

CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

TV Chassis Removal	Picture Tube Removal
1. Remove 2 clips from bottom of rear cover and compress 9 clips around cabinet back to remove rear cover.	1. Remove chassis then lay cabinet face down on a soft protective surface.
2. Disconnect degaussing coil, speaker, picture tube socket, yoke, convergence board, and high voltage leads.	2. Remove 2 screws (one on each side) securing picture tube shield to cabinet then remove shield.
3. Remove 4 screws holding tuner-front panel control assembly.	3. Remove 12 screws holding picture tube mounting brackets (3 per bracket) and lift assembly from cabinet.
4. Remove 4 bolts from bottom of chassis and remove chassis.	

TROUBLESHOOTING CHECK CHART

The following chart lists component failures most likely to produce the indicated symptoms.

SWEEP	PICTURE or SOUND	COLOR (B/W operating normally)
No raster, has sound V11, V12, V13, V14, V15, V24	No pic, no sound, no raster X1, X2, F1 (Circuit Breaker), F2.	No color V17, V18, V21.
No vert. deflection V10	No pic, no sound, has raster V1, V2, V3, V202.	Weak color V17, V18, V21.
Poor vert. lin. or foldover V10	No pic, no sound, has snow V201, V202	No color sync V21, V18, V22.
Poor horiz. lin. or foldover V12, V13	No pic, has sound, no raster X7, V4, V5	No blue V19, V20
Narrow picture X1, X2, V11, V12, V13	No pic, has sound, has raster V5, V24	No red V23, V20
Vert. off freq. V10	Has pic, no sound V6, V7, V8	Incorrect hue (tint) V21, V18, V23
Horiz. off freq. X9, V11	Overloaded picture V9	
	Poor focus X4	
RASTER	SYNC	
Yellow - no blue V20, V24	No vert. sync V10	
Cyan - no red V20, V24	No horiz. sync X9, V11	
Magenta - no green V16, V24	No vert. or horiz. sync V9	

SET 1065 FOLDER 2

PHOTOFACT® Folder

with CIRCUITRACE®

For Supplier Address See PHOTOFACT Index

CARDINAL
CHASSIS C18B01

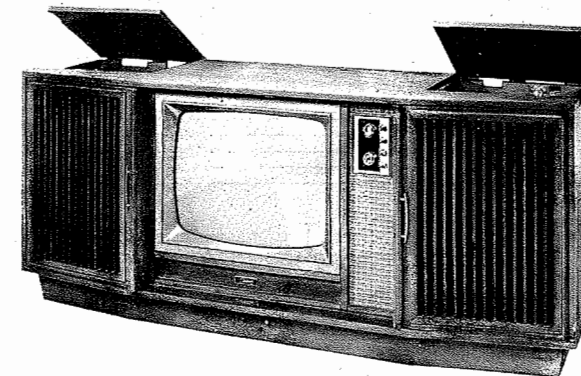
COLOR TV

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

AM-FM-FM Stereo Radio Chassis
AS-8090, AS-8091 SET 1065, FOLDER 2-A



MODELS	CHASSIS
3-101-2, 3-301-5, 3-701-3	C18B01
6-102-2, 6-302-5, 6-601-4, 6-701-3	C18B01
7-101-2, 7-301-5, 7-701-3	C18B01

Radio Chassis AS-8090 (Run R70A01) and
Power Amp Chassis AS-8091 (Run R27A01)
used in 3- and 7- Models.

MODEL 7-101-2

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 fuse wire is used for filament protection.

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.)

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 "Tube Placement Chart" for location.)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Oscillator Coil (waveform slug B1). (See "Tube Placement Chart" for location.)

FOCUS

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

REMEMBER TO ASK— "What else needs fixing?"

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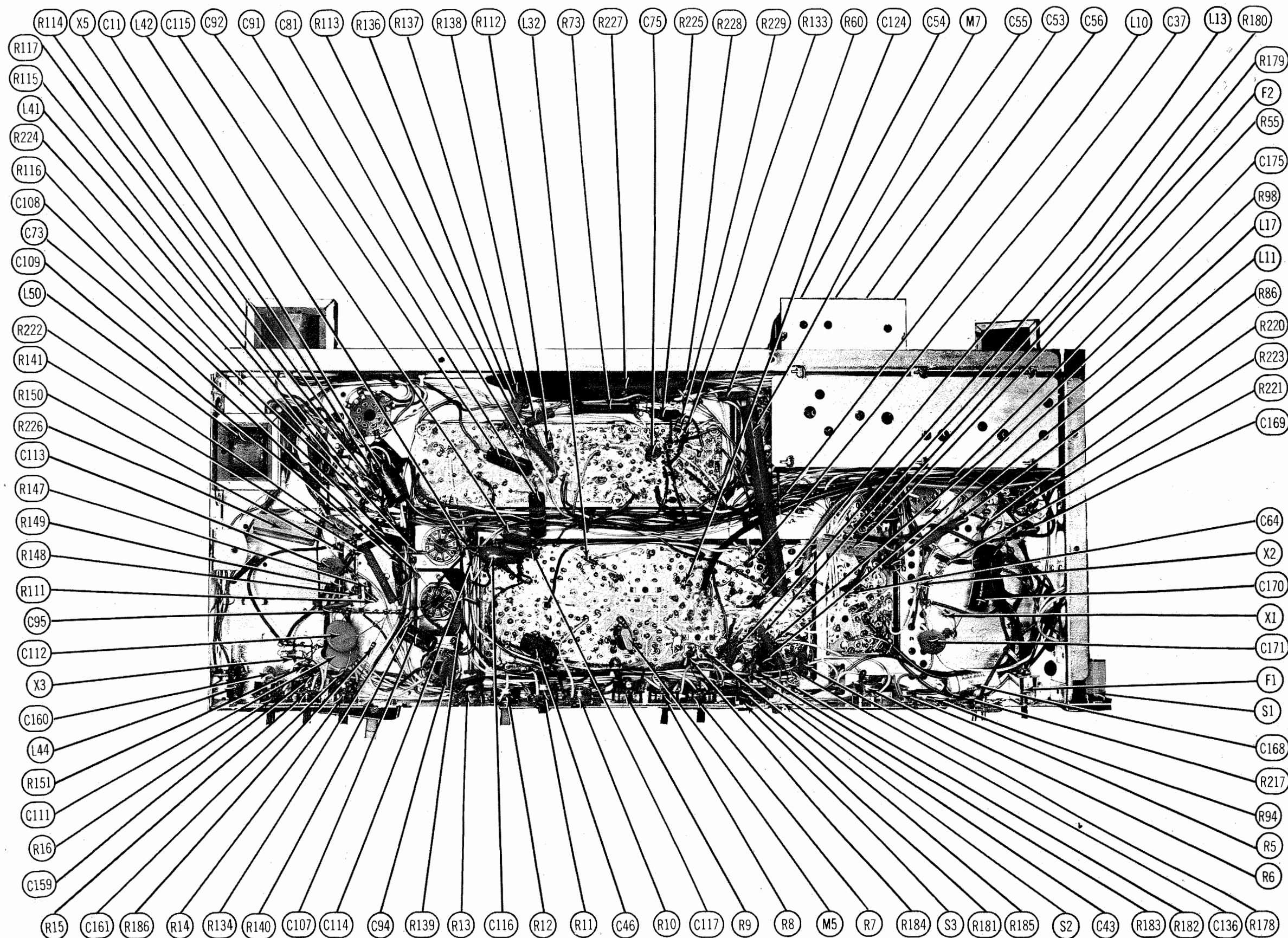
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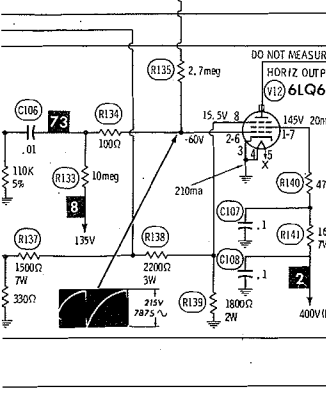
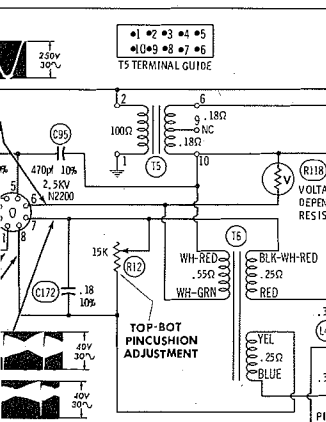
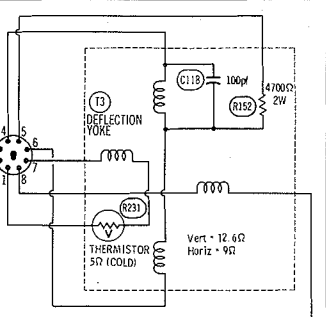
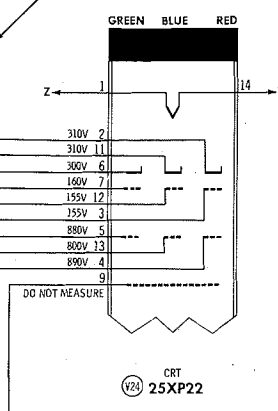
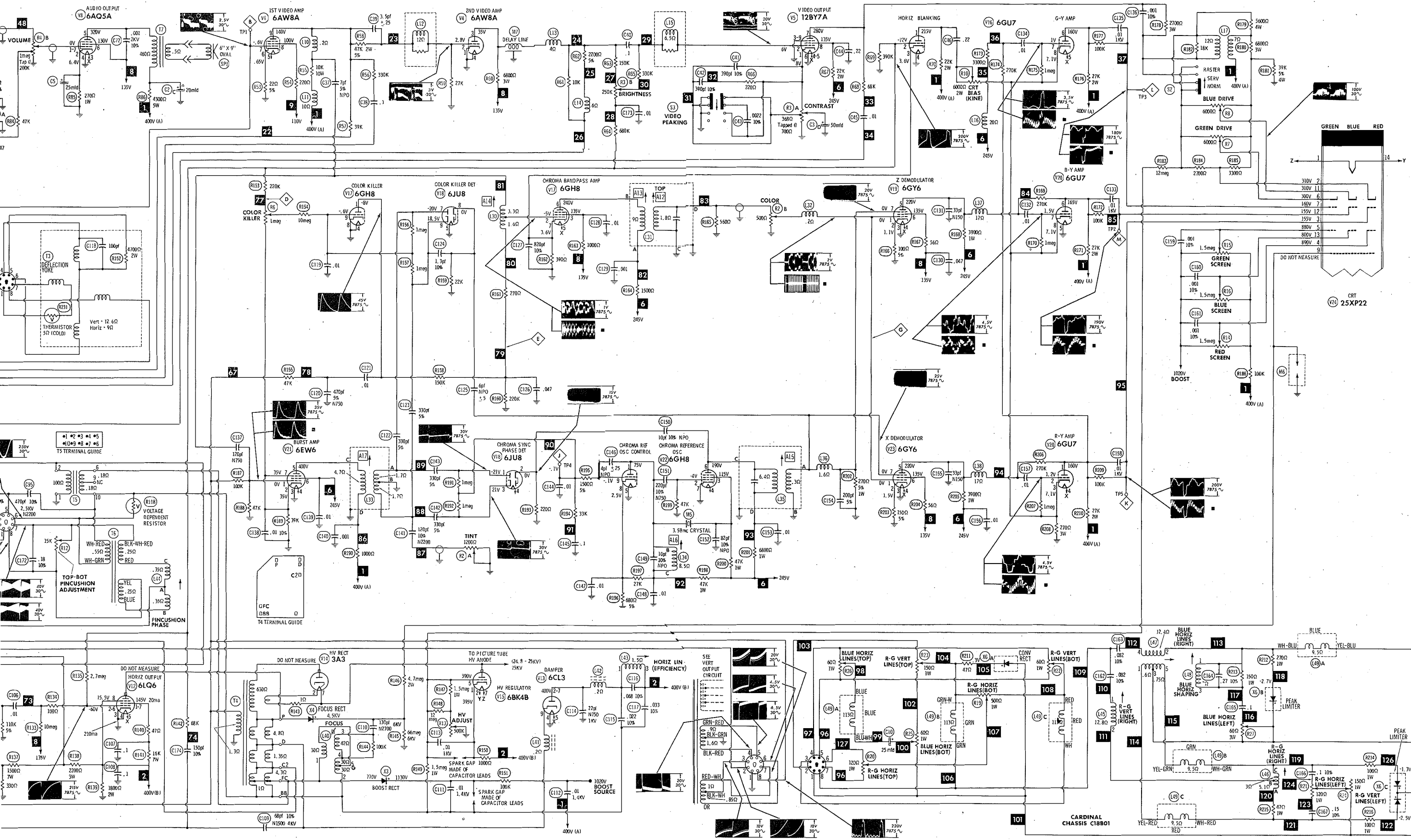
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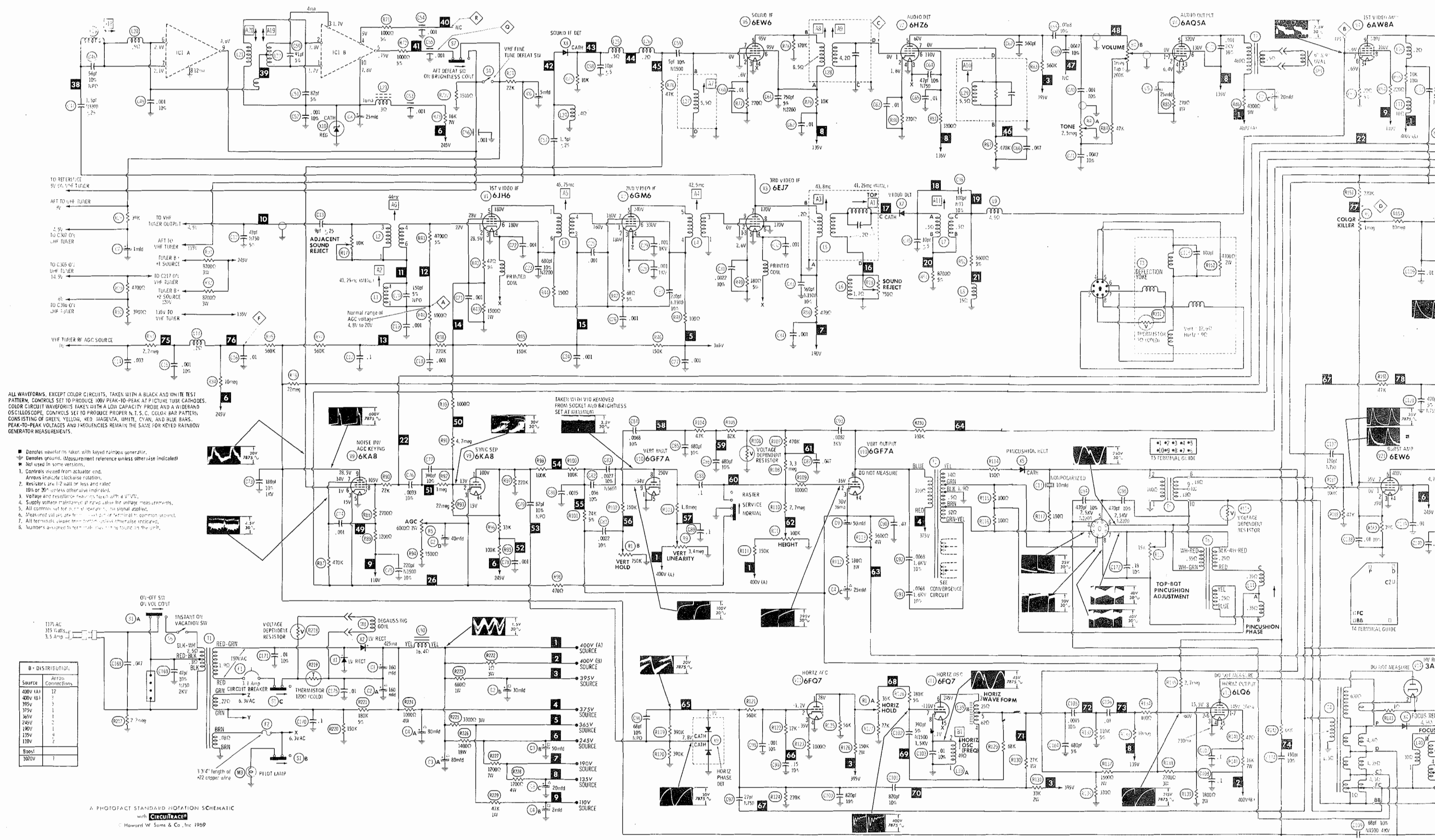
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SET 1065 FOLDER 2



CHASSIS - BOTTOM VIEW





ALL WAVEFORMS, EXCEPT COLOR CIRCUITS, TAKEN WITH A BLACK AND WHITE TEST PATTERN. CONTROLS SET TO PRODUCE 100V PEAK-TO-PEAK AT PICTURE TUBE CATHODES. COLOR CIRCUIT WAVEFORMS TAKEN WITH A LOW CAPACITY PROBE AND A WIDE-BAND OSCILLOSCOPE. CONTROLS SET TO PRODUCE PROPER N.T.S.C. COLOR BAR PATTERN CONSISTING OF GREEN, YELLOW, RED, MAGENTA, WHITE, CYAN, AND BLUE BARS. PEAK-TO-PEAK VOLTAGES AND FREQUENCIES REMAIN THE SAME FOR KEYED RAINBOW GENERATOR MEASUREMENTS.

■ Denotes waveforms taken with keyed rainbow generator.
 ▴ Denotes ground. (Measurement reference unless otherwise indicated)
 * Not used in some versions.

1. Controls viewed from actuator end.
 Arrows indicate clockwise rotation.
 2. Resistors are 1/2 watt or less and rated 10% or 30% unless otherwise indicated.
 3. Voltage and resistance readings taken with a V.M.V.
 4. Supply voltages maintained at rated values for on-line measurements.
 5. All control voltages are in millivolts unless otherwise indicated.
 6. Measured voltages are from common terminal to common ground.
 7. All terminals viewed from bottom unless otherwise indicated.
 8. Numbers assigned to terminals are in the order shown on the pin.

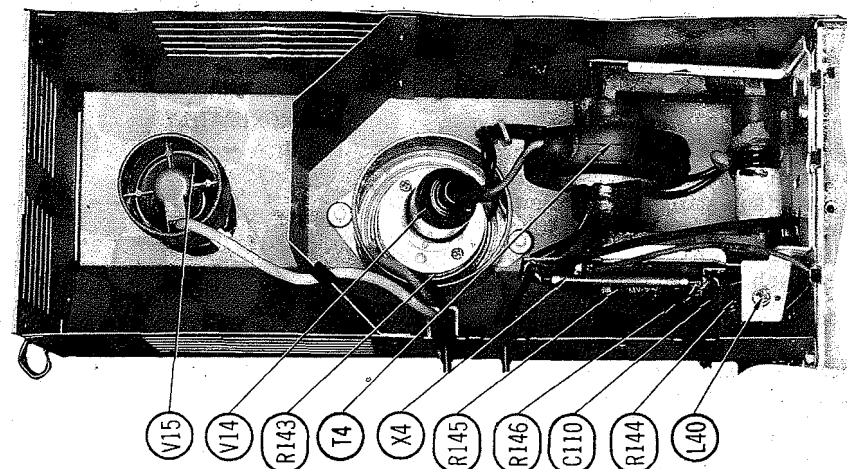
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 with **Circuitrace**
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RESISTANCE MEASUREMENTS														
ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	TOP CAP
V1	6JH6	230Ω	1550Ω	FIL	FIL	230Ω ◆	230Ω ◆	1500Ω						
V2	6GM6	85K	1NF	FIL	FIL	3300Ω †	3300Ω †	68Ω ◆						
V3	6EJ7	180Ω	0Ω	180Ω	FIL	FIL	0Ω	2600Ω †	2600Ω †	0Ω				
V4	6AW8A	0Ω	20K #	5700Ω † #	FIL	FIL	22Ω	7000Ω ●	3000Ω †	8200Ω †				
V5	12BY7A	330Ω	560K	0Ω	FIL	FIL	FIL	5800Ω †	24K †	0Ω				
V6	6EW6	5.5Ω	270Ω	FIL	FIL	11.5K †	11.5K †	0Ω						
V7	6HZ6	4.2Ω	270Ω	FIL	FIL	560K †	6500Ω †	470K						
V8	6AQ5A	250K	270Ω	FIL	FIL	4500Ω †	3000Ω † #	250K						
V9	6KA8	6200Ω †	3meg	3800Ω	FIL	FIL	60K	470K	3000Ω †	700K				
V10	6GF7A	0Ω	3meg	1100Ω	FIL	FIL	1300Ω †	NC	2.6meg	200K				
V11	6FQ7	2400Ω †	660K	1000Ω	FIL	FIL	6500Ω †	215K	47Ω	0Ω				
V12	6LQ6	15K †	2.5meg	0Ω	FIL	FIL	2.5meg	15K †	1100Ω	NC				3.2Ω †
V13	6CL3	NC	17Ω †	NC	FIL	FIL	NC	17Ω †	NC	700K				
V14	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE												600Ω †
V15	6BK4B	1000Ω	FIL	NC	NC	900K	NC	FIL	NC					1NF
V16	6GU7	21K †	245K	390Ω	FIL	FIL	2.6K †	1.1meg	270Ω	0Ω				
V17	6GH8	370K	220K	4800Ω †	FIL	FIL	2900Ω †	390Ω	0Ω	11meg				
V18	6JU8A	1meg ▲	220Ω	1meg ▲	FIL	FIL	0Ω	12meg	22K	12meg				
V19	6GY6	95Ω	100Ω	FIL	FIL	5300Ω †	3900Ω †	2.2Ω						
V20	6GU7	22K †	1meg	270Ω	FIL	FIL	22K †	1meg	270Ω	0Ω				
V21	6EW6	34K	38K	FIL	FIL	1000Ω †	1400Ω †	38K						
V22	6GH8	20K †	47K	48K †	FIL	FIL	8200Ω †	0Ω	680Ω	1NF				
V23	6GY6	95Ω	150Ω	FIL	FIL	5300Ω †	3900Ω †	.3Ω						
V24	25XP22	FIL	9200Ω †	130K †	440K †	420K †	3300Ω †	130K †	NC	70meg	NC	8000Ω †	130K †	
												PIN 13 460K †	PIN 14 FIL	
V201	6HA5	3meg	0Ω	FIL	FIL	11K †	0Ω	0Ω						
V202	6GJ7	0Ω	220K	0Ω	FIL	FIL	11K †	15K †	22K †	50K				
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

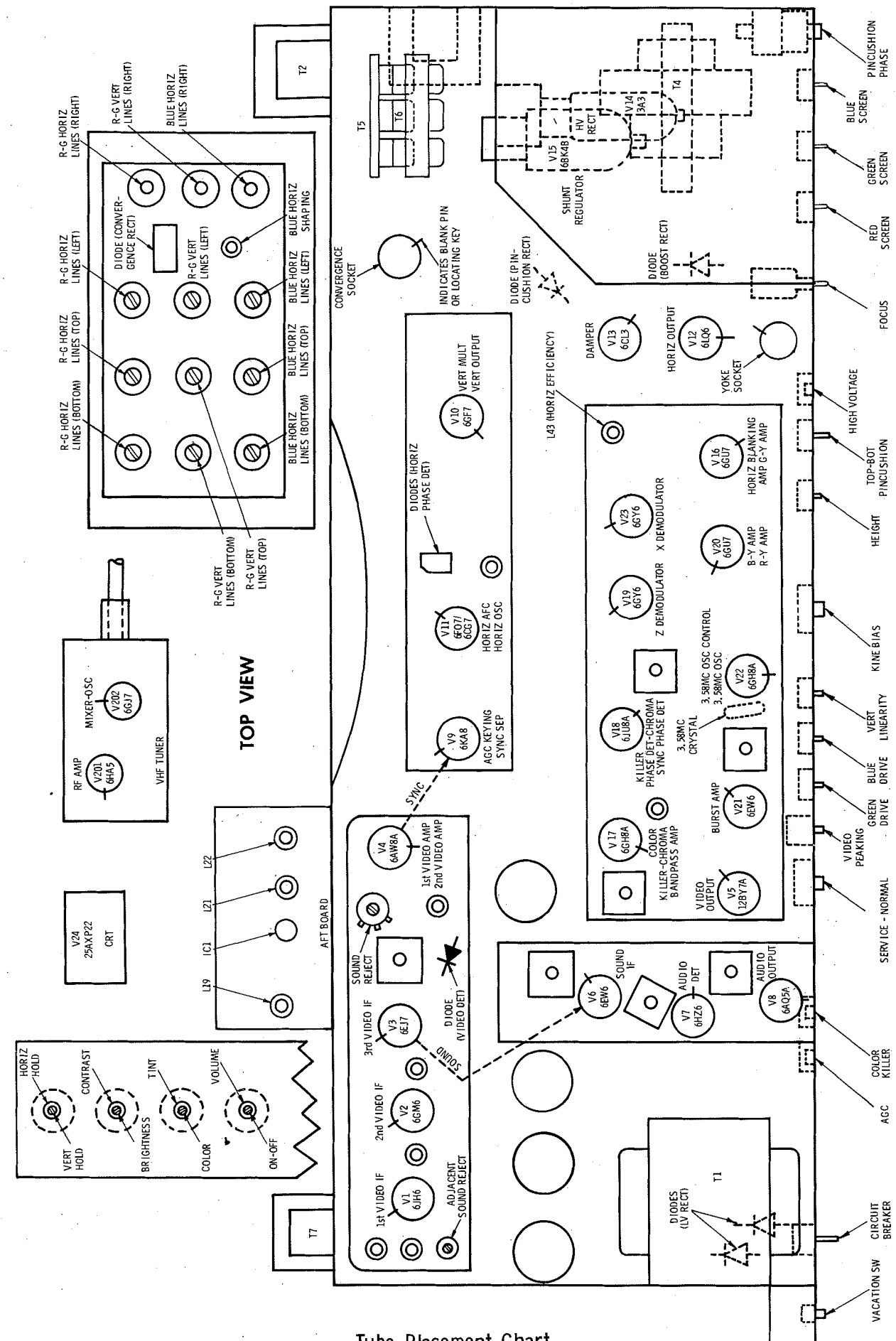
THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
 ● READING DEPENDS UPON POLARITY OF METER CONNECTIONS.
 † MEASURED FROM OUTPUT OF X2.

NC NO CONNECTION

◆ MEASURED FROM PIN 2 OF V2.
 † MEASURED FROM PIN 9 OF V13.
 ▲ MEASURED FROM PIN 9 OF V22.



HIGH VOLTAGE COMPARTMENT



Tube Placement Chart

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, B1,....GENERAL CEMENT #8606, 8606L, 8869,.....WALSCO #2543, 2544, 2588 A18, A19, A20, Mixer Plate Coil.....GENERAL CEMENT #9296, 9297, 9300..... WALSCO #2510, 2546, 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 Ⓢ) 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, R18, A2, R17	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 Ⓢ. 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, A4, and A5. Adjust A6 for maximum with core at top end of coil and Mixer Plate Coil with core at bottom of coil.
3. 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 42.75MC 45.0MC 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.

SOUND IF ALIGNMENT

Connect a VTVM thru a detector probe to point Ⓢ. Tune in a TV station and adjust A7, A8 and A9 to maximum deflection. Remove VTVM. Reduce the signal at the antenna terminals until distortion occurs in the sound. Adjust A10 clockwise from 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.

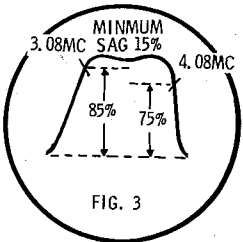
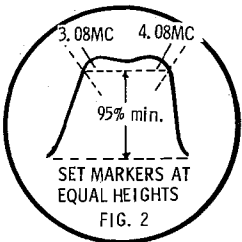
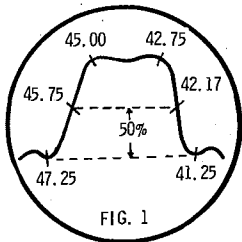
4.5MC TRAP ALIGNMENT

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 WG304B or equivalent). Connect a -15 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 A to ground. Turn Color Intensity to maximum. Remove the Horizontal Output Tube and connect a 2000Ω, 100W resistor from 400V source to ground.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4. High side thru .1mfd to grid of Bandpass Amp., V17, low side to ground.	3.58MC (3-5MC Sweep)	3.08MC 4.08MC		Vert. Amp. thru Detector Probe to pin 1 of demodulators point Ⓢ, 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 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 Gen. to 3MC (6MC Sweep)	"		"	A14	Adjust for response curve similar to Fig. 3. If necessary, retouch A12 to flatten top of response.



AFT ALIGNMENT

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
Connect High side thru .001mfd capacitor to point Ⓢ, low side to ground.	46.1MC		DC probe to point Ⓢ, low side to ground.	A18 A19	Adjust input signal level for +2 to +3 volts. Alternately adjust A18 & A19 for MINIMUM positive reading (Dip) while adjusting input signal to maintain +2 to +3 volts.
"	45.75MC		DC probe to point Ⓢ, low side to point Ⓢ.	A20	Adjust for zero. A positive or negative reading will be obtained on either side of correct reading.

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect:
A 0-500 ma meter in series with cathode of Horizontal Output tube.
A .47 mfd capacitor across meter.
A VTVM through a high voltage probe to picture tube anode connector.
Point Ⓢ, off pin 2, Sync Separator, V9, to ground.
A short across Horizontal Sine Wave coil, pin 8 of V11B 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 Sine Wave coil and adjust B1 until the picture "floats" horizontally. Remove the short from Point Ⓢ. Adjust the Horizontal Linearity coil for MINIMUM current in the Horizontal Output tube, then advance core into coil to increase cathode current by 3 or 4 ma. (Do not exceed 230ma.)

Adjust the High Voltage control for 24KV in picture tube anode with MINIMUM brightness. Check voltage drop across R150 with VOM. Voltage should be a MINIMUM of 0.96 volts. Optimum reading would be 1.35 volts. The Horizontal Output tube current must not exceed 230 ma.

Adjust Focus, Height, and Vertical Linearity controls.

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.

COLOR AFC ALIGNMENT

Suggested Alignment Tools:
A15, A16, A17-GENERAL CEMENT #8606, 8606L, 8869
WALSCO #2543, 2544, 2588

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 the receiver for normal color reception. Short Pint 1 of Burst Amp., V21, to ground.

Connect DC probe of VTVM through 470K to pin 1 of Phase Detector, V18. 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 short from pin 1 of Burst Amp. Adjust A17 for maximum deflection on VTVM. Make sure the oscillator is running and locked in.

Short Point Ⓢ, off pin 9 Chroma Reference Oscillator control, V22, to ground. Remove VTVM. Adjust A16 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 A16 for best hold.

Connect the vertical input of a scope to Point Ⓢ, off pin 1 R-Y Amp., V20. 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 controls.

COLOR AFC ALIGNMENT (CONTINUED)

Check for proper waveform at G-Y and B-Y outputs: Point Ⓢ, off pin 6 G-Y Amp., V16, and Point Ⓢ, off pin 6 B-Y Amp., V20. 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 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.

If TV is equipped with an automatic degaussing coil, degaussing occurs between the time the receiver is turned on and before the high voltage appears. Shunt Points Ⓢ and Ⓢ to ground. Loosen the deflection yoke and move it rearward until it is against the convergence yoke assembly.

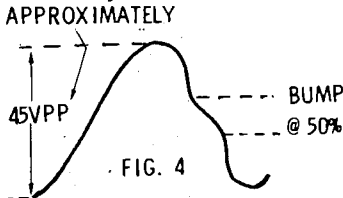
Adjust the tabs on the Purity magnet and rotate the assembly until a red spot appears at the center of the picture tube. Slide the deflection yoke forward to obtain a uniform red over entire picture tube face. A low power microscope is useful to observe the beam landings.

GRAY SCALE ADJUSTMENTS

Tune in a black-and-white picture or a color picture with the Color control set at MINIMUM. Turn the Kine Bias control to MINIMUM (counterclockwise). Turn the Red, Blue, and Green Screen controls to MINIMUM. Move the Normal-Raster-Service switch to the 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 Kine Bias until a barely visible line appears, then readjust the other two screen controls for a barely visible line. Return Normal-Raster-Service switch to the Normal position. Adjust the Blue and Green Video Drive controls to eliminate coloring in the light and dark areas of the picture.

DYNAMIC PINCUSHION ADJUSTMENTS

Vertical Correction:
Connect a crosshatch generator to the antenna terminals. Turn the top and bottom Pincushion Adjustment control, R12, to its maximum clockwise position. Adjust the Vertical Phase coil, L44, until the top and bottom horizontal lines are bowing outward toward the picture tube mask in a symmetrical pattern. Now, adjust the top and bottom Pincushion control until the top and bottom horizontal bars are straight with the edge of the picture tube screen.



BLUE HORIZONTAL SHAPING COIL ADJUSTMENT

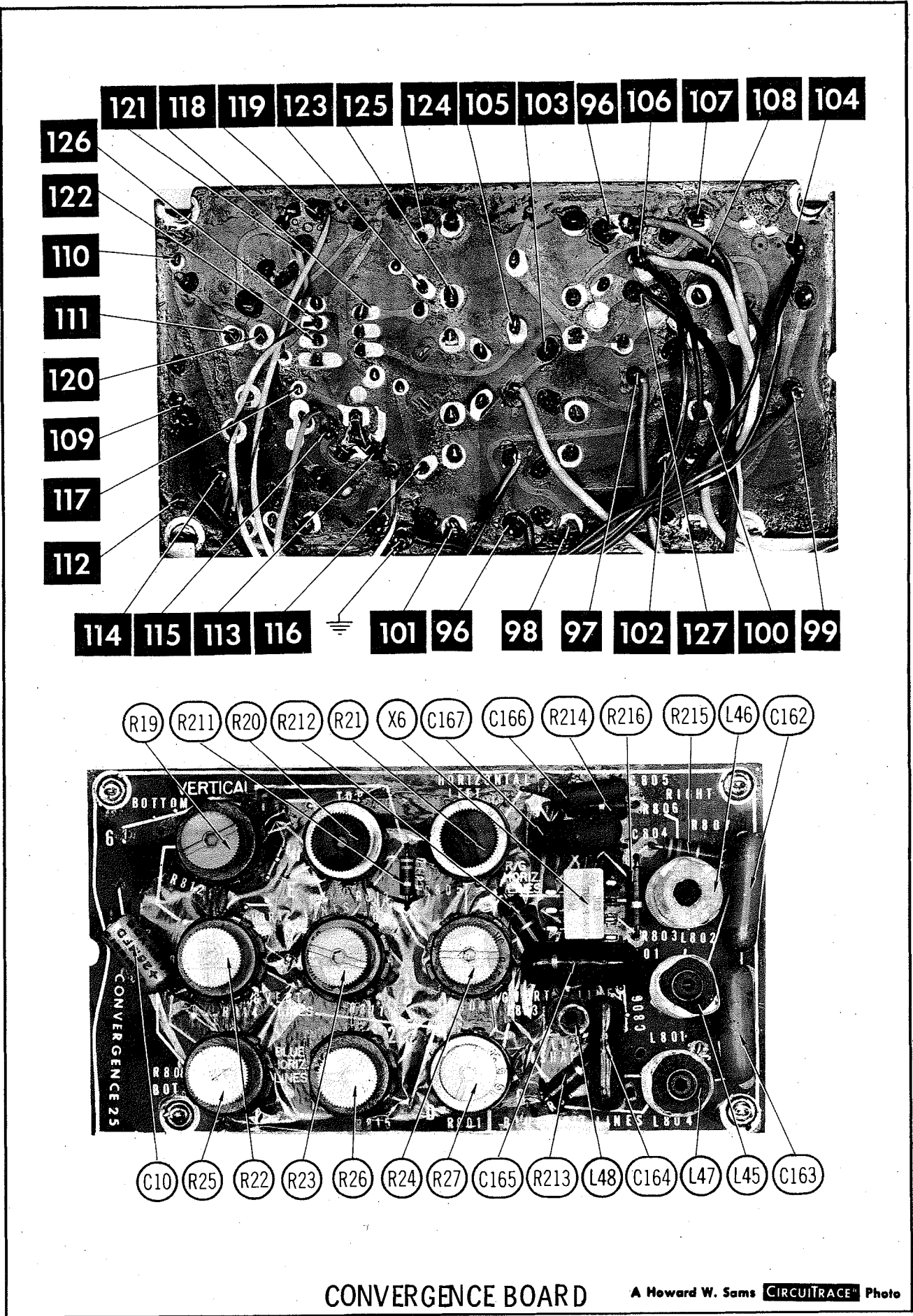
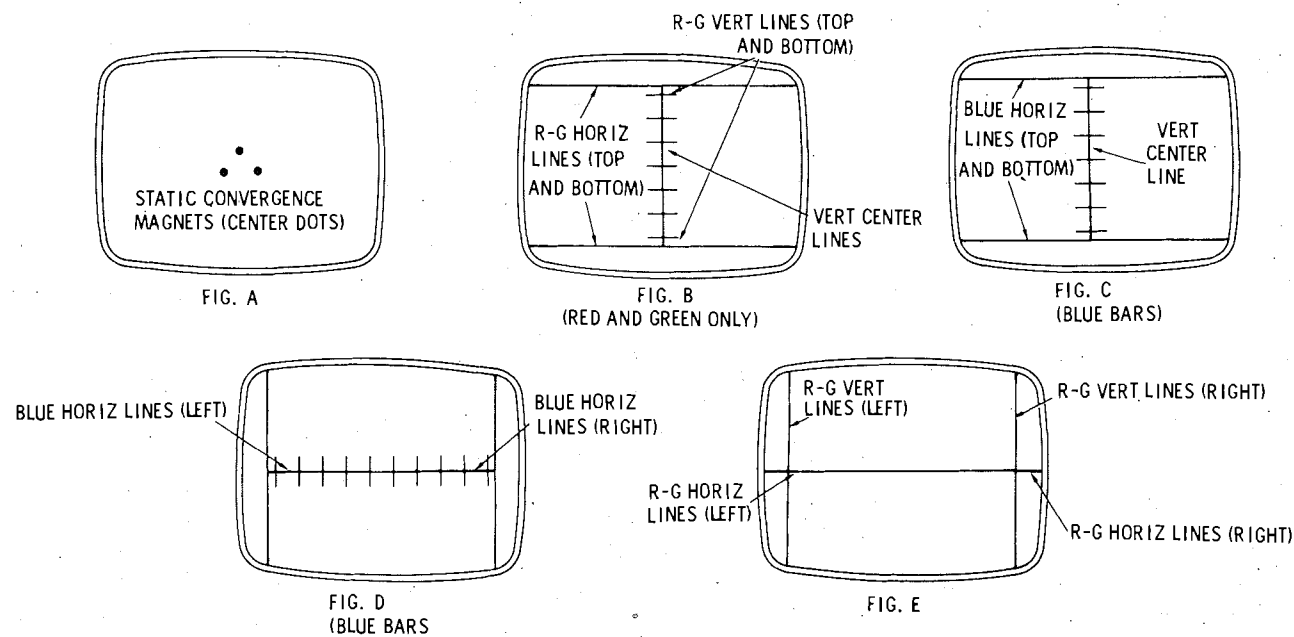
Connect the high side of a scope to junction of R212, C164, and L48 (CircuitTrace 113), low side to ground. Adjust Blue Horizontal Shaping coil slug until the harmonic "bump" is at the 50% point in the sine wave slope. See Fig. 4.

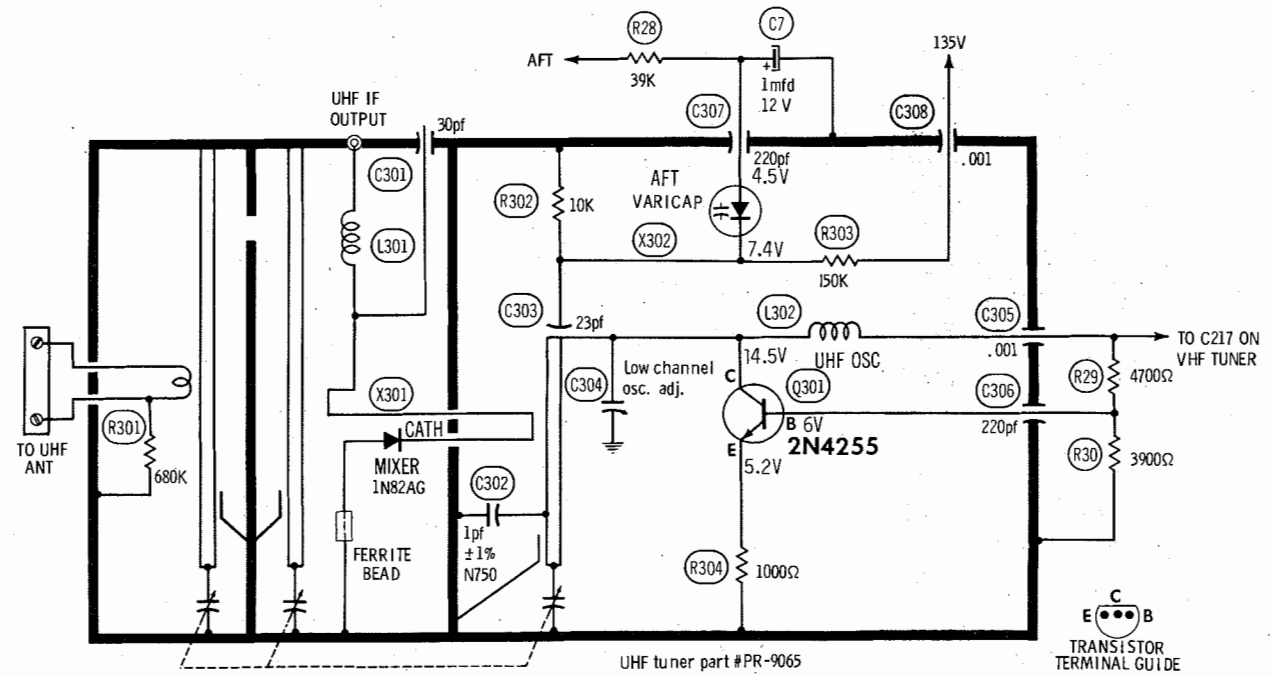
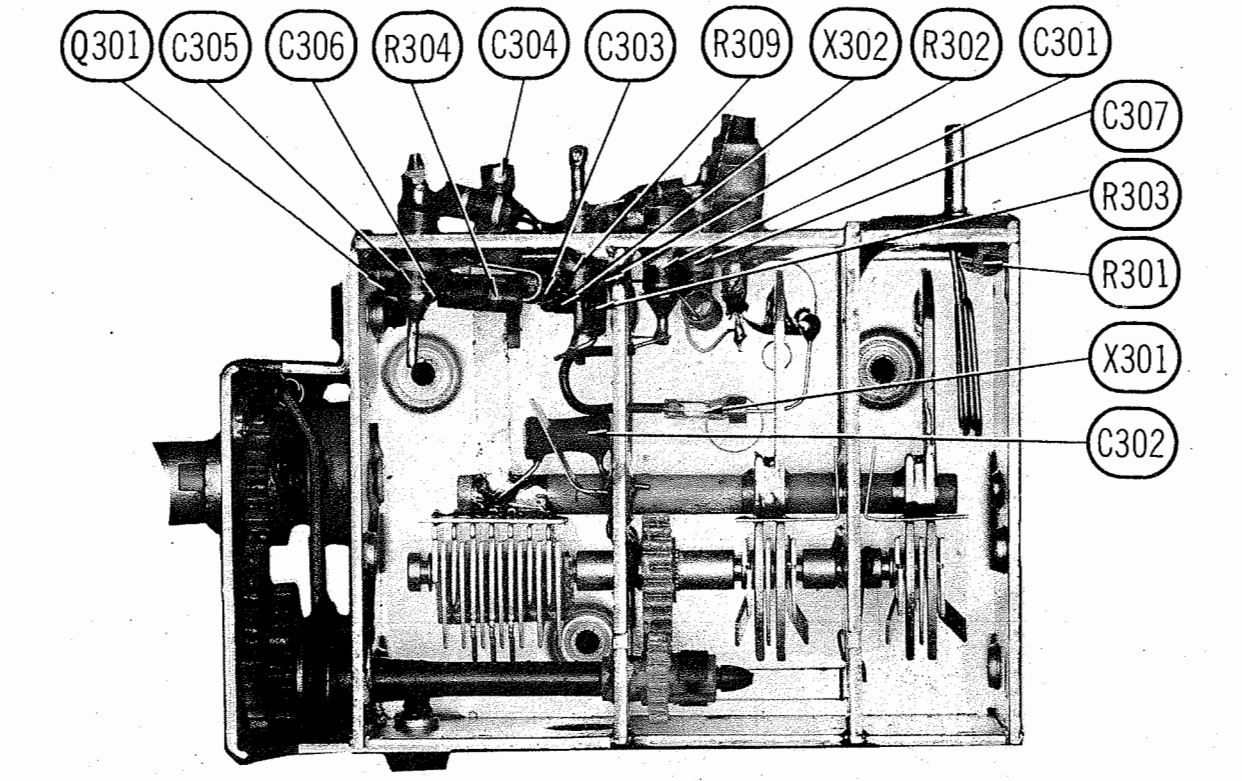
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FOLDER 2

CONVERGENCE ADJUSTMENTS

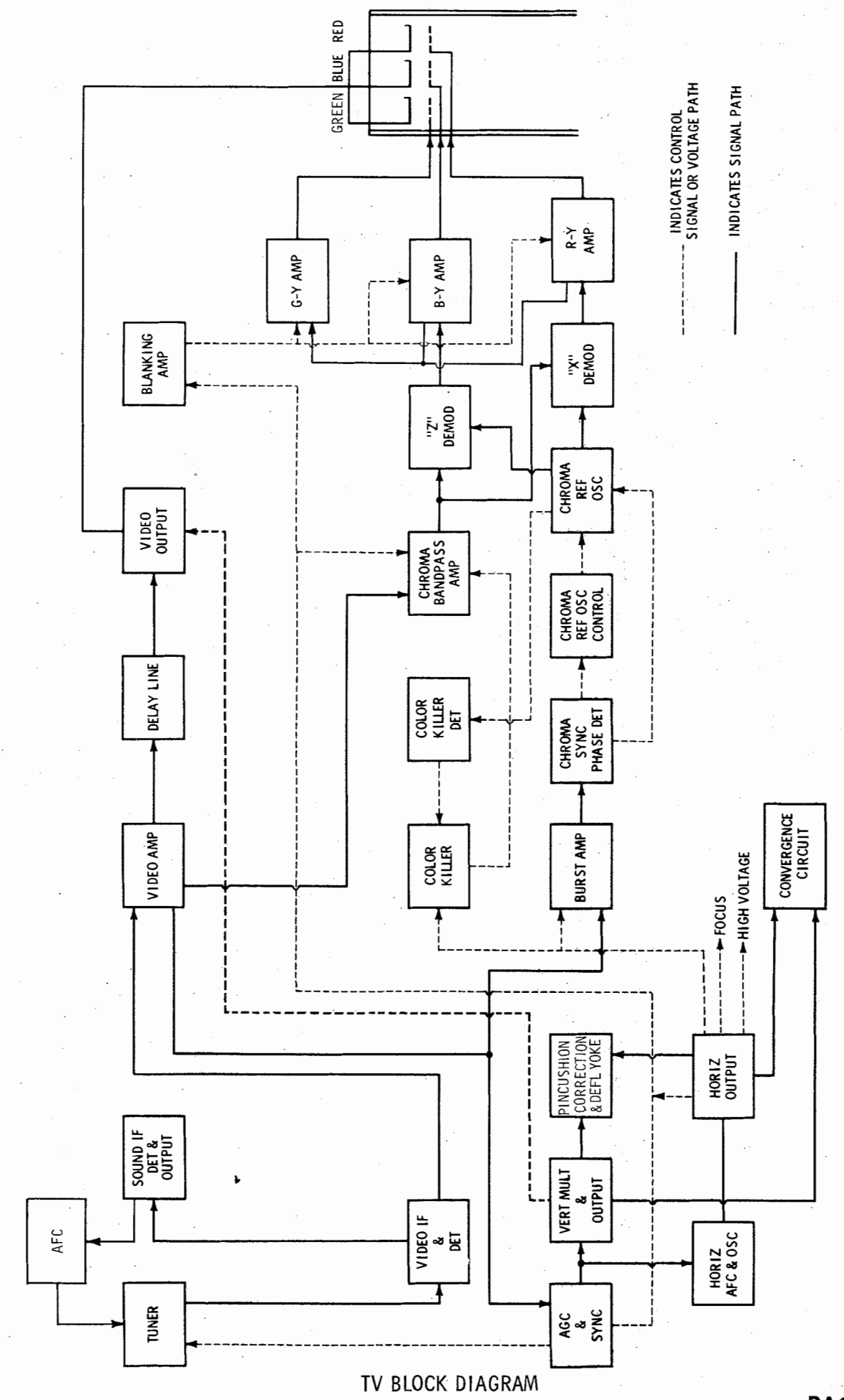
Step	Control	Use to Converge (or Straighten)	Remarks
1.			Perform Center Dot Convergence using convergence magnets. See Fig. A.
2.	R-G Vertical Lines, Top	Red and Green Vertical bars at top of screen.	Touch up both controls for best convergence from top to bottom along vertical center line (Fig. B).
3.	R-G Vertical Lines, Bottom	Red and Green Vertical bars at bottom 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 bars 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).
13.	R-G Vertical Lines, Left	Red and Green Vertical bars at left side of screen.	(Fig. E)
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).



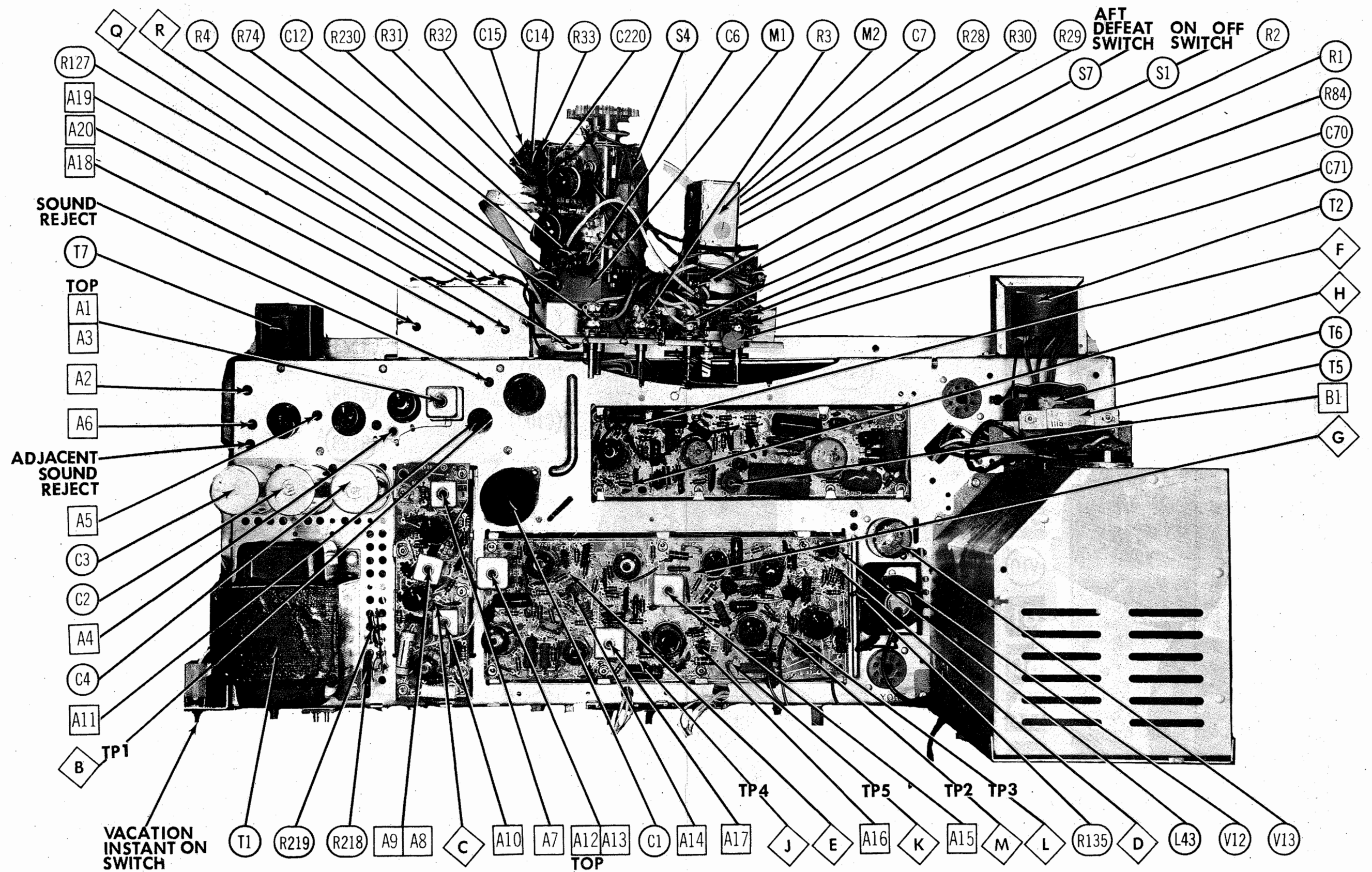


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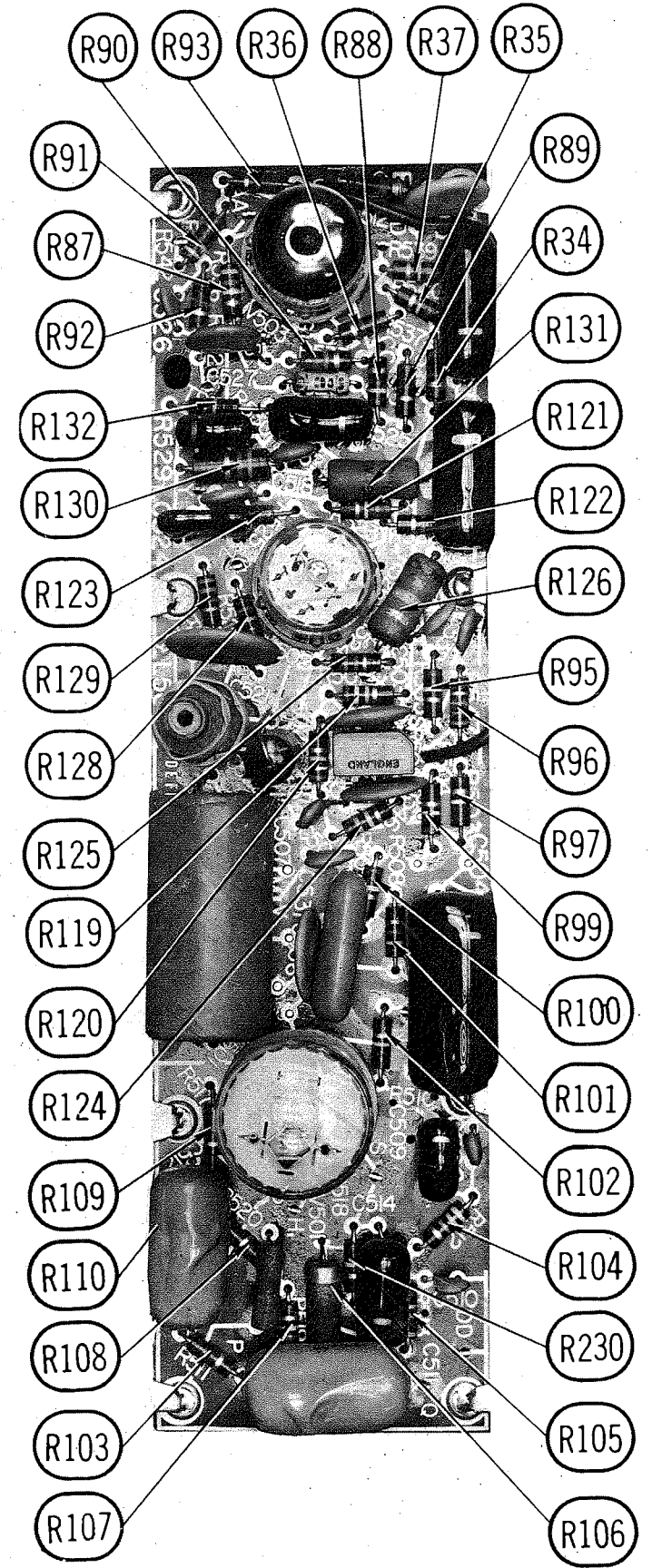
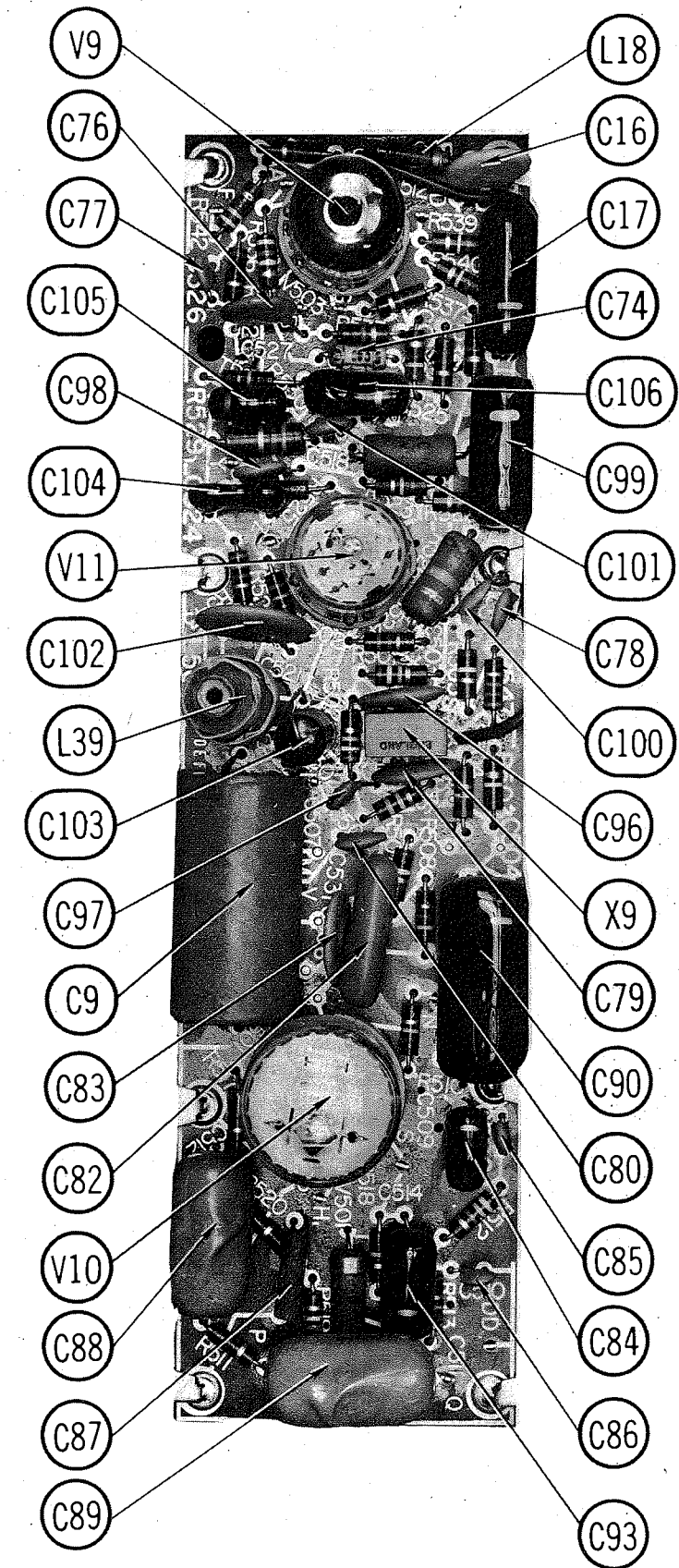
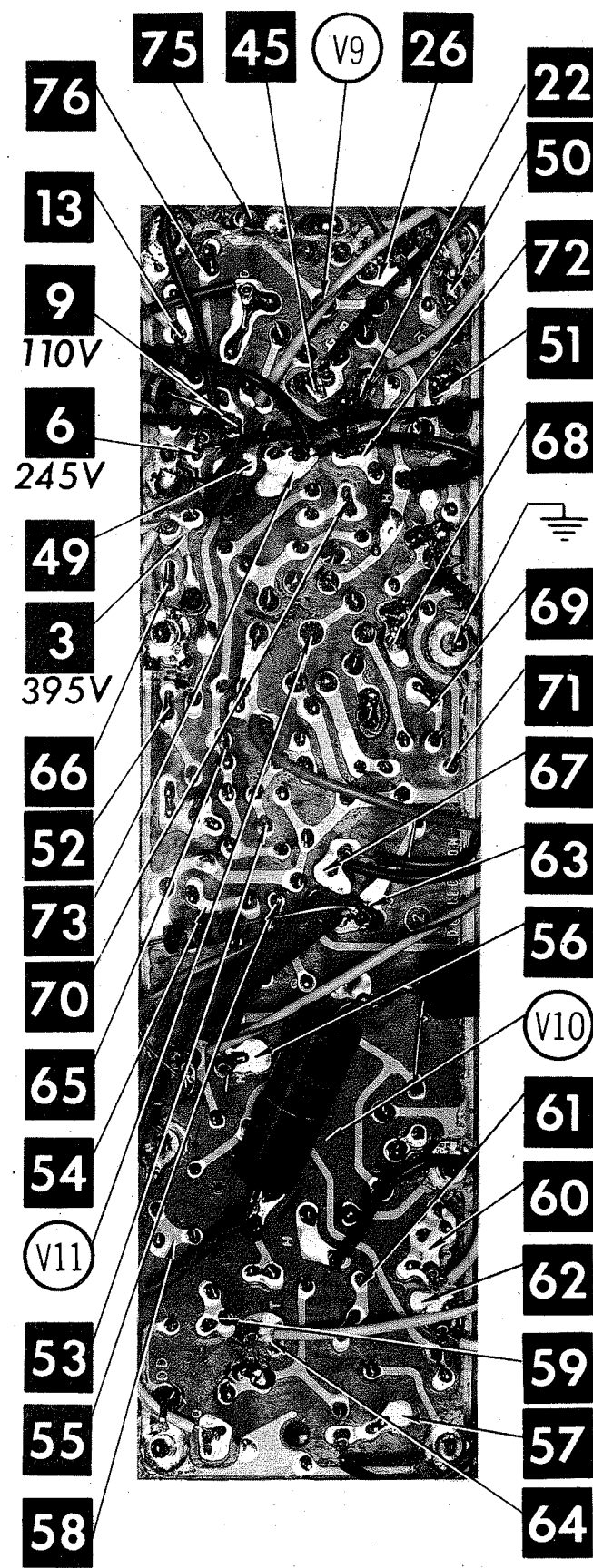
UHF Tuner



TV BLOCK DIAGRAM

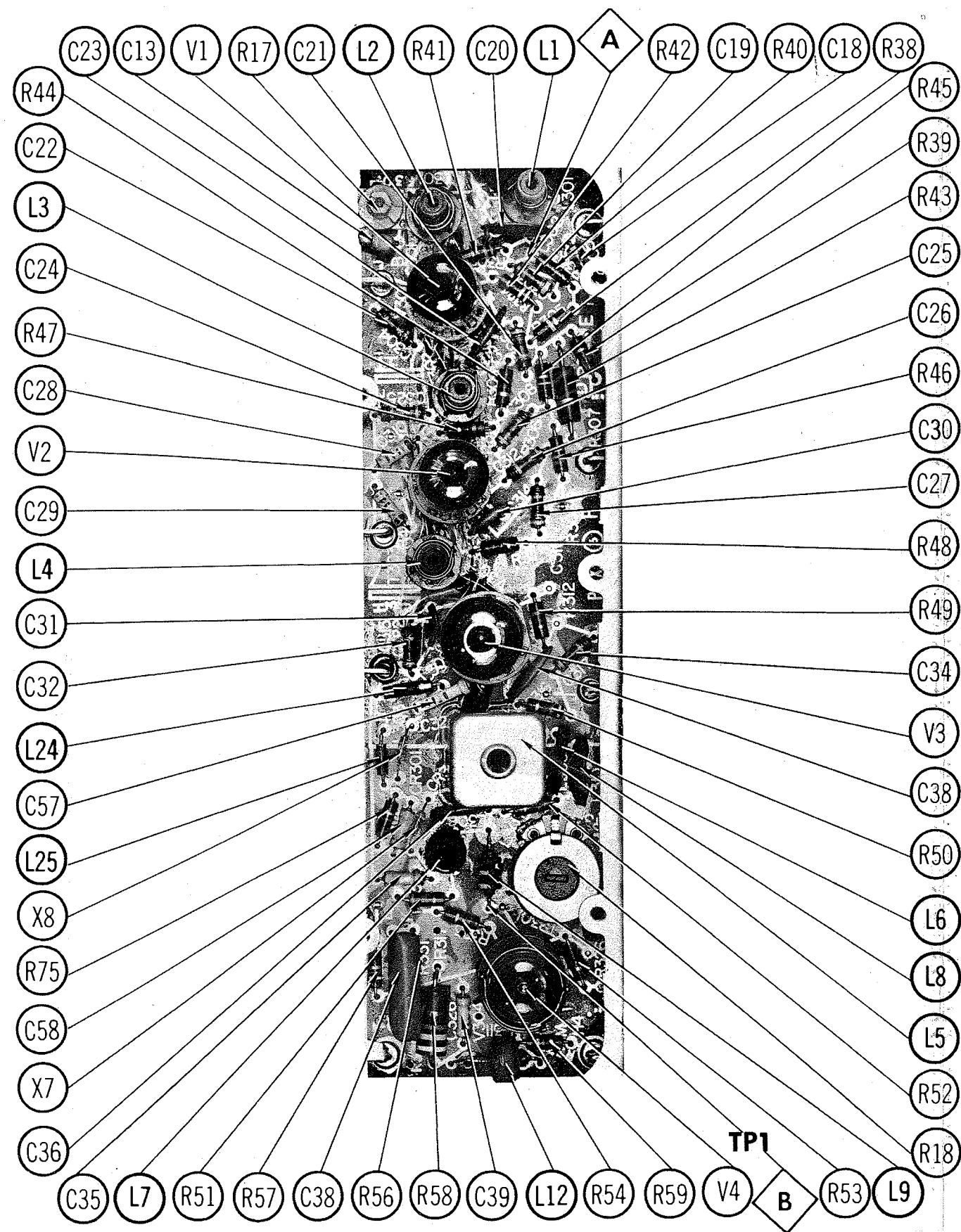


CHASSIS - TOP VIEW

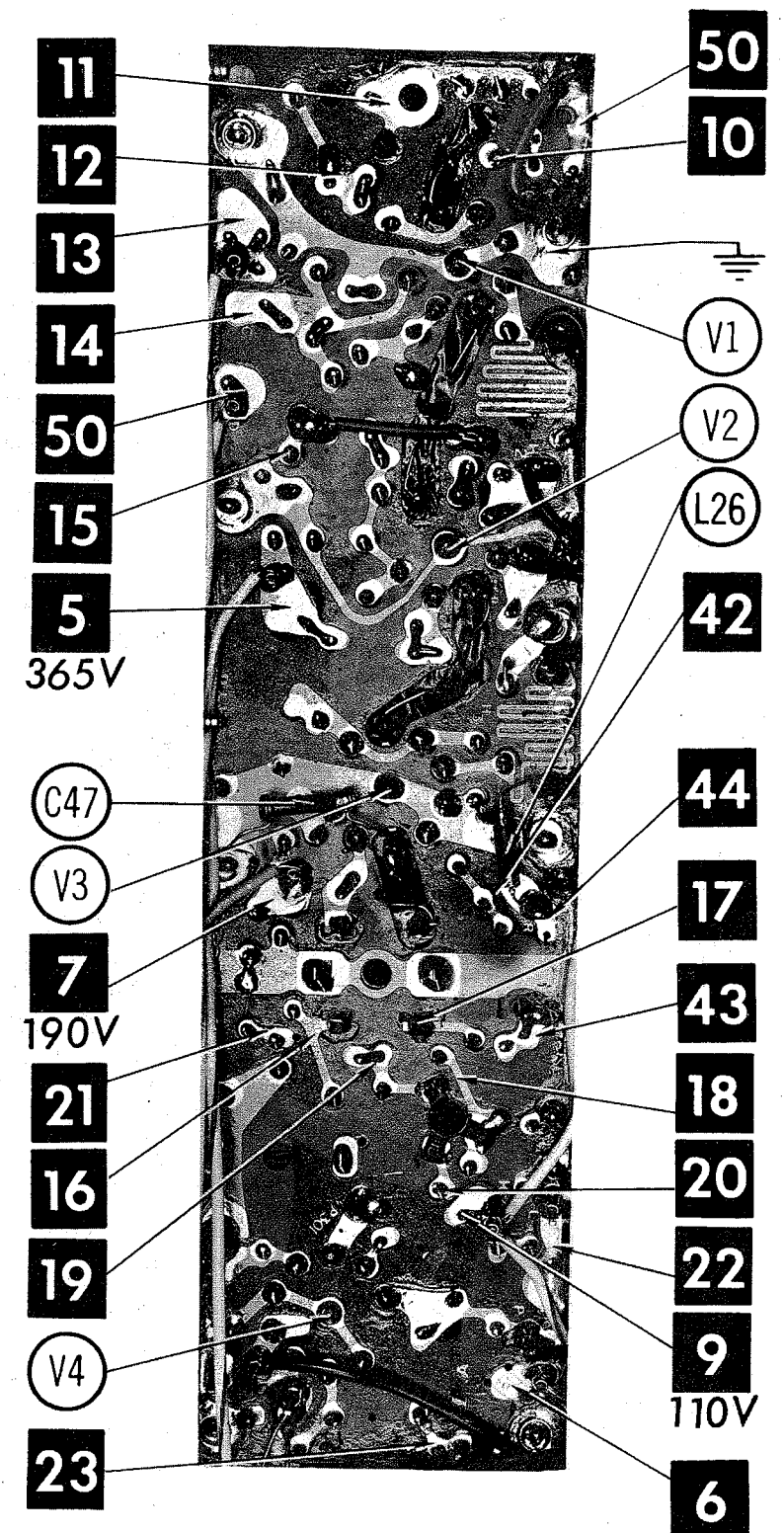


A Howard W. Sams **CIRCUITRACE** Photo ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

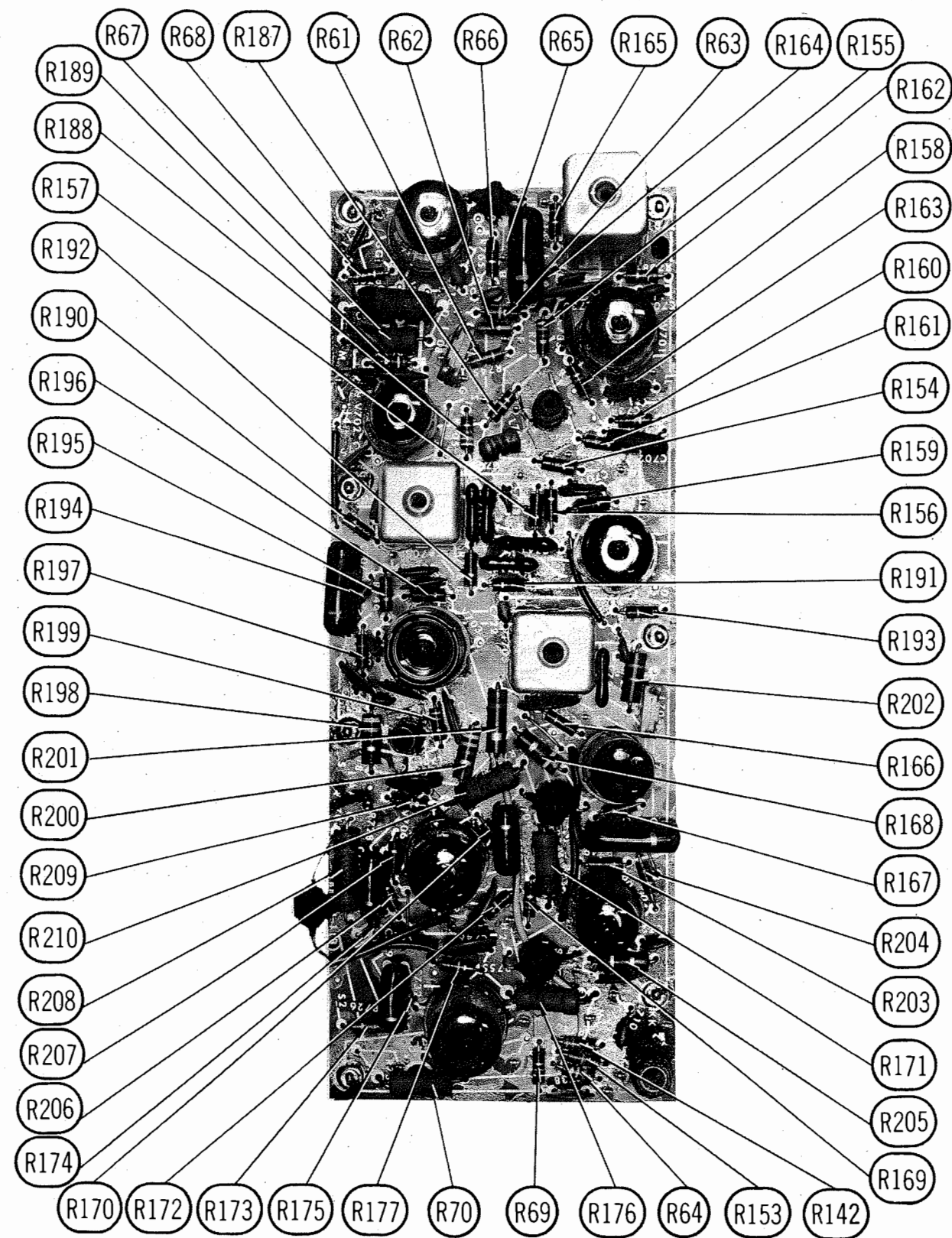
DEFLECTION BOARD



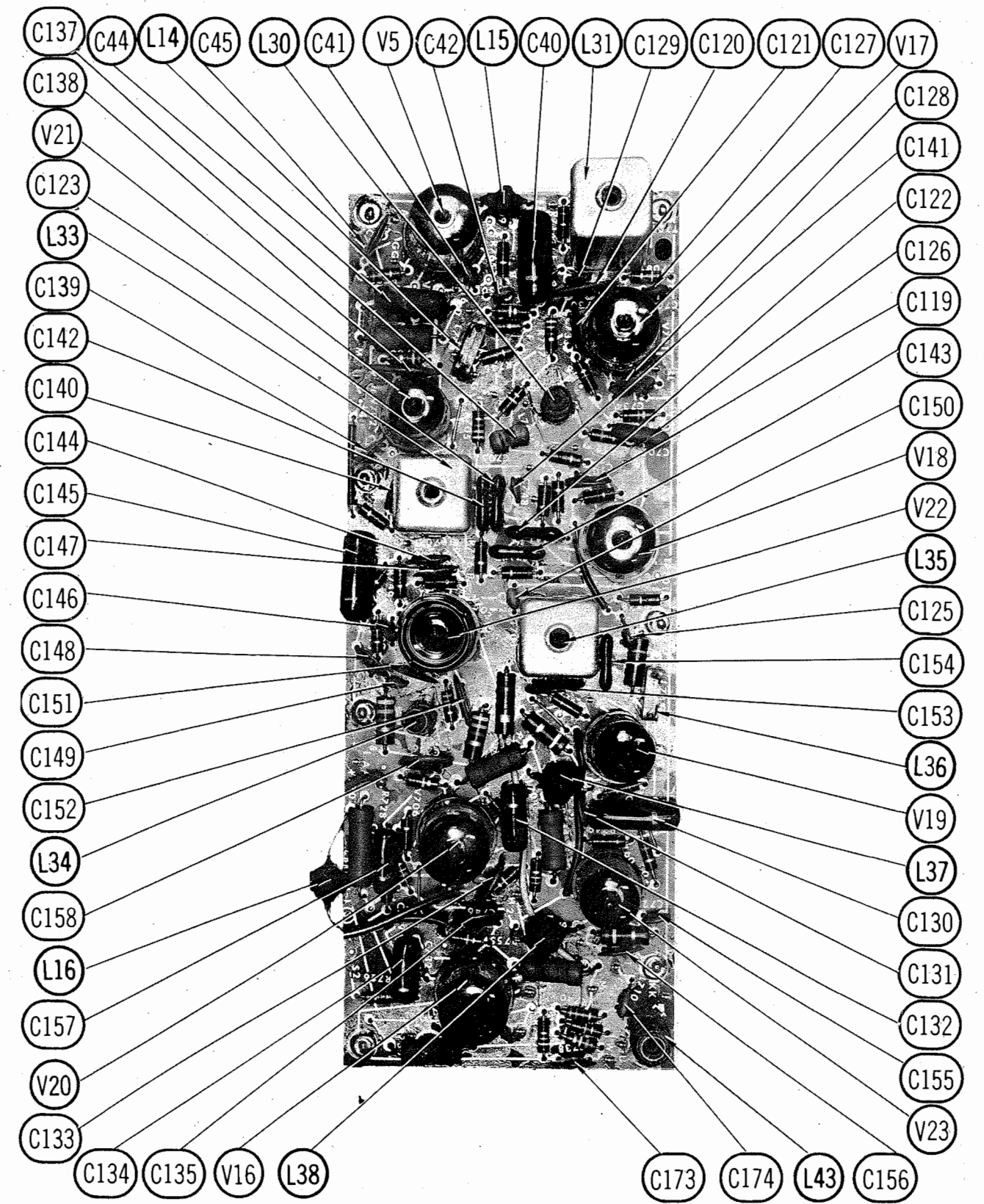
VIDEO IF BOARD

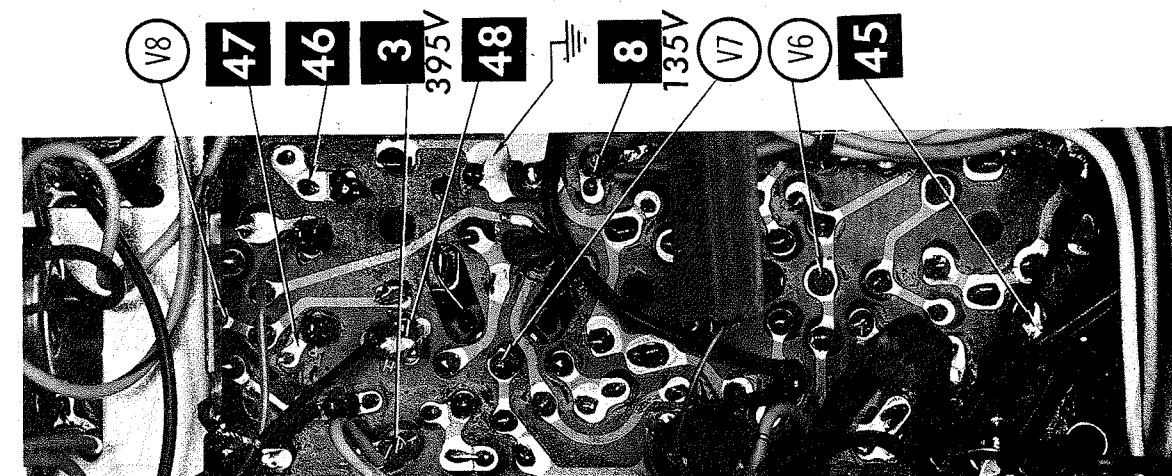
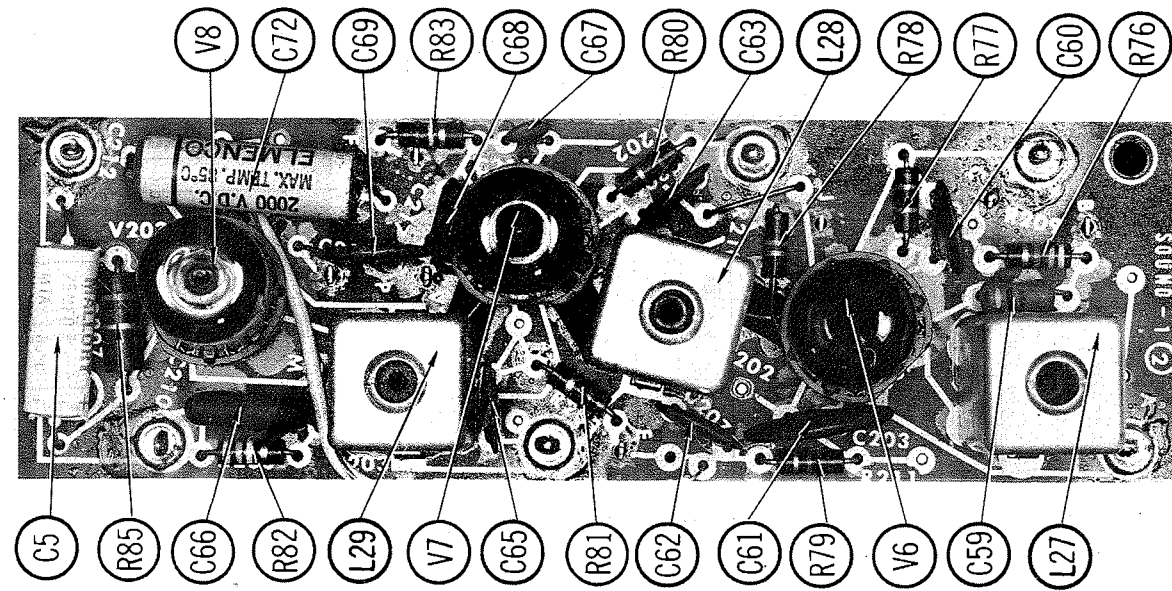


ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED A Howard W. Sams CIRCUITRACE Photo



CHROMA BOARD

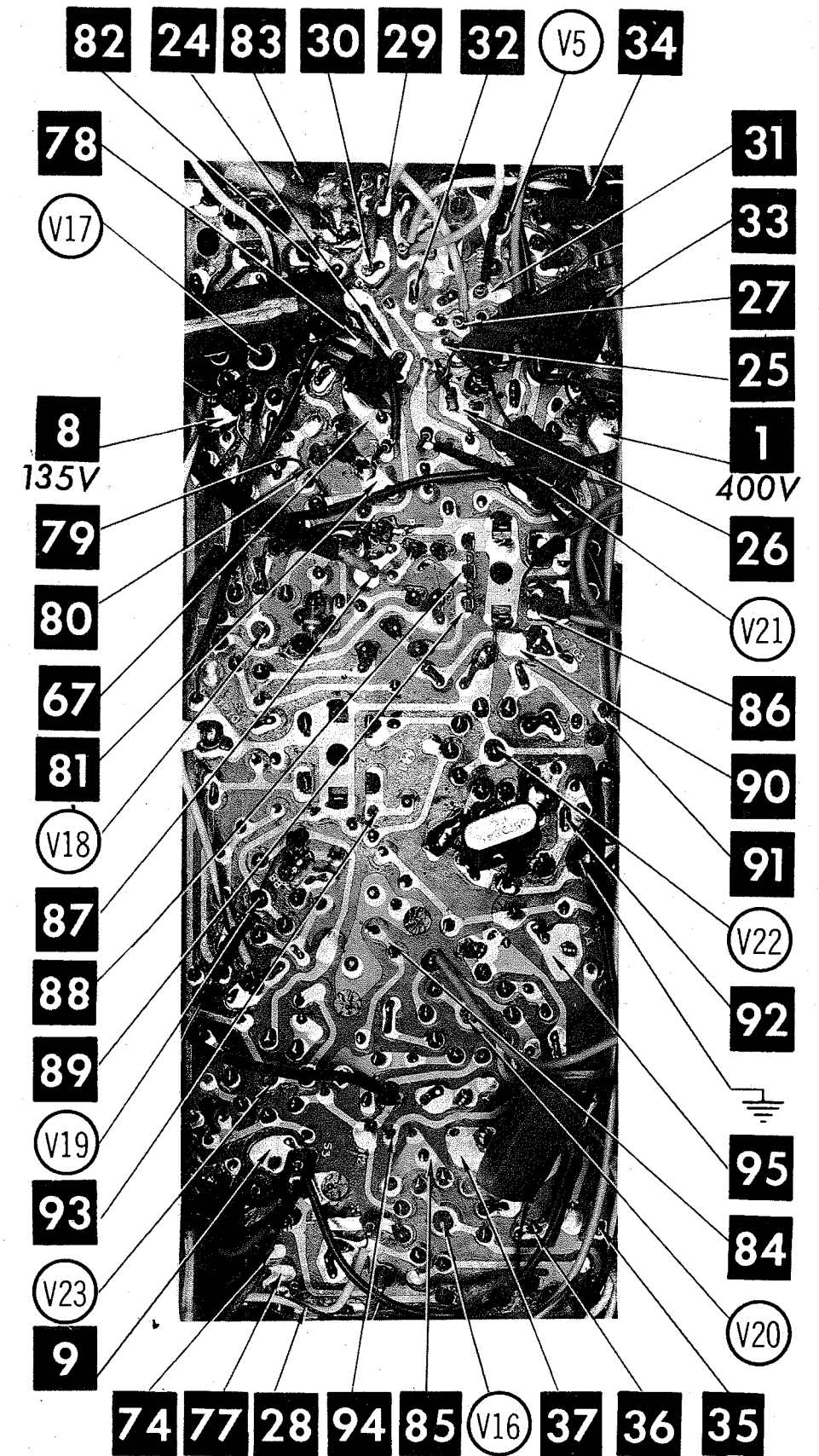




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SOUND BOARD

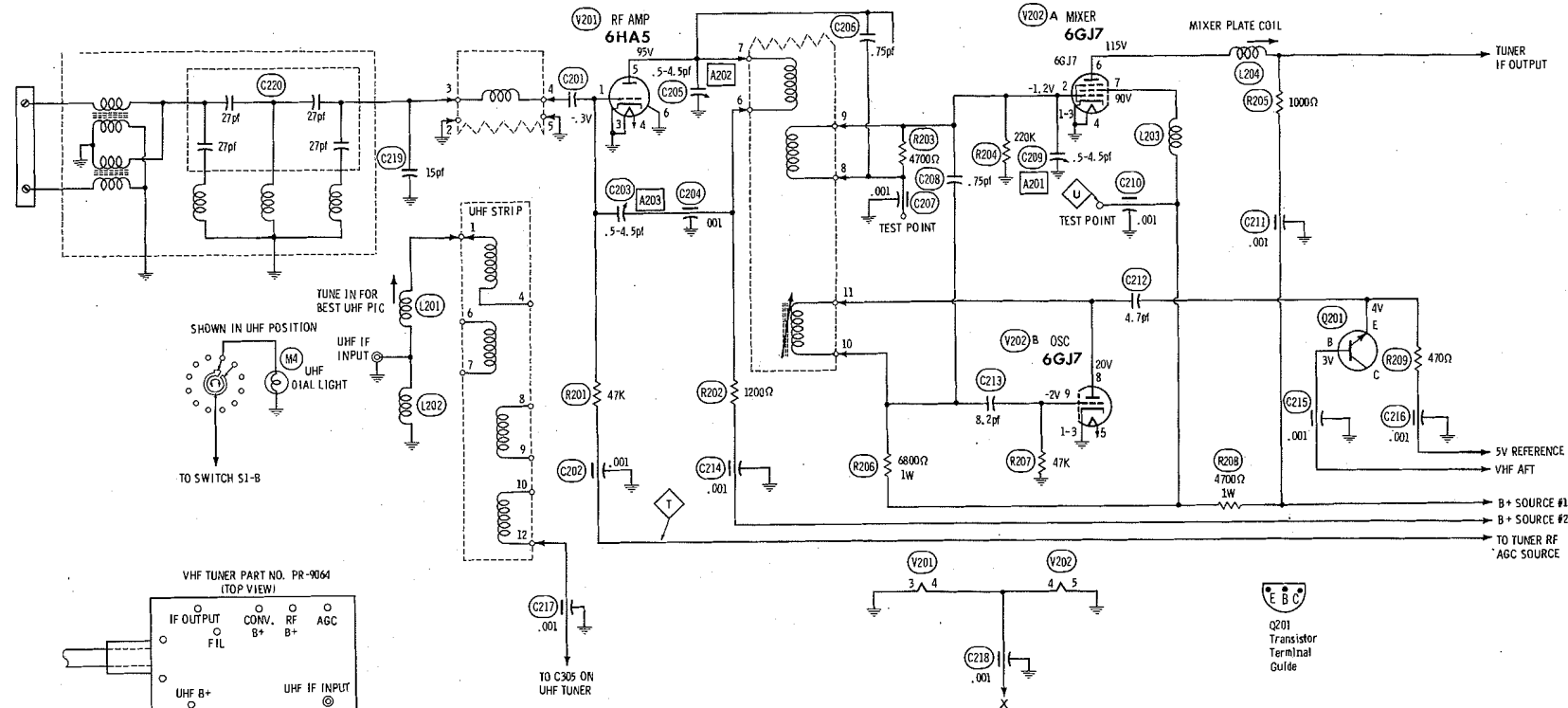
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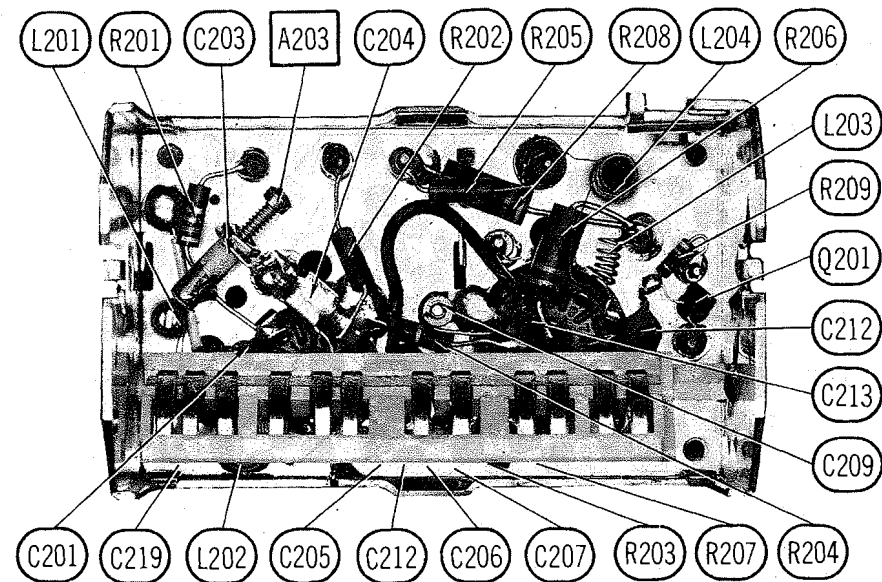
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CHROMA BOARD

A Howard W. Sams CIRCUITRACE® Photo



A PHOTOFAC STANDARD NOTATION SCHEMATIC
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VHF TUNER

VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201,..... GENERAL CEMENT #9296, 9297, 9300,..... WALSCO #2510, 2546, 2547
A202, A203, A301... 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.

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.

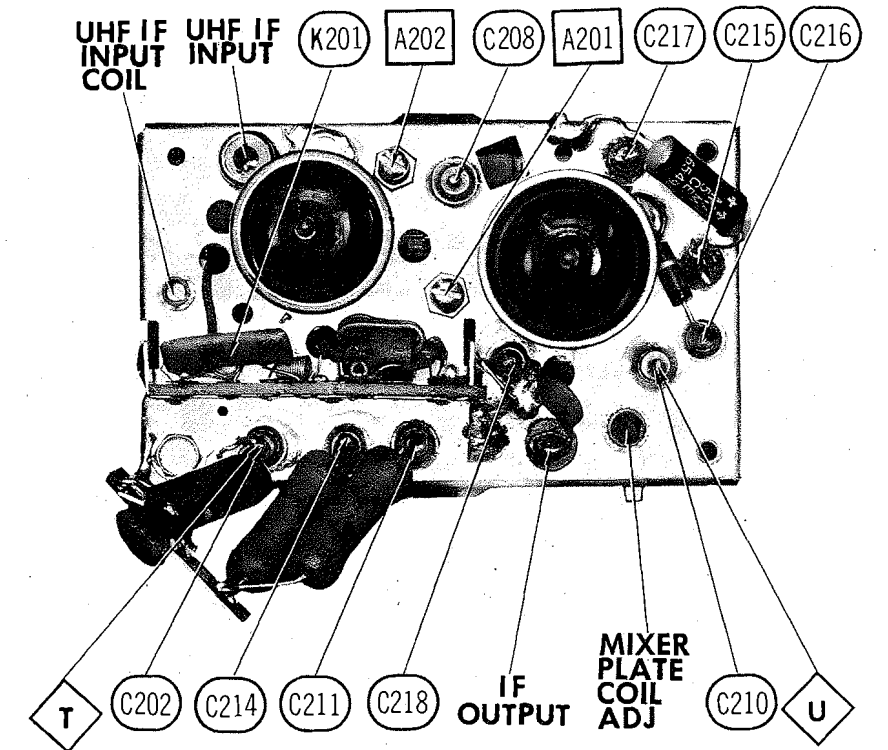
SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point U, low side to ground.	A201, A202	Adjust for maximum gain and symmetry of response similar 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 T, low side to ground.		Decrease bias. Check response on all channels and make compromise adjustments of A201, A202 & A203 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	SOUND VIDEO
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	198.25MC 203.75MC	11	
69MC	67.25MC 71.75MC	4	183MC	181.25MC 185.75MC	8	207MC	205.25MC 209.75MC	12	
75MC	73.25MC 77.75MC	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. Tune UHF Channel Selector to the lowest UHF channel operating in the area (low end of dial). Adjust UHF Low Channel Oscillator Trimmer 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.

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	Vertical Output	T0-9109			26596		* Use original core clamp and bracket assembly.
T3	Yoke (Horiz. 13mh)	LC-9159		DY-95AC		YC-312-2 *	
T4	90° (Vert. 21mh)						
T5	Horiz. Output	T0-9106-1					
T6	Pincushion (Side)	T0-9108-1					
	Pincushion (Top & Bot)	T0-9107					

* COMPONENT CONNECTION DATA

ORIGINAL →	HV TRANSFORMER	VERTICAL OUTPUT	YOKE	YOKE PLUG
REPLACEMENT ↓	Original Connections	Original Connections	Original Connections	1 2 3 4 5 6 7 8
				TO YOKE TERMINAL
MERIT				
STANCOR			NO WIRING CHANGE NECESSARY	
THORDARSON		CONNECT SAME AS ORIGINAL		
TRIAD			NO WIRING CHANGE NECESSARY	

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T7	19,600	3.2	T0-9105	A-29D1	A-3823	24S06	S-53X	

SPEAKER

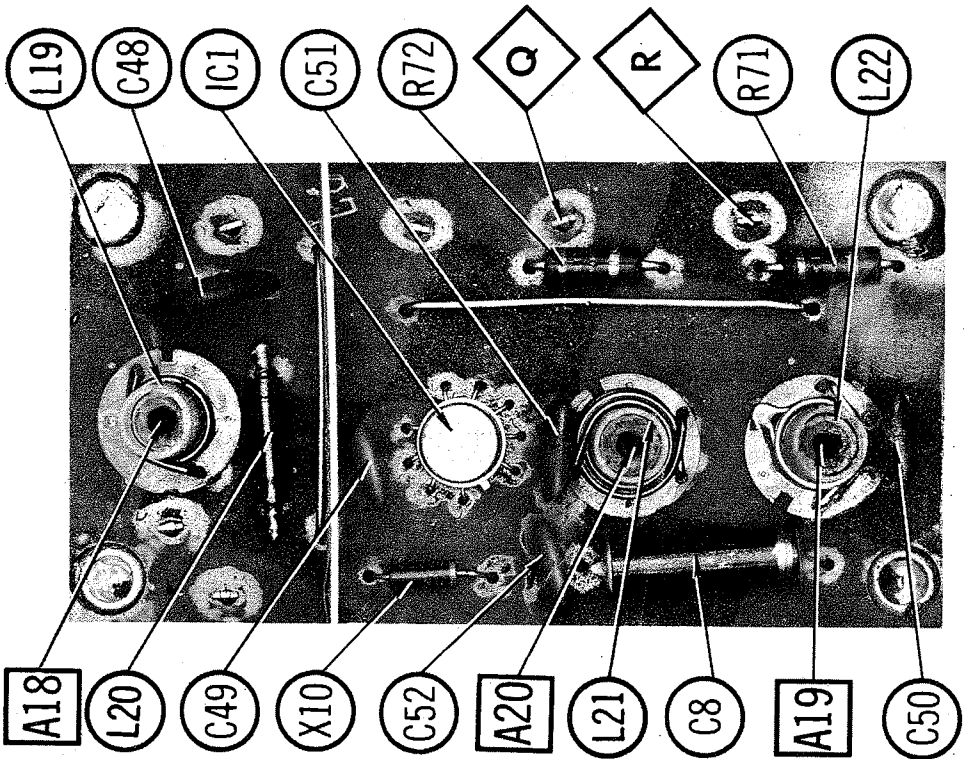
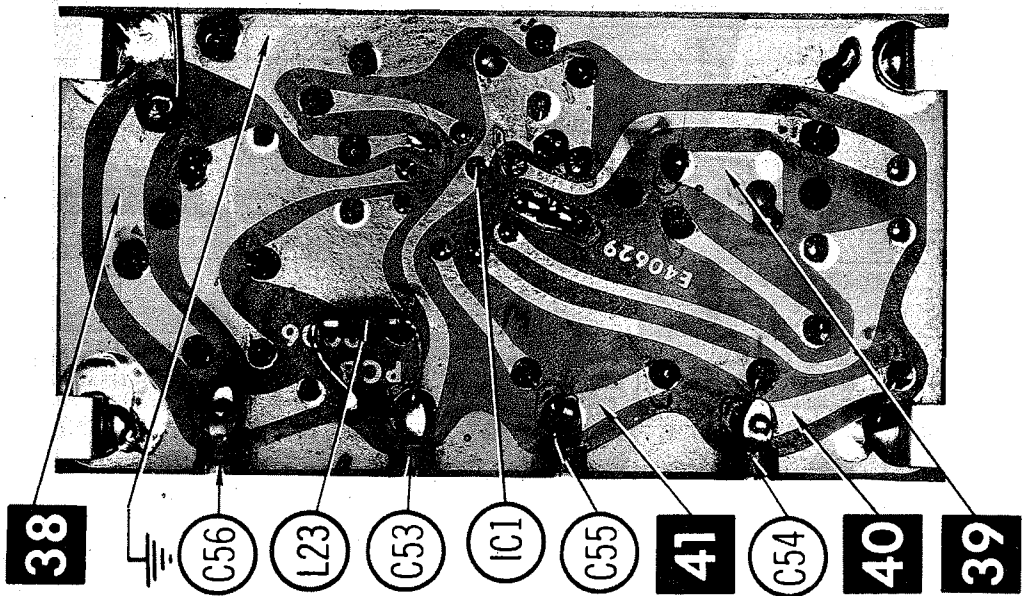
ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	6" x 9" PM, 3.2-ohms (1 used)	SK-0043	69A2	Models: 7-101-2, 6-102-2, 6-302-5, 6-601-4, 6-701-3, 7-301-5, 7-701-3.
	12" PM, 8-ohms (2 used)	SK-0052	12A6PA	Models: 7-101-2, 7-301-5, 7-701-3.
	8" PM, 8-ohms (2 used)	SK-0049		Models: 3-101-2, 3-301-5, 3-701-3.
	8" PM, 8-ohms (2 used)	SK-0053	8A1PA	Models: 7-101-2, 7-301-5, 7-701-3.
	3" x 9" PM (2 used)	SK-0050		Models: 3-101-2, 3-301-5, 3-701-3.
	3" x 7 1/4" 8-ohms (2 used)	SK-0054		Models: 7-101-2, 7-301-5, 7-701-3.
	3" PM (2 used)	SK-0051		Models: 3-101-2, 3-301-5, 3-701-3.

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 Break Current 3.1 Amp. Hold Current 2.1 Amp. 3 3/4" #22 copper wire	PR-9016				8153.25		FA3.5
F2		WM-0078						

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M1	VHF Tuner	PR-9064	JFO Replacement TA544, Model 7-101-2. #1847 #1847 3.58MC Part of CRT Cable
M2	UHF Tuner	PR-9065	
M3	UHF Antenna	AN-0031	
M4	VHF Pilot Lamp	LS-0004-3	
M5	UHF Pilot Lamp	LS-0004-3	
M6	Crystal	CX-9000	
M7	Spark Gap		
M8	Delay Line	LM-9105	
M9	Degaussing Coil	LM-9108	
M10	Magnet	AS-9107	Purity Assembly
S1	Switch		On-Off (Part of R4)
S2	Switch	SW-9001	Normal-Service-Raster
S3	Switch	SW-9001	Video Peaking
S4	Switch		VHF Fine Tune Defeat Switch (Part of R3)
S5	Switch	SW-9004	UHF Indicator
S6	Switch	SW-0030-1	Vacation
S7	Switch		AFT Defeat (Part of VHF Tuner)
	Printed Circuit Board	AS-9008	Deflection
	Printed Circuit Board	AS-9009	Sound
	Printed Circuit Board	AS-9011	Video IF
	Printed Circuit Board	AS-9012-5	Chroma
	Printed Circuit Board	AS-9036	AFT (AFC)



AFT BOARD

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VHF TUNER

TUBES

AMPEREX			GENERAL ELECTRIC			RCA			SYLVANIA		
ITEM No.	USE		TYPE			ITEM No.	USE		TYPE		
V201	RF Amp.		6HA5			V202	Mixer - Oscillator		6GJ7		

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA						
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q201		AFT (1)			GE-11	TR-21	HEP56	SK3018	ECG 108

(1) Collector lead clipped and used as diode.

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	15 10%	13	NPO-01 15	DTZ-15	C2601CG150J	CCTO-150	CN0415	10TCC-Q15
C202	.001							
C203	.5-4.5							
C204	.001							
C205	.5-4.5							
C206	.75pf 10%							
C207	.001							
C208	.75pf 10%							
C209	.5-4.5							
C210	.001							
C211	.001							
C212	4.7 10%	7	NPO-01 4.7	DTZ-4R7			CN0547	10TCC-V47
C213	8.2 10%	11	NPO-01 8.2					10TCC-V82
C214	.001							
C215	.001							
C216	.001							
C217	.001							
C218	.001							
C219	15 10%							
C220A	27							
B	27							
C	27							
D	27							

COILS (RF-IF)

ITEM No.	USE	MFGR. PART No.	NOTES	ITEM No.	USE	MFGR. PART No.	NOTES
L201	UHF Input			L203	RF Choke		
L202	RF Choke			L204	Mixer Plate		

UHF TUNER

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA						
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q301	2N4255	UHF Oscillator			GE-11	TR-22	HEP56	SK3019	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.		
X301	1N82A	29	1N82A	1N82AG	ECG 112		(1) Variable Capacitor Diode.
X302	(1)						

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	30 5%							
C302	1 N750 1%							
C303	23			DO-220	CY601CG220K	CCD-220	6P422	10TS-Q22
C304	.001							
C305	.001							
C306	220							
C307	220							

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)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	47.25MC Trap	LC-9133			
L2	1st Video IF	LI-9110	17-3418	7514-E	T272
L3	2nd Video IF	LI-9111	17-3419	7511-W	TB664
L4	3rd Video IF	LI-9112		7526	
L5	4th Video IF	LI-9113		6037	
L6	RF Choke (12.6uh)	LC-9135	19-2016	72F125AP	TA328
L7	4.5MC Trap	LC-9136		7142	TA264
L8	Peaking (630uh)	LC-9138	19-2030	6146	T335
L9	Peaking (36uh)	LC-9137	19-3036	6176	T301
L10	RF Choke (5.6uh)	LC-9130	19-2013	4609	T820
L11	Peaking (390uh)	LC-9129	19-2028	72F394AP	T870
L12	Peaking (780uh)	LC-9139	19-2031 (1)	6156 (1)	T328 (1)
L13	Peaking (72uh)	LC-9131	19-3075	6172	T303
L14	Peaking (64uh)	LC-9145	19-2068	72F865AP	T338
L15	Peaking (110uh)	LC-9146	19-2025 (2)	6112 (2)	T394 (2)
L16	Peaking (690uh)	LC-9144	19-3660	72F685AP	T327
L17	Service	LI-9106		7600	
L18	RF Choke (5.6uh)	LC-9130	19-2013	4609	T820
L19	45.75MC Trap	LC-9160			
L20	RF Choke (3.3uh)	LC-9161		74F336AP	T816
L21	AFT Discriminator, Primary	LI-9117			
L22	AFT Discriminator, Secondary	LI-9118			
L23	RF Choke (5.6uh)	LC-9132	19-1008	74F566AP	T820
L24	RF Choke (12uh)	LC-9100	19-2016	72F125AP	TA328
L25	RF Choke (1.9uh)	LC-9134	19-1002	72F226AP	TA324
L26	RF Choke (5.6uh)	LC-9130	19-2013	4609	T820
L27	Sound Take-off	LI-9107		7143	
L28	Sound IF	LI-9109		7141	T270
L29	Quadrature	LI-9108	20-1052 (3)	7110-R (3)	TF299 (3)
L30	Chroma Take-off	LC-9141			
L31	Chroma Bandpass	LI-9114			
L32	RF Choke (5.6uh)	LC-9130	19-2013	4609	T820
L33	Burst Phase	LI-9115			
L34	3.58MC Oscillator	LC-9142			
L35	3.58MC Output	LI-9116			
L36	RF Choke (12.6uh)	LC-9143	19-2016	72F125AP	TA328
L37	Peaking (690uh)	LC-9144	19-3660	72F684AP	T327
L38	Peaking (690uh)	LC-9144	19-3660	72F684AP	T327
L41	RF Choke (5.6uh)	LC-9130	19-2013	4609	T820
L42	RF Choke (5.6uh)	LC-9130	19-2013	4609	T820

(1) Shunt with 15K Resistor.

(2) Shunt with 2200-ohm Resistor.

(3) Add 68K Resistor.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA						
		MFGR. PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L39A	Horiz. Oscillator	LC-9140		6349				T8177
B	Waveform							
L40	Focus	LC-9157		6350		FC-5		TC289
L43	Horiz. Linearity	LC-9158		H-137				
L44	Pincushion Phase	LC-9152		H-178				
L45	Right R/G Vert. Lines	LC-9154		H-139				
L46	Right R/G Horiz. Lines	LC-9155		H-138				
L47	Right Blue Horiz. "	LC-9153		H-140				
L48	Blue Horiz. Shape	LC-9156		H-136				
L49	Convergence Yoke Assembly	LM-9112-1						

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L50	.410A DC	16.4	.5 H	LC-9121-2	C-4133	C-2708	26C81	C-40X	

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
		SEC. 2						
T1	117VAC @ 3.5A AC	150VAC @ 1.85A DC	TP-9102					
	6.3VAC @ 1.4A AC	6.3VAC @ 11.2A AC						

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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Have your local distributor check Sams COUNTER FACTS® for the most up-to-date replacement.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R6	Color Killer	1meg	VC-9131	40 TT-69 or [F1-1meg, SNK010]	B47-1meg-S or [NP-1meg-S, NML-A-300, TT-2]	B11-137, TM4 or [BU11, CF17, SS6]*	PTA16L or [RU16L, SL37, SN281] or [UA16L, SN281]
R7	Green Drive	6000	VC-9123	F1-7500, SNK104, AK-38	A47-7500, RN-3, TT-2 or [NP-7000-S, NML-A-300, TT-2]	B11-115, TM4 or [BU11, CF8, SS6]*	HVC63L
R8	Blue Drive	6000	VC-9126	F1-7500, SNK104, AK-38	A47-7500, RN-3, TT-2 or [NP-7000-S, NML-A-300, TT-2]	B11-115, TM4 or [BU11, CF8, SS6]*	HVC63L
R9	Vert. Linearity	3.4meg	VC-9130	F1-4meg, SNK014, AK-38	A43-7500, FKS-1/2 or [NPW-7500, NML-A-300, TT-2]	HLC4	HVC355L
R10	CRT Bias (Kine)	6000 2W	VC-9132	V-5000 (1) or WN-752	A43-7500, FKS-1/2 or [NPW-7500, NML-A-300, TT-2]	P115R502A or [W11-214, SK5] or [BU1, WF8, SS6]*	MR5000T or VWSK or CGMP
R11	Height	100K	VC-9129	TT-40 or [F1-100K, SNK010]	B47-100K-S or [NP-100K-S, NML-A-300, TT-2]	B11-128, TM4 or [BU11, CF13, SS6]*	PTA15L or [RU15L, SL37, SN1000] or [UA15L, SN1000]
R12	Top & Bottom Pincushion	15K	VC-9150	F1-15K, SNK012	A47-15K-S, RN-3 or [NP-15K-S, NML-A-300]	B11-118, SK6 or [BU1, CF10, SS6]*	RU153L, SL38, SN1000 or [UA24L, SN1000] or TA153L
R13	High Voltage Adjust	500K	VC-9127	TT-59 or [F1-500K, SNK010]	B47-500K-S or [NP-500K-S, NML-A-300, TT-2]	B11-133, TM4 or [BU11, CF16, SS6]*	PTA55L or [RU55L, SL37, SN281] or [UA55L, SN281]
R14	Red Screen	1.5meg	VC-9122	F1-1.5meg, SNK104, AK-38	NP-750-S, UP-N-007, TT-3	B11-138, TM4 or [BU11, CF18, SS6]*	HVC155L
R15	Green Screen	1.5meg	VC-9125	F1-1.5meg, SNK104, AK-38	NP-750-S, UP-N-007, TT-3	B11-138, TM4 or [BU11, CF18, SS6]*	HVC155L
R16	Blue Screen	1.5meg	VC-9124	F1-1.5meg, SNK104, AK-38	NP-750-S, UP-N-007, TT-3	B11-138, TM4 or [BU11, CF18, SS6]*	HVC155L
R17	Adjacent Sound Reject	10K	VC-9139	TR-69-1	NP-750-S, UP-N-007, TT-3	B11-105, TM9 or [BU11, CF5, SS6, DC2]*	TRS751L
R18	Sound Reject	750	VC-9140	F1-750, SNK010, AK-40	NP-750-S, UP-N-007, TT-3	B11-105, TM9 or [BU11, CF5, SS6, DC2]*	TRS751L
R19	R/G Horiz. Lines (Bottom)	500 1W	VC-9155	V-500	U39-500	110-600	MR600P, MRS375
R20	R/G Horiz. Lines (Top)	120 1W	VC-9141	V-120	U39-125	110C120	MRC120P
R21	R/G Horiz. Lines (Left)	120 1W	VC-9141	V-120	U39-125	110C120	MRC120P
R22	R/G Vert. Lines (Bottom)	60 1W	VC-9142	V-60	U39-75	110C60	MRC60P
R23	R/G Vert. Lines (Top)	150 1W	VC-9144	V-150	U39-150	110C150	MRC150P
R24	R/G Vert. Lines (Left)	150 1W	VC-9144	V-150	U39-150	110C150	MRC150P
R25	Blue Horiz. Lines (Bottom)	60 1W	VC-9142	V-60	U39-75	110C10	MRC60P
R26	Blue Horiz. Lines (Top)	60 1W	VC-9142	V-60	U39-75	110C60	MRC60P
R27	Blue Horiz. Lines (Left)	60 3W	VC-9151		U39-75	110C60	MRT100P, MRS375

- (1) Insulate control from chassis and solder original center terminal lead to metal case of control. * "SNAPTROL"
(2) "CONCENTRIKIT" Equivalent: K-6 Kit with base elements and shafts: B11-123, P14-019 (Panel), B11-136, R1-103 (Rear).
(3) "SNAPTROL" Equivalent: K-6 Kit with base elements and shafts: B11-123, P14-019 (Panel), B11-136, R1-103 (Rear).
(4) "CONCENTRIKIT" Equivalent: K-6 Kit with base elements and shafts: B11-123, P14-019 (Panel), B11-136, R1-103 (Rear).
(5) "SNAPTROL" Equivalent: K-6 Kit with base elements and shafts: B11-123, P14-019 (Panel), B11-136, R1-103 (Rear).

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFR. PART No.			IRC PART No.	WORKMAN PART No.	MFR. PART No.
R31	8200 3W	1 3/4A-10K	3G-8.2K	RG-8201-13	R181	39K 4W	1A-1	4G-39K	RG-3902-54
R32	8200 3W		3G-8.2K	RG-8201-13	R208	270 3W		5W-SQ-250	RG-270-13
R55	10K 10W		10W-SQ-10K	RW-1002-110	R218	V.O.R. *		FR-9041	PR-9041
R60	6800 3W		3G-6.8K	RG-6801-13	R219	Thermistor (120 Cold)		FR191	PR-9042
R73	16K 7W		3G-16K	RG-1602-17	R222	1 3W		5W-SQ-1	RW-001-13
R86	4300 5W	1 3/4A-16K	5G-4.3K	RG-4301-15	R224	1000 4W	2C-1500	1A-1000	RG-1001-14
R106	V.D.R. *		VR-9000	RG-4301-15	R225	3300 3W		3G-3.3K	RG-3301-13
R113	5600 4W		4G-5.6K	RG-5601-14	R226	1400 18W		20W-SQ-15K	RW-1401-118
R138	2200 3W		3G-2.2K	RG-2201-13	R227	1200 7W		7G-1.2K	RG-1201-17
R141	16K 7W		7G-16K	RG-1602-17	R228	1200 4W		4G-1.2K	RG-1201-14
R145	66meg, 6KV		PR-9040	PR-9040	R231	Thermistor (5-ohms Cold)		FR-49	Part of Yoke
R178	2700 3W		3G-2.7K	RG-2701-13					
R179	5600 4W		4G-5.6K	RG-5601-14					
R180	6800 3W		3G-6.8K	RG-6801-13					

* Voltage Dependent Resistor

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

ITEM	PART No.	ITEM	PART No.
Knob - Speaker Control Models 3-101-2, 3-301-5, 3-701-3, 7-101-2, 7-301-5, 7-701-3	KB-8028	Knob - VHF Channel Selector Models 6-102-2, 6-302-5, 6-601-4	KB-9032
Models 6-102-2, 6-302-5, 6-601-4, 6-701-3, 7-101-2, 7-301-5, 7-701-3		Knob - UHF Channel Selector, same as above models.	KB-9033
Knob - Channel Selector	KB-9028-1	Knob - VHF Channel Selector Models 6-701-3, 7-101-2, 7-301-5 and 7-701-3	KB-9032-1
Knob - Fine Tuning	KB-9029-1	Knob - UHF Channel Selector, same as above models.	KB-9033-1
Knob - Function Control (Bar), Vert. Hold, On/Off/Volume, Brightness, Color	KB-9031-1	Escutcheon 25" Mask (Brown)	ES-9030
Knob - Function Control	KB-9048-1		

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.
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WIRING DATA

High Voltage Lead	Use BELDEN No. 8868 (25KV)
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors
300-ohm Tuner Input Lead	Use BELDEN No. 8225
300-ohm 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

TUBES

AMPEREX		GENERAL ELECTRIC		RCA		SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE
V1	1st Video IF	6JH6	V13	Damper	6CL3	V19	Z Demodulator
V2	2nd Video IF	6GM6	V14	HV Rectifier	3A3	V20	B-Y Amp. - R-Y Amp.
V3	3rd Video IF	6EJ7	V15	HV Regulator	6BK4B	V21	Burst Amp.
V4	1st Video Amp. - 2nd Video Amp	6AW8A	V16	Horiz. Blanking - G-Y Amp.	6GU7	V22	Chroma Ref. Osc. Control - Chroma Reference Oscillator
V5	Video Output	12BY7A	V17	Color Killer - Chroma Bandpass Amp.	6GH8	V23	X Demodulator
V6	Sound IF	6E6	V18	Color Killer Detector - Chroma Sync Phase Detector	6JUBA		
V7	Audio Detector	6H26			6GY6		
V8	Audio Output	6AQ5A			6GU7		
V9	Noise Inverter - AGC Keying - Sync Separator	6KA8			6EW6		
V10	Vert. Mult. - Vert. Output	6GF7A			6GH8		
V11	Horiz. AFC - Horiz. Osc.	6FQ7/6C67			6GY6		
V12	Horiz. Output	6LQ6					

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V24	25XP22 * 25GP22A	25AP22A (1) 25AP22A (1)	H25XP22 (2) H25XP22A (2)	RE25AP22A (3) RE25AP22A (3)	(1) Aluminized (2) Hi-Lite (3) Color Bright "85"

* Models: 7-101-2, 3-101-2, 3-301-5, 3-701-3, 6-302-5, 6-601-4, 6-701-3, 7-301-5, 7-701-3.

INTEGRATED CIRCUITS

ITEM No.	FUNCTION	MFR. PART No.	REMARKS
IC1	AFT Amp and Detector	CA3034V1	

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS	NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.		
X1	CX-0039 (SM160)	GE-504A	5A6-0 or 9006A (3)	ECG 116 or ECG 117	SK3017A or SK3032	(3) A single unit replacement for both rectifiers.
X2	CX-0039 (SM160)	GE-504A	5A6-0 or 9006A (3)	ECG 116 or ECG 117	SK3017A or SK3032	
X3	SR-9001	GE-504A	61-8968	ECG 119	SK3017A or SK3032	
X4	SR-9000	GE-504A	61-8969	ECG 118	SK3017A or SK3032	
X5	CX-0039 (SM160)	GE-504A	806 or 5A6-D	ECG 116 or ECG 117	SK3017A or SK3032	
X6	SR-9005	GE-504A (1)	CD-07 or 804 (1)	ECG 120 or ECG 116 (1)		(1) Four required.
X7	CX-0036	1N60	1N60	ECG 109		* Zener Diode 10V
X8	CX-0036	1N60	1N60	ECG 109		
X9	SR-9002	66C1	0D04	ECG 113		
X10	* CX-0051 (1N4327A)		1ZM10T10	ECG 140		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		CARDINAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	160 250V	CE-9108	AFH1-31-81 (1)		AA0316A (1)	XC1-19 (1)	FP121 (1)	TVL-1541 (1)
C2A	160 250V	CE-9107	AFH4-108-38		000818A	XC4-63.1	FP427.69A	TVL-4714.4
B	30 450V							
C	20 450V							
D	40 150V							
C3A	80 450V	CE-9106	AFH4-108-35		DD0825.5A	XC4-68.1	FP427.67	TVL-4714.6
B	50 450V							
C	20 250V							
D	50 50V							
C4A	80 450V	CE-9111-1	AFH3-134-25		DD0956A	XC4-0.5	FP342.75	TVL-3719.10
B	2 350V							
C	25 25V							
C5	25 25V	CE-101-1	CRE612A	EA30-25	WBR25-50	MT1-11	MTA25E35	TE-1207
C6	5 12V	CE-100-2	CRE604A	EA15-5	AL5-150	MT1-3	MTA5050	TE-1127
C7	1 12V	CE-100-1	CRE750A	EA15-2	AL1-50	MT1-10	MTA1050	TE-1120
C8	25 12V	CE-100-13	CRE462A	EA15-25	AL25-16	MT1-10	MTA25D20	TE-1131
C9	50 150V	CE-9003	PR51480		WBR60-150	Q11-15.5	TC49A	TVL-1414
C10	25 6V	CE-100-5	CRE462A	EA6-25	AL25-16	MT1-13	MTA25D20	TE-1091
C11	10 NP 10V	CE-9109	PR57315			NPQT-3	TCN5010	TVAN-1204.1

(1) Use insulating sleeve and mounting wafer.

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C12	43 N750 5%	(1)						
C13	9 +.25	#CC-305-3						
C14	.033 200V		V1612S33		DMF2S33	4DP-2-333	PVC2133	4PS-S33
C15	.001 500V 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C16	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C17	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C18	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C19	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCO-102	GP210	10TS-D10
C20	150 NPO 5%		GPD X5F102K	DD-102	JBS601YP102K	CCO-102	GP210	10TS-D10
C21	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C22	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C23	680 N220D 10%	#CC-303-1	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C24	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C25	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C26	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C27	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C28	.001 1KV		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C29	.001 1KV		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C30	220 N150D 10%	#CC-303-4	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C31	.0022 500V 10%		GPD X5F222K	DD-222	JBS601YP222K	CCO-222	GP222	10TS-D10
C32	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C33	560 N150D 10%	#CC-303-3	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C34	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C35	10 +.5		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C36	100 N33/500V/10%	#CC-303-2	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C37	7 NPO/500V 5%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C38	1 NPO/400V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C39	3.5 +.25		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C40	.1 200V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C41	390 500V 10%		GPD X5F391K	DD-391	JBS601YP391K	CCD-391	GP339	10TS-T39
C42	390 500V 10%		GPD X5F391K	DD-391	JBS601YP391K	CCD-391	GP339	10TS-T39
C43	.0022 500V 10%		GPD X5F222K	DD-222	JBS601YP222K	CCD-222	GP222	10TS-D22
C44	.22 200V		GPD X5F222K	DD-222	JBS601YP222K	CCD-222	GP222	10TS-D22
C45	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C46	.22 400V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C47	1.5 N3300 +.25	#CC-305-1	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C48	56 NPO 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C49	.001 500V 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C50	.001 500V 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C51	.001 500V 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C52	.001 500V 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C53	.001 500V 10%	#CC-0261	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C54	.001 500V 10%	#CC-0261	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C55	.001 500V 10%	#CC-0261	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C56	.001 500V 10%	#CC-0261	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C57	1.5 +.25		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C58	10 +.5		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C59	5 N1500/500V	#CC-305-2	GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C60	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C61	750 N220D/500V/5%	#CC-303-7-0	GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C62	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C63	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C64	47 N750/500V/10%		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C65	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C66	.047 200V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C67	560 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C68	.0068 500V 10%		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C69	.0047 500V 10%		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C70	.001 500V 10%		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C71	.0047 500V 10%		GPD X5S103K	DD-103	BYX601ZU103P	CCO-103	JF110	10TS-S10
C72	.001 2KV 10%	#CP-201-1	GPD X5F181K	DD-181	JBS601YP181K	CCD-181	GP318	10TS-T18
C73	180 1KV 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C74	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C75	220 N1500 10%	#CC-303-4	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C76	.0033 500V 10%		GPD X5R332K	DD-332	JBS601YP332K	CCD-332	JF233	10TS-D33
C77	390 500V 10%		GPD X5F391K	DD-391	JBS601YP391K	CCD-391	GP339	10TS-T39
C78	.001 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C79	82 NPO/500V/10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C80	.0015 500V		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C81	.0022 500V 10%		GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C82	.036 600V 10%	#CP-204-5	GPD X5F222K	DD-222	JBS601YP222K	CCD-222	GP222	10TS-D22
C83	.0027 N5600 10%	#CC-303-6	GPD X5F102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C84	.0068 400V 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C85	680 500V 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C86	.047 200V		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C87	.1 600V		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C88	.1 600V		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C89	.1 600V		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C90	.47 200V		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C91	.0068 1.6KV 10%	#CP-202-133	GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C92	.0068 1.6KV 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C93	.0082 1KV	#CP-202-412	GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C94	470 N220D 10%	#CC-301-4	GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C95	470 N220D 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C96	68 NPO/500V/10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C97	27 N750/500V		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C98	.001 500V 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C99	.15 200V 20%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C100	820 500V 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C101	820 500V 10%		GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68
C102	390 N1500 5%	#CC-301-1	GPD X5F681K	DD-681	JBS601YP681K	CCD-681	GP368	10TS-T68

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

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CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL- DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C103	.01 400V 10%	#CC-301-8 #CC-301-13	V1614S1	CPR-10000J CPR-680J	DMF4S1 CD19F681J500	40P-1-103 DM-16-681J	PVC411 SX368	4PS-S10 424ME6800J501	
C104	680 500V 5%		DBE6D1	DO-102	DMF6D1	60P-1-102	PVC621	6PS-D10	
C105	.0015 600V 10%		DBE6S1		DMF6S1	60P-2-103	PVC611	6PS-S10	
C106	.01 600V		DBE6P1		DMF6P1	60P-4-104	PVC601	6PS-P10	
C107	.1 600V		DBE6P1		DMF6P1	60P-4-104	PVC601	6PS-P10	
C108	.1 600V						*	*	
C109	68 N1500/4KV/10%						*	*	
C110	130 N2200/6KV								
C111	.01 1.4KV				CI-103 CI-103 00-103	ACT142ZU103P ACT142ZU103P BYX6D1ZU103P		UAC110 UAC110 JF110	125L-S10 125L-S10 10TS-S10
C112	.01 1.4KV					CCD-103			10TCU-Q22
C113	.01 1KV		GPD X5S103K		DMF6S22 DMF6S68 DMF6S33	60P-2-223 60P-4-683 60P-3-333	CN7422 PVC6122 PVC6168	6PS-S22 6PS-S68 6PS-S33	
C114	22 N750/1KV			DD-103 TCN-470	BYX6D1ZU103P	CCD-103	JF110	10TS-S10	
C115	.022 600V 10%		DBE6S22			60P-2-223	PVC6122	6PS-S22	
C116	.068 600V 10%		DBE6S68			60P-4-683	PVC6168	6PS-S68	
C117	.033 600V 10%		DBE6S33			60P-3-333	PVC6133	6PS-S33	
C118	.01 500V		GPD X5S103K	DD-103 TCN-470	BYX6D1ZU103P	CCD-103	JF110	10TS-S10	
C119	470 N750/500V/5%	#CC-302-251	GPD X5S103K	DD-103 CPR-330J CPR-330J	CD15F331J500 CD15F331J500	DM-15-331J DM-15-331J	SX233 SX233	424ME3300J501 424ME3300J501	
C120	.01 500V							10TCC-V12	
C121	.01 500V							10TCC-V56	
C122	330 500V 5%							2PS-S47	
C123	330 500V 5%							10TS-T82	
C124	1.3 500V 10%	#CC-304-5						10TS-S10	
C125	6 NPO/500V +.5	#CC-302-507						10TS-D10	
C126	.047 200V		V1612S47		DMF2S47	4DP-3-473	PVC2147	4PS-S47	
C127	820 500V 10%		GPD XF821K	DD-821	JBY601YP821K	CCD-821	GP382	10TCP-Q33	
C128	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	6PS-S10	
C129	.001 400V		GPD XF5102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C130	.047 400V		DBE6S47		DMF4S47	4DP-3-473	PVC4147	10TS-D10	
C131	33 N150/500V	#CC-300-523				*	*	10TCC-V39	
C132	.01 600V		DBE6S1		DMF6S1	60P-2-103	PVC611	6PS-S10	
C133	.01 1KV		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C134	.01 600V		DBE6S1		DMF6S1	60P-2-103	PVC611	6PS-S10	
C135	.01 1KV		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C136	.001 500V 10%		GPD XF5102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C137	120 N750			TCN-120		CCCTN-121	CN7312	10TCC-Q10	
C138	.01 500V 10%		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C139	.01 500V		GPD X5S103K	DD-102	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C140	.001 400V		GPD XF5102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C141	120 N2200 10%	#CC-303-5					*	10TCC-Q10	
C142	330 500V 5%			CPR-330J	CD15F331J500	DM-15-331J	SX233	424ME3300J501	
C143	330 500V 5%			CPR-330J	CD15F331J500	DM-15-331J	SX233	424ME3300J501	
C144	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C145	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10	
C146	4 NPO/500V/+.25	#CC-303-8-0						10TCC-V39	
C147	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C148	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C149	10 NPO/500V/10%		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10	
C150	10 NPO/500V/10%		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CN0410	10TCC-Q10	
C151	220 N750/500V/10%		82 N750-DI 22	DTN-220	CV601UJ22K	CCCTN-221	CN7327	10TCC-Q10	
C152	82 NPO/500V/10%							10TCC-Q10	
C153	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C154	200 500V 5%			CPR-200J	CD15F201J500	DM-15-201J	SX320	424ME2000J501	
C155	33 N150/500V	#CC-30D-523				*	*	10TCP-Q33	
C156	.01 500V		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C157	.01 600V		DBE6S1		DMF6S1	60P-2-103	PVC611	6PS-S10	
C158	.01 1KV		GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C159	.001 500V 10%		GPD XF5102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C160	.001 500V 10%		GPD XF5102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C161	.001 500V 10%		GPD XF5102K	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10	
C162	.082 400V 10%		DBE6S82		PKM4S82	60P-4-823		6PS-S82	
C163	.082 400V 10%		DBE6S82		PKM4S82	60P-4-823		6PS-S82	
C164	.27 200V 10%	#CP-202-180			PKM4P27	4DP-5-274			
C165	.1mfd 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10	
C166	.1mfd 200V 10%		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10	
C167	.15 200V 10%		V1612P15		DMF2P15	2DP-3-154	PVC2015	2PS-P15	
C168	.047 600V		DBE6S5		DPMS6S5	60P-3-503	PVC615	6PS-S50	
C169	47 N750/2KV/10%								
C170	.1mfd 600V		DBE6P1		DMF6P1	60P-4-104	PVC601	6PS-P10	
C171	.01 500V 10%	#CP-202-178-0	GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10	
C172	.18 200V 10%				PKM4P18				
C173	.01 500V			GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10
C174	150 500V 10%			GPD XF51S1K	DD-151		CCD-151	GP315	10TS-T15
C175	.01 500V 10%			GPD X5S103K	DD-103	BYX601ZU103P	CCD-103	JF110	10TS-S10

1)

REMARKS	REPLACEMENT DATA					
	AEROVOX PART No.	CENTRALB PART No.	CORNELL- DUBILIER PART No.	ELMENCO PART No.	MALLYORY PART No.	SPRAGUE PART No.
GPD X5F222K		DD-222	J8X601YP222K	CCD-222	GP222	10TS-022
GDE2P1			DMF1	20P-2-104	PWC101	22SP10491UD3
GPD X5R332K		DD-332	J8V601YP332K	CCO-332	JF233	10TS-033
GDE2P1			DMF1P1	10P-2-104	PWC101	22SP10491UD3
GPD X5R332K			J8V601YP332K	CCO-332	JF233	10TS-033
DD-02		CK-203	DMF1	PWC101	22SP10491UD3	22SP10491UD3
DD-02		CK-203	H0R101VZV03P	CCO-203	TA120	TG-520
TPP-02		CK-203	H0R101VZV03P	CCO-203	TA120	TG-520
TPP-02		CK-203	H0R101VZV03P	CCO-203	TA120	TG-520
DD-02P1			DMF1P1	10P-2-104	PWC101	22SP10491UD3
DD-02P47			DMF1P47	10P-2-104	PWC1047	2PS-P47
DD-02P47			DMF1P47	10P-4-474	PWC1047	2PS-P47
GPD X5R332K		DD-332	J8V601YP332K	CCO-332	JF233	10TS-033
V1612547			DMF1547	10P-2-473	PWC1147	22SP47391UD3
GPD X5F152K		DD-152	J8T601YP472K	CCO-152	GP215	10TS-015
GPD X5R472K		DD-472G	DMF1P1	CCO-472	GP217	10TS-017
DD-02P1			DMF1P22	10P-2-104	PWC101	22SP10491UD3
V1612P22			DMF1P22	10P-3-224	PWC1022	2PS-224
DD-02P1		CK-103	H0Y101VZV03P	CCO-103	TA110	TG-510
DD-01 100		DTZ-100	CV601CG101K	CCO-101	TA010	10TC-110
TPP-1		CK-104	H0V12V104Z	CCO-101	GP310	TG-P10
GPD X5F101K		DD-101	J8Z601YP101K	CCO-101	TA010	10TS-110
GPD X5F101K		DD-101	J8Z601YP101K	CCO-101	GP310	10TS-110
DD-02P1			DMF1P1	10P-2-104	PWC101	22SP10491UD3
DD-02P47			DMF1P47	10P-4-474	PWC1047	2PS-P47
DD-02P47			DMF1P47	10P-4-474	PWC1047	2PS-P47
GPD X5F222K		DD-222	J8X601YP222K	CCO-222	GP222	10TS-022
V1612547			DMF1547	10P-2-473	PWC1147	22SP47391UD3
GPD X5F152K		DD-152	J8T601YP472K	CCO-152	GP215	10TS-015
GPD X5R472K		DD-472G	DMF1P1	CCO-472	GP217	10TS-017
GDE2P1			DMF1P1	10P-2-104	PWC101	22SP10491UD3
V1612P22			DMF1P22	10P-3-224	PWC1022	2PS-224
DD-02P1		CK-103	H0Y101VZV03P	CCO-103	TA110	TG-510
DD-01 100		DTZ-100	CV601CG101K	CCO-101	TA010	10TC-110
TPP-1		CK-104	H0V12V104Z	CCO-101	GP310	TG-P10
DD-02P47			DMF1547	60P-3-473	PVC6147	6PS-547
GDE6547			DMF6547	20P-3-104	PWC201	2PS-P10
DD-02P1		CK-103	H0Y101VZV03P	CCO-103	TA110	TG-510
DD-02P1			DMF6547	20P-3-104	PWC201	2PS-P10
GPD X5X103K		DD-103	8YX601ZU103P	CCO-103	JF110	10TS-510
GPD X5X103K		DD-103	8YX601ZU103P	CCO-103	JF110	10TS-510
GPD X5X103K		DD-103	8YX601ZU103P	CCO-103	JF110	10TS-510
DD-02P1			DMF6547	20P-3-104	PWC201	2PS-P10
GPD X5X103K		DD-103	8YX601ZU103P	CCO-103	JF110	10TS-510
GPD X5X103K		DD-103	8YX601ZU103P	CCO-103	JF110	10TS-510
DD-02P1			DMF6547	20P-3-104	PWC201	2PS-P10
DD-02P47			DMF1P47	10P-4-474	PWC1047	2PS-P47

stages 1/2 watt, or less, unless listed)

RESIST- ANCE	REPLACEMENT DATA				
	MFGFR. PART No.	CENTRAL8 PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
50K 50K	VC-8053	F1-50K,R1-50K, SF110,CPL-2, BA008,CAD05		QC82 (1), B11-123,B11-123, TM5,QCN,QCN or [9U9,CF12,CX7, SSI,SS7A,0C1, QCN] *	P54L,3012, SU3250,RU54L, CS3500
50K 50K	VC-8053	F1-50K,R1-50K, SF110,CPL-2, BA008,CAD05		QC82 (1), B11-123,B11-123, TM5,QCN,QCN or [9U9,CF12,CX7, SSI,SS7A,0C1, QCN] *	P54L,3012, SU3250,RU54L, CS3500
25K	VC-8054	F3-25K,R2-25K, SF110,CPL-2, BA008,CAD05		QC82 (1), B17-120,B13-120, TM5,QCN,QCN or [9U9,CF91,CRO50, SSI,SS7A,0C1, QCN] *	P253R,3012, SH3250,RU253A, CS3500
25K 2000 Tap & 7500 Tap 25K 9000 Tap & 7500 Tap 600	VC-8052			B0J3,CF104TT, CR69TT, SSI, SS7A,0C1,QCN	
	VC-8055	F1-500,SNK010, AK-40	KP-500-8, UP-N-007,TT-3	B11-103,TM9 or [BU11,CF4, S56,0C2] *	TR5751L
25K	VC-8045	TT-26 or [F1-25K,SNK010]	847-25K-5 or [NP-25K-5, NML-A-300]	B11-120,TM4 or [BU11,CF11,S56] *	RU253L,SL37, SN281 or [UA253L,SN281]
250 2W	VC-8051	V-300	U39-300	110-300	
100 2W	VC-8050	V-100	U39-100	110-100	MR100P
250 2W	VC-8051	V-300	U39-300	110-300	
100 2W	VC-8050	V-100	U39-100	110-100	MR100P

d of Tab Mount Plate in TM5 Kit.

* "SNAPTROL"

REPLACEMENT DATA		
No.	WORKMAN PART No.	MFGR. PART No.
		RW-00027-110 RW-00033-110 RW-020-13
3	SW-SQ-20	

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFGR. PART No.
R217	.27 10W			RW-00027-110
R218	.33 10W			RW-00033-110
R219	.36 3W	1A-20	SW-SQ-20	RW-020-13

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	FM Antenna	(1)			
L2	FM RF	(1)			
L3	RF Choke	(1)			
L4	FM Oscillator	(1)			
L5	FM Input IF	(1)			
L6	FM Interstage IF	LI-8022			
L7	FM Interstage IF	LI-8022			
L8	AM Loopstick	LA-8006	14-9013	7789	T542
L9	AM RF	LR-8003			
L10	AM Oscillator	LO-8011			
L11	AM Input IF	LI-8020			
L12	AM Interstage IF	LI-8020			
L13	Ratio Detector	LI-8023			
L14	AM Output IF	LI-8201			
L15A	19KC Input, Primary	LC-8027			
B	19KC Input, Secondary	LC-8028			
L16	19KC Doubler	LC-8028			
L17	67KC Trap	LC-8074			
L18A	38KC Output, Primary	LC-8029			
B	38KC Output, Secondary	LC-8030			

(1) Part of FM Tuner Assembly, Part No. PR-B036.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .670A AC	62VAC, CT @ 3.2A DC	TP-8012					
	SEC. 2	SEC. 3						
	52VAC, CT @ .060A DC	6.3VAC @ .750A AC						

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	3AG, 3-amp., 250V Quick Acting	FU-0011		AGC 3	HCM	312003.	342012		

PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA						NOTES
	MFGR. PART No.		ASTATIC PART No.		ELECTRO-VOICE PART No.		
	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2 M3	PS-0065						

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
M1	Tuner Assembly	PR-8036	
M4	Lamp	LS-0006	Tuning Meter
M5	Lamp	LS-0004-3	Olal
M6	Lamp	LS-0004-3	Olal
M7	Lamp	LS-0004-3	Push Button
M8	Lamp	LS-0006	Stereo Indicator
M9	Meter	MT-0006	Tuning
PC1	38KC Notch Filter	PAK-0105	
PC2	38KC Notch Filter	PAK-0105	
S1	Switch		Function (AFC, Stereo, FM, AM, Auxiliary, Tape, Phono)

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

ITEM	PART No.	ITEM	PART No.
Knob - On/Off Push Button	K8-8027	Knob - Phono Push Button	K8-8027-5
Knob - AM Push Button	K8-8027-1	Knob - Tape Push Button	K8-8027-6
Knob - FM Push Button	K8-8027-2	Knob - Auxiliary Push Button	K8-8027-7
Knob - Stereo Push Button	K8-8027-3	Knob - Function (5 used)	K8-8028
Knob - AFC Push Button	K8-8027-4		

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN NO.	8530 (Solid) Available in 12 Colors
		8524 (Stranded) Available in 12 Colors
Power Cord	Use BELDEN NO.	17106 (Plastic) or 17126 (Rubber) - 6 Ft.
		17101 (Plastic) or 17129 (Rubber) - 9 Ft.
Low-loss Shielded Lead (Interconnecting)	Use BELDEN NO.	8401 or 8421
Phono Pick-up Arm Cable	Use BELDEN NO.	8430 (Two Conductor-Unshielded)
		8429 (Two Conductor-Shielded)
		8419 (Three Conductor-Shielded)

SET 1065 FOLDER 2-A

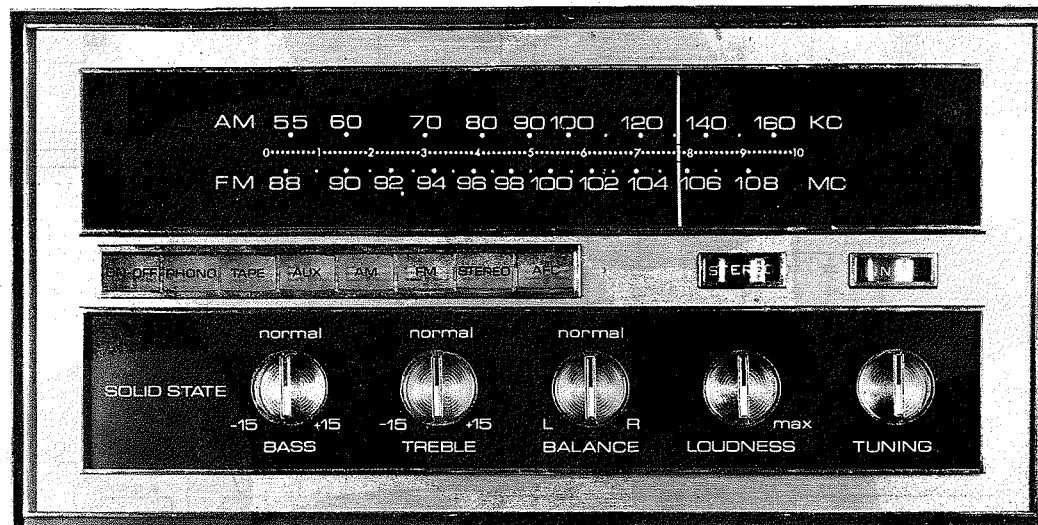
**CARDINAL
CHASSIS AS-8090, AS-8091**

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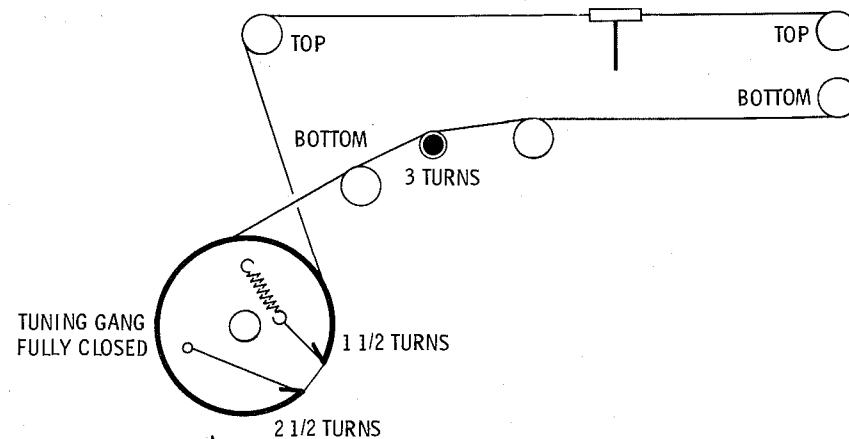
CARDINAL
CHASSIS AS-8090, AS-8091

For Supplier Address See PHOTOFAC Index



CARDINAL
CHASSIS AS-8090, AS-809T

SET 1065 FOLDER 2-A



REMEMBER TO ASK— “What else needs fixing?”

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

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. SB876



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DATE 11-69 SET 1065 FOLDER 2-A

PARTS LIST AND DESCRIPTION (CONTINUED)

(When ordering parts, state Model, Part Number, and Description.)

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA							
			MFGR. PART No.	DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.	
Q1	SE5050	FM RF Amp.	(1)		GE-17	TR-22	HEP709	SK3018	ECG 108	
Q2	SE5006	FM Mixer	(1)		GE-17	TR-22	HEP709	SK3018	ECG 108	
Q3	SE1001	FM Oscillator	(1)		GE-17	TR-22	HEP738	SK3018	ECG 108	
Q4	40481	FM IF	TR-8031		GE-20	TR-21	HEP56	SK3018	ECG 108	
Q5	40481	FM IF	TR-8031		GE-20	TR-21	HEP56	SK3018	ECG 108	
Q6	40481	FM IF	TR-8031		GE-20	TR-21	HEP56	SK3018	ECG 108	
Q7	40481	FM IF	TR-8031		GE-20	TR-21	HEP56	SK3018	ECG 108	
Q8	40480	AM RF Amp.	TR-8028		GE-20	TR-21	HEP56	SK3018	ECG 123	
Q9	40479	AM Mixer	TR-8029		GE-20	TR-24	HEP56	SK3018	ECG 104	
Q10	40478	AM Oscillator	TR-8030		GE-20	TR-24	HEP56	SK3018	ECG 108	
Q11	40481	AM IF	TR-8031		GE-20	TR-21	HEP56	SK3018	ECG 123	
Q12	40482	AM IF	TR-8032		GE-20	TR-21	HEP56	SK3018	ECG 123	
Q13	MP56517	Tuning Indicator Amp	TR-8026		GE-21	TR-19	HEP715	SK3025	ECG 129	
Q14	2N3638	AM AVC	TR-8007		GE-22	TR-19	HEP716	SK3025	ECG 129	
Q15	2N2926	MPX Input Amp.	TR-8004-5		GE-17	TR-21	HEP722	SK3018	ECG 123	
Q16	2N2926	19KC Amp.	TR-8004-5		GE-17	TR-21	HEP722	SK3018	ECG 123	
Q17	2N3638	19KC Oscillator	TR-8007		GE-22	TR-19	HEP716	SK3025	ECG 129	
Q18	36387	Tuning Indicator Amp	TR-8014		GE-18	TR-25	HEP243	SK3020	ECG 128	
Q19	36387	Tuning Indicator Amp	TR-8014		GE-18	TR-25	HEP243	SK3020	ECG 128	
Q20	2N2926	Stereo Switch	TR-8004-5		GE-17	TR-21	HEP722	SK3018	ECG 123	
Q21	2N2926	AF Amp.	TR-8007		GE-22	TR-19	HEP716	SK3025	ECG 129	
Q22	2N2926	AF Amp.	TR-8004-4		GE-17	TR-21	HEP722	SK3018	ECG 123	
Q23	2N3819	AF Amp.	TR-8027		GE-20	TR-21	HEP724	SK3020	ECG 123	
Q24	2N3393	AF Amp.	TR-8025		GE-20	TR-21	HEP724	SK3020	ECG 123	
Q25	2N3393	AF Amp.	TR-8025		GE-20	TR-21	HEP724	SK3020	ECG 123	
Q26	2N3393	AF Amp.	TR-8025		GE-20	TR-21	HEP724	SK3020	ECG 123	
Q27	MP56517	AF Amp.	TR-8026		GE-21	TR-19	HEP715	SK3025	ECG 129	
Q28	40406	AF Amp.	TR-8020		GE-20	TR-21	HEP714	SK3020	ECG 123	
Q29	40407	AF Amp.	TR-8021		GE-20	TR-21	HEP714	SK3020	ECG 123	
Q30	40408	AF Amp.	TR-8022		GE-20	TR-21	HEP714	SK3020	ECG 123	
Q31	40410	Driver	TR-8024		GE-21	TR-30	HEP242	SK3025	ECG 129	
Q32	40409	Driver	TR-8023		GE-18	TR-25	HEP243	SK3020	ECG 128	
Q33	40411	Output	TR-8018		GE-14	TR-26	HEP247	SK3036	ECG 130	
Q34	40411	Output	TR-8018		GE-14	TR-26	HEP247	SK3036	ECG 130	
Q35	2N3819	AF Amp.	TR-8027		GE-20	TR-25	HEP724	SK3020	ECG 123	
Q36	2N3393	AF Amp.	TR-8025		GE-20	TR-25	HEP724	SK3020	ECG 123	
Q37	2N3393	AF Amp.	TR-8025		GE-20	TR-25	HEP724	SK3020	ECG 123	
Q38	2N3393	AF Amp.	TR-8025		GE-20	TR-25	HEP724	SK3020	ECG 123	
Q39	MP56517	AF Amp.	TR-8026		GE-21	TR-19	HEP715	SK3025	ECG 129	
Q40	40400	AF Amp.	TR-8020		GE-21	TR-19	HEP714	SK3020	ECG 123	
Q41	40407	AF Amp.	TR-8021		GE-20	TR-21	HEP714	SK3020	ECG 123	
Q42	40408	AF Amp.	TR-8022		GE-20	TR-21	HEP714	SK3020	ECG 123	
Q43	40410	Driver	TR-8024		GE-21	TR-30	HEP242	SK3025	ECG 129	
Q44	40409	Driver	TR-8023		GE-18	TR-25	HEP243	SK3020	ECG 128	
Q45	40411	Output	TR-8018		GE-14	TR-26	HEP247	SK3036	ECG 130	
Q46	40411	Output	TR-8018		GE-14	TR-26	HEP247	SK3036	ECG 130	
Q47	2N4898	Voltage Regulator	TR-8019		GE-26		HEP702	SK3036	ECG 130	

(1) Part of FM Tuner Assembly, Part No. PR-8036.

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.		
X1	CX-0040 (1N4720)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X2	CX-0040 (1N4720)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X3	CX-0040 (1N4720)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X4	CX-0040 (1N4720)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X5	CX-0039	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X6	CX-0039	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X7	CX-0049 (1)	GE-20	1N60	ECG 109	SK3031	(1) Zener Diode
X8	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	(4) Matched pair.
X9	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	
X10	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	
X11	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	
X12	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	
X13	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	
X14	CX-0036	1N60	ECG 110	ECG 110 (4)	SK3031	
X15	CX-0042	1N60	ECG 110	ECG 110 (4)	SK3031	
X16	CX-0042	1N60	ECG 110	ECG 110 (4)	SK3031	
X17	CX-0042	1N60	ECG 110	ECG 110 (4)	SK3031	
X18	CX-0042	1N60	ECG 110	ECG 110 (4)	SK3031	
X19	CX-0050 (1)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X20	CX-0048 (1N3754)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X21	CX-0048 (1N3754)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X22	CX-0048 (1N3754)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X23	CX-0047	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X24	CX-0050 (1)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X25	CX-0049 (1N3754)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X26	CX-0049 (1N3754)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X27	CX-0049 (1N3754)	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
X28	CX-0047	GE-504A	804 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	

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.

ELECTROLYTIC CAPACITORS

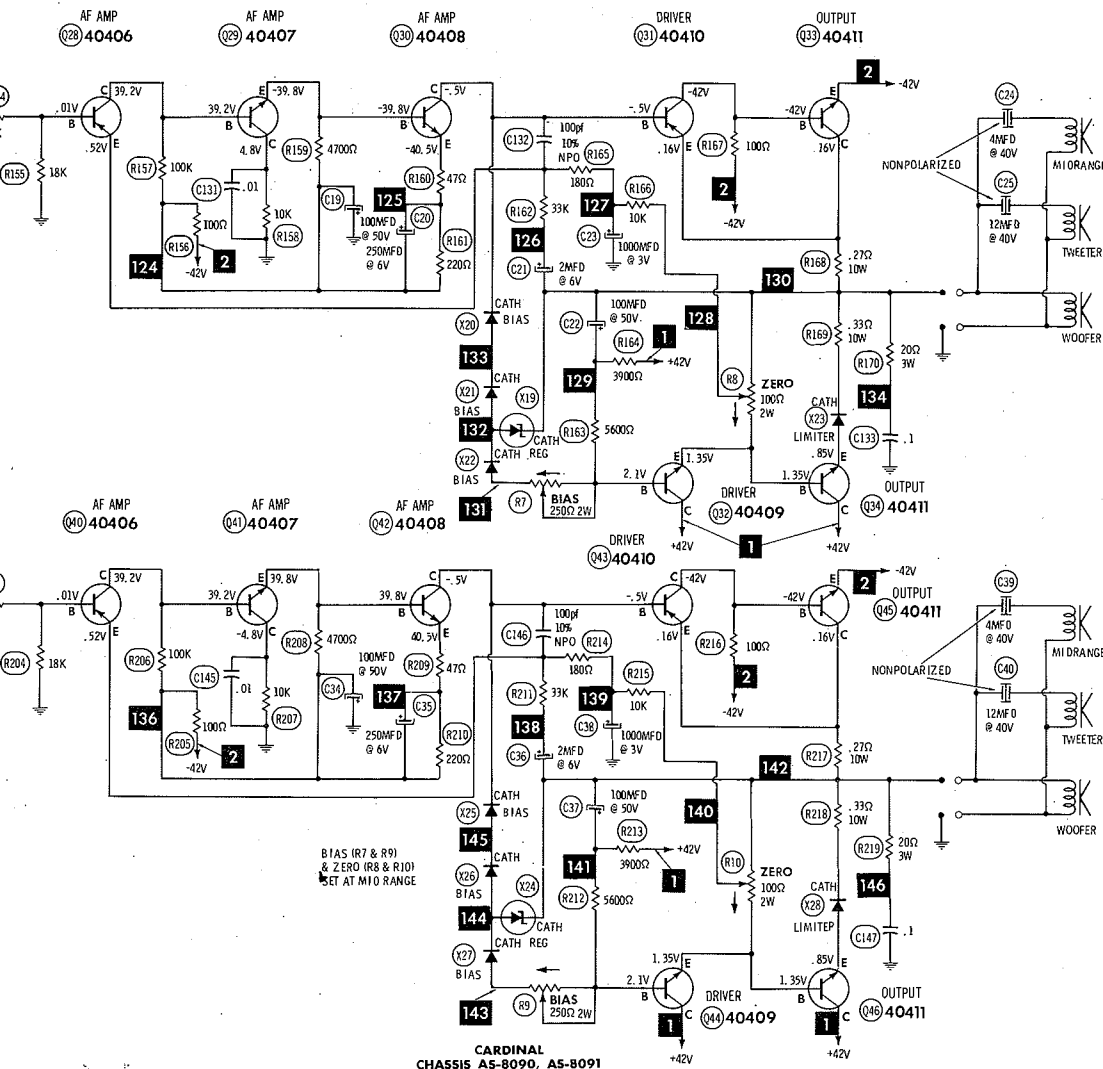
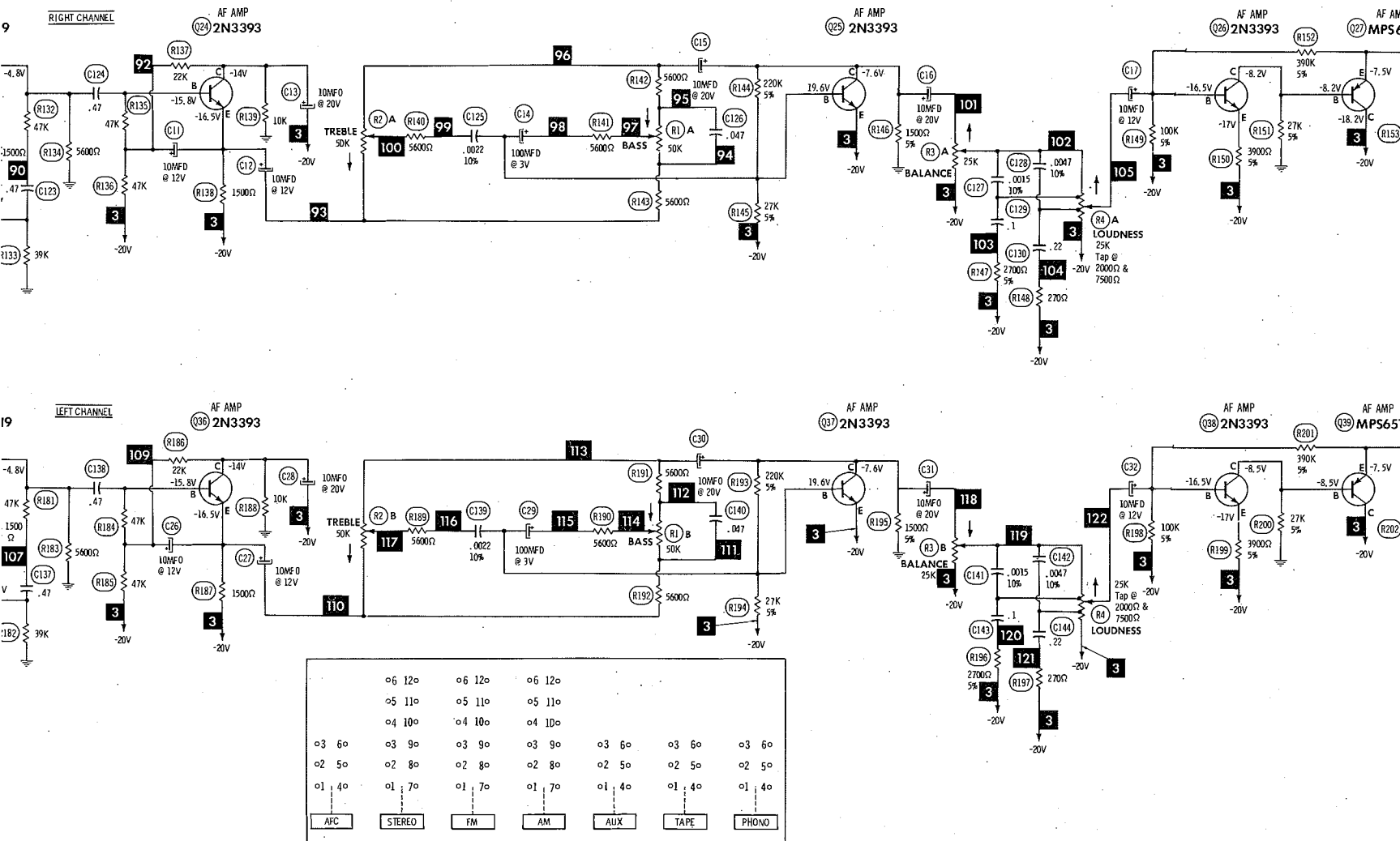
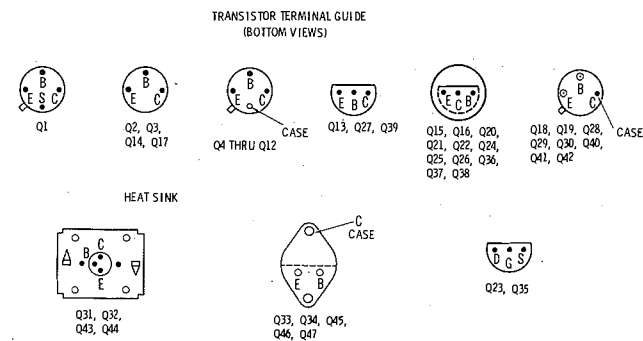
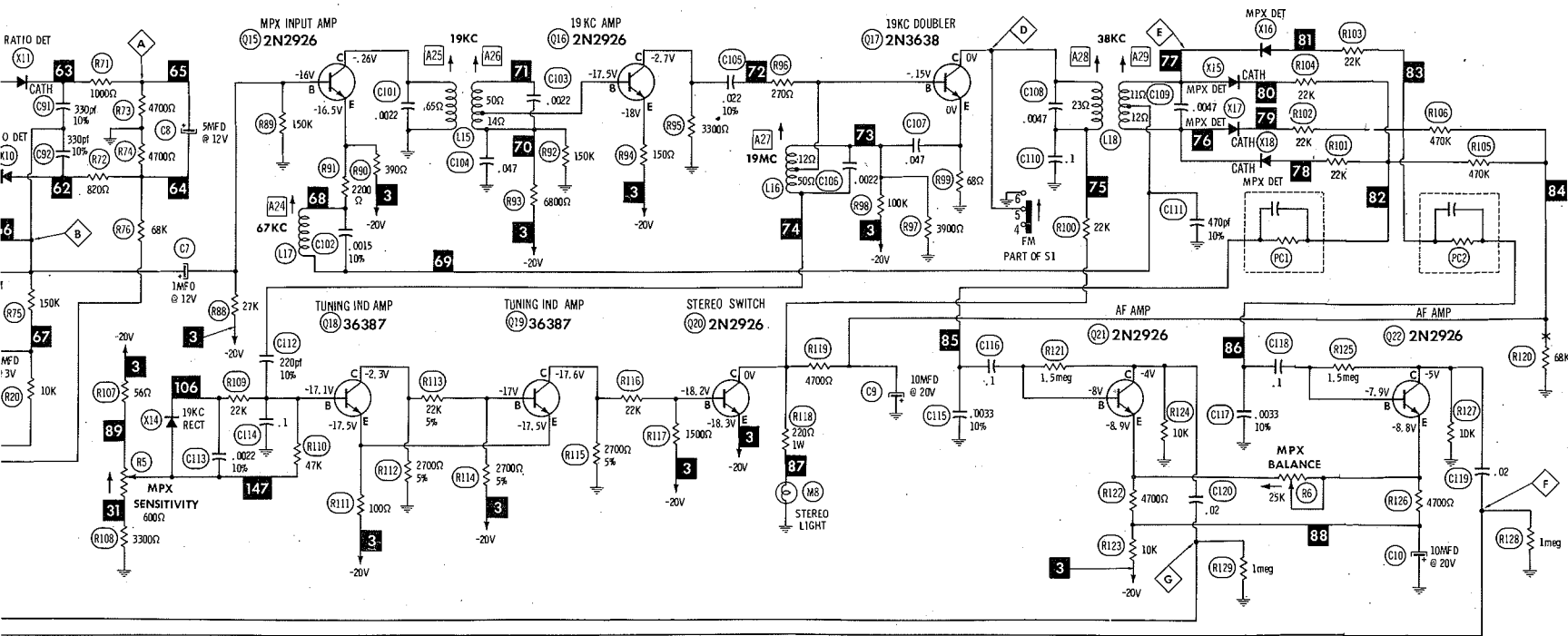
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			CARDINAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.
C1	4000 50V		CE-8030	PR51399		AA0155A		TVL-1295
C2	4000 50V		CE-8031	PR51399		AA0155A (1)		TVL-1295 (1)
C3	3000 30V		CE-8031	PR51399		AA0155A (1)		TVL-1295 (1)
C4	2000 25V		CE-100-12	PR51296	EA30-1000 (2)	WR2000-35		TC50100A (2)
C5	5 20V		CE-100-4	CRE604A	EA30-5	AL5-150	MTI-3	MTA5020
C6	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C7	1 12V		CE-100-1	CRE750A	EA15-2	AL1-50	MTI-1	MTA1050
C8	5 12V		CE-100-2	CRE604A	EA15-5	AL5-150	MTI-3	MTA5050
C9	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C10	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C11	10 12V		CE-100-3	CRE457A	EA15-10	AL10-150	MTI-5	MTA10035
C12	10 12V		CE-100-3	CRE457A	EA15-10	AL10-150	MTI-5	MTA10035
C13	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C14	100 3V		CE-100-14	PTT113	EA6-100	AL100-16	MTI-21	MTA100E10
C15	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C16	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C17	10 12V		CE-100-3	CRE457A	EA15-10	AL10-150	MTI-5	MTA10035
C18	5 6V		CE-101-4	CRE604A	EA6-5	WR5-150	MTI-3	MTA5050
C19	100 50V		CE-101-5	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C20	250 6V		CE-101-6	CRE333A	EA6-250	WR250-50	MTI-25	MTA250F15
C21	2 6V		CE-101-3	CRE751A	EA6-2	AL2-50	MTI-1	MTA2050
C22	10 50V		CE-101-5	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C23	1000 3V		CE-101-7	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C24	4 NP 40V		CE-103-1	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C25	12NP 40V		CE-103-3	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C26	10 12V		CE-100-3	CRE457A	EA15-10	AL10-150	MTI-5	MTA10035
C27	10 12V		CE-100-3	CRE457A	EA15-10	AL10-150	MTI-5	MTA10035
C28	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C29	10 20V		CE-100-14	PTT113	EA6-100	AL100-16	MTI-21	MTA100E10
C30	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C31	10 20V		CE-100-9	PTT114	EA30-10	AL10-25	MTI-5	MTA10035
C32	10 12V		CE-100-3	CRE457A	EA15-10	AL10-150	MTI-5	MTA10035
C33	5 6V		CE-101-4	CRE604A	EA6-5	WR5-150	MTI-3	MTA5050
C34	100 50V		CE-101-5	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C35	250 6V		CE-101-6	CRE333A	EA6-250	WR250-50	MTI-25	MTA250F15
C36	2 5V		CE-101-3	CRE751A	EA6-2	AL2-50	MTI-1	MTA2050
C37	100 50V		CE-101-5	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C38	1000 3V		CE-101-7	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C39	4 NP 40V		CE-103-1	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A
C40	12NP 40V		CE-103-3	PR51360	EA60-100	WR125-50	MTI-20.5	TC493A

(1) Use sleeve and washer.

(2) Use two (2) units.

CAPACITORS

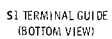
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
C41	8.2	NPO	NPO-01 8.2					10TCC-V82
C42	5.6	NPO						10TCC-V56
C43	.02		GPD Z50203P	DO-202	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C44	.02		GPD Z50203P	DO-202	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C45	5.6	NPO						10TCC-V82
C46	8.2	NPO	NPO-01 8.2					10TCC-V82
C47	1.5		NPO-01 1.5	DTZ-185				10TCC-V15
C48	20	NPO	NPO-01 20	DTZ-202		CCO-200	CN0515	10TCC-V20
C49	.02		GPD Z50203P	DO-203	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C50	.02		GPD Z50203P	DO-203	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C51	120	NPO	NPO-01 120	DTZ-120		CCO-121	CN0312	10TCC-112
C52	.02		GPD Z50203P	DO-203	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C53	.02		GPD Z50203P	DO-203	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C54	20	NPO	NPO-01 20	DTZ-202		CCO-200	CN0420	10TCC-V20
C55	10	NPO	NPO-01 10	DTZ-10	CZ601CG003	CCO-100	CN0410	10TCC-010
C56	15	N750	N750-01 15	DTN-15	CZ601UJ150J	CTN1-150	CN7415	10TCC-015
C57	.02		GPD Z50203P	DO-203	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C58	8.2	N750						10TCC-V82
C59	.02		GPD Z50203P	DO-203	BYT601ZU03Z	CCO-203	GP120	10TCC-V56
C60	150		GPD XF5151K	DO-151		CCO-151	GP315	10TCC-V15
C61	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C62	.0022	10%	GPD XF5222K	DO-222	JX8601P222K	CCO-222	GP222	10TCC-V22
C63	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C64	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C65	2.2	10%	GPD 01 2.2	DTZ-282	CZ601CJ282	CCO-103	CN0522	10TCC-V22
C66	.01		TTT-01	CK-103	HOV101ZV103P	CCO-103	TA110	TG-S10
C67	.01		TTT-01	CK-103	HOV101ZV103P	CCO-103	TA110	TG-S10
C68	.047	100V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C69	2.2	10%	NPO-01 2.2	DTZ-282	CZ601CJ282	CCO-103	CN0522	10TCC-V22
C70	2.2	10%	NPO-01 2.2	DTZ-282	CZ601CJ282	CCO-103	CN0522	10TCC-V22
C71	.01		TTT-01	CK-103	HOV101ZV103P	CCO-103	TA110	TG-S10
C72	.01		TTT-01	CK-103	HOV101ZV103P	CCO-103	TA110	TG-S10
C73	.01		TTT-01	CK-103	HOV101ZV103P	CCO-103	TA110	TG-S10
C74	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C75	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C76	.01		TTT-01	CK-103	HOV101ZV103P	CCO-103	TA110	TG-S10
C77	.47	75V	08E2P47		OMF147	10P-4-474	PAV1047	2PS-P47
C78	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C79	.0047	10%	GPD X5R472K	DO-472G	J8T601P472K	CCO-472	JF247	10TCC-V47
C80	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C81	.0022	10%	GPD XF5222K	DO-222	JX8601P222K	CCO-222	GP222	10TCC-V22
C82	.0022	10%	GPD XF5222K	DO-222	JX8601P222K	CCO-222	GP222	10TCC-V22
C83	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C84	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C85	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C86	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C87	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C88	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C89	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C90	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C91	330	10%	GPD XF5331K	DO-331	J8Z601P331K	CCO-331	GP333	10TCC-V33
C92	330	10%	GPD XF5331K	DO-331	J8Z601P331K	CCO-331	GP333	10TCC-V33
C93	560	10%	GPD XF5561K	DO-561	J8Z601P5561K	CCO-561	GP556	10TCC-V56
C94	1mfd	3V		UK-105	HXC380X105P		MAG31	HY-135
C95	.47	1K	GPD XF5471K	DO-471	J8Z601P471K	CCO-471	GP347	10TCC-V47
C96	.22	100V	V1612P22		DMF1P22	10P-3-224	PAV1022	2PS-P22
C97	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C98	.05	50V	TTT-05	CK-503	HOV101ZV503Z	CCO-503	TA150	TGL-V50
C99	91	NPO						10TCC-V91
C100	1	50V	TTT-1	CK-104	HOV101ZV104Z	TC-91	TA010	TG-P10
C101	.002			CPR-2200J	CO19F222J500	OM-19-222J	SX222	424ME2201J50
C102	.0015	10%	GPD XF5152K	DO-152		CCO-152	GP215	10TCC-V15
C103	.0022			CPR-2200J	CO19F222J500	OM-19-222J	SX222	424ME2201J50
C104	.347	100V	V1612S47		DMF1S47	10P-4-347	PVC1147	225P4391V100
C105	.22	200V	V1612S22		DMF1S22	10P-4-223	PVC1222	225P4391V200
C106	.0022	125V		CPR-2200J	CO19F222J500	OM-19-222J	SX222	424ME2201J50
C107	.047	100V	V1612S47		DMF1S47	10P-4-473	PVC1147	225P4391V100
C108	.0047	600V	08E6047		OMF6047	10P-1-472	PVC6247	6PS-047
C109	.0047	600V	08E6047		OMF6047	10P-1-472	PVC6247	6PS-047
C110	.1	100V	08E2P1		DMF1P1	10P-2-104	PVC1101	225P10491V100
C111	470	10%	GPD XF5471K	DO-471	J8Z601P471K	CCO-471	GP347	10TCC-V47
C112	220	10%	GPD XF5221K	DO-221	J8Z601P221K	CCO-221	GP322	10TCC-V22

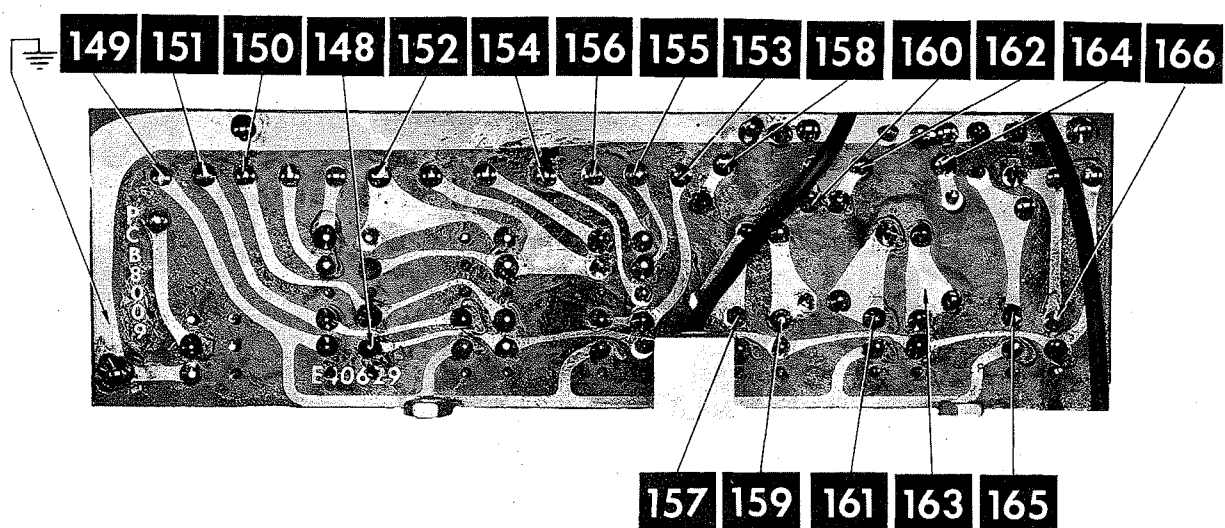
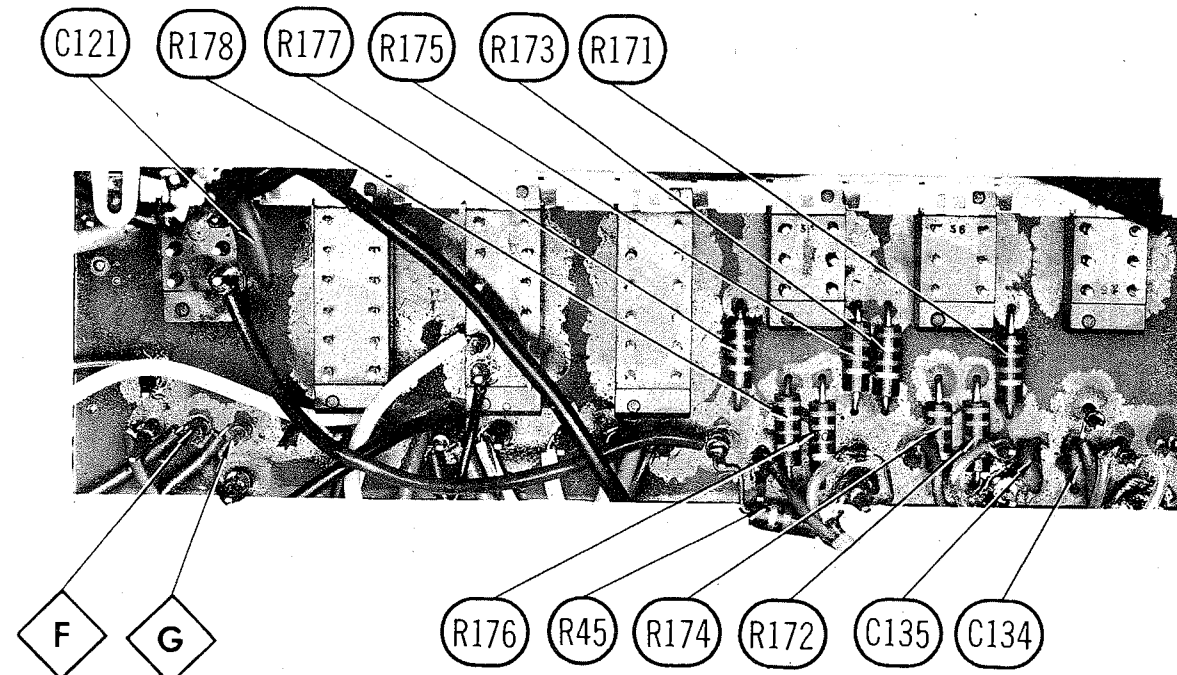


06 120	06 120	06 120	06 120	06 120	06 120	06 120
05 110	05 110	05 110	05 110	05 110	05 110	05 110
04 100	04 100	04 100	04 100	04 100	04 100	04 100
03 60	03 90	03 90	03 90	03 60	03 60	03 60
02 50	02 80	02 80	02 80	02 50	02 50	02 50
01 40	01 70	01 70	01 70	01 40	01 40	01 40
APC	STEREO	FM	AM	AUX	TAPE	PHONO

51 TERMINAL GUIDE (BOTTOM VIEW)

CARDINAL CHASSIS AS-8090, AS-8091





A Howard W. Sams CIRCUITRACE™ Photo

RADIO ALIGNMENT INSTRUCTIONS

Maintain line voltage at 117 volts. Use only enough generator output to obtain a suitable indication. Allow a 15 minute warmup for receiver and equipment.
CAUTION: Use isolation transformer, if available. If not, observe polarity when connecting test equipment.

AM ALIGNMENT - SELECTOR IN AM POSITION

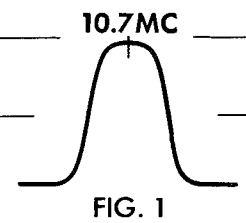
Fashion loop of several turns of wire and connect generator across loop. Set volume control at maximum.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. 455KC (400v Mod.)	Tuning gang fully open.	Output meter across voice coil.	A1, A2, A3 A4, A5, A6	Adjust for maximum. Repeat until no further improvement can be made.
2. 1620KC	"	"	A7	Adjust for maximum.
3. 1400KC	Tune to signal.	"	A8, A9	"
4. 600KC	"	"	A10, A11	Rock tuning gang and adjust for maximum. Repeat steps 2 thru 4 until no further improvement can be made.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR - SELECTOR IN FM POSITION

High side of generator thru .001mfd to point \diamond , low side to ground.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point \diamond , common to ground.	A12, A13, A14, A15, A16, A17, A18	Adjust for maximum.
6. "	"	DC probe to point \diamond , common to ground.	A19	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.



FM IF ALIGNMENT USING FM SIGNAL GENERATOR - SELECTOR IN FM POSITION

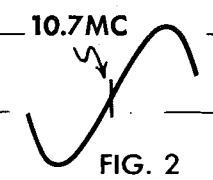
High side of generator thru .001mfd to point \diamond , low side to ground. Use only enough marker signal for indication. Use 60v frequency modulated signal with 450KC sweep. Use 60v sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of scope to point \diamond , low side to ground.	A12, A13, A14, A15, A16, A17, A18	Disconnect stabilizing capacitor C 8 . Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C 8 .
6. "	"	Vert. amp. to point \diamond , low side to ground.	A19	Adjust A18 (secondary) to place marker at center of "S" curve similar to Fig. 2. Adjust A12 (primary) for maximum amplitude and straightness of line.

FM RF ALIGNMENT - SELECTOR IN FM POSITION

Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
7. 108.5MC	Set at high end.	DC probe of VTVM to point \diamond , common to ground.	A20, A21, A22	Adjust for maximum.
8. 90MC	Tune to signal.	"	A23	Rock tuning and adjust for maximum. Repeat steps 7 and 8 until no further improvement can be made.



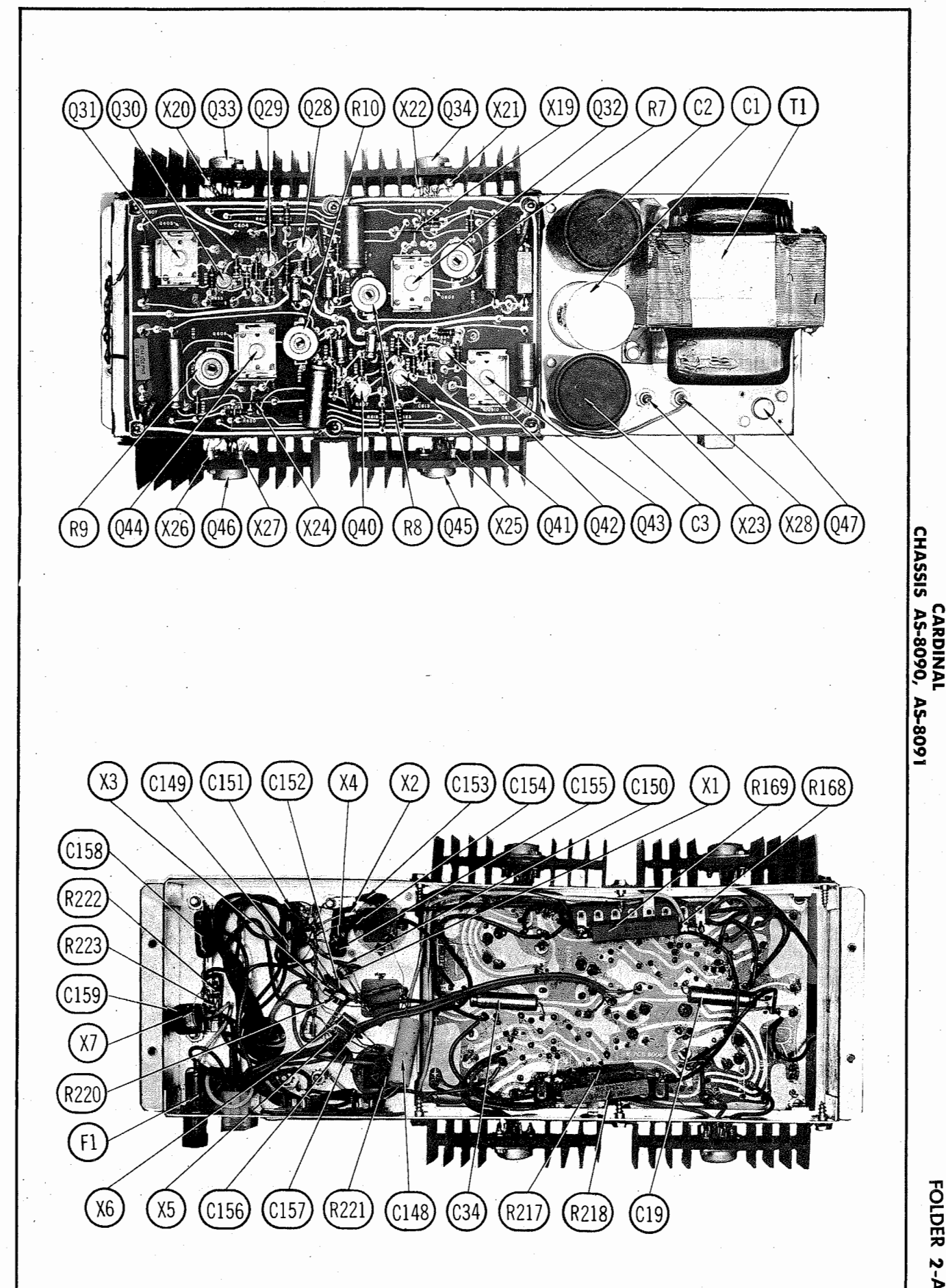
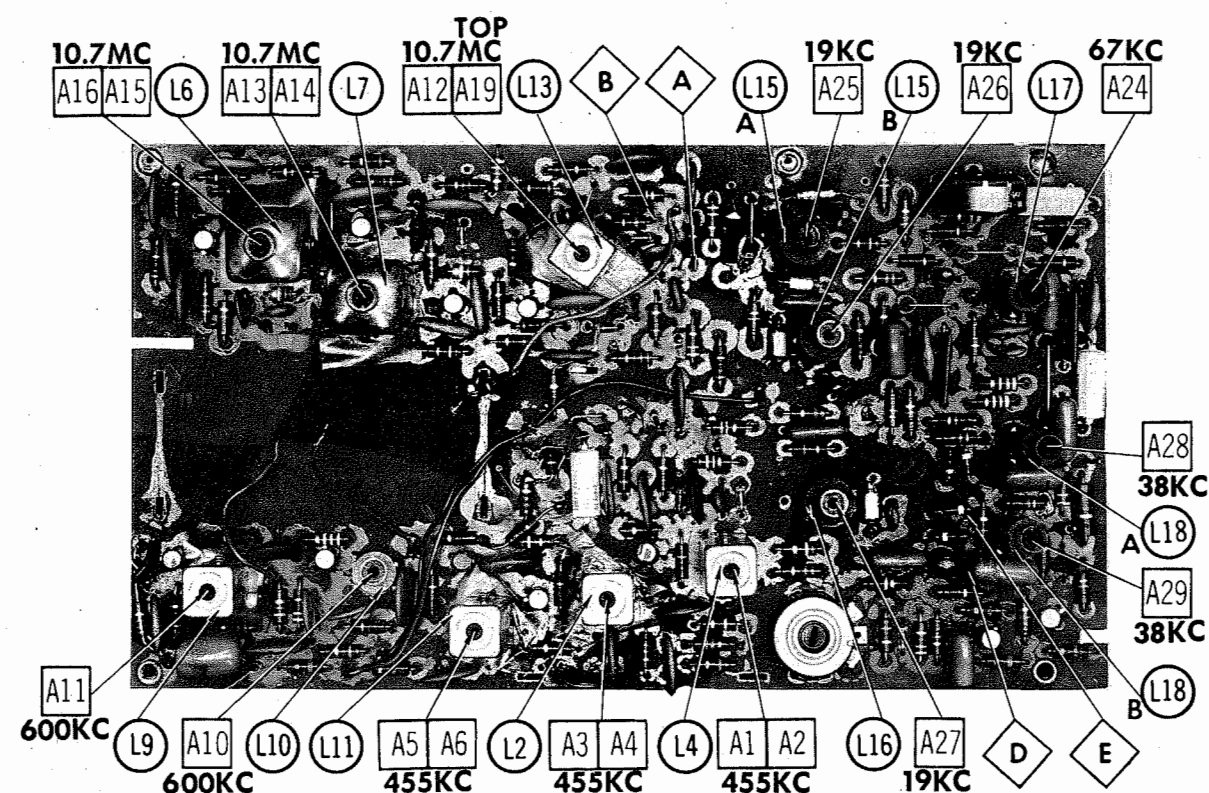
RADIO ALIGNMENT INSTRUCTIONS (cont)

FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR ($\pm .0001\%$ ACCURACY)

High side of generator thru 47K to point $\diamond B$, low side to ground.			
GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
9. 67KC	Vert. amp. of scope thru a 47K to point $\diamond E$, low side to ground.	A24	Adjust for MINIMUM.
10. 19KC	Vert. amp. thru 47K to point $\diamond D$, low side to ground.	A25, A26, A27	Adjust for maximum.
11. "	Vert. amp. thru 47K to point $\diamond E$, low side to ground.	A28, A29	Adjust for maximum 38KC response.
12. Modulated Left Channel	Vert. amp. to point $\diamond F$, low side to ground.	A25, A26, A27, A28, A29, R6	Adjust for MINIMUM. This step should require only slight adjustment.
13. Modulated Right Channel	Vert. amp. to point $\diamond G$, low side to ground.	Check for MINIMUM. If necessary make compromise adjustments of A25, A26, A27, A28, A29, R6.	

MPX SENSITIVITY ADJUSTMENT R5

Tune across dial (with AFC off) noting operation of Stereo Indicator lamp.
Adjust R5 until lamp glows on weak stereo stations but does not glow on noise pulses.



CARDINAL
CHASSIS AS-8090, AS-8091

FOLDER 2-A

