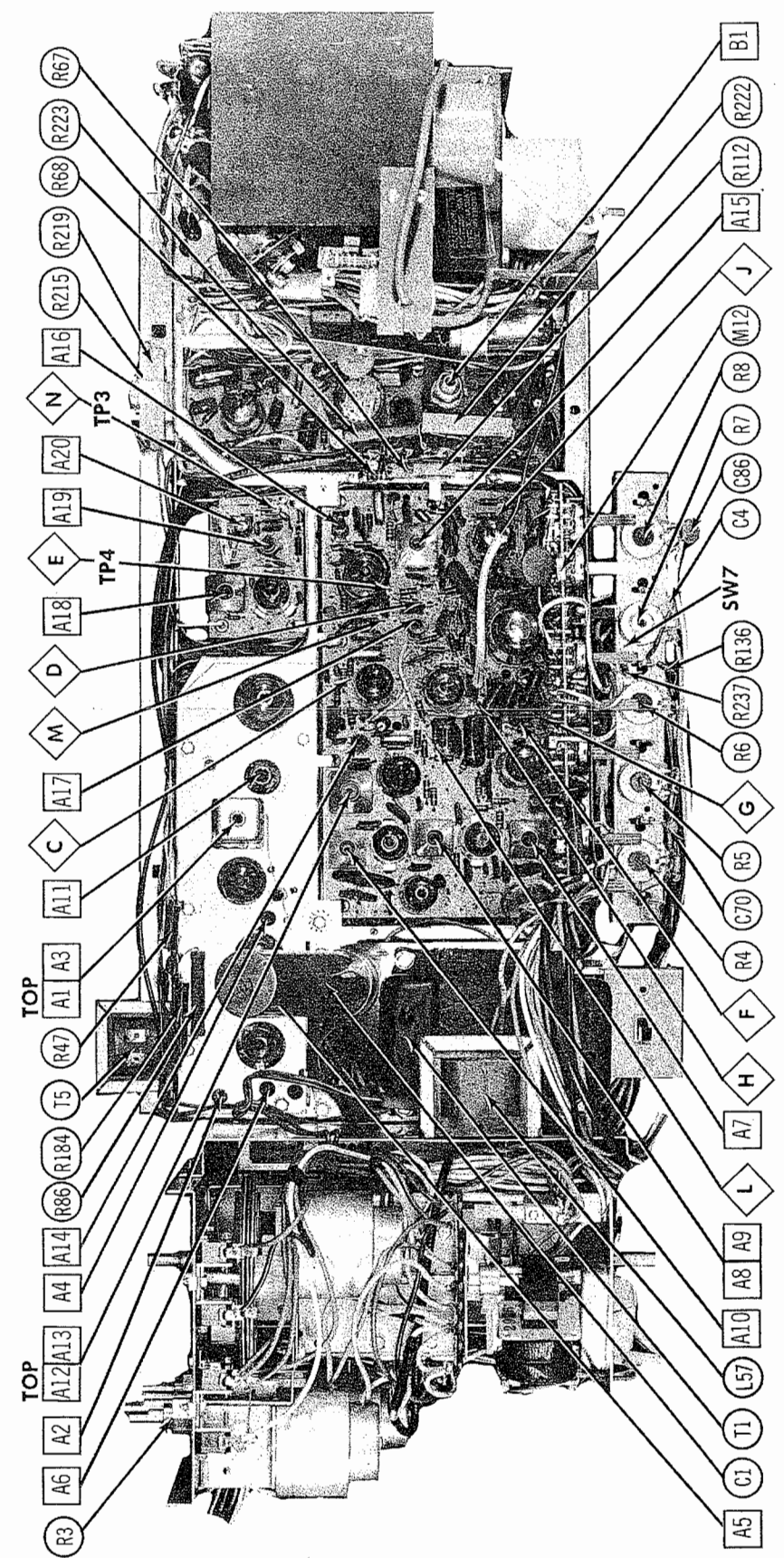
VIDEO BOARD

MAGNAVOX CHASSIS 1931-01-AA
thru 1931-19-AA, 1931-23-AA/-25-AA/-26-AA

FOLDER 1



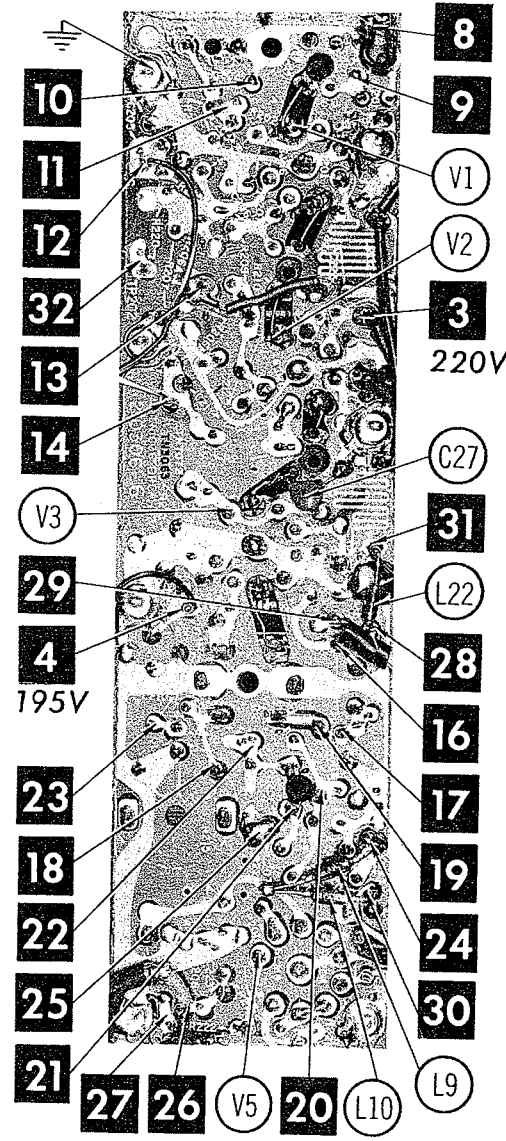
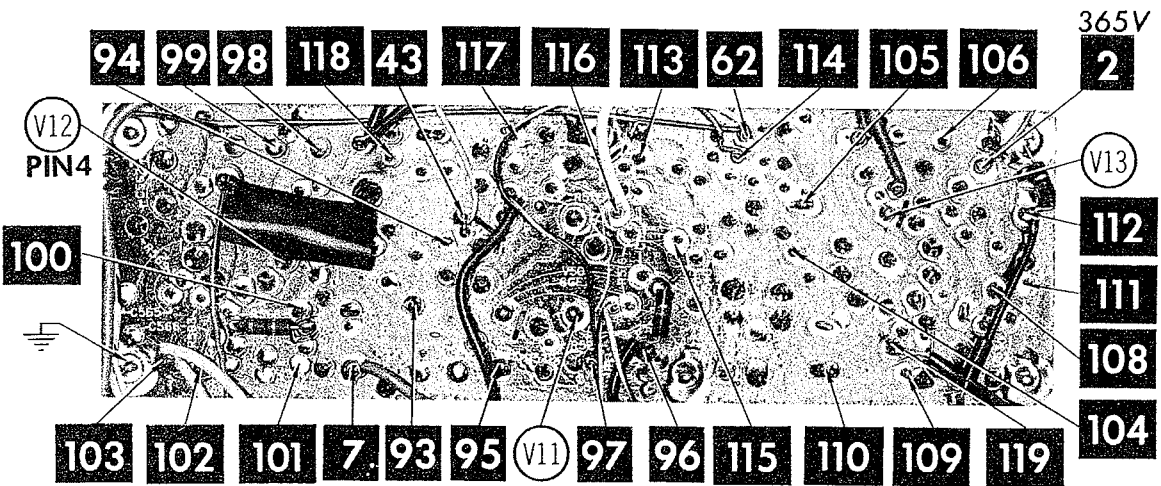
CHASSIS - BOTTOM VIEW



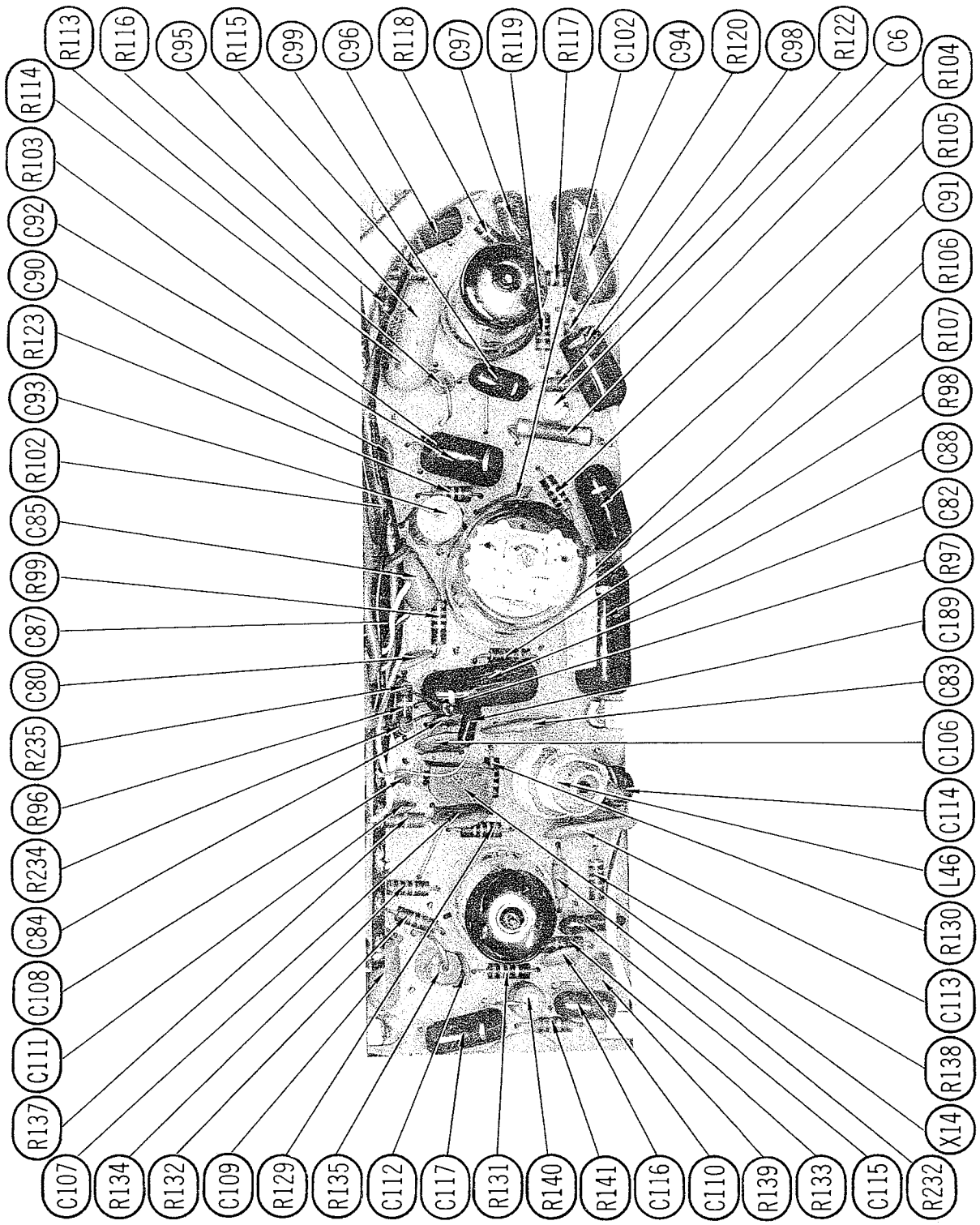
CHASSIS - TOP VIEW

DEFLECTION BOARD

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



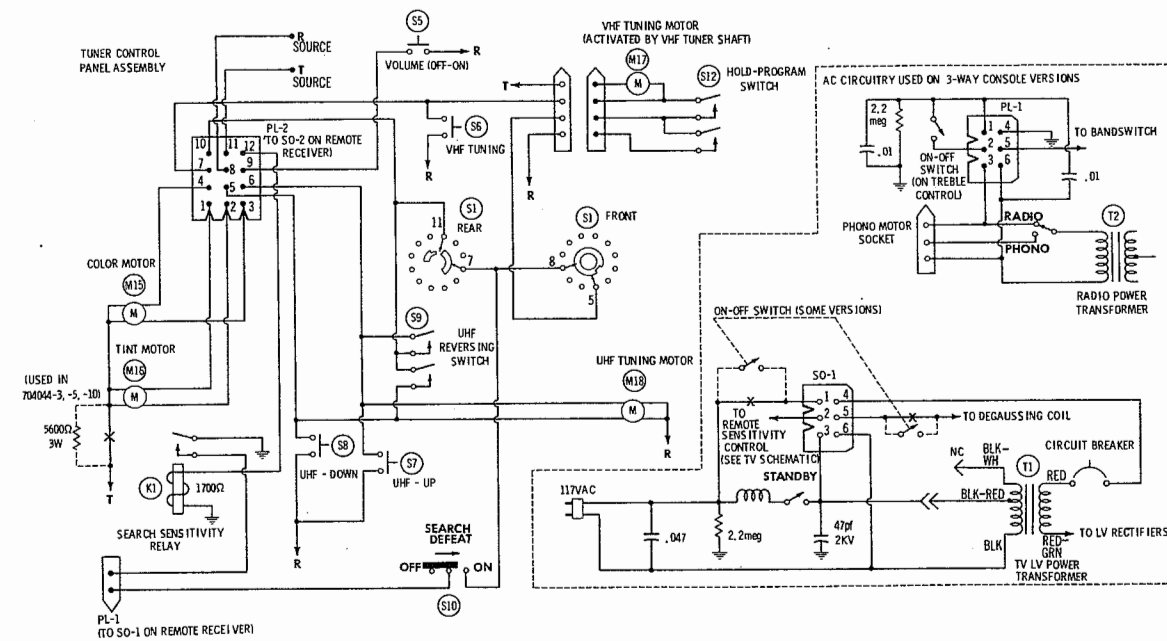
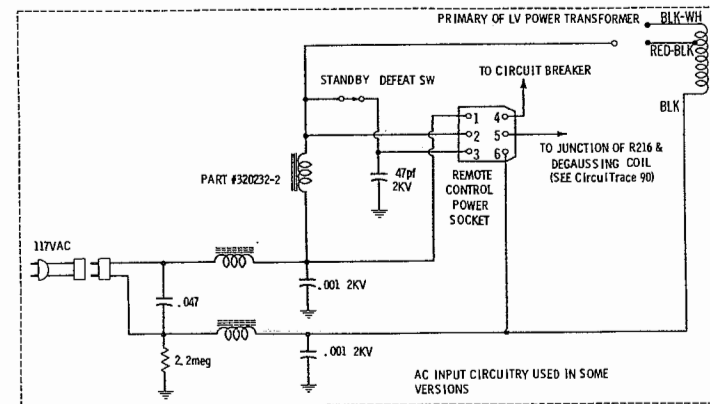
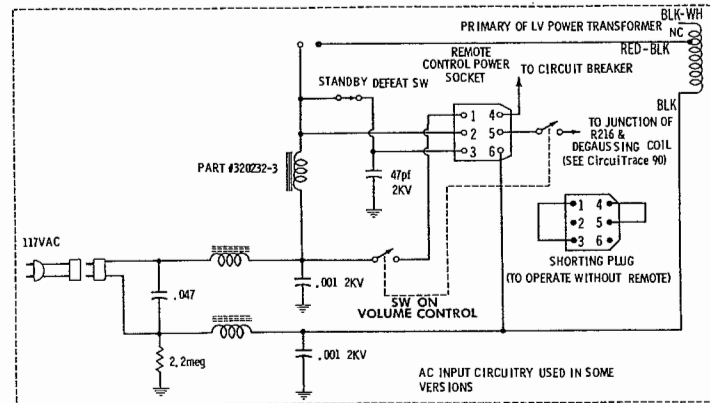
VIDEO BOARD



DEFLECTION BOARD

MAGNAVOX CHASSIS 1931-01-AA
thru 1931-19-AA, 1931-23-AA/-25-AA/-26-AA

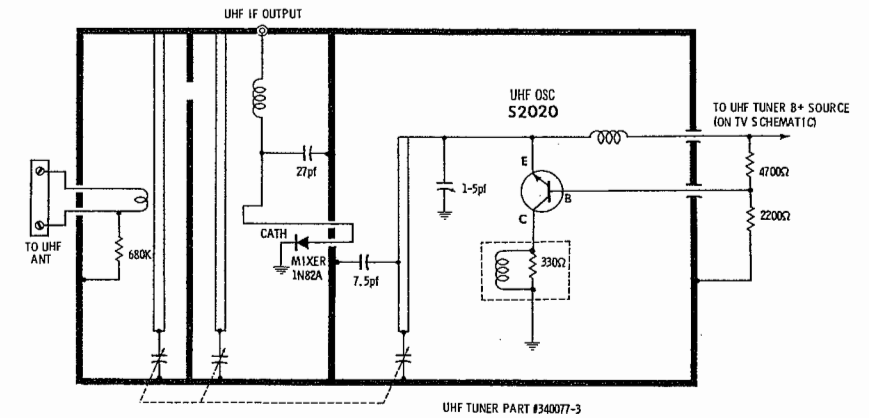
FOLDER 1



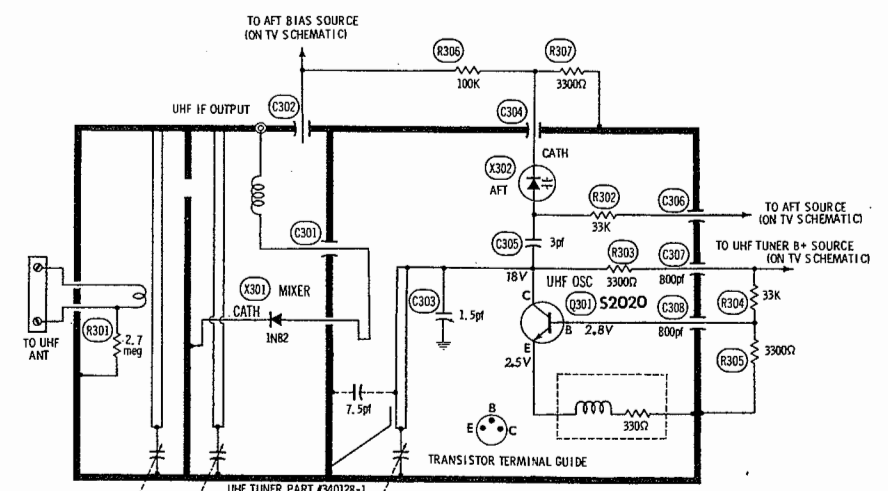
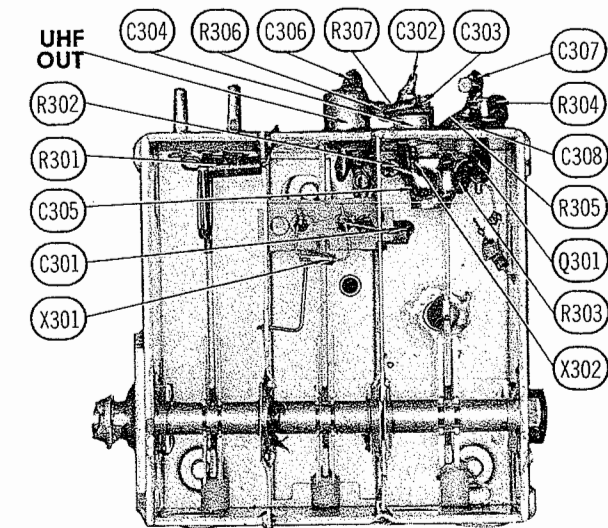
NOTE: LETTERS "R", "S" & "T" CONNECT TO 117VAC SOURCE POINTS. (SEE REMOTE RECEIVER POWER SUPPLY.)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with **CIRCUITTRACE**
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UHF TUNER 340077-3



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UHF TUNER 340128-1

VHF TUNER PARTS LIST

TUBES

• AMPEREX •			• GENERAL ELECTRIC •			• RCA •			• SYLVANIA •		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6HQ5	V202	Mixer - Oscillator	6HB7						

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.
Q201		VHF AFT Diode (Transistor used as diode)	530082-3					

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MAILORY PART No.	SPRAGUE PART No.
C201A	27			DD-270		CCD-270	GP427	10TS-Q27
C201B	27			DD-270		CCD-270	GP427	10TS-Q27
C201C	27			DD-270		CCD-270	GP427	10TS-Q27
C201D	27			DD-270		CCD-270	GP427	10TS-Q27
C202	15			DD-150		CCD-150	GP415	10TS-Q15
C203	27			DD-270		CCD-270	GP427	10TS-Q27
C204	5-4.5							
C205	30							
C206	.001							
C207	.5-4.5							
C208	1.2							
C209	18							10TCC-V12
C210	.75pf							
C211	.5-4.5							
C212	.001							
C213	6.8 NPO							
C214			NPO-DI 6.8	DTZ-6R8	CZ601CH6R8D	CCTO-6R8	CNO568	10TCC-V68
C215	8.2 N470					*	*	10TCT-V82
C216	.001							
C217	.001							
C218	.001							
C219	.001							
C220	.001							
C221	.001							
C222	3		NPO-DI 3.0					10TCC-V30
C223	.001		GPD X5 F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

UHF TUNER PARTS LIST

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.
Q301	S2020	UHF Oscillator	610107-1		GE-11	TR-24	SK-3019	ECG 108

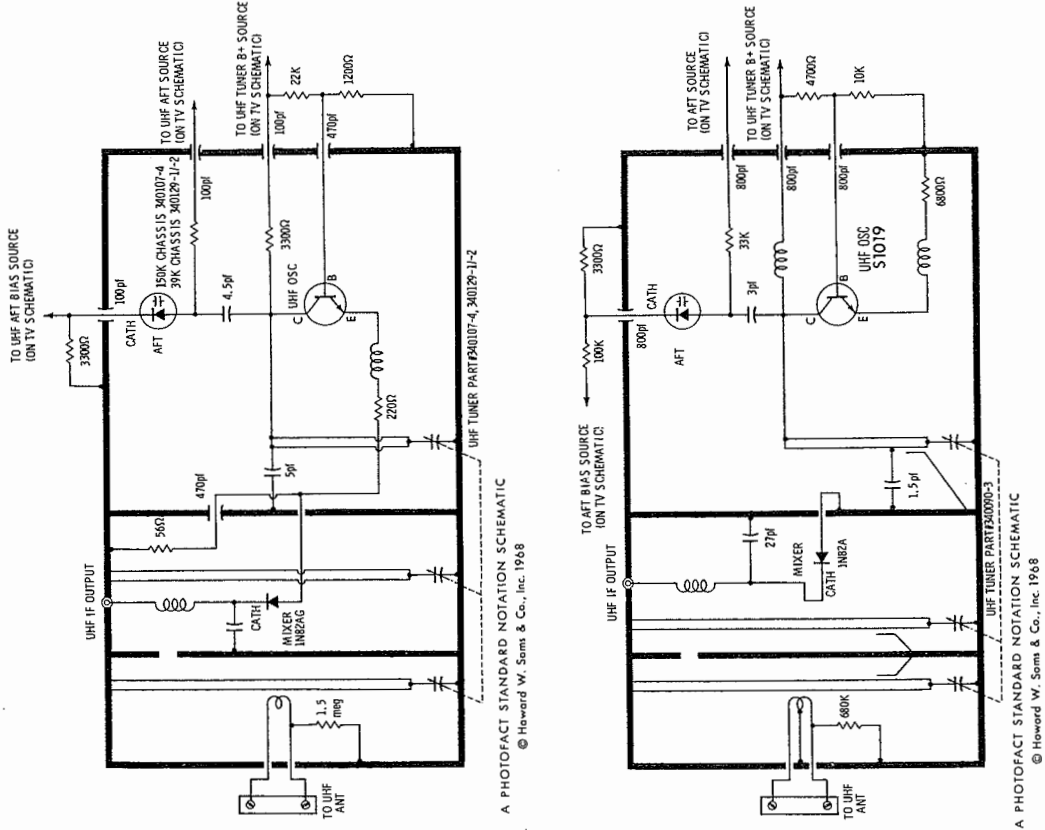
POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS		NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X301	1N82A	1N82A	1N82AG	ECG 112			
X302	Varicap						

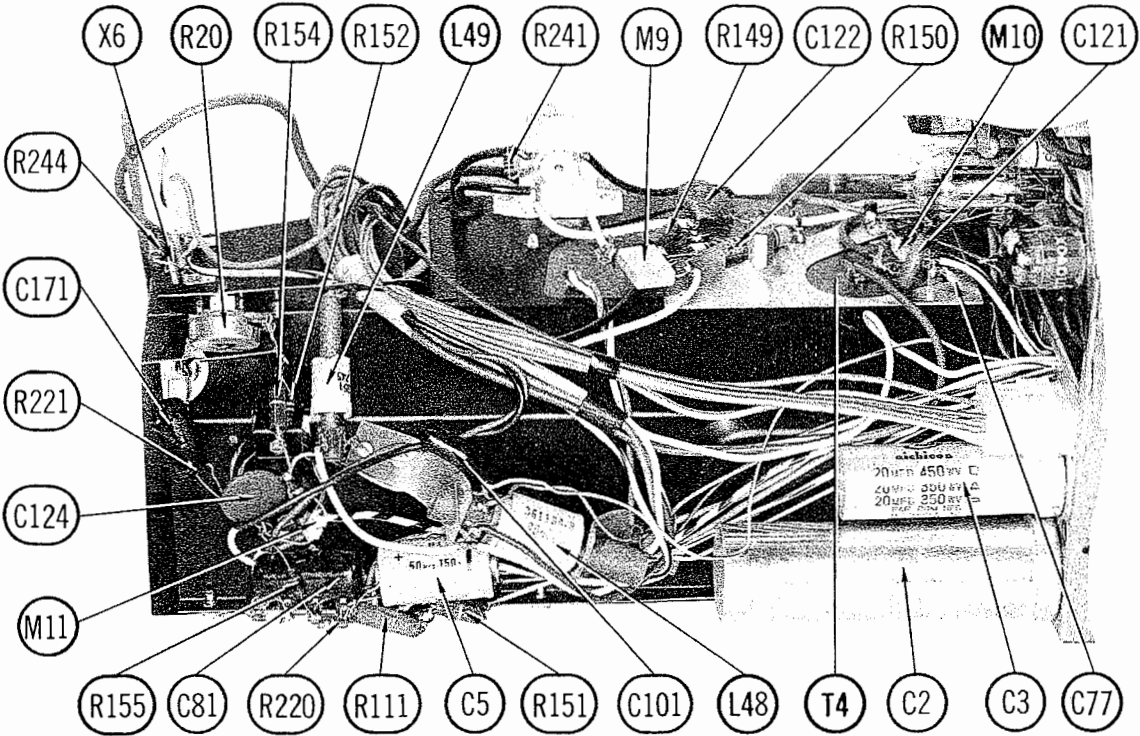
CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MAILORY PART No.	SPRAGUE PART No.
C301								
C302								
C303	1.5							
C304								
C305	3		NPO-DI 3.0					10TCC-V30
C306								
C307	800							
C308	800							
C309	7.5							

UHF TUNER 340107-4, 340129-1/-2



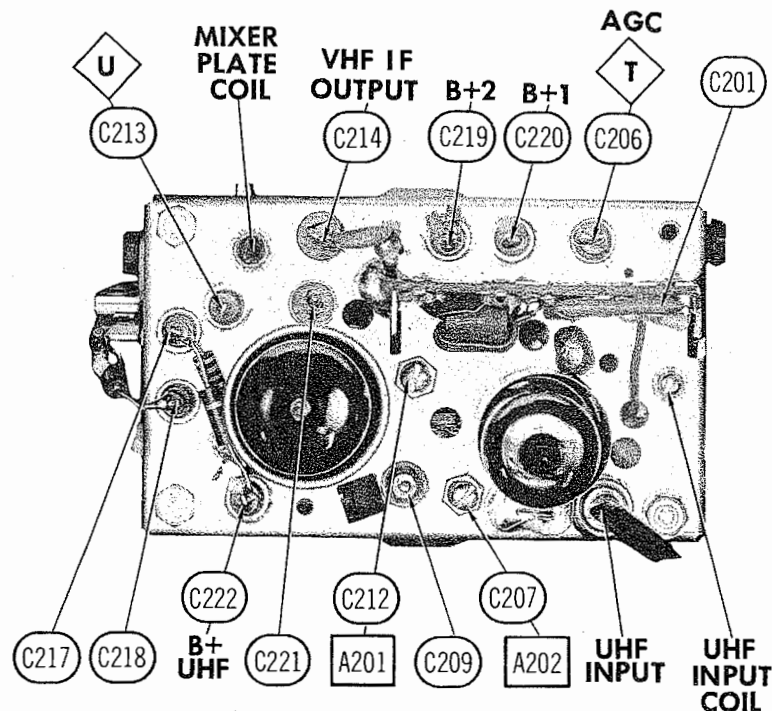
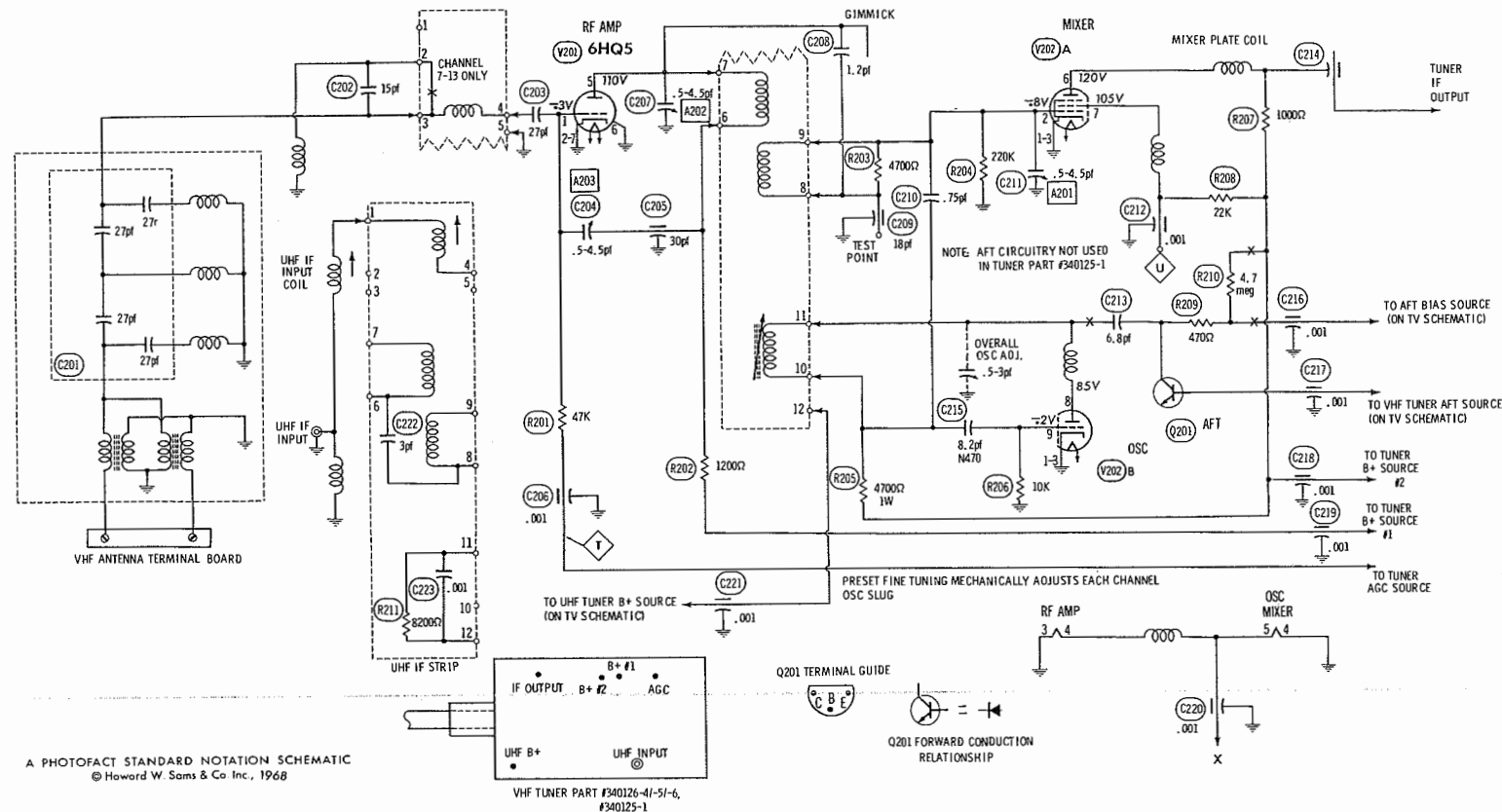
UHF TUNER 340090-3



HV CAGE FRONT VIEW

MAGNAVOX CHASSIS 1931-01-AA
thru 1931-19-AA, 1931-23-AA/-25-AA/-26-AA

FOLDER 1



VHF TUNER

VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools:
A201, A202, A203, UHF Input Coil .. GENERAL CEMENT #8868, 8987, 9089 .. WALSCO #2531X, 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.

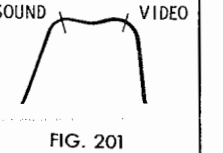
RF AND MIXER ALIGNMENT

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 available channels. Make compromise adjustment of A201 & A202 if necessary.

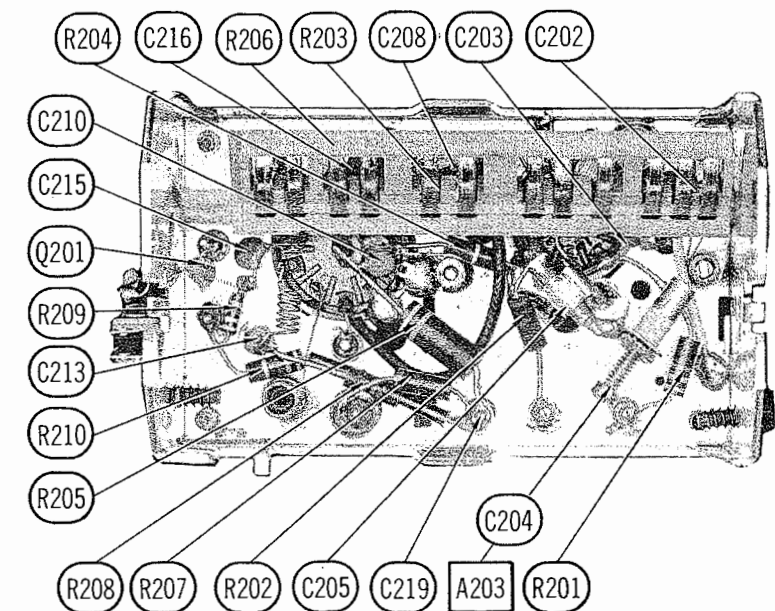
CHANNEL & FREQUENCY CHART

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



UHF TUNER ALIGNMENT INSTRUCTIONS

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



PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, 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.

COILS (RF-IF) (cont)

ITEM No.	USE	REPLACEMENT DATA				
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.	
L18	Peaking (120uh)	360853-4	19-3125 -	6153 -	T342 -	
L19	Peaking (145uh)	361091-3	19-2026 ▲	72F154AP ▲	TA347 ▲	
L20	RF Choke (12uh)	360676-1	19-1006	72F125AP	TA820	
L21	RF Choke	360852-11	19-1000	74F106AP	T805	
L22	RF Choke (5.6uh)	360676-7	19-1008	72F566AP	T820	
L23	Sound Takeoff	360845-2				
L24	Sound Interstage	360846-3				
L25	Quadrature	360847-2		SI-144		
L26	RF Choke (1uh)	360852-10	19-1000	Q-113 ■		
L27	Peaking (620uh)	360853-11	19-2030	74F106AP	T805	
L28	Chroma Takeoff	360959-5		6146	T355	
L29	Chroma Bandpass	361192-1		6042		
L30	Burst	361094-2		6043		
L31	RF Choke (2.5uh)	360852-8	19-1002	4606	T857	
L32	RF Choke (8.2uh)	360876-13	19-2015	4611	T822	
L33	Chroma Ref. Osc. Control	360963-4				
L34	3.58MC Oscillator	361198-2		6041		
L35	RF Choke (1uh)	361043-1	19-2016	72F105AP	T860	
L36	RF Choke (1uh)	361043-1	19-2016	72F105AP	T860	
L37	RF Choke (1uh)	360852-10	19-1000	74F106AP	T805	
L38	Peaking (620uh)	360853-11	19-2030	6146	T355	
L39	Peaking (620uh)	360853-11	19-2030	6146	T355	
L40	RF Choke (5.6uh)	360676-5	19-1008	74F566AP	T820	
L41	RF Choke (5.6uh)	360676-5	19-1008	74F566AP	T820	
L42	RF Choke (12uh)	361043-4	19-2016	72F125AP	TA343	
L43	RF Choke (8.2uh)	360876-13	19-2015	4611	T822	
L44	Peaking (31uh)	361091-4	19-3300	6155	T318	
L45	Line Choke (65uh)	361259-1				

* Clip unused pin.
■ Remove original 18pf capacitor from set.
▲ Shunt with 12K Resistor.
▲ Shunt with 2200Ω Resistor.
▲ Shunt with 3300Ω Resistor.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA						
		MFR. PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	WORKMAN PART No.
L45	Horiz. Waveform - Horiz. Oscillator	360960-3						
L46	Focus	361306-1		H-106		WC-56		
L47	Horiz. Efficiency	361022-3						
L48	Pincushion Correction	361134-3						
L49	Pincushion Phase	361135-1	MWC-2	6318	WC-17	WC-23 ①	WLC-23	T124
L50	Right R/G Master Amp. (Right R/G Vert. Lines)	361092-1		6347		WC-41		T149
R51	Right R/G Diff. Amp. (Right R/G Horiz. Lines)	361092-3		6348				
L52	Blue Master Amp.	361092-5						
L53	Horiz. Blue Tilt	361188-1		H-138				
L54	Blue Center	361092-1		6347		WC-41		T149
L55	Convergence Yoke Assembly	361303-2						
A	Blue Coil	170745-1						
B	Green Coil	170745-3						
C	Red Coil	170745-2						

① Enlarge mounting hole.

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA						NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L56	.4A DC	15Ω	.45 H	320124-4	C-4125	C-2343	26C79	C-34X	
L57	.62A DC	7Ω	.25 H	320232-3					† External Audio Version.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
			MFRG. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
	PRI.	SEC. 1						
T1	117VAC @ 3A AC	300VAC @ .45A DC	300251-1	P-4151C				
	SEC. 2	SEC. 3						
	6.3VAC @ 2.25A AC	6.3VAC @ 9.4A AC						

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MFR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	Vertical Output	320317-2	A-4140C	VO-700C	26S86	A-305X	* Use original core clamp and bracket. ▲ Used in 21" models.
T3	Yoke (Vert. 21mh) 90° (Horiz. 12.2mh)	361290-102	MDF-145C	DY-91AC	Y-108 ▲	YC-310-2	
	Alternate Yoke	361290-302 ▲					
T4	Horiz. Output	361197-2(F)					

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MFR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	19000Ω	4-6Ω	320130-3	A2999 ①		24508 ①		① Drill new mounting holes.

SWEEP COMPONENT CONNECTION DATA

ORIGINAL →	VERTICAL OUTPUT					YOKE					YOKE PLUG											
REPLACEMENT ↓	Original Connections					Original Connections					1	2	3	4	5	6	7	8	9	10	11	12
											TO YOKE TERMINAL											
MERIT	NO WIRING CHANGE NECESSARY																					
STANCOR	NO WIRING CHANGE NECESSARY																					
THORDARSON	NO WIRING CHANGE NECESSARY																					
TRIAD	NO WIRING CHANGE NECESSARY																					

† Use original yoke plug and rewire. Duplicate original horizontal network.
‡ Remove wire from yoke terminal #12. ▲ Remove Orange lead.
* Remove Blue lead. Connect vertical damping resistors between yoke terminals #4 and #8.
Connect a wire from junction of resistors to yoke plug pin #8.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		MFR. PART No.	JENSEN PART No.	QUAM PART No.	
SP1	6" x 9" PM 3.2Ω	586909-1	P6X9V3	69A1	
SP2	6" x 9" PM 3.2Ω	586909-1	P6X9V3	69A1	
SP3	5" PM 3.2Ω	580503-1	P5V3	5A15	
	3" PM 3.2Ω	580301-1	P3W3	3A05	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA						
		PART No.		BUSS PART No.		LITTELFUSE PART No.		WORKMAN PART No.
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER	DEVICE
F1	Circuit Breaker Hold Current 2.1A Break Current 3.1A 3" length #22 fuse wire	180723-2				81503.5		FA3.5
F2								

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES	
K1	Relay	160413-4	Search Sensitivity	
M1	VHF Tuner	340126-4		
	VHF Tuner	340125-1		
	VHF Tuner	340126-6		
	VHF Tuner	340126-5		
	VHF Tuner	340137-1		
M2	VHF Tuner	340128-1		
	UHF Tuner	340077-3		
	UHF Tuner	340107-4		
	UHF Tuner	340090-3		
	UHF Tuner	340129-2		
	UHF Tuner	340129-1		
M3	VHF Indicator Lamp	180161-30 (1488)		CHICAGO MINIATURE Replacement CM1488
M4	UHF Indicator Lamp	180161-30 (1488)		CHICAGO MINIATURE Replacement CM1488
M5	Crystal	530089-2		3.58MC
M6	Spark Gap	180832-3		
M7	Spark Gap	180832-3		
M8	Spark Gap	180832-3		
M9	Spark Gap	180832-1		
M10	Spark Gap	180832-3		
M11	Spark Gap	180832-3		
M12	Spark Gap	180832-2		
M13	Delay Line	360949-5		
M14	Degaussing Coil	361266-3	2 used	
M15	Motor	500220-2	Color (Chassis T931-10)	
	Motor	500220-4	Color (Chassis T931-11/12) (704044-1/-7/-9)	
	Motor	500225-2	Color (Chassis T931-17/18/19) (704044-4/-6/-8)	
	Motor	500225-1	Color (704044-3/-5/-10)	
M16	Motor	500220-1	Tint (Chassis T931-10) (704044-2/-8)	
	Motor	500220-3	Tint (Chassis T931-11/12) (704044-1/-7/-9)	
	Motor	500225-1	Tint (Chassis T931-17/18/19)	
	Motor	500225-2	Tint (704044-3/-5/-10)	
	Motor	500222-1	VHF (Chassis T931-10/17) (704044-2/-4/-6/-8)	
M17	Motor	500222-1	VHF (Chassis T931-11/12/18/19) (704044-1/-3/-5/-7/-9/-10)	
	Motor	500222-2	UHF (704044-2/-5/-6/-8)	
M18	Motor	500221-2 or	UHF " " " "	
	Motor	500222-1	UHF " " " "	
	Magnet	361292-1	Blue Lateral & Purity Assembly	
S1	Switch	160393-1	UHF Up (Micro)	
S2	Switch	160393-1	UHF Down (Micro)	
S3	Switch	160393-1 or	VHF Selector (Micro)	
	Switch	160393-1	VHF Selector "	
S4	Switch	160393-1	On-Off/Volume (Micro)	
S5	Switch	160370-3	Search Defeat	
S6	Switch	160370-3	AFT Defeat (Automatic Color)	
S7	Switch	160370-7	Chromatone	
S8	Switch	160370-7	Fast-On	
S9	Switch	160370-2	Normal-Service	
S10	Switch	160422-1	Reversing (Actuated by Tuner Shaft)	
S11	Switch		VHF/UHF Indicator (on rear of VHF Tuner)	
S12	Switch		Audio Mute/VHF Stop	
S13	Switch		AFT Defeat (Part of VHF Tuner)	

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

PARTS LIST AND DESCRIPTION

(When ordering parts, state Model, Part Number, 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.

WIRING DATA

High Voltage Lead	Use BELDEN No. 8868 (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
300Ω Tuner Input Lead	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
300Ω Antenna Lead-in	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor
Antenna Rotor Cable	Use BELDEN No. 8485 (Round) - 5 Conductor
	8488 (Round) - 8 Conductor

TUBES

• AMPEREX		• GENERAL ELECTRIC		• RCA		• SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE	
Q301	UHF Oscillator (Transistor)	S2020		V11	Vert. Mult. - Vert. Output	6GF7	
Q201	VHF AFT Diode (Transistor)			V12	Pincushion Amp.	12AX7A	
V201	RF Amp.	6HQ5		V13	Horiz. AFC - Horiz. Osc.	6FQ7/6CG7	
V202	Mixer - Oscillator	6HB7		V14	Horiz. Output	6JF6A	
V1	1st Video IF	6JH6		V15	Damper	6DW4B	
V2	2nd Video IF	6GM6		V16	HV Rectifier	3CU3	
V3	3rd Video IF	6JC6		V17	Focus Rectifier	1V2	
V4	AFT Amp.	6BA6		V18	Shunt Regulator	6BK4B	
V5	Chroma, Sync Amp. - Video Cathode Follower - Video Amp.	6LM8		V19	Horiz. Blanking Amp. - Chroma Bandpass Amp.	6GH8A	
V6	Video Output	12GN7A		V20	Z-X Demodulator	6MK8	
V7	AGC Keying - Sync Sep.	6GH8A		V21	G-Y Amp. - B-Y Amp. - R-Y Amp	6MD8	
V8	Sound IF	6AU6A		V22	Color Killer - Burst Amp.	6KE8	
V9	Audio Detector	6DT6A		V23	3.58MC Osc. Control - 3.58MC Oscillator	6GH8A	
V10	Audio Output	6AQ5A					

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V24	25AP22 or 25BP22 or 22JP22	25AP22A ① 22JP22 ①	H25XP22 ② H25BP22A ② H22JP22 ②	RE25AP22A ③ RE25BP22A ③ RE22JP22 ③	① Aluminized ② Hi-Lite ③ Color Bright "85"

CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.
C27	2.2 NPO	#25088-186	NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C28	.0022 10%		GPD X5 F222K	DD-222	JBX601Y P222K	CCD-222	GP222	10TS-D22
C29	1.5 N3300							
C30	.22 200V		V1612 P22	TCZ-27	DMF2 P22	2DP-4-224	PVC2022	2PS-P22
C31	27 NPO 5%							
C32	.001		GPD X5 F102K	DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10
C33	220		GPD X5 F221K	DD-221	JBZ601Y P221K	CCD-221	GP322	10TS-T22
C34	680		GPD X5 F681K	DD-681	JBY601Y P681K	CCD-681	GP368	10TS-T68
C35	.001		GPD X5 F102K	DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10
C36	27 NPO 5%			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C37	47 NPO 5%	(350) ↑	NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CNO447	10TCC-Q47
C38	47 NPO 5%		NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CNO447	10TCC-Q47
C39	12 NPO 5%			TCZ-12	CZ601CG120J	CCTO-120	CNO412	10TCC-Q12
C40	220		GPD X5 F221K	DD-221	JBZ601Y P221K	CCD-221	GP322	10TS-T22
C41	100		GPD X5 F101K	DD-101	JBZ601Y P101K	CCD-101	GP310	10TS-T10
C42	330		GPD X5 F332K	DD-332	JBZ601Y P331K	CCD-331	GP331	10TS-T33
C43	390 N1500 5%							
C44	.001		GPD X5 F102K	DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10
C45	.01 .01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10
C46	10 NPO 5%		(N033) ↑	NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CNO410
C47	100 NPO 10%	NPO-DI 100		DTZ-100	CV601CG101K	CCTO-101	CNO310	10TCC-T10
C48	680 5%							
C49	.001	GPD X5 F102K		DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10
C50	33 N750 5%	N750-DI 33		DTN-33	CZ601UJ330K	CCTN-330	CN7433	10TCU-Q33
C51	.001	GPD X5 F102K		DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10
C52	.1 200V	DBE2 P1			DMF2 P1	2DP-3-104	PVC201	2PS-P10
C53	390 10%	GPD X5 F391K		DD-391	GP339	10TS-T39	GP339	10TS-T39
C54	390 10%	GPD X5 F391K		DD-391	GP339	10TS-T39	GP339	10TS-T39
C55	10 NPO 5%	NPO-DI 10		DTZ-10	CZ601CG100J	CCTO-100	CNO410	10TCC-Q10
C56	3.3 NPO	NPO-DI 3.3	DTZ-3R3	CZ601CG100J	CCTO-3R3	CNO533	10TCC-V30	
C57	.01	GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10	
C58	.01	GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10	
C59	.0033							
C60	3 N1500 10%	#250529-3099			*	*		
C61	3 N1500 10%	#250529-3099			*	*		
C62	.01	(02) ↑	GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10
C63	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10
C64	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10
C65	.022		GPD Z5U203P	DD-103	BYT601ZU203Z	CCD-203	GP120	10TS-S20
C66	.18 N150 5%							
C67	220		GPD X5 F221K	DD-221	JBZ601Y P221K	CCD-221	GP322	10TS-T22
C68	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10
C69	.1 400V		DBE4 P1		DMF4 P1	4DP-3-104	PVC601	4PS-P10
C70	.0033		GPD X5R332K	DD-332	JBV601Y P332K	CCD-332	GP233	10TS-D33
C71	.47 NPO		NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CNO447	10TCC-Q47
C72	.002 1KV	(01) ↑	GPD X5 F202K	DD-202	JBX601Y P202K	CCD-202	GP220	10TS-D20
C73	.033 100V		V1612S33		DMF4S33	4DP-2-333	PVC6133	4PS-S33
C74	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10
C75	.1 100V		DBE2 P1		DMF2 P1	1DP-2-104	PVC101	10TS-S10
C76	.001		GPD X5 F102K	DD-102	BYX601ZU103M	CCD-102	GP210	10TS-D10
C77	180 2KV 10%		HVD-30-180	DD30-181	BYX601ZU103M	3CCD-181	30GA-T18	
C78	.002		GPD X5 F202K	DD-202	JBX601Y P202K	CCD-202	GP220	10TS-D20
C79	150		GPD X5 F151K	DD-151	JBX601Y P151K	CCD-151	GP315	10TS-T15
C80	.0022		GPD X5 F222K	DD-222	JBX601Y P222K	CCD-222	GP222	10TS-D22
C81	.47 200V		DBE2 P47		DMF2 P47	2DP-5-474	PVC2047	2PS-P47
C82	.039 600V 10%	#250236-64	DBE6S39		DPMS6S39	6DP-3-393	PVC6139	6PS-S39
C83	.0027 N5600 10%							
C84	.0015		GPD X5 F152K	DD-152	V1614D68	6DP-1-682	GP215	10TS-D15
C85	.0068 400V 10%		V1614D68	CPR-6800J	DMF6D68	6DP-1-682	PVC6268	6PS-D68
C86	.002		GPD X5 F202K	DD-202	JBX601Y P202K	CCD-202	GP220	10TS-D20
C87	680		GPD X5 F681K	DD-681	JBY601Y P681K	CCD-681	GP368	10TS-T68
C88	.1 400V		DBE4 P1		DMF4 P1	4DP-3-104	PVC601	4PS-P10
C89	.1 600V		DBE6 P1		DMF6 P1	6DP-4-104	PVC601	6PS-P10
C90	680		GPD X5 F681K	DD-681	JBY601Y P681K	CCD-681	GP368	10TS-T68
C91	.047 200V		V1612S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C92	.0062 1KV	#250236-63			16DP-3-822	GEM1628	6PS-D82	
C93	.001 2KV 10%		DBE4 P1		DMF4 P1	4DP-3-104	PVC601	4PS-P10
C94	.1 400V		DBE2 P1		DMF2 P1	2DP-3-104	PVC201	2PS-P10
C95	.1 200V 10%		DBE6S39		DPMS6S39	6DP-3-393	PVC6139	6PS-S39
C96	.039 200V 10%			CPR-4700J	DMF6D47	6DP-1-472	PVC6247	6PS-D47
C97	.0047 600V 10%					16DP-3-822	GEM1628	6PS-D82
C98	.0082 1KV			CPR-4700J	DMF6D47	6DP-1-472	PVC6247	6PS-D47
C99	.0047 600V 10%					3CCD-470		30GA-Q47
C100	.47 1.4KV		HVD-15-47	DD30-470	HVX302X P470M	4DP-2-223	PVC6122	4PS-S22
C101	.022 400V 10%		V1514S22		DMF4S22	CCD-103	GP110	10TS-S10
C102	.01	GPD X5S103K	DD-103	BYX601ZU103M	CCD-103			
C103	100 N750/3KV/5%							
C104	.470 N1500 10%				*	*		
C105	.470 N1500 10%				*	*		
C106	68 NPO 10%	(N750) ↑	NPO-DI 68	DTZ-68	CX601CG680K	CCTO-680	CNO468	10TCC-Q68
C107	68 NPO 10%		NPO-DI 68	DTZ-68	CX601CG680K	CCTO-680	CNO468	10TCC-Q68
C108	27 NPO 10%			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C109	.15 75V		V1612 P15		DMF1 P15	1DP-3-154	PVC1015	2PS-P15
C110	.001		GPD X5 F102K	DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10
C111	820		GPD X5 F821K	DD-821	JBY601Y P821K	CCD-821	GP382	10TS-T82
C112	820		GPD X5 F821K	DD-821	JBY601Y P821K	CCD-821	GP382	10TS-T82
C113	390 N1500 5%					*	*	
C114	.01 400V 10%		V1614S1	CPR-10000J	DMF4S1	4DP-1-102	PVC411	4PS-S10
C115	680 600V 5%		DBE6D15	CPR-680J	DMF6D15	6DP-1-152	PVC6215	6PS-D15
C116	.0015 600V 10%	#250562-1	DBE6S1		DMF6S1	6DP-1-103	PVC611	6PS-S10
C117	.01 600V 10%		DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C118	.1 600V		DBE6S47		DMF6S47	6DP-3-473	PVC6147	6PS-S47
C119	.047 600V					CCD-151	GP315	10TS-T15
C120	150		GPD X5 F151K	DD-151		*	6DY468	
C121	68 N1500 4KV							
C122	130 N2200 6KV							
C123	.01 1.5KV							
C124	.01 1KV							
C125	.22 N750 1KV	#250562-1						
C126	.068 600V 5%		N750-DI 22	DTN-22	CZ601UJ220K	CCTN-220	CN7422	10TCU-Q22
C127	.082 600V 5%							
C128	18 NPO 10%			TCZ-18	CY601CG180J	CCTO-180	CNO418	10TCC-Q18
C129	120 N750 10%			TCN-120		CCTN-121	CNO312	10TCC-T12
C130	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C131	.01		GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C132	.470 N750			TCN-470		CCTN-457	GP110	10TCU-T47
C133	.047 100V		V1612S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C134	820		GPD X5 F821K	DD-821	JBY601Y P821K	CCD-821	GP382	10TS-T82
C135	.01	GPD X5S103K	DD-103	BYX601ZU103M	CCD-103	JP110	10TS-S10	
C136	.001	GPD X5 F102K	DD-102	JBS601Y P102K	CCD-102	GP210	10TS-D10	
C137	.047 100V	GPD X5 F102K		DMF2S47	4DP-3-473	PVC2147	2PS-S47	