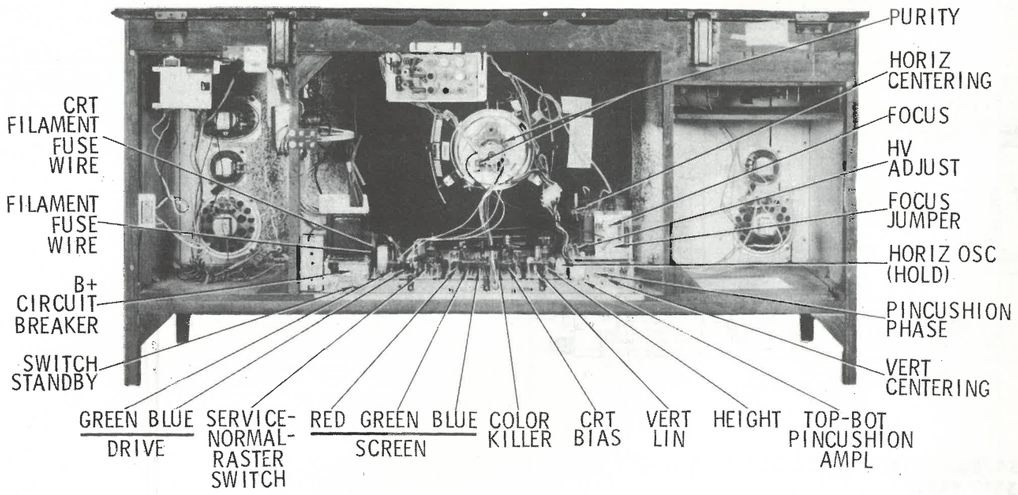


CABINET—REAR VIEW

DISASSEMBLY INSTRUCTIONS

TV CHASSIS REMOVAL

Remove eighteen screws holding cabinet back and remove back from the cabinet.

Disconnect yoke plug, convergence plug, degaussing-coil plug, tuner-cable plug, two control plugs, picture-tube socket, HV anode lead, TV speaker connections, IF cable, antenna leads, and radio-power cord.

Remove four screws securing chassis and remove chassis from the cabinet.

Remove knobs on TV tuner assembly. Remove four screws securing tuner assembly and remove tuner assembly from the cabinet.

Remove two nuts holding control bracket assembly and remove control assembly from cabinet.

RADIO CHASSIS REMOVAL

Remove knobs from radio. Disconnect phono power plug from changer, phono input cables, pilot lamp leads, tape input plugs, and radio speaker leads.

Remove two nuts on right side of radio chassis and one screw on left side of chassis. Remove radio chassis from the cabinet.

PICTURE TUBE REMOVAL

Follow "Chassis Removal" procedure and lay set face down on a soft protective surface.

Remove blue-lateral and purity magnet, convergence yoke and deflection yoke from picture-tube neck. Remove convergence board.

Remove ground lead and four screws securing putity shield to picture-tube brackets and remove purity shield.

Unhook four springs from yoke mounting and remove springs.

SET 1177 FOLDER 1

PHOTOFACT® Folder with CIRCUITRACE®

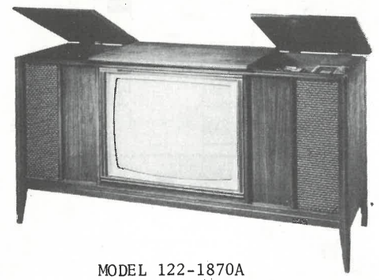
CATALINA MODELS
122-1820A/40A/45A/50A/70A
(Ch. T511 thru T514, T523, T524, T531, T532)

COLOR TV

MODELS
122-1820A
122-1840A
122-1845A
122-1850A
122-1870A

CHASSIS
T511
T512
T513
T514
T523
T524
T531
T532

For Supplier Address See PHOTOFACT Index



MODEL 122-1870A

IMPORTANT FILING NOTICE

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

INDEX

SAFETY PRECAUTIONS

Make sure line voltage does not exceed rating of set.

Check high-voltage regulation and adjust to correct value.

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

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

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

SERVICING IN THE FIELD

CRT IMPLOSION PROTECTION AND CLEANING

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

FUSE OR FUSE DEVICE

A circuit breaker is used for low-voltage power-supply protection. (See "Cabinet - Rear View" photo for location.)

A 1" length of #28 fuse wire is used for CRT filament protection. (See "Tube Placement Chart" for location.)

A 1-1/2" length of #24 fuse wire is used for filament protection. (See "Tube Placement Chart" for location.)

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 (hold). (See "Cabinet - Rear View" photo for location.)

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 "Cabinet - Rear View" photo for location.)

AGC

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

CENTERING

Horizontal centering is accomplished by proper adjustment of the horizontal centering control. (For location, see "Tube Placement Chart".)

Vertical centering is accomplished by proper adjustment of the vertical centering control. (For location, see "Cabinet - Rear View" for location.)

REMEMBER TO ASK— "What else needs fixing?"

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

DATE 6-71 SET 1177 FOLDER 1

CATALINA MODELS
122-1820A/40A/45A/50A/70A
(Ch. T511 thru T514, T523, T524, T531, T532)

SET 1177 FOLDER 1

TROUBLESHOOTING CHECK CHART

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

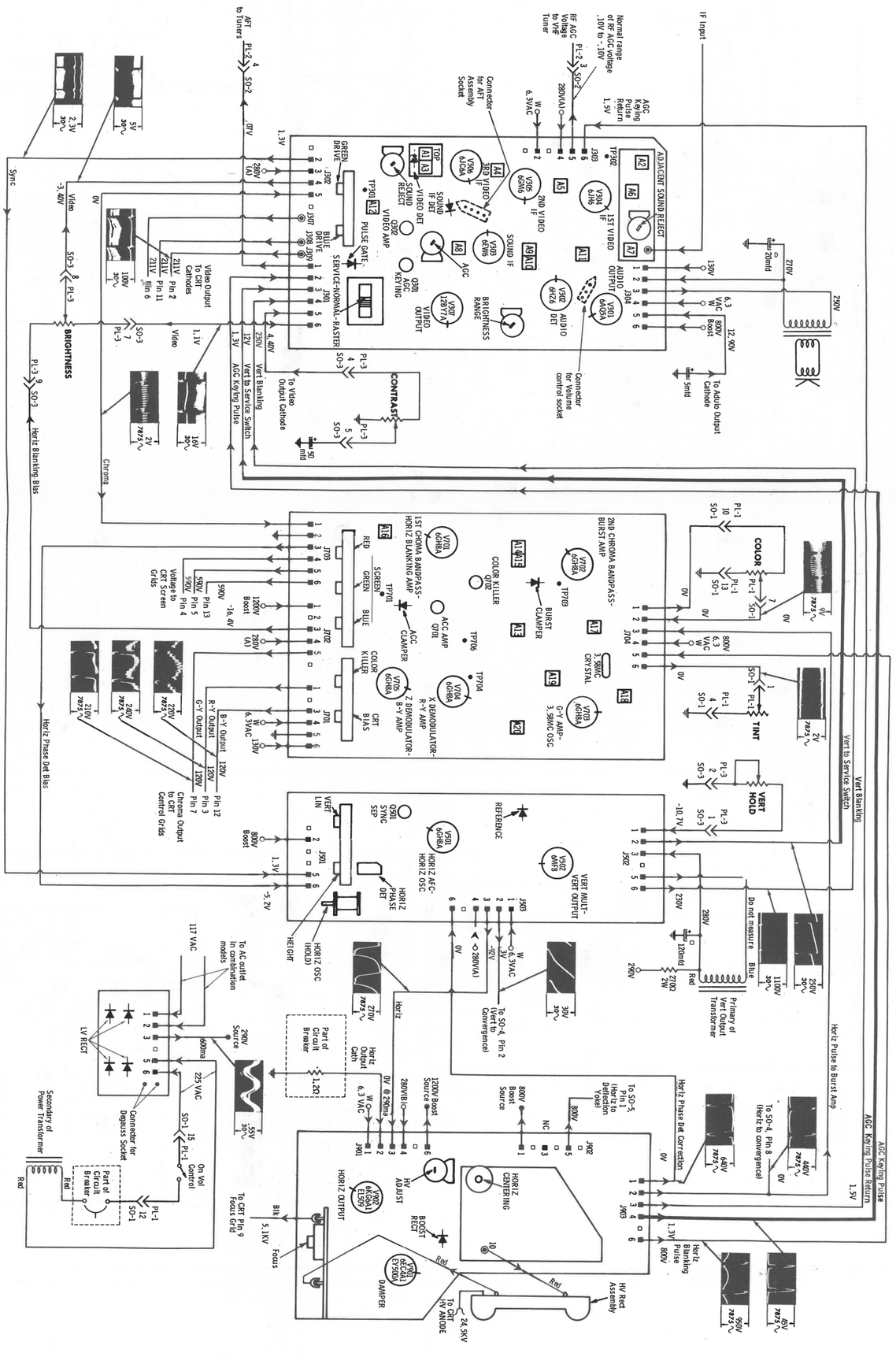
SWEEP V501, V902, V901
No raster, has sound and VM101, V101.
No vert. deflection V502
Poor vert. lin. or foldover V502.
Poor horiz. lin. or foldover V902, V901.
Narrow picture SD1101 thru SD1104, V501, V902,
Vert. off freq. V502. V901.
Horiz. off freq. V501, CR501.

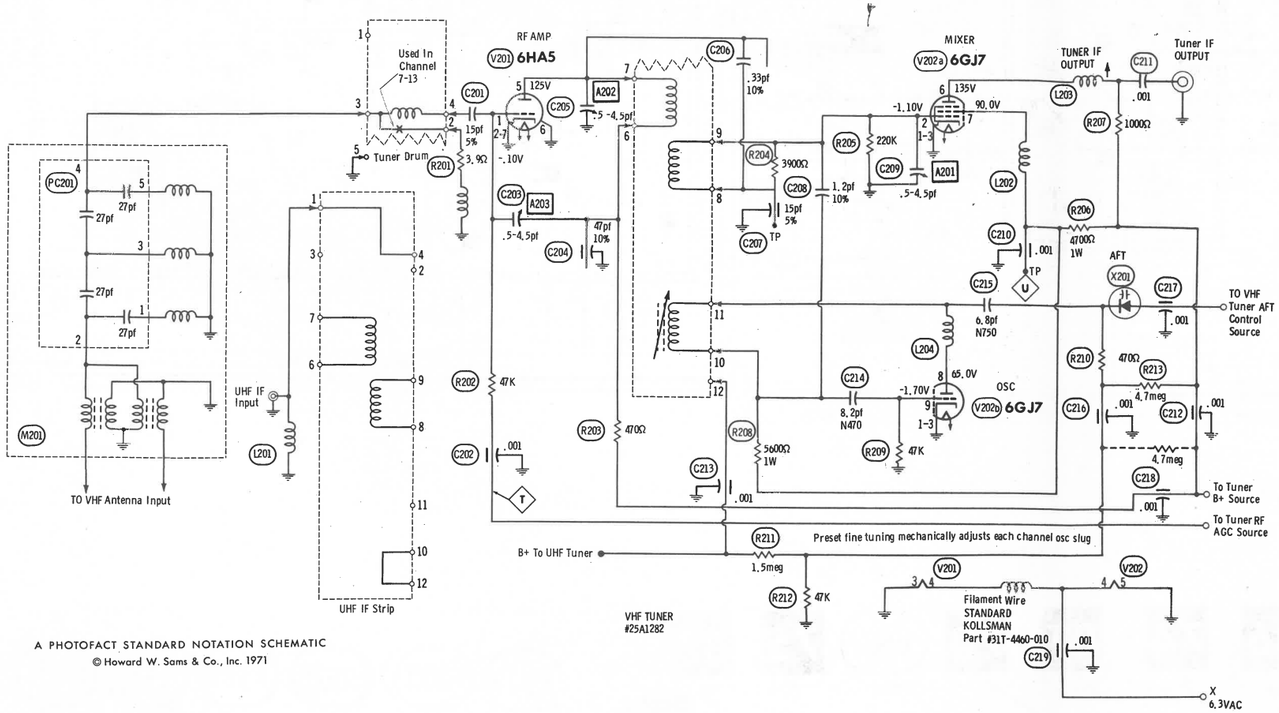
RASTER
Yellow - no blue V705, V101
Cyan - no red V704, V101
Magenta - no green V703, V101

PICTURE or SOUND
No pic, no sound, no raster CB101, F101, F102
No pic, no sound, has raster V304, V305, V306, V202.
No pic, no sound, has snow V201, V202.
No pic, has sound, no raster V307, V101.
No pic, has sound, has raster Q302, V307
Has pic, no sound V303, V302, V301.
Overloaded picture Q301, CR302.
Low or excessive brightness V701.

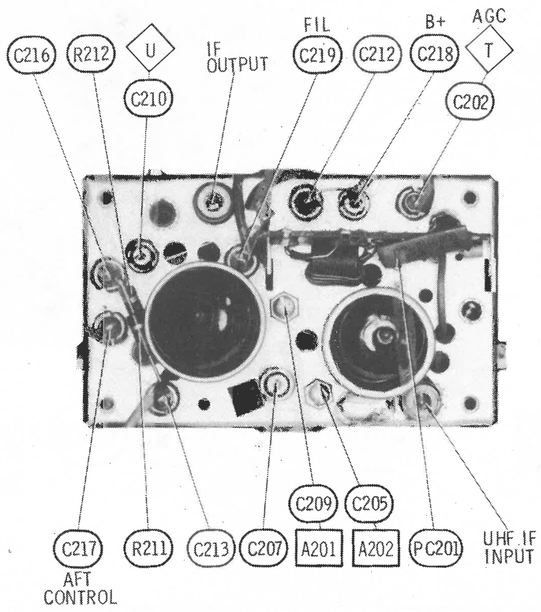
COLOR (B/W operating normally)
No color Q702, V702, V701.
Weak color V701, V702.
No color sync V702, V703.
No blue V705
No red V704
Incorrect hue (tint) V702, V704, V705.

SYNC
No vert. sync V502.
No horiz. sync V501, CR501.
No vert. or horiz. sync Q501





A PHOTOFACT STANDARD NOTATION SCHEMATIC



VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: GENERAL CEMENT 5004, 9293 .. A201, A202, A203

OSCILLATOR ADJUSTMENTS

The oscillator slug for each channel is preset with the fine tuning control. Pull out on fine tuning shaft and adjust the fine tuning for best picture and sound. Push in on fine tuning shaft.

RF AND MIXER ADJUSTMENTS

Connect the sweep generator across antenna terminals with 120-ohm carbon resistor in each lead. Refer to chart below for generator frequencies. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the scope 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 showing no overload. Defeat AFT. Have fine tuning shaft in Out position.

CHANNEL	CONNECT SCOPE	REMARKS 25A1282-001/-002 - VHF
13	Vertical input to Point (U), low side to ground.	Adjust A201 and A202 for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
10	Across video detector load resistor.	Increase bias to -15 volts and adjust A203 for MINIMUM amplitude.
12 thru 2	Vertical input to Point (U), low side to ground.	Decrease bias. Check all channels and make compromise adjustments by expanding or compressing appropriate coils if necessary.

CHANNEL	CONNECT SCOPE	REMARKS 25A1283-001 - VHF
13	Vertical input to Point (U), low side to ground.	Expand or compress appropriate coils for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
12 thru 2	Vertical input to Point (U), low side to ground.	Check all channels and make compromise adjustments by expanding or compressing appropriate coils if necessary.

GENERATOR FREQUENCY
Numbers in () indicate channel number

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

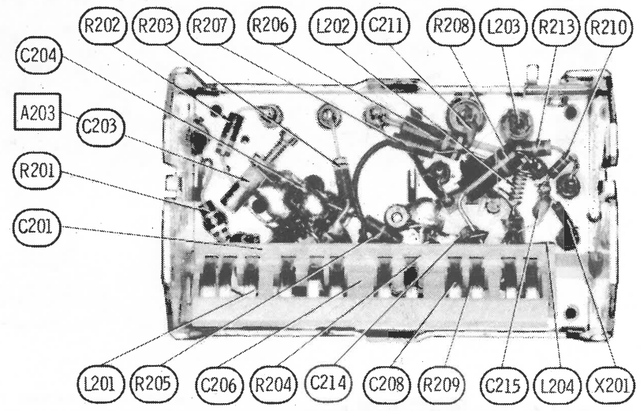
FIG. 201

25A1283-001 **UHF TUNER ALIGNMENT INSTRUCTIONS**

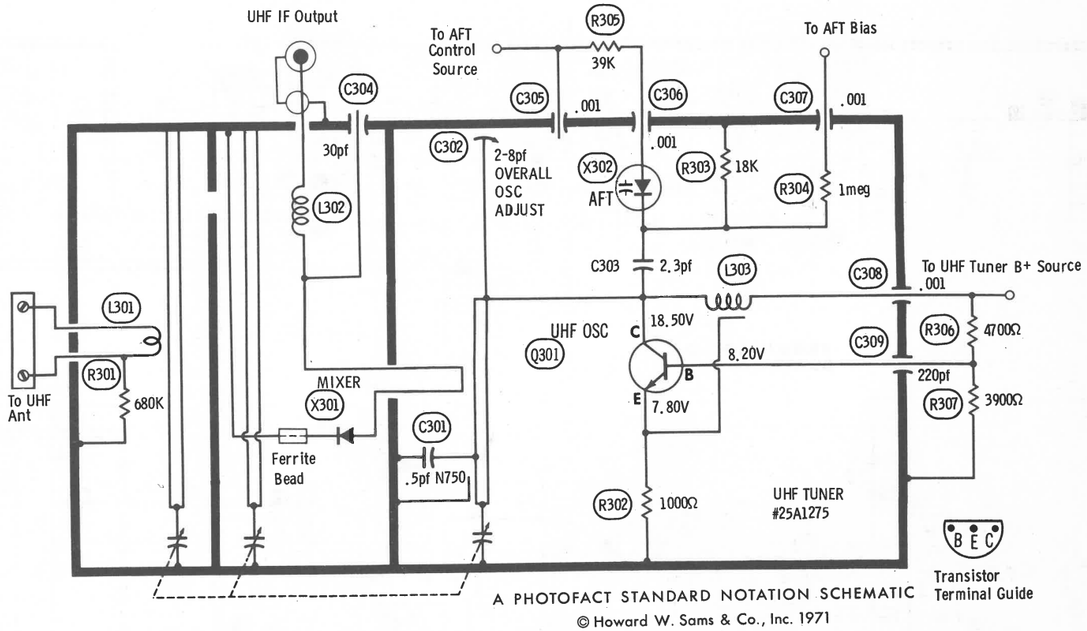
Select a UHF station. Adjust UHF IF input coil for best picture and sound.

25A1275-001/002 **UHF TUNER ALIGNMENT INSTRUCTIONS**

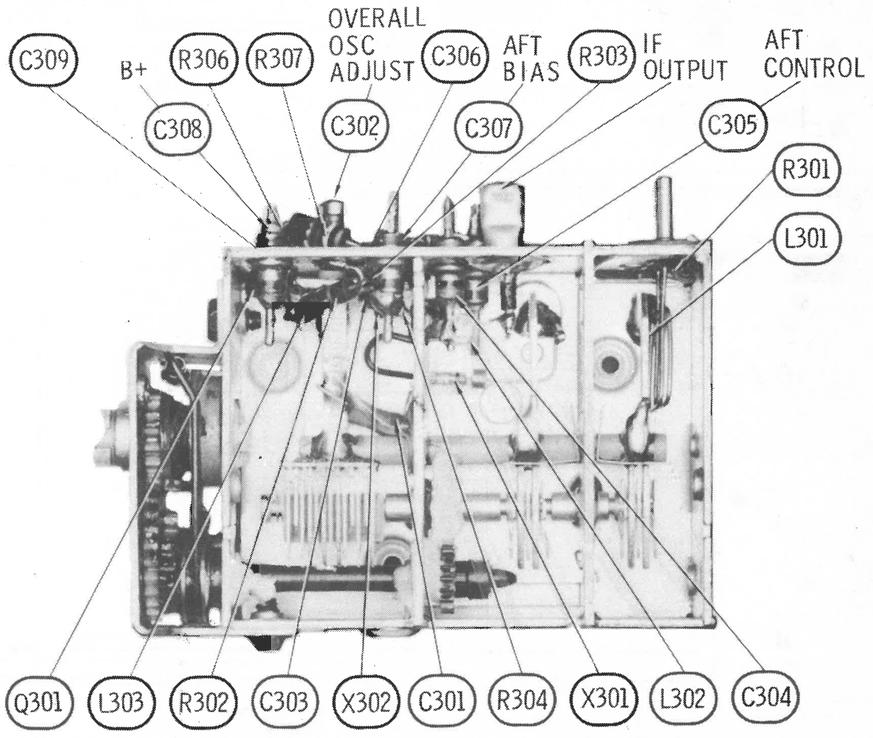
Select the lowest active UHF channel. Adjust the UHF oscillator trimmer for best picture and sound.



VHF TUNER 25A1282

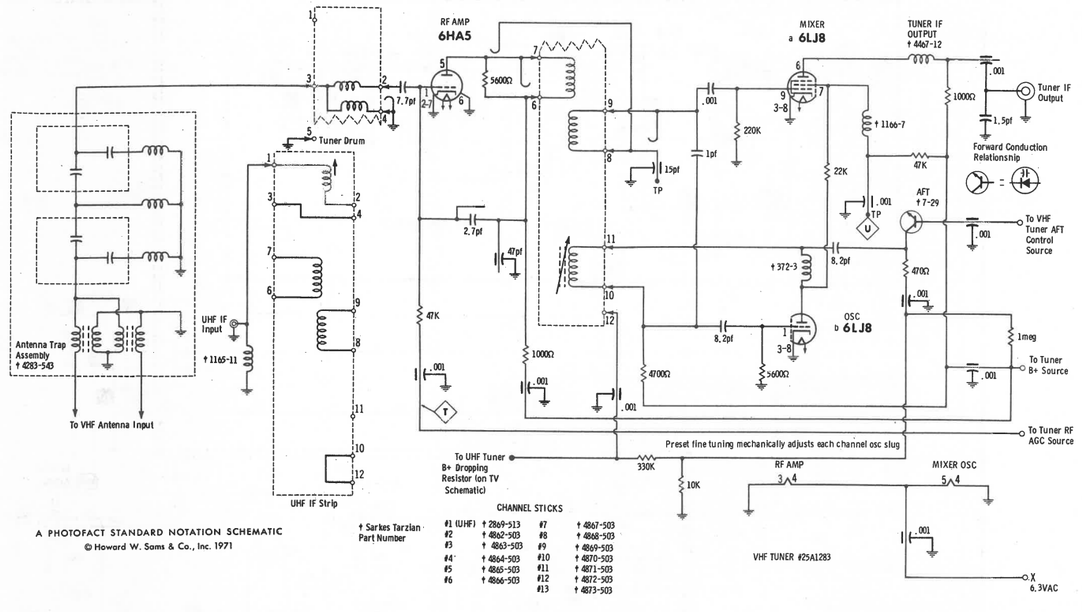


A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1971



UHF TUNER 25A1275

VHF TUNER 25A1283

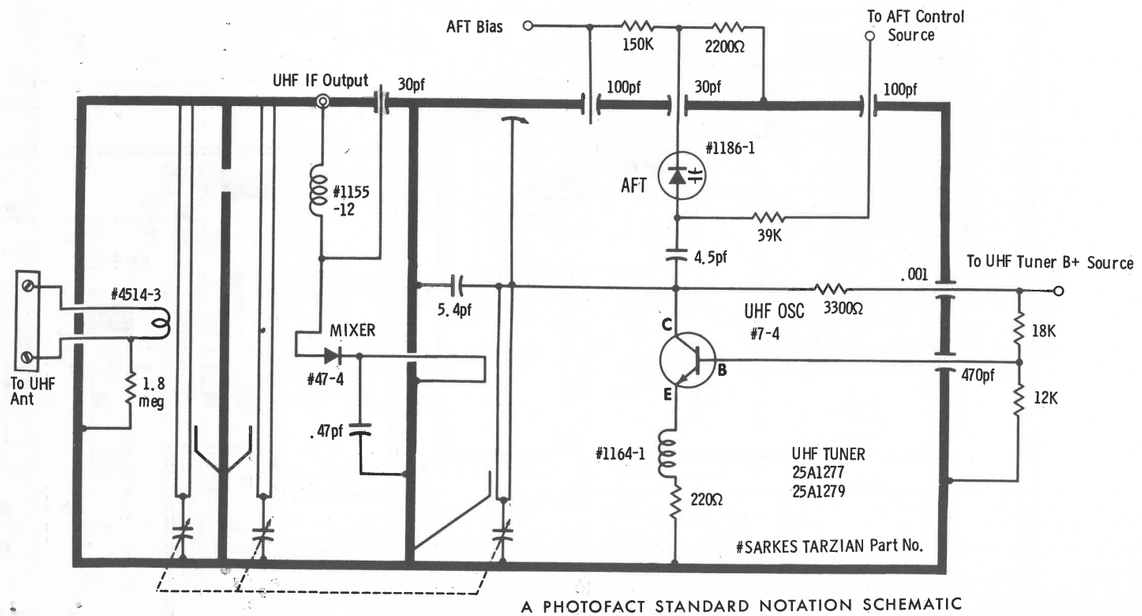


A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1971

† Sarkes Tarzian Part Number

CHANNEL STICKS

#1 (UHF)	† 2869-513	#7	† 4867-503
#2	† 4862-503	#8	† 4868-503
#3	† 4863-503	#9	† 4869-503
#4	† 4864-503	#10	† 4870-503
#5	† 4865-503	#11	† 4871-503
#6	† 4866-503	#12	† 4872-503
		#13	† 4873-503

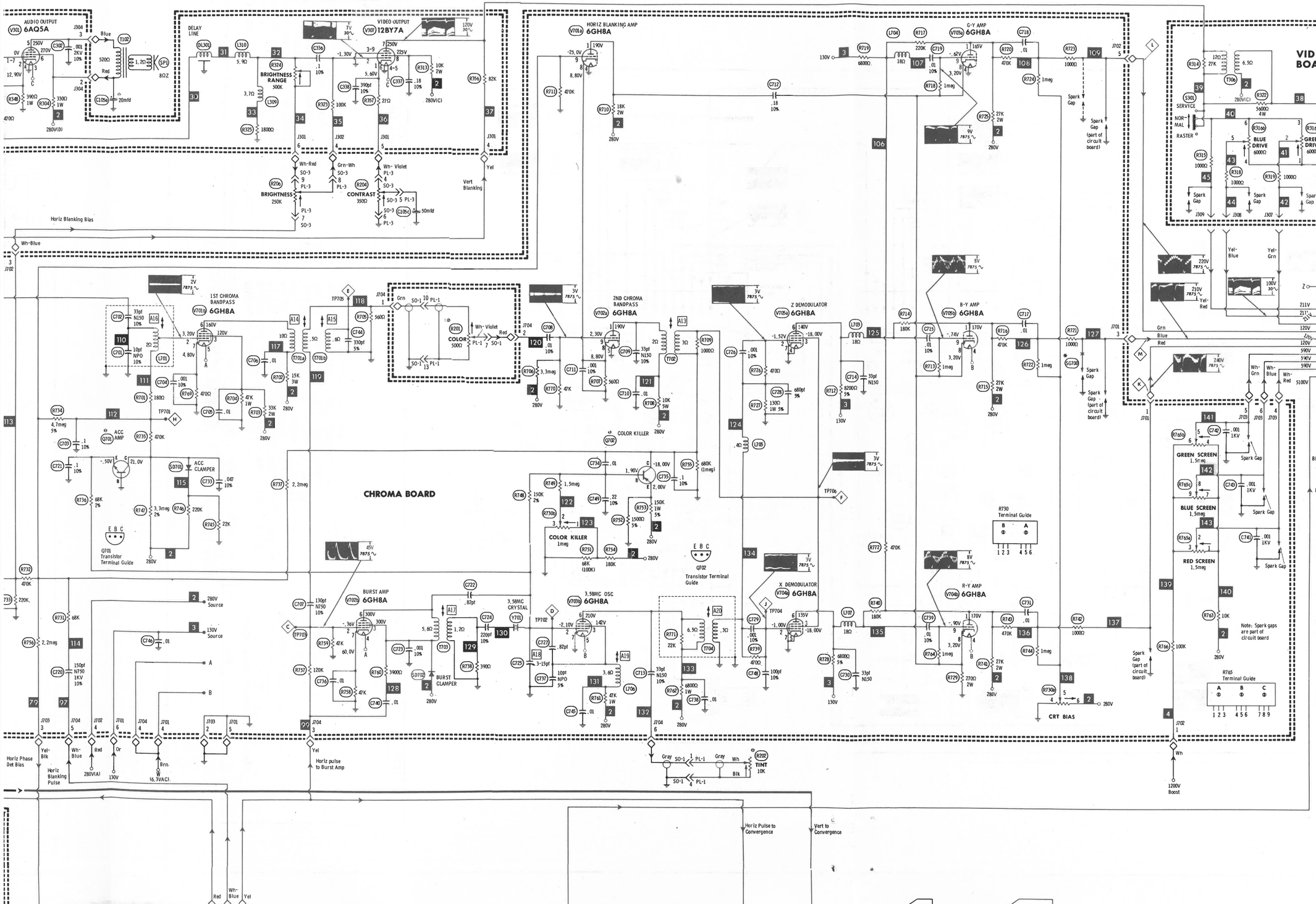


A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1971

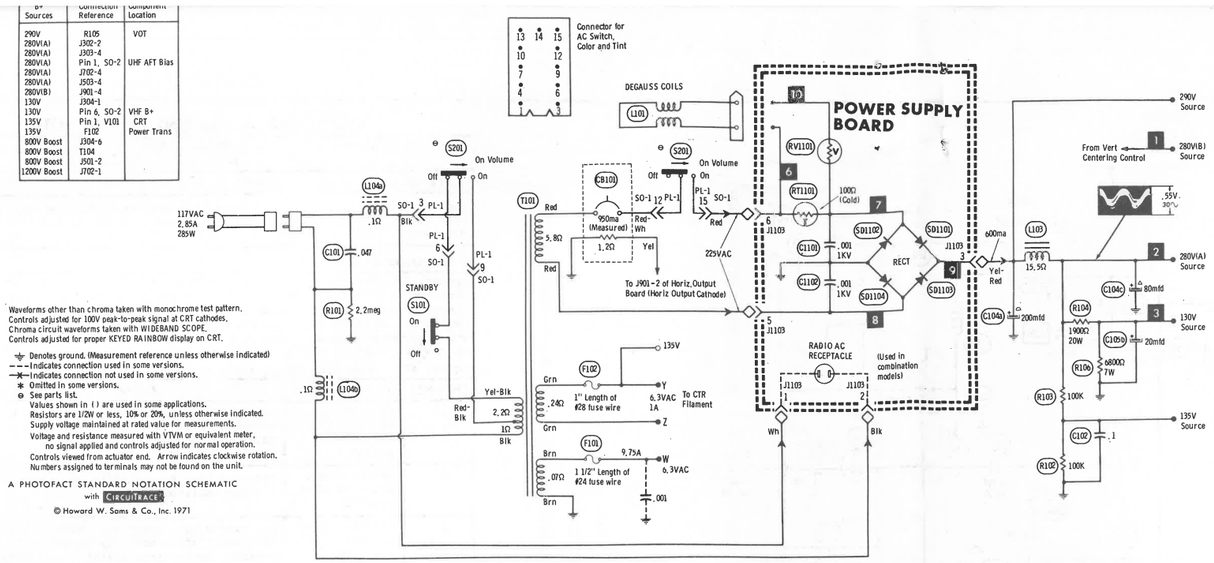
UHF TUNER 25A1277, 1279

AFT AMP
AFT DISCRIMINATOR
AFT ASSEMBLY
Q1401 Transistor Terminal Guide
VIDEO IF-SOUND BOARD
SOUND IF DET
SOUND IF 6EW6
AUDIO DET 6HZ6
AUDIO OUTPUT 6AQ5A
DELAY LINE
VOLUME 1meg
800V Boost
280V(D)
VHF Tuner AFT Control Source
UHF Tuner AFT Control Source
UHF Tuner AFT Bias Source
IF INPUT
VHF Tuner B+ Source
To B+ Switching in VHF Tuner
UHF TUNER B+ SOURCE
used with UHF Tuner #25A1277 and #25A1279
REAR On VHF Tuner
AFT DEFEAT
Nonpolarized 5mfd
280V(A)
1ST VIDEO IF 6JH6
2ND VIDEO IF 6GM6
3RD VIDEO IF 6JC6A
VIDEO DET
VIDEO AMP
Transistor-Terminal Guide
ADJACENT SOUND REJECT 47.25MC (Min.)
Normal range of RF AGC voltage .10V to -.10V
Normal range of IF AGC voltage -1.10 to -11.00V
VHF Tuner RF AGC Source
AGC KEYING
SERVICE
NORMAL
RASTER
PULSE GATE
AGC 5000Ω
Q301 Transistor Terminal Guide
AGC Keying Pulse
AGC Keying Pulse Return
SYNC SEP
Sync
VERT HOLD 750K
VERT MULT 6MF8
VERT MULT-VERT OUTPUT 6MF8
Do not measure
REFERENCE
HEIGHT 7.5meg
VERT LIN 50K
SOUND REJECT 750Ω
Q501 Transistor Terminal Guide
R528 Terminal Guide
PL-3 SO-3 Terminal Guide
Connector for BRIGHTNESS, CONTRAST, and VERT HOLD
Vert Blanking
Horiz Blanking Bias
Wh-Blue
Chroma
Transistor-Terminal Guide
VERT CENTERING 10Ω 2W
PINCUSHION PHASE
TOP-BOT PINCUSHION AMPL 10K 2W
DEFLECTION YOKE L106
VERT = 14.5Ω HORIZ = 8.8Ω
3.9Ω (Cold)
See Convergence Circuit
Vert to Convergence
To VHF Tuner Filament
On Volume
On Rear VHF Tuner
To VHF Tuner Chassis
UHF #1847
VHF #1847
Slip connector used only in T51 and T53 Series Chassis
Connector for Tuner Cluster
PL-1 SO-1 Terminal Guide
Horiz Phase Det Bias
Horiz Blanking Pulse
ACC AMP Q701
ACC CLAMPER
Q701 Transistor Terminal Guide
DEFLECTION BOARD

B+ Source	Connection Reference	Component Location
280V (A)	PL-2 SO-2	1
280V (B)	PL-2 SO-2	2
280V (C)	PL-2 SO-2	2
280V (D)	PL-2 SO-2	2
130V	PL-2 SO-2	3
130V	PL-3 SO-3	3
800V Boost	PL-3 SO-3	5


AUDIO OUTPUT
6AQ5A
DELAY LINE
VIDEO OUTPUT
12BY7A
HORIZ BLANKING AMP
6GH8A
G-Y AMP
6GH8A
B-Y AMP
6GH8A
R-Y AMP
6GH8A
Z DEMODULATOR
6GH8A
X DEMODULATOR
6GH8A
1ST CHROMA BANDPASS
6GH8A
2ND CHROMA BANDPASS
6GH8A
BURST AMP
6GH8A
3.58MC OSC
6GH8A
ACC AMP
ACC CLAMPER
COLOR KILLER
BURST CLAMPER
CHROMA BOARD
VIDEO IF-SOUND BOARD
BRIGHTNESS RANGE 500K
BRIGHTNESS 250K
CONTRAST 350Ω
BLUE DRIVE 6000Ω
GREEN DRIVE 6000Ω
SERVICE
NORMAL
RASTER
GREEN SCREEN 1.5meg
BLUE SCREEN 1.5meg
RED SCREEN 1.5meg
COLOR 500Ω
TINT 10K
CRT BIAS
3.58MC CRYSTAL
Q701 Transistor Terminal Guide
Q702 Transistor Terminal Guide
R316 Terminal Guide
R730 Terminal Guide
R765 Terminal Guide
Note: Spark gaps are part of circuit board.
Spark Gap (part of circuit board)
CRT V101
Horiz Blanking Bias
Wh-Blue
Vert Blanking
Yel
Horiz Phase Det Bias
Yel-Blk
Horiz Blanking Pulse
Wh-Blue
Red
Or
Brn.
280V(A)
130V
(6.3VAC).
Yel
Horiz pulse to Burst Amp
Horiz Pulse to Convergence
Vert to Convergence
Red
Wh-Blue
Yel
HV RECT
Grn
Blue
Red
Yel-Blue
Yel-Grn
Yel-Red
Wh-Grn
Wh-Blue
Wh-Red
Blk
Focus
1200V Boost
GREEN BLUE RED
135V
211V
120V
590V
5KV
590V
100V
240V
220V
210V
280V Source
130V Source

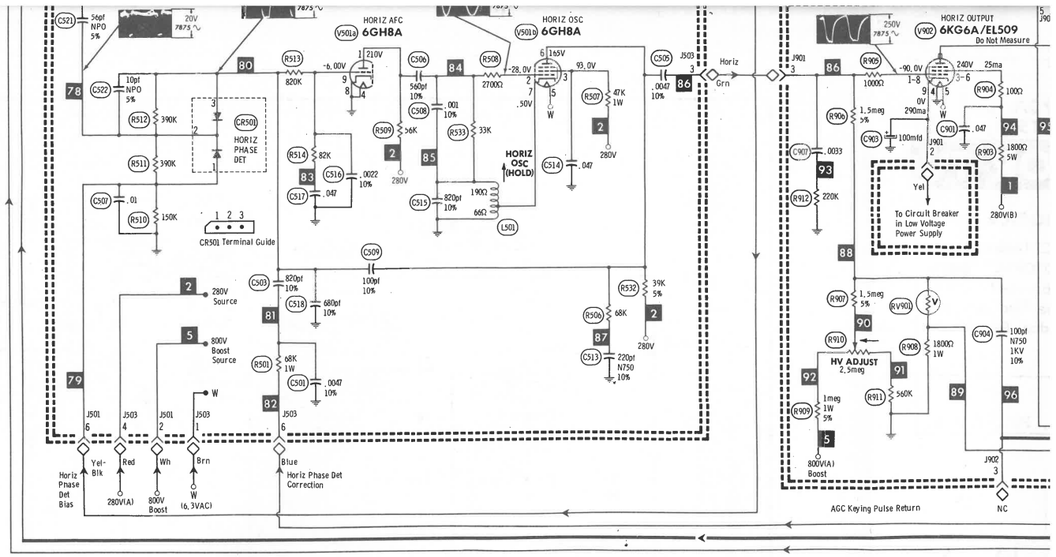
B+ Sources	Connection Reference	Component Location
290V	R105	VOT
280V(A)	J302-2	
280V(A)	J303-4	
280V(A)	Pin 1, SO-2	UHF AFT Bias
280V(A)	J702-4	
280V(A)	J503-4	
280V(B)	J901-4	
130V	J304-1	
130V	Pin 6, SO-2	VHF B+
135V	Pin 1, V101	CRT
135V	F102	Power Trans
800V Boost	J304-6	
800V Boost	T104	
800V Boost	J501-2	
1200V Boost	J702-1	

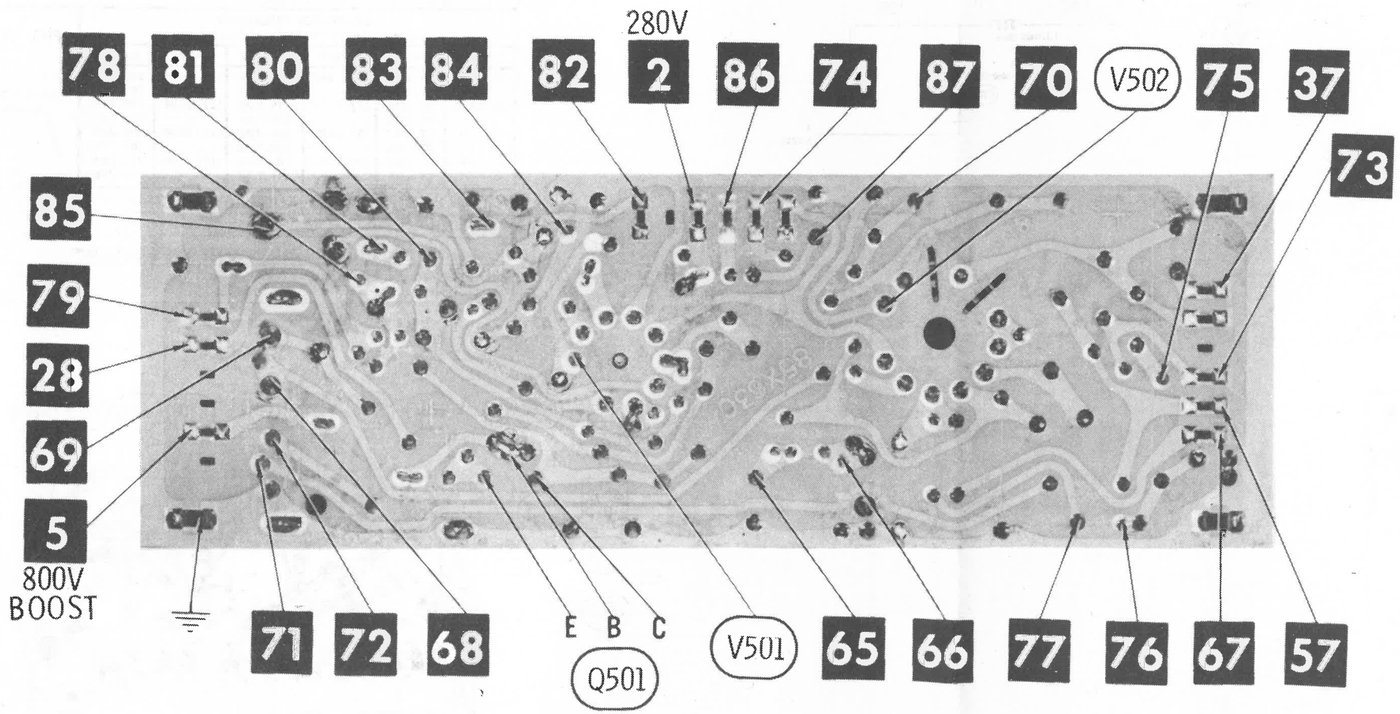


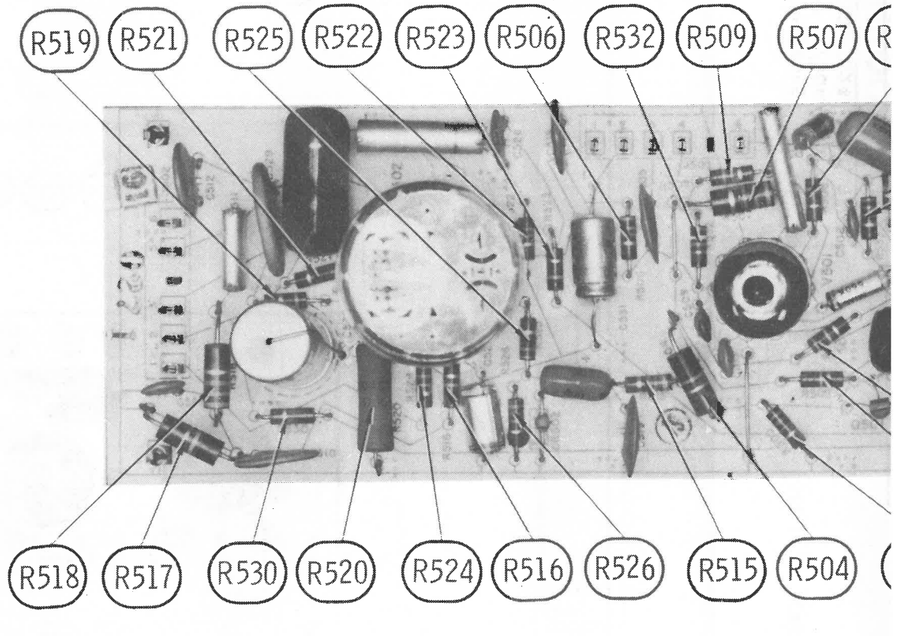
Waveforms other than chroma taken with monochrome test pattern.
Controls adjusted for 100V peak-to-peak signal at CRT cathodes.
Chroma circuit waveforms taken with WIDEBAND SCOPE.
Controls adjusted for proper KEYED RAINBOW display on CRT.

⏚ Denotes ground. (Measurement reference unless otherwise indicated)
– – Indicates connection used in some versions.
—✕— Indicates connection not used in some versions.
✱ Omitted in some versions.
⊖ 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.
Controls viewed from actuator end. Arrow indicates clockwise rotation.
Numbers assigned to terminals may not be found on the unit.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE



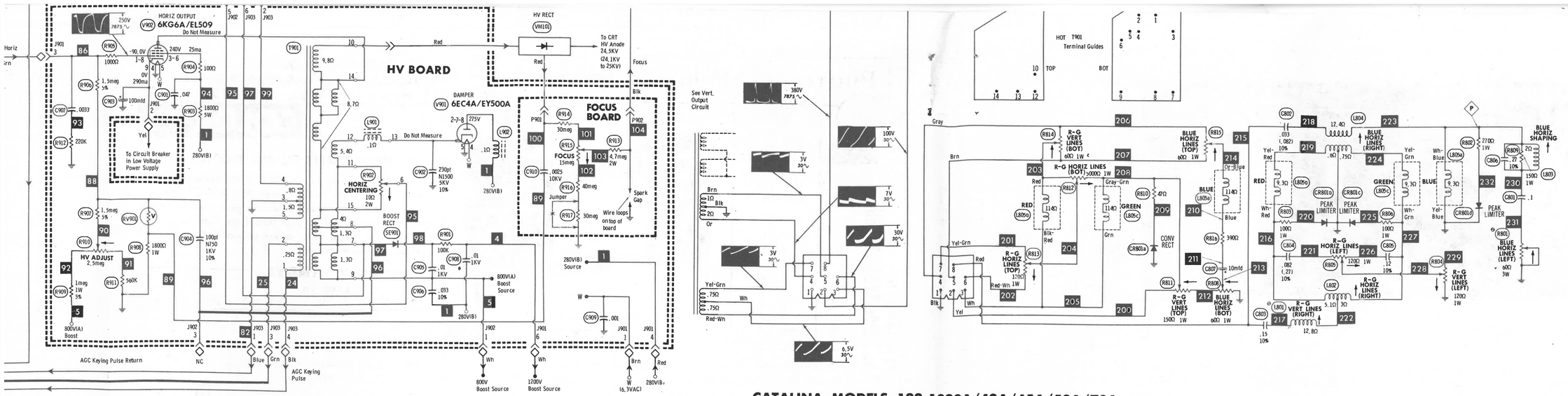




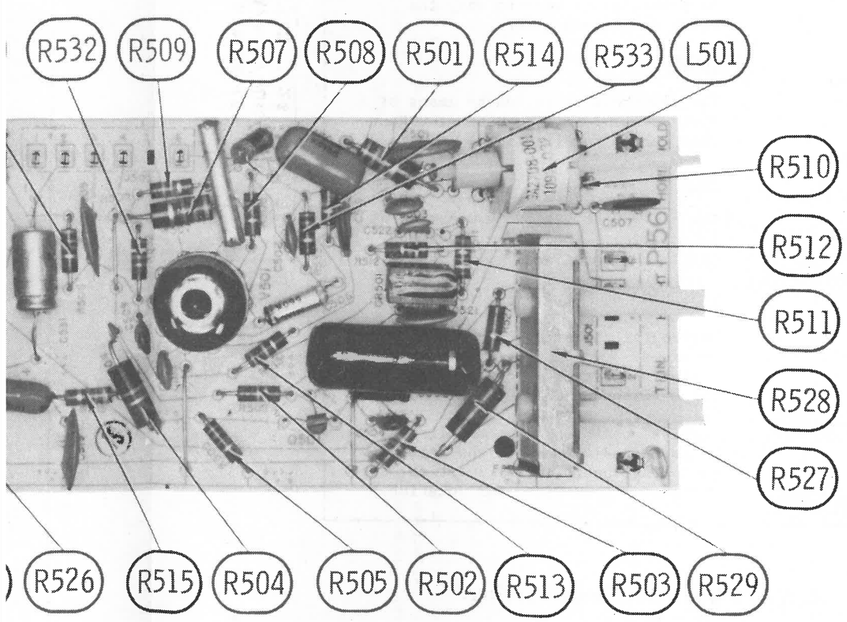
A Howard W. Sams CIRCUITRACE Photo

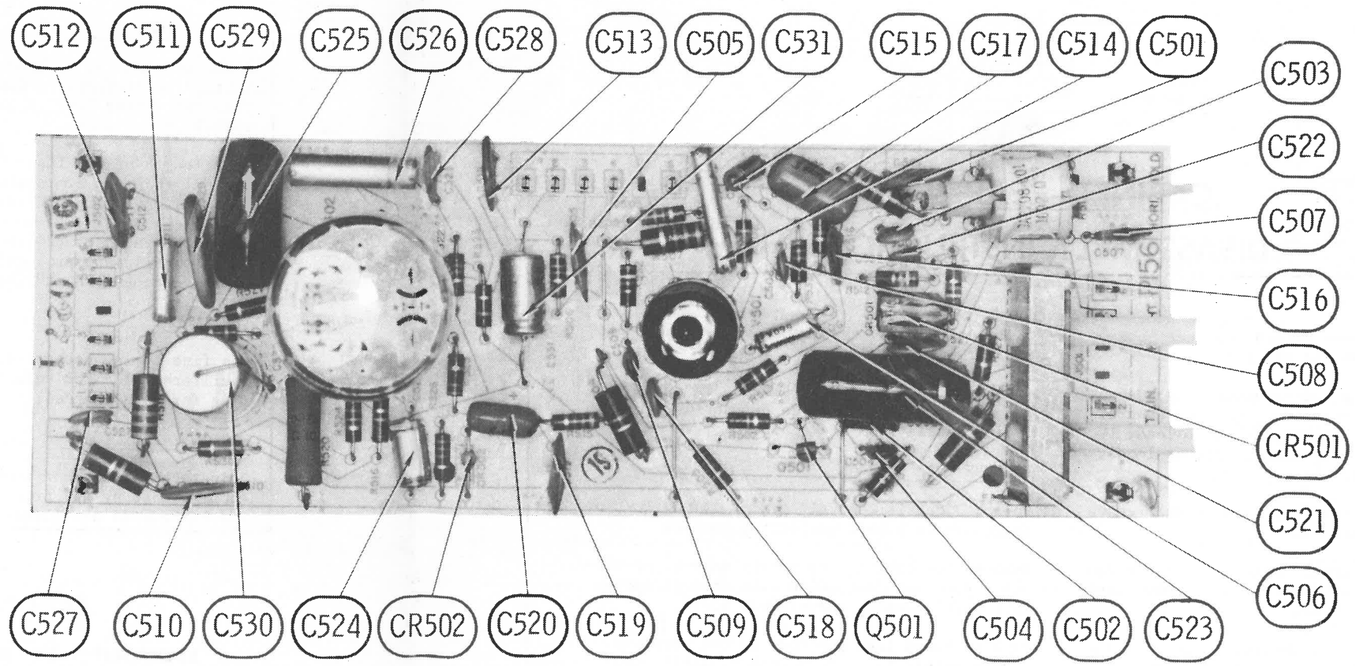
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

DEFLECTION BOARD



CATALINA MODELS 122-1820A/40A/45A/50A/70A
(Ch. T511 thru T514, T523, T524, T531, T532)





DEFLECTION BOARD

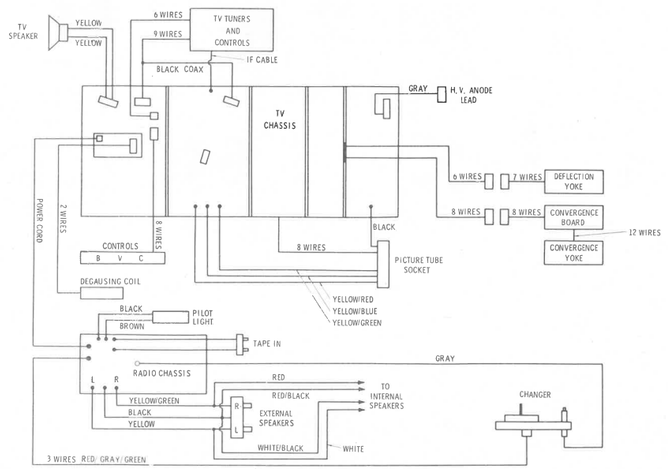
RESISTANCE MEASUREMENTS

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	
V101	FIL	4500Ω †	33K †	50K †	50K †	5500Ω †	33K †		55meg		5500Ω †	33K †	50K †	PIN 14 FIL
V301	100K	390Ω	FIL	FIL	700Ω †	345Ω †	NC							
V302	.5Ω	270Ω	FIL	FIL	900K ††	5200Ω †	470K							
V303	.5Ω	270Ω	FIL	FIL	10K †	10K †	0Ω							
V304	330K	47Ω	FIL	FIL	200Ω ▲	200Ω ▲	0Ω							
V305	70K	INFINITE	FIL	FIL	1600Ω †	1600Ω †	INFINITE							
V306	180Ω	.1Ω	180Ω	FIL	FIL	0Ω	2300Ω †	2300Ω †	0Ω					
V307	377Ω	250K	0Ω	FIL	FIL	0Ω	3600Ω †	10K †	0Ω					
V501	56K †	36K	47K †	FIL	FIL	39K †	65Ω	0Ω	1.8meg					
V502	FIL	7meg	NC	450Ω †	NC	2.6meg	2.6meg	5900Ω †	820Ω	700K	36K †	FIL		
V701	18K †	2.2meg	20K	FIL	FIL	15K †	470Ω	560Ω	220K					
V702	10K †	47K	*	FIL	FIL	*	47K	560Ω	47K					
V703	27K †	1.9meg	47K †	FIL	FIL	6800Ω †	0Ω	270Ω	1meg					
V704	22K †	470Ω	550K †	FIL	FIL	8200Ω †	0Ω	270Ω	1meg					
V705	22K †	470Ω	550K †	FIL	FIL	10K †	0Ω	270Ω	1meg					
V901	NC	11Ω †	NC	FIL	FIL	NC	NC	NC	NC					TOP CAP 850K
V902	NC	0Ω	1900Ω †	FIL	FIL	NC	NC	4.5meg	2Ω					TOP CAP 17.5Ω ††
TUNER V201	800K	0Ω	FIL	FIL	2000Ω †	0Ω	0Ω							
TUNER V202	0Ω	220K	0Ω	FIL	FIL	2900Ω †	6000Ω †	12K †	47K					

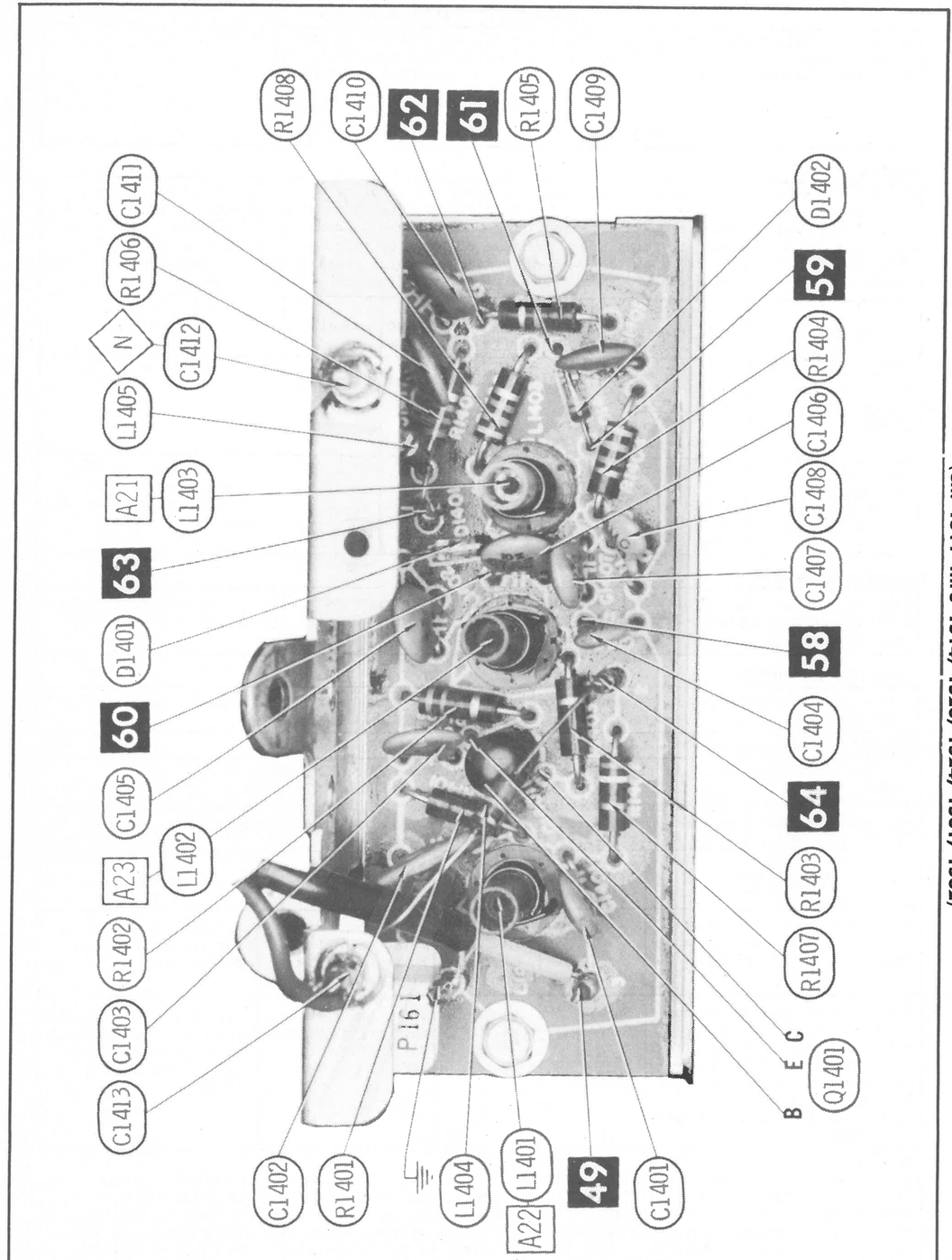
MEASUREMENTS BELOW TAKEN WITH METER HAVING .08V MAX BETWEEN PROBE TIPS

ITEM	E	B	C		ITEM	E	B	C		ITEM	E	B	C	
Q301	1500Ω	1200Ω	*		Q701	2meg	0Ω	2meg		UHF	Tuner			
Q302	220Ω	8500Ω	1200Ω		Q702	1800Ω	1.7meg	500K		Q301	1000Ω	3900Ω	8000Ω	
Q501	0Ω	27K	33K		Q1401	330Ω	1000Ω	4400Ω						

* READING DEPENDS UPON POLARITY OF METER CONNECTIONS.
† MEASURED WITH LOW POWER OHM METER
NC NO CONNECTION TP TIE POINT
† MEASURED FROM CATHODE OF SD1101 AND SD1103.
†† MEASURED FROM THE TOP CAP OF V901.
▲ MEASURED FROM PIN 2 OF V305.



CABLING DIAGRAM



AFT BOARD

A Howard W. Sams CIRCUITRACE" Photo

TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain voltage at 117VAC.
Allow a 20-minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools:

	GENERAL CEMENT
A1 thru A12	8606, 8606L, 8869
Tuner IF Output Coil	9296, 9297, 9300
A13 thru A16	8606, 8869, 9302

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 that shown. Connect a -5 volt supply to Point (A) and a -15 volt supply to Point (T), positive of supplies to ground. Disable mixer-oscillator tube, V202, by clipping Pin 9 of the tube. Disable horizontal sweep circuit by removing horizontal output tube, V902. Connect a 1500-ohm, 100-watt resistor from 280V source to ground.

INDICATOR	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	ADJUST	REMARKS
DC probe of VTVM thru 47K to Point (B), common to ground.	High side to test point (U) on VHF tuner, low side to ground.		41.25MC 47.25MC	A1,R335 A2 ,R354	Adjust for MINIMUM.
Vertical input of scope to Point (B), low side to ground.	High side to test point (U) on VHF tuner, low side to ground.	44MC (10MC Sweep)	41.25MC 42.17MC 44.00MC 45.75MC 47.25MC	A3,A4,A5, A6,A7, Tuner IF input coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 1.

SOUND IF ALIGNMENT

Tune in a station and adjust A11 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, A9 and A10.

4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and set the contrast at maximum. Adjust the fine tuning until a beat pattern is visible on the screen. Adjust A12 for MINIMUM beat interference.

CHROMA BANDPASS ALIGNMENT

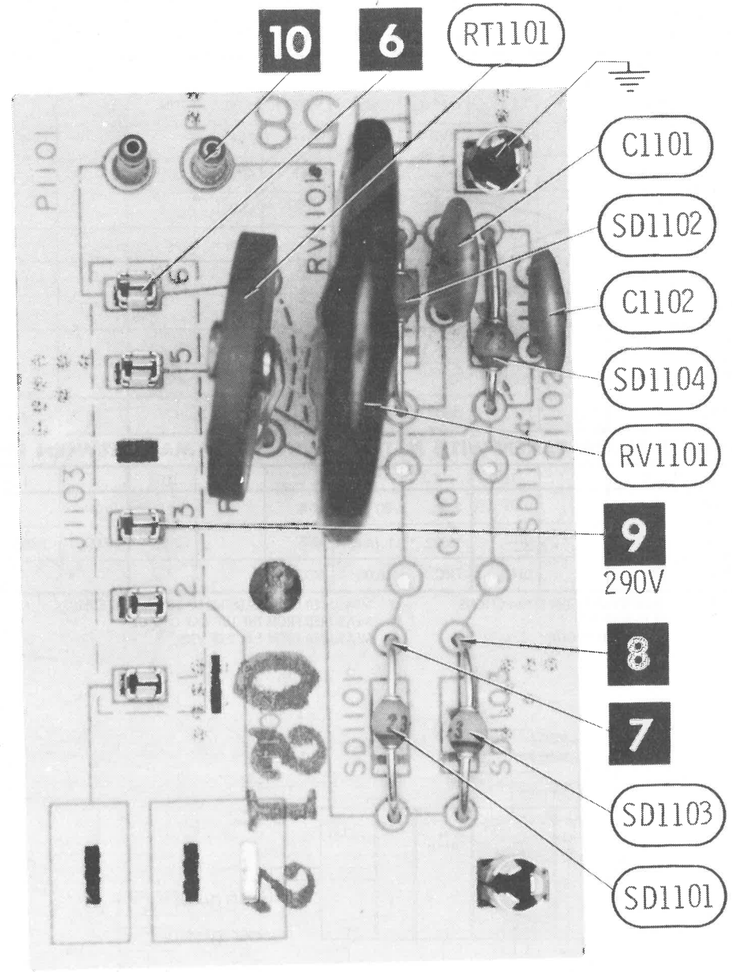
The following alignment will require the use of an RF modulator (RCA WG304B or equivalent). Connect a -5 volt supply to Point (A), a -15 volt supply to Point (T), and a -4 volt supply to Point (H), positive of all supplies to ground. Turn the color intensity to maximum. Remove the horizontal output tube and connect a 1500-ohm, 100-watt resistor from 280-volt source to ground. Remove V703 and set color killer control fully clockwise.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CONNECT SCOPE	REMARKS
High side thru .1mfd to grid of V701, 1st Chroma Bandpass Amp., low side to ground.	3.58MC (3-5MC Sweep)	3.08MC 3.58MC 4.08MC	Vert. amp thru detector probe to Point (E), low side to ground.	Adjust A14 and A15 for response curve similar to Fig. 2.
High side of sweep generator to video sweep input of RF modulator. High side of signal gen. (set at 45.75MC) to picture carrier input. Output of RF modulator to mixer grid test point on tuner, low side to ground.	Sweep Generator (3MC to 6MC Sweep)	3.08MC 3.58MC 4.08MC	Vert. amp thru detector probe to Point (F), low side to ground.	Adjust A16 for response curve similar to Fig.3. If necessary, adjust A13 to flatten top of response.

AFT (TOUCHUP)

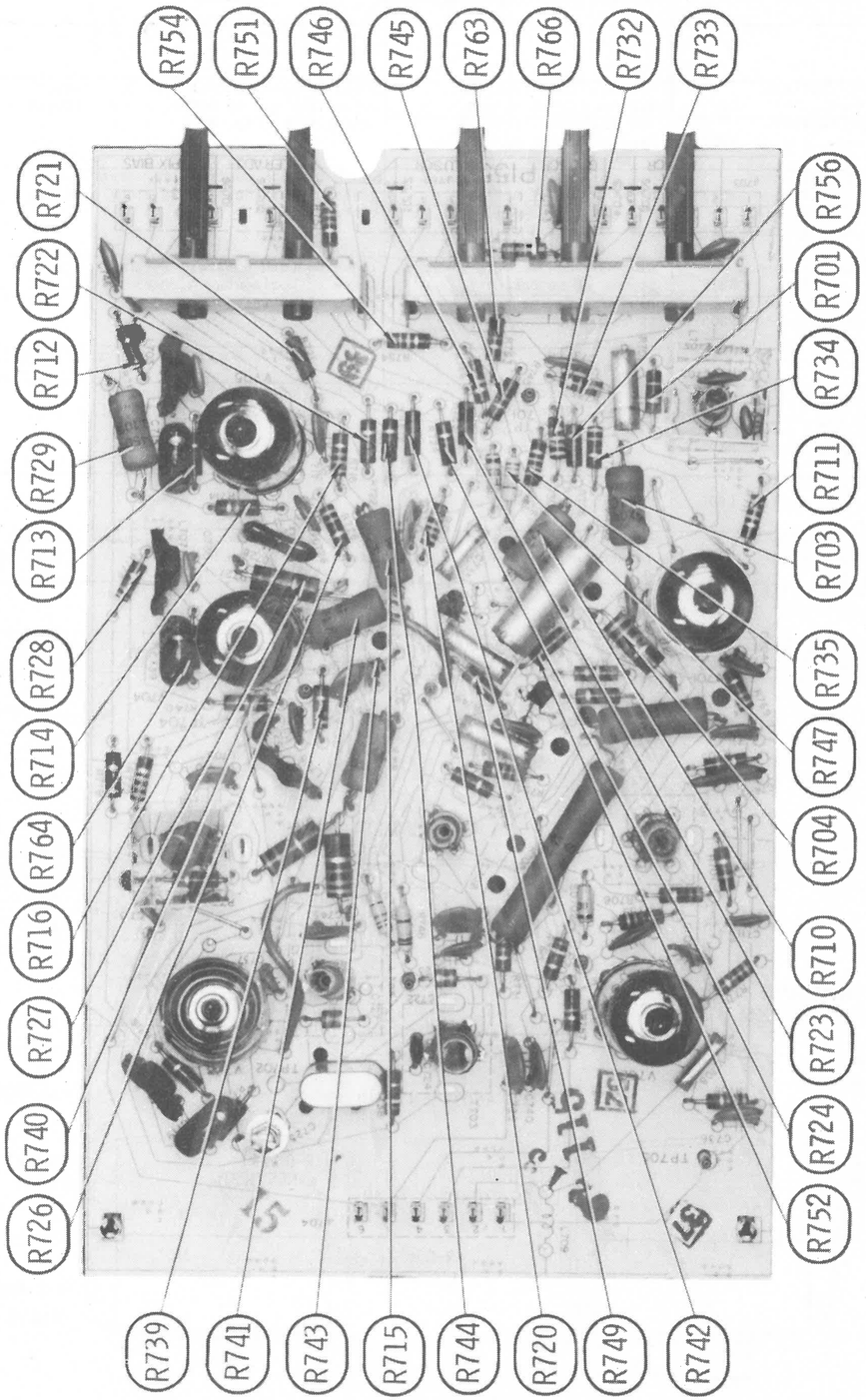
AFT ALIGNMENT

Tune in a TV station and set all controls for normal color reception. Pull out fine tuning control and adjust until the picture is herringbone. Carefully adjust the fine tuning control in the opposite direction until the herringbone condition of the picture just disappears. The fine tuning is now properly adjusted. Push the AFT switch to the On position. The quality of the picture or color intensity of the picture should not appreciably change. If a change occurs, slightly adjust A21 until the picture quality and color intensity are the same. While alternately moving the AFT switch On and Off and observing the picture, check all local color stations for proper AFT action.



POWER SUPPLY

A Howard W. Sams CIRCUITRACE® Photo



CHROMA BOARD

TV ALIGNMENT INSTRUCTIONS (Continued)

AFT ALIGNMENT

Suggested Alignment Tools: A21 thru A23 .. GENERAL CEMENT 9296, 9297, 9300
Disable the horizontal sweep section of the set by removing horizontal output and connecting a 1500-ohm, 100-watt resistor from 280-volt source to chassis ground. Connect sweep generator high side to Point (U) , low side to ground, on VHF tuner. Loosely couple marker generator cable to provide markers. Connect a -5 volts bias supply to Point (A) and a -15 volts bias supply to (T). Disconnect lead at Point (N) and connect oscilloscope high side to Point (N) , low side to ground. Adjust A22 for maximum positive amplitude at 46.25MC. Adjust A23 for maximum negative amplitude of 45.00MC. Adjust A21 for proper crossover at 45.75MC marker as shown in Fig. 5. Repeat alignment if necessary. Reconnect lead at Point (N) .

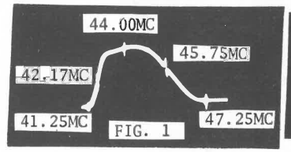


FIG. 1

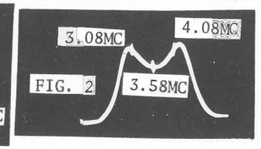


FIG. 2

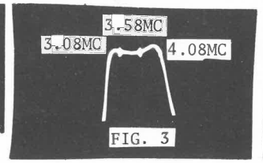


FIG. 3

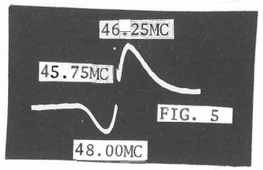
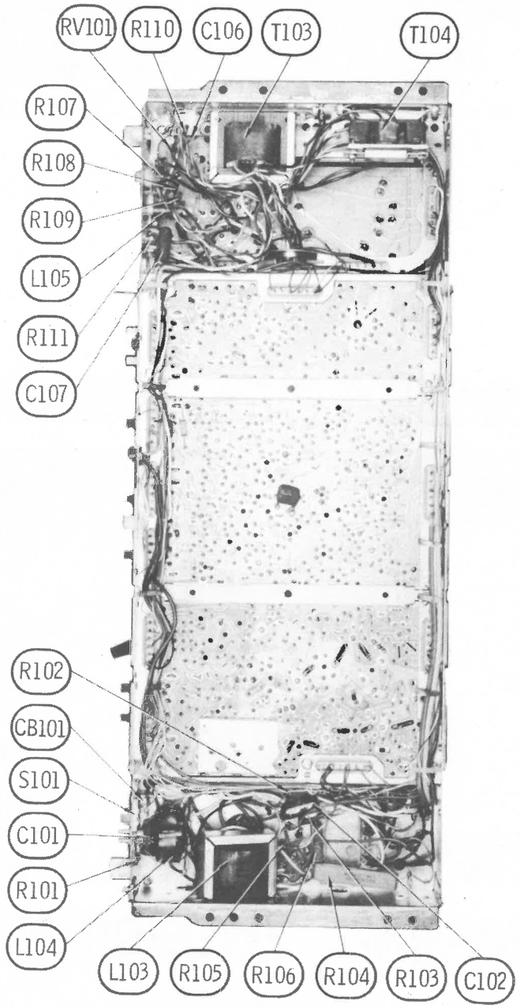
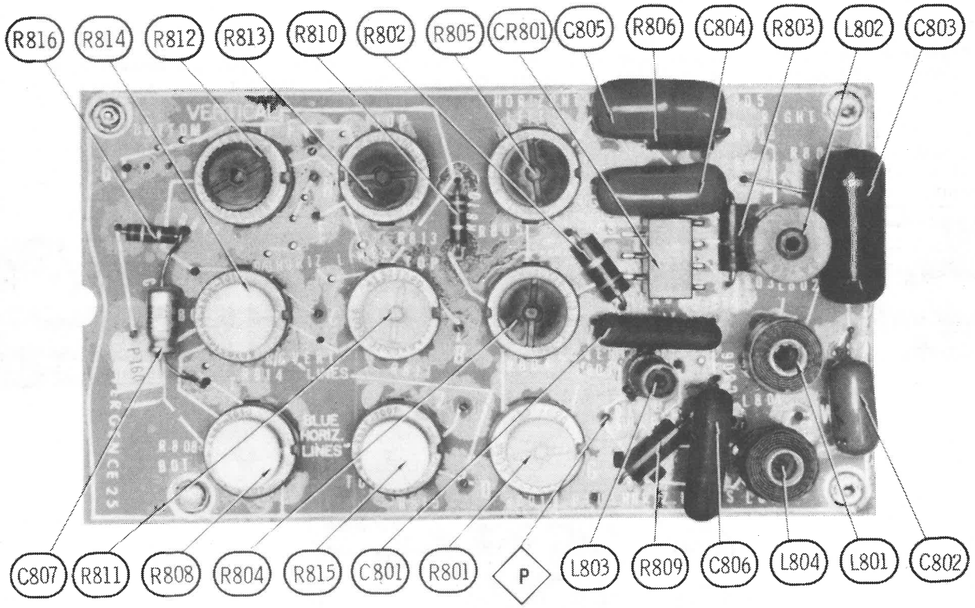
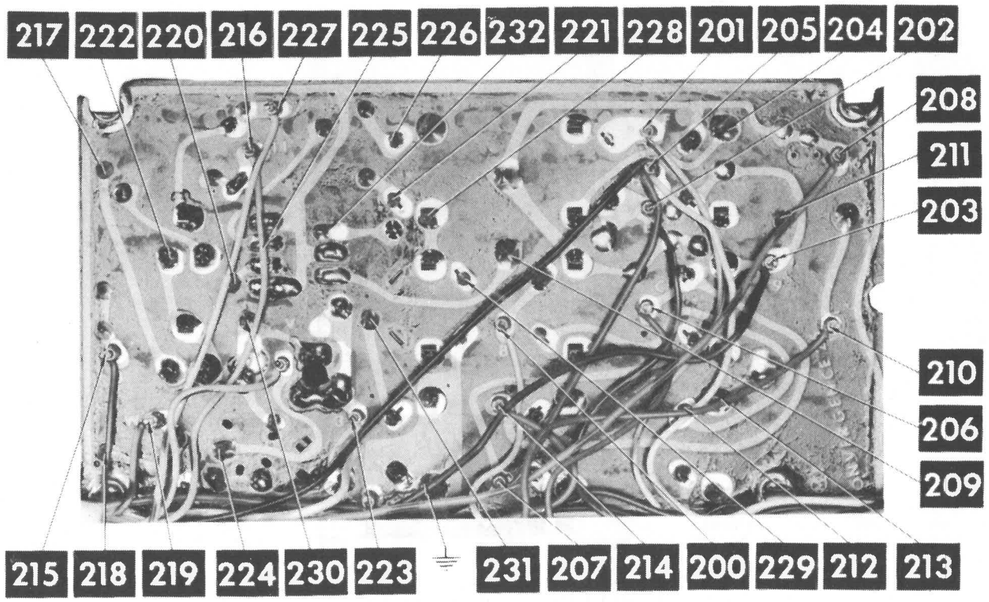


FIG. 5



CHASSIS-BOTTOM VIEW





A Howard W. Sams CIRCUITRACE Photo CONVERGENCE BOARD

CONVERGENCE ADJUSTMENTS

Step	Control	Use to Converge (or Straighten)	Remarks
1.			Perform Center Dot Convergence using convergence magnets. See Fig. A.
2.	R-G Vertical Lines, Top R811	Red and Green Vertical bars at top of screen.	Touch up both controls for best convergence from top to bottom along vertical center line (Fig. B).
3.	R-G Vertical Lines, Bottom R814	Red and Green Vertical bars at bottom of screen.	
4.	R-G Horizontal Lines, Top R813	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 R812	Red and Green Horizontal bars at bottom of screen.	
6.	Blue Horizontal Lines, Top R815	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 R808	Blue Horizontal bars at bottom of screen.	
8.			Perform Center Dot Static Convergence(Fig.A).
9.	Blue Horizontal Lines, Right L804	Blue Horizontal bars at right side of screen.	Touch up both controls for best convergence along horizontal center line (Fig. D).
10.	Blue Horizontal Lines, Left R801	Blue Horizontal bars at left side of screen.	
11.	R-G Vertical Lines, Right L801	Red and Green Vertical bars at right side of screen.	(Fig. E)
12.	R-G Horizontal Lines, Right L802	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 R804	Red and Green Vertical bars at left side of screen.	(Fig. E)
14.	R-G Horizontal Lines, Left R805	Red and Green Horizontal bars at left side of screen.	Use control to converge blue bar with red and green bars at left side of screen (Fig. E).

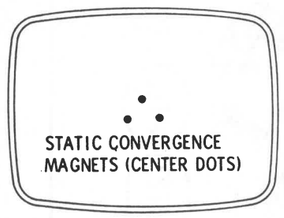


FIG. A

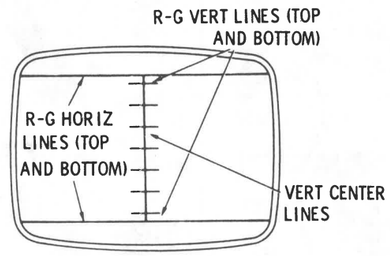


FIG. B
(RED AND GREEN ONLY)

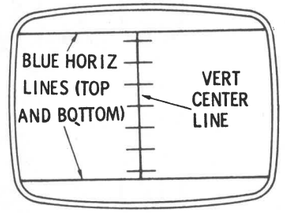


FIG. C
(BLUE BARS)

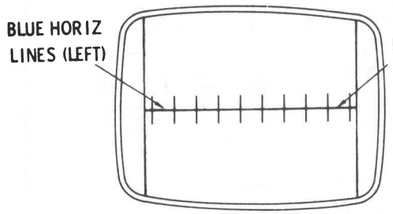


FIG. D
(BLUE BARS

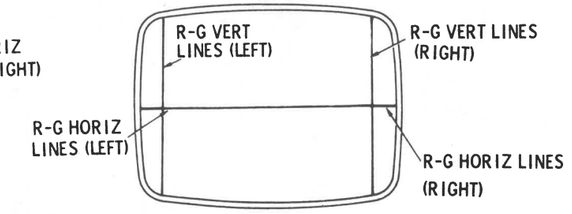
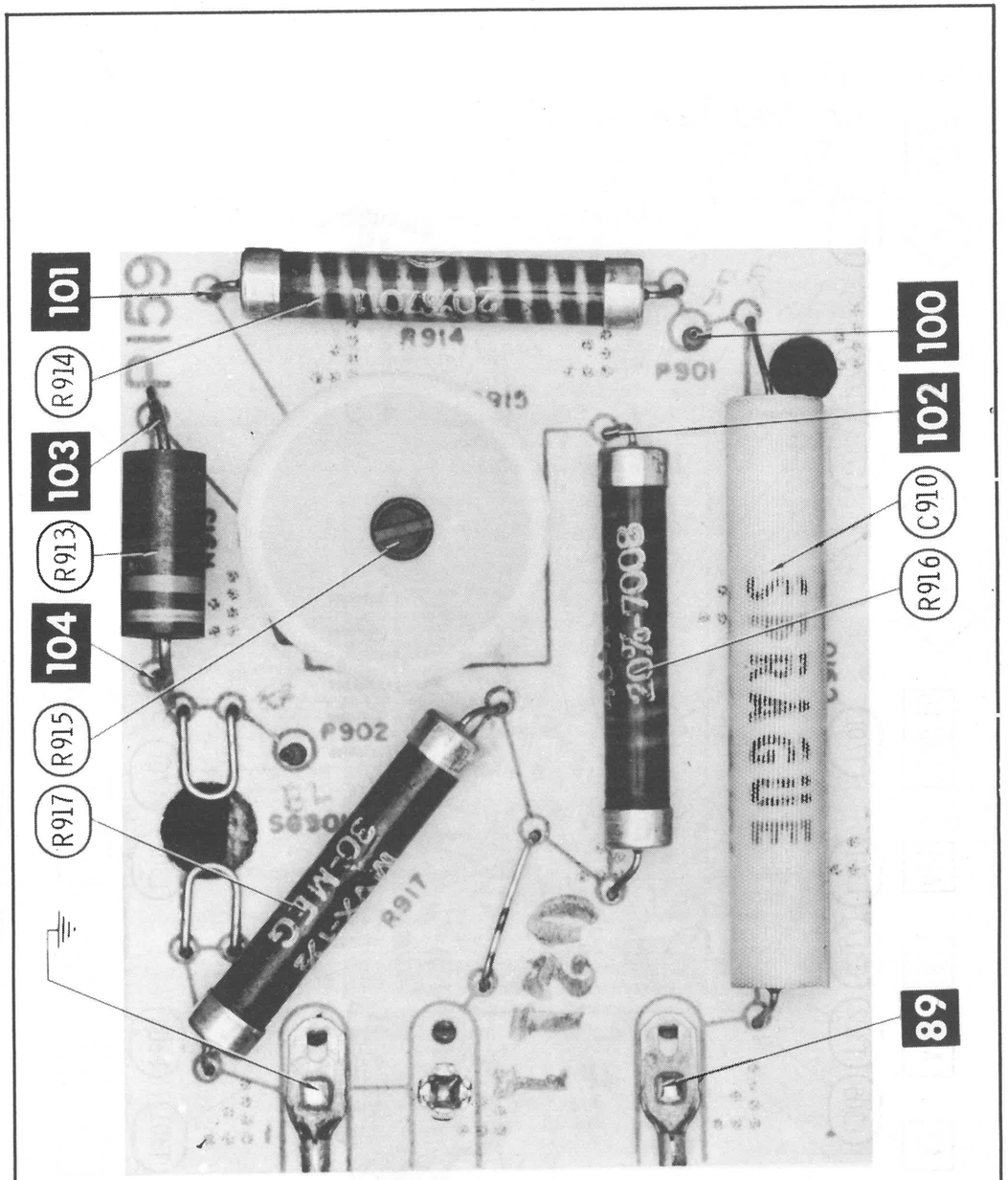


FIG. E

TUNER ASSEMBLY

CHASSIS-TOP VIEW



A Howard W. Sams CIRCUITRACE™ Photo FOCUS BOARD

MISCELLANEOUS ADJUSTMENTS

HIGH VOLTAGE ADJUSTMENT

Place Service-Normal-Raster switch in Raster position. Turn Brightness control to MINIMUM. Adjust high voltage control for 25KV. Turn Brightness control to maximum and adjust the Brightness Range control for 23KV.

Adjust Focus, Height, and Vertical Linearity controls.

AGC ADJUSTMENT

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

COLOR AFC ALIGNMENT

Suggested Alignment Tools:	GENERAL CEMENT
A17, A19 and A20	8606, 8869, 9302
A18	8728A

Connect a color bar generator to the antenna terminals. Adjust receiver for normal color reception. Set the Killer control to fully clockwise. Set the Tint control to MINIMUM, Color control to maximum.

Short Point (H) to ground. Ground Point (C) through silicon diode (cathode to chassis). Connect VTVM to Point (D) and adjust A17 for MINIMUM indication on meter. Keep core at bottom.

Adjust A18 until color bars stand still or drift slowly across screen. Remove shorts from Points (H) and (C). Connect DC VTVM to Point (J). Adjust A19 for approximately -3 volts DC on VTVM, core at bottom. Adjust A20 for equal indication on VTVM at both extremes of Tint control (Tint control to mid-position).

Connect the vertical input of a scope to Point (K). Check for proper waveform with the color bar generator being used. See waveform on schematic for pattern obtained from a standard keyed rainbow generator. Check the range of the Tint control. The bars should move 30° either side of proper signal. If necessary, retouch A20 for proper range of control.

Check for proper waveform at G-Y and B-Y outputs: Points (L) and (M). Tune in a weak signal or reduce the signal at the antenna terminals to obtain a snowy picture. Adjust 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 and rotate the assembly until a red spot appears at the center of the picture tube. Slide the deflection yoke forward to obtain a uniform red over entire picture tube face. A low-power microscope is useful to observe the beam landings.

GRAY SCALE ADJUSTMENTS

Tune in a black and white picture or a color picture with the Color control set at MINIMUM. Turn the CRT Bias control to MINIMUM (counterclockwise). Turn the red, blue and green screen controls to MINIMUM. Move the Normal-Service-Raster switch to Service position. Advance the screen controls one at a time until each produces a barely visible line.

If one or more controls fail to produce a line, leave that screen control at maximum and advance the CRT Bias until a barely visible line appears. Then readjust the other two screen controls for a barely visible line. Return the Normal-Service-Raster switch to the Normal position. Adjust the blue and green drive controls to eliminate coloring in the light and dark areas of the picture.

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

BLUE HORIZONTAL SHAPING COIL ADJUSTMENT

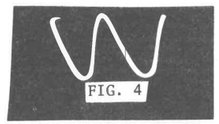
Connect high side of a scope to Point (P) (located on convergence panel), low side to ground. Adjust Blue Horizontal Shaping coil, L803, slug until the harmonic "bump" is at the 50% point on the wave slope. See Fig. 4.

DYNAMIC PINCUSHION ADJUSTMENTS

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

Connect a crosshatch generator to the antenna terminals and adjust the set for a normal crosshatch pattern. Turn the Pincushion Amp control, R111, fully clockwise.

Adjust L105, Phase Amp coil to move top upward and curvature to the top center of the screen. Readjust Pincushion Amp, R111, for straight horizontal lines at top and bottom of the screen. Repeat above steps if necessary.



HV BOARD

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

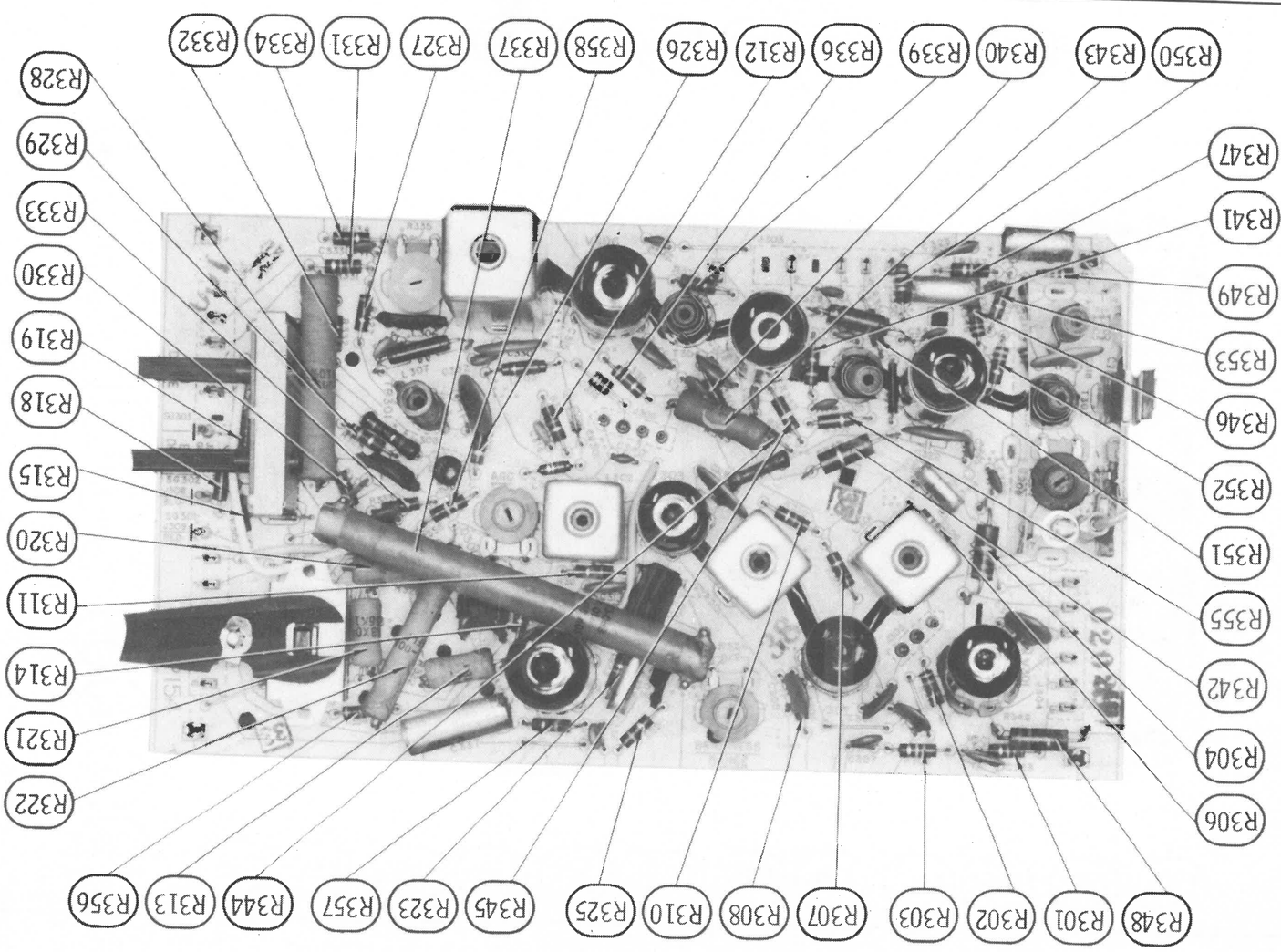
A Howard W. Sams CIRCUITRACE® Photo

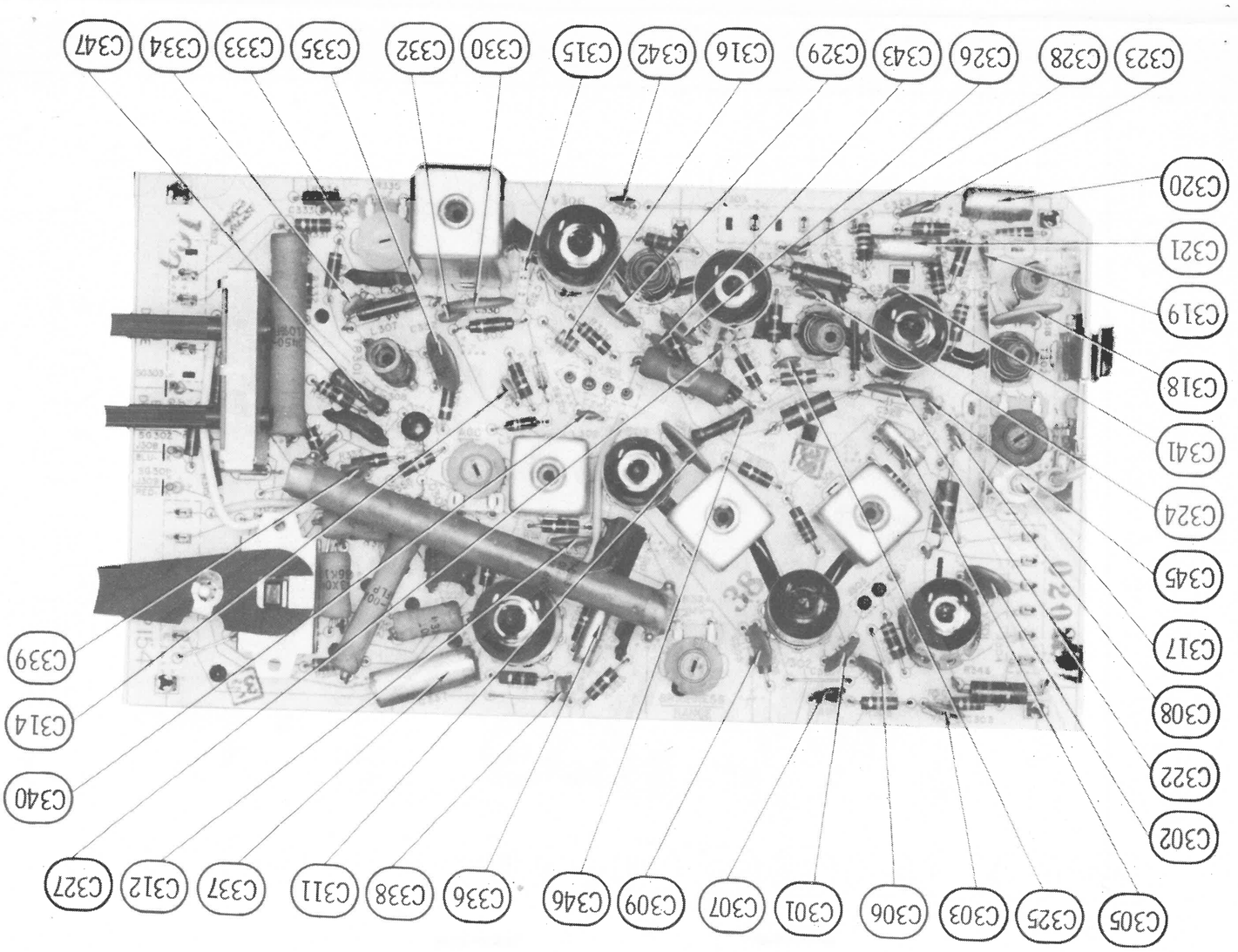
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VIDEO IF-SOUND BOARD

A Howard W. Sams CIRCUITRACE™ Photo

A Howard W. Sams CIRCUITRACE™ Photo





VIDEO IF-SOUND BOARD

VIDEO IF - SOUND

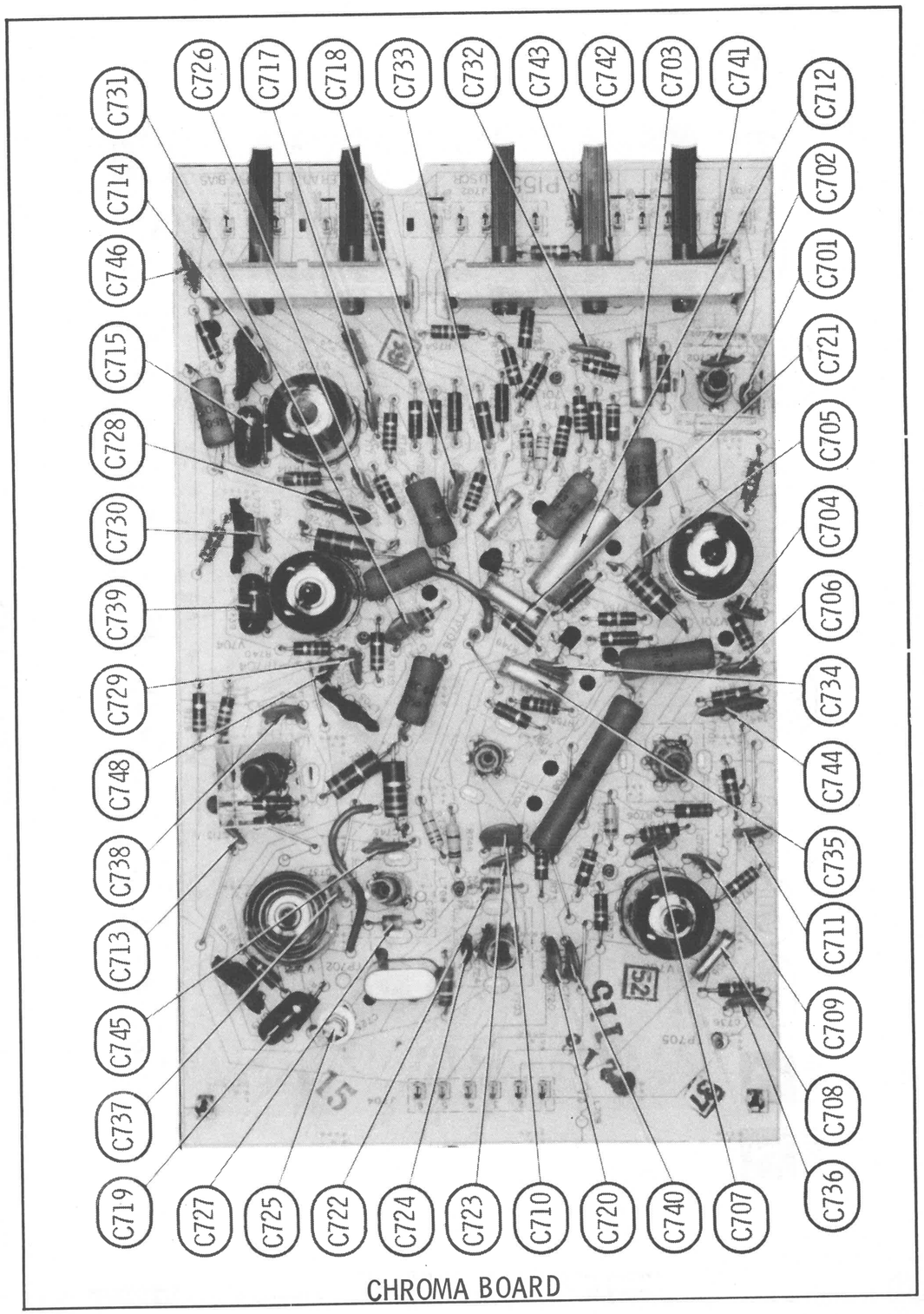
CHROMA BOARD

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

A Howard W. Sams CIRCUITRACE™ Photo

CHROMA BOARD

A Howard W. Sams CIRCUITRACE™ Photo



CHROMA BOARD

VHF TUNER PARTS LIST AND DESCRIPTION

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

TUBES

AMPEREX / GENERAL ELECTRIC ITEM No.	USE	TYPE
V201	RF Amp	6HA5

RCA / SYLVANIA ITEM No.	USE	TYPE
V202	Mixer - Oscillator	6GJ7 (6LJ8) *

* Alternate

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	NOTES
X201	24E-001-( )					Varactor

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA: AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	15pf 5%	#13L6GP150J	NPO-DI 15	DTZ-15	NPO15	CCTO-150	CNO415	10TCC-Q15
C202	.001	#31B-902-023						
C203	.5-4.5pf	#13M-063						
C204	47pf 10%	#31B-902-023						
C205	.5-4.5pf							
C206	.33pf	#13M-105-( )						
C207	15pf 5%		NPO-DI 1.5	DTZ-1R5	NPO1P5		CNO515	10TCC-V15
C208	1.2pf 10%	#31B-902-023						
C209	.5-4.5pf	#13M-035-( )						
C210	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C211	.001							
C212	.001	#13M-035-( )						
C213	.001	#13M-035-( )				*	*	10TCT-V82
C214	8.2pf N470	#13L6TH8R2C	NPO-DI 6.8	DTZ-6R8	NPO6P8		CNO568	10TCC-V68
C215	6.8pf N750							
C216	.001	#13M-035-( )						
C217	.001	#13M-035-( )						
C218	.001	#13M-035-( )						
C219	.001	#13M-035-( )						

* Not normally in distributor's stock. Available thru distributor on order to manufacturer. # Standard Kollsman Part Number

COILS (RF-IF)

ITEM No.	USE	MFGR. PART No.	NOTES
L201	UHF Input	34A-1150-022	
L202	Mixer Screen	25A-249-018	

ITEM No.	USE	MFGR. PART No.	NOTES
L203	Mixer Plate	31U-648-001	
L204	Oscillator Choke	25A-255-007	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
PC201	Antenna Input	13P-012	27pf, 27pf, 27pf,.25pf ±7.5%

UHF TUNER PARTS LIST AND DESCRIPTION

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

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA: MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q301	SPS428	UHF Oscillator	24T-016-(016)	GE-11	TR-22	HEP56	SK3019	ECG 108

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA: GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	NOTES
X301	24E-002-( )	1N82A	1N82AG	1N82A	ECG 112	Varactor
X302	24E-005-( )					

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	.5pf N750	#13X0009	NPO-DI 2.2	DTZ-2R2	NPO2P2		CNO522	10TCC-V22
C302	2-8pf	#31B-902-017						
C303	2.3pf							
C304	3opf	#13M-058-( )						
C305	.001	#13M-035-( )						
C306	.001	#13M-102-( )						
C307	.001	#13M-035						
C308	.001	#13M-035						
C309	220pf	#13M-106-( )						

COILS (RF-IF)

ITEM No.	USE	MFGR. PART No.	NOTES
L301	UHF Antenna	25A-269	
L302	Mixer Choke	34A-1150-023	

ITEM No.	USE	MFGR. PART No.	NOTES
L303	Oscillator RF Choke	31K-137-051	

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.

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
	VHF Tuner	25A1282-001	
	VHF Tuner	25A1282-002	
	VHF Tuner	25A1282-003	
	VHF Tuner	25A1282-004	
	VHF Tuner	25A1283-001	
	VHF Tuner	25A1283-002	
	VHF Tuner	25A1283-003	
	VHF Tuner	25A1283-004	
	UHF Tuner	25A1275-001	
	UHF Tuner	25A1275-002	
	UHF Tuner	25A1275-003	
	UHF Tuner	25A1277-001	
	UHF Tuner	25A1277-002	
	UHF Tuner	25A1277-003	
	UHF Tuner	25A1279-001	
DL301	Delay Line	9A2573-003	
L101	Degaussing Coil	9A2711-001	
S101	Switch	2A0595-001	Standby (On-Off)
S202	Switch	2A0624-000	Dial Lamp B+
S203	Switch	38A4159-000	AFT Defeat, used in Chassis T511, T512, T513, T514.
	Switch	2A0611-001	AFT Defeat, used in Chassis T523, T524.
	Switch	2A0629-001	AFT Defeat, used in Chassis T531, T532.
S301	Switch	2A0630-001(A)	Normal-Service-Raster
Y701	Crystal	68X0004-002	3.58MC
	Magnet	2A0590-003	Lateral and Purity
	Printed Circuit Board	38A4124-000	Video IF, Sound Complete (PW-300)
	Printed Circuit Board	38A4127-000	Deflection Complete (PW-500)
	Printed Circuit Board	38A4126-000	Chroma Complete (PW-700)
	Printed Circuit Board	38A4131-000	Comvergence, includes mounting bracket cable plug and Convergence Coil Assembly (PW-800)
	Printed Circuit Board	38A4252-000	Convergence, including mounting bracket only.
	Printed Circuit Board	38A4128-000	High Voltage Complete (PW-900) - Includes Focus board.
	Printed Circuit Board	38A4129-000	Power Supply (PW-1100)
	Printed Circuit Board	38A4227-000	Power Supply with AC Receptacle used on combination chassis only.
	Printed Circuit Board	38A4184-000	AFT Complete with cable (PW-1400)

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

ITEM	PART No.
MODELS: 122-1820A/-1840A/-1845A/-1850A	
Cabinet Back	14X0928-001
Picture Tube Mask	4X2220-008
Picture Tube Cover	57X0275-001
DIAL: VHF Assembly,Models 122-1840A/45A/50A	38A4200-000
UHF Assembly,Models 122-1840A/45A/50A (T511, T513)	38A4201-000
UHF Assembly,Models 122-1840A/45A/50A (T512, T514)	38A4202-000
UHF Assembly (T531), Model 122-1820A	38A3000-261
UHF Assembly (T532), Model 122-1820A	38A3000-249
KNOB: Slide Volume	10A1187-003
Slide Color	10A1187-004
Slide Tint	10A1187-005
Brightness, Vertical, Contrast	10A1183-902
AFT Fine Tuning, Models 122-1840A/45A/50A	10A1169-007
Fine Tuning, Model 122-1820A	38A3000-246
VHF-UHF Fine Tuning, Models 122-1840A/45A/50A	10A1185-002

ITEM	PART No.
MODEL: 122-1870A	
Picture Tube Mask	4X2220-009
Control Panel Escutchonn	38A4226-000
DIAL: UHF Assembly (T523)	38A3000-261
UHF Assembly (T524)	38A3000-249
KNOB: VHF Assembly	38A3000-250
UHF Assembly	38A3000-242
Fine Tuning	38A3000-246
On-Off-Volume	38A3000-267
Tint	10A1148-903
Brightness, Vertical, Contrast	10A1183-902
Color	10A1170-005
AFT	10A1172-001
MODELS: 122-1820A-1840A/-8845A/-1850A Cont.	
KNOB: VHF Assembly, Model 122-1820A	38A4208-001
UHF Assembly, Model 122-1820A	38A4208-002
Control Panel Escutcheon, Models: 122-1840A/45A	38A4199-000
Control Panel Escutcheon, Model 122-1850A	38A4207-000

WIRING DATA

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

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.

TUBES

AMPEREX / GENERAL ELECTRIC			RCA / SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V301	Audio Output	6AQ5A	V701	Horiz. Blanking Amp.- 1st Chroma Bandpass	6GH8A
V302	Audio Detector	6HZ6	V702	2nd Chroma Bandpass - Burst Amp.	6GH8A
V303	Sound IF	6EW6	V703	G-Y Amp.- 3.58MC Oscillator	6GH8A
V304	1st Video IF	6JH6	V704	X Demodulator - R-Y Amp.	6GH8A
V305	2nd Video IF	6GM6	V705	Z Demodulator - B-Y Amp.	6GH8A
V306	3rd Video IF	6JC6A	V901	Damper	6EC4A/EY500A
V307	Video Output	12BY7A	V902	Horiz. Output	6KG6A/EL509
V501	Horiz. AFC - Horiz. Osc.	6GH8A			
V502	Vert. Mult.- Vert. Output	6MF8			

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V101	25VABP22 or 25VAMP22	25VAKP22	H-25VABP22 (2)	XR25VAEP22 (1)	(1) Color Bright "85"
	25VAEP22 *	25VAKP22	H-25VABP22 (2)	XR25VAEP22 (1)	(2) Hi-Lite
					* Model 122-1820A.

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA					
			MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q301	SE1002	AGC Keying	86X0006-001	GE-17	TR-21	HEP729	SK3018	ECG 123A
Q302		Video Amp	86X0034-001	GE-17	TR-21	HEP720	SK3040	ECG 123A
Q501		Sync Separator	86X0035-001	GE-17	TR-21	HEP736	SK3024	ECG 123A
Q701		ACC	86X0045-001	GE-17	TR-21	HEP723	SK3024	ECG 123A
Q702	2N5087	Color Killer	86X0044-001	GE-22	TR-19	HEP57	SK3025	ECG 159
Q1401	SE5025	AFT Amp	86X0038-001	GE-20	TR-21	HEP720	SK3018	ECG 108

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT DATA				NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	RCA PART No.	SYLVANIA PART No.	
CR301	66X0020-000 (1N295)	1N34AS	1N34A	1N34A	ECG 109	
CR302	66X0020-000 (1N295)	1N34AS	1N34A	1N34A	ECG 109	
CR501	66X0025-000 (9LR2-24)	6GC1	DD04		ECG 113	
CR502	66X0023-003 (1N5061) or(1N4385)	GE-504A	8D6 or 5A6D	SK3017A or SK3032	ECG 116 or ECG 117	
CR801	66X0041-001 (RCC-7022) or (TVC3)	GECR-3 or GE-504A (4)	CD07 or 8D4 (4)		ECG 120 or ECG 116 (4)	(4) Four required.
D1401	66X0020-000 (1N295)	1N34AS	1N34A	1N34A	ECG 110 (6)	(6) Matched pair.
D1402	66X0020-000 (1N295)	1N34AS	1N34A	1N34A	ECG 110 (6)	
SD301	66X0043-001 (FD222)	1N34AS	1N34A	1N34A	ECG 177	
SD701	66X0038-001 (SD701-02)	GE-504A	8D4 or 5A4D	SK3030 or SK3031	ECG 506	
SD702	66X0038-001 (SD701-02)	GE-504A	8D4 or 5A4D	SK3030 or SK3031	ECG 506	
SD1101	66X0023-003 (1N5061) or(1N4385)	GE-504A	8D6 or 5A6D	SK3017A or SK3032	ECG 116 or ECG 117	
SD1102	66X0023-003 (1N5061) or(1N4385)	GE-504A	8D6 or 5A6D	SK3017A or SK3032	ECG 116 or ECG 117	
SD1103	66X0023-003 (1N5061) or(1N4385)	GE-504A	8D6 or 5A6D	SK3017A or SK3032	ECG 116 or ECG 117	
SD1104	66X0023-003 (1N5061) or(1N4385)	GE-504A	8D6 or 5A6D	SK3017A or SK3032	ECG 116 or ECG 117	
SE901	66X0036-001	GECR-2	61-8968		ECG 506	
VM101	66X0045-001			SK3069	ECG 501	

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.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA: PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C104a	200 350V	45X0536-001(A)	AFH4-56-88.5		CC0238.7A &	XC3-48.05 &	FP331.9 &	TVL-4624.13
b	120 350V				WBR5-150	MT1-4	TC30A	
c	80 350V							
d	5 50V							
C105a	20 350V	45X0539-001	AFH2-37 &		CC0990A	XC2-14A &	FP333.7	TVL-3751.2
b	20 350V		PRS1350			MT1-20.5		
c	50 50V							
C220	5 NP 10V	45X0534-001	PRS7550		BRNP5-15	NPQT-1	TCN105	TVAN-1203.1
C502	5 35V		CRE754A	EA50-5	AL5-150	MT1-3	MTA5D50	TE-1303
	5 15V	45X0515-013	CRE754A	EA50-5	AL5-150	MT1-3	MTA5D50	TE-1303
C530	10 350V	45X0540-001	PRS1620		WBR10-500	QT1-6	TC62A	TVA-1604
C531	50 50V	45X0515-019	CRE767A	EA50-50	WBR60-50	MT1-17	MTA50F50	TE-1307
C807	10 10V	45X0515-008	PTT39	EA15-10	AL10-25	MT1-5	MTA10D35	TE-1128
C903	100 10V	45X0515-002	PTT46	EP15-100	AL100-16	MT1-19	MTA100E10	TE-1135

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.
C101	.047		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C102	.1 600V		DBE6P15		DPMS6P15	6DP-5-154	PVC6015	6PS-P15
C106	100 10%		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C107	.18 200V 10%		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C108	100 N750 3KV 10%		N750-DI 100	DTN-100	N100	CCTN-101	CN7310	10TCU-T10
C237	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C301	.0068 N330 500V	#80X0099-035				*	*	
C302	.001 2KV 10%		HVD-301000	DD30-102	HV3-1000	3CCD-102	3HV210	30GA-D10
C303	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C305	.047 200V		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C306	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C307	560 500V 10%		GPD X5F561K	DD-561	GP560	CCD-561	GP356	10TS-T56
C308	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C309	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C311	750 N2200 500V 5%	#80X0099-096					*	10TCY-Q75
C312	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C314	10 NPO 500V 10%		NPO-DI 10	DTZ-10	NP010	CCTO-100	CN0410	10TCC-Q10
C315	1.5 N3300 +.25	#47X0656-000						
C316	.47pf 500V							
C317	3-15pf							
C318	150 NPO 500V 5%		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C319	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C320	.22 100V 10%		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C321	.22 100V 10%		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C322	680 N2200 500V 10%	#80X0099-051					*	10TCY-T68
C323	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C324	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C325	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C326	220 N1500 500V 10%					*	*	10TCW-T22
C327	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C328	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C329	.0022 500V 10%		GPD X5F222K	DD-222	GP2200	CCD-222	GP222	10TS-D22
C330	560 N1500 500V 5%					*	*	10TCW-T56
C332	5 NPO 500V 10%		NPO-DI 5.0		NP05			10TCC-V50
C333	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C334	5 NPO 500V 10%		NPO-DI 5.0		NP05			10TCC-V50
C335	100 N33 500V 10%		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C336	.1 100V 10%		DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C337	.18 400V 10%		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C338	390 500V 10%		GPD X5F391K	DD-391	GP390	CCD-391	GP339	10TS-T39
C339	680 500V 10%		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C340	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C341	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C342	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C343	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C345	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C346	.001 500V		DBE6D1	DD-102	DPMS6D1	6DP-1-102	PVC621	6PS-D10
C347	7pf NPO +.5		NPO-DI 6.8	DTZ-6R8	NP06P8		CN0568	10TCC-V68
C348	.001 N330					*	*	
C501	.0047 500V 10%		GPD X5R472K	DD-472G	GP4700	CCD-472	JF247	10TS-D47
C503	820 500V 10%		GPD X5F821K	DD-821	GP820	CCD-821	GP382	10TS-T82
C504	470 N330 500V 10%	#80X0099-006				*	*	10TCS-T47
C505	.0047 500V 10%		GPD X5R472K	DD-472G	GP4700	CCD-472	JF247	10TS-D47
C506	560 500V 10%			CPR-560J	CD19F561J500	DM-16-561	SK356	MS-356
C507	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C508	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C509	100 500V 10%		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C510	.0068 500V 10%			CPR-6800J		DM-30-682	SK268	MS-268
C511	.01 600V 10%		V1614S1	CPR-10000J	DPMS6S1	4DP-1-103	PVC411	4PS-S10
C512	.01 1KV		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C513	220 N750 500V 10%		N750-DI 220		N220	CCTN-221		

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA: MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	NOTES
L106	Yoke (Horiz. 13.2mh)	9A2707-001(-B)	DY98AC (2)	Y109 (2)	YC-312-2 (2)	(1) Includes convergence plug pins and vertical output transformer.
	90° (Vert. 24mh)					(2) See component connection data.
T103	Vert. Output	51X0248-001				
	Vert. Output Assembly	38A4145-000 (1)				
T104	Pincushion Correction	52X0116-003(-A)				
T901	Horiz. Output	53X0453-001(-E)	HO-646CF		D-324	

SWEEP COMPONENT CONNECTION DATA

ORIGINAL → / REPLACEMENT ↓	HORIZONTAL OUTPUT: Original Connections	YOKE: Original Connections	YOKE PLUG: TO YOKE TERMINAL
		Red, Blue, Brown, Yellow, Green, Black, White	
STANCOR	EXACT REPLACEMENT	Red, Orange, Blue, Yellow, Yel/Blk, White, Red/Whi. (1) (3)	
THORDARSON		Red, Blue, Brown, Yellow, Green, White, Black (2) (3)	
TRIAD	EXACT REPLACEMENT	Red, Orange, Brown, Yellow, Green, White, Black (3)	

(1) Remove vertical damping resistor and install original thermistor. (2) Rotate 180°. (3) Use original yoke plug and clamp.

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE: PRI.	IMPEDANCE: SEC.	REPLACEMENT DATA: MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	NOTES
T102	12K	8	51X0236-004	A-3852	24S06	S-53X	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA: MFGR. PART No.	QUAM PART No.	NOTES
SP1	4" x 6" PM 8 ohms	12A0654-001	46A1Z10	

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA: PART No. DEVICE	PART No. HOLDER	BUSS PART No. DEVICE	BUSS PART No. HOLDER	LITTELFUSE PART No. DEVICE	LITTELFUSE PART No. HOLDER	WORKMAN PART No. DEVICE
CB101	Circuit Breaker	2A0610-001 (1)						
F101	1 1/2" length #24 wire	320X2400-000						
F102	1" length #28 fuse wire	320X2800-000						F 28

(1) Double circuit breaker.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

COILS (RF-IF) (cont)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L705	RF Choke (3.3uh)	9A2680-003		74F336AP	T970
L706	3.58MC Oscillator Adjust	9A2710-001			
L707	Peaking (620uh)	36A0095-008	19-2030	6146	T326
L901	RF Choke (5.6uh)	9A2553-004	19-1008	74F566AP	T820
L902	RF Choke (5.6uh)	9A2553-004	19-1008	74F566AP	T820
L1401	AFT Input	9A2681-001		7515-E	TA227
L1402	Discriminator, Primary	9A2681-002		7515-E	TA227
L1403	Discriminator, Secondary	9A2681-003			
L1404	RF Choke (1.8uh)	9A2553-001	19-2010	74F186AP	T990
L1405	RF Choke (1.8uh)	9A2553-001	19-2010	74F186AP	T990
T301	Sound Interstage	9A2698-001			
T302	1st Video IF	9A2562-001	17-3418	7549	T272
T303	2nd Video IF	9A2562-003	17-3419	7552	TB644
T304	3rd Video IF	9A2562-002	17-3414	7526	TA258
T305	4th Video IF/41.25MC Trap	9A2667-003			
T306	Service Transformer	9A2655-001		7600	
T701a/b	1st Chroma Bandpass	9A2661-003			
T702	2nd Chroma Bandpass	9A2709-001			
T703	Burst	9A2685-002			
T704	3.58MC Oscillator	9A2660-002			

(1) Two required.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA					
		MFGR. PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L105	Pincushion Phase	9A2629-002	H-178				
L501	Horiz. Oscillator	9A2708-001					
L801	Right R-G Vert. Lines	9A2555-002D	6347		WC-41		T149
	Right R-G Vert. Lines, Alt.	9A2555-002B	H-138				T149
L802	Right R-G Horiz. Lines	9A2634-001	H-139				
L803	Blue Horiz. Shape	9A2630-001	H-136				
L804	Right Blue Horiz. Lines	9A2556-002	H-140				
L805	Convergence Yoke Assembly	9A2649-002D			Y-113		
A	Blue Section						
B	Red Section						
C	Green Section						

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L103	.550A DC	15.5	.36 H	52X0114-002(A)	C-2708 (1)	26C81 (1)	C-40X (1)	(1) Drill new mounting hole(s) if necessary.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T101	117VAC @ 2.9A AC (1)	225VAC @ .6A DC	53X0445-002(A)				(1) Primary has stand-by tap.
	SEC. 2	SEC. 3					
	6.3VAC @ 1A AC	6.3VAC @ 9.75A AC					

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.
C514	.047 400V		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C515	820 10%				CD19F821J500	DM-19-821	SX382	MS-382
C516	.0022 500V 10%		GPD X5F222K	DD-222	GP2200	CCD-222	GP222	10TS-D22
C517	.047 200V		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C518	680 500V 10%		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C519	.0047 500V 10%		GPD X5R472K	DD-472G	GP4700	CCD-472	JF247	10TS-D47
C520	.01 400V 10%		V1614S1	CPR-10000J	DPMS6S1	4DP-1-103	PVC411	4PS-S10
C521	560 NPO 500V 5%		GPD X5F561K	DD-561	GP560	CCD-561	GP356	10TS-T56
C522	10 NPO 500V 5%		NPO-DI 10	DTZ-10	NP010	CCT0-100	CN0410	10TCC-Q10
C523	.15 600V		DBE6P15		DPMS6P15	6DP-5-154	PVC6015	6PS-P15
C524	.0022 630V 10%			CPR-2200J	CD19F222J500	DM-19-222J	SX222	424ME2201J501
C525	.1 600V 10%		DBE6P15		DPMS6P15	6DP-5-154	PVC6015	6PS-P15
C526	.047 600V		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C527	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C528	.0022 500V 10%	N330				*	*	
C529	.0033 3KV 10%		HVD-303300	DD30-332			3HV233	30GA-D33
C701	10 NPO 500V 10%		NPO-DI 10	DTZ-10	NP010	CCT0-100	CN0410	10TCC-Q10
C702	33 N150 500V 10%	#80X0099-058				*	*	10TCP-Q33
C703	.1 100V 10%		DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C704	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C705	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C706	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C707	130 N750 500V 10%		GPD X5F151K	DD-151	GP150	CCD-151	GP315	10TS-T15
C708	.01 100V 10%		V1614S1	CPR-10000J	DPMS6S1	4DP-1-103	PVC411	4PS-S10
C709	33 N150 500V 10%	#80X0099-058				*	*	10TCP-Q33
C710	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C711	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C712	.18 400V 10%		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C713	33 N150 500V 10%	#80X0099-058				*	*	10CP-Q33
C714	33 N150 500V	#80X0099-041				*	*	10CP-Q33
C715	.01 400V 10%		V1614S1	CPR-10000J	DPMS6S1	4DP-1-103	PVC411	4PS-S10
C717	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C718	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C719	.01 400V 10%		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C720	150 N750 1KV 10%		N750-DI 150		N150	CCTN-151		
C721	.1 100V 10%		DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C722	.82 500 500V		NPO-DI 1.0	TCZ-1			CN0510	10TCC-V10
C723	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C724	220 500V 10%		GPD X5F221K	DD-221	GP220	CCD-221	GP322	10TS-T22
C725	3-15							
C726	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C727	.82 500V		NPO-DI 1.0	TCZ-1			CN0510	10TCC-V10
C728	680 500V 5%		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C729	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C730	33 N150 500V	#80X0099-041				*	*	10CP-Q33
C731	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C732	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C733	.047 100V 10%		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C734	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C735	.1 100V 10%		DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C736	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C737	10 NPO 500V 5%		NPO-DI 10	DTZ-10	NP010	CCT0-100	CN0410	10TCC-Q10
C738	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C739	.01 400V 10%		V1614S1	CPR-10000J	DPMS6S1	4DP-1-103	PVC411	4PS-S10
C740	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C741	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C742	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C743	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C744	330 500V 5%		GPD X5F331K	DD-331	GP330	CCD-331	GP333	10TS-T33
C745	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C746	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C748	100 500V 10%		GPD X5F101K	DD-101	GP100	CCD-101	GP310	10TS-T10
C749	.22 100V 10%		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C801	.1 200V		DBE2P1		DPMS2P1	2DP-3-104	PVC201	2PS-P10
C802	.033 400V 10%		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C803	.15 400V 10%		DBE6P15		DPMS4P15	4DP-4-154	PVC6015	4PS-P15
C804	.082 200V 10%		DBE6S82		DPMS6S82	6DP-4-823		6PS-S82
C805	.12 200V 10%		DBE6P15		DPMS4P15	4DP-4-154	PVC6015	4PS-P15
C806	.27 200V 10%		V1616P33		DPMS6P33	6DP-6-334	PVC6033	
C901	.047 400V		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C902	230 N1500 5KV 10%	#80X0098-038				*	*	10TCW-T22
C904	100 N750 1KV 10%		N750-DI 100		N100	CCTN-101		
C905	.01 1KV		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C906	.033 600V 10%		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C907	.0033 500V		GPD X5R332K	DD-332	GP3300	CCD-332	JF233	10TS-D33
C908	.01 1KV		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C909	.001 500V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C910	.0025 10KV		DBE6D25		DPMS6D25	6DP-1-252	PVC6225	6PS-D25
C1101	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1102	.001 1KV		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1401	22 N220 500V 10%	#80X0099-100				*	*	10TCR-Q22
C1402	220 N750 500V 10%		N750-DI 220		N220	CCTN-221		
C1403	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1404	15 N220 500V 10%	#80X0099-015				*	*	10TCR-Q15
C1405	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1406	22 N220 500V 10%	#80X0099-100				*	*	10TCR-Q22

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.
C1407	22 N220 500V 10%	#80X0099-100				*	*	10TCR-Q22
C1408	1.5 NPO 500V		NPO-DI 1.5	DTZ-1R5	NP01P5		CN0515	10TCC-V15
C1409	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1410	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1411	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C1412	.001 500V	#47X0784-001						
C1413	.001 500V	#47X0784-001						

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
\# Catalina Part Number.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS—IRC PART No.	MALLORY PART No.
R107	Vert. Centering	10 2W	40X0608-001, B	WP-15,WSK104 or [WT-10 (2), WSK104] or V-10 (1)	U39-15 (1) or [NPW-10 (2), NML-A 300]	P115R100A (2), P115-117-1 or 110-15 (1)	MR15P,MRS1250 or [MR10T (2), MRS1250]
R111	Top & Bottom Pincushion Amp	10K 2W	40X0577-004	WT-10K or WN-103 or WW-103	A43-10K,FKS-1/2 or [NPW-10K, NML-A-300,TT-2]	P115R103A or WPS1000 or [BU1,WF9,SS6] * (10) QJ-2638	MR10T or VW10K or C10MP
R201	Color (Rear)	500	78X0057-007, (7) D				
R202	Tint (Front)	10K					
	Color (Slider Type)	500	40X0616-002(8)				
	Color (Slider Type)	500	40X0620-002(9)				
	Tint	10K	40X0616-001(8)				
	Tint	10K	40X0620-001(9)				
R203	Volume/Switch	1meg	78X0064-001				
	Volume (Slider Type)	1meg	40X0616-003(8)				
	Volume (Slider Type)	1meg	40X0620-003(9)				
R204	Contrast	350	40X0594-003	F1-500,SN200	A47-500-S, RN-3,TT-2 or [NP-350-S, NML-A-300,TT-2]	B11-103,TM4 or [BU1,CF4,SS6] *	RU52L,SL37, SN1500 or [UA52L,SN1500] or PTA52L (3)
R205	Vertical Hold	750K	40X0585-048, A	F1-750K,SN200	A47-750K-S, RN-3,TT-2 or [NP-750K-S, NML-A-300,TT-2]	B11-136,TM4 or [BU1,CF64,SS6] *	RU754L,SL37, SN1500 or [UA16L,SN1500] or PTA754L (3)
R206	Brightness	250K	40X0585-063	F1-250K,SN200	A47-250K-S, RN-3,TT-2 or [NP-250K-S, NML-A-300,TT-2]	B11-130,TM4 or [BU1,CF15,SS6] *	RU254L,SL37, SN1500 or TA254L
R316A	Green Drive	6000 "A"	40X0614-001			H3 (4) [A-E6,A1]	
B	Blue Drive	6000 "B"				(B-E6,A1]	
R324	Brightness Range	500K	40X0590-009	TSV-500K (5) or T-500K (5)		U201R504B	MTC55L4
R335	Sound Reject (41.25MC Trap Adjust)	750	40X0590-007	T-750 (5) or TSV-1K (5)		U201R102B	MTC751L4
R338	AGC	5000	40X0590-008, B	TSV-5K (5) or T-5000		U201R502B	MTC53L4
R354	Adjacent Sound Reject (47.25MC Trap Adjust)	10K	40X0590-006, A	TSV-10K (5) or T-10K (5)		U201R103B	MTC14L4
R528A	Vert. Linearity	50K "A"	40X0614-003				
B	Height	7.5meg"B"					
R730A	CRT Bias	(6) 1meg "B"	40X0614-002			H3 (4) [A-E19,A1]	
B	Color Killer	1meg "A"				[B-E19,A1]	
R765A	Red Screen	1.5meg"A"	40X0615-001			H4 (4) [A-E20,A1]	
B	Green Screen	1.5meg"B"				[B-E20,A1]	
C	Blue Screen	1.5meg"C"				[C-E20,A1]	
R801	Blue Horiz. Lines (Left)	90 3W	40X0570-007, C	WP-100,WSK104			MR100P,MRS1250
R804	R/G Vert. Lines (Left)	120 1W	40X0570-003	WCP-120 or V-120	U39-125	110C120	MRC120P
R805	R/G Horiz. Lines (Left)	120 1W	40X0570-003	WCP-120 or V-120	U39-125	110C120	MRC120P

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.

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS—IRC PART No.	MALLORY PART No.
R808	Blue Horiz. Lines (Bottom)	60 1W	40X0570-004, A	WCP-60 or V-60	U39-75	110C60	MRC60P
R811	R/G Vert. Lines (Top)	150 1W	40X0570-001, A	WCP-150 or V-150	U39-150	110C150	MRC150P
R812	R/G Horiz. Lines (Bottom)	500 1W	40X0570-006, A	V-500 or [WP-600,WSK104]	U39-500	110-600	MR600P,MRS1250
R813	R/G Horiz. Lines (Top)	120 1W	40X0570-003	WCP-120 or V-120	U39-125	110C120	MRC120P
R814	R/G Vert. Lines (Bottom)	60 1W	40X0570-004, A	WCP-60 or V-60	U39-75	110C60	MRC60P
R815	Blue Horiz. Lines (Top)	60 1W	40X0570-004, A	WCP-60 or V-60	U39-75	110C60	MRC60P
R902	Horiz. Centering	10 2W	40X0619-001 (25-116)	WT-10,WSK104		P115R100A, P115-117-1	MR10T,MRS1250
R910	High Voltage Adjust	2.5meg	40X0590-011				
R915	Focus	15meg	40X0618-001	RTT-15meg			FCR156L

* "SNAPTROL"

(1) Use original nylon tab mount and solder original center lead to metal case of control.
(2) Use original nylon tab mount.
(3) Use portion of original shaft to obtain desired length.
(4) To establish section identification of side-by-side controls (controls viewed from shaft ends, terminals down):
For 3-section controls, left-hand section is "A", middle section is "B", right-hand section is "C".
For 2-section controls, left-hand section is "A", right-hand section is "B".
(5) For horizontal mount, bend the two outside terminals to fit PC board. Use jumper to connect center terminal to PC board.
(6) May be 500K in some versions.
(7) Includes R201 and R202.
(8) Alternate Part, used in Models using Tuner Mounting Assembly stamped T511, T512, T531 or T532.
(9) Alternate Part, used in Models using Tuner Mounting Assembly stamped T513 or T514.
(10) "SNAPTROL" Equivalent: BU2, CF35, CR77, SF10, SR12, DC1.

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R104	1900 20W, WW	20W-SQ-2K	43X0401-030
R106	6800 7W,Glass	7G-6.8K	43X0450-015
R112	4700 2W,Film	3G-4.7K	43X0450-043
R313	10K 2W,Film	3G-10K	43X0346-000
R320	6800 2W,Film	3G-6.8K	43X0450-005
R321	56K 2W,Film	3G-56K	43X0450-032
R322	5600 4W,Film	4G-5.6K	43X0371-000
R328	13K 10W,Film	10G-13K	43X0450-031
R343	27K 3W,Film	3G-27K	43X0450-006
R344	150K 1/2W,4%, (Carbon)		43X0449-000 (1)
R345	150K 1/2W,4% (Carbon)		43X0449-000 (1)
R520	820 3W,Film	3G-820	43X0450-001
R702	15K 3W,Film	3G-15K	43X0450-030
R703	33K 2W,Film	3G-33K	43X0439-000
R708	10K 5W,Film	5G-10K	43X0450-041
R710	18K 2W,Film	3G-18K	43X0450-029
R715	27K 2W,Film	3G-27K	43X0441-000

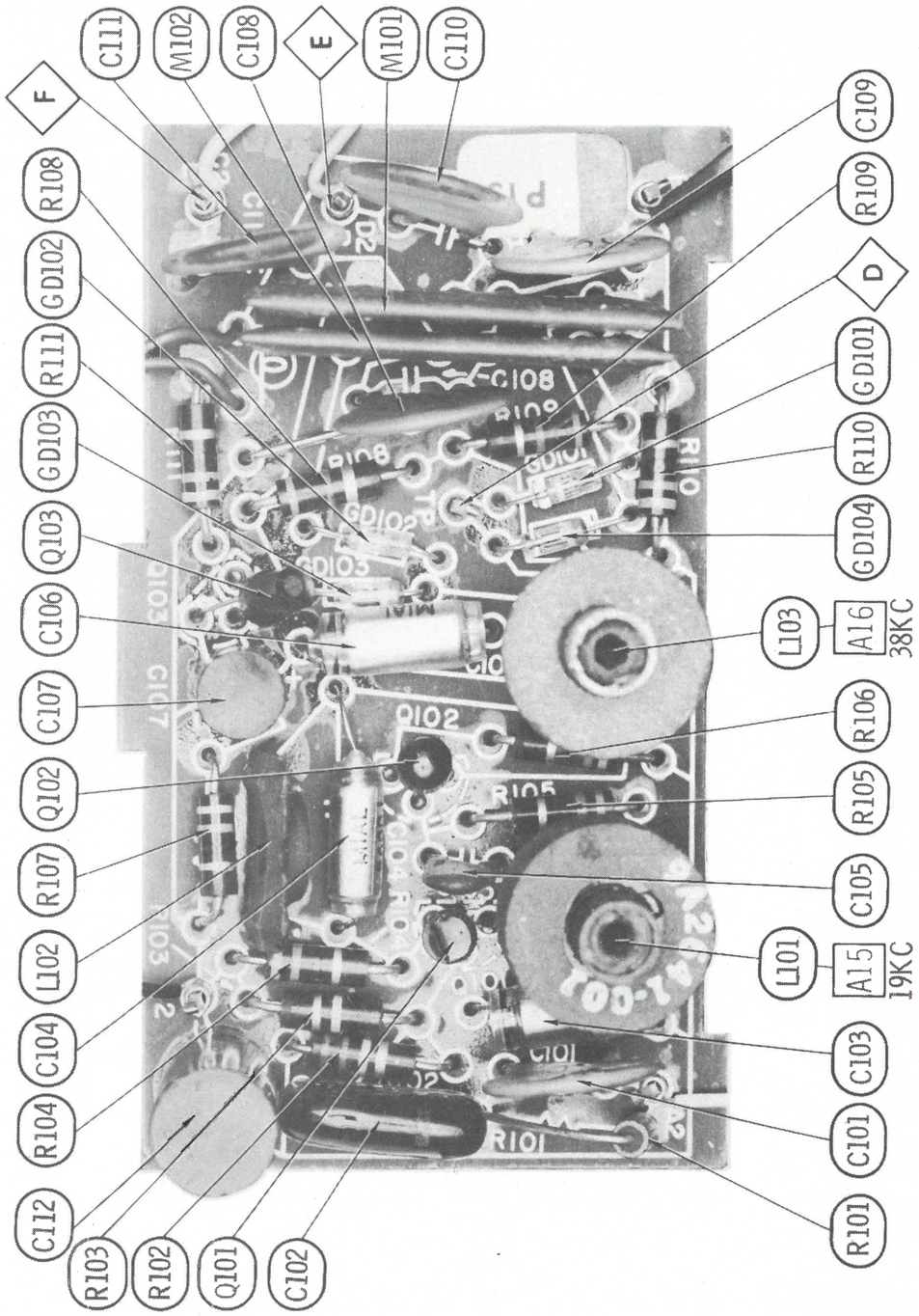
(1) Matched Pair

ITEM No.	RATING	REPLACEMENT DATA	
		WORKMAN PART No.	MFGR. PART No.
R725	27K 2W,Film	3G-27K	43X0441-000
R729	270 2W,Film	3G-270	43X0450-037
R736	68K 1/2W,Film		43X0450-040
R741	27K 2W,Film	3G-27K	43X0441-000
R747	3.3meg,1/2W,2% (Film)		43X0450-038
R748	150K 1/2W,2% (Film)		43X0450-039
R903	1800 5W	7W-1800	43X0401-035
R914	30meg, Film		43X0451-003
R916	40meg, Film		43X0451-004
R917	30meg, Film		43X0451-003
RT101	Thermistor (3.9 Cold)	FR 3.8	43X0453-001
RT1101	Thermistor (100 Cold)		43X0455-001
RV101	VDR *		43X0456-001
RV901	VDR *		43X0457-004
RV1101	VDR *		43X0454-001

* Voltage Dependent Resistor

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L104a	Line Choke (70uh)	9A2695-001		5248 (1)	
b	Line Choke (70uh)				
L301	Sound Detector	9A2699-001			
L302	Sound Take-off	9A2697-001			
L303	RF Choke (12uh)	9A2553-003	19-2016	72F125AP	TA820
L304	RF Choke (1.8uh)	9A2553-001	19-2010	74F186AP	T990
L305	47.25MC Trap	9A2563-000		7553	TA260
L306	RF Choke (12uh)	36A0095-004	19-2016	72F125AP	TA343
L307	RF Choke (16uh)	9A2432-000		74F155AP	T989
L308	4.5MC Trap	9A2565-000		7142	TA264
L309	Peaking (39uh)	36A0095-011		72F395AP	
L310	Peaking (68uh)	36A0095-010		72F685AP	
L311	Peaking (330uh)	36A0095-009		72F334AP	
L312	RF Choke (1.5uh)	9A2380-000	19-1001	4604	
L701	Chroma Take-off	9A2658-003		6039	
L703	Peaking (620uh)	36A0095-008	19-2030	6146	T326
L704	Peaking (620uh)	36A0095-008	19-2030	6146	T326



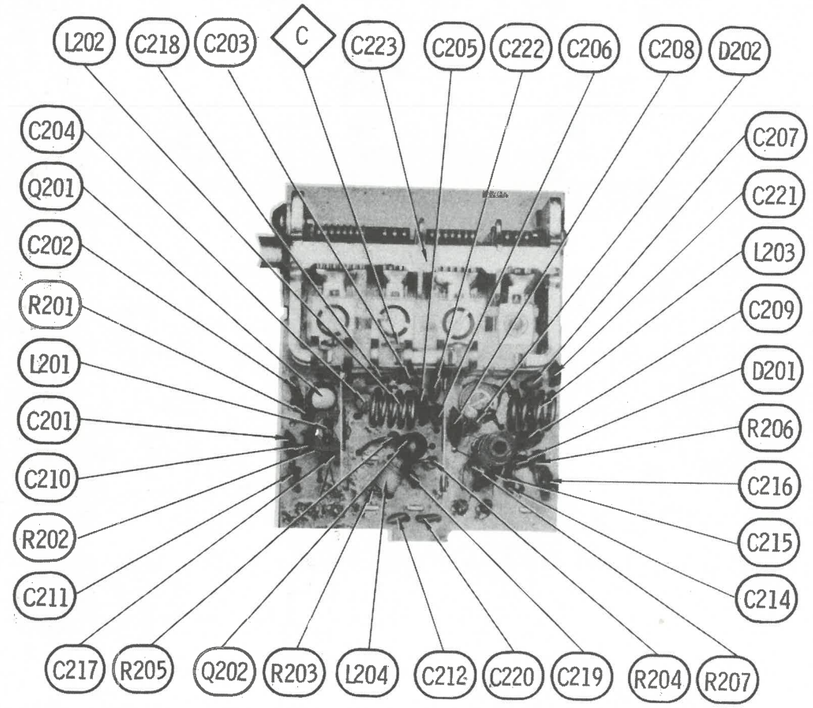
PHOTOFACT® Folder with CIRCUITRACE®

For Supplier Address See PHOTOFACT Index

IMPORTANT FILING NOTICE

This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 1177 FOLDER 1 . File this Folder with the TV Folder in the yellow filing jacket provided.

CATALINA AM-FM RADIO
used in MODEL 122-1870A



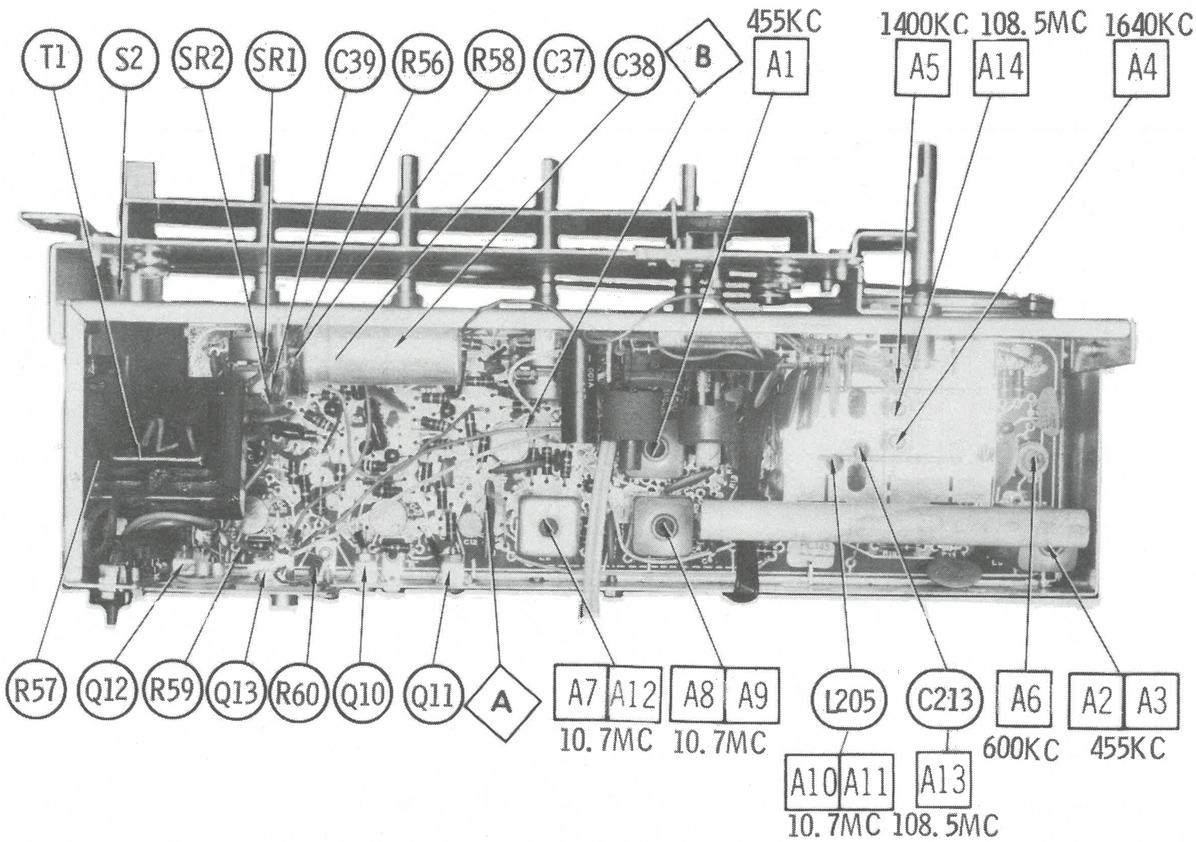
CATALINA AM-FM RADIO
used in MODEL 122-1870A

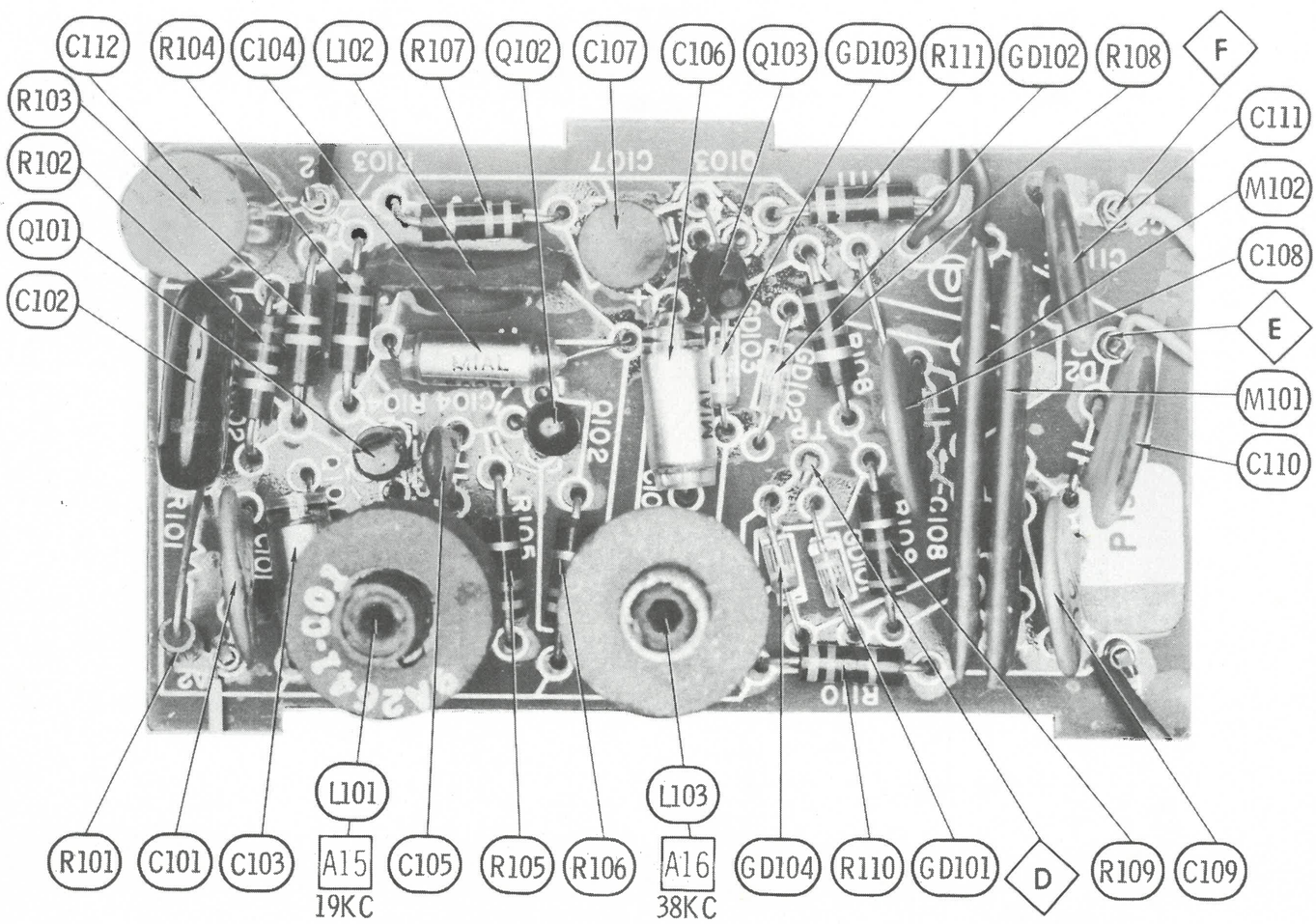
REMEMBER TO ASK— "What else needs fixing?"

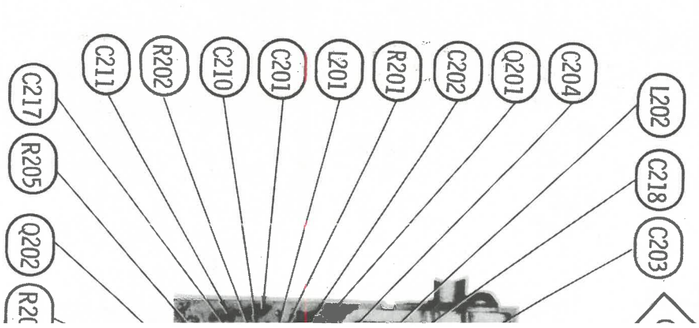
HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206

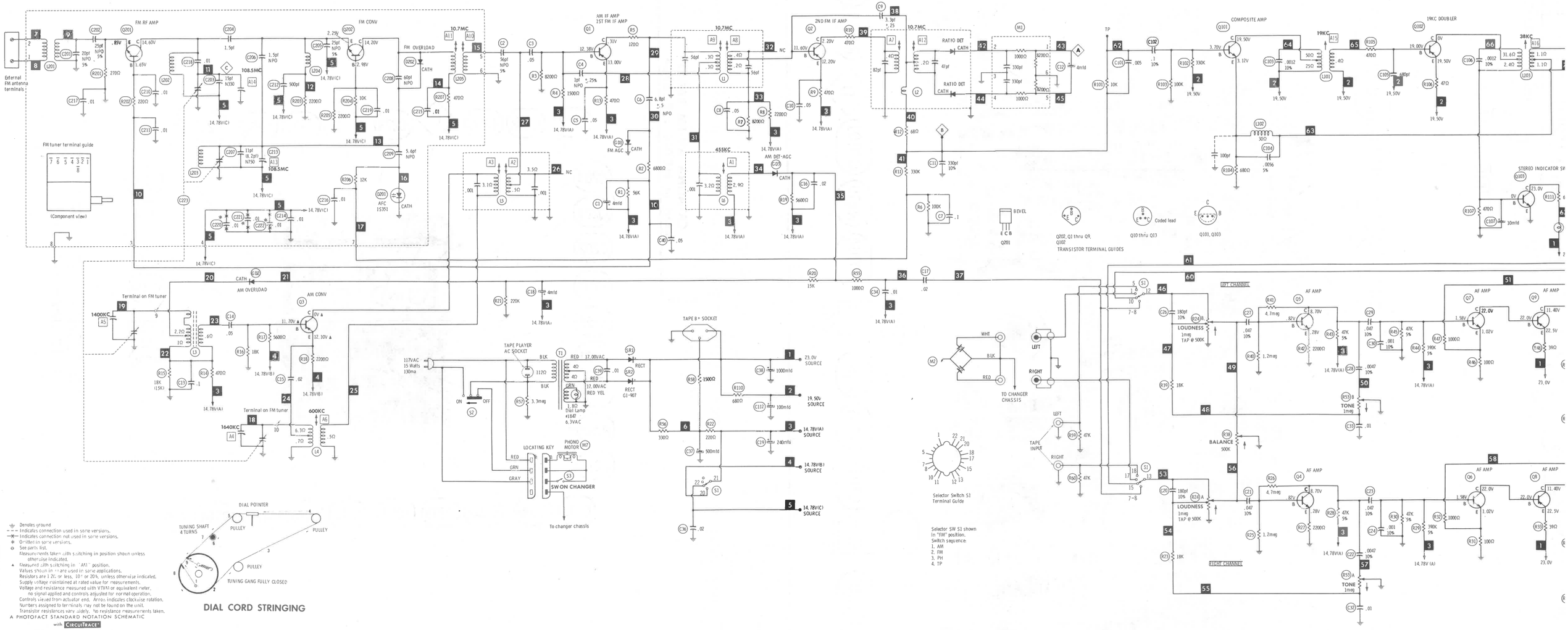
DATE 6 -71 SET 1177 FOLDER 1-A

SET 1177 FOLDER 1-A





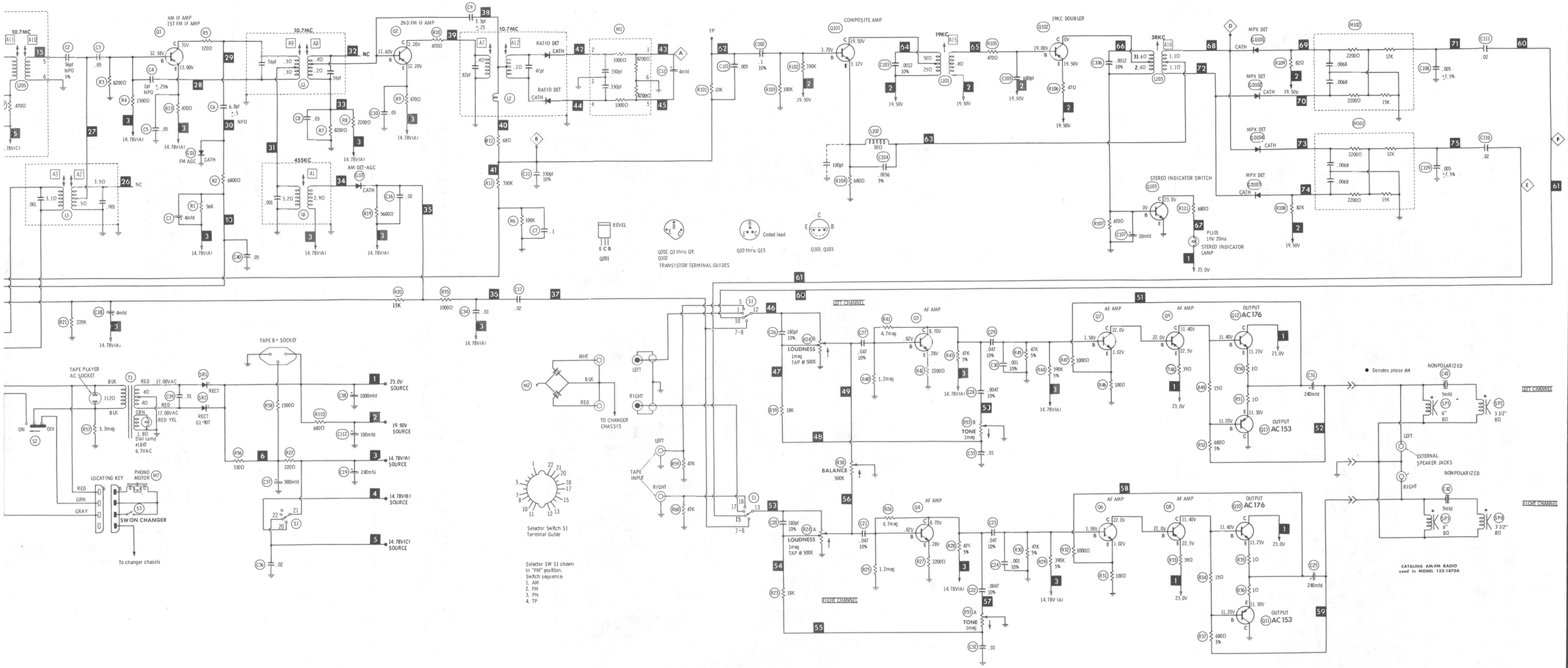




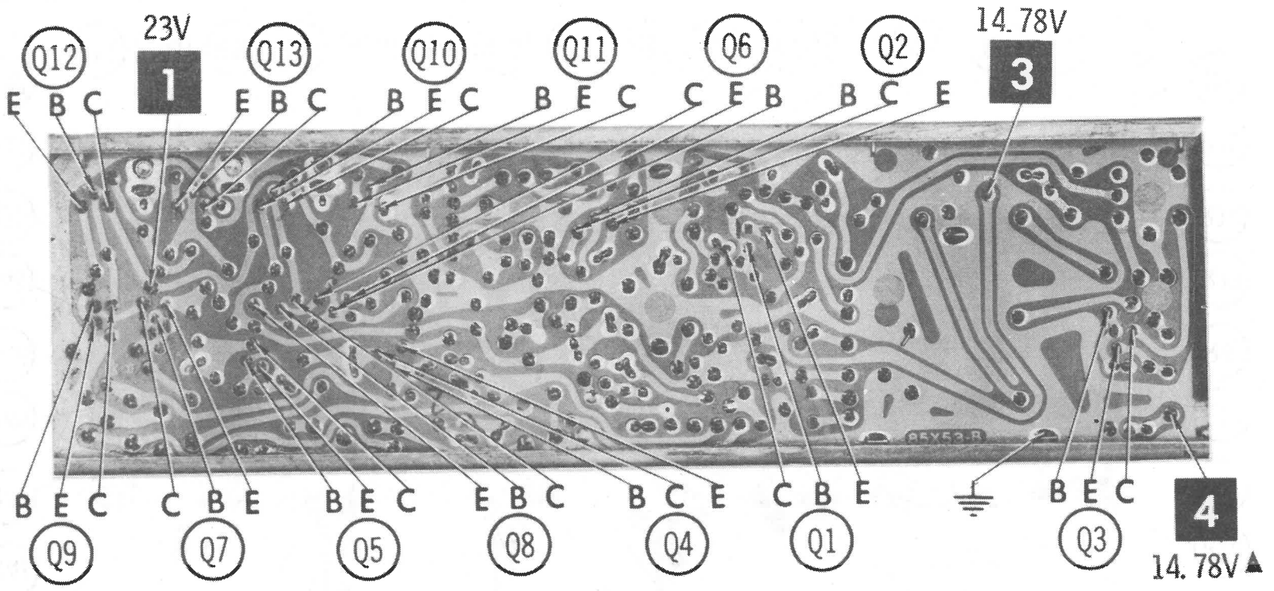
DIAL CORD STRINGING

- Denotes ground
- Indicates connection used in some versions.
- Indicates connection not used in some versions.
- * Omitted in some versions.
- ⊖ See parts list.
- Measurements taken with switching in position shown unless otherwise indicated.
- ▲ Measured with switching in "AM" position.
- Values shown in ( ) are used in some applications.
- Resistors are 1 2% 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.
- Controls viewed from actuator end. Arrow indicates clockwise rotation.
- Numbers assigned to terminals may not be found on the unit.
- Transistor resistances vary widely. No resistance measurements taken.

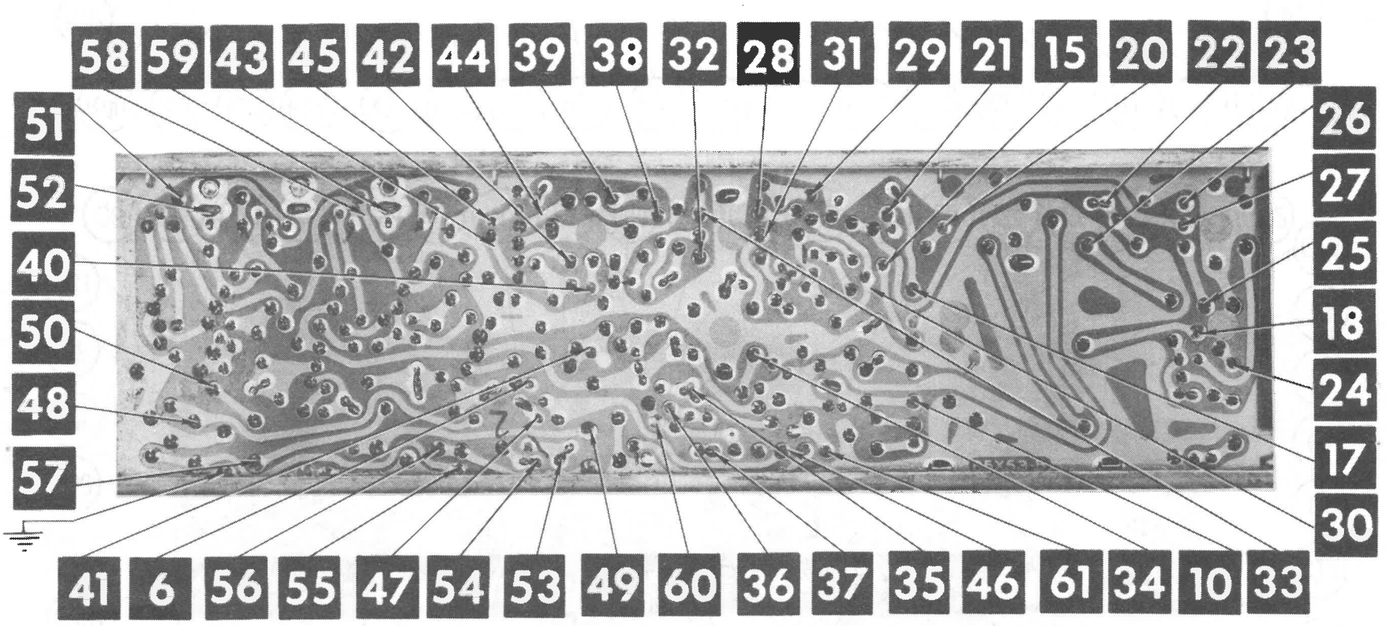
A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

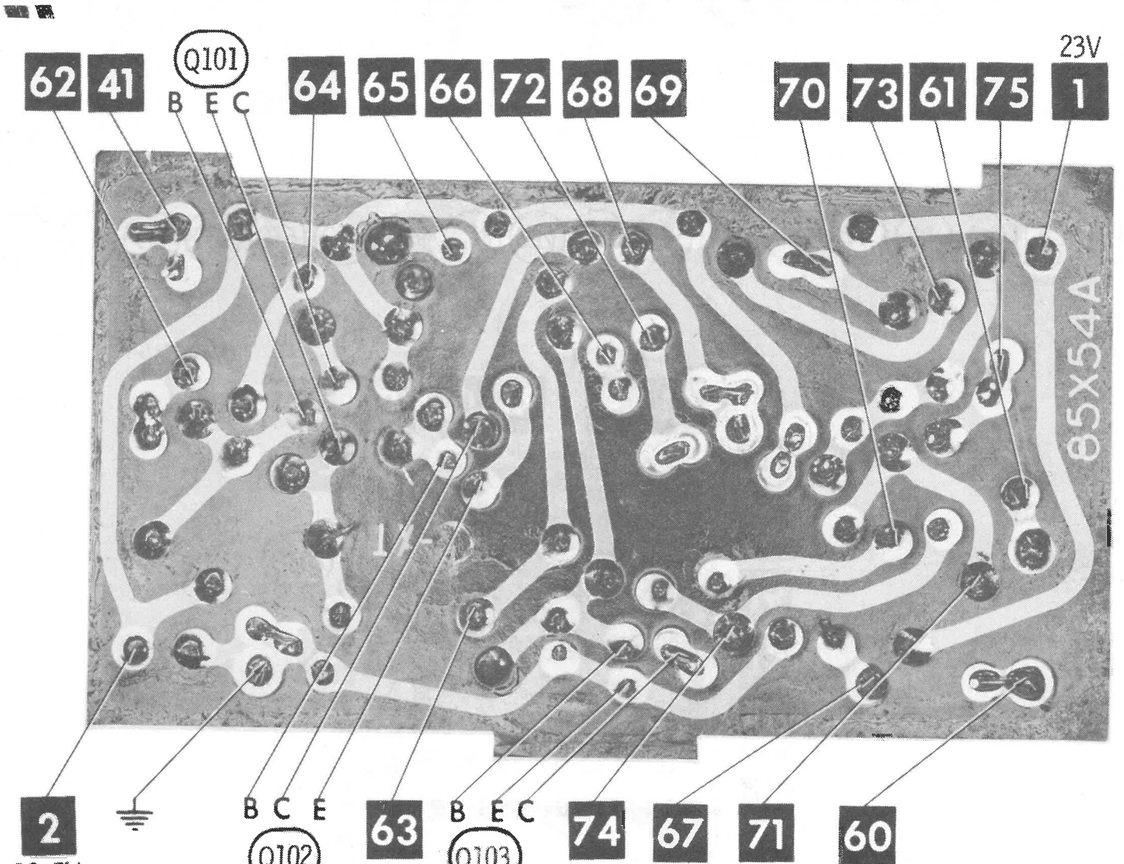

10.7MC
AM IF AMP
1ST FM IF AMP
2ND FM IF AMP
RATIO DET
AM DET-AGC
FM AGC
455KC
COMPOSITE AMP
19KC DOUBLER
19KC
38KC
MPX DET
STEREO INDICATOR SWITCH
PL101 10V 20ma STEREO INDICATOR LAMP
TP
BEVEL
E C B
Q201
Q202, Q1 thru Q9, Q102 TRANSISTOR TERMINAL GUIDES
Coded lead
Q10 thru Q13
Q101, Q103
TAPE B+ SOCKET
TAPE PLAYER AC SOCKET
LOCATING KEY
PHONO MOTOR
SW ON CHANGER
To changer chassis
Dial Lamp #1847 6.3VAC
23.0V SOURCE
19.50V SOURCE
14.78V(A) SOURCE
14.78V(B) SOURCE
14.78V(C) SOURCE
WHT
BLK
RED
TO CHANGER CHASSIS
LEFT
RIGHT
TAPE INPUT
Selector Switch S1 Terminal Guide
Selector SW S1 shown in "FM" position. Switch sequence 1. AM 2. FM 3. PH 4. TP
LOUDNESS 1meg TAP @ 500K
BALANCE 500K
TONE 1meg
AF AMP
OUTPUT AC176
OUTPUT AC153
LEFT CHANNEL
RIGHT CHANNEL
Denotes phase dot
NONPOLARIZED
EXTERNAL SPEAKER JACKS
CATALINA AM-FM RADIO
used in MODEL 123-1870A

A Howard W. Sams CIRCUITRACE Photo



▲ Measured in AM position





ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Maintain line voltage at 117VAC. Allow a 15-minute warm-up period.
Use only enough generator output to obtain a suitable indication.
Suggested Alignment Tools:

	GENERAL CEMENT	WALSCO
A1 thru A3, A6 thru A9, A12, A15, A16	8606, 8606L, 8869	2543, 2544, 2588
A4, A5, A13, A14	8868, 8987, 9089	2531-X, 2541, 2587
A10, A11	9296, 9297, 9300	2510, 2546, 2547

AM ALIGNMENT—SELECTOR IN AM POSITION

Connect generator across loop fashioned of several turns of wire. Set volume at maximum.

	GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1.	455KC 400 cycle modulation	Tuning gang fully open.	Output Meter across voice coil.	A1,A2, A3	Adjust for maximum. Repeat until no further improvement can be made.
2.	1640KC	"	"	A4	Adjust for maximum.
3.	1400KC	Tune to signal	"	A5	"
4.	600KC	"	"	A6	Rock tuning gang and adjust for maximum. Repeat steps 2 thru 4 until no further improvement can be made.

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

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

	GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
5.	10.7MC Unmodulated	Point of non-interference	DC probe of VTVM to point Ⓐ ,common to ground.	A7,A8, A9,A10, A11	Adjust for maximum.
6.	"	"	DC probe of VTVM to point Ⓑ ,common to ground.	A12	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.

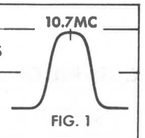


FIG. 1

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

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

	GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
5.	10.7MC 450KC Sweep	Point of non-interference	Vert. amp of scope to point Ⓐ ,low side to ground.	A7,A8, A9,A10, A11	Disconnect stabilizing capacitor C12 . Adjust for maximum gain and symmetry of response similar to Fig.1 with marker as shown. Reconnect C_{12}.
6.	"	"	Vert. amp of scope to point Ⓑ ,low side to ground.	A12	Adjust A12 (secondary) to place marker at center of "S" curve similar to Fig. 2. Readjust A7 (primary) for maximum amplitude and straightness of line.

FM RF ALIGNMENT—SELECTOR IN FM POSITION

Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead.

	GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
7.	108.5MC	High freq. end	DC probe of VTVM to point Ⓐ ,common to ground.	A13,A14	Adjust for maximum.

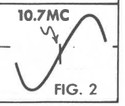


FIG. 2

FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (± .0001% ACCURACY)

High side of generator thru 47K to point Ⓑ ,low side to ground.

	GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
8.	19KC	Vert. amp of scope thru 47K to point Ⓓ ,low side to ground.	A15	Adjust for maximum.
9.	"	Vert. amp of scope thru 47K to point Ⓓ ,low side to ground.	A16	Adjust for maximum 38KC response.
10.	Modulated Left Channel	Vert. amp of scope to point Ⓔ , low side to ground.	A15,A16	Adjust for MINIMUM. This step should require only slight adjustment.
11.	Modulated Right Channel	Vert. amp of scope to point Ⓕ , low side to ground		Check for MINIMUM. If necessary make compromise adjustment of A15 and A16.

PARTS LIST AND DESCRIPTION

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

TRANSISTORS

ITEM No.	TYPE No.	FUNCTION	REPLACEMENT DATA: MFGR. PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MOTOROLA PART No.	RCA PART No.	SYLVANIA PART No.
Q1	2N4916	1st AM - 1st FM IF Amp	86X0036-001	GE-21	TR-19	HEP52		ECG 106
Q2	2N4916	2nd FM IF Amp	86X0036-001	GE-21	TR-19	HEP52		ECG 106
Q3	2N4916	AM Converter	86X0036-001	GE-21	TR-19	HEP52		ECG 106
Q4	SE4010	AF Amp	86X0007-004	GE-10	TR-21	HEP55	SK3020	ECG 123 A
Q5	SE4010	AF Amp	86X0007-004	GE-10	TR-21	HEP55	SK3020	ECG 123 A
Q6	SE4010	AF Amp	86X0007-004	GE-10	TR-21	HEP55	SK3020	ECG 123 A
Q7	SE4010	AF Amp	86X0007-004	GE-10	TR-21	HEP55	SK3020	ECG 123 A
Q8	2N4916	AF Amp	86X0036-001	GE-22	TR-28	HEP52	SK3025	ECG 129
Q9	2N4916	AF Amp	86X0036-001	GE-22	TR-28	HEP52	SK3025	ECG 129
Q10	AC175	Output	86X0037-001 (2)			HEP641		ECG 103 A
Q11	AC117	Output	86X0037-002 (2)			HEP254		ECG 102 A
Q12	AC175	Output	86X0037-001 (2)			HEP641		ECG 103 A
Q13	AC117	Output	86X0037-002 (2)			HEP254		ECG 102 A
Q101	SE4010	Composite Amp	86X0007-004	GE-10	TR-21	HEP55	SK3020	ECG 123 A
Q102	2N4916	19KC Doubler	86X0036-001	GE-22	TR-19	HEP52	SK3025	ECG 129
Q103	SE6001	Stereo Indicator Sw.	86X0008-001	GE-10	TR-21	HEP721	SK3020	ECG 123 A
Q201		FM RF Amp	(1)	GE-17	TR-22	HEP50	SK3018	ECG 108
Q202		FM Converter	(1)	GE-17	TR-22	HEP50	SK3018	ECG 108

(1) Part of FM Tuner, Part #25A1278-001. (2) Part Number for Complimentary Pair - #86X0037-100.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES: GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	REPLACEMENT RECTIFIERS: RCA PART No.	NOTES
D201	1S351					Varactor
D202		1N60	1N60	ECG 109	1N60	
GD1	66X0039-001	1N60	1N60	ECG 109	1N60	
GD2	66X0039-001	1N60	1N60	ECG 109	1N60	
GD3	66X0039-001	1N60	1N60	ECG 109	1N60	
GD101	66X0039-001	1N60	1N60	ECG 110 (4)	1N60	(4) Matched Pairs.
GD102	66X0039-001	1N60	1N60		1N60	
GD103	66X0039-001	1N60	1N60	ECG 110 (4)	1N60	
GD104	66X0039-001	1N60	1N60		1N60	
SR1	66X0023-003	GE-504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	
SR2	66X0023-003	GE-504A	8D4 or 5A4-D	ECG 116 or ECG 117	SK3030 or SK3031	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA: PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	4 20V	45X0524-005	MCD-50	EP30-5	WBR5-50	MT1-3	MTV4CB50	TE-1201.2
C12	4 20V	45X0524-005	MCD-50	EP30-5	WBR5-50	MT1-3	MTV4CB50	TE-1201.2
C18	4 20V	45X0524-005	MCD-50	EP30-5	WBR5-50	MT1-3	MTV4CB50	TE-1201.2
C19	240 25V	45X0524-012	PRS1280	EA30-250	PC250-25	QT1-28	MTV250DN25	TL-1214
C25	240 25V	45X0524-012	PRS1280	EA30-250	PC250-25	QT1-28	MTV250DN25	TL-1214
C31	240 25V	45X0524-012	PRS1280	EA30-250	PC250-25	QT1-28	MTV250DN25	TL-1214
C37	500 25V	45X0515-015	PRS1290	EA30-500	WBR500-35	QT1-30A	TC2505B	TL-1217
C38	1000 25V	45X0515-016	PRS1295	EA30-1000	WBR1000-35		TC2510	TL-1218
C41	5 NP 10V	45X0534-001(A)	PRS-NP7550			NPQT-1	TCN105	TVAN1203.1
C42	5 NP 10V	45X0534-001(A)	PRS-NP7550			NPQT-1	TCN105	TVAN1203.1
C107	10 25V	45X0524-002	MCD-70	EP30-10	PC10-50	MT1-10	MTV10CB50	TE-1204
C112	100 20V	45X0524-001(B)	PRS1270	EA30-100	PC100-25	MT1-23.5	MTV100CK25	TE-1211

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.
C2	56 NPO,500V 5%			TCZ-56			CN0456	10TCC-Q56
C3	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C4	1 NPO ±.25		NPO-DI 1.0	TCZ-1			CN0510	10TCC-V10
C5	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C6	6.8 500V ±.5		NPO-DI 6.8	DTZ-6R8	NP06P8		CN0568	10TCC-V68
C7	.1mfd 25V		TTP-1	CK-104			TA010	TG-P10
C8	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C9	3.3 500V ±.25		NPO-DI 3.3	DTZ-3R3			CN0533	10TCC-V33
C10	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C11	330 10%		GPD X5F331K	DD-331	GP330	CCD-331	GP333	10TS-T33
C13	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C14	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C15	.02 100V		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C16	.02 100V		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C17	.02 100V		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C20	180 10%		GPD X5F181K	DD-181		CCD-181	GP318	10TS-T18
C21	.047 100V 10%		V1612S47		DPMS6S47	1DP-2-473	PVC1147	225P47391WD3
C22	.0047 10%		GPD X5R472K	DD-472G	GP4700	CCD-472	JF247	10TS-D47
C23	.047 100V 10%		V1612S47		DPMS6S47	1DP-2-473	PVC1147	225P47391WD3
C24	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10

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.
C26	180 10%		GPD X5F181K	DD-181	GP180	CCD-181	GP318	10TS-T18
C27	.047 100V 10%		V1612S47		DPMS6S47	1DP-2-473	PVC1147	225P47391WD3
C28	.0047 10%		GPD X5R472K	DD-472G	GP4700	CCD-472	JF247	10TS-D47
C29	.047 100V 10%		V1612S47		DPMS6S47	1DP-2-473	PVC1147	225P47391WD3
C30	.001 500V 10%		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C32	.01 100V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C33	.01 100V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C34	.01 100V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C36	.02 100V		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C39	.01 500V		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C40	.05 50V		TTP-05	CK-503	MGP05	CCD-503	TA150	TGL-S50
C101	.005 500V 7.5%		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C102	.1 100V 10%		D8E2P1		DPMS2P1	1DP-2-104	PVC101	225P10491WD3
C103	.0012 10%			CPR-1200J	CD19F122J500	DM-19-122J	SX212	424ME1201J501
C104	.0056 33V 5%			CPR-5600J	CD30F562J500	DM-20-562J	SX256	
C105	680 500V		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C106	.0012 10%			CPR-1200J	CD19F122J500	DM-19-122J	SX212	424ME1201J501
C108	.005 500V 7.5%		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C109	.005 500V 7.5%		GPD X5R502K	DD-502	GP5000	CCD-502	JF250	10TS-D50
C110	.02 500V		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C111	.02 500V		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C201	20 NPO 5%			DTZ-20			CN0420	10TCC-Q20
C202	25 NPO 5%			DTZ-25			CN0425	10TCC-Q25
C203	15 N330			TCZ-15		*	*	10TCS-Q15
C204	1.5		NPO-DI 1.5	DTZ-1R5			CN0515	10TCC-V15
C205	25 NPO,50V 5%			DTZ-25			CN0425	10TCC-Q25
C206	1.5 NPO,50V		NPO-DI 1.5	DTZ-1R5			CN0515	10TCC-V15
C207	11 N750		N750-DI 10	DTN-10	N10	CCTN-100	CN7410	10TCU-Q10
C208	60 NPO			TCZ-56		CCTO-560	CN0456	10TCC-Q56
C209	5.6 NPO							10TCC-V56
C210	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C211	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C212	500 50V		GPD X5F501K	DD-501K	GP500	CCD-501	GP350	10TS-T50
C213								
C214	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C215	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C216	.01		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C217	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C218	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C219	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C220	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C221	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C222	.01 50V		TTP-01	CK-103	MGP01	CCD-103	TA110	TG-S10
C223	.01 50V							

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

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

ITEM No.	FUNCTION	RESISTANCE	REPLACEMENT DATA: MFGR. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS—IRC PART No.	MALLORY PART No.
R24A	Loudness/Right	1meg, Tap @ 500K	36X0477-001	F11-1meg, R11-1meg, SF206,BA010, CA005,CPL-2		QCB2(1),B19-137X, B19-137X,SK1, QCM,QCN or [BU3, CF47T,CR36T,SS1, SS7A,QCM,DC1] *	P16T35,SH3250, 3058,RU16T35, CS3500
B	Loudness/Left	1meg, Tap @ 500K					
R38	Balance	500K	36X0476-001	F1-500K,SF208, CA005,BA012		QCB4(2),B11-133, SK1,QCM,QCN or [BU14(3),CF16, SS1,QCM.DC1] *	P55L,SH3375, 3034,SF3000
R53A	Tone/Right	1meg	40X0611-001	F1-1meg, R1-1meg, SF206,BA019, CA005,CPL-2		QCB2(1),B11-137, B11-137,SK1, QCM,QCN or [BU3, CF17,CR12,SS1, SS7A,QCM,DC1] *	P16L,SH3250, 3058,RU16L, CS3500
B	Tone/Left	1meg					

(1) Use QCB2 Bushing instead of bushing in SK1 Kit.
(2) Use QCB4 Bushing instead of bushing in SK1 Kit.
(3) Alter bushing to meet requirements.
* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA: WORKMAN PART No.	MFGR. PART No.
R35	1 1/2W	WS-1.0	340X3010-210
R36	1 1/2W	WS-1.0	340X3010-210

ITEM No.	RATING	REPLACEMENT DATA: WORKMAN PART No.	MFGR. PART No.
R50	1 1/2W	WS-1.0	340X3010-210
R51	1 1/2W	WS-1.0	340X3010-210

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	FM Interstage IF	9A2689-001		1602-PC	
L2	Ratio Detector	9A2691-001			
L3	Loopstick	9A2687-001			
L4	AM Oscillator	9A2692-001			
L5	AM Input IF	9A2688-001			
L6	AM Output IF	9A2690-001		16PC-1	T646
L101	19KC Doubler	9A2641-001			
L102	67KC Trap (1mh)	36A0095-007	19-1037	72F103AP	T873
L103	38KC Output	9A2615-001			
L201	FM Antenna	(1)			
L202	FM RF	(1)			
L203	FM Oscillator	(1)			
L204	10.7MC Trap	(1)			
L205	FM Input IF	(1)			

(1) Part of FM Tuner, Part #25A1278-001.

TRANSFORMER (Power)

ITEM No.	RATING: PRI.	SEC. 1	SEC. 2	REPLACEMENT DATA: MFGR. PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	NOTES
T1	117VAC @ .080A AC	34VAC,CT @ .11A DC	6.3VAC @ .15A AC	53X0451-001(B)				

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA: MFGR. PART No.	QUAM PART No.	NOTES
SP1	6" PM 6-8 ohms	12A0591-001	6A1Z8	
SP2	3 1/2" PM 6-8 ohms	12A0633-001	3A05Z8	
SP3	6" PM 6-8 ohms	12A0591-001	6A1Z8	
SP4	3 1/2" PM 6-8 ohms	12A0633-001	3A05Z8	

PHONO CARTRIDGE & NEEDLES

ITEM No.	REPLACEMENT DATA: MFGR. PART No. CARTRIDGE	MFGR. PART No. NEEDLE	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	ELECTRO-VOICE PART No. CARTRIDGE	ELECTRO-VOICE PART No. NEEDLE	NOTES
M1	3-41D-S3B		1148d	N774sd	5397D	3315DS	
M2		D/S 41D		N774sd		3315DS	

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
	Tuner	25A1278-001	AM-FM
M1	Component Combination	76X0076-001	Ratio Detector (1000 ohm, 1000 ohm, 8200 ohm, 8200 ohm, 330pf, 330pf)
M7	Motor	42150	Phono
M101	Component Combination	76X077-001	MPX Matrix (2200 ohm, 2200 ohm, 12K, 15K, .0068mfd, .0068mfd)
M102	Component Combination	76X077-001	MPX Matrix (2200 ohm, 2200 ohm, 12K, 15K, .0068mfd, .0068mfd)
S1	Switch	2A0619-001	Function (AM-FM-Phono-Tape), Rotary
S2	Switch	2A0615-001	Power On-Off (Slide)
S3	Switch	33945	Power On-Off (On Changer)
	Printed Circuit Board	38A4090-000	Audio (P150)
	Printed Circuit Board	38A3936-000	Multiplex (P134)
	45 RPM Spindle Adapter	28A0437-001	
	Idler Wheel	35249	Phono
	Hold Down Arm	43381-C	Phono
	Tone Arm	43978-44	Phono

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

ITEM	PART No.
Control Panel Escutcheon	26A1268-000
Dial Background	58X0978-004
Pointer	15X0310-001

ITEM	PART No.
Knob - Tuning	10A1184-004
Knob - Tone, Balance, Loudness, Function	10A1179-002

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in 12 Colors
8524 (Stranded) Available in 12 Colors
Power Cord ..... Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft.
17109 (Plastic) or 17129 (Rubber) - 9 Ft.
Low-loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401 or 8421
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor-Unshielded)
8429 (Two Conductor-Shielded)
8419 (Three Conductor-Shielded)