

**CABINET-REAR VIEW
DISASSEMBLY INSTRUCTIONS**

CHASSIS REMOVAL

Disconnect leads from the antenna terminals and remove control knobs from the set. Remove five screws from cabinet back. Remove cabinet back.

Remove three screws holding printed circuit board to the cabinet bottom, one screw holding high-voltage cage to the bottom, four screws holding tuner assembly and two screws holding controls.

Disconnect picture-tube socket, HV anode lead, degaussing-coil leads, and speaker lead.

Remove purity ring, convergence yoke, and deflection yoke from the picture-tube neck. Remove chassis from cabinet pan.

PICTURE TUBE REMOVAL

Follow Chassis Removal instructions. Lay set face down on a soft protective surface.

Remove the eight retaining screws from the shield. Picture tube may now be lifted out. Do not lift picture tube by the neck.

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

Implosion protection is an integral part of the picture tube, cleaning accomplished without CRT removal.

FUSE DEVICES

A 2.5-amp fuse is used for low-voltage power-supply protection. (See Tube Placement Chart.)

A 2.5-amp fuse is used for AC line protection. (See Tube Placement Chart.)

VHF TUNER

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

HORIZONTAL OSCILLATOR

Adjustment of the horizontal hold is accomplished by the proper setting of the horizontal oscillator coil (horizontal hold). (See photo, Cabinet-Rear View.)

WIDTH

No provision is made to vary the width on this receiver.

FOCUS

The focus may be varied by means of a focus control. (See photo, Cabinet-Rear View.)

AGC

The AGC may be varied by an AGC control. (See photo, Cabinet-Rear View.)

SET 1394 FOLDER 1

BRADFORD MODEL
1171D24 (WTG-79814)

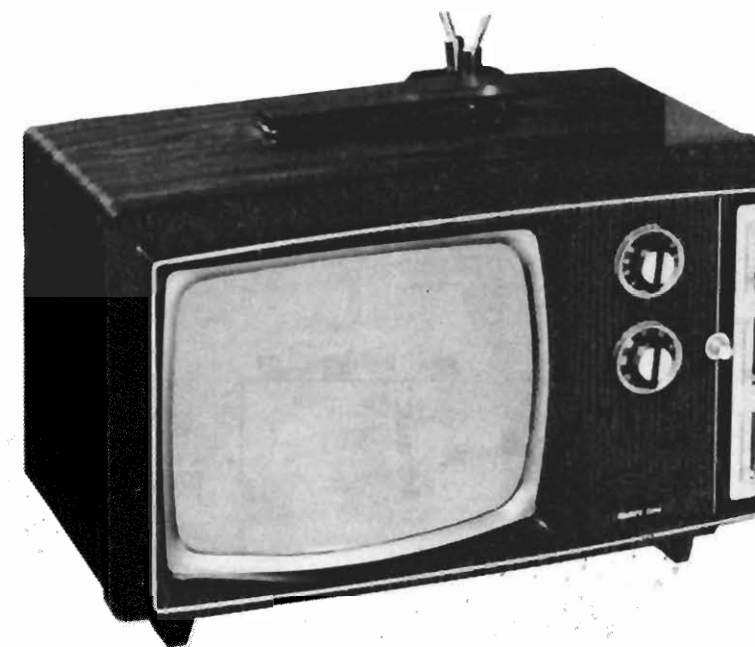
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For Supplier Address See PHOTOFACT Index

**BRADFORD MODEL
1171D24 (WTG-79814)**

COLOR TV



SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set. Beware of shock from high voltage or AC line. Check high-voltage regulation and adjust to correct value. Discharge high voltage to HV cage only.

Be sure shields and rear cover are in place and secure. Use extreme care when handling picture tube. Do not bump, scratch, or exert undue strain.

CAUTION: One side of AC line connected to chassis. Use isolation transformer for servicing. Make certain isolation networks are in place and exposed metal is safe to touch before returning set to customer.

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



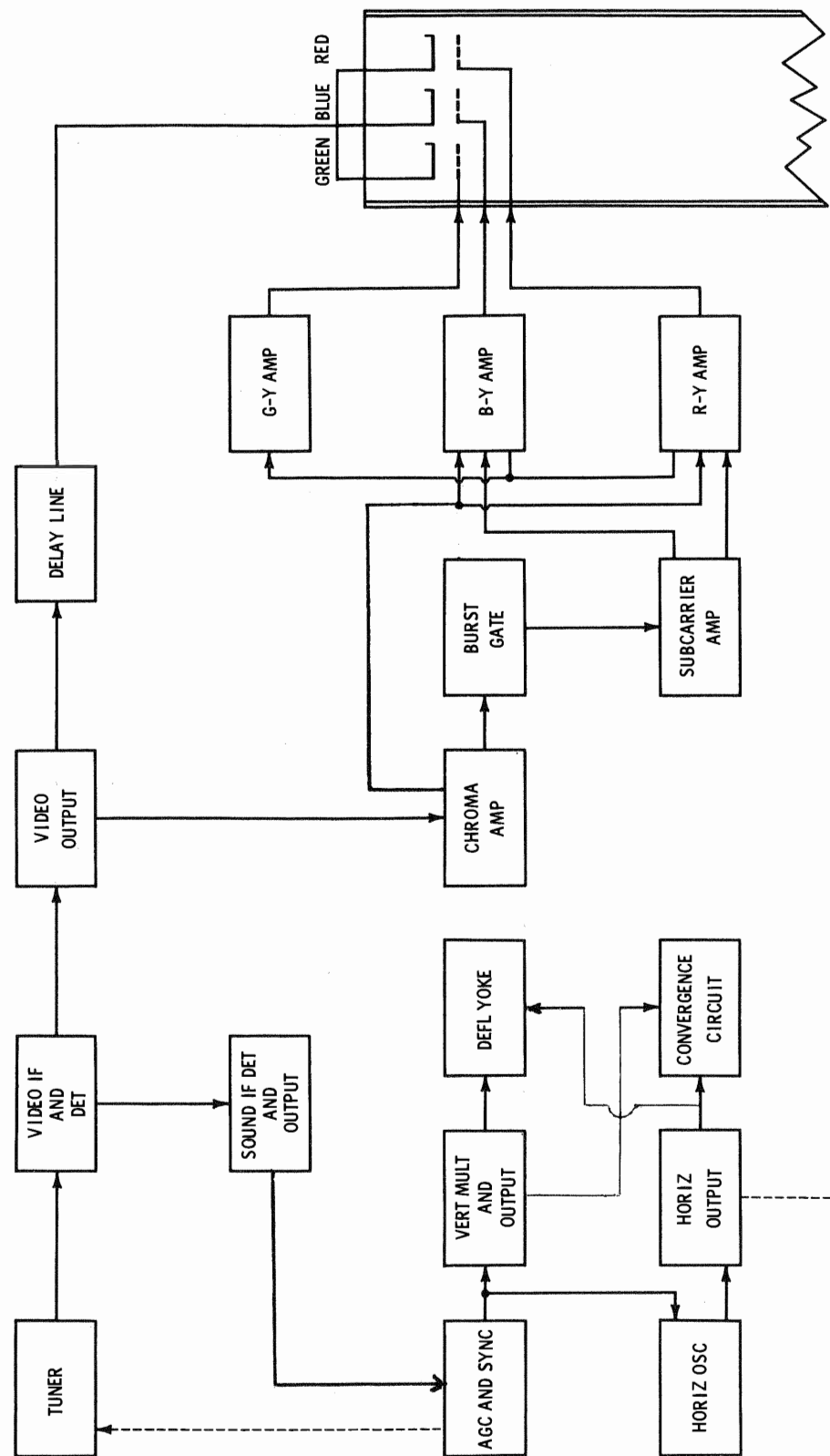
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 4PB932R 10 9 8 7 6 5 4

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DATE 4-74 SET 1394 FOLDER 1

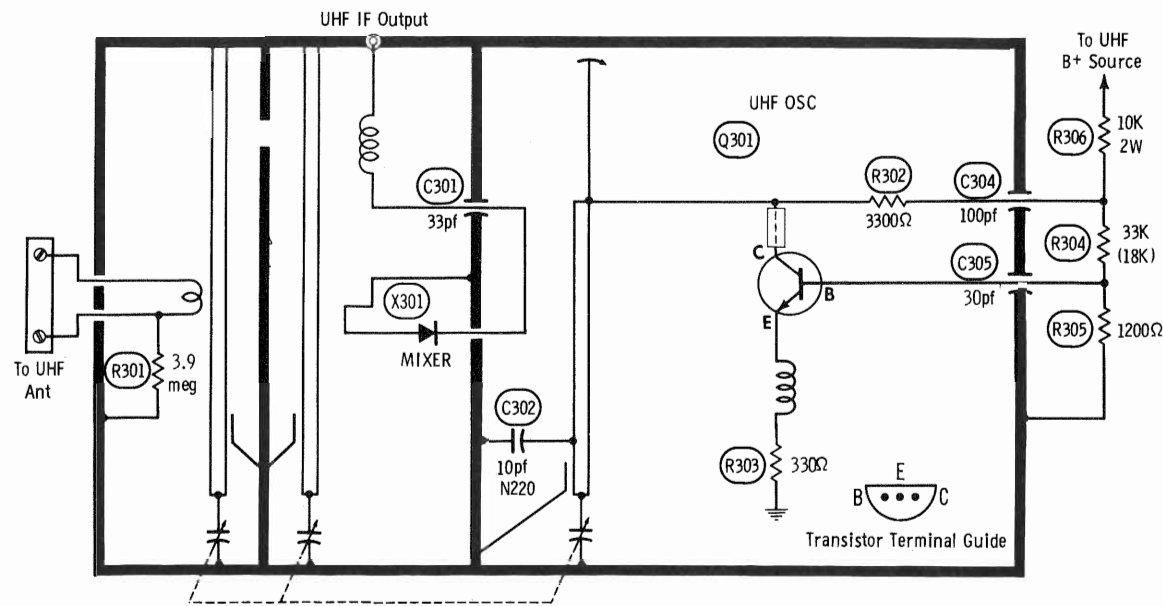
BRADFORD MODEL
1171D24 (WTG-79814)

SET 1394 FOLDER 1

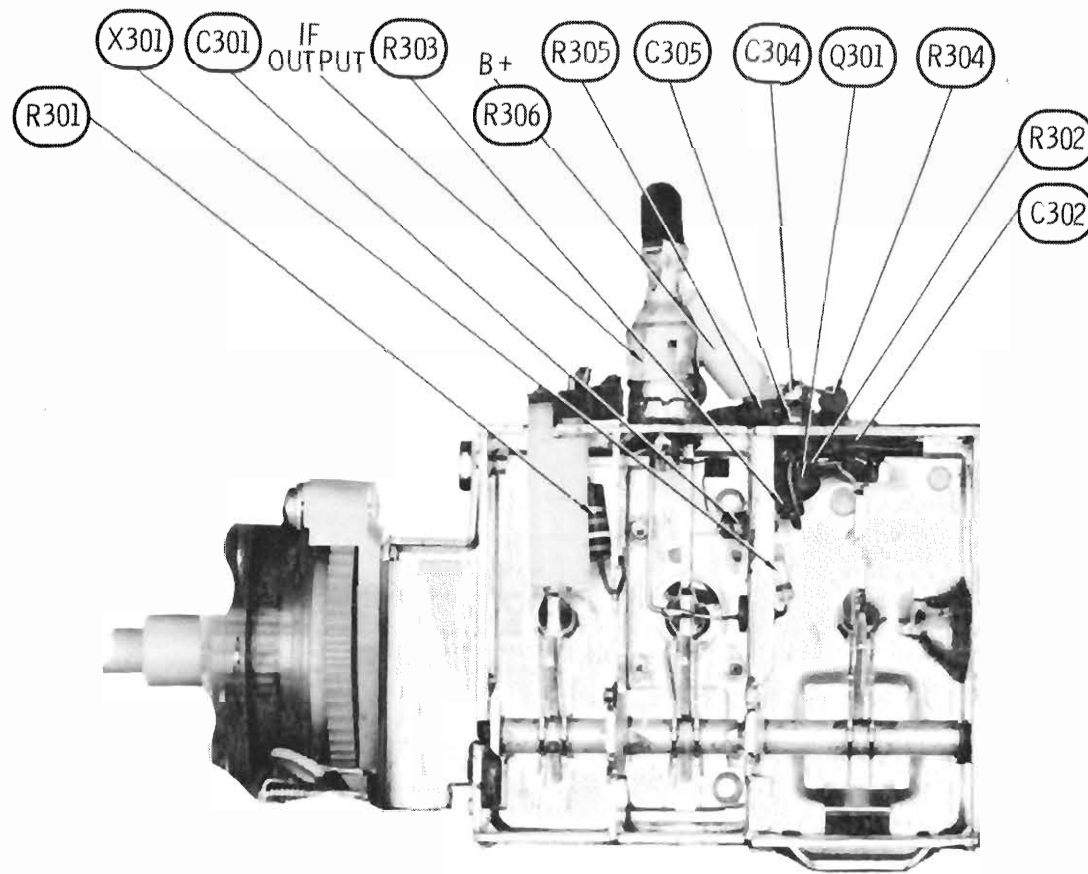


BLOCK DIAGRAM

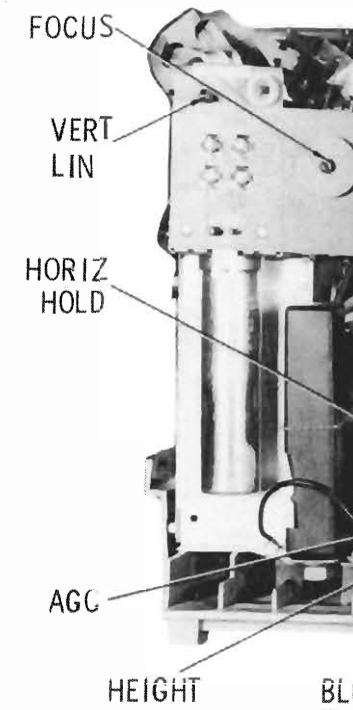
--- INDICATES CONTROL SIGNAL OR VOLTAGE PATH
 ——— INDICATES SIGNAL PATH



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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UHF TUNER EP85X14



CHASSIS REMOVAL

Disconnect leads from the antenna, remove control knobs from the chassis, and remove screws from cabinet back. Remove three screws holding picture board to the cabinet bottom, on high-voltage cage to the bottom holding tuner assembly and two controls.

Disconnect picture-tube socket, degaussing-coil leads, and speaker leads.

CRT IMPLOSION PROTECTION AND CLEANING

Implosion protection is an internal coating on the inside of the picture tube, cleaning accomplished by removal.

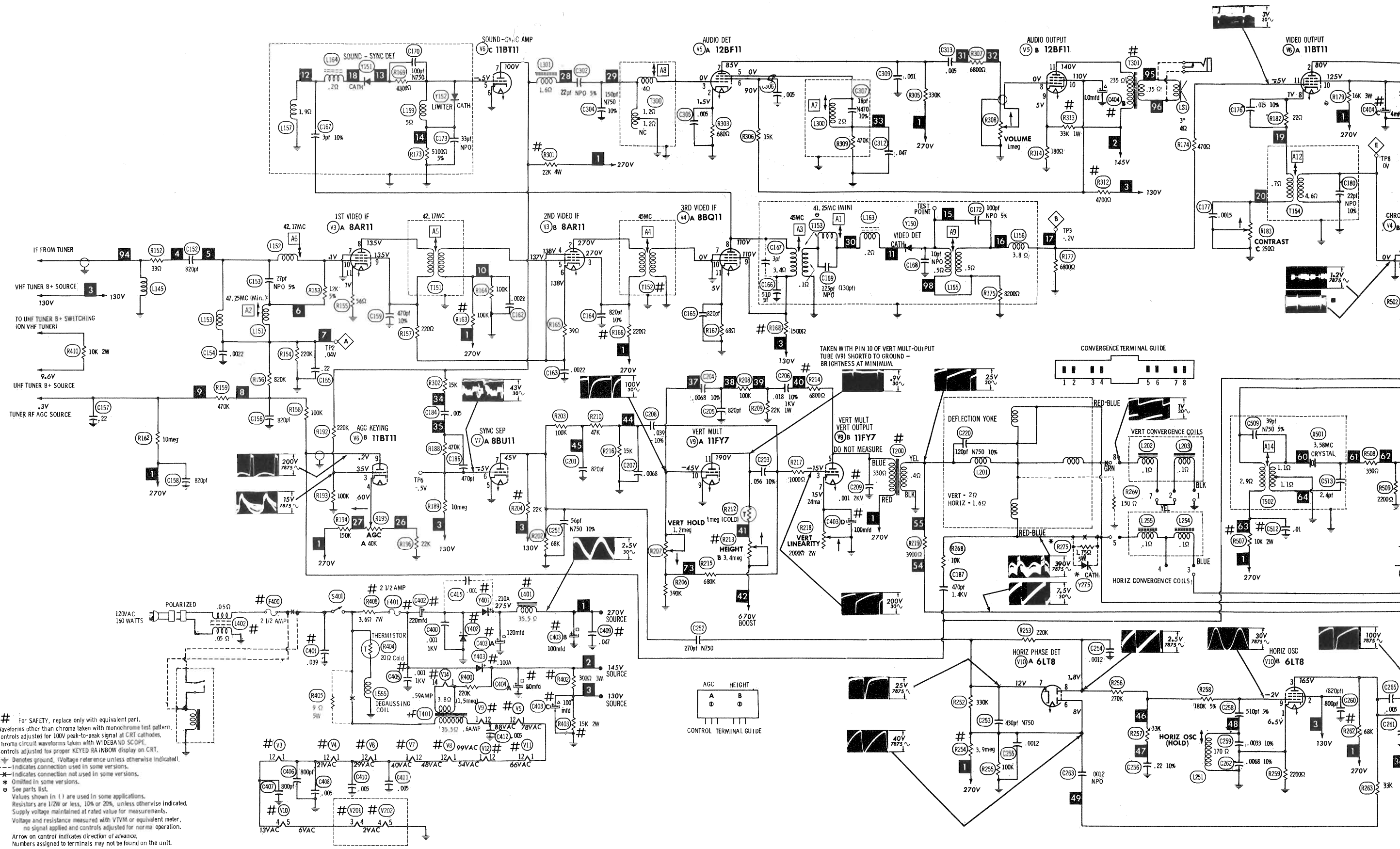
FUSE DEVICES

A 2.5-amp fuse is used for low-voltage protection. (See Tube Placement Chart.)

A 2.5-amp fuse is used for AC line protection. (See Tube Placement Chart.)

VHF TUNER

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

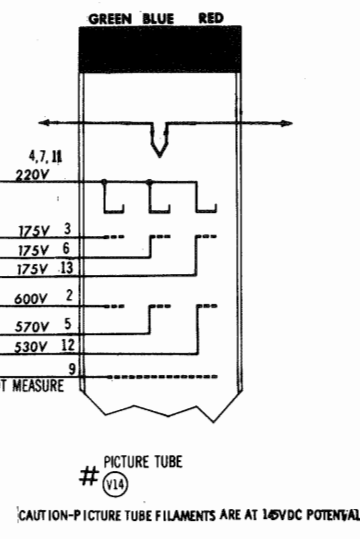
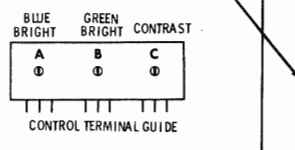
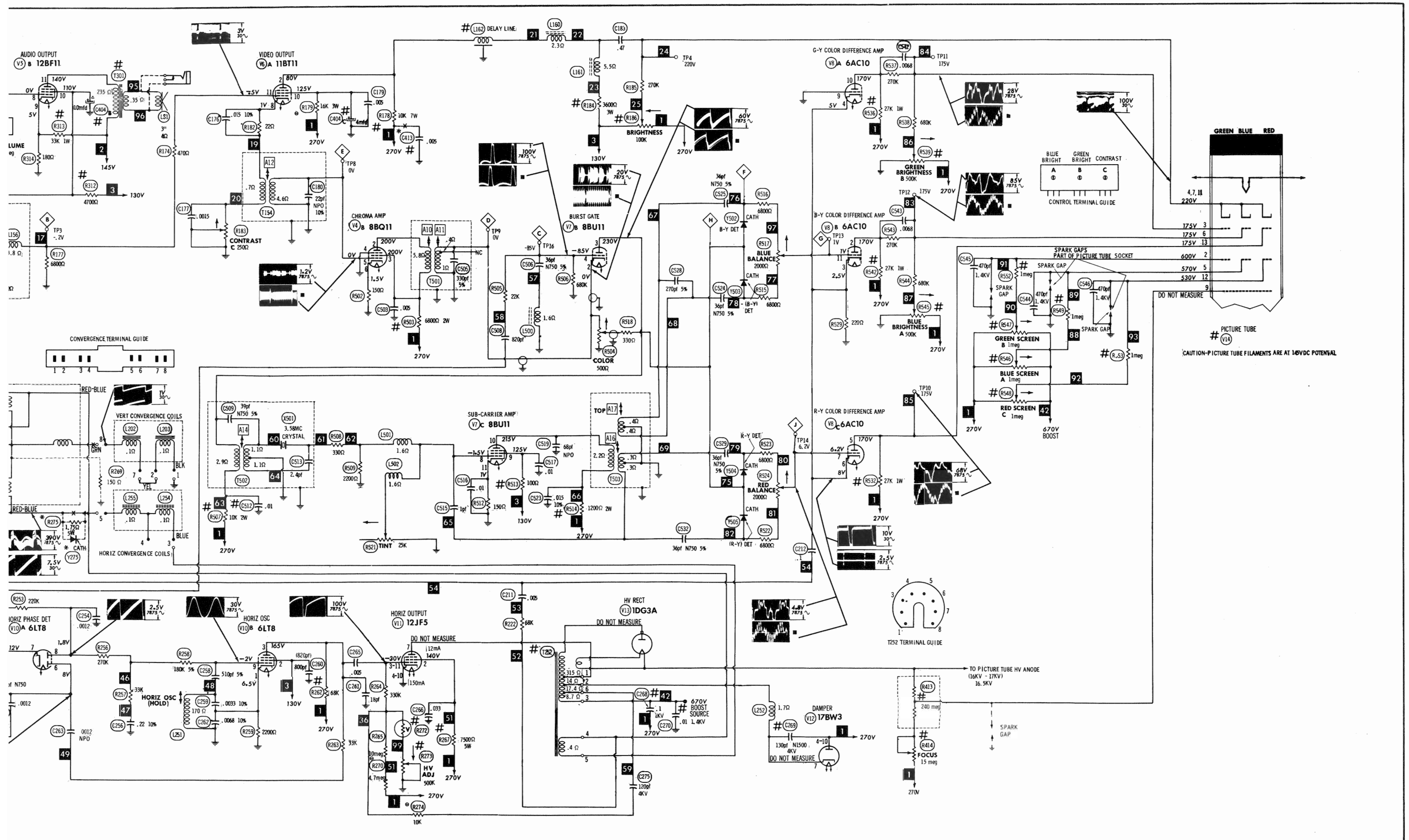


For SAFETY, replace only with equivalent part.
 Waveforms other than chroma taken with monochrome test pattern.
 Controls adjusted for 100V peak-to-peak signal at CRT cathodes.
 Chroma circuit waveforms taken with WIDEBAND SCOPE.
 Controls adjusted for proper KEYED RAINBOW display on CRT.

⊕ Denotes ground. (Voltage reference unless otherwise indicated).
 --- Indicates connection used in some versions.
 * Omitted in some versions.
 e See parts list.

Values shown in () are used in some applications.
 Resistors are 1/2W or less, 10% or 20%, unless otherwise indicated.
 Supply voltage maintained at rated value for measurements.
 Voltage and resistance measured with VTVM or equivalent meter,
 no signal applied and controls adjusted for normal operation.
 Arrow on control indicates direction of advance.
 Numbers assigned to terminals may not be found on the unit.

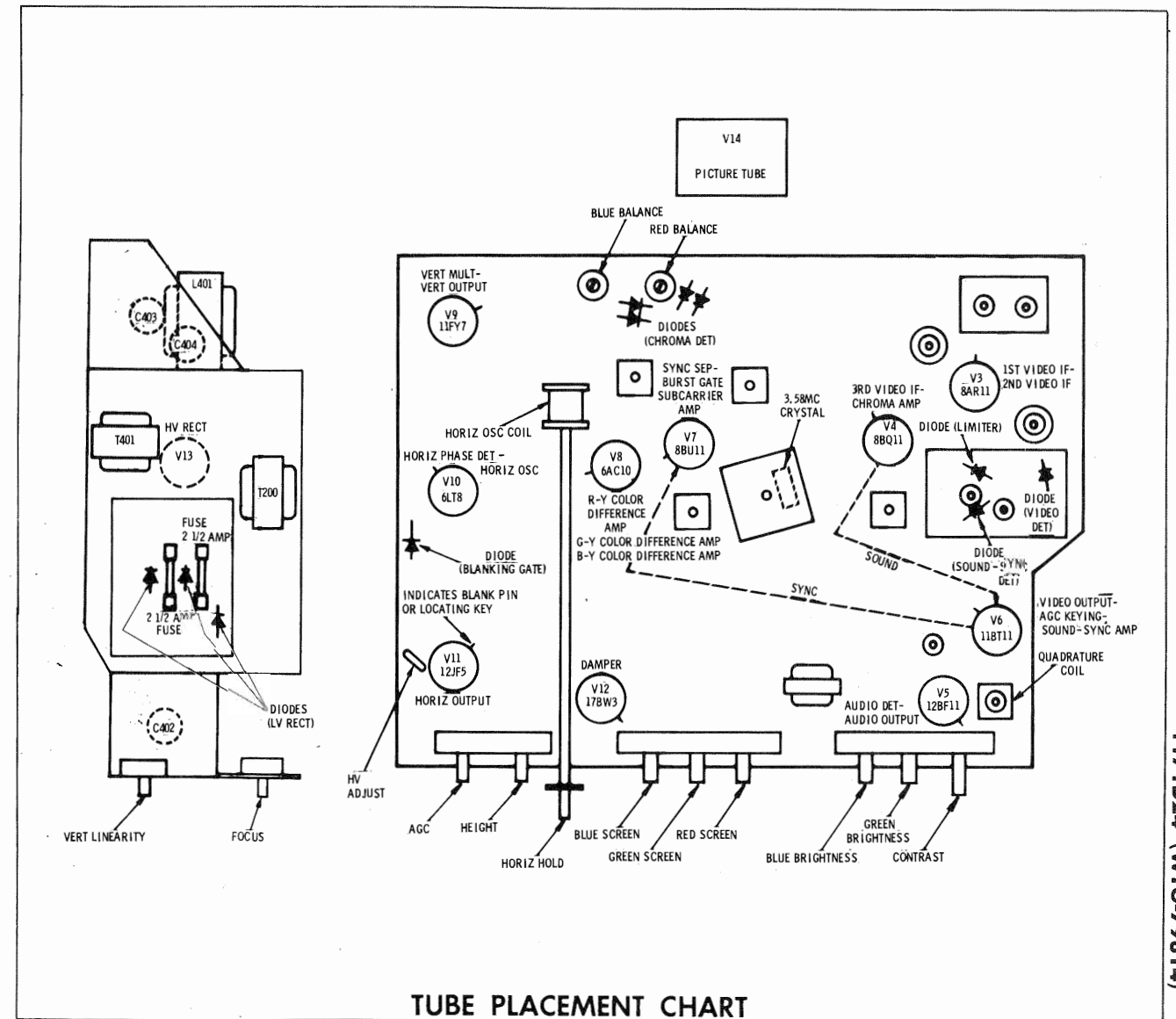
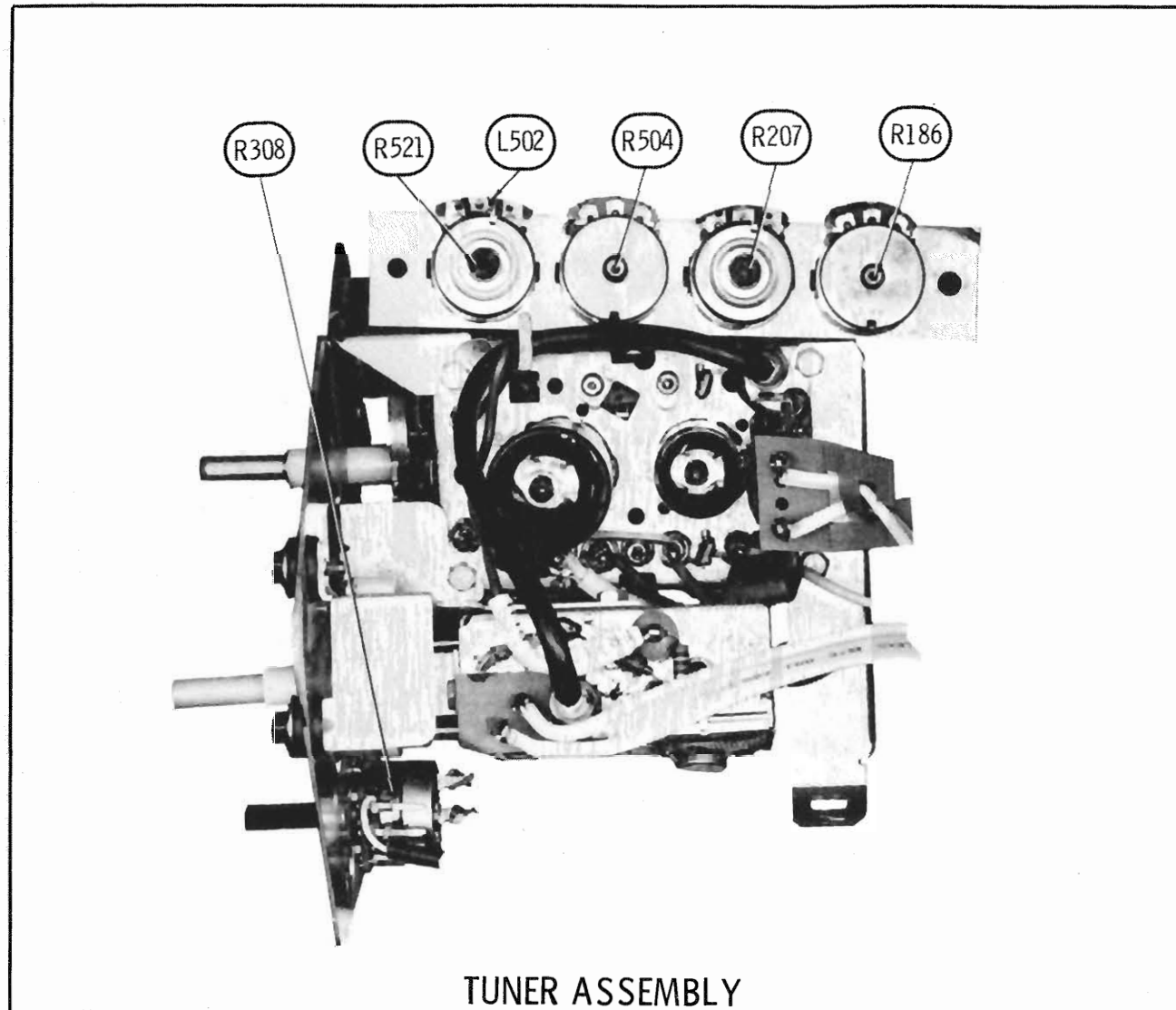
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RESISTANCE MEASUREMENTS

ITEM	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	PIN 13
V3	4Ω	250Ω †	250Ω †	39Ω ▲	60K	1N	0Ω	259Ω ▲	259Ω ▲	235K	56Ω	2.5Ω	
V4	5.5Ω	6800Ω †	6800Ω †	0Ω	4.6Ω	150Ω	0Ω	1800Ω ■	1800Ω ■	0Ω	820Ω	4Ω	
V5	17Ω	680Ω	5.2Ω	0Ω	470K	20K ■	331K †	300K	180Ω	5000Ω ■	250Ω ■	15Ω	
V6	7Ω	9000Ω †	80K	38K	2800Ω ●	0Ω	22K †	100Ω	1.1meg	16K †	900Ω ●	5.5Ω	
V7	7Ω	1Ω	10K †	680K	0Ω	10meg ■	17K ■	2200Ω	400Ω ■	1237Ω †	150Ω †	8Ω	
V8	9Ω	27K †	220Ω	220Ω	27K †	220Ω	35K	0Ω	0Ω	27K †	14K	8Ω	
V9	15Ω	NC	1meg	NC	370Ω †	NC	750Ω	NC	0Ω	1meg	3.8meg †	13Ω	
V10	2200Ω	300Ω ■	68K †	2.5Ω	1.5Ω	100K	430K	650K	1.1meg				
V11	13Ω	7500Ω †	900K	0Ω	NC	NC	15.7Ω †	NC	NC	0Ω	900K	11Ω	
V12	9Ω	0Ω	0Ω	37Ω †	0Ω	NC	280K	NC	0Ω	37Ω †	NC	11Ω	
V13	PINS 1 THRU 8 HAVE INFINITE RESISTANCE												TOP CAP 331Ω †
V14	1.2meg †	27K †	1.3meg †	FIL	NC	280K †	300K †	NC	1meg †	NC	FIL	NC	1.2meg †
V201-VHF	0Ω	1.4meg	0Ω	1Ω	1600Ω	0Ω	0Ω						
V202-VHF	15K	5000Ω	0Ω	1Ω	1.5Ω	1300Ω	16.1K	0Ω	220K				

● READING DEPENDS ON POLARITY OF METER CONNECTIONS. ▲ MEASURED FROM PIN 6 OF V3.
 † MEASURED FROM OUTPUT OF Y401. † MEASURED FROM PIN 7 OF V12.
 ■ MEASURED FROM OUTPUT OF Y403. NC NO CONNECTION



TROUBLESHOOTING CHECK CHART

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

<p>PICTURE or SOUND</p> <p>No pic, no sound, no raster: Fuses, LV Rectifier</p> <p>No pic, no sound, has raster: Video IF, Tuner Mixer</p> <p>No pic, no sound, has snow: Tuner RF, Mixer, Oscillator</p> <p>No pic, has sound, no raster: Video Output, CRT</p> <p>No pic, has sound, has raster: Video Det, Video Output</p> <p>Has pic, no sound: Sound Det, Sound Limiter, Audio Det, Audio Output</p> <p>Overloaded picture: Video Det, AGC.</p> <p>SWEEP</p> <p>No raster, has sound: Horiz Osc, Horiz Output, Damper, CRT.</p> <p>No vert deflection: Vert Mult, Vert Output.</p> <p>Poor vert lin or foldover: Vert Mult, Vert Output.</p> <p>Poor horiz lin or foldover: Horiz Output, Damper.</p> <p>Narrow picture: LV Rect, Horiz Osc, Horiz Output, Damper.</p> <p>Vert off frequency: Vert Mult</p> <p>Horiz off frequency: Horiz Phase Det, Horiz Oscillator.</p>	<p>SYNC</p> <p>No vert sync: Vert Mult</p> <p>No horiz sync: Horiz Phase Det, Horiz Osc.</p> <p>No vert/horiz sync: Sync Sep.</p> <p>RASTER</p> <p>Yellow (no blue): B-Y Amp, CRT</p> <p>Cyan (no red): R-Y Amp, CRT</p> <p>Magenta (no green): G-Y Amp, CRT</p> <p>COLOR (B/W operating normally)</p> <p>No color: Chroma Amp, Burst Gate</p> <p>Weak color: Chroma Amp</p> <p>No color sync: Burst Gate, Sub-Carrier Amp, B-Y Det, R-Y Det.</p> <p>No blue: B-Y Det, B-Y Amp</p> <p>No red: R-Y Det, R-Y Amp</p> <p>Incorrect hue (tint): Burst Gate, R-Y Det, B-Y Det.</p>
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A series filament circuit is used; an open filament in any tube will cause the set to be inoperative.

BRADFORD MODEL 171D24 (WTG-79814)

FOLDER 1

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 120VAC. Allow a 20-minute warm-up period for receiver and test equipment.

Suggested Alignment Tools: GC ELECTRONICS
 A1 thru A12 8606, 8869, 9302
 Mixer Plate Coil 9296, 9300, 9302

PRELIMINARY INSTRUCTIONS

Set the channel selector to the highest unused channel. 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 that shown.
 Connect a -3 volt bias supply to point A and disable oscillator section of mixer oscillator (VHF tuner)

VIDEO IF ALIGNMENT

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input to point B, low side to ground.	High side to ungrounded tube shield over mixer-osc, low side to ground.	44MC (10MC Sweep)	41.25MC	Adjust A1 for MINIMUM. See Fig. 1.
			47.25MC	Adjust A2 for MINIMUM. See Fig. 1.
"	"	"	41.25MC 41.65MC 42.17MC 42.75MC 45.00MC 45.75MC 47.25MC	Adjust A3, A4, A5, A6 and Mixer Plate coil for maximum gain and symmetry of response with markers as shown in Fig. 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 the signal while aligning for undistorted output by adjusting A8.

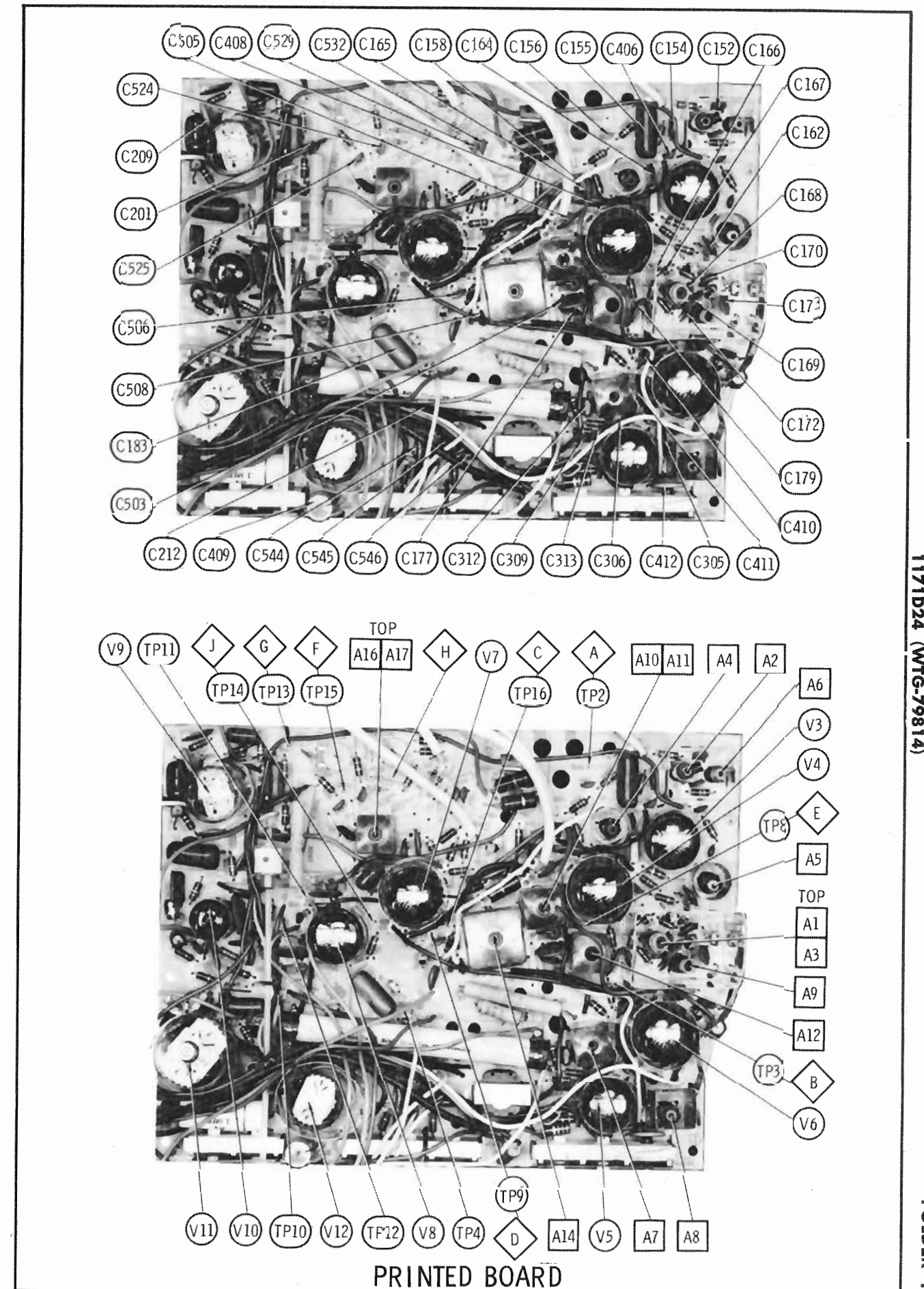
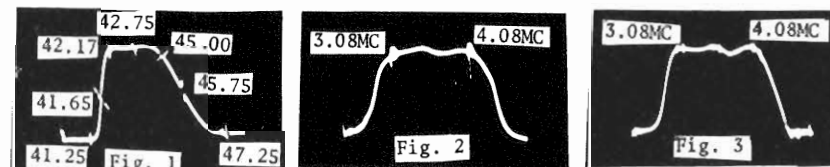
4.5MC TRAP ALIGNMENT

Tune in a strong IV signal and set the contrast at maximum. Adjust the fine tuning until a beat pattern is visible on the screen. Adjust A9 for MINIMUM beat interference.

CHROMA BANDPASS ALIGNMENT

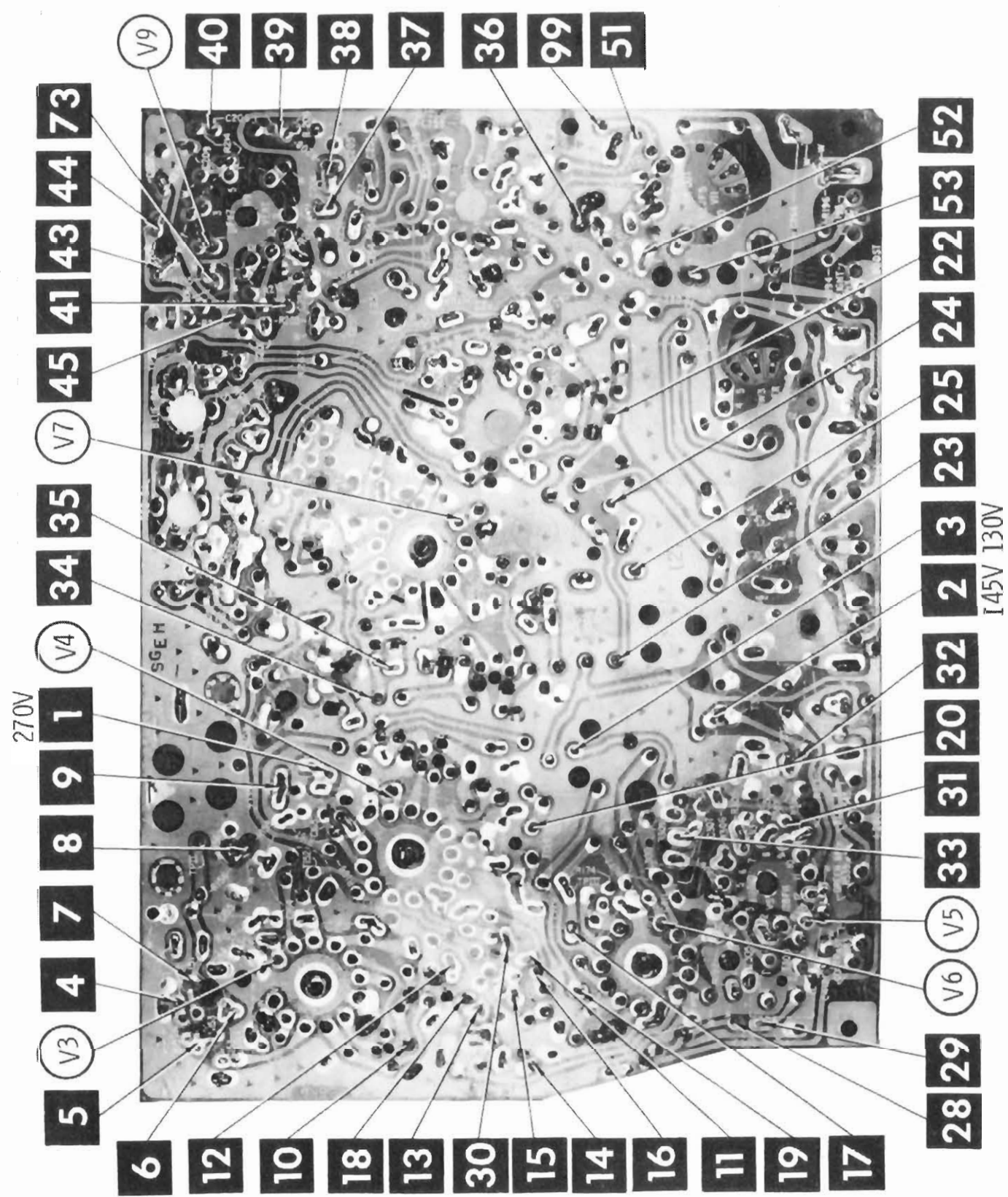
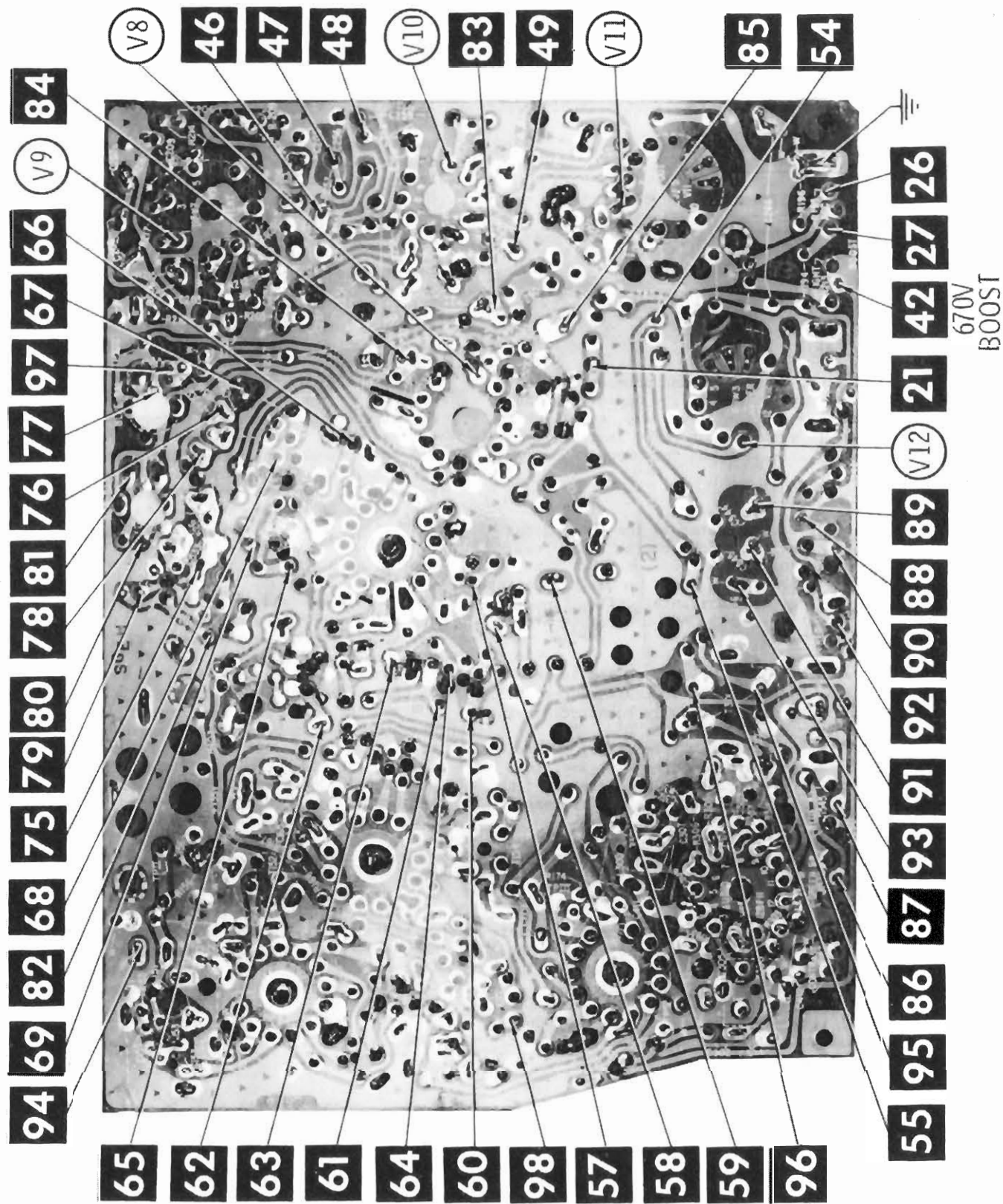
Connect as explained in preliminary instructions. Set color control to maximum, tint control to mid-range, and color killer fully counterclockwise. Connect a -4 volt bias to point A. Connect a -20 volt bias to point C, off pin 4 of Burst Gate, V7, positive lead of bias supplies to ground. Turn contrast control to maximum clockwise position and color control to center of its range.

CONNECT SCOPE	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	REMARKS
Vertical input thru detector probe to point D, pin 2 of V7, Burst Amp, low side to ground. (See Fig. 4.)	Thru .1mfd to point E, pin 5, grid of Chroma Amp, V4, low side to ground	3.58MC (3-5MC Sweep)	3.08MC 4.08MC	Adjust A10 and A11 for response curve similar to Fig. 2.
"	Thru .001mfd to point U on VHF tuner, low side to ground.	"	3.08MC 3.58MC 4.08MC	Adjust A12 for response curve similar to Fig. 3. Make compromise adjustments of A10 and A11 if necessary.



BRADFORD MODEL
1171D24 (WTG-79814)

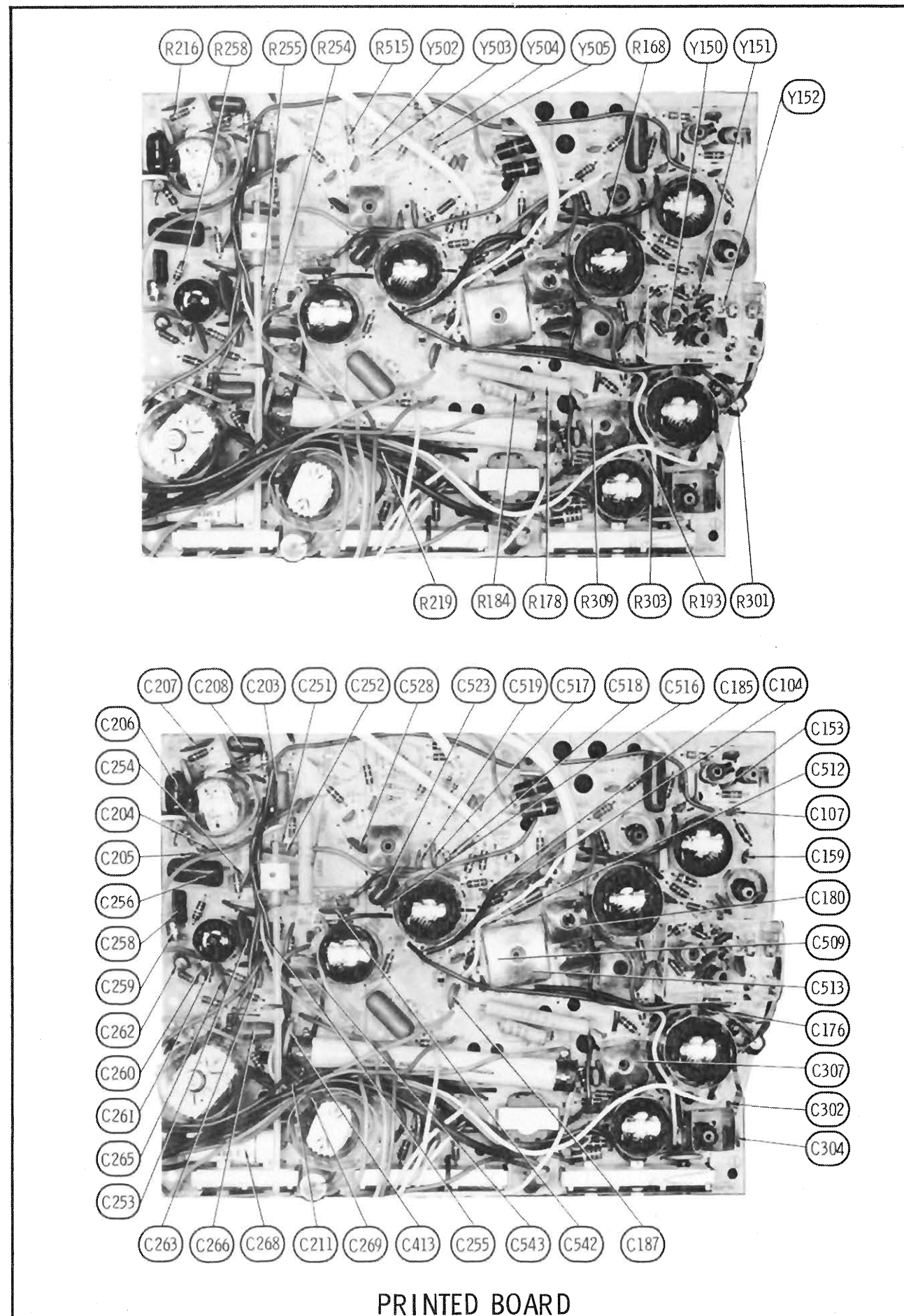
FOLDER 1



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

PRINTED BOARD

A Howard W. Sams CIRCUITRACE Photo



MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station and set all controls for normal operation. Short pin 6 of Sync Separator, V7, to ground. Set the Horizontal Hold coil, L251, to obtain floating picture. Horizontal hold coil core should be positioned away from front of set. Remove the short from the Sync Separator, V7. The picture should horizontal sync when switching from channel to channel.

HIGH VOLTAGE ADJUSTMENTS

Warm up set for fifteen minutes before adjusting high voltage. Set brightness control to MINIMUM and adjust the High Voltage Adjust control, R273, for 17.2KV at high voltage anode with 120VAC line voltage.

AGC ADJUSTMENT

Tune in a strong TV station and advance the AGC control, R195, until instability appears in the picture (pulling, jitters, overload, etc.). Reduce control to a point just below instability and check all available stations for proper AGC action.

COLOR AFC ALIGNMENT

Connect a color bar generator to the VHF antenna terminals or tune in a color program and adjust receiver for normal color reception. Set tint control: fully clockwise and clip an 18pf capacitor across it. Be certain horizontal deflection circuits are operating and the AGC control is properly set.

Set Blue Balance control, R517, and Red Balance control, R524, to the center of their ranges, and adjust Color control, R504, fully counterclockwise.

Connect a VTVM to point F. While making the following adjustments, maintain the burst amplitude at a low input level by turning the receiver fine tuning control slightly toward smear after each adjustment.

Adjust A14 for maximum deflection. Detune A17 by moving core away from printed circuit board. Adjust A16 and A17 for maximum deflection.

Connect VTVM DC probe to point G, common to point H and adjust blue balance control for zero. Meter should show no deflection while turning fine tuning control from smear to crystallization.

Connect VTVM DC probe to point J, common to point H, and adjust red balance control for zero. Meter should show no deflection while turning fine tuning control from smear to crystallization.

PURITY ADJUSTMENT

Check for correct positioning of convergence assembly and purity ring on the picture-tube neck. (The convergence assembly should be positioned 1-1/2" from the picture-tube base and the purity ring just in front of the convergence assembly.)

Loosen screws on horizontal convergence sliders and move each slider to place core end 1/8" from neck of picture tube. Using a dot pattern, adjust static convergence magnets to provide center convergence. Set Blue Brightness control, R545, and Green Brightness control, R539, to MINIMUM. Set the brightness control (customer control) approximately 1/4 turn clockwise.

Loosen yoke clamp screw and slide yoke back as far as possible. Rotate purity ring assembly and/or spread tabs for uniform red field in center of raster. Turn blue and green brightness controls clockwise to produce three color areas in the center of the raster. Reconverge at center of raster using static convergence magnets.

Repeat above procedure, if necessary, to obtain best results. Move yoke forward until best overall pure red screen and proper leveling of picture are obtained. Check each color field for purity by rotating blue and green brightness controls individually to maximum and back to MINIMUM. Tighten yoke clamp screw to hold yoke firmly in position.

GRAY SCALE ADJUSTMENT

Tune in a black and white or a color picture with the color control set to MINIMUM. Check for proper adjustment of height, vertical linearity and horizontal hold controls. Remove signal by shorting antenna terminals together and setting tuner on unused channel. Set contrast control to MINIMUM and the three picture-tube screen controls to maximum. Adjust brightness control (customer control) to a point just short of defocusing raster. Adjust blue and green brightness controls to eliminate color shading of the white raster. Adjust brightness control (customer control) to a point where raster is almost extinguished.

Adjust appropriate color screen controls to produce a dark gray raster. Check the raster from low lights to high lights, adjusting controls as necessary, to maintain graduations from gray to white raster throughout usable brightness range. Repeat above procedure, if necessary. Check position of the three color screen controls to make certain at least one of the controls is set at maximum.

CONVERGENCE ADJUSTMENTS

1. Converge center of pattern using static convergence magnets. The red and blue rasters are moved both horizontally and vertically to coincide with the green. (See Fig. 5.)
2. Loosen red and blue horizontal slider screws. Switch generator to crosshatch pattern.
3. Move red horizontal slider closer to, or away from, the picture tube-neck and rotate red horizontal static magnet to converge red and green vertical lines at the center horizontal lines. (See Fig. 6.)
4. Move blue horizontal slider closer to, or away from, the picture tube-neck and rotate blue horizontal static magnet to converge the blue lines with the previously converged red and green vertical lines at the center horizontal line. (See Fig. 6.)
5. Repeat steps 3 and 4, if necessary, to obtain best center edge convergence at center horizontal line. Lock horizontal slider in position.
6. Check convergence of horizontal lines at center vertical line. (See Fig. 7.) If additional adjustment is necessary, the connections to each vertical dynamic convergence coil may be changed to either reverse its polarity or remove it from the circuit completely. Plugs and jacks are provided on the convergence assembly for this purpose.
7. Lock static convergence magnet and purity rings in position with appropriate cement.

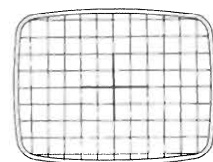


FIG. 5
CENTER CONVERGENCE

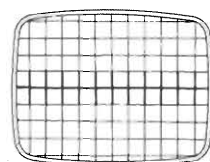


FIG. 6
CENTER HORIZ CONVERGENCE

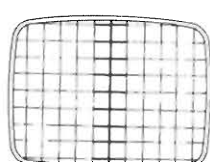
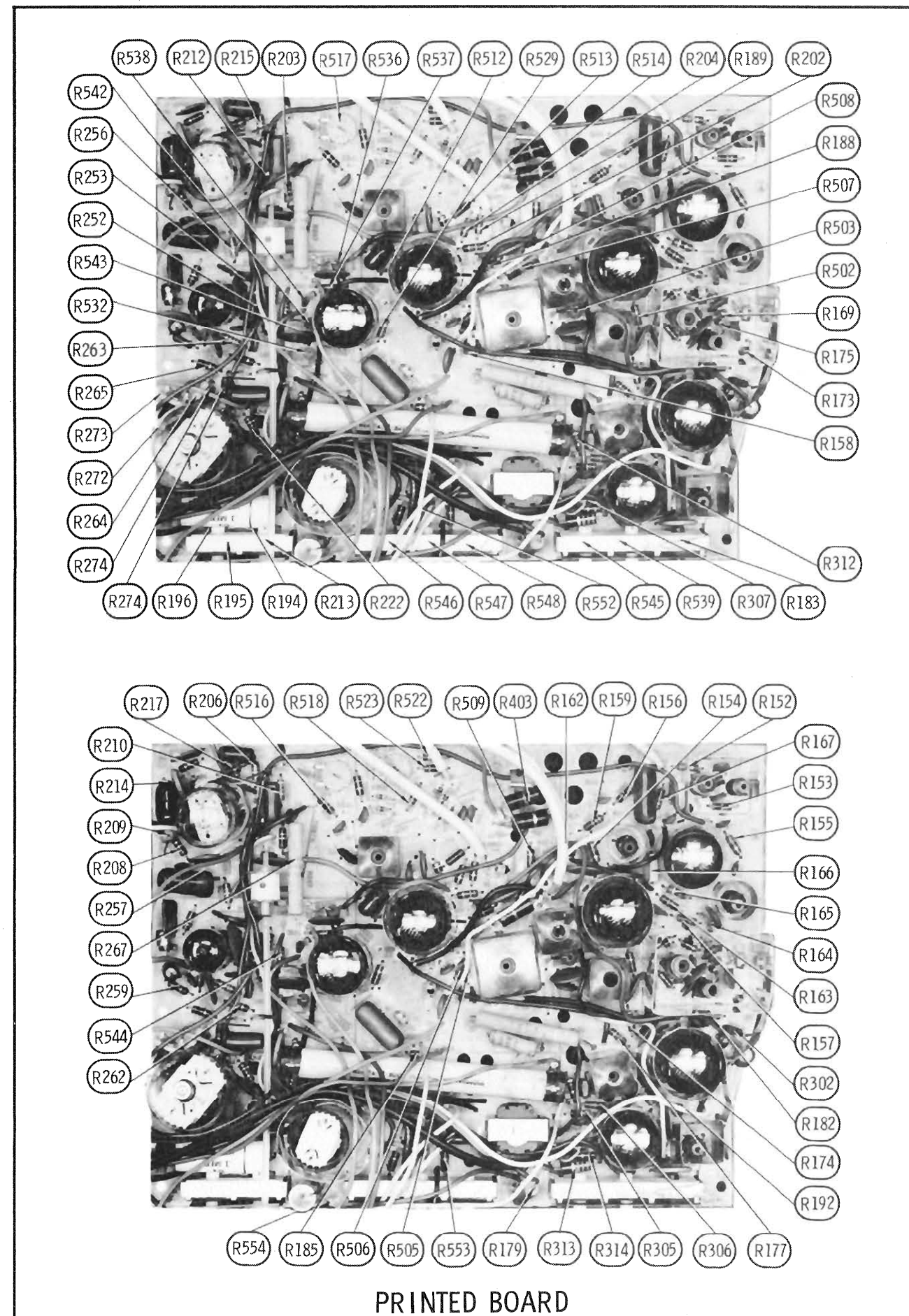
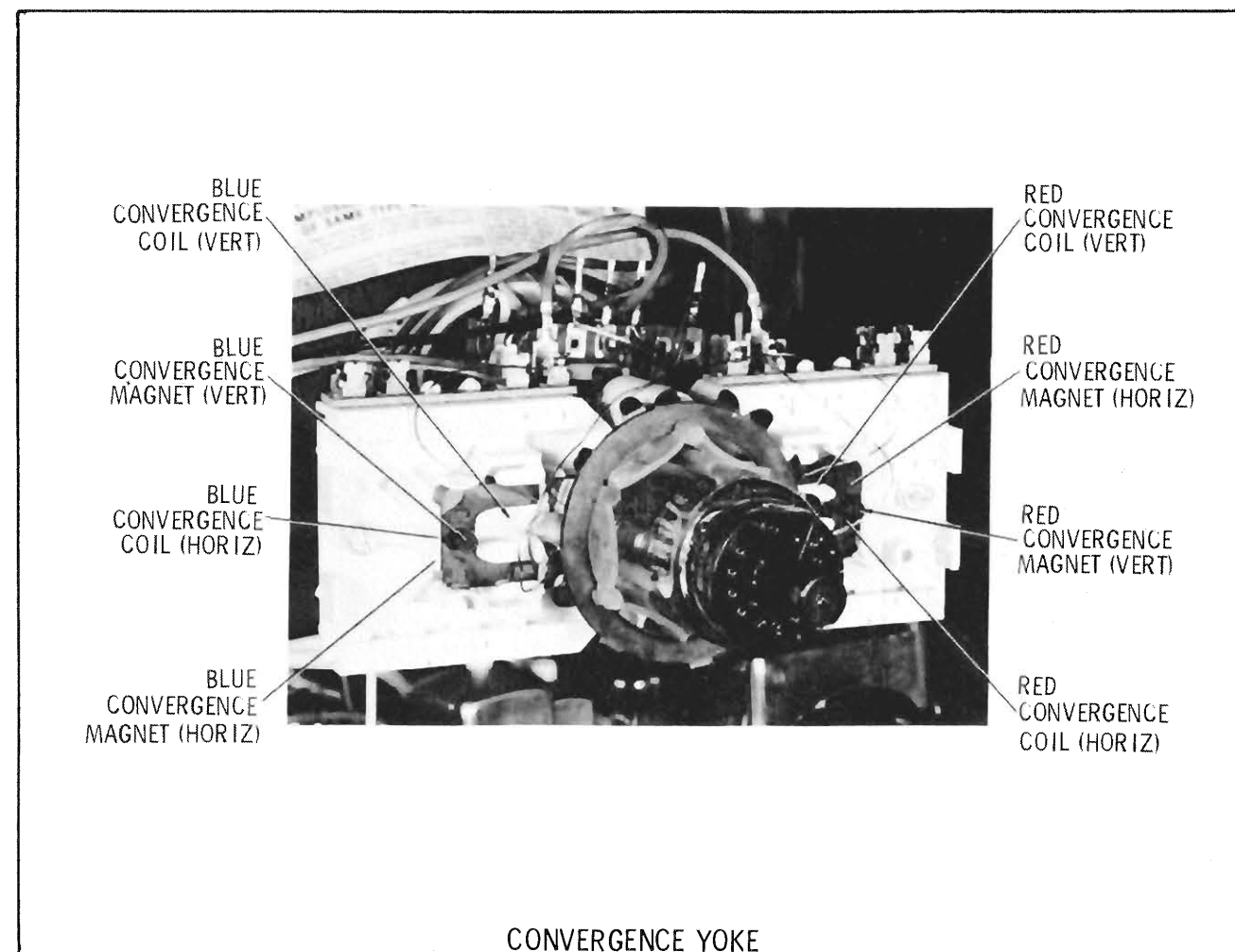
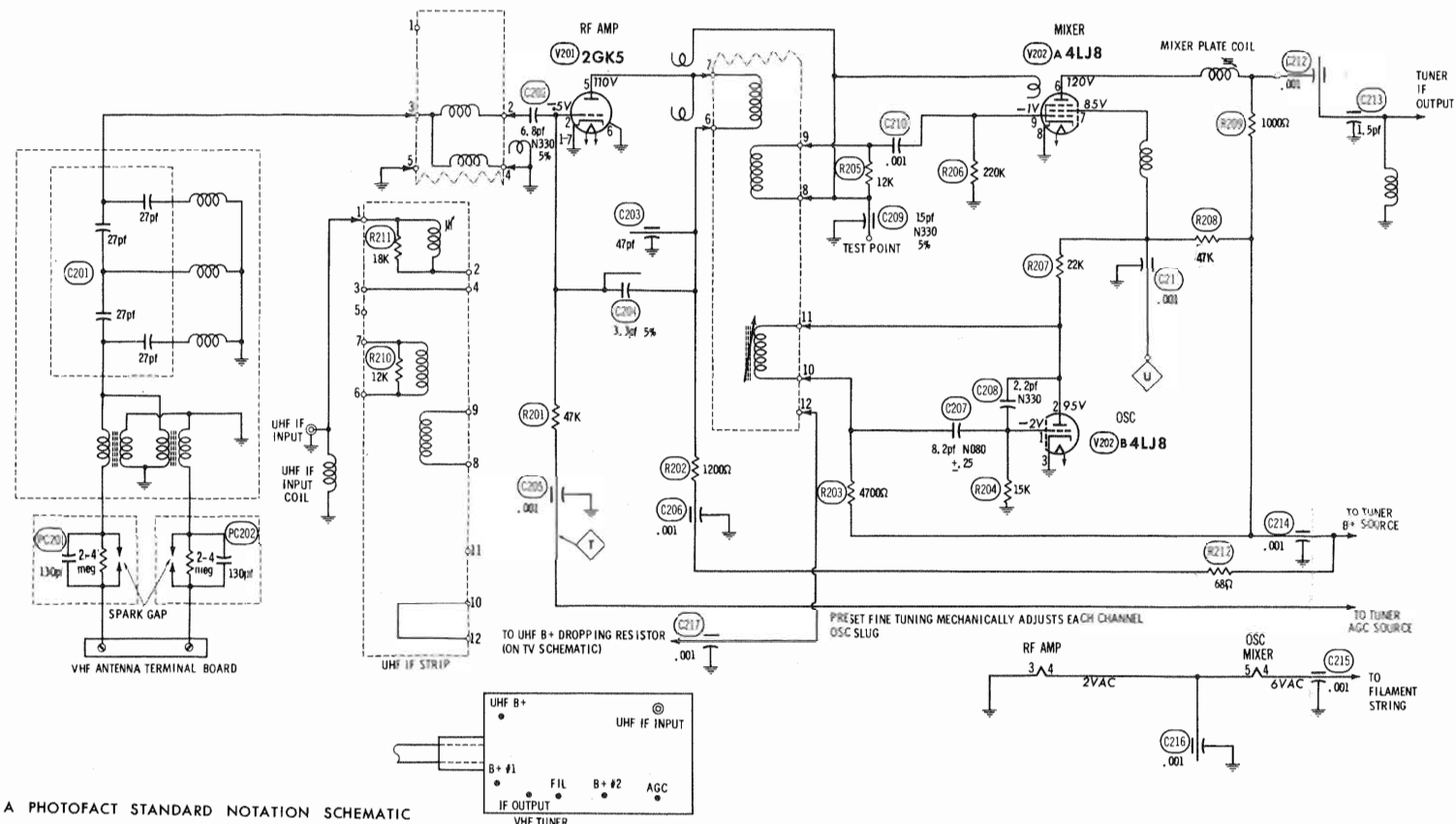


FIG. 7
CENTER VERT CONVERGENCE





A PHOTOFAC STANDARD NOTATION SCHEMATIC
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VHF TUNER ALIGNMENT INSTRUCTIONS

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 \diamond . Adjust bias to obtain response curve which shows no indication of overloading.

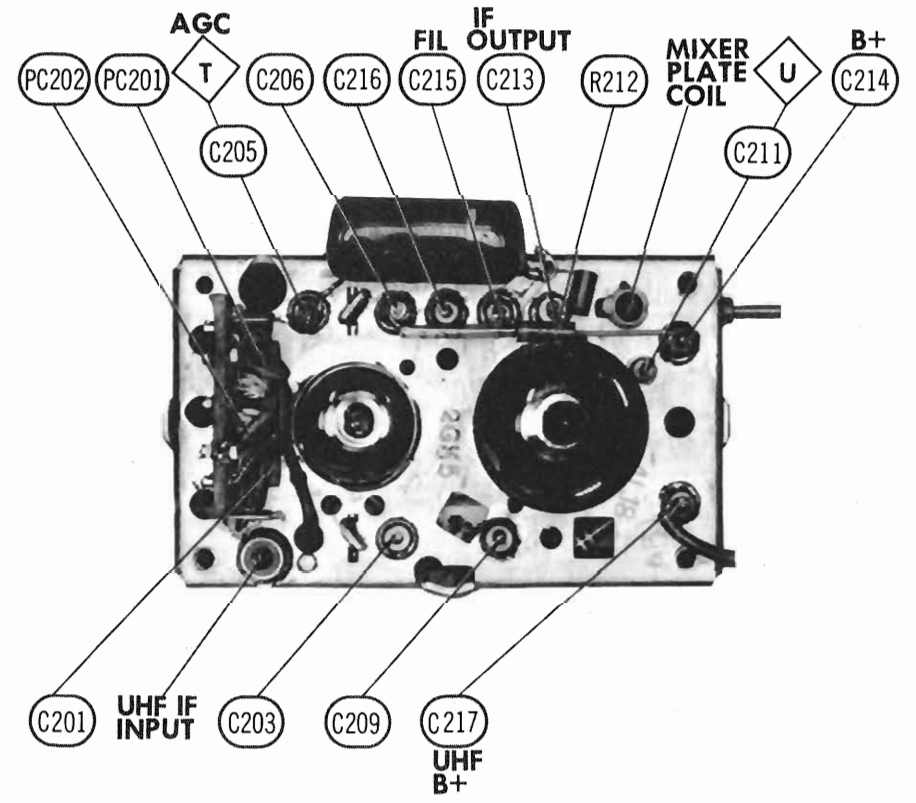
SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point \diamond , low side to ground		Expand or compress appropriate coils for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
2. "	See Chart	See Chart	12 thru 2	Vert. Input to Point \diamond , low side to ground.		Check all channels and make compromise adjustments by expanding or compressing appropriate coils if necessary.

CHANNEL & FREQUENCY CHART

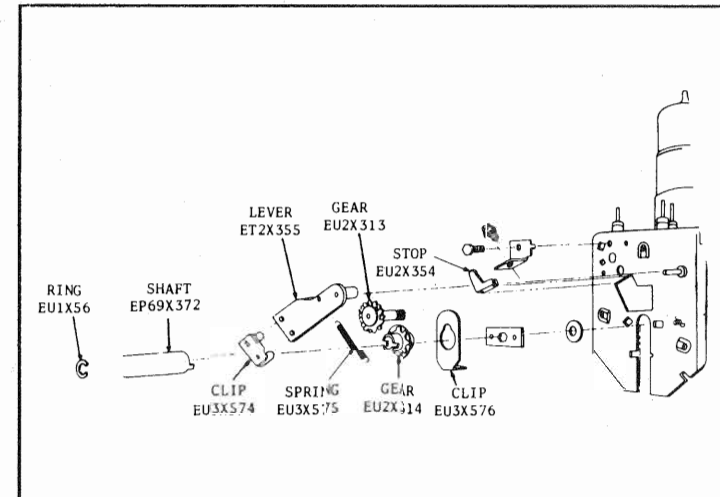
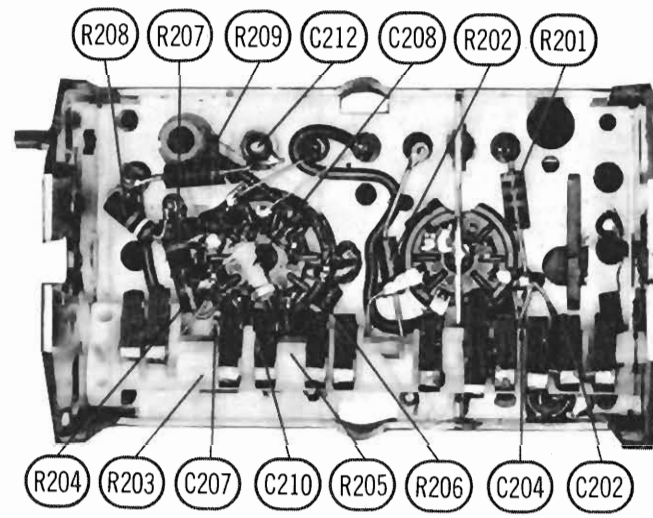
SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SOUND	VIDEO
57MC	55.25MC 59.75MC	2	85MC	83.25MC 87.75MC	6	195MC	193.25MC 197.75MC	10		
63MC	61.25MC 65.75MC	3	177MC	175.25MC 179.75MC	7	201MC	199.25MC 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.



VHF TUNER EP86X8



Courtesy of the Manufacturer

EXPLODED VIEW

BRADFORD MODEL
1171D24 (WTG-7981A)

FOLDER 1

VHF TUNER PARTS LIST AND DESCRIPTION

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

TUBES

ITEM No.	AMPEREX		GENERAL ELECTRIC		RCA		SYLVANIA	
	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
Y201	RF Amp		Z6K5		Y202	Mixer - Oscillator		4LJ8

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA					
			ARCO/ELMENC0 PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201a b c d	27pf 27pf 27pf 27pf	EU33K63						
C202	6.8pf N330 5%	EP18X604						
C203	47pf	EU23X28						
C204	3.3pf 5%			DTZ-3R3	NP03P3	CN0533		10TCC-V33
C205	.001							
C206	.001							
C207	8.2pf N080	EP18X605						10TCU-V82
C208	2.2pf N330	ET18X414						
C209	15pf N330	ET23X7						10TCR-Q15
C210	.001		CCD-102	DD-102	GP1000	GP210		10T5-D10
C211	.001	EU23X4						
C212	.001							
C213	1.5pf N750/P100	EU23X51						
C214	.001							
C215	.001							
C216	.001							
C217	.001							

COILS (RF-IF)

ITEM No.	USE	MFR. PART No.	NOTES	ITEM No.	USE	MFR. PART No.	NOTES
	Mixer Plate	EU36E832			Ant., RF, Mixer, Osc.	EP62X296	Channel 7 Strip
	Ant., RF, Mixer, Osc.	EP62X289	Channel 1 Strip		Ant., RF, Mixer, Osc.	EP62X297	Channel 8 Strip
	Ant., RF, Mixer, Osc.	EP62X291	Channel 2 Strip		Ant., RF, Mixer, Osc.	EP62X298	Channel 9 Strip
	Ant., RF, Mixer, Osc.	EP62X292	Channel 3 Strip		Ant., RF, Mixer, Osc.	EP62X299	Channel 10 Strip
	Ant., RF, Mixer, Osc.	EP62X293	Channel 4 Strip		Ant., RF, Mixer, Osc.	EP62X300	Channel 11 Strip
	Ant., RF, Mixer, Osc.	EP62X294	Channel 5 Strip		Ant., RF, Mixer, Osc.	EP62X301	Channel 12 Strip
	Ant., RF, Mixer, Osc.	EP62X295	Channel 6 Strip		Ant., RF, Mixer, Osc.	EP62X302	Channel 13 Strip

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
PC201	Antenna Isolation	(1)	2-4meg, 130pf (includes Spark Gap)
PC202	Antenna Isolation	(1)	2-4meg, 130pf (includes Spark Gap)
	Antenna Input Assembly	EP62X288	

(1) Alternate 600K - 2meg, 130pf, Part Number ET33K64.

UHF TUNER PARTS LIST AND DESCRIPTION

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

SEMICONDUCTORS

ITEM No.	TYPE / MFR. No./PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Q301 X301		GE-11 1N62A	IRTR-83 1N62AG	PTC133 PTC217	HEV200 HEPRO700	SK3019 SK3089	RT108	11L 1B1 EGG 112

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA				
			ARCO/ELMENC0 PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	33pf NPO 5%						
C302	10pf N220 5%						
C304	100pf						
C305	30pf						

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. 8888 (25KV)
Shielded Hook-up Wire	Use BELDEN No. 8855 (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
300-Ohm Tuner Input Lead	Use BELDEN No. 8225 (Foam Core) or 8285 (Foam Jacketed)
300-Ohm 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

ITEM No.	AMPEREX		GENERAL ELECTRIC		RCA		SYLVANIA	
	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V3	1st Video IF - 2nd Video IF	88U11	V4	3rd Video IF - Chroma Amp	88U11	V10	Horiz. Phase Detector -	11F7
V5	Audio Det. - Audio Output	128F1	V6	Video Output - AGC Keying	118T1	V11	Horiz. Oscillator	6L7B
V7	Sync Sep. - Burst Gate -		V12	Damper		V13	Rectifier	12X5
V8	Sub-Carrier Amp	88U11						178W3
	G-Y/B-Y/R-Y Difference Amp	6AC10						1DG3A

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V14	10VAP22 #				
	10VAP22 #				

For SAFETY, replace only with equivalent part.

SEMICONDUCTORS

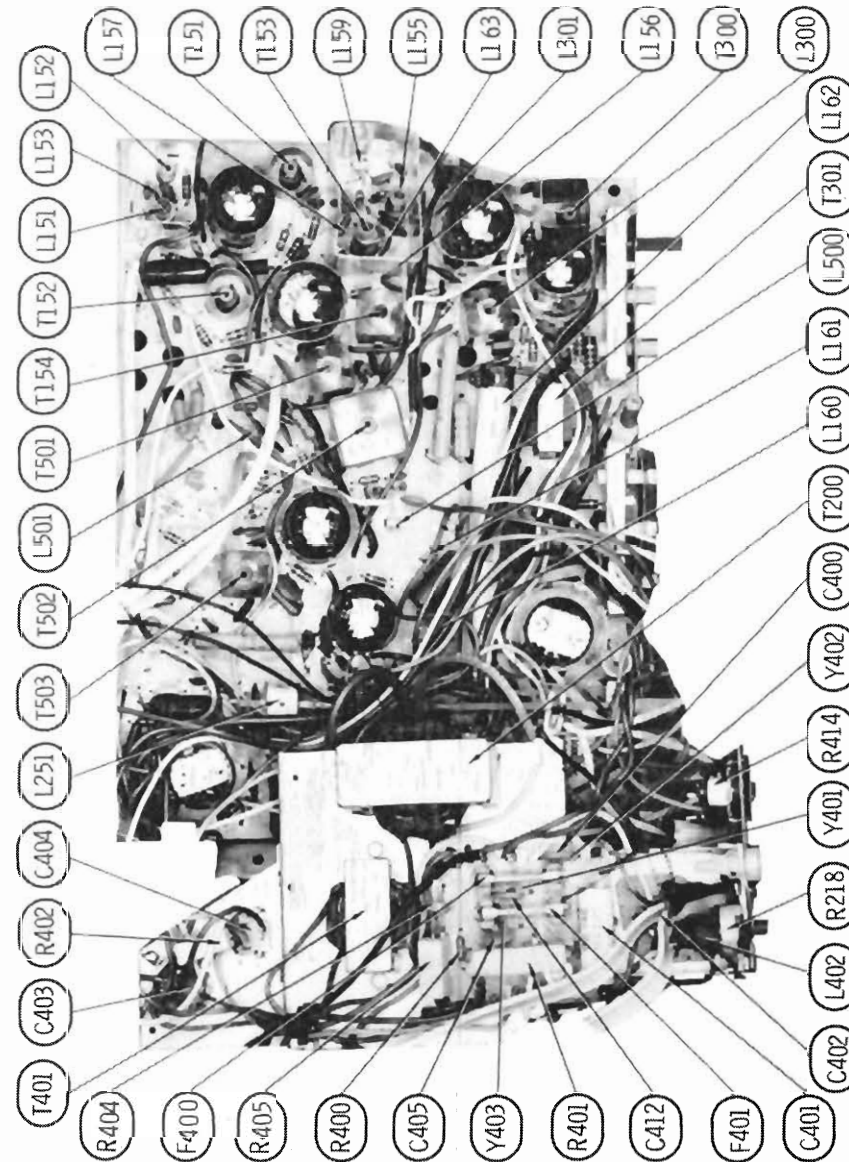
ITEM No.	TYPE / MFR. No./PART No.	REPLACEMENT DATA						
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	MOTOROLA PART No.	RCA PART No.	SPRAGUE PART No.	SYLVANIA PART No.
Y150	6N14V3	1N60	1N60	PTC206	HEP135	SK3088		EGG 109
Y151	EP16V3	1N60	1N60	PTC206	HEP135	SK3088		EGG 109
Y152	EU16V3	1N60	1N60	PTC206	HEP135	SK3088		EGG 109
Y275	EP57H (2)	GE-504A	804 or 5A4D	PTC202 or PTC201	HEPRO053	SK3016 or SK3031	RT214 or RT215	EGG 116 or ECG 117
Y401	EP57X1 # (1)	GE-504A	804 or 5A4D	PTC202 or PTC201	HEPRO053	SK3016 or SK3031	RT214 or RT215	EGG 116 or ECG 117
Y402	EP57X1 # (1)	GE-504A	804 or 5A4D	PTC202 or PTC201	HEPRO053	SK3016 or SK3031	RT214 or RT215	EGG 116 or ECG 117
Y403	EP57X1 # (1)	GE-504A	804 or 5A4D	PTC202 or PTC201	HEPRO053	SK3016 or SK3031	RT214 or RT215	EGG 116 or ECG 117
Y502	EP16X2	1N34AS	1N34A	PTC207	HEP134	SK3087		EGG 09
Y503	EP16X2	1N34AS	1N34A	PTC207	HEP134	SK3087		EGG 09
Y504	EP16X2	1N34AS	1N34A	PTC207	HEP134	SK3087		EGG 09
Y505	EP16X2	1N34AS	1N34A	PTC207	HEP134	SK3087		EGG 09

For SAFETY, replace only with equivalent part.
(1) Some versions may use Part Number EP57X4.
(2) Not used in some versions.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA					
		MFR. PART No.	ARCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.
C402	220 200V	EP31X264 #	AFH1-25-85 (1/2)				
C403a	120 350V	EP31X265 #	AFH3-117-15 (1)				
b	100 300V						
c	100 150V						
d	100 75V						
C404a	80 175V	EP31X266 #	AFH3-165-50 (1)				
b	10 150V						
c	4 300V						

For SAFETY, replace only with equivalent part.
(1) Indicate Aerovox part supplied by Arc.
(2) Use cardboard sleeve and mounting wafer.



CHASSIS- TOP VIEW

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.

CAPACITORS

ITEM No.	RATING	MFR. PART No.	REPLACEMENT DATA					
			ARCO/ELMENCO PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C152	820		CCO-821	00-821	GP820	GP382	10T5-182	
C153	27		CCO-270		NP027	0N027	10TCC-027	
C154	.0022		CCO-222	00-222	GP200	GP222	10T5-022	
C155	.22		40P-5-224		DPMS4P22	PVC4022	4P5-P22	
C156	820		CCO-821	00-821	GP820	GP382	10T5-182	
C157	.22		40P-5-224		DPMS4P22	PVC4022	4P5-P22	
C158	820		CCO-821	00-821	GP820	GP382	10T5-182	
C159	470		CCO-471	00-471	GP470	GP471	10T5-147	
C162	.0022		CCO-222	00-222	GP220	GP222	10T5-022	
C163	.0022		CCO-222	00-222	GP220	GP222	10T5-022	
C164	820		CCO-821	00-821	GP820	GP382	10T5-182	
C165	820		CCO-821	00-821	GP820	GP382	10T5-182	
C166	510		CCO-501	00-501	GP500	GP350	10T5-150	
C167	3						10TCC-V30	
C168	10						10TCC-010	
C169	125						10TCC-110	
C170	100						10TCC-110	
C172	100						10TCC-033	
C173	33						4P5-S15	
C176	.015						10T5-015	
C177	.0015						10T5-050	
C179	.005						10TCC-020	
C180	22						2P5-P47	
C183	.47						10T5-050	
C184	.005						10T5-147	
C185	470						10T5-182	
C187	470						6P5-S56	
C201	820						10T5-068	
C203	.056						10T5-182	
C204	.0068						10T5-068	
C205	.018						10T5-068	
C206	.018						10T5-068	
C207	.0068						10T5-068	
C208	.039						10T5-068	
C209	.001						10T5-068	
C211	.005						10T5-068	
C212	1						10T5-068	
C220	120						10T5-068	
C251	56						10T5-068	
C252	270						10T5-068	
C253	430						10T5-068	
C254	.0012						10T5-068	
C255	.0012						10T5-068	
C256	.22						10T5-068	
C258	510						10T5-068	
C259	.0033						10T5-068	
C260	820						10T5-068	
C261	18						10T5-068	
C262	.0068						10T5-068	
C263	.0012						10T5-068	
C265	.005						10T5-068	
C266	.033						10T5-068	
C268	1						10T5-068	
C269	130						10T5-068	
C270	.01						10T5-068	
C275	120						10T5-068	
C302	22						10T5-068	
C304	150						10T5-068	
C305	.005						10T5-068	
C306	.005						10T5-068	
C307	18						10T5-068	
C309	.001						10T5-068	
C312	.047						10T5-068	
C313	.005						10T5-068	
C400	.001						10T5-068	
C401	.039						10T5-068	
C405	.001						10T5-068	
C406	820						10T5-068	
C407	820						10T5-068	
C408	.005						10T5-068	
C409	.047						10T5-068	
C410	.005						10T5-068	
C411	.005						10T5-068	
C412	.005						10T5-068	
C413	.005						10T5-068	
C503	.005						10T5-068	
C505	330						10T5-068	
C506	36						10T5-068	
C508	820						10T5-068	
C509	39						10T5-068	
C512	.01						10T5-068	
C513	2.4						10T5-068	
C515	1pF						10T5-068	
C516	.01						10T5-068	
C517	.01						10T5-068	
C519	68						10T5-068	
C523	.015						10T5-068	
C524	36						10T5-068	
C525	36						10T5-068	
C528	270						10T5-068	
C529	36						10T5-068	
C532	36						10T5-068	
C542	.0068						10T5-068	
C543	.0068						10T5-068	
C544	470						10T5-068	
C545	470						10T5-068	
C546	470						10T5-068	

* For SAFETY, replace only with equivalent part.

(*) Part of 1750.

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA					
			MFR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R195	AGC Weight	40K	EP49X59 #15			H4 (1)		
R213	Vert Hold	1.2meg	EP49X23	73140362-31 (3)	71-1.5meg, SNK010	B47-1.5meg-5 or [NP-1.5meg-5, NML-A-300, TT-2]	H4 (1) [A-E10, A1] [B-E22, A1] BU11, CF18, 556A	
R218	Vert Linearity	2000	EP49X590				PTA12SL or [BU12SL, SL37, SN1000] or [UA15SL, SN1000]	
R273	High Voltage	500K	EP49X42 #					
R308	Volume (Slider Type)	1meg	EP49X41					
R414	Focus	15meg	EP49X91 #					
R504	Color (Slider Type)	500	EP49X15					
R517	Blue Balance	2000	EP49X594					
R521	Tint (Slider Type)	25K	EP49X81					
R524	Red Balance	2000	EP49X594					
R546	Blue Screen	1meg	EP49X591 #					
R547	Green Screen	1meg	EP49X591 #					
R548	Red Screen	1meg	EP49X591 #					

(*) For SAFETY, replace only with equivalent part.
 (1) To establish section identification of side-by-side controls, view controls with shaft ends facing you, terminals down. On 2-section controls, left-hand section is "A", middle section is "B", right-hand section is "C".
 (2) For horizontal mounting, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.
 (3) Number on unit.
 (4) Includes R183, R339 and R545.
 (5) Includes R195 and R213.
 (6) Includes R546, R547 and R548.
 SNAPTRON

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFR. PART No.			WORKMAN PART No.	MFR. PART No.
R163	100K 5W, 1/2W			R313	33K	1W, Carbon	
R166	220	1/2W, Carbon		R401	3.6 5W, 1W		
R168	1500	1/2W, Carbon		R402	300	3W, 1W	
R178	10K	7W, 1W		R403	15K	2W, 1W	
R179	16K	3W, 1W		R404	Thermistor		
R184	3600	3W, 1W		R405	9 5W, 1W		
R204	22K	1/2W, Carbon		R410	10K	2W, 1W	
R212	Thermistor			R413	4W, 1W	Carbon	
R214	6800	1/2W, Carbon		R503	6800	2W, 1W	
R215	2200	1/2W, 1W		R507	10K	1/2W, Carbon	
R216	68K	1/2W, Carbon		R513	100	1/2W, Carbon	
R217	7500	5W, 1W		R514	1200	2W, Carbon	
R218	VDR * (100 @ 800V +15)			R532	27K	1W, Carbon	
R219	10K	1/2W, Carbon		R536	27K	1W, Carbon	
R220	1.75 5W, 1W			R549	1meg	1/2W, Carbon	
R301	22K	4W, 1W		R552	1meg	1/2W, Carbon	
R312	4700	1/2W, Carbon		R553	1meg	1/2W, Carbon	

* For SAFETY, replace only with equivalent part.
 (1) May be used in some versions.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	REMARKS
L145	Choke	EP36X76			
L151	47.25M Trap	EP36X76			
L152	1st Video IF	EP36X129		7537 (2)	(2) Clip unused pin.
L153	RF Choke (7 Turns)	EP36X129			
L155	4.5M Trap	EP36X121	20-1057	7142	
L156	Peaking (36.2uH)	EP36X7	19-3036	6176	
L157	RF Choke (27uH)	EP36X08B		72F275AP	
L159	Peaking (120uH)	EP36X41D		9-3125	
L160	Peaking (150uH)	EP36X17		9-2026	
L161	Peaking (330uH)	ES36X5		9-3330	
L163	RF Choke (2.5uH)	EP36X1		9-1002	
L164	RF Choke (2.5uH)	EP36X1		9-1002	
L232	RF Choke (10uH)	EP36X37		9-2016	
L300	Quadrature	EP36X52		4612	
L301	Peaking (56uH)	EP36X81Z	19-3060	74F565A1	
L402	Line Choke	EP36X57 #			
L500	3.58MC Trap (5uH)	EP36X81Z	19-3060	74F565A1	
L501	Peaking (56uH)	EP36X81Z	19-3060	74F565A1	
L502	RF Choke (56uH)	EP36X81Z	19-3060	74F565A1	
T151	2nd Video IF	EP36X9			
T152	3rd Video IF	EP61X170 (3)	7513-P		
T153	4th Video IF/41.25M Trap	EP61X171 (3)			
T154	Chrome Take-off	EP61X177			
T300	Sound Interstage	EP36X81Z			
T501	Chrome Bandpass	EP61X173			
T502	Burst Amp/Osc Control	EP61X174			
T503	Chrome Demodulator	EP61X175			

(3) Includes C169.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA						
		MFR. PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	WORKMAN PART No.	
L202	Convergence Assembly	EP62X19						
L203	Vert Conv. Winding							
L204	Vert Conv. Winding							
L251	Horiz Osc. (Hold)	ES35X2						
L254	Horiz Conv. Winding</							