PHOTOFACT® Folder with CIRCUITRACE®

EMERSON CHASSIS 120822A, 120835A, 120844A

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.

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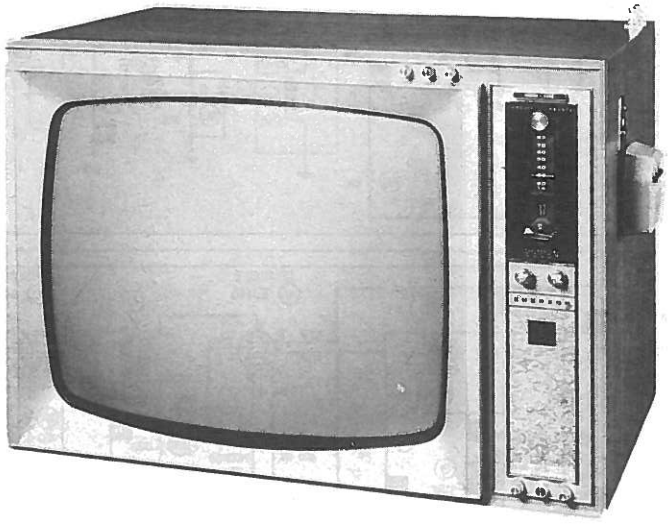
EMERSON CHASSIS 120822A, 120835A, 120844A



MODEL 23T02

TRADE NAME	Emerson Models	Chassis	Models	Chassis
	23C01, 23C02, 23C03 .	120835A	25C05, 25C06 ..	120822A
	23K01, 23T01	120835A	25C07, 25C08 ..	120822A
	23T02	120844A	25K03, 25K04 ..	120822A (Combination Models)
SUPPLIER	For current address, see Annual Index.			
TYPE SET	23" and 25" Color Television Receivers			
TUBES	VHF: Twenty-Six, UHF: One Transistor			
POWER SUPPLY	110-120 Volts AC, 60 Cycles		RATING	340 Watts, 3.1 Amps. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)			

EMERSON CHASSIS 120822A, 120835A, 120844A

SERVICING IN THE FIELD

SAFETY GLASS

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

FUSE OR FUSE DEVICE

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.)

Two 4" lengths of fuse wire are used for filament protection. (See F2 and F3 in photo "Chassis - Bottom View" for location.)

AGC

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

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

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

VHF OSCILLATOR ADJUSTMENT

The Fine Tuning mechanically engages oscillator slug for adjustment (one slug for each channel).

FOCUS

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

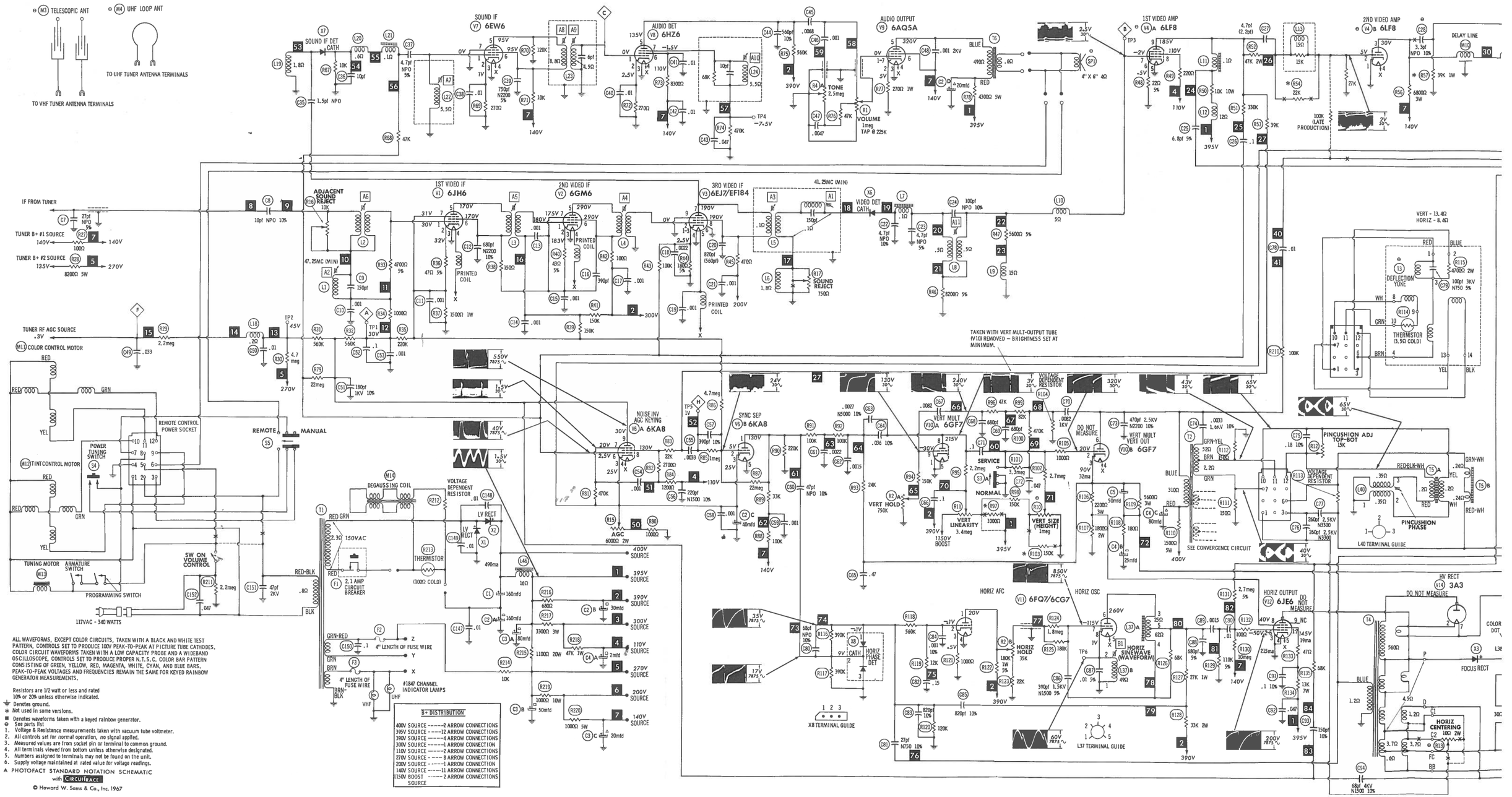
CENTERING

Centering is accomplished by a Horizontal Centering control. (For location, see "Cabinet - Rear View" photo.)

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

DATE 3 -67 SET 871 FOLDER 3

SET 871 FOLDER 3



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 WIDEBAND 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.

Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

⏚ Denotes ground.

✱ Not used in some versions.

■ Denotes waveforms taken with a keyed rainbow generator.

⊖ See parts list

1. Voltage & Resistance measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

Reverse values of R182 + R183

delete

add

395V

IDEO AMP
. 6LF8

2ND VIDEO AMP
V4 B 6LF8

DELAY LINE

VIDEO OUTPUT
V5 12BY7A

HORIZ BLANKING AMP
V19 A 6GU7

G-Y AMP
V19 B 6GU7

B-Y AMP
V20 A 6GU7

R-Y AMP
V20 B 6GU7

Z DEMODULATOR
V17 6GY6

X DEMODULATOR
V18 6GY6

COLOR KILLER
V16 A 6GH8A

COLOR KILLER DET
V22 A 6JU8

CHROMA BANDPASS AMP
V16 B 6GH8A

BURST AMP
V21 6EW6

CHROMA SYNC PHASE DET
V22 B 6JU8

CHROMA REFERENCE OSC CONTROL
V23 6GH8A

CHROMA REFERENCE OSC

HORIZ OUTPUT
V12 6JE6

HV RECT
V14 3A3

HV REGULATOR
V15 6BK4A

DAMPER
V13 6DW4B

PICTURE TUBE
V24 23EGP22

DEFLECTION YOKE
T3

THERMISTOR (3.5Ω COLD)

PINCUSHION ADJ TOP-BOT

VOLTAGE DEPENDENT RESISTOR

PINCUSHION PHASE

L40 TERMINAL GUIDE

SEE CONVERGENCE CIRCUIT

BRIGHTNESS 250K

CONTRAST 368Ω TAP @ 300Ω

VIDEO PEAKING

PICTURE TUBE BIAS

COLOR FIDELITY 500K

SERVICE

NORMAL

SPARK GAP

GREEN DRIVE 600Ω

BLUE DRIVE 600Ω

GREEN SCREEN 1.5meg

BLUE SCREEN 1.5meg

RED SCREEN 1.5meg

SPARK GAP (FORMED WITH CAPACITOR LEADS)

1150V BOOST

COLOR 500Ω

MATCHED PAIR

TEST POINT

TINT 1200Ω

COLOR DOT

HORIZ OUTPUT TRANSFORMER TERMINAL

L38 TERMINAL GUIDE

L39 TERMINAL GUIDE

FOCUS RECT

FOCUS

HORIZ CENTERING

HIGH VOLTAGE ADJUST 500K

BOOST RECT

J150V BOOST SOURCE

HORIZ LINEARITY (EFFICIENCY)

SEE VERT OUTPUT CIRCUIT

BLUE HORIZ LINES (TOP)

R-G VERT LINES (TOP)

R-G VERT LINES (BOT)

R-G HORIZ LINES (TOP)

BLUE HORIZ LINES (BOT)

(WIRED DIRECT IN SOME VERSIONS)

BLUE HORIZ SHAPE

R-G VERT LINES (RIGHT)

R-G VERT LINES (LEFT)

L41 TERMINAL GUIDE

L42 TERMINAL GUIDE

L43 TERMINAL GUIDE

L44 TERMINAL GUIDE

PEAK LIMITERS

-4.4V @ 15ma

-3.7V @ 15ma

-5V @ 17ma

TO CAP OF V14 (HV RECT)

TO CAP OF V12 (HORIZ OUTPUT)

T4 TERMINAL GUIDE

TIE POINT

DO NOT MEASURE

NOTE: DEMODULATOR PLATE RESISTORS R173 AND R196 ARE A MATCHED PAIR.

INFO ONLY NO CORRECTION

Changed to a #770581 Trippes Secondary in later production

EMERSON CHASSIS
120822A, 120835A, 120844A

TROUBLESHOOTING CHECK CHART

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

PICTURE or SOUND

No pic, no sound, no raster: X1,X2,Circuit Breaker

No pic, no sound, has raster: V1,V2,V3,V202
No pic, no sound, has snow: V201,V202
No pic, has sound, no raster: V5,V24
No pic, has sound, has raster: X6,V4,V5
Has pic, no sound: X7
Overloaded picture:
Low or excessive brightness: V24
Poor focus: X3

SWEEP

No raster, has sound: V11 Thru V15,V20

No vert deflection: V10
Poor vert lin or foldover: V10
Poor horiz lin or foldover: V12,V13
Narrow picture: X1,X2,V11,V12,V13
Vert off frequency: V10
Horiz off frequency: V11,X8

SYNC

No vert sync: V6
No horiz sync: V6,X8
No vert/horiz sync: V6

RASTER

Yellow (no blue): V20,V24
Cyan (no red): V20,V24
Magenta (no green): V19,V24

COLOR (B/W operating normally)

No color: V16,V21 Thru V23

Weak color: V16,V21 Thru V23

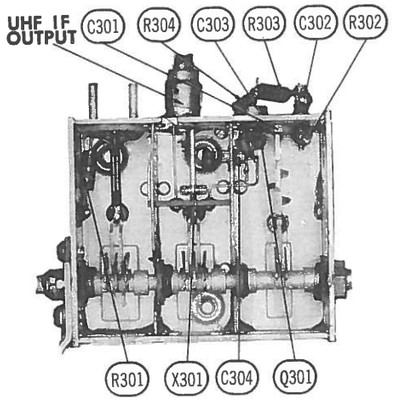
No color sync: V21 Thru V23
No Green: V19
No blue: V17,V20
No red: V18,V20
Incorrect hue (tint): V17,V18

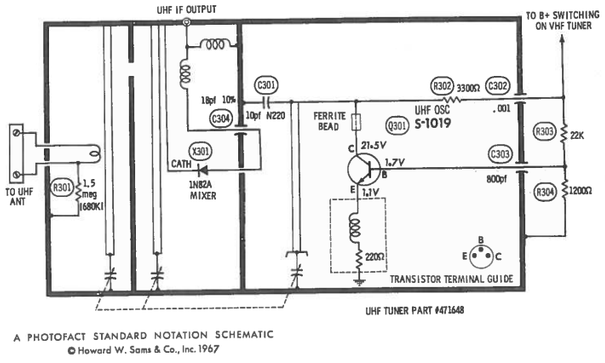
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12
V1	6JH6	222K	1547Ω	FIL	FIL	193Ω ▲	193Ω▲	1500Ω					
V2	6GM6	70K	INF	FIL	FIL	3416Ω†	3416Ω†	43Ω ▲					
V3	6EJ7/ EF184	180Ω	0Ω	180Ω	FIL	FIL	0Ω	2586Ω†	2586Ω	0Ω			
V4	6LF8	0Ω	20K	5100Ω	FIL	FIL.	22Ω	1200Ω ●	33K †	8600Ω †			
V5	12BY7A	368Ω	490K	0Ω	FIL	FIL	FIL	6000Ω †	23K †	0Ω			
V6	6KA8	69K	4meg	3700Ω	FIL	FIL	38K	474K	37K	664K			
V7	6EW6	5.5Ω	270Ω	FIL	FIL	13K †	13K †	0Ω					
V8	6HZ6	4.5Ω	270Ω	FIL	FIL	561K †	6416Ω †	470K					
V9	6AQ5A	NC	270Ω	FIL	FIL	4806Ω †	3116Ω †	310K					
V10	6GF7	0Ω	2.8meg	2400Ω	FIL	FIL	1810Ω †	NC	3.8meg	450K			
V11	6FQ7	33K	710K	1000Ω	FIL	FIL	61K †	220K	49Ω	FIL			
V12	6JE6	NC	2.5meg	0Ω	FIL	FIL	NC	13.1K †	1500Ω	NC			
V13	6DW4B	NC	18.3Ω ǂ	NC	FIL	FIL	NC	18.3Ω ǂ	NC	3meg			
V14	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE											Top Cap 570Ω ǂ
V15	6BK4A	1016Ω †	FIL	NC	NC	1.5meg	NC	FIL	NC				Top Cap INF
V16	6GH8A	370K	220K	4316Ω †	FIL	FIL	1616Ω †	390Ω	0Ω	10.5meg			
V17	6GY6	130Ω	100Ω	FIL	FIL	5016Ω †	3172Ω †	1.8Ω					
V18	6GY6	130Ω	150Ω	FIL	FIL	5016Ω †	3172Ω †	.3Ω					
V19	6GU7	47K †	240K	390Ω	FIL	FIL	27K †	1meg	270Ω	0Ω			
V20	6GU7	26.5K	1meg	270Ω	FIL	FIL	26.5K †	1meg	270Ω	0Ω			
V21	6EW6	32K	39K	FIL	FIL	1016Ω †	1116Ω †	39K					
V22	6JU8	1meg ††	220Ω	1meg ††	FIL	FIL	FIL	11.5meg	22K	11.5meg			
V23	6GH8A	20K	47K	48K †	FIL	FIL	7916Ω †	0Ω	680Ω	INF			
V24	23EGP22	FIL	5400Ω †	130K †	630K †	500K †	3300Ω †	135K †	NC	71meg	NC	3700Ω †	120K †
V201	6HQ5	3.5meg	0Ω	FIL	FIL	4416Ω †	0Ω	0Ω				PIN 13 540K †	PIN 14 FIL
V202	6GX7	0Ω	220K	0Ω	FIL	FIL	10.3K †	31K †	14K †	47K			
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

▲ MEASURED FROM PIN 2 OF V2 † MEASURED FROM THE OUTPUT OF X2 ǂ MEASURED FROM PIN 9 OF V13

†† MEASURED FROM PIN 9 OF V23 ● READING DEPENDS ON POLARITY OF METER CONNECTIONS. INF INFINITE NC NO CONNECTION





A PHOTOFACT STANDARD NOTATION SCHEMATIC
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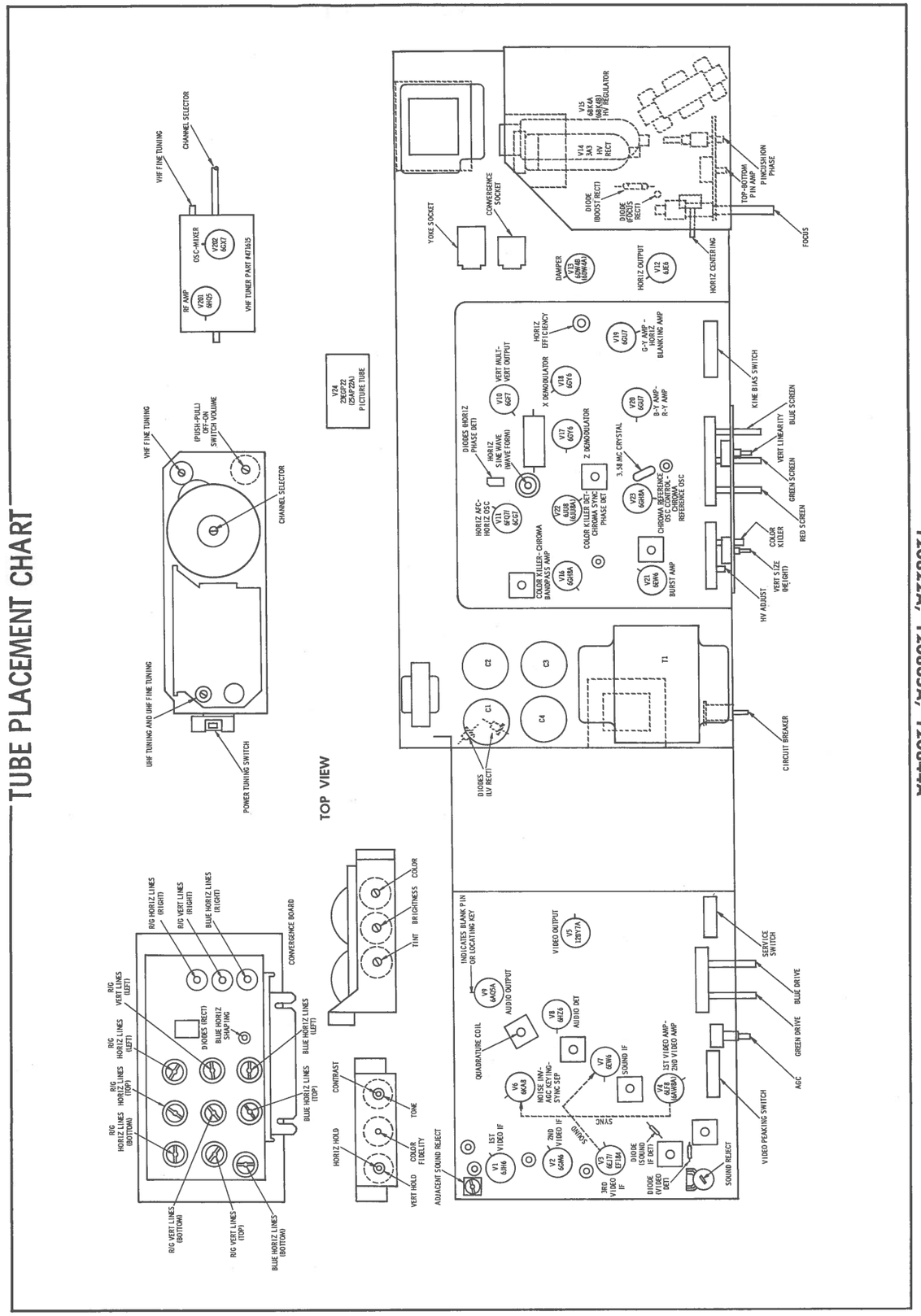
UHF TUNER 471648

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 ..... GENERAL CEMENT #8606, 8606L, 8869 .. WALSCO #2543, 2544, 2588
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 Mixer-Osc. test point Ⓤ on VHF tuner. Low side to ground.		41.25MC 47.25MC	A1,R17 A2,R16	Adjust for MINIMUM.
2.	Connect vertical input of a scope to point Ⓑ . Low side to ground.	Connect high side to Mixer-Osc. test point Ⓤ on VHF tuner. Low side to ground.	44MC (10MC Sweep)	41.25MC 42.17MC 42.75MC 45.00MC 45.75MC 47.25MC	A3,A4, A5,A6, Mixer Plate Coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 1.

4.5 MC TRAP ALIGNMENT

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

SOUND IF ALIGNMENT

Connect a TVTM thru a detector probe to point Ⓒ , pin 1, Audio Detector (V8). Tune in a TV station and adjust A7, A8, and A9 for maximum deflection. Remove VTVM. Reduce the signal at the antenna terminals until distortion occurs in the sound. Adjust A10 clockwise from the fully out position to the second peak for maximum sound. Continue to reduce the signal and adjust A10 for MINIMUM distortion and maximum sound until no further improvement can be made.

CHROMA BANDPASS ALIGNMENT

The following alignment will require the use of an RF Modulator (RCA WG304A or equivalent). Connect a -15V supply to point Ⓓ , off pin 9, Color Killer (V16). Connect a -2V supply to point Ⓔ , off pin 2, Chroma Bandpass Amp. (V16). Connect a -15V supply to point Ⓕ , off pin 6, AGC Keying (V6). Connect a -40V supply to pin 2 of Horizontal Blanking Amp. (V19), positive of all supplies to ground. Connect a jumper from point Ⓐ , off pin 1, 1st Video IF (V1) to ground. Turn the Color Intensity to maximum. Open cathode circuit of Horizontal Output tube (V12).

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	High side thru .1mfd to grid of Bandpass Amp., V16. Low side to ground.	3.58MC (3-5MC Sweep)	3.08MC 4.08MC		Vert. Amp. thru detector probe to pin 1 of demodulators point Ⓖ . 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 Modulator. High side of signal gen. (set @ 45.75MC) to picture carrier input. Output of RF Modulator to Mixer Grid test point on tuner. Low side to ground.	Sweep Generator to 3MC (6MC Sweep)			"	A14	Adjust for response curve similar to Fig.3. If necessary, retouch A12 to flatten top of response.

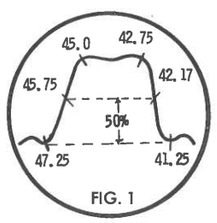


FIG. 1

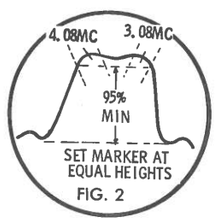


FIG. 2

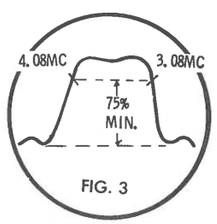


FIG. 3

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect:
A 0-500 ma meter in series with cathode lead of horizontal output tube.
A .47 mfd capacitor across meter.
A VTVM across HV Regulator Tube (6BK4A) Cathode resistor, R141 (1000Ω).
A VTVM through a high voltage probe to Picture Tube Anode connector, point Ⓗ , off pin 2, Sync Separator (V6) to ground.
A short across Horizontal Sine Wave coil (pin 8 of V11 to ground).

Tune in a TV station and set all controls for normal operation. Adjust the Horizontal Hold control until the picture floats with blanking bars vertical. Remove the short from the Horizontal Oscillator cathode and adjust B1 until the picture floats horizontally. Remove the short from point Ⓗ . Adjust the Horizontal Linearity coil for MINIMUM current in the Horizontal Output tube. (Current should not exceed 220 ma.)

Adjust the High Voltage control for 25KV on picture tube anode with normal brightness. Check the voltage on the VTVM across the HV Regulator Tube Cathode resistor. This voltage should be at least 1.1 volt with MINIMUM brightness. If voltage is less than 1.1 volt, turn Horizontal Linearity slug slightly to obtain 1.1 volt. Check to see that the horizontal output current does not exceed 220 ma. If foldover occurs in picture, adjust Horizontal Linearity clockwise to eliminate foldover while checking to make sure horizontal output current does not exceed 220 ma.

Adjust Focus, Horizontal Centering, 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 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 receiver for normal reception. Short pin 1 of Burst Amp. (V21) to ground.

Connect DC probe to VTVM throguh 470K to pin 1 of Phase Detector (V22). Adjust A15 for maximum deflection on VTVM. If no reading is obtained, oscillator is not operating. Adjust A16 to start oscillator, then adjust A15 for maximum. Remove the 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 (V23) 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 Ⓚ , pin 3 of picture tube. Check for proper waveform with the color bar generator being used.

COLOR AFC ALIGNMENT (CONTINUED)

See waveform on schematic for pattern obtained from a standard N.T.S.C. signal. Check range of the Tint control. The bars should move 30° either side of proper signal. If necessary, retouch A17 for proper range of control.

Check for proper waveform at G-Y and B-Y outputs (point Ⓛ , pin 7 of picture tube and point Ⓜ , pin 12 of picture tube). Tune in a weak signal or reduce signal at the antenna terminals to obtain a snowy picture. Adjust Color Killer control to eliminate the color in the snow. Check with a color signal to make sure the killer is not eliminating picture coloring.

PURITY ADJUSTMENTS

Perform step 1 of "Convergence Adjustments". If the picture tube appears to be magnetized, use a degaussing coil to demagnetize tube and mounting brackets.

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

Adjust the tabs on the Purity magnet ring 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 to MINIMUM. Set the Color Fidelity control to its mechanical center. Switch Kine Bias switch to position 1 (right). Turn the Red, Blue, and Green Screen controls fully counterclockwise. Move the Normal-Service switch to Service position. Advance the screen controls, one at a time, until each produces a barely visible line on the screen.

If one or more controls fail to produce a line, change the Kine Bias switch to position 2 (center) or possibly position 3 (left) and begin again. Return the Normal-Service switch to Normal position. Adjust the Blue and Green Drive controls to eliminate coloring in the dark and bright areas of the picture.

BLUE HORIZONTAL SHAPING COIL

Connect high side of a scope to junction of R225, L44, C155, and CircuiTrace, 136 (located on Convergence panel, low side to ground). Adjust Blue Horizontal Shaping coil, L44, slug until the harmonic bump is at the 50% point on the wave slope. See Fig. 4.

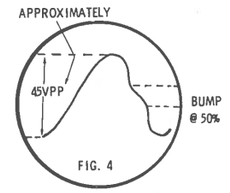


FIG. 4

DYNAMIC PINCUSHION ADJUSTMENTS

The Side Pincushion is a fixed correction and no adjustments are provided. If necessary, Top and Bottom Pincushion may be corrected by adjusting for straight horizontal lines at top and bottom of the screen. Connect a crosshatch generator to the antenna terminals and adjust the set for normal crosshatch pattern. Turn the Top-Bottom Pincushion Adjust control (R12) fully clockwise. Adjust Top-Bottom Pincushion Phase coil (L40) to move curvature to the center of the screen. Readjust Top-Bottom Pincushion Amp. for straight horizontal lines at top and bottom of screen. Repeat if necessary.

CONVERGENCE ADJUSTMENTS

Step	Control	Use to Converge (or Straighten)	Remarks
1.			Perform center dot convergence using convergence magnets. If more range is needed, rotate magnet 180°. 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 Line , 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.	Tocuh 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).

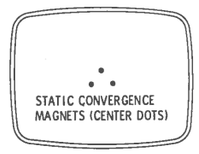


FIG. A

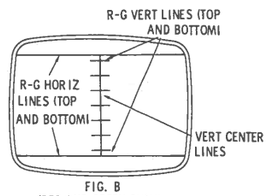


FIG. B
(RED AND GREEN ONLY)

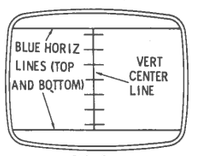
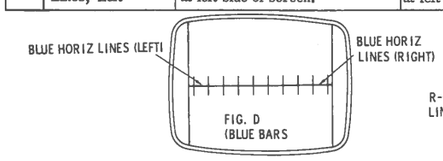
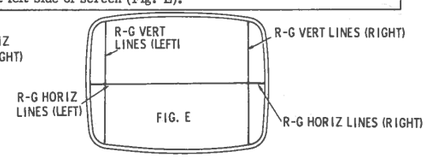


FIG. C
(BLUE BARS)

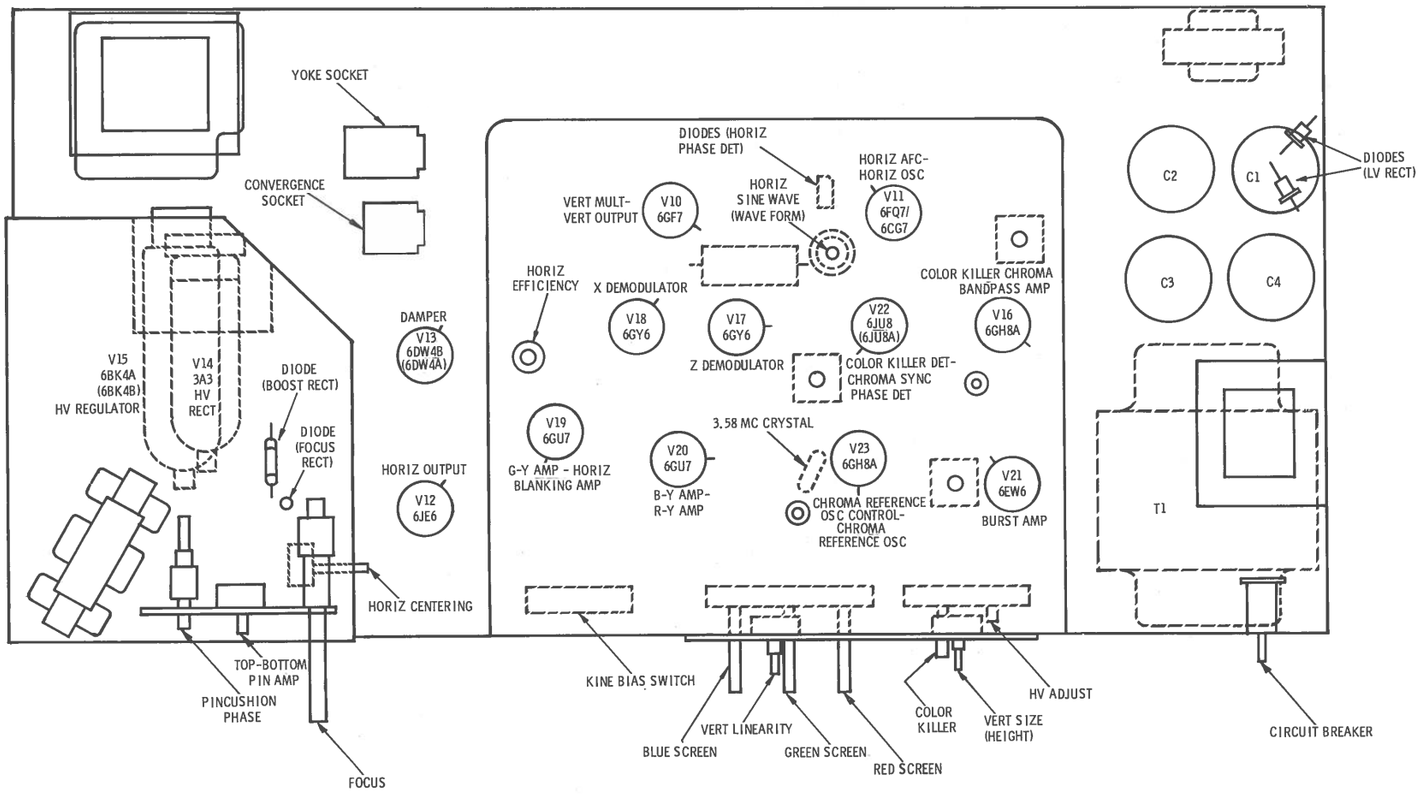


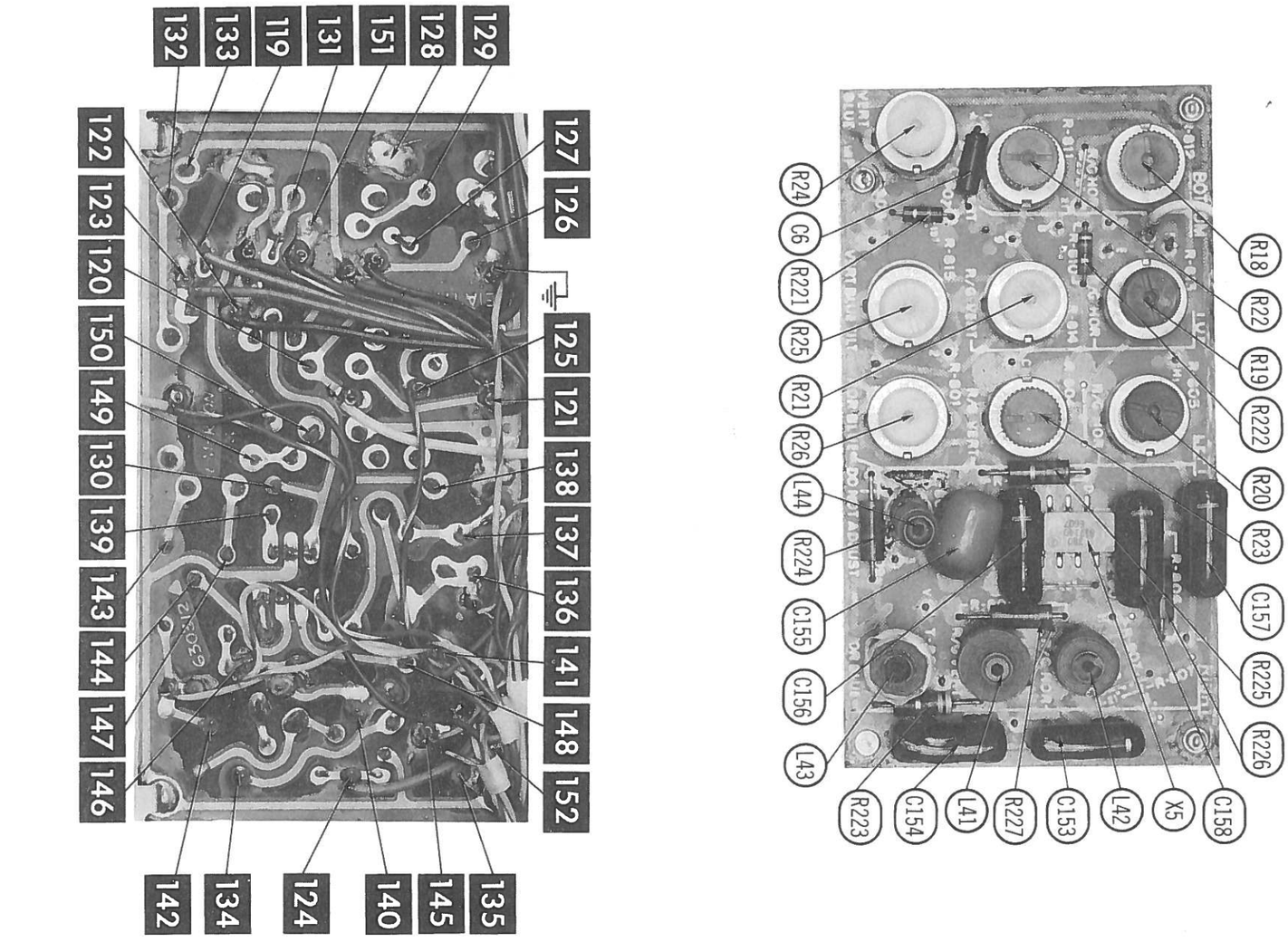


TUBE PLACEMENT CHART

V24
23EGP22
(25AP22A)
PICTURE TUBE

BOTTOM VIEW





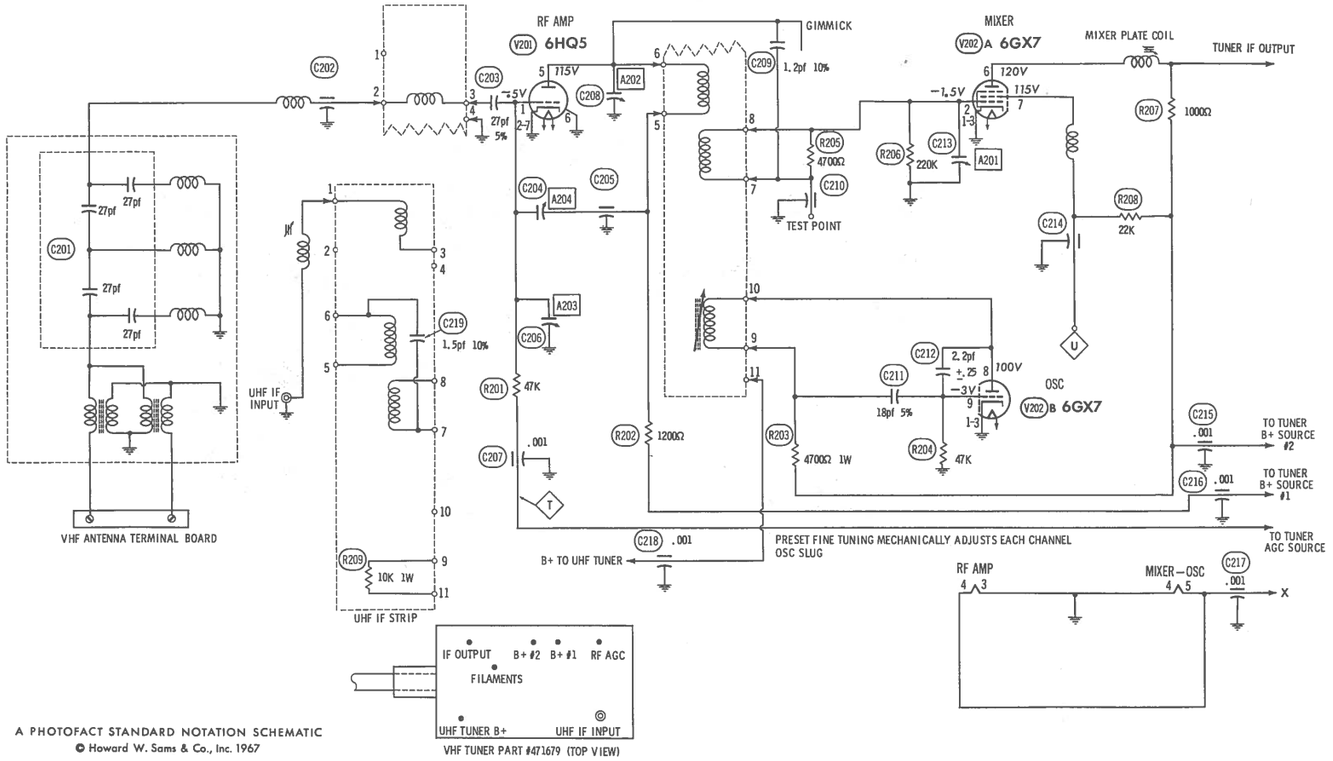
A Howard W. Sams CIRCUITRACE® Photo

CONVERGENCE BOARD

EMERSON CHASSIS
120822A, 12083SA, 120844A

FOLDER 3

SET 871 FOLDER 3



A PHOTOFACT STANDARD NOTATION SCHEMATIC

VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201 thru A204 ... 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

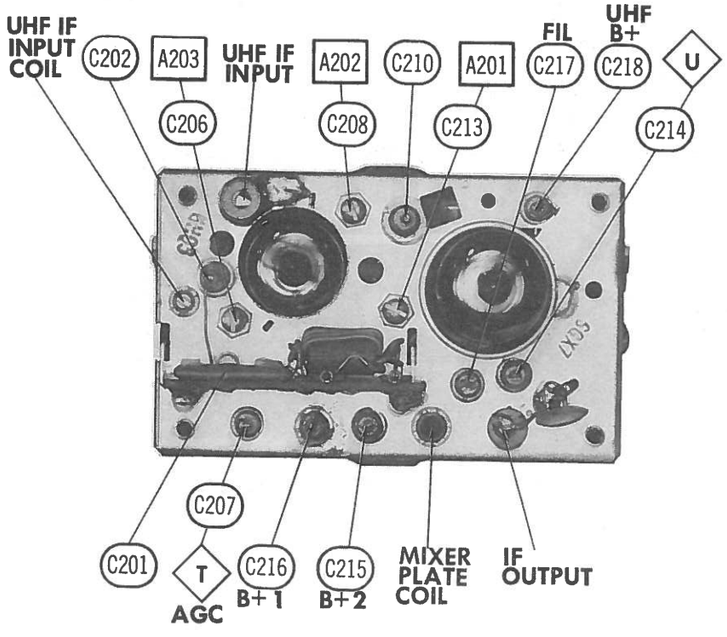
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use 10MC sweep unless otherwise noted.
Connect a variable bias to the RF AGC line at point (T). Adjust bias to obtain response curve which shows no indication of overloading.

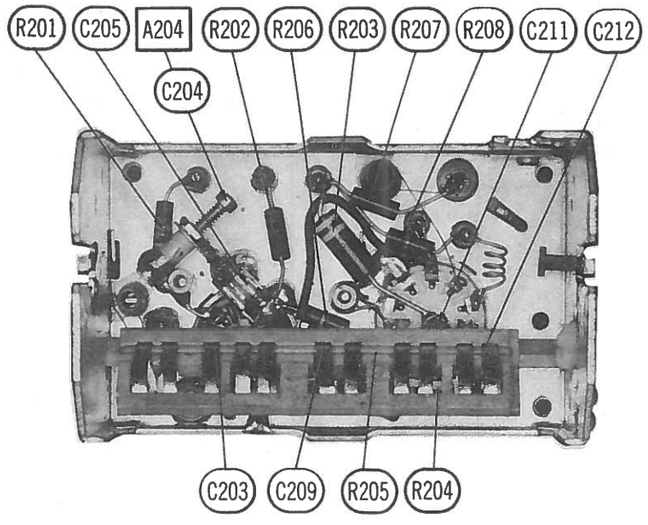
	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point (U), low side to ground	A201, A202, A203	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
2.	"	195MC	193.25MC 197.75MC	10	Across Video Det. load resistor.	A204	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3.	"	See Chart	See Chart	12 thru 2	Vert. Input to Point (U), low side to ground.		Reduce bias. Check all channels for response similar to Fig. 201. Make compromise adjustments of A201, A202 and A203.

CHANNEL & FREQUENCY CHART

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

FIG. 201





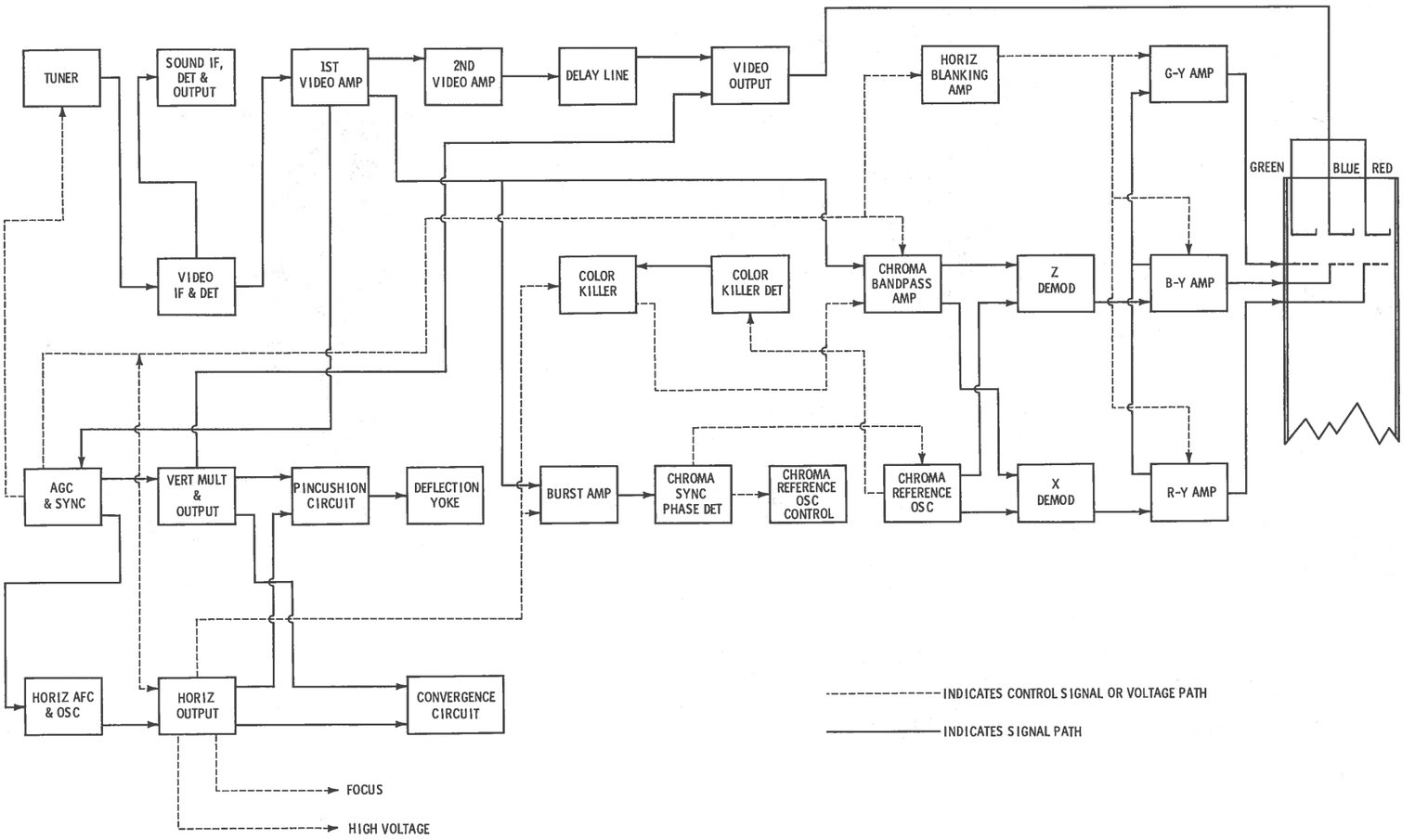
VHF TUNER PARTS LIST

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
	◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆				
V201	RF Amp.	6HQ5	V202	Mixer - Osc.	6GX7

CAPACITORS

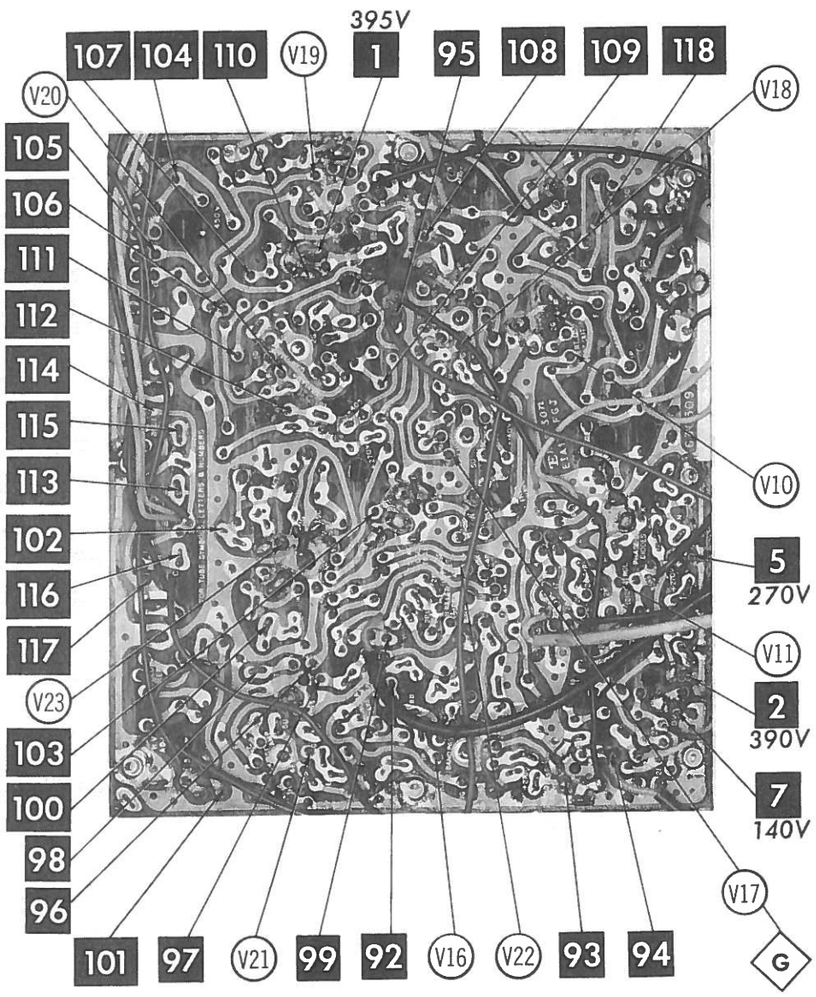
ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201A	27			DI-27	DD-270		CCD-270	GP427	10TS-Q27
B	27			DI-27	DD-270		CCD-270	GP427	10TS-Q27
C	27			DI-27	DD-270		CCD-270	GP427	10TS-Q27
D	27			DI-27	DD-270		CCD-270	GP427	10TS-Q27
C202									
C203	27	5%			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C204									
C205									
C206									
C207	.001			EF-001	MFT-1000		CCF-102	CT280A	
C208									
C209	1.2	10%							
C210									
C211	18	5%			TCZ-18	CY601CG180J	CCTO-180	CNO418	10TCC-Q18
C212	2.2	±.25		NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C213									
C214									
C215	.001			EF-001	MFT-1000		CCF-102	CT280A	
C216	.001			EF-001	MFT-1000		CCF-102	CT280A	
C217	.001			EF-001	MFT-1000		CCF-102	CT280A	
C218	.001			EF-001	MFT-1000		CCF-102	CT280A	
C219	1.5	10%		NPO-DI 1.5	DTZ-1R5			CNO515	10TCC-V15



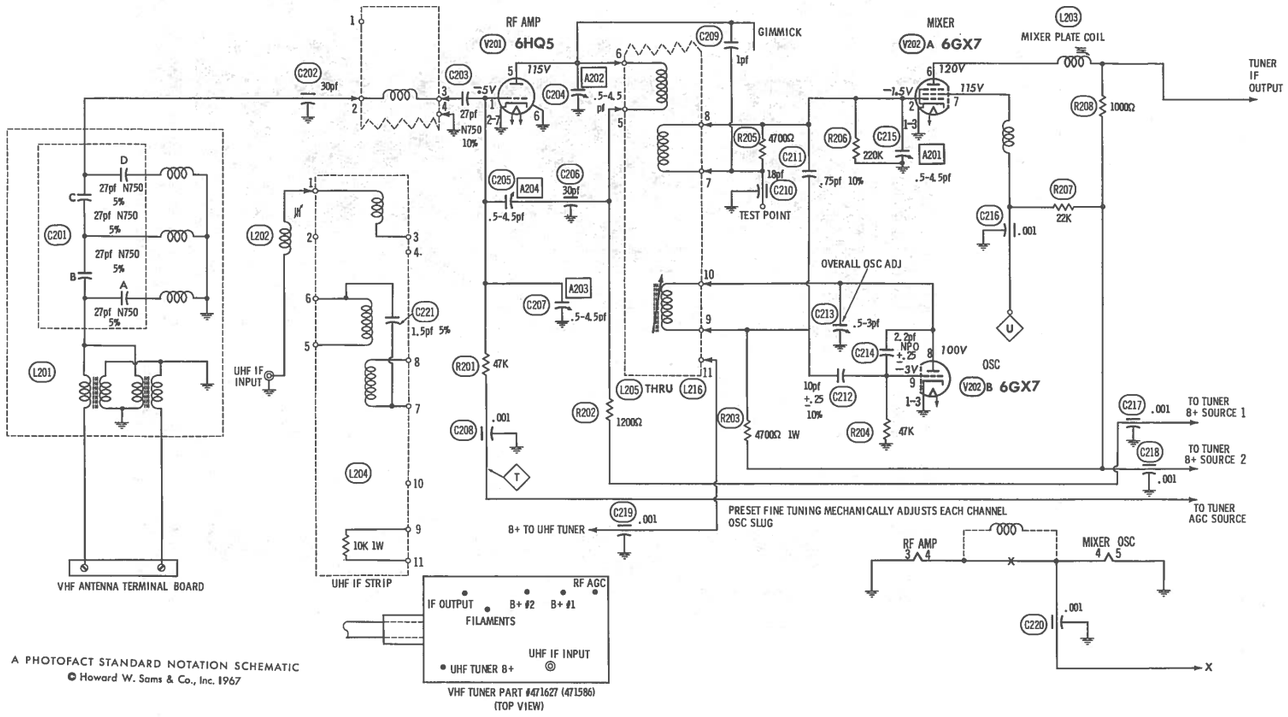
BLOCK DIAGRAM

A Howard W. Sams CIRCUITRACE® Photo

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



CHROMA — SWEEP BOARD



A PHOTOFACT STANDARD NOTATION SCHEMATIC

VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201, A202, A203, A204 ... GENERAL CEMENT #8868, 8987, 9089 ... WALSCO #2531-X, 2541, 2587

OSCILLATOR ADJUSTMENTS

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

RF AND MIXER ALIGNMENT

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

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point (U), low side to ground	A201, A202, A203	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.	A204	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3.	"	See Chart	See Chart	12 thru 2	Vert. Input to Point (U), low side to ground.		Decrease bias. Check response on all channels and make compromise adjustment of A201, A202 and A203 if necessary.

CHANNEL & FREQUENCY CHART

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

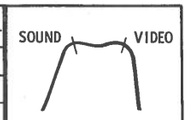
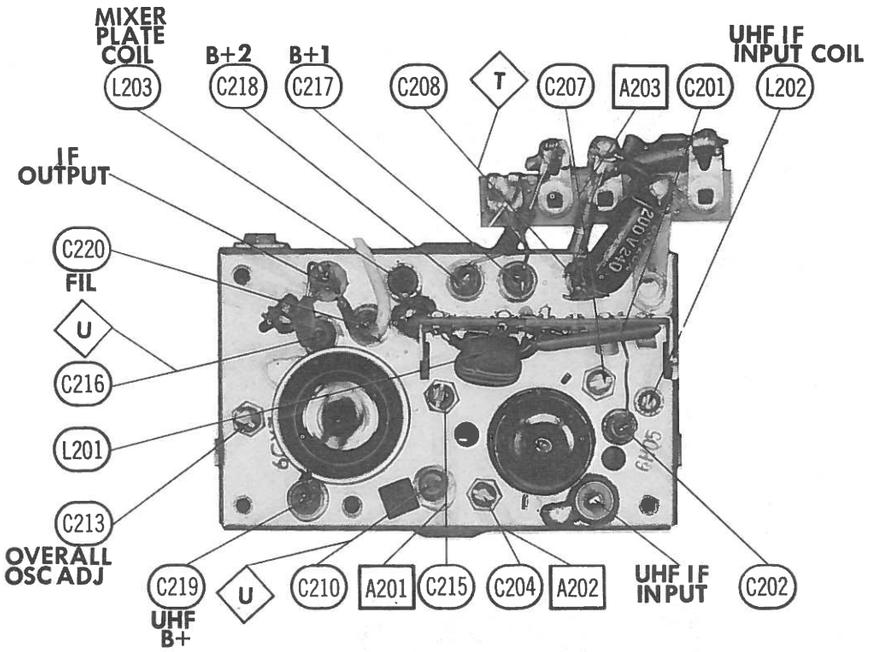


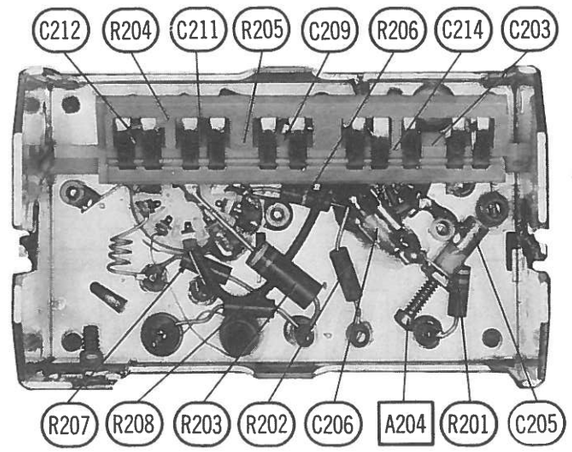
FIG. 201

UHF TUNER ALIGNMENT INSTRUCTIONS

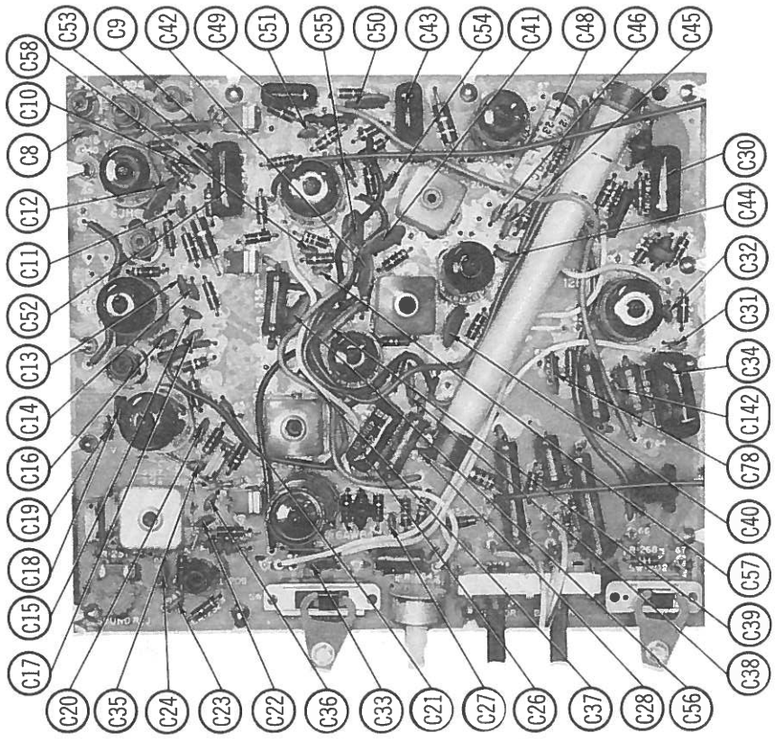
UHF TUNER 471646 — Tune to a UHF station and adjust UHF IF Input Coil for best picture and sound.

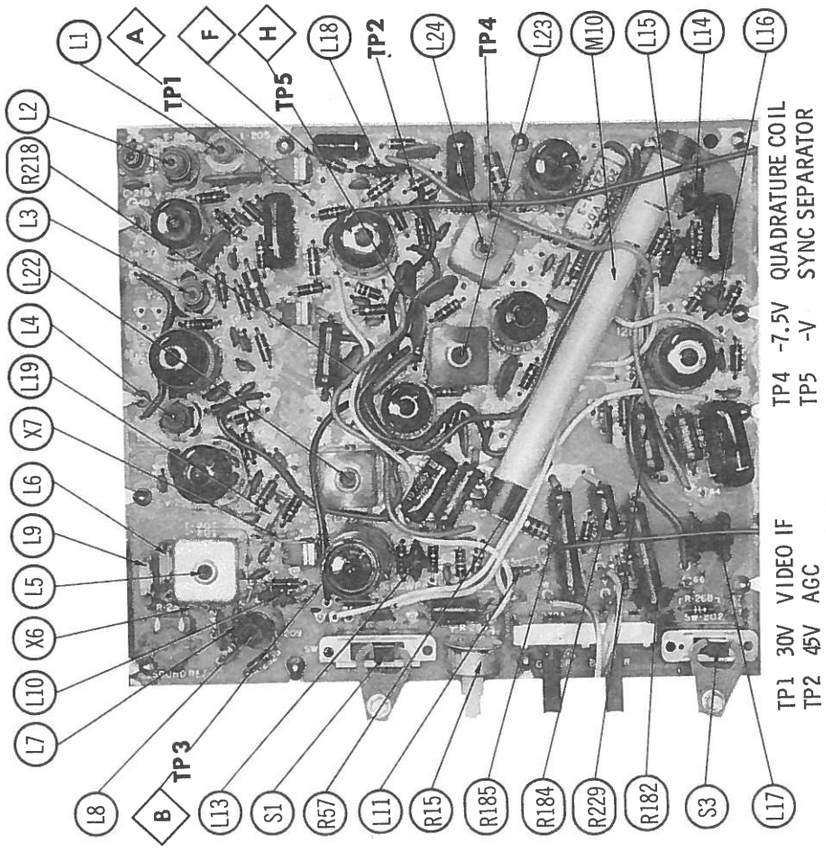
UHF TUNER 471567 — Tune to a UHF station and adjust UHF IF Input Coil for best picture and sound. Tune UHF Channel Selector to the lowest UHF channel operating in the area (low end of the dial). Adjust UHF Low Channel Oscillator Trimmer for best picture and sound.





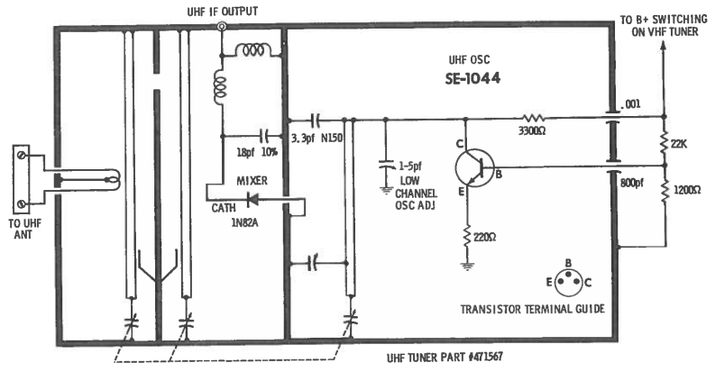
VHF TUNER 471627





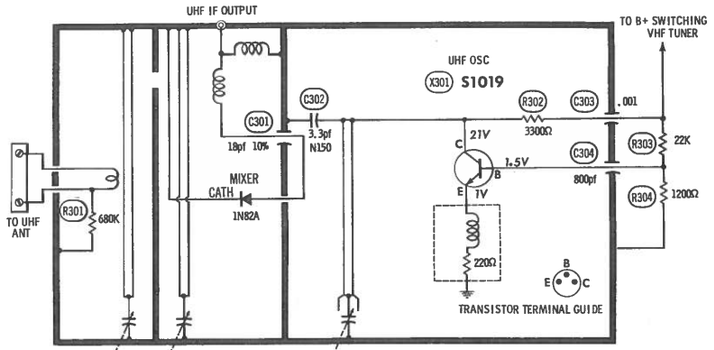
TP1 30V VIDEO IF
TP2 45V AGC
TP3 -2V VIDEO AMP
TP4 -7.5V QUADRATURE COIL
TP5 -V SYNC SEPARATOR

AUDIO — VIDEO BOARD

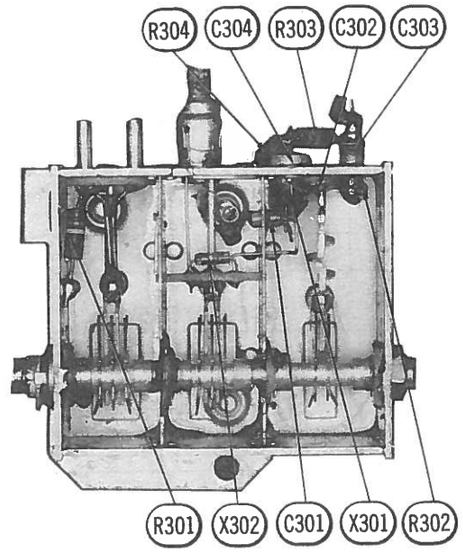


A PHOTOFACT STANDARD NOTATION SCHEMATIC

UHF TUNER 471567



A PHOTOFACT STANDARD NOTATION SCHEMATIC



TUNER 471646

VHF TUNER PARTS LIST

VHF TUNER 471615

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V201	RF Amp.	6HQ5
V202	Mixer - Osc.	6GX7

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.
C201A	27 NPO			TCZ-27		CCTO-270	CNO427	10TCC-Q27
B	27 NPO			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C	27 NPO			TCZ-27		CCTO-270	CNO427	10TCC-Q27
D	27 NPO			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C202								
C203	27 5%		DI-27	DD-270		CCD-270	GP427	10TS-Q27
C204								
C205								
C206								
C207	.001		EF-001	MFT-1000		CCF-102	CT280A	
C208								
C209	1.5 10%		NPO-DI 1.5	DTZ-1R5			CNO515	10TCC-V15
C210								
C211	10 N220 ±.5					*	*	10TCR-Q10
C212	2.2		NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C213								
C214	.75pf 10%							
C215								
C216								
C217	.001		EF-001	MFT-1000		CCF-102	CT280A	
C218	.001		EF-001	MFT-1000		CCF-102	CT280A	
C219	.002		EF-001	MFT-1000		CCF-102	CT280A	
C220	.001		EF-001	MFT-1000		CCF-102	CT280A	
C221	1.5 10%		NPO-DI 1.5	DTZ-1R5			CNO515	10TCC-V15

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

UHF TUNER PARTS LIST

UHF TUNER 471648

TRANSISTORS

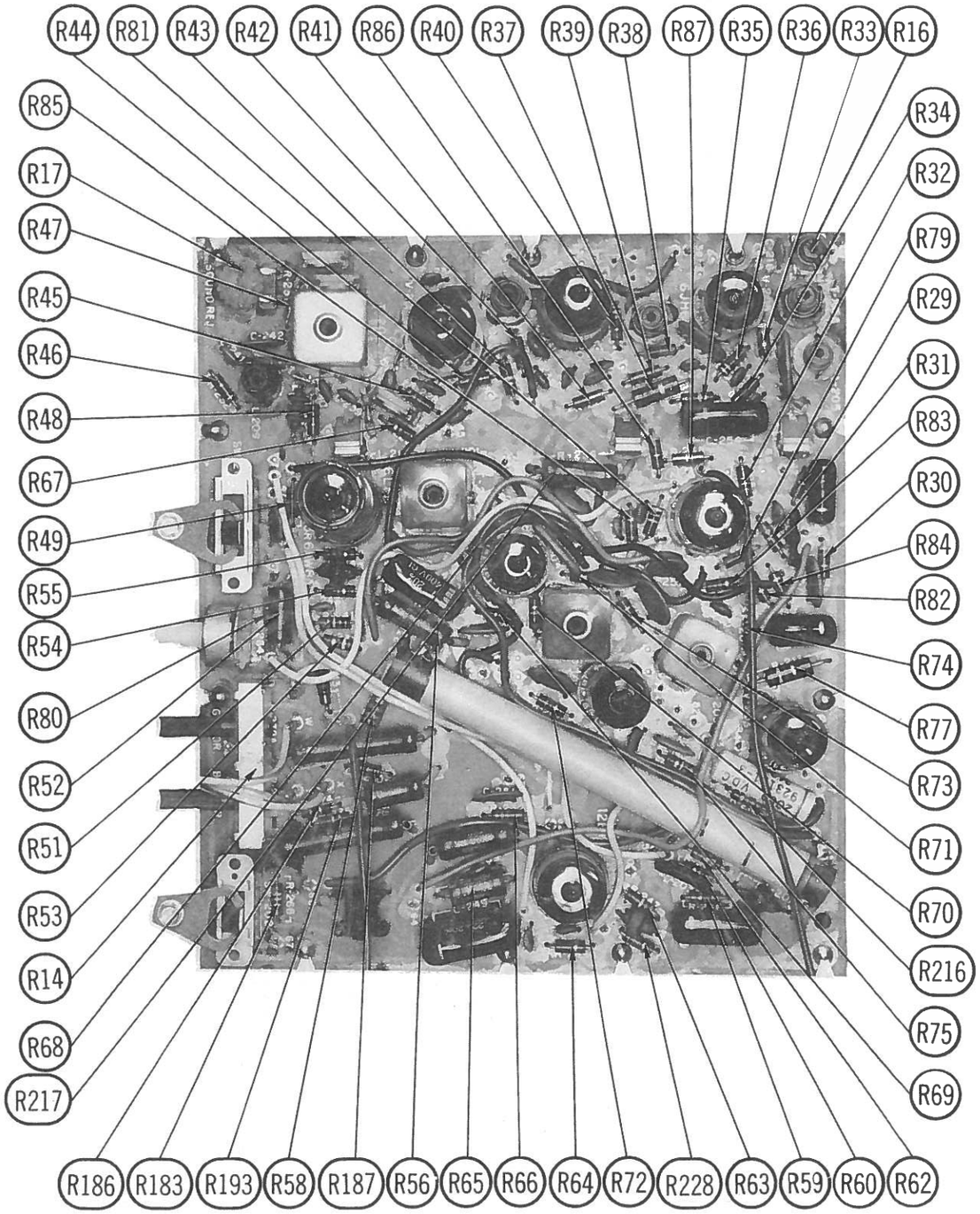
ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
Q301	S-1019	UHF Oscillator		GE-11		NPN EMERSON Part #965000

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X301		964999 (1N82A)	1N82A	1N82A			

CAPACITORS

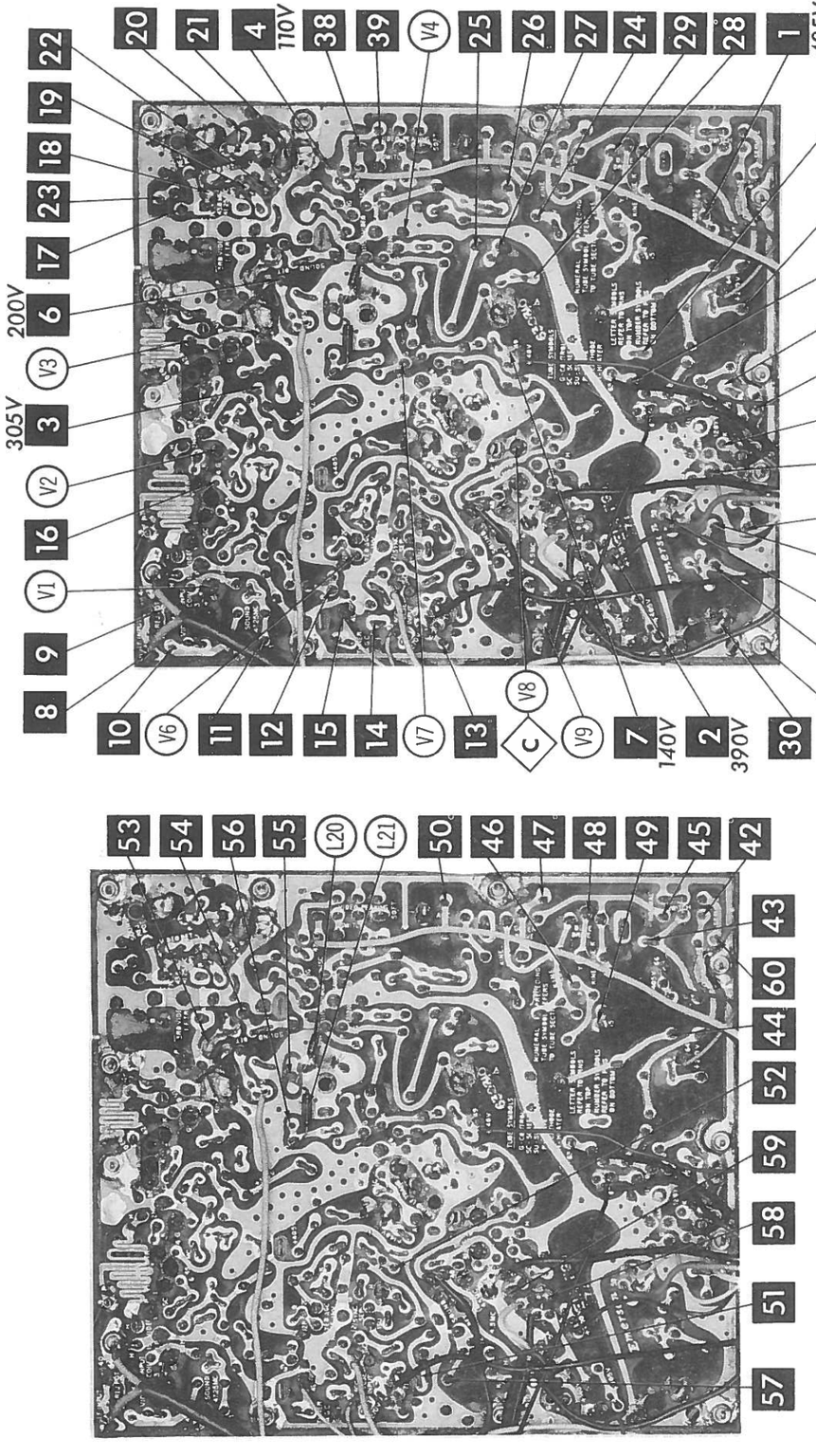
ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	10 N220	#964994	EF-001	MFT-1000		CCF-102	CT280A	
C302	.001	#964998						
C303	800	#964993						
C304	18 10%	#964995						



AUDIO – VIDEO BOARD

EMERSON CHASSIS 120822A, 120835A, 120844A

FOLDER 3



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

AUDIO — VIDEO BOARD

VHF TUNER PARTS LIST

VHF TUNER 471586, 471627

TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6HQ5	V202	Mixer - Osc.	6GX7

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.
C201A	27 N750 5%			TCN-27			CN7427	10TCU-Q27
B	27 N750 5%			TCN-27			CN7427	10TCU-Q27
C	27 N750 5%			TCN-27			CN7427	10TCU-Q27
D	27 N750 5%			TCN-27			CN7427	10TCU-Q27
C202	30							
C203	27 N750 10%			TCN-27			CN7427	10TCU-Q27
C204	.5-4.5	#964696						
C205	.5-4.5	#964696						
C206	30							
C207	.5-4.5	#964696						
C208	.001		EF-001	MFT-1000		CCF-102	CT280A	
C209	1		NPO-DI 1.0	TCZ-1			CNO510	10TCC-V10
C210	18			TCZ-18	CY601CG180J	CCTO-180	CNO418	10TCC-Q18
C211	.75pf 10%			TCZ-R68				
C212	10 ±.25		NPO-DI 10	DTZ-10	CZ601CG100K	CCTO-100	CNO410	10TCC-Q10
C213	.5-3	#964578		829-3		CV-1	CT565	
C214	2.2 NPO ±.25		NPO-DI 2.2	DTZ-2R2	CZ601CJ2R2D	CCTO-2R2	CNO522	10TCC-V22
C215	.5-4.5	#964696						
C216	.001		EF-001	MFT-1000		CCF-102	CT280A	
C217	.001		EF-001	MFT-1000		CCF-102	CT280A	
C218	.001		EF-001	MFT-1000		CCF-102	CT280A	
C219	.001		EF-001	MFT-1000		CCF-102	CT280A	
C220	.001		EF-001	MFT-1000		CCF-102	CT280A	
C221	1.5 5%		NPO-DI 1.5	DTZ-1R5			CNO515	10TCC-V15

Emerson Part Number

COILS (RF-IF)

ITEM No.	USE	EMERSON PART No.	NOTES
L201	Ant. Input	964680	Complete Ass'y
L202	UHF Input	964695	
L203	Mixer Plate	964711	
L204	UHF Strip	964738	
L205	Ant., RF, Mixer, Osc.	964682	Channel 2 Strip
L206	"	964683	" 3 "
L207	"	964684	" 4 "
L208	"	964685	" 5 "
L209	Ant., RF, Mixer, Osc.	964686	Channel 6 Strip
L210	"	964687	" 7 "
L211	"	964688	" 8 "
L212	"	964689	" 9 "
L213	"	964690	" 10 "
L214	"	964691	" 11 "
L215	"	964692	" 12 "
L216	"	964693	" 13 "

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
	Fine Tuning Ass'y	964704	
	Gear	964700	Fine Tuning (Small)
	Gear	964699	Fine Tuning (Large)
	Shaft	964698	Fine Tuning
	Gear	965023	UHF Indicator
	Clutch	965022	UHF Tuning
	Cam	965021	Fine Tuning

UHF TUNER PARTS LIST

UHF TUNER 471646

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA: DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	NOTES
X301	S1019	UHF Oscillator				

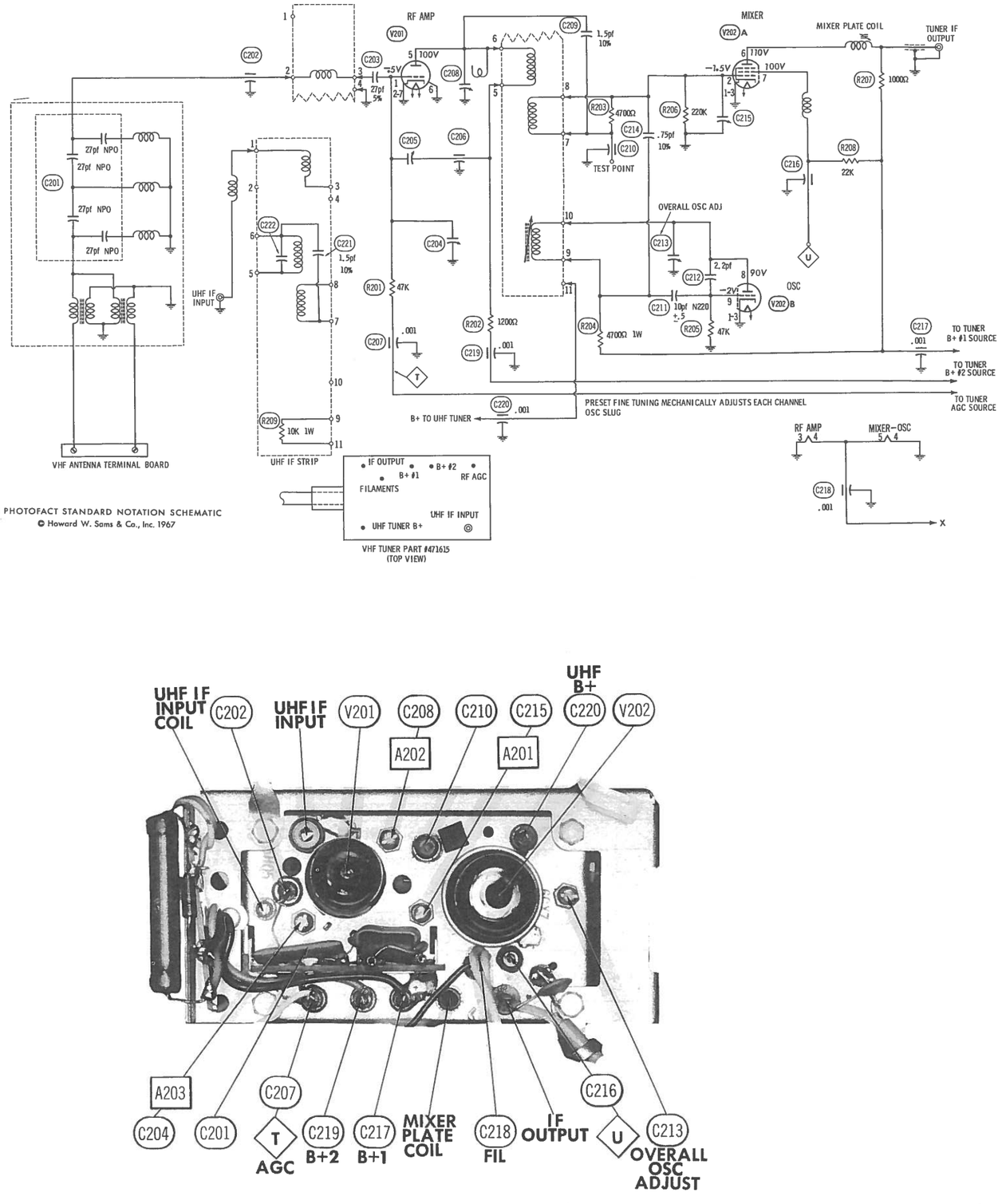
POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES: GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RECTIFIERS: MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X302		1N82A	1N82A	1N82A			

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	18	#964995						
C302	3.3		NPO-DI 3.3	DTZ-3R3		CCTO-3R3	CNO533	10TCC-V33
C303	.001		EF-001	MFT-1000		CCF-102	CT280A	
C304	800	#964993						

Emerson Part Number



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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. If any channel cannot be properly tuned in with the fine tuning, adjust overall oscillator adjustment and recheck all available channels.

RF AND MIXER ALIGNMENT

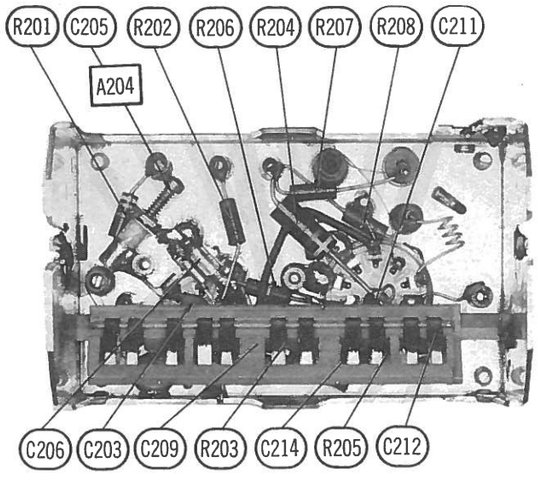
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use 10MC sweep unless otherwise noted.
Connect a variable bias to the RF AGC line at point (T). Adjust bias to obtain response curve which shows no indication of overloading.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point (U), low side to ground	A201 A202 A203	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.	A204	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3.	"	See Chart	See Chart	12 thru 2	Vert. Input to Point (U), low side to ground.		Decrease bias. Check all channels for response similar to Fig. 201. Make compromise adjustments of A201, A202 & A203.

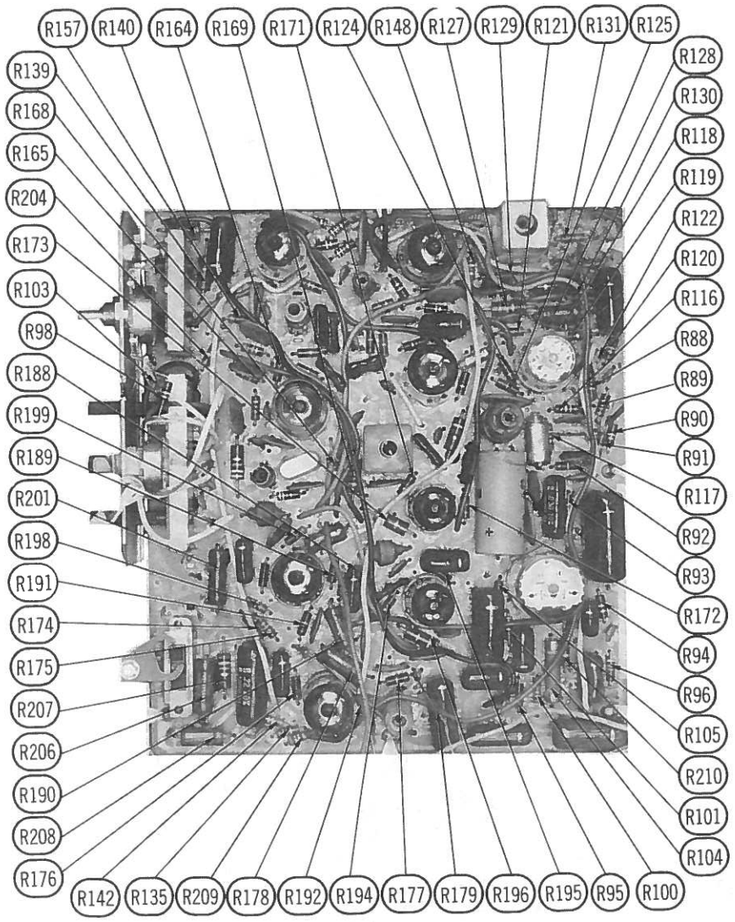
CHANNEL & FREQUENCY CHART

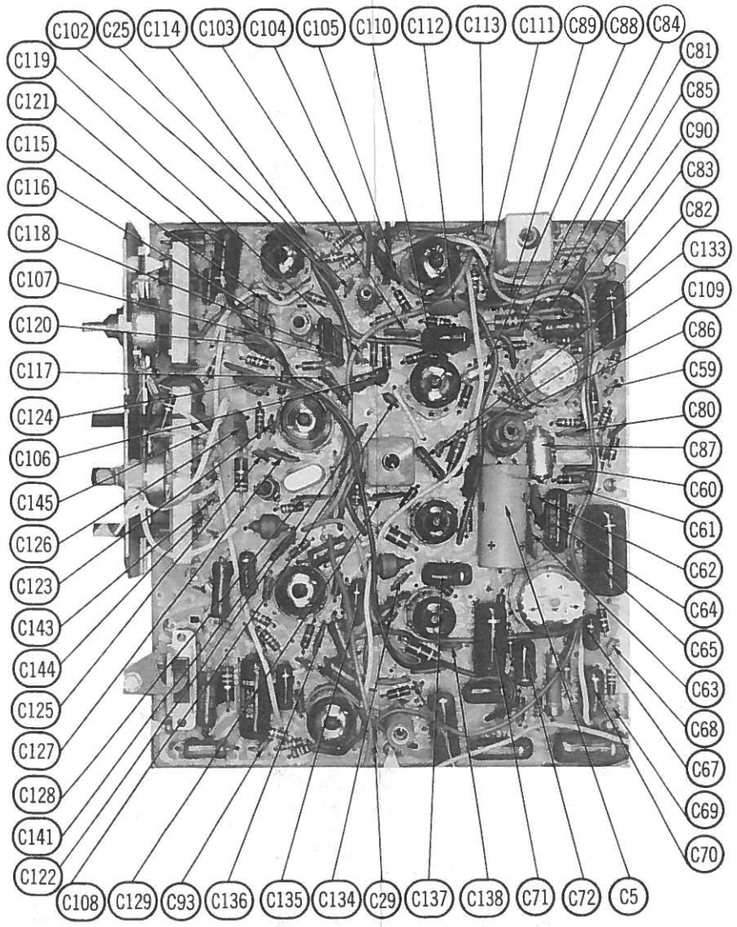
SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL
57MC	55.25MC 59.75MC	2	85MC	83.25MC 87.75MC	6	195MC	193.25MC 197.75MC	10
63MC	61.25MC 65.75MC	3	177MC	175.25MC 179.75MC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

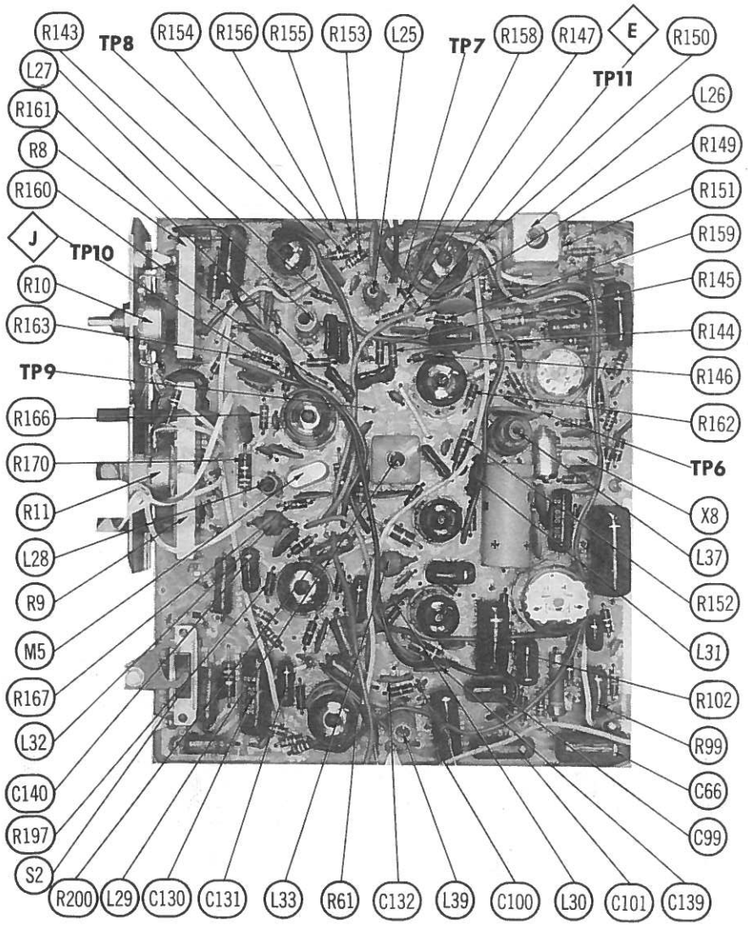
FIG. 201



VHF TUNER 471615







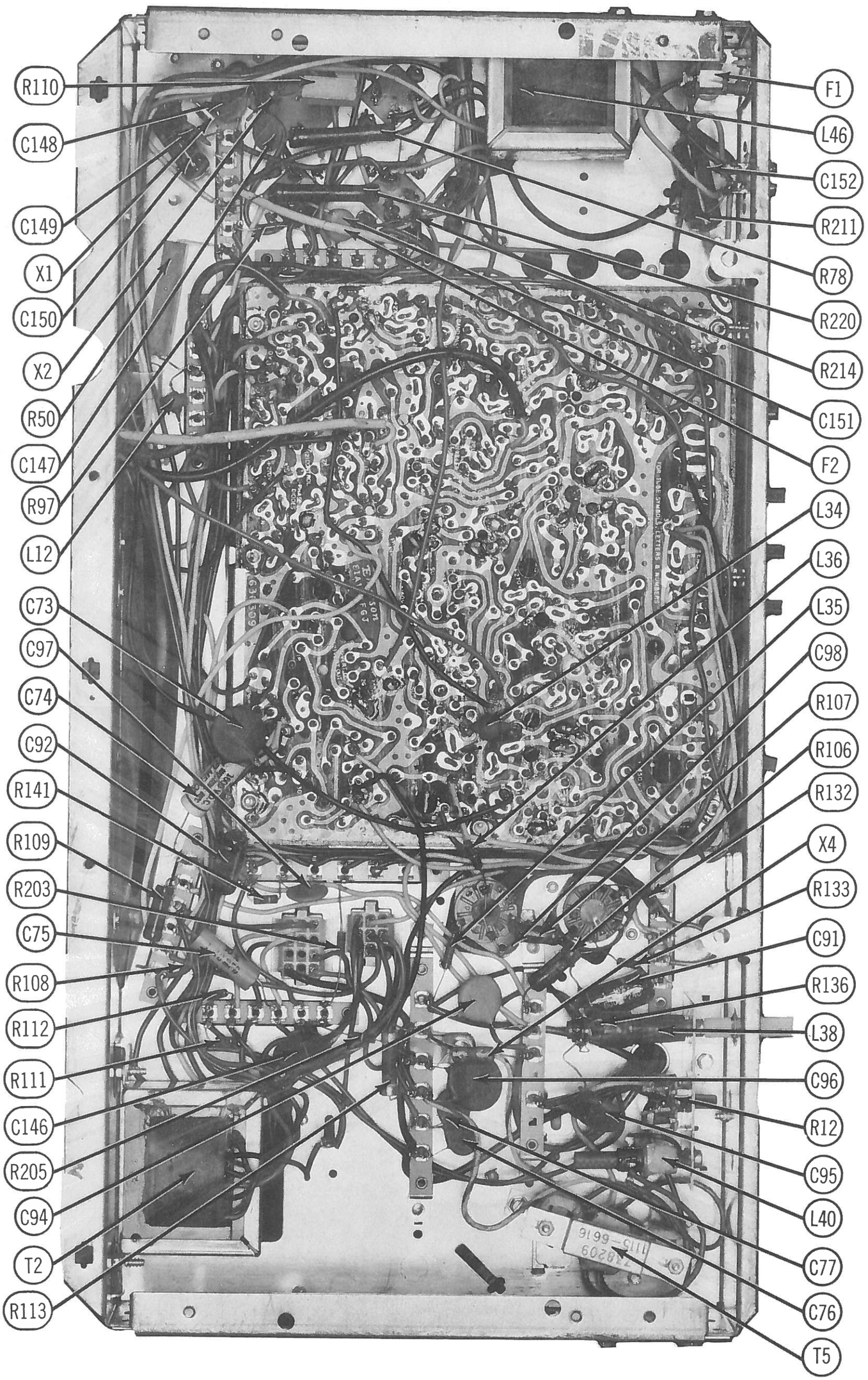
TP6 .1V HORIZ OSC
TP7 -10V CHROMA TAKEOFF
TP8 .2V BURST AMP

CHROMA — SWEEP BOARD

TP9 -65V CHROMA SYNC PHASE DETECTOR
TP10 0V
TP11 -11V

EMERSON CHASSIS
120822A, 120835A, 120844A

FOLDER 3



CHASSIS BOTTOM VIEW

EMERSON CHASSIS
120822A, 120835A, 120844A

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 (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		EMERSON PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L37A B	Horiz. Osc. (Freq.) & Waveform (Sine Wave)	708434		6349				TB177
L38	Focus	708461		6350		FC-5		TC289
L39	Horiz. Linearity(Effic.)	708462						
L40	Pincushion Phase	708464						
L41	Dynamic Convergence Right R/G Vert. Lines (2mh-6mh)	708436				WC-41		T149
L42	Dynamic Convergence Right R/G Horiz. lines (1.7mh-6mh)	708437						
L43	Dynamic Convergence Right Blue Horiz. line (Pri. 1.9mh-8.4mh) (Sec. 28uh-54uh)	708465						
L44	Blue Horiz. Shape	708468						
L45	Convergence Yoke Assembly	471654						
A	Blue Section							
B	Green Section							
C	Red Section							
	Alternate	461667						
	Alternate	471629						

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	EMERSON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L46	.44A DC	16Ω	.6 H	737057	C-4133	C-2708	26C81	C-40X	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	EMERSON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ 3A AC	150VAC @ .49A DC	6.3VAC @ 1.55A AC	730129	P-4141C	P-900C	26R150	R-300A	① Drill new mounting holes.
	SEC. 3	SEC. 4	SEC. 5						
	6.3VAC @11.5A AC								

*TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		EMERSON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	Vert. Output	738207					
T3	Yoke (Horiz. 12mh) 90° (Vert. 24mh)	708496					
	Alternate Yoke	708476					
T4	Horiz. Output	738214	HVO-234C	HO-601C		D-304	
T5	Pincushion (Top and Bottom)	738209					

*COMPONENT CONNECTION DATA

ORIGINAL →	HV TRANSFORMER	VERTICAL OUTPUT	YOKE
REPLACEMENT ↓	Original Connections	Original Connections	Original Connections
	P D C1 C2 F C B Blue		
MERIT	EXACT REPLACEMENT		
STANCOR	EXACT REPLACEMENT		
THORDARSON			
TRIAD	EXACT RE PLACEMENT		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	EMERSON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T6	17,700Ω	3-4Ω	734223	A-2901	A-8092	24S61	S-53X	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		EMERSON PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4" x 6" PM 3-4Ω	180314	PW4X6W3	46A07	Used in Models 23C01/02/03,23T01/02
	10" PM	180274			Used in Models 25K03/04
	8" PM	180165A			Used in Model 23K01
	3½" PM	180194			Used in Model 23K01
	3½" PM	180164B			Used in Model 23K01
	4" x 6" PM	180298			Used in Models 25C05/06/07/08 and 25K03/04

FUSE DEVICES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
F1	Circuit Breaker	2.1A	808022		8153.25			
F2	4" length of fuse wire							
F3	4" length of fuse wire							

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M1	VHF Tuner	471679	
	VHF Tuner	471615	
	VHF Tuner	471627	
M2	UHF Tuner	471648	
	UHF Tuner	471646	
M3	VHF Antenna	471677A	Used in Model 23T02, JFD Replacement TA-393.
	VHF Antenna	471675A	Used in Model 23T01, JFD Replacement TA-393.
M4	UHF Antenna	700142	Used in Models 23T01/02 only, JFD Replacement TA-544.
M5	Crystal	817147	3.58MC
M6	Spark Gap		
M7	Spark Gap		
M8	Spark Gap		
M9	Magnets	708469	Blue Lateral Assembly and Purity Rings
M10	Delay Line	709008	
M11	Motor	471668	Color Control
M12	Motor	471668	Tint Control
M13	Motor	471636	Tuning
M14	Degaussing Coil	708471	
S1	Switch	510234	Video Peaking
S2	Switch	510234	Kine Bias
S3	Switch	510235	Service
S4	Switch	510238	Power Tuning
S5	Switch	510237	Remote/Manual

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART #	MODEL 23C01	23C02	23C03	23K01	23T01	23T02	25C05	25C06	25C07	25C08	25K03	25K04
Cabinet Front	462365A	X	X	X	X	X							
Cabinet Front	462364A						X						
Mask	462307							X	X	X	X	X	X
Window, Plastic	462129							X	X	X	X	X	X
Knob, VHF Selector	462190	X	X	X	X	X	X						
Knob, VHF Selector	462040							X	X	X	X	X	X
Knob, Volume	461892A	X	X	X	X	X	X	X	X	X	X	X	X
Knob, UHF	462215	X	X	X	X	X	X						
Knob, UHF	462006F							X	X	X	X	X	X
Knob, Horiz. & Contrast	462316	X	X	X	X	X	X						
Knob, Vert. & Tone	462317	X	X	X	X	X	X						
Knob, Color	462325	X	X	X	X	X	X						
Knob, Color	462127							X	X	X	X	X	X
Knob, Color Fidelity	462331	X	X	X	X	X	X						
Knob, Brightness	462326	X	X	X	X	X	X						
Knob, Brightness	462125							X	X	X	X	X	X
Knob, Tint	462324	X	X	X	X	X	X						
Knob, Tint	462126							X	X	X	X	X	X
Knob, Auxilliary(4 req'd.)	462124A							X	X	X	X	X	X
Dial, Disc, VHF	462201	X	X	X	X	X	X						
Dial, UHF	462265							X	X	X	X	X	X
Dial, VHF	462036							X	X	X	X	X	X
Knob, Treble, Stereo, Funct. Bass, Loudness, Bal.	461829				X							X	X
Knob, Tuning AM-FM	461828				X							X	X

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869 (17KV) or 8868 (25KV)
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

PARTS LIST AND DESCRIPTION

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TUBES

◆ AMPEREX ◆ GENERAL ELECTRIC ◆ RCA ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
Q301	UHF Osc. (Transistor)	S-1019
V201	RF Amp.	6HQ5
V202	Mixer-Osc.	6GX7
V1	1st Video IF	6JH6
V2	2nd Video IF	6GM6
V3	3rd Video IF	6EJ7/EF184
V4	1st Video Amp. - 2nd Video Amp.	6LF8 (6AW8A) *
V5	Video Output	12BY7A
V6	Noise Inverter - AGC Keying - Sync Separator	6KA8
V7	Sound IF	6EW6
V8	Audio Detector	6HZ6
V9	Audio Output	6AQ5A
V10	Vert. Mult. - Vert. Output	6GF7
V11	Horiz. AFC - Horiz. Osc.	6FQ7/6CG7

ITEM No.	USE	TYPE
V12	Horiz. Output	6JE6
V13	Damper	6DW4B
V14	HV Rectifier	3A3
V15	HV Regulator	6BK4A
V16	Color Killer - Chroma Bandpass Amp.	6GH8A
V17	Z Demodulator	6GY6
V18	X Demodulator	6GY6
V19	G-Y Amp. - Horiz. Blanking Amp.	6GU7
V20	B-Y Amp. — R-Y Amp.	6GU7
V21	Burst Amp.	6EW6
V22	Color Killer Detector - Chroma Sync Phase Det.	6JU8
V23	Chroma Ref. Osc. Control - Chroma Reference Osc.	6GH8A

* Alternate

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	EMERSON PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V24	23EGP22 ③ 25AP22A ④	23EGP22 25AP22A ①	25AP22A ①	RE25AP22A ②	① Aluminized ② Color Bright "85"

③ Used in Models 23C01/02/03, 23K01, 23T01/02. ④ Used in Models 25C05/06/07/08, 25K03/04.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.490A	817122	GE-504A	SD600 or 5A6-D	1N1096 or VB600 ①	SK-3016 or SK-3017	F-6 or S-5860-2 ①
X2	.490A	817122	GE-504A	SD600 or 5A6-D	1N1096 or VB600 ①	SK-3016 or SK-3017	F-6 or S-5860-2 ①
X3		817123	GECR-1	61-8969			S-880
X4		817124	GECR-2	61-8968			S-879
X5A	.0065A	817149	GE-504A or	8D4 or	A50 or	SK-3016 or	S-5462 ② or
B	.017A		GE-505 GE-504A or	5A4-D 8D4 or	1N536 A50 or	SK-3017 SK-3016 or	40C S-5462 ② or
C	.015A		GE-505 GE-504A or	5A4-D 8D4 of	1N536 A50 or	SK-3017 SK-3016 or	40C S-5462 ② or
D	.015A		GE-505 GE-504A or	5A4-D 8D4 or	1N536 A50 or	SK-3017 SK-3016 or	40C S-5462 ② or
			GE-505	5A4-D	1N536	SK-3017	40C
X6		817125	1N60	1N60			
X7		817125	1N60	1N60			
X8		817126	6GC1	DD04			

① A single unit replaces X1 and X2. ② A single unit replaces X5A, B, C, and D.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	EMERSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	160	250	925587	AFHS1-31-81	AA0316	XC1-19	WP131.5	TVL-1541
C2A	▲160	250	925585	AFH4-108-38	DD0818	XC3-29	PFP427.69A	TVL-4714.4
B	■30	450				QT1-26		
C	40	150						
D	▲20	450						
C3A	▲80	450	925586	AFH4-108-35	DD0825.5	XC4-68.1	FP427.67	TVL-4714.6
B	■50	450						
C	▲20	250						
D	50	50						
C4A	■2	350	925650	AFH3-134-25	BB0473	XC2-19	FP342.75	TVL-3719.10
B	▲25	25			BR2-450	QT1-1		
C	▲80	450						
C5	50	150	925589	PRS1480	BR50-150	QT1-17	TC49	TVA-1414
C6	.10	10	925498	CRE407A	NLW10-15	MT1-5	TT10X10	TE-1114

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			EMERSON AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C7	27 NPO 5%			TCZ-27		CCTO-270	CNO427	10TCC-Q27
C8	10 NPO 10%		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CNO410	10TCC-Q10
C9	150		DI-150	DD-151		CCD-151	GP315	10TS-T15
C10	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C11	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C12	680 N2200 10%					*	*	
C13	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C14	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C15	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C16	390		DI-390	DD-391		CCD-391	GP339	10TS-T39
C17	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C18	.0022		DI-2200	DD-222	JBX601YP222K	CCD-222	GP222	10TS-D22
C19	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C20	820 10%	(560) †	DI-820	DD-821	JBY601YP821K	CCD-821	GP382	10TS-T82
C21	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C22	4.7 NPO 10%		NPO-DI 4.7	DTZ-4R7		CCTO-4R7	CNO547	10TCC-V47
C23	4.7 NPO 5%		NPO-DI 4.7	DTZ-4R7		CCTO-4R7	CNO547	10TCC-V47
C24	100 NPO 10%		N750-DI 100	DTZ-100	CV601CG101K	CCTO-101	CNO310	10TCC-T10
C25	6.8 5%		NPO-DI 6.8	DTZ-6R8	CZ601CH6R8D	CCTO-6R8	CNO568	10TCC-V68
C26	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C27	4.7 NPO 5%	(2.2) †	NPO-DI 4.7	DTZ-4R7		CCTO-4R7	CNO547	10TCC-V47
C28	3.3 NPO 10%	①	NPO-DI 3.0	DTZ-3R3		CCTO-3R3	CNO533	10TCC-V30
C29	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C30	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C31	390 10%		DI-390	DD-391		CCD-391	GP339	10TS-T39
C32	390 10%		DI-390	DD-391		CCD-391	GP339	10TS-T39

EMERSON CHASSIS 120822A, 120835A, 120844A

FOLDER 3

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.
C33	.0022 10%		DI-2200	DD-222	JBX601YP222K	CCD-222	GP222	10TS-D22
C34	.22 200V		DBE4P22		DMF4P22	4DP-5-224	PVC4022	4PS-P22
C35	1.5 NPO		NPO-DI 1.5	DTZ-1R5			CNO515	10TCC-V15
C36	10		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CNO410	10TCC-Q10
C37	4.7 NPO 5%		NPO-DI 4.7	DTZ-4R7		CCTO-4R7	CNO547	10TCC-V47
C38	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C39	750 N2200 5%					*	*	
C40	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C41	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C42	.01		DI-1000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C43	.047 200V		DBE2S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C44	560 10%		DI-560	DD-561	JBY601YP561K	CCD-561	GP356	10TS-T56
C45	.0068		DI-6800	DD-682	BYX601ZU682P	CCD-682	GP268	10TS-D68
C46	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C47	.0047		DI-4700	DD-472	JBY601YP472K	CCD-472	GP247	10TS-D47
C48	.001 2KV		B161Y-001					10PS-D10
C49	.033 200V		DBE2S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C50	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C51	180 1KV 10%		DI-180	DD-181	JBZ601YP181K	CCD-181	GP318	10TS-T18
C52	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C53	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C54	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C55	.0033		DI-3300	DD-332	JBV601YP332K	CCD-332	GP233	10TS-D33
C56	220 N1500 10%					*	*	
C57	390 10%		DI-390	DD-391		CCD-391	GP339	10TS-T39
C58	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C59	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C60	47 NPO 10%		NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CNO447	10TCC-Q47
C61	.0022		DI-2200	DD-222	JBX601YP222K	CCD-222	GP222	10TS-D22
C62	.0015		DI-1500	DD-152		CCD-152	GP215	10TS-D15
C63	.0027 N5000 10%							
C64	.036 600V 10%		DBE6S33		DMF6S33	6DP-2-333	PVC6133	6PS-S33
C65	.47 200V		DBE2P47		DMF2P47	2DP-5-474	PVC2047	2PS-P47
C66	.1 600V		DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C67	.0082 400V		DBE6D82	CPR-8200J	DPMS6D82	6DP-2-822		6PS-D75
C68	680		DI-680	DD-681	JBY601YP681K	CCD-681	GP368	10TS-T68
C69	680		DI-680	DD-681	JBY601YP681K	CCD-681	GP368	10TS-T68
C70	.0082 1KV					16DP-3-822	GEM1628	16PS-D80
C71	.1 600V		DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C72	.047 200V		DBE2S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C73	470 N2200 2.5KV 10%					*		
C74	.0033 1.6KV 10%		BE10D33			16DP-2-332	GEM16233	16PS-D33
C75	.18 200V 10%					2DP-4-204		2PS-P20
C76	260 N3300 2.5KV					*	*	
C77	260 N3300 2.5KV					*	*	
C78	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C79	100 N750 3KV 5%							
C80	68 NPO 10%		NPO-DI 68	DTZ-68	CX601CG680K	CCTO-680	CNO468	10TCC-Q68
C81	27 N750 10%			TCN-27		CCTN-270	CN7427	10TCU-Q27
C82	.15 200V		DBE2P15		DMF2P15	2DP-3-154	PVC2015	2PS-P15
C83	820 10%		DI-820	DD-821	JBY601YP821K	CCD-821	GP382	10TS-T82
C84	.001 10%		DI-1000	DD-102	JBS801YP102K	CCD-102	GP210	10TS-D10
C85	820 10%		DI-820	DD-821	JBY601YP821K	CCD-821	GP382	10TS-T82
C86	390 N1500 1.5KV 5%					*		
C87	.01 500V 5%			CPR-10000J	CD30F103J500	DM-30-103	SX110	
C88	680 500V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C89	.0015 600V		DBE6D15	CPR-1500J	DMF6D15	6DP-1-152	PVC6215	6PS-D15
C90	.01 600V		DBE6S1	CPR-10000J	DMF6S1	6DP-1-103	PVC611	6PS-S10
C91	.1 600V 10%		DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C92	.047 600V		DBE6S47		DMF6S47	6DP-3-473	PVC6147	6PS-S47
C93	150 10%		DI-150	DD-151		CCD-151	GP315	10TS-T15
C94	68 N1500 4KV 10%					*	6DY468	
C95	130 N2200 6KV					*	*	
C96	.01 1KV		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C97	.01 1KV		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C98	22 1KV		DI-22	DD-220		CCD-220	GP420	10TS-Q20
C99	.022 600V 10%		DBE6S22		DMF6S22	6DP-2-223	PVC6122	6PS-S22
C100	.068 600V 5%		DBE6S68		DMF6S68	6DP-4-683	PVC6168	6PS-S68
C101	.033 600V 10%		DBE6S33		DMF6S33	6DP-2-233	PVC6133	6PS-S33
C102	120 N750 10%			TCN-120		CCTN-121	CN7312	10TCU-T12
C103	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C104	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C105	470 N750 5%			TCN-470		CCTN-471		10TCU-T47
C106	330 5%		ADM-15-331	CPR-330J	CD15F332J500	DM-15-331	SX333	MS-333
C107	330 5%		ADM-15-331	CPR-330J	CD15F332J500	DM-15-331	SX333	MS-333
C108	1.5 NPO ±.2		NPO-DI 1.5	DTZ-1R5			CNO515	10TCC-V15
C109	15 NPO 10%		NPO-DI 15	DTZ-15	CZ601CG150J	CCTO-150	CNO415	10TCC-Q15
C110	.047 200V		DBE2S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C111	820		DI-820	DD-821	JBY601YP821K	CCD-821	GP382	10TS-T82
C112	.01		DI-10000	DD-103	BYX601ZU103P	CCD-103	GP110	10TS-S10
C113	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C114	.01		DI-10000	DD-103	BYX601ZU103P	CCD-103	GP110	10TS-S10
C115	.01		DI-10000	DD-103	BYX601ZU103P	CCD-103	GP110	10TS-S10
C116	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C117	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331	SX333	MS-333
C118	330 5%		ADM-15-331	CPR-330J	CD15F331J500	DM-15-331	SX333	MS-333
C119	120 N2200 10%					*	*	
C120	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C121	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C122	10 NPO 10%		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CNO410	10TCC-Q10
C123	4 NPO ±.5							10TCC-V39
C124	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C125	10 NPO 10%		NPO-DI 10	DTZ-10	CZ601CG100J	CCTO-100	CNO410	10TCC-Q10
C126	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C127	220 N750 10%		N750-DI 220	DTN-220	CV601UJ221K	CCTN-221	CN7322	10TCU-T22
C128	82 NPO 10%			DTZ-82		CCTO-820	CNO482	10TCC-Q82
C129	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C130	.22 400V		DBE4P22		DMF4P22	4DP-5-224	PVC4022	4PS-P22
C131	.01 600V		DBE6S1	CPR-10000J	DMF6S1	6DP-1-103	PVC611	6PS-S10
C132	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C133	200 5%		ADM-15-201	CPR-200J	CD15F201J500	DM-15-201	SX320	MS-32
C134	33 N330 10%			TCZ-33				10TCS-Q30
C135	.01 600V		DBE6S1	CPR-10000J	DMF6S1	6DP-1-103	PVC611	6PS-S10
C136	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C137	.047 200V		DBE2S47		DMF2S47	4DP-3-473	PVC2147	2PS-S47
C138	33 N330 10%			TCZ-33				10TCS-Q30
C139	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C140	.01 600V		DBE6S1	CPR-10000J	DMF6S1	6DP-1-103	PVC611	6PS-S10
C141	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C142	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C143	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C144	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C145	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10
C146	.01 1KV		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP210	10TS-S10

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 (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.
C147	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C148	.01		DI-10000	DD-103	BYX601ZU003M	CCD-103	GP110	10TS-S10
C149	.01		DI-10000	DD-103	BYX601ZU103M	CCD-103	GP110	10TS-S10
C150	.1 600V		DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C151	47 2KV		HVD-30-47	DD30-470	HVX302X P470M			60GA-Q47
C152	.047 600V		DBE6S47		DMF6S47	6DP-3-473	PVC6147	6PS-S47
C153	.039		DBE6S39		DPMS6S39	6DP-3-393	PVC6139	6PS-S39
C154	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C155	.27 200V 10%					2DP-4-254	PVC2025	2PS-P25
C156	.082 200V 10%		DBE6S82		DPMS6S82	6DP-4-823		6PS-S82
C157	.1 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C158	.12 200V		DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C159	.001		DI-1000	DD-102	JBS601YP102K	CCD-102	GP210	10TS-D10

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Used in late production models. † Alternate Value

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA: EMERSON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.
R1	Volume/Switch	1meg, 225K Tap	390876	F12-1meg①, SP212, KR-8	C47SF1-1meg①, RS-3/16 or (NPF1-1meg, UPP-H-300, PPAP, NWG-18)	B13-137X①, SK8 or (PPQ13-137X①, SK8) or (BU2, CF44T①, SS11, K) *	PP16T25①, DS37 or (RUP16T254①, SL35)
	Volume/Switch	1meg, 175K Tap	390854 ⑥	F12-1meg①, SP212, KR-8	C47SF1-1meg①, RS-3/16 or (NPF1-1meg①, UPP-H-300, PPAP, NWG-18)	B13-137X①, SK8 or (PPQ13-137X①, SK8) or (BU2, CF44T①, SS11, K) *	PP16T25①DS37 or (RUP16T254①, SL35)
R2A B	Vert. Hold Horiz. Hold	750K 35K	390906	F1-750K, R1-50K, FFS110, RFS201	NP-750K-S, NR-50K-S, UP-C-B-110, UR-D-201	† QJ-2299	▲
	Vert. Hold	750K	390848 ⑥	F1-750K, SNF108	A47-750K-S, RS-3/16, TT-2 or (NP-750K-S, NMS-A-300, TT-2)	B11-136, TM10 or (BU11, CF64, SS16, DC1) *	RU754L, SL37, SD1187 or (UA16L, SD1187) or (TA16L, DS37)
	Horiz Hold	35K	390850 ⑥	F1-50K, SNF108	A47-40K-S, RS-3/16, TT-2 or (NP-40K-S, NMS-A-300, TT-2)	B11-122, TM10 or (BU11, CF12, SS16, DC1) *	RU54L, SL37, SD1187 or (UA54L, SD1187) or (TA54L, DS37)
R3	Color Fidelity	500K	390905 ⑥	F1-500K, SF110	A47-500K-S, FS-3 or (NP-500K-S, UP-B-400)	Q11-133 or (BU2, CF16, SS1, DC1) *	UA55L, SL3500 or (RU55L, SL38, SL3500) or (U50)
R4A B	Tone Contrast	2.5meg 368Ω, 300Ω Tap	390907			‡ QJ-2300	■
	Tone	2.5meg	390849 ⑥	F1-2.5meg, SNF108	A47-2.5meg-S, RS-3/16, TT-2 or (NP-2.5meg-S, NMS-A-300, TT-2)	B11-239, TM10 or (BU11, CF20, SS16, DC1) *	RU255L, SL37, SD1187 or (UA255L, SD1187) or (TA255L, DS37)
	Contrast	368Ω, 300Ω Tap	390847 ⑥	F51-750, SNF108	NPF-750, NMS-A-300, TT-2	B17-103X, TM10 or (BU11, CF48T, SS16, DC1) *	RU751T42, SL37, SL37, SD1500)
R5	Tint Tint	1200Ω 1200Ω	390904 390853 ⑦	F5-1500, SFS212	NP-1200-V, SE-F-400	B17-208, SK9 or (BU2, CF53, SS4, DC1) *	UA152R, SD3500 or (RU122R, SL35, IS1375) or (U5, DS37)
R6	Brightness	250K	390852	F1-250K, SFS212	A47-250K-S, RS-3/16 or (NP-250K-S, SE-F-400)	B11-130, SK9 or (BU2, CF15, SS4, DC1) *	UA254L, SD3500 or (RU254L, SL35, IS1375) or (U46, DS37)
R7	Color Color	500Ω 500Ω	390903 390851 ⑦	F1-500, SFS212	A47-500-S, RS-3/16 or (NP-500-S, SE-F-400)	B11-103, SK9 or (BU2, CF4, SS4, DC1) *	UA52L, SD3500 or (RU52L, SL35, IS1375) or (U2, DS37)
R8A B	High Voltage Adjust Color Killer	500K 1meg	390880				
R9A B C	Red Screen Green Screen Blue Screen	1.5meg 1.5meg 1.5meg	390879				
R10	Vert. Size (Height)	1meg	390875	F2-1meg, SFS212	A47-1meg-Z, RS-3/16 or (NP-1meg-Z, SE-F-400)	B13-137, SK9 or (BU2, CF26, SS4, DC1) *	UA16A, SD3500 or (RU16A, SL35, IS875) or (U53, DS37)
	Vert. Size (Height)	100K	390785 ④	TT-40 or (F1-100K, SNK010)	B47-100K-S or (NP-100K-S, NML-A-400, TT-2)	B11-128, TM4 or (BU11, CF13, SS6) *	PTA15L or (RU15L, SL37, SN1000) or (UA15L, SN1000)
R11	Vert. Linearity	3.4meg	390908	F1-3meg②, SNK012		HLC3 ②	HVC355L
R12	Pincushion Adjust Top-Bottom	15K	390858	F1-15K, SNK012	A47-15K-S, RN-3, TT-2 or (NP-15K-S, NML-A-300, TT-2)	B11-118, TM4 or (BU11, CF10, SS6) *	RU153L, SL37, SN1000 or (TA153L) or (UA24L, SN1000)
R13	Horiz. Centering	10Ω 2W	1470827-1 ⑤			BU11, WF16, SS6 *	MR10T, MRS1250

CONTROLS (cont)

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA: EMERSON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS–IRC PART No.	MALLORY PART No.
R14A B	Green Drive Blue Drive	6000Ω 6000Ω	390881				
R15	AGC	6000Ω, 2W	390882	V-5000 ③	U39-5000 ③	112-5000 ③	MR5000P ⑤, MRS1250
R16	Adjacent Sound Reject	10K	390789				
R17	Sound Reject	750Ω	390883			U201R102B	MTC751L4
R18	R/G Horiz. Lines (Bottom)	500Ω 1W	390860	V-500	U39-500	110-600	MR600P, MRS375
R19	R/G Horiz. Lines (Top)	120Ω 1W	390792	V-120	U39-125	110C120	MRC120P
R20	R/G Horiz. Lines (Left)	120Ω 1W	390792	V-120	U39-125	110C120	MRC120P
R21	R/G Vert. Lines (Bottom)	150Ω 1W	390795	V-150	U39-150	110C150	MRC150P
R22	R/G Vert. Lines (Top)	60Ω 1W	390793	V-60	U39-75	110C60	MRC60P
R23	R/G Vert. Lines (Left)	150Ω 1W	390795	V-150	U39-150	110C150	MRC150P
R24	Blue Vert. Amp. (Blue Horiz. Lines) (Bottom)	60Ω 1W	390793	V-60	U39-75	110C60	MRC60P
R25	Blue Vert. Tilt (Blue Horiz. Lines) (Top)	60Ω 1W	390793	V-60	U39-75	110C60	MR60P
R26	Blue Horiz. Lines (Left)	60Ω 3W	390859				MR100P, MRS375

† "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B11-136, P22-121 (Panel), "SNAPTROL" Equivalent: BU5, CF64, CR7, SF13, SR13, DC1. B11-122, R1-200 (Rear).
‡ "CONCENTRIKIT" Equivalent: K-6 Kit with Base Elements and Shafts: B11-239, P22-121 (Panel), B17-103X, R1-200 (Rear).

▲ "STA-LOC" Equivalent: FA754L, RU54L, OS1625, IS2062.
■ "STA-LOC" Equivalent: FA255L, RU751T42, OS1625, IS2062.
① Tie point incorporated in the original control should be provided for in another manner.
② Use original nylon tab mount.
③ Use original mounting bracket. Cut off one of the end terminals.
④ Alternate Part, may be used in some versions.
⑤ Not used in some versions.
⑥ Alternate Part used in Chassis 120822A.
⑦ Alternate Part used in Chassis 120835A and 120822A.
⑧ Part #390900 used in Chassis 120822A.
* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN PART No.	EMERSON PART No.
R28	8200Ω 5W		5G-8.2K	394273
R50	10K 10W	PW10-10K	10W-SQ-10K	394260
R56	6800Ω 3W		3G-6.8K	
R78	4300Ω 5W	PW5-4500	5G-4.3K	394256
R104	V.D.R. †			397171
R106	2200Ω 3W	PW5-2250	3G-2.2K	
R109	5600Ω 3W	PW5-6000	3G-5.6K	
R110	1500Ω 5W	PW5-1500	5W-SQ-1.5K	
R113	V.D.R. †			
R114	Thermistor (3.5Ω Cold)		FR-3.5	
R134	13K 7W	PW10-12.5K	7G-13K	394255
R137	66M @ 6KV	MV-66M	66M	397176A

† Voltage Dependent Resistor

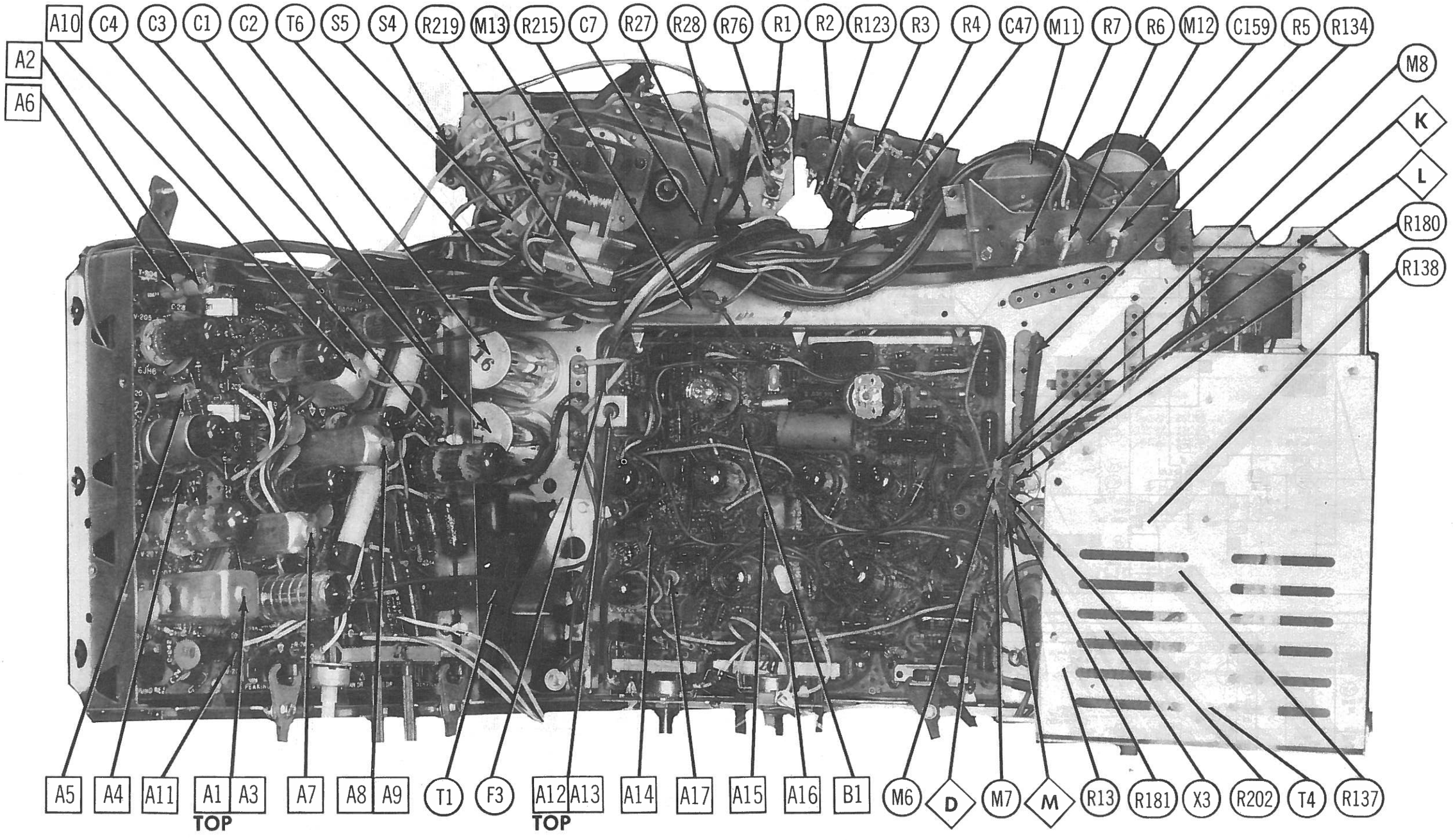
ITEM No.	RATING	REPLACEMENT DATA: IRC PART No.	WORKMAN PART No.	EMERSON PART No.
R183	5600Ω 4W	PW5-6000	4G-5.6K	
R185	39K 4W		4G-39K	
R201	2700 3W	PW5-250	3G-270	
R207	39K 3W		4G-39K	
R212	V.D.R. †		FR-066	
R213	Thermistor (100Ω Cold)		FR-922	
R215	1100Ω 20W	2C-1000	20W-SQ-1.1K	394276
R217	3300Ω 3W	PW5-3300	3G-3.3K	
R219	1000Ω 10W	PW10-1000	10W-SQ-1K	394275
R220	1000Ω 5W	PW5-1000	5W-SQ-1K	394274
R229	2700Ω 3W	PW5-2500	3G-2.7K	

COILS (RF-IF)

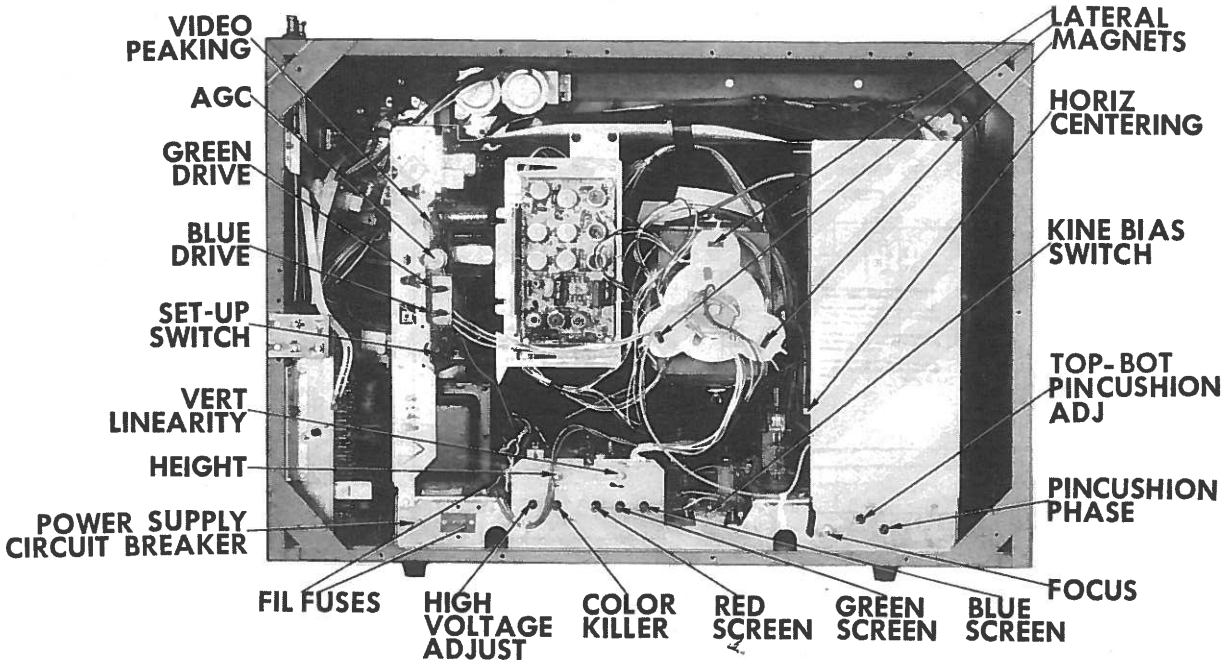
ITEM No.	USE	REPLACEMENT DATA: EMERSON PART No.	MEISSNER Part No.	MERIT PART No.	MILLER PART No.	WORKMAN PART No.
L1	47.25MC Trap	708427				
L2	1st Video IF	720474	17-3418		7514-E	T272
L3	2nd Video IF	720514			7511-W	
L4	3rd Video IF	720476			7526	
L5	4th Video IF/ 41.25MC Trap	720518			6037	
L6	RF Choke (12uh)	708428	19-2016	BC-566	72F125AP	TA343
L7	RF Choke (5.6uh)	705047	19-1008	BC-565	74F566AP	T820
L8	4.5MC Trap	708432			7142	TA264
L9	Peaking (620uh)	708430	19-2030	TV-205	6146	T356
L10	Peaking (36uh)	708429	19-3036	TV-180	6176	T301
L11	RF Choke (5.6uh)	705047	19-1008	BC-565	74F566AP	T820
L12	Peaking (390uh)	708426	19-2028	TV-201	72F394AP	TA338
L13	Peaking (680uh) ①	708431	19-3660 *	TV-206 *	72F684AP *	T327 *
L14	Peaking (72uh)	708425	19-3075	TV-186	6172	T303
L15	Peaking (62uh)	708442	19-3060	BC-666	6110	T338
L16	Peaking (120uh)	708443 ②	19-3125 ♦	TV-195 ♦	6153 ♦	TA344 ♦
L17	Dual Peaking (340,120uh)	708474			7600	
L18	RF Choke (5.6uh)	708475	19-1008	BC-565	74F566AP	T820
L19	RF Choke (12uh)	708428	19-2016	BC-566	72F125AP	TA343
L20	RF Choke (1.8uh)	705049	19-1001	BC-562	74F186AP	TA819
L21	RF Choke (5.6uh)	705047	19-1008	BC-565	74F566AP	T820
L22	1st Sound IF	720469	20-1052		7143	TF299
L23	2nd Sound IF	720471			7141	
L24	Quadrature	720472	20-1050		7110-R	TA265
L25	Chroma Take-off	708438				
L26	Chroma Bandpass	720515				
L27	Burst Phase	720516				
L28	Chroma Ref. Osc. Control	708439				
L29	3.58MC Oscillator	720517				
L30	RF Choke (5.6uh)	708475	19-1008	BC-565	74F566AP	T820
L31	RF Choke (10uh)	708440	19-1005	BC-566	72F105AP	T860
L32	Peaking (620uh)	708441	19-1035	TV-205	6146	T326
L33	Peaking (620uh)	708441	19-1035	TV-205	6146	T326
L34	Peaking (620uh)	708441	19-1035	TV-205	6146	T326
L35	RF Choke (5.6uh)	705047	19-1008	BC-565	74F566AP	T820
L36	RF Choke (5.6uh)	705047	19-1008	BC-565	74F566AP	T820

① Wound on 15K Resistor.
② Wound on 2200Ω Resistor.
* Shunt with 15K Resistor.
♦ Shunt with 2200Ω Resistor.

INFO ONLY NO CORRECTION — Changed to a tapped secondary in late production Part #720561



CHASSIS TOP VIEW



CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

TV CHASSIS REMOVAL

1. Remove 10 screws holding back cover and remove back cover. On some models it may be necessary to disconnect antenna leads. Remove all knobs.
2. Disconnect yoke plug, high voltage anode lead, picture tube socket, speaker leads, and ground wire.
3. Remove 3 screws holding remote control.
4. Remove 5 screws holding chassis and 9 screws holding tuner and controls. Lift out chassis and tuner.

PICTURE TUBE REMOVAL

1. Follow "Chassis Removal" procedure. Lay set face down on a soft protective surface.
2. Remove 4 screws holding picture tube brackets and lift out picture tube.

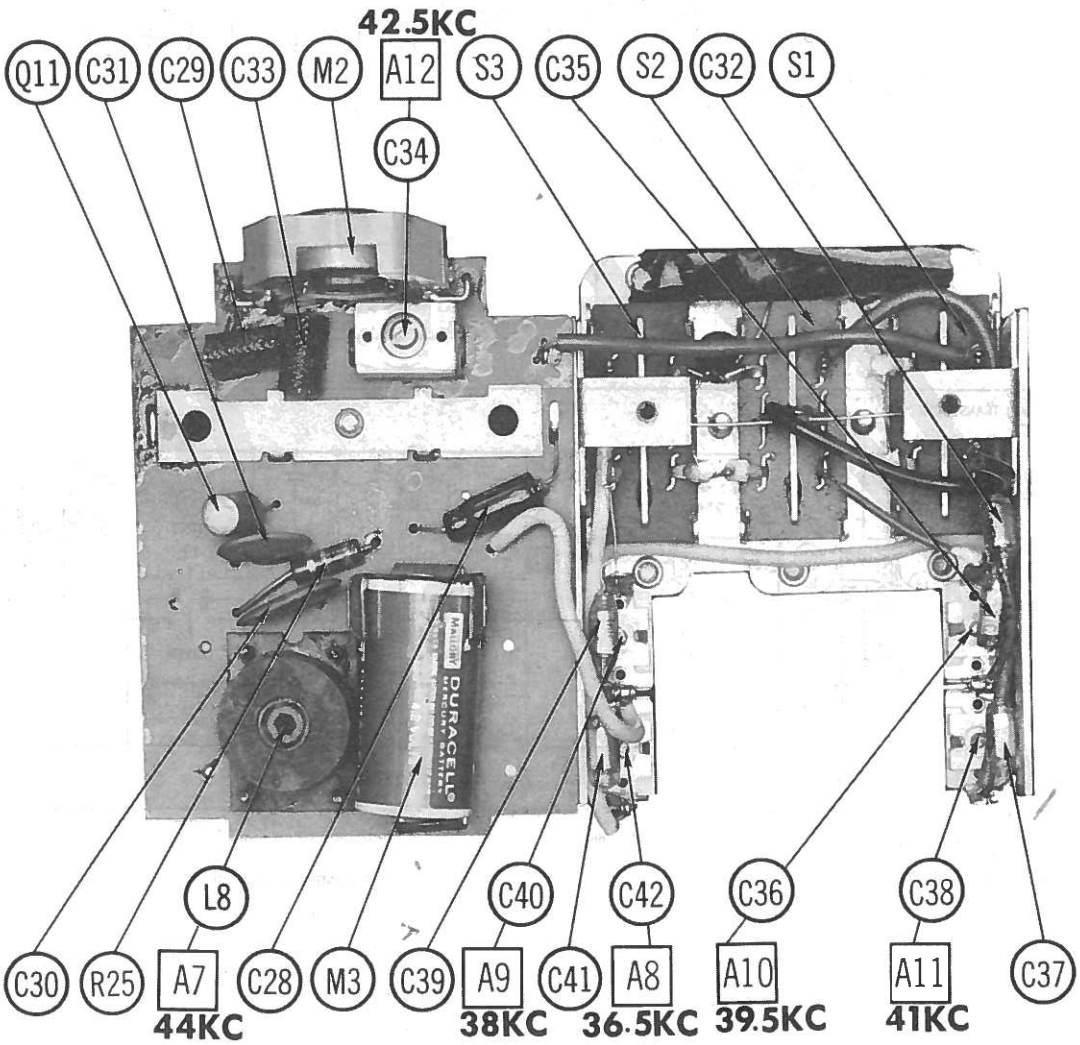
PHOTOFACT® Folder with CIRCUITRACE®

EMERSON REMOTE CONTROL 471663, 471664, 471665

IMPORTANT FILING NOTICE

This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 871 FOLDER 3 . File this Folder with the TV Folder in the yellow filing jacket provided.

EMERSON REMOTE CONTROL 471663, 471664, 471665

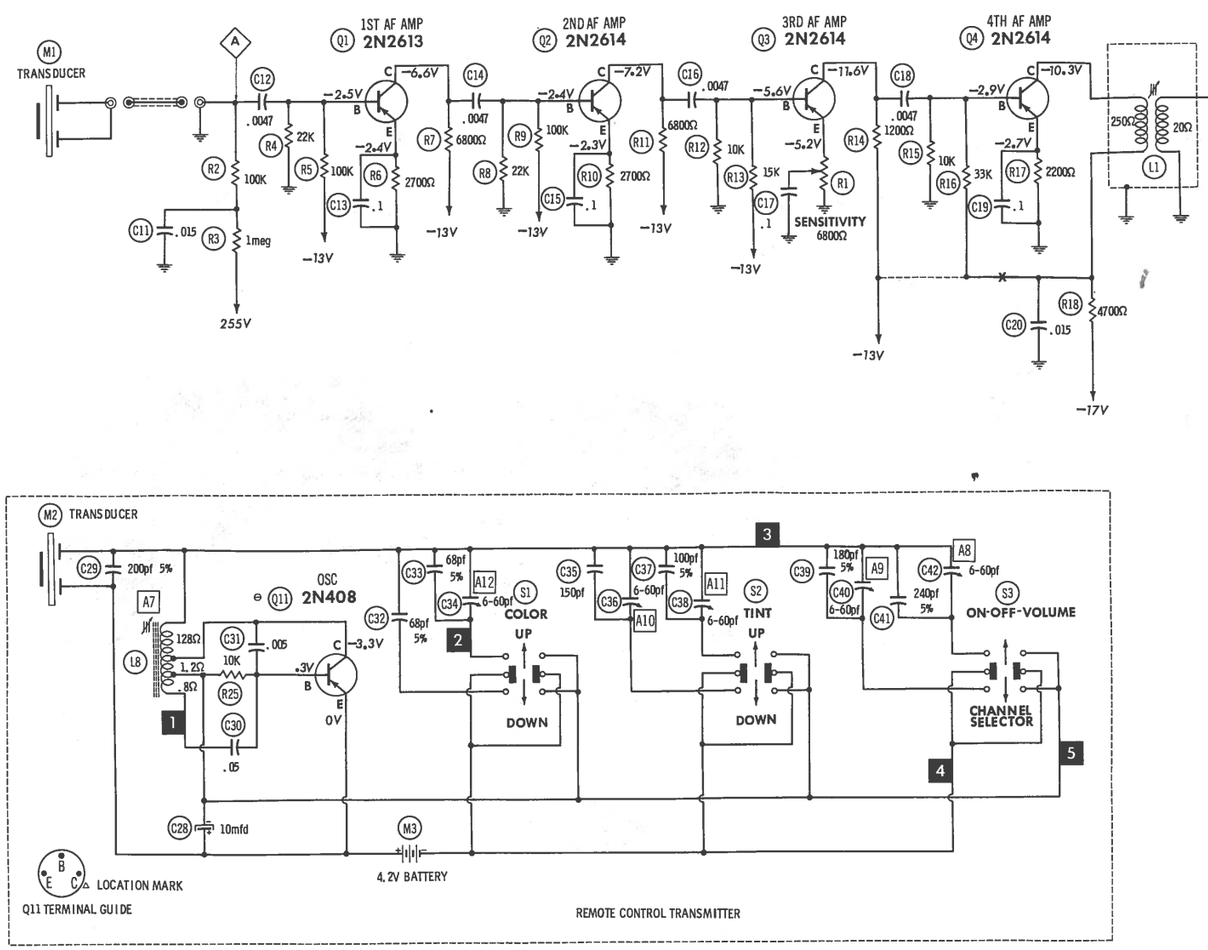


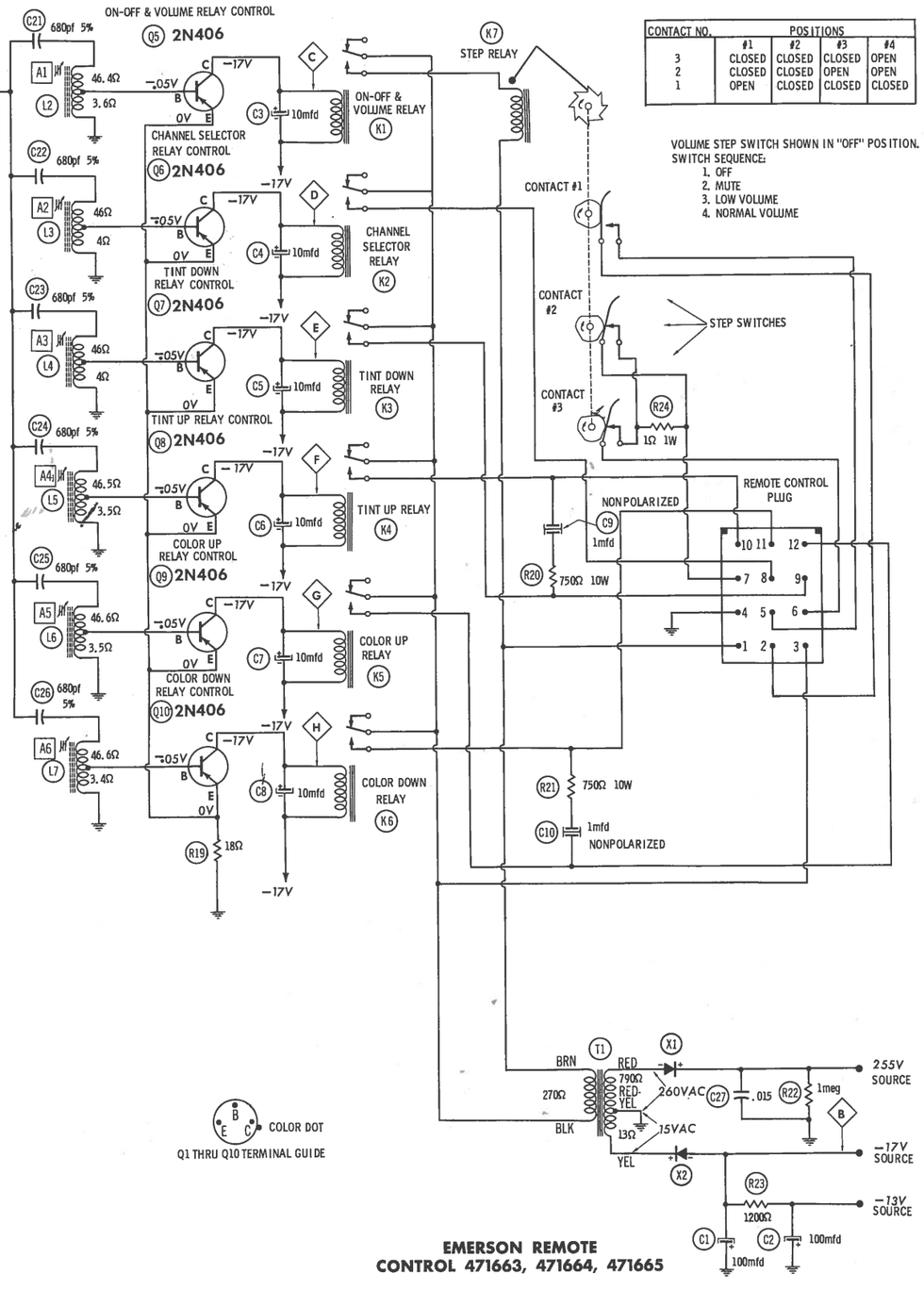
EMERSON REMOTE CONTROL 471663, 471664, 471665

TRADE NAME	Emerson
SUPPLIER	For current address, see Annual Index.
TYPE SET	Remote Receiver 471665, Remote Transmitter 471663, 471664
TRANSISTORS	Eleven
POWER SUPPLY	110-120 Volts AC, 60 Cycles

SET 871 FOLDER 3-A

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





CONTACT NO.	POSITIONS			
	#1	#2	#3	#4
3	CLOSED	CLOSED	CLOSED	OPEN
2	CLOSED	CLOSED	OPEN	OPEN
1	OPEN	CLOSED	CLOSED	CLOSED

VOLUME STEP SWITCH SHOWN IN "OFF" POSITION.
SWITCH SEQUENCE:
1. OFF
2. MUTE
3. LOW VOLUME
4. NORMAL VOLUME

Resistors are 1/2 watt or less and rated 10% or 20% unless otherwise indicated.

⊖ See parts list
1. Voltage measurements taken with vacuum tube voltmeter.
2. All controls set for normal operation, no signal applied.
3. Measured values are from socket pin or terminal to common ground.
4. All terminals viewed from bottom unless otherwise designated.
5. Numbers assigned to terminals may not be found on the unit.
6. Supply voltage maintained at rated value for voltage readings.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE™

EMERSON REMOTE CONTROL 471663, 471664, 471665

REMOTE TRANSMITTER PARTS LIST

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				EMERSON PART No.	NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.		
Q11	2N408 (2S56) * (2SB56)*	Osc.	DS-26	GE-2	TR-05	SK-3003	815058	PNP

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	EMERSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C28	10	10	925498	CRE407A	NLW10-15	MT1-5	TT10X10	TE-1114

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.
C29	200 500V 5%		TTD-05 DI-5000	CPR-200J	CD15F201J500	DM-15-201	SX320 TA150	MS-32 TG-S50
C30	.05 30V			CK-503	HOV101ZV503Z			
C31	.005			DD-502	JBT601YP502K	CCD-502	GP250	10TS-D50
C32	68 500V 5%			CPR-68J	CD15E680J500	DM-15-680	SX468	MS-468
C33	68 500V 5%			CPR-68J	CD15E680J500	DM-15-680	SX468	MS-468
C34	6-60	#900209						
C35	150 500V 5%			CPR-150J	CD15F151J500	DM-15-151	SX315	MS-315
C36	6-60	#900209						
C37	100 500V 5%			CPR-100J	CD15F101J500	DM-15-101	SX310	MS-31
C38	6-60	#900209						
C39	180 500V 5%			CPR-180J	CD15F181J500	DM-15-181	SX318	MS-318
C40	6-60	#900209						
C41	240 500V 5%			CPR-240J	CD15F241J500	DM-15-241	SX324	MS-324
C42	6-60	#900209						

Emerson Part Number.

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M2	Transducer	825007A	
S1	Switch	510163	Color Up & Down
S2	Switch	510163	Tint Up & Down
S3	Switch	510163	Off-On Volume / Channel Selector

BATTERIES

ITEM No.	VOLTAGE	EMERSON PART No.	REPLACEMENT DATA			NOTES
			BURGESS	EVEREADY	MALLORY	
M3	4.2V		H163	E-163	TR-163	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No.	8530 (Solid 22AWG)	Available in 12 Colors
	8524 (Stranded 22AWG)	
	8570 (Stranded 26AWG)	

REMOTE TRANSMITTER ALIGNMENT

REMOTE TRANSMITTER ALIGNMENT

The Transmitter should be aligned using a receiver known to be operating properly. Set Sensitivity control on receiver fully clockwise.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
	Use cottom or tape over receiver transducer to limit signal input from transmitter to a useable dip on VTVM (2 or 3 volts)	44KC	Color Down Control	DC probe to point (H). Low side to point (B).	A7	Adjust for maximum.
	"	36.5KC	On-Off Volume	DC probe to point (C). Low side to point (B).	A8	Adjust for maximum.
	"	38.0KC	Channel Selector	DC probe to point (D). Low side to point (B).	A9	Adjust for maximum.
	"	39.5KC	Tint Down	DC probe to point (E). Low side to point (B).	A10	Adjust for maximum.
	"	41.0KC	Tint Up	DC probe to point (F). Low side to point (B).	A11	Adjust for maximum.
	"	42.5KC	Color Up	DC probe to point (G). Low side to point (B).	A12	Adjust for maximum.

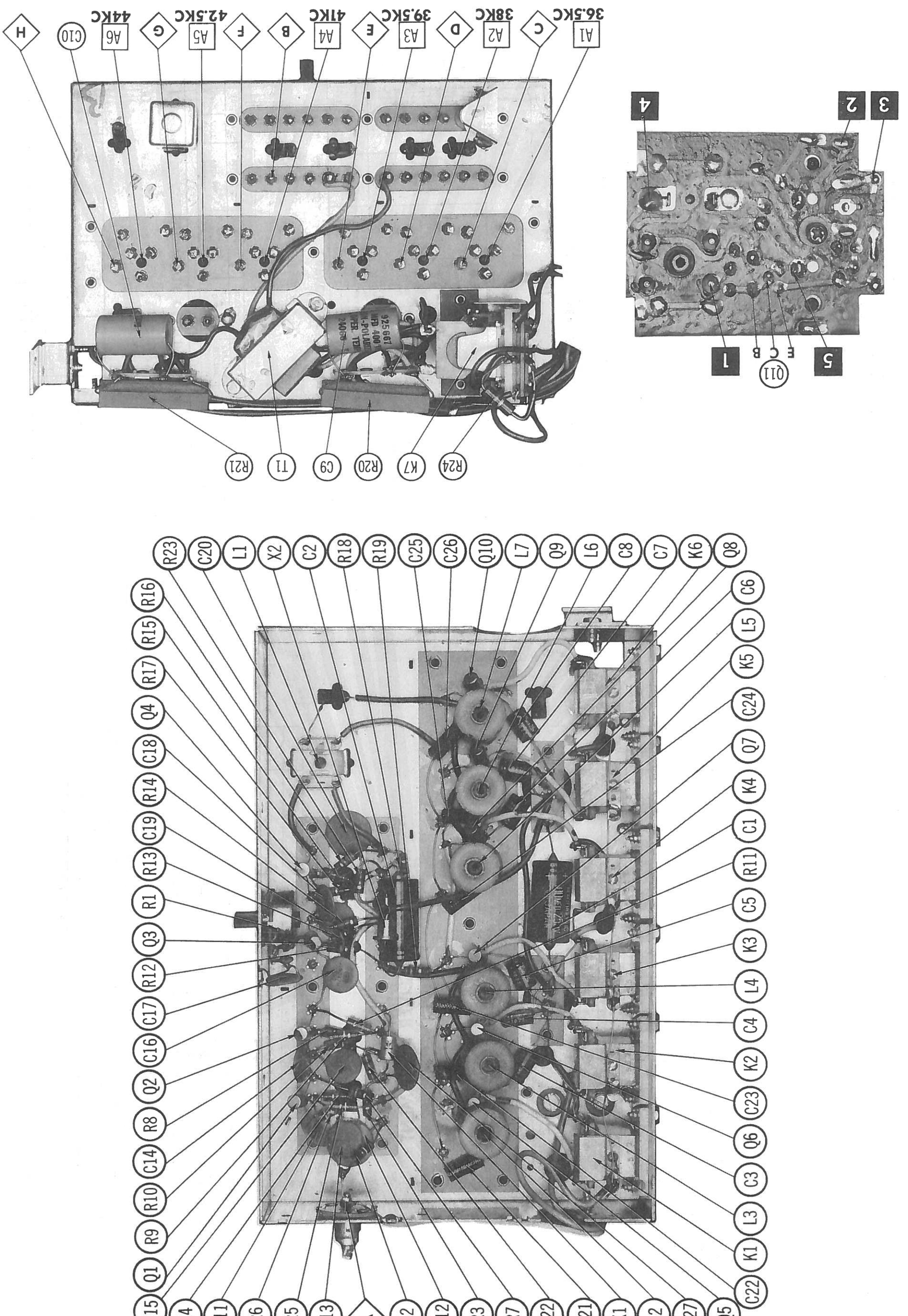
REMOTE RECEIVER ALIGNMENT

REMOTE RECEIVER ALIGNMENT

Disconnect Transducer and turn Sensitivity control, R1, fully clockwise. Set VTVM for positive voltage. Do not use more output from generator than necessary to obtain 2 or 3 volts on VTVM.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
	High side thru .1 mfd capacitor to point (A). Low side to ground.	36.5KC	On-Off Volume Control	DC probe to point (C). Low side to point (B).	A1	Adjust for maximum.
	"	38.0KC	Channel Selector	DC probe to point (D). Low side to point (B).	A2	Adjust for maximum.
	"	39.5KC	Tint Down	DC probe to point (E). Low side to point (B).	A3	Adjust for maximum.
	"	41KC	Tint Up	DC probe to point (F). Low side to point (B).	A4	Adjust for maximum.
	"	42.5KC	Color Up	DC probe to point (G). Low side to point (B).	A5	Adjust for maximum.
	"	44KC	Color Down	DC probe to point (H). Low side to point (B).	A6	Disconnect test equipment. Connect the Transducer. Readjust Sensitivity control using a transmitter known to be suitable for proper operation.

NOTE: Do not adjust L1 which is set at factory.



471665 REMOTE RECEIVER PARTS LIST

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				EMERSON PART No.	NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.		
Q1	2N2613	Amp.	DS-26	GE-2	TR-05	SK-3003	815139	PNP
Q2	2N2614	Amp.	DS-26	GE-2	TR-05	SK-3004	815136	PNP
Q3	2N2614	Amp.	DS-26	GE-2	TR-05	SK-3004	815136	PNP
Q4	2N2614	Amp.	DS-26	GE-2	TR-05	SK-3004	815136	PNP
Q5	2N406	On-Off Volume Relay Control	DS-26	GE-2	TR-05	SK-3003	815189	PNP
Q6	2N406	Channel Selector Relay Control	DS-26	GE-2	TR-05	SK-3003	815189	PNP
Q7	2N406	Tint Down Relay Control	DS-26	GE-2	TR-05	SK-3003	815189	PNP
Q8	2N406	Tint Up Relay Control	DS-26	GE-2	TR-05	SK-3003	815189	PNP
Q9	2N406	Color Up Relay Control	DS-26	GE-2	TR-05	SK-3003	815189	PNP
Q10	2N406	Color Down Relay Control	DS-26	GE-2	TR-05	SK-3003	815189	PNP

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.001A	817053 (1N3195)	GE-504A	8D6 or 5A6-D	1N2071 or 1N1096	SK-3017	F-6 or 60C
X2	.010A	817068	GE-504A or GE-505	8D4 or 5A4-D	A50 or 1N536	SK-3016 or SK-3017	F-4 or 40C

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	EMERSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	100	25	925571	CRE623A	NLW100-25	MT1-20	TT25X100	TE-1211
C2	100	25	925571	CRE623A	NLW100-25	MT1-20	TT25X100	TE-1211
C3	10	25	925458	CRE607A	NLW10-25	MT1-5	TT25X10	TE-1204
C4	10	25	925458	CRE607A	NLW10-25	MT1-5	TT25X10	TE-1204
C5	10	25	925458	CRE607A	NLW10-25	MT1-5	TT25X10	TE-1204
C6	10	25	925458	CRE607A	NLW10-25	MT1-5	TT25X10	TE-1204
C7	10	25	925458	CRE607A	NLW10-25	MT1-5	TT25X10	TE-1204
C8	10	25	925458	CRE607A	NLW10-25	MT1-5	TT25X10	TE-1204
C9	1	400NP	925667					
C10	1	400NP	925667					

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.
C11	.015		BPD-015	DD-153	BYT601ZU153Z	CCD-153	GP115	10TS-S15
C12	.0047		DI-4700	DD-472	JBT601YP472K	CCD-472	GP247	10TS-D47
C13	.1 10V			UK10-104			MAG-1201	HY-320
C14	.0047		DI-4700	DD-472	JBT601YP472K	CCD-472	GP247	10TS-D47
C15	.1 10V			UK10-104			MAG-1201	HY-320
C16	.0047		DI-4700	DD-472	JBT601YP472K	CCD-472	GP247	10TS-D47
C17	.1 10V			UK10-104			MAG-1201	HY-320
C18	.0047		DI-4700	DD-472	JBT601YP472K	CCD-472	GP247	10TS-D47
C19	.1 10V			UK10-104			MAG-1201	HY-320
C20	.015		BPD-015	DD-153	BYT601ZU153Z	CCD-153	GP115	10TS-S15
C21	680 125V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C22	680 125V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C23	680 125V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C24	680 125V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C25	680 125V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C26	680 125V 5%			CPR-680J	CD19F681J500	DM-16-681	SX368	MS-368
C27	.015		BPD-015	DD-153	BYT601ZU153Z	CCD-153	GP115	10TS-S15

CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			EMERSON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Sensitivity	6800Ω	390902	F1-7500, SNK010	A47-7500-S, RN-3, TT-2 or (NP-7000-S, NML-A-300, TT-2)	B11-115, TM4	RU752L, SL37, SN1000

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	EMERSON PART No.
R20	750Ω 10W	PW10-750	10W-SQ-750	394108

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	EMERSON PART No.
R21	750Ω 10W	PW10-750	10W-SQ-750	394108

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				
		EMERSON PART No.	MEISSNER Part No.	MERIT PART No.	MILLER PART No.	WORKMAN PART No.
L1	Bandpass	720539				
L2	36.5KC	716160				
L3	38KC	716161				
L4	39.5KC	716161				
L5	41KC	716159				
L6	42.5KC	716159				
L7	44KC	716158				
L8	Transmitter Osc.	738185				

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	EMERSON PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ .03A AC	275VAC @ .001A DC Tap @ 15VAC @ .01A DC		730134					

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
K1	Relay	515020	Off/On & Volume
K2	Relay	515020	Channel Selector
K3	Relay	515020	Tint Down
K4	Relay	515020	Tint Up
K5	Relay	515020	Color Up
K6	Relay	515020	Color Down
K7	Relay	515019	Step Relay (Volume)
M1	Transducer	825015	

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid 22AWG) 8524 (Stranded 22AWG) 8570 (Stranded 26AWG) — Available in 12 Colors