



MODEL 6109A

### 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 500ma fuse is used for horizontal sweep circuit protection. (See "Cabinet - Rear View" photo for location.)

A 3-1/2" fuse wire is used for filament protection.

#### 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 hold and horizontal sine wave coil. (See "Tube Placement Chart" for location.)

#### HORIZONTAL LINEARITY

For horizontal linearity (efficiency) adjustment, refer to "Miscellaneous Adjustments".

#### 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 "Cabinet - Rear View" photo for location.)

**REMEMBER TO ASK— "What else needs fixing?"**

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

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

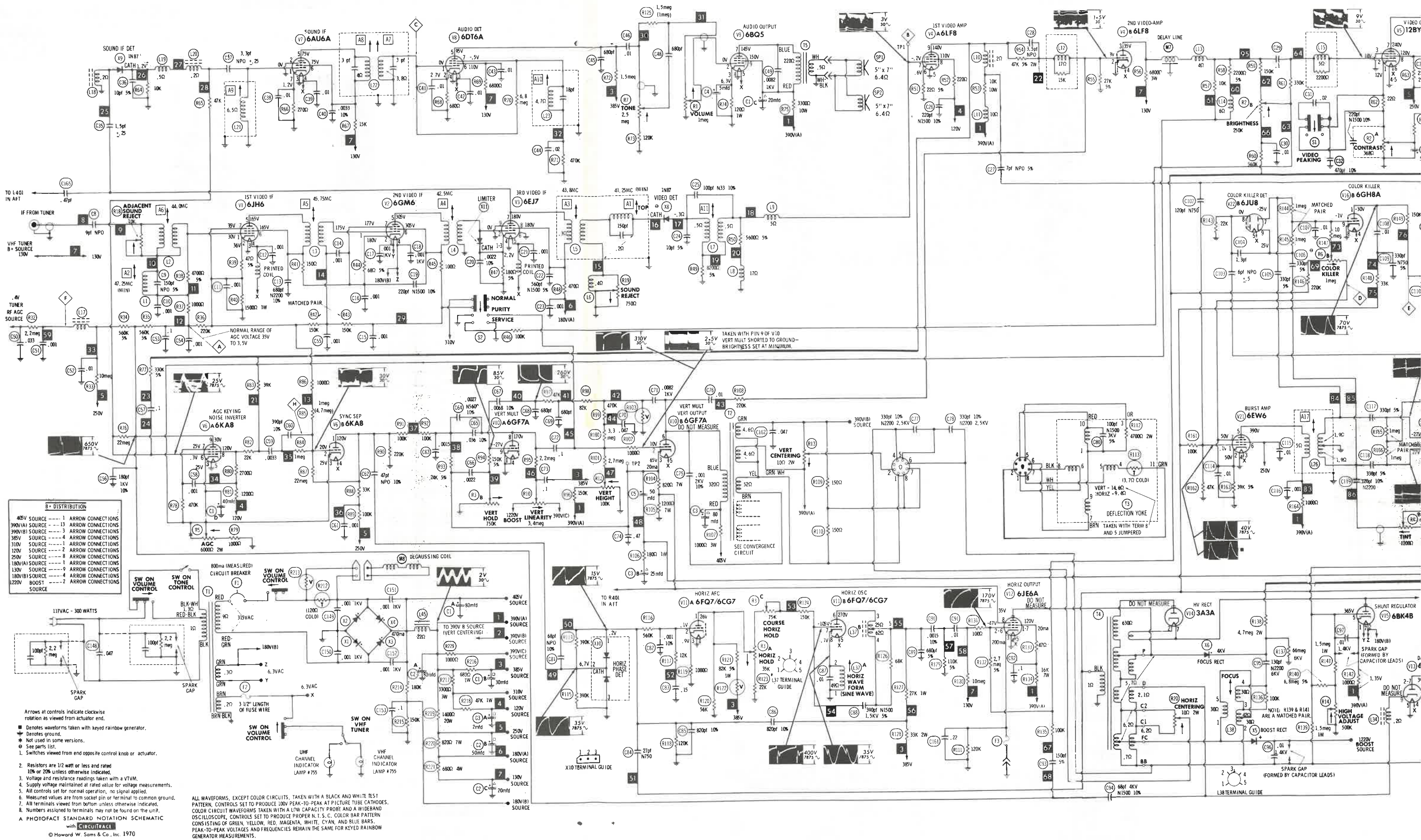
UB581

Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1970 Howard W. Sams & Co., Inc., Indianapolis, Indiana 46206. Printed in U.S. of America.

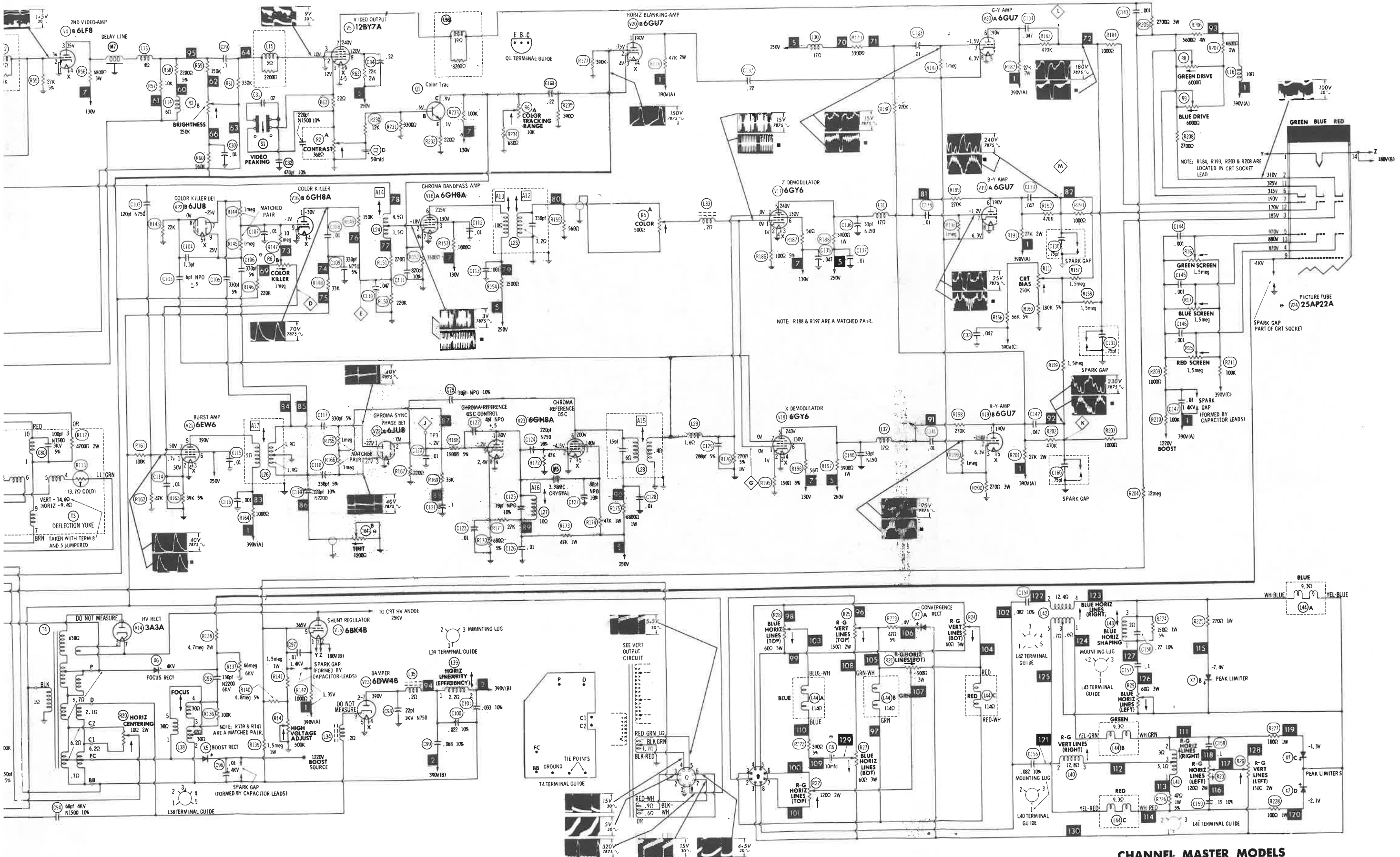
DATE 5 70

SET 1101 FOLDER 2









CHANNEL MASTER MODELS  
6105A, 6109A, 6113A, 6117A

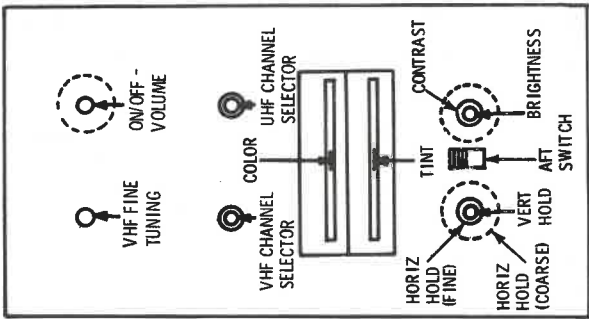
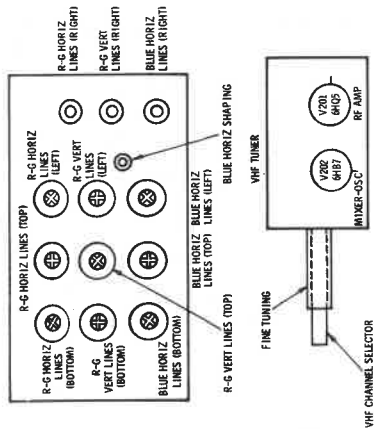
RESISTANCE MEASUREMENTS

ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	TOP CAP
V1	6JH6	220K	1550Ω	FIL	FIL	220Ω ▲	220Ω ▲	1500Ω						
V2	6GM6	75K	INFINITE	FIL	FIL	3400Ω †	3400Ω †	70Ω ▲						
V3	6EJ7	180Ω	0Ω	180Ω	FIL	FIL	0Ω	2700Ω †	2700Ω †	0Ω				
V4	6LF8	0Ω	20K	7500Ω † #	FIL	FIL	22Ω	1200Ω *	33K †	8500Ω †				
V5	12BY7A	390Ω	550K	0Ω	FIL	FIL	FIL	6500Ω †	26K †	0Ω				
V6	6KA8	70K †	4.3meg	2000Ω	FIL	FIL	65K	470K	33K †	870K				
V7	6AU6A	6.5Ω	0Ω	FIL	FIL	17.5K †	17.5K †	270Ω						
V8	6HZ6	3.8Ω	680Ω	FIL	FIL	1.5meg	10K †	470K						
V9	6BQ5	NC	280K	120Ω	FIL	FIL	NC	3500Ω †	NC	3300Ω †				
V10	6GF7A	0Ω	2.7meg	2050Ω	FIL	FIL	1300Ω †	NC	3.3meg	430K †				
V11	6FQ7	25K	700K	1000Ω	FIL	FIL	67K †	230K	49Ω	0Ω				
V12	6JE6A	11K †	1.5meg	0Ω	FIL	FIL	1.5meg	11K †	1500Ω	NC				19.6Ω †
V13	6DW4B	NC	30Ω †	NC	FIL	FIL	NC	30Ω †	NC	2.6meg				
V14	3A3A	PINS 1 THRU 8 HAVE INFINITE RESISTANCE												649Ω †
V15	6BK4B	1000Ω †	FIL	NC	NC	1.3meg	NC	FIL	NC					INFINITE
V16	6GH8A	370K	220K	3900Ω †	FIL	FIL	3100Ω †	390Ω	0Ω	11meg				
V17	6GY6	130Ω	100Ω	FIL	FIL	5350Ω †	2600Ω †	2Ω						
V18	6GY6	130Ω	150Ω	FIL	FIL	5350Ω †	2600Ω †	.4Ω						
V19	6GU7	30K	1meg	270Ω	FIL	FIL	35K †	1meg	270Ω	0Ω				
V20	6GU7	22K †	230K	390Ω	FIL	FIL	35K †	1meg	270Ω	0Ω				
V21	6EW6	31K	39K	FIL	FIL	1000Ω †	1400Ω †	39K						
V22	6JU8A	1meg ††	220Ω	1meg ††	FIL	FIL	0Ω	12meg	22K	12meg				
V23	6GH8A	24K †	47K	48K †	FIL	FIL	9000Ω †	0Ω	680Ω	INFINITE				
V24	25AP22A	FIL	150K †	480K ■	6400Ω †	4000Ω †	150K †	560K ■	NC	71meg	NC	500K ■	140K †	
												PIN 13 3500Ω †	PIN 14 FIL	
V201	6HQ5	4.4meg	0Ω	FIL	FIL	4100Ω †	0Ω	0Ω						
V202	6BH7	0Ω	220Ω	0Ω	FIL	FIL	3800Ω †	26K †	7800Ω †	3300Ω				
ITEM	TUBE	PIN 1	PIN 2	PIN 3	PIN 4	PIN 5	PIN 6	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 12	TOP CAP

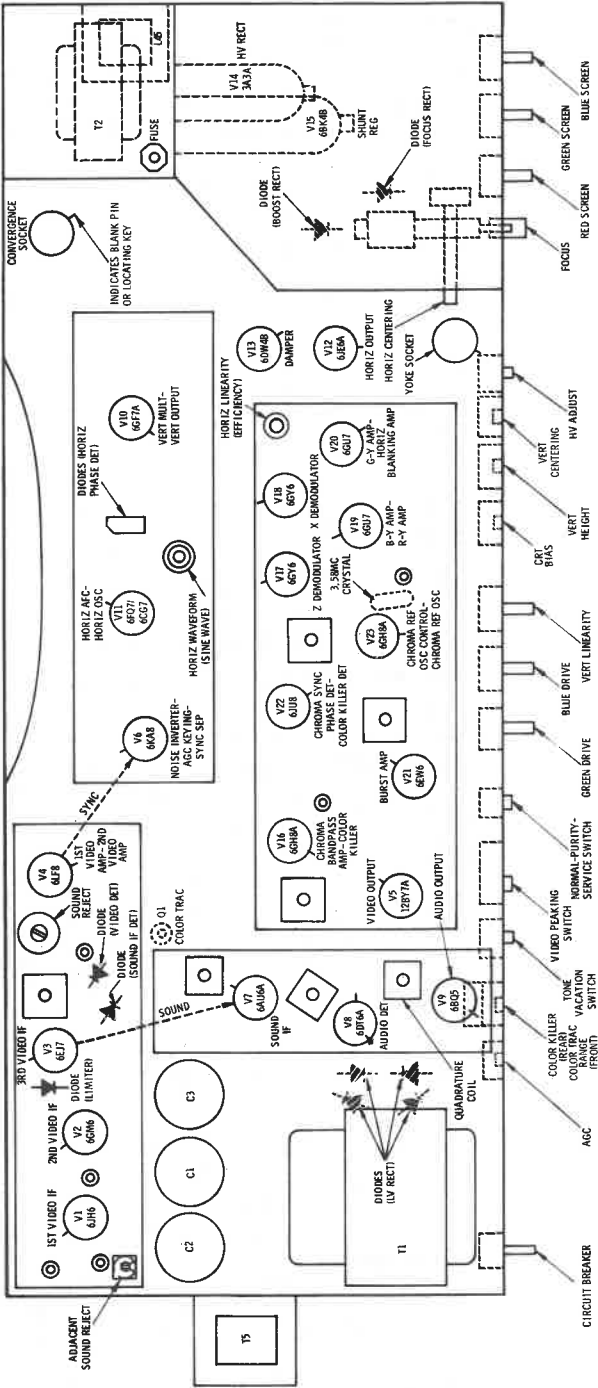
# THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.  
\* READING DEPENDS ON POLARITY OF METER CONNECTIONS.  
† MEASURED FROM OUTPUT OF X3 AND X4.  
■ MEASURED FROM CATHODE OF X5.

NC NO CONNECTION  
† MEASURED FROM PIN 9 OF V13.  
†† MEASURED FROM PIN 9 OF V23.  
▲ MEASURED FROM PIN 2 OF V2.

TUBE PLACEMENT CHART



TOP VIEW



CHANNEL MASTER MODELS  
6105A, 6109A, 6113A, 6117A

FOLDER 2

## TV ALIGNMENT INSTRUCTIONS

Use an isolation transformer, or observe polarity, and maintain line voltage at 117VAC. Allow a 20-minute warm-up period for the receiver and test equipment.  
Suggested Alignment Tools: GENERAL CEMENT WALSCO  
A1 thru A11 ..... 8606, 8969, 9302 ..... 2511, 2543, 2588  
Mixer Plate Coil ..... 9296, 9300, 9302 ..... 2510, 2511, 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 that shown.  
Connect a variable bias supply to the IF AGC line (Point  $\Delta$ ) and adjust to obtain a response curve which shows no indication of overload. Disable oscillator section of mixer-oscillator. Set the channel selector to any non-interfering channel.

INDICATOR	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	ADJUST	REMARKS
DC probe of VTVM thru 47K to Point $\Delta$ , common to ground.	High side to ungrounded tube shield over Mixer-Osc., low side to ground.		41.25MC 47.25MC	A1,R19 A2,R18	Adjust for MINIMUM.
DC probe of VTVM thru 47K to Point $\Delta$ , common to ground.	High side to ungrounded tube shield over Mixer-Osc., low side to ground.		43.8MC 42.5MC 45.75MC 44.00MC	A3 A4 A5 A6,Mixer Plate Coil	Adjust for maximum with core nearest printed board end of coil for A3, Adjust A6 for maximum with core at top, mixer plate at bottom of coil.
Vertical input of scope to Point $\Delta$ , low side to ground.	High side to ungrounded tube shield over Mixer-Osc., low side to ground.	44MC (10MC Sweep)	41.25MC 42.17MC 42.75MC 45.00MC 45.75MC 47.25MC		Adjust for maximum gain and symmetry of response with markers as shown in Figure 2. To obtain a proper response, it may be necessary to slightly retouch A3,A4,A5,A6 and Mixer Plate Coil.

### SOUND IF ALIGNMENT

Connect a VTVM thru a detector probe to Point  $\Delta$ . Tune in a TV station and adjust A7, A8, and A9 for maximum deflection. Remove VTVM. Reduce signal at the antenna terminals until distortion occurs in the sound. Adjust A10 clockwise from fully out position to second peak for maximum sound. Continue to reduce the signal and adjust A10 for MINIMUM distortion and maximum sound until no further improvement can be made.

### 4.5MC TRAP ALIGNMENT

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

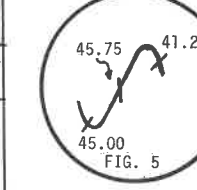
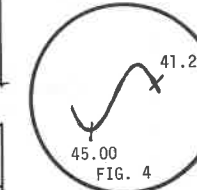
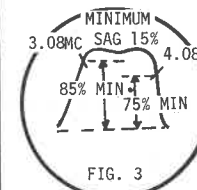
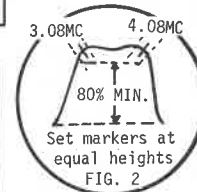
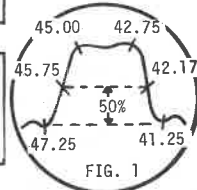
### CHROMA BANDPASS ALIGNMENT

The following alignment will require the use of an RF Modulator (RCA WG304B or equivalent). Connect a -15 volt supply to Point  $\Delta$ , a -2 volt supply to Point  $\Delta$ , a -15 volt supply to Point  $\Delta$ , positive of all supplies to ground. Connect a jumper from Point  $\Delta$  to ground. Turn color intensity to maximum. Remove the horizontal output tube and connect a 2000-ohm, 100W resistor from 390V source to ground. Suggested Alignment Tools:  
A12, A13, A14 .. GENERAL CEMENT 8606,8606L,8869  
WALSCO ..... 2543, 2544,2588

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CONNECT SCOPE	REMARKS
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 $\Delta$ , low side to ground.	Adjust A12 and A13 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 to 3MC (6MC Sweep)	"	"	Adjust A14 for response curve similar to Fig. 3. If necessary, retouch A12 to flatten top of response.

### AFT ALIGNMENT

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CONNECT SCOPE	REMARKS
Connect high side to ungrounded tube shield over Mixer-Oscillator, low side to ground.	44MC (6MC Sweep)	47.25MC 45.00MC	Vert. input to Point $\Delta$ , low side to ground.	Adjust A19 for maximum gain and response curve similar to Fig. 4.
"	"	45.75MC	"	Adjust A21 for crossover as marker shown in Fig.5
"	"	"	"	Adjust A20 for maximum gain and straight line through S curve as in Fig. 5. It may be necessary to readjust A21.



## MISCELLANEOUS ADJUSTMENTS

### HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect:  
A 0-500 ma meter in series with cathode of Horizontal output tube.  
A .47 mfd capacitor across meter.  
A VTVM through a high-voltage probe to picture-tube anode connector.  
Point  $\Delta$ , off Pin 2, Sync Separator, 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 the blanking bars vertical. Remove the short from the horizontal sine wave coil and adjust B1 until the picture "floats" horizontally. Remove the short from Point  $\Delta$ . Adjust the horizontal linearity coil for MINIMUM current in the horizontal output tube, then advance core into coil to increase cathode current by 3 or 4 ma. (Do not exceed 230 ma.)

Adjust the high voltage control for 25KV in picture-tube anode with MINIMUM brightness. Check voltage drop across R142 with VOM. Voltage should be a MINIMUM of 0.96 volts. Optimum reading would be 1.35 volts. The horizontal output tube current must not exceed 230 ma.

Adjust focus, height, and vertical linearity controls.

### AGC ADJUSTMENT

Tune in a strong TV station and advance 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: A15, A16, A17  
GENERAL CEMENT 8606, 8606L, 8869  
WALSCO 2543, 2544, 2588

Set the color killer control to fully counterclockwise. Set the tint control to the center of its range. Connect a color bar generator to the antenna terminals. Adjust the receiver for normal color reception. Short pin 1 of Burst Amp., V21, to ground.

Connect DC probe of VTVM through 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  $\Delta$ , 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  $\Delta$  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  $\Delta$ , off Pin 1, R-Y Amp., V19. Check for proper waveform with the color bar generator being used. See waveform on schematic for pattern obtained from a standard N.T.S.C. signal. Check the range of the tint control. The bars should move 30° either side of proper signal. If necessary, retouch A17 for proper range of controls.

### COLOR AFC ALIGNMENT (CONTINUED)

Check for proper waveform at G-Y and B-Y outputs: Point  $\Delta$ , off Pin 6, G-Y Amp., V20, and Point  $\Delta$ , off Pin 6, B-Y Amp., V19. Tune in a weak signal or reduce the signal at the antenna terminals to obtain a snowy picture. Adjust the color killer control to eliminate 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 face and brackets.

If TV is equipped with an automatic degaussing coil, degaussing occurs between the time the receiver is turned on and the high-voltage appears. Move Normal-Purity-Service switch to Purity position to obtain noise-free raster. Shunt Points  $\Delta$  and  $\Delta$  to ground. Loosen the deflection yoke and move it rearward until it is against the convergence assembly.

Adjust the tabs on the purity magnet and rotate the assembly until a red spot appears in 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

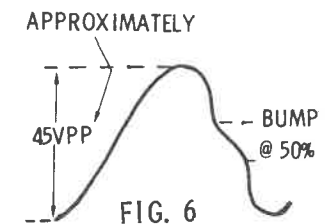
Allow the set to run for 45 minutes before preceeding. Tune in a black and white picture or a color picture with the color control set to MINIMUM. Rotate the picture-tube bias control to the maximum counterclockwise position. Turn the Red, Blue, and Green screen controls fully counterclockwise. Set the master control to its mid-range (on some models). Set brightness control to maximum.

Move the Normal-Purity-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, advance the picture-tube bias control to obtain a line on the screen.

Return the Normal-Purity-Service switch to Normal position. Adjust brightness control for maximum brightness. Advance the picture-tube bias control until picture starts to "bloom". Reduce the control to the point just below the place where the picture "blooms". Adjust the Blue and Green Drive controls to eliminate coloring in the dark and bright areas of the picture.

### BLUE HORIZONTAL SHAPING COIL ADJUSTMENT

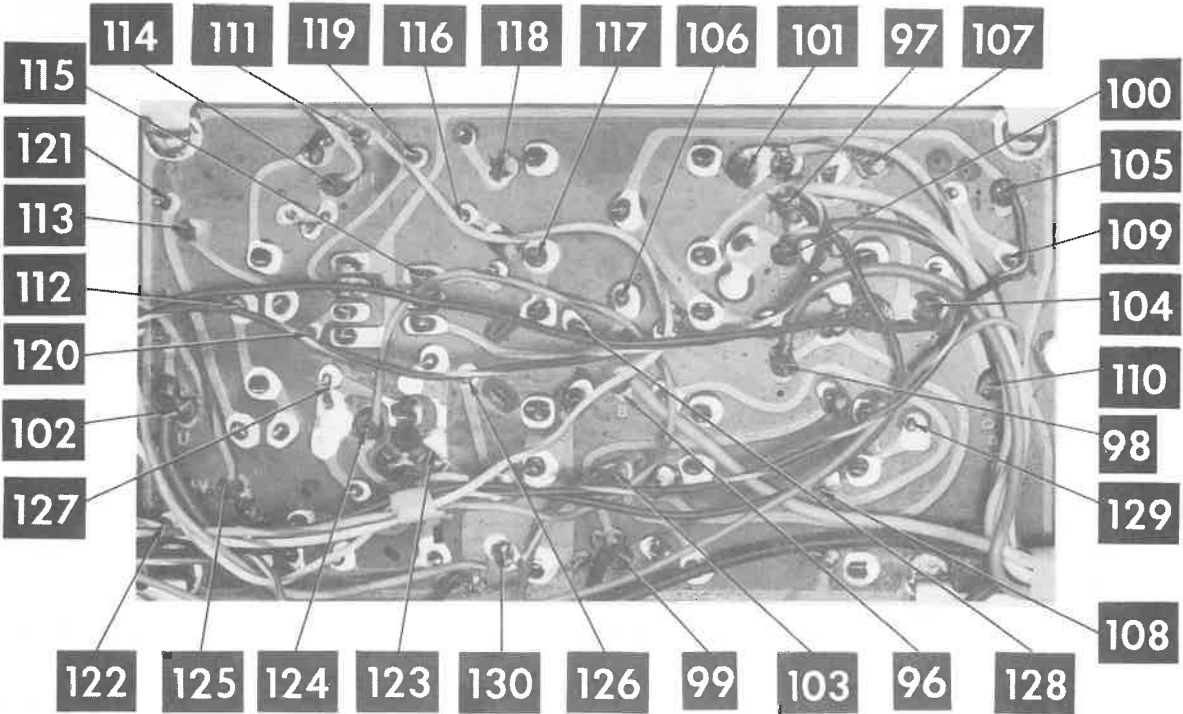
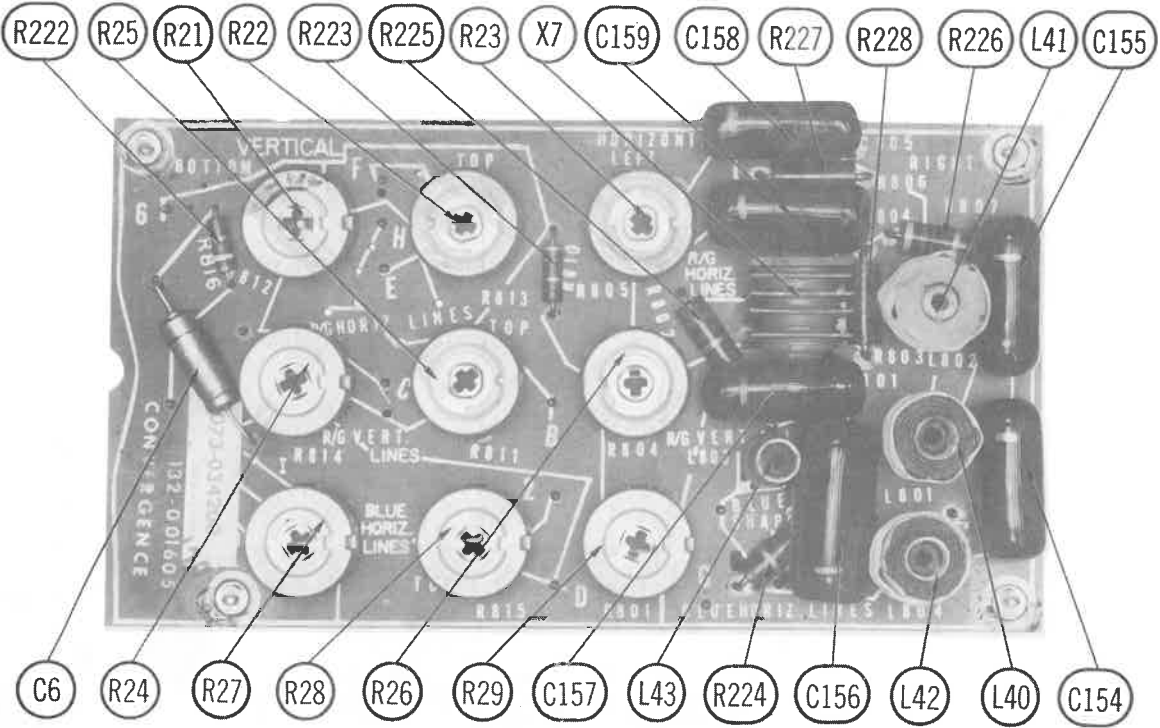
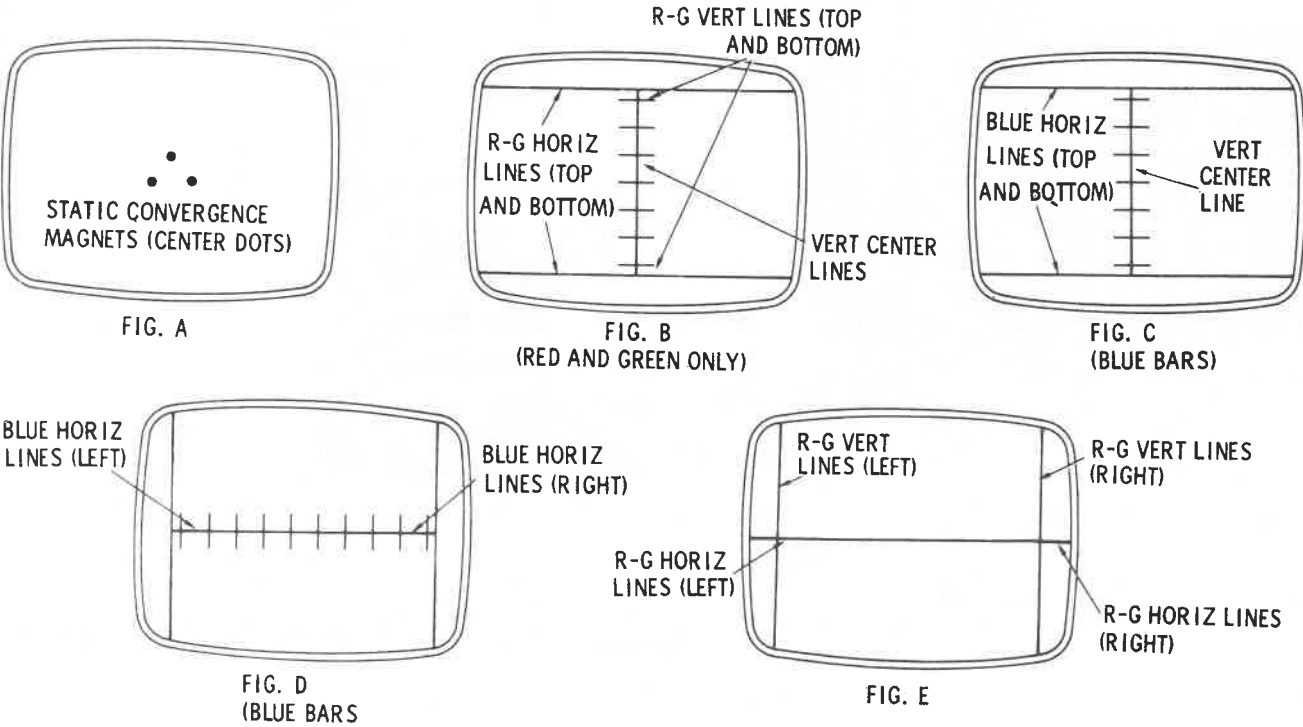
Connect the high side of a scope to junction of R224, C156, and CircuiTrace 123, low side to ground. Adjust Blue Horizontal Shaping coil slug until harmonic "bump" is at the 50% point in the sine wave slope. See Fig. 6.





CONVERGENCE ADJUSTMENTS

Step	Control	Use to Converge (or Straighten)	Remarks
1.			Perform Center Dot Convergence using convergence magnets. If more range is needed, turn magnet control 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 lines, Bottom	Red and Green vertical bars at bottom of screen.	
4.	R-G Horizontal lines, Top	Red and Green horizontal bars at top of screen.	Touch up both controls for best convergence of horizontal bars along vertical center line (Fig. B).
5.	R-G Horizontal lines, Bottom	Red and Green horizontal bars at bottom of screen.	
6.	Blue Horizontal lines, Top	Blue horizontal bars at top of screen.	Touch up both controls for best convergence of horizontal bars along vertical center line (Fig. C).
7.	Blue Horizontal lines, Bottom	Blue horizontal bars at bottom of screen.	
8.			Perform Center Dot Static Convergence, Fig. A.
9.	Blue Horizontal lines, Right	Blue horizontal bars at right side of screen.	Touch up both controls for best convergence along horizontal center line (Fig. D).
10.	Blue Horizontal lines, Left	Blue horizontal bars at left side of screen.	
11.	R-G Vertical lines, Right	Red and Green vertical bars at right side of screen.	(Fig. E)
12.	R-G Horizontal lines, Right	Red and Green horizontal bars at right side of screen.	Use control to converge blue bar with red and green bars on right side of screen (Fig. E).
13.	R-G Vertical lines, Left	Red and Green vertical bars at left side of screen.	(Fig. E)
14.	R-G Horizontal lines, Left	Red and Green horizontal bars at left side of screen.	Use control to converge blue bar with red and green bars at left side of screen (Fig. E).

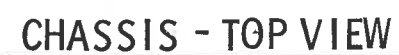


CONVERGENCE BOARD

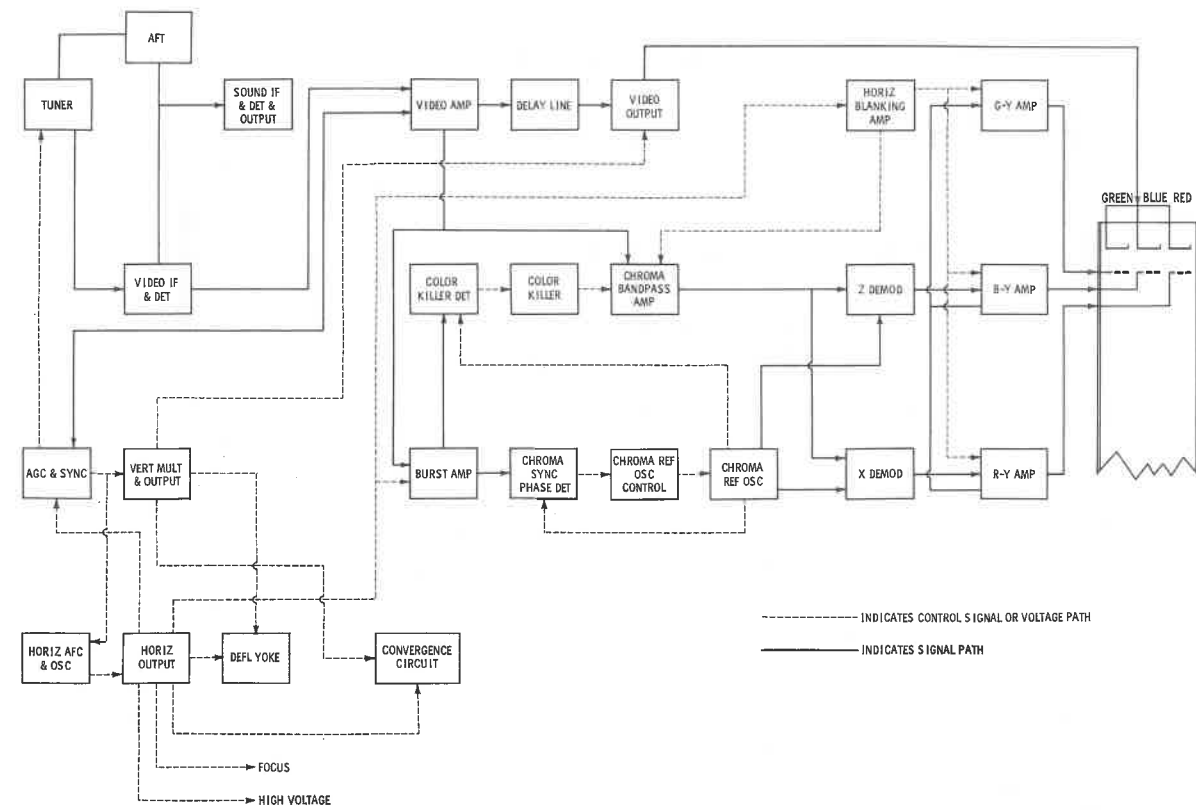
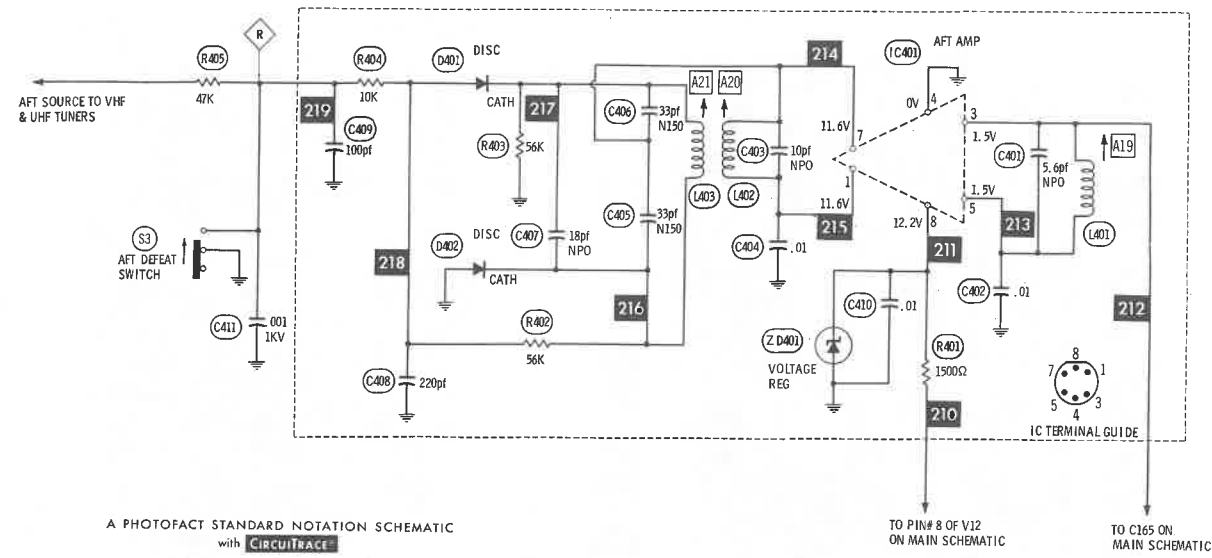
A Howard W. Sams CIRCUITRACE Photo

CHANNEL MASTER MODELS  
6105A, 6109A, 6113A, 6117A

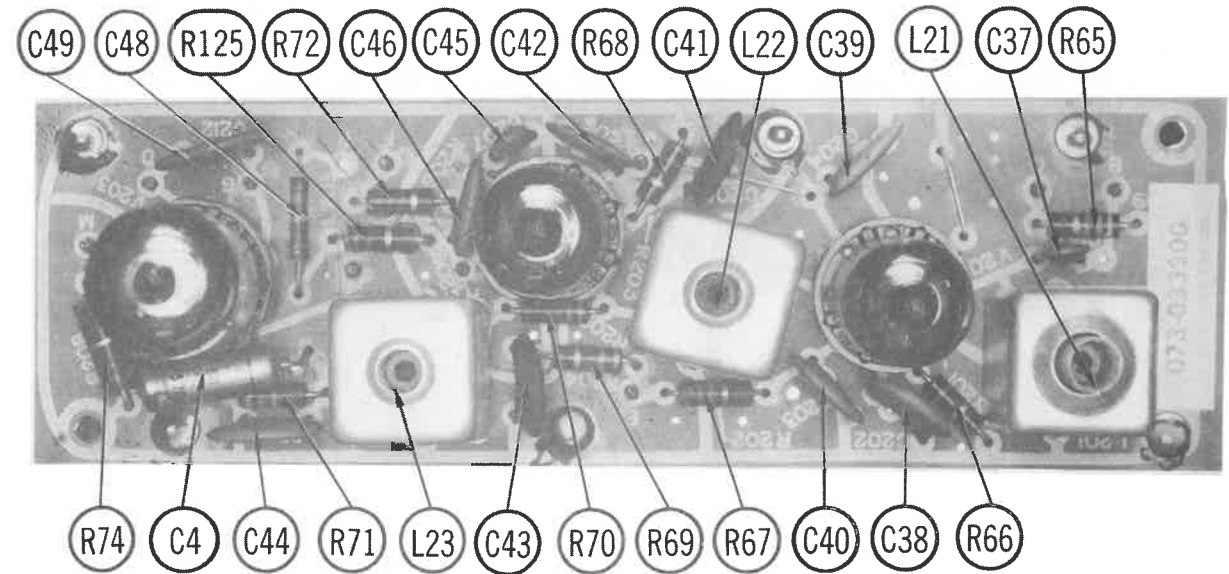
FOLDER 2



## AFT CIRCUIT



## BLOCK DIAGRAM



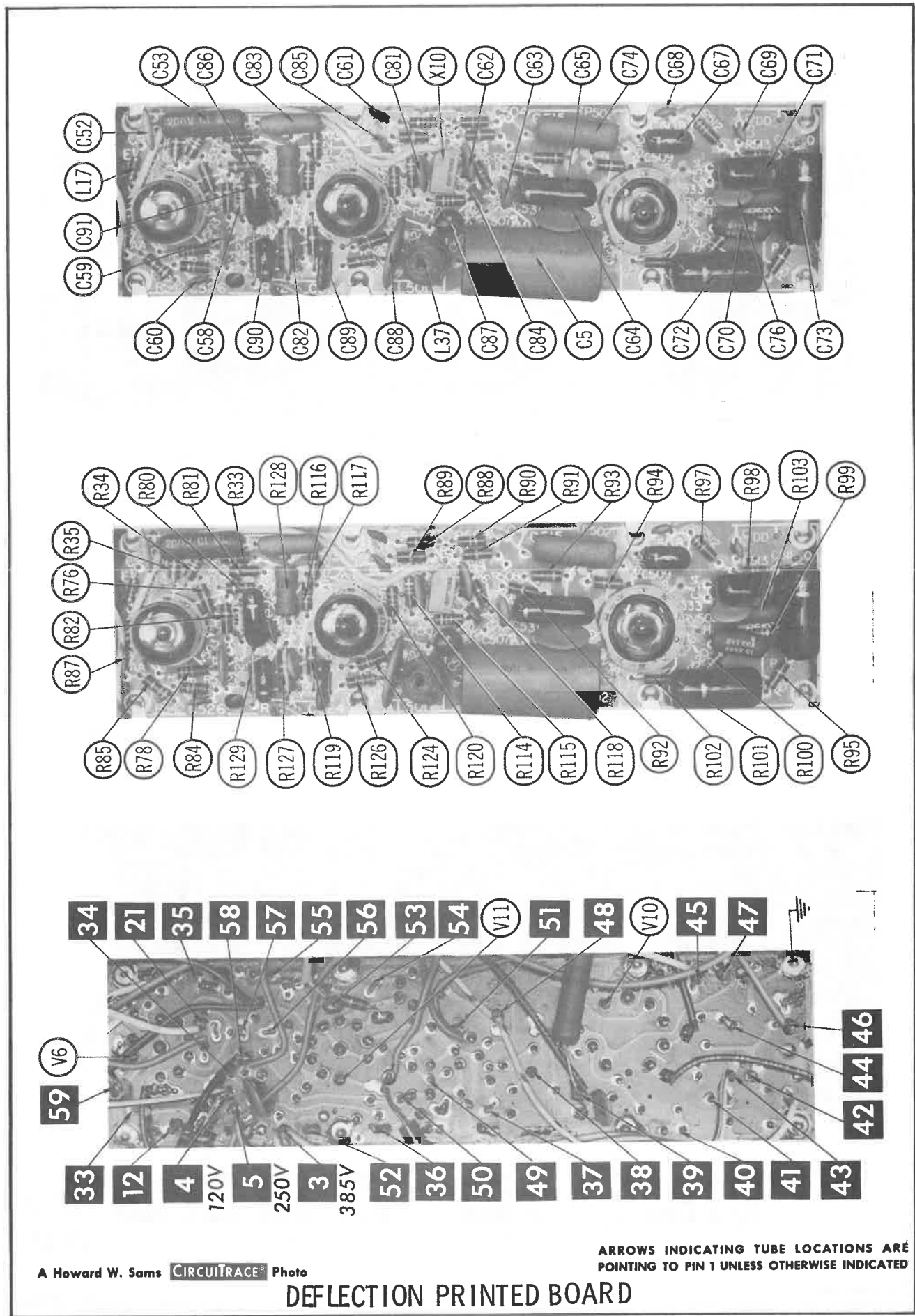
28 24 V7 V8 7 30 3 32 31 V9  
130V 385V PIN7

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

CHANNEL MASTER MODELS  
6105A, 6109A, 6113A, 6117A

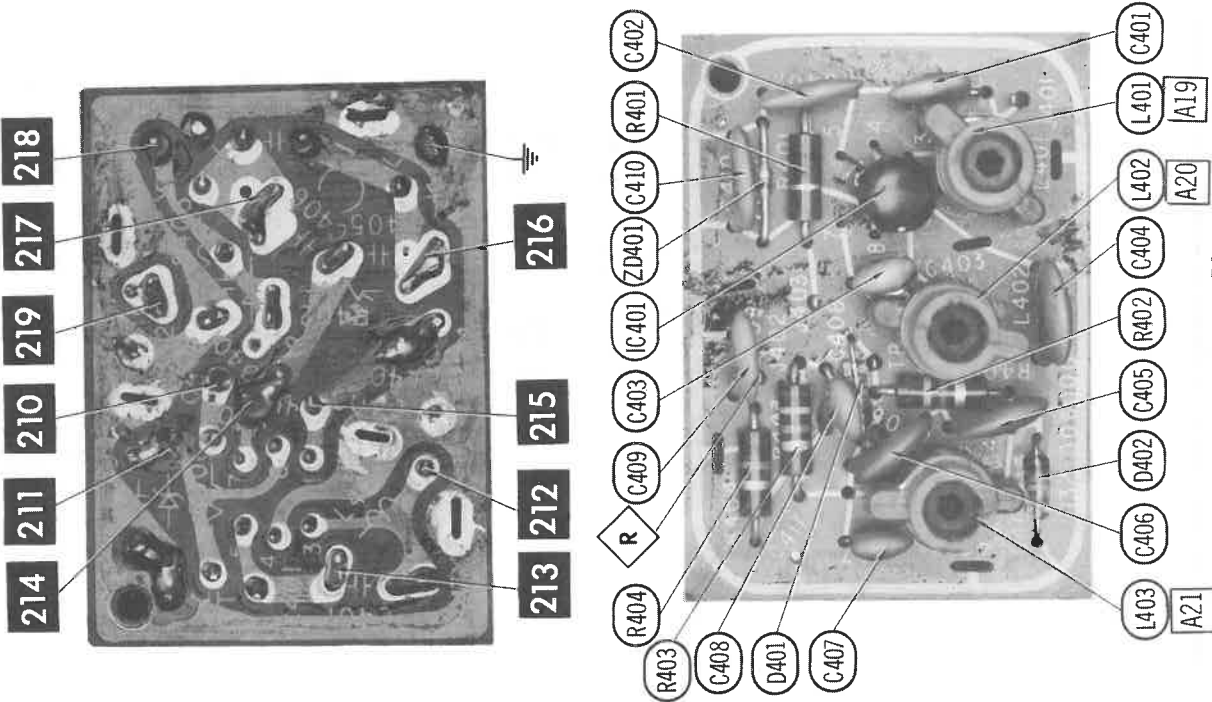
FOLDER 2





A Howard W. Sams CIRCUITRACE® Photo

A Howard W. Sams CIRCUITRACE® Photo AFT PRINTED BOARD



### AFT PARTS LIST

#### INTEGRATED CIRCUITS

ITEM No.	FUNCTION	MFGR. PART No.	REMARKS
IC401	AFT Amp.	H100	

#### POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS	NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.		
D401	H091	1N87A	1N60	ECG 109		(1) Zener Diode
D402	H091	1N87A	1N60	ECG 109		
ZD401	H483	(1)	1ZM12T10			

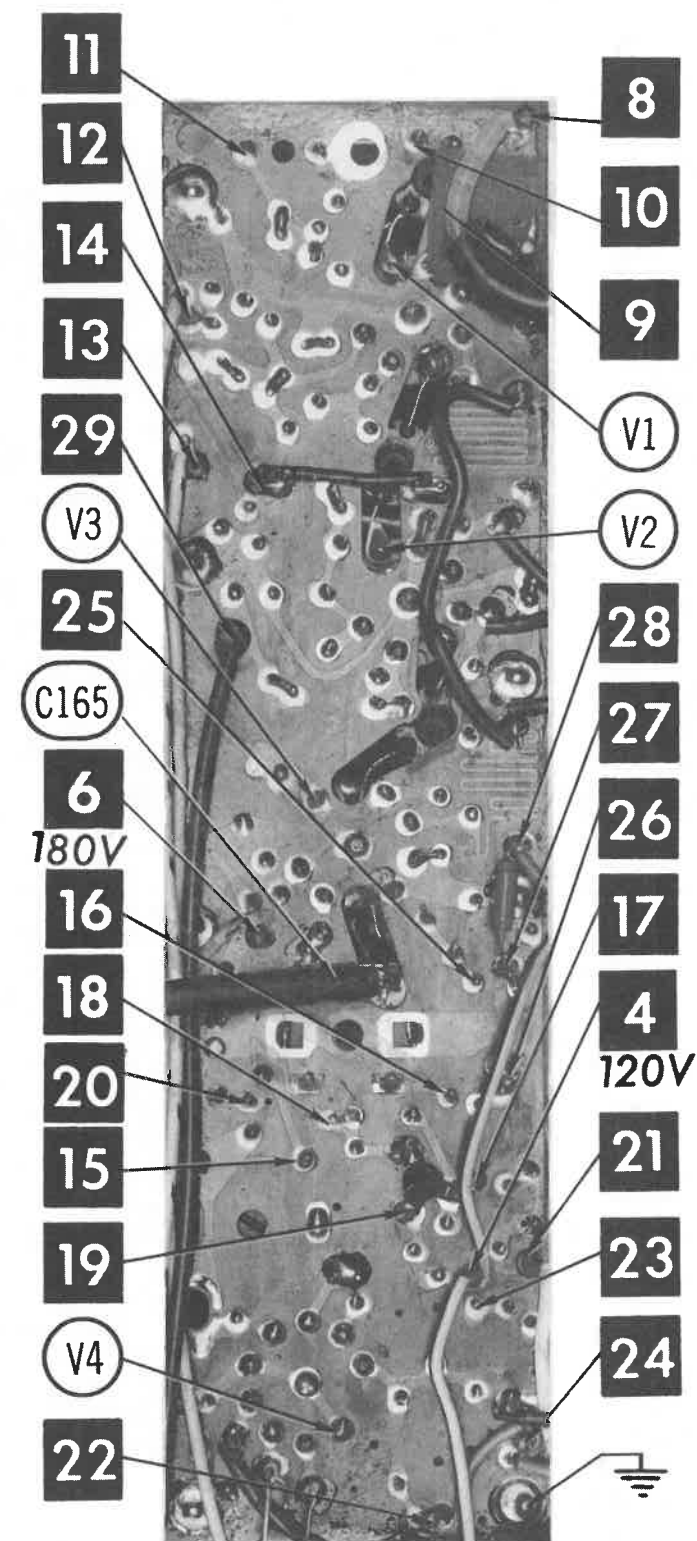
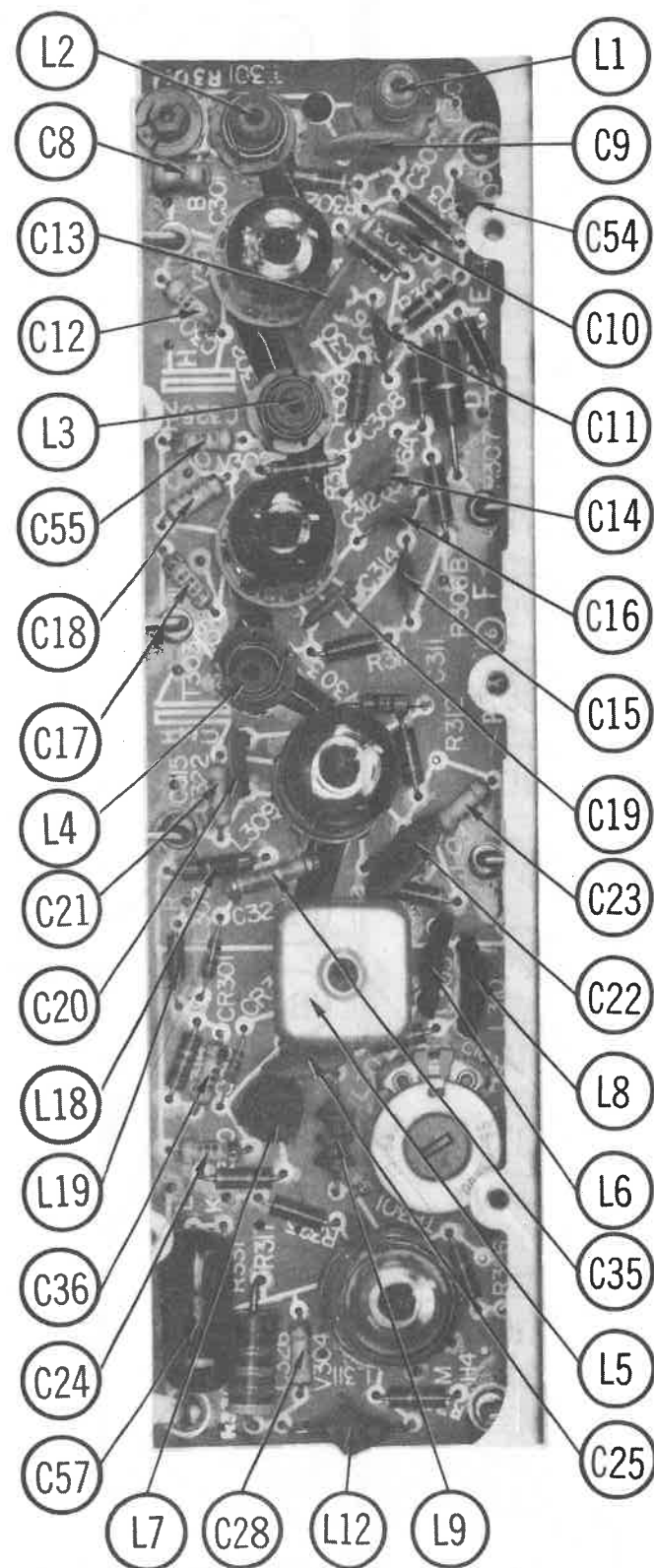
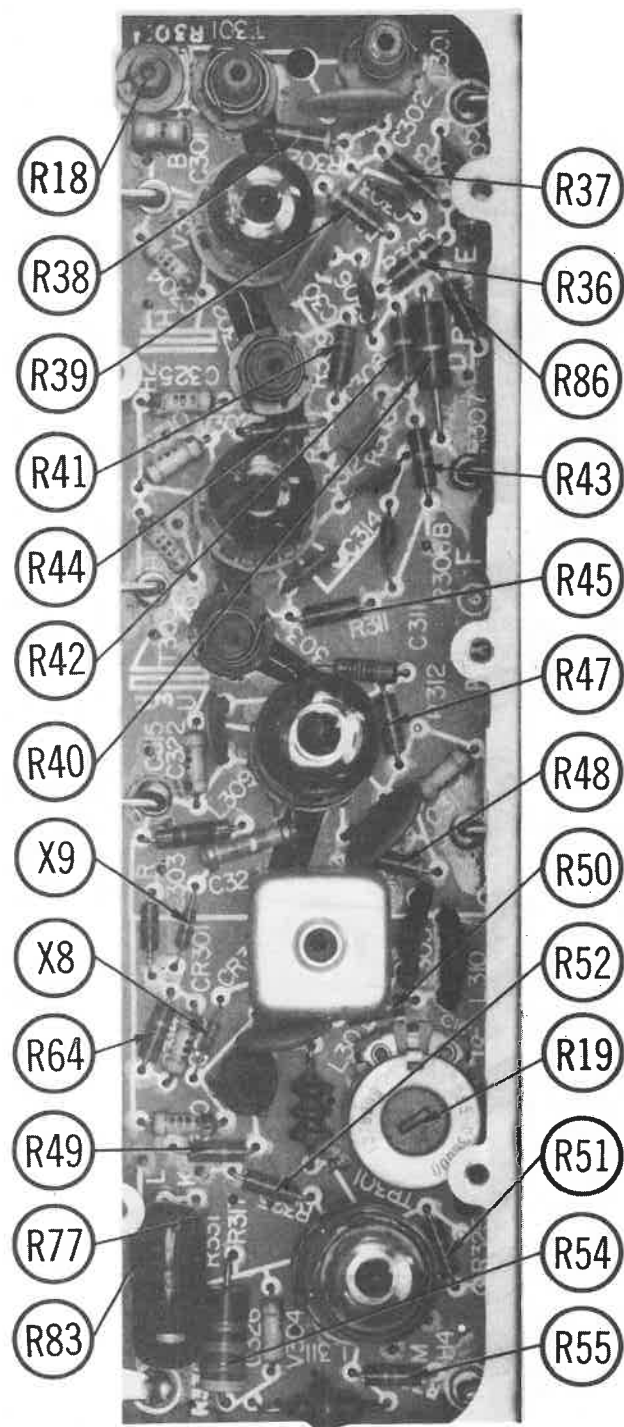
#### CAPACITORS

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.
C401	5.6 NPO		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TCC-V56
C402	.01		NPO-DI 10	DTZ-10	NP010	CCT0-100	CN0410	10TS-S10
C403	.01 NPO		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TCC-Q10
C404	.01					*	*	10TS-S10
C405	33 N150					*	*	10TCP-Q33
C406	33 N150					*	*	10TCP-Q33
C407	18 NPO					*	*	10TCP-Q33
C408	220		GPD X5F221K	TCZ-18	NP018	CCT0-180	CN0418	10TCC-Q18
C409	100		GPD X5F101K	DD-221	GP220	CCD-221	GP322	10TS-T22
C410	.01		GPD X5S103K	DD-101	GP100	CCD-101	GP310	10TS-T10
C411	.001 1KV		GPD X5F102K	DD-102	GP10000	CCD-103	JF110	10TS-S10
					GP1000	CCD-102	GP210	10TS-D10

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

#### COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L401	AFT Input				
L402	AFT Discriminator (Pri.)	H272			
L403	AFT Discriminator (Sec.)	H273 H274			



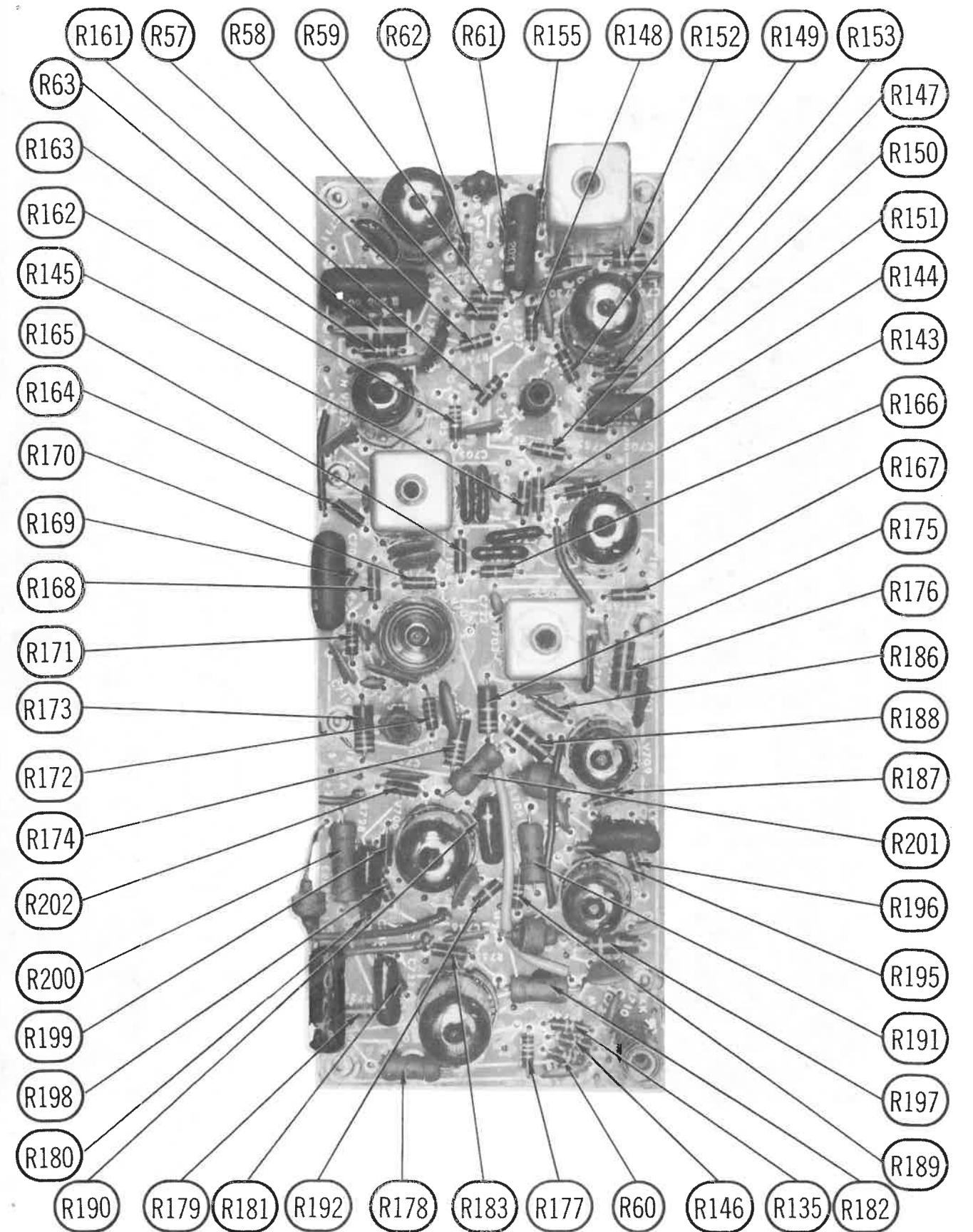
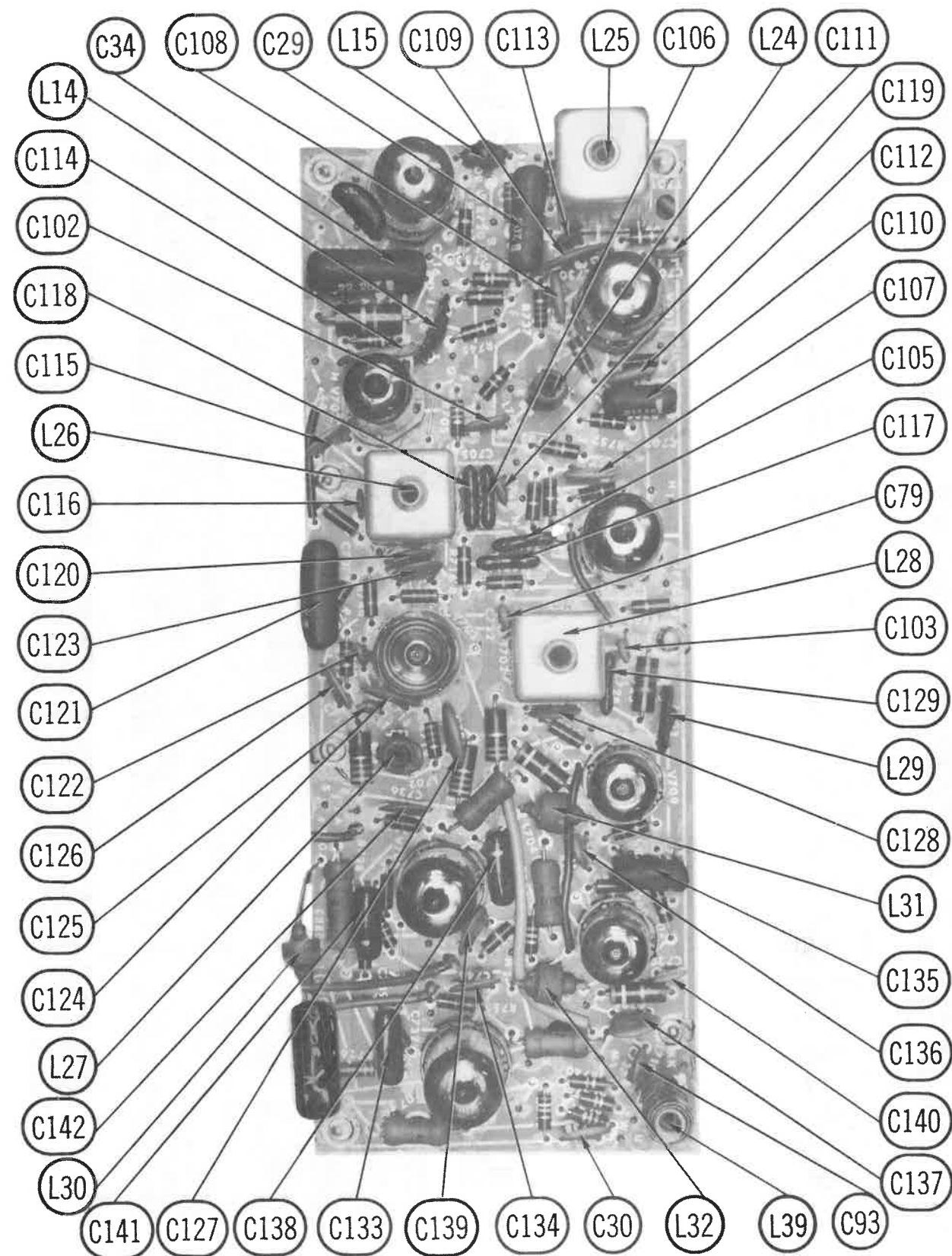
PICTURE CIRCUIT BOARD

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

CHANNEL MASTER MODELS  
6105A, 6109A, 6113A, 6117A

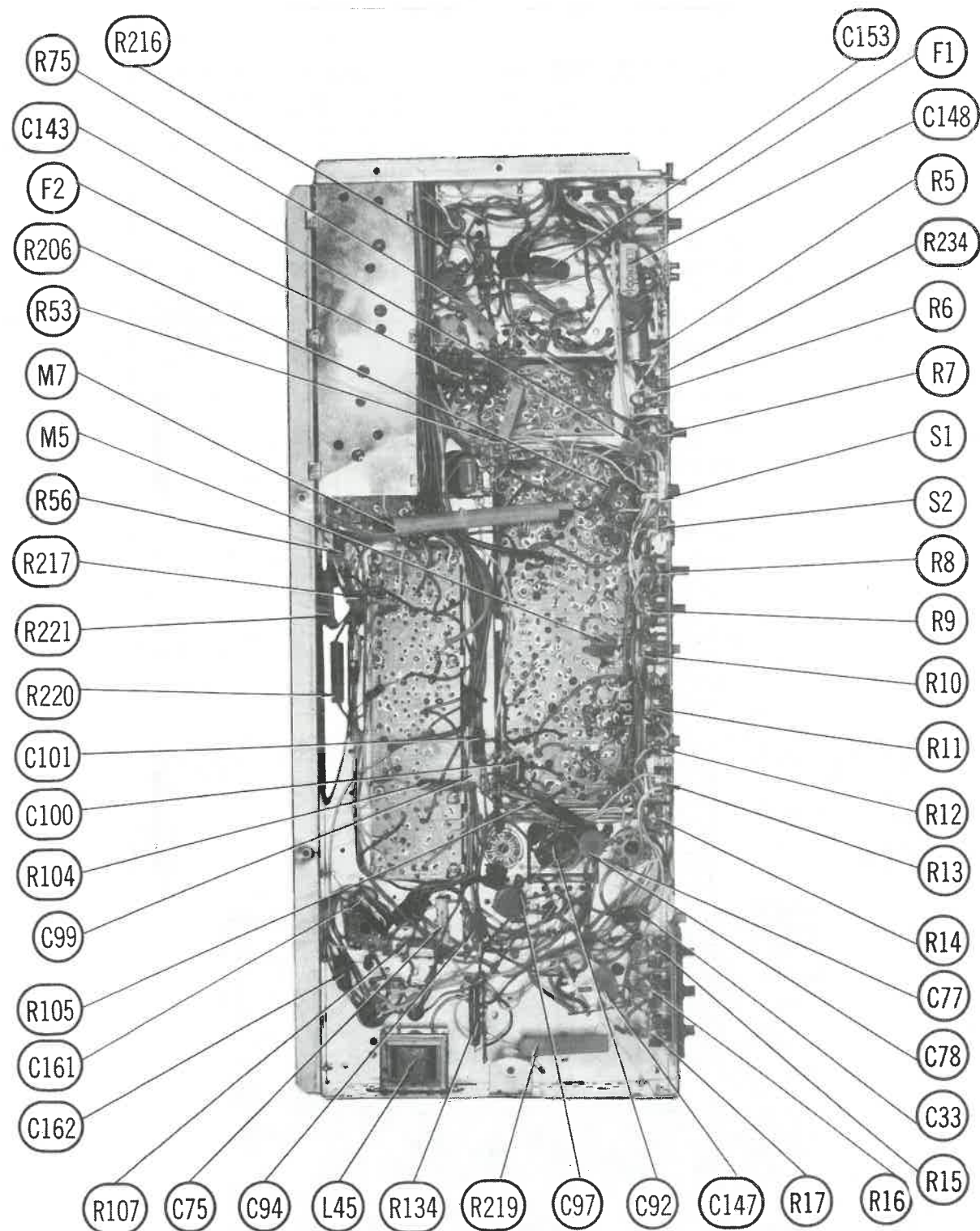
FOLDER 2



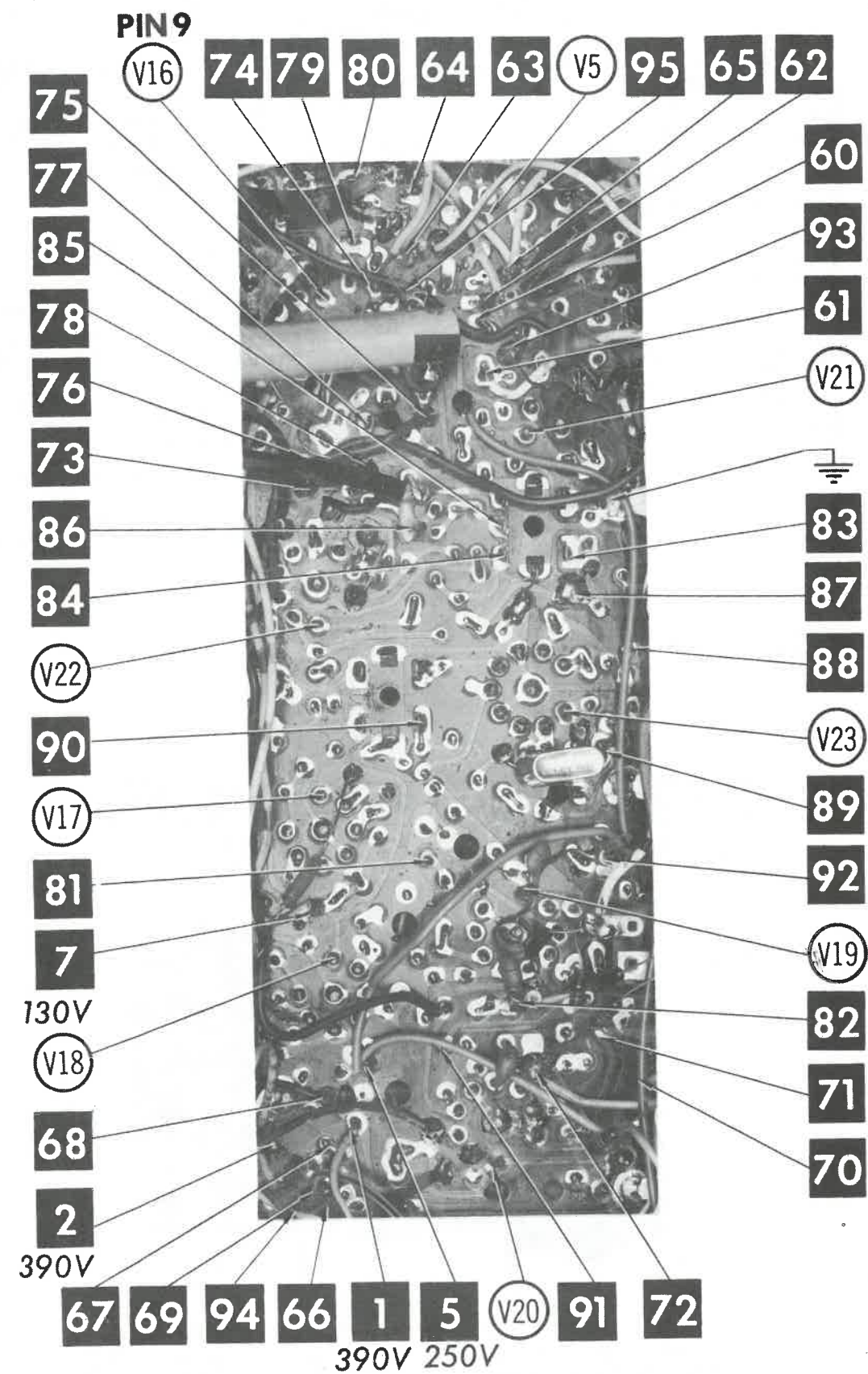


CHROMA PRINTED BOARD





CHASSIS - BOTTOM VIEW



CHROMA PRINTED BOARD

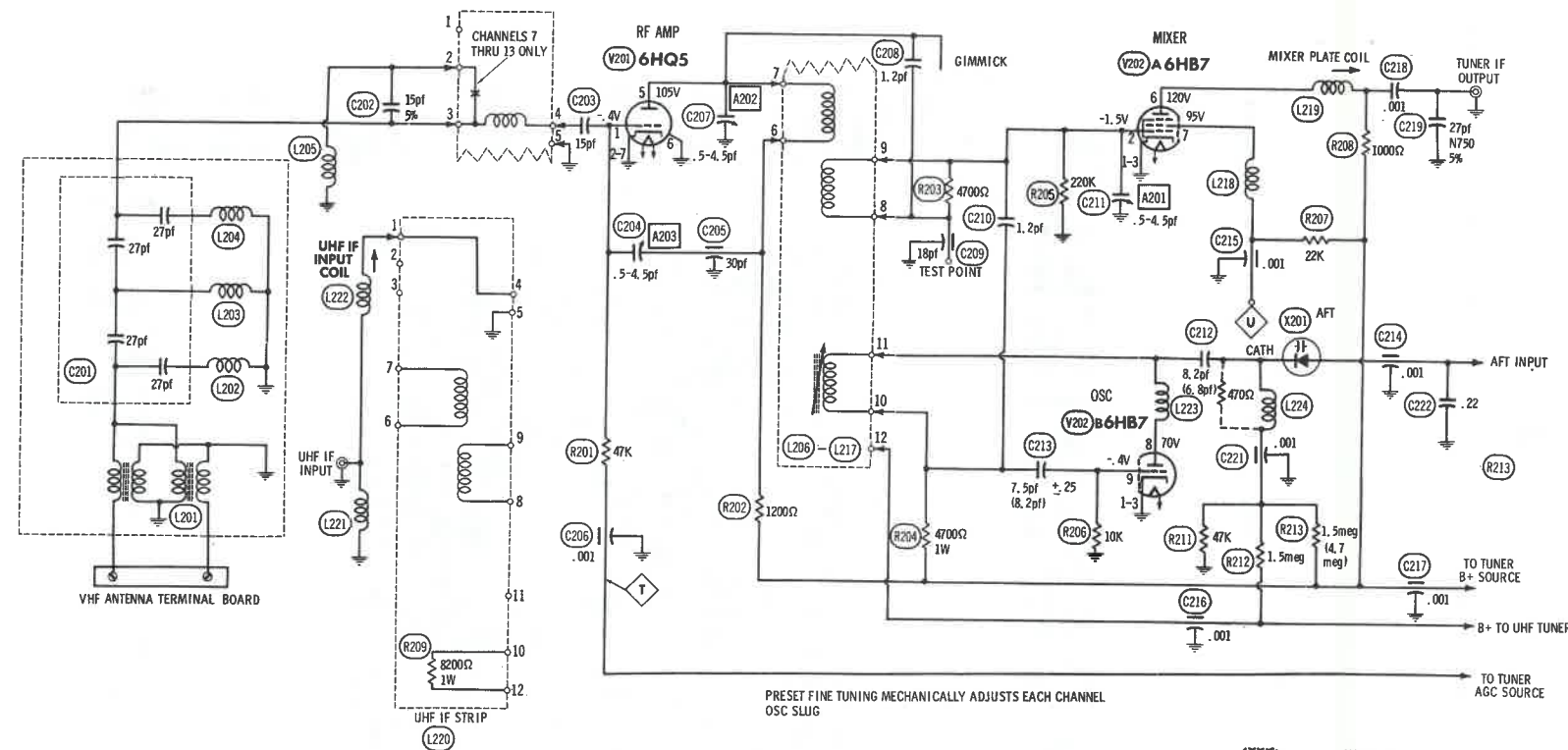
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

A Howard W. Sams CIRCUITRACE® Photo

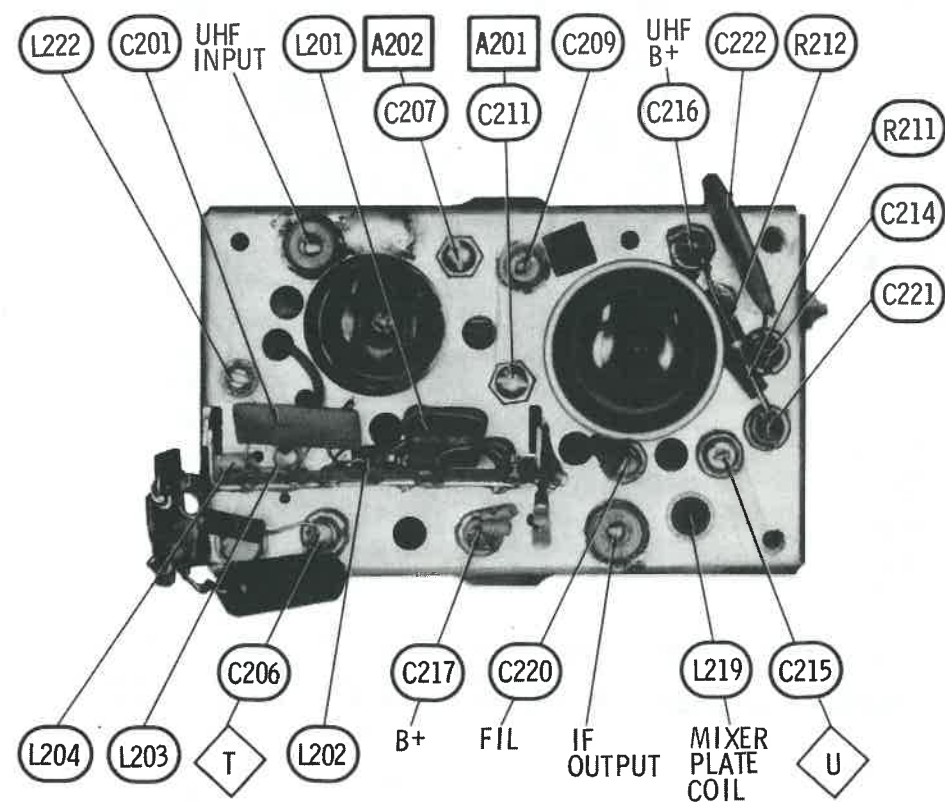
CHANNEL MASTER MODELS  
6105A, 6109A, 6113A, 6117A

FOLDER 2

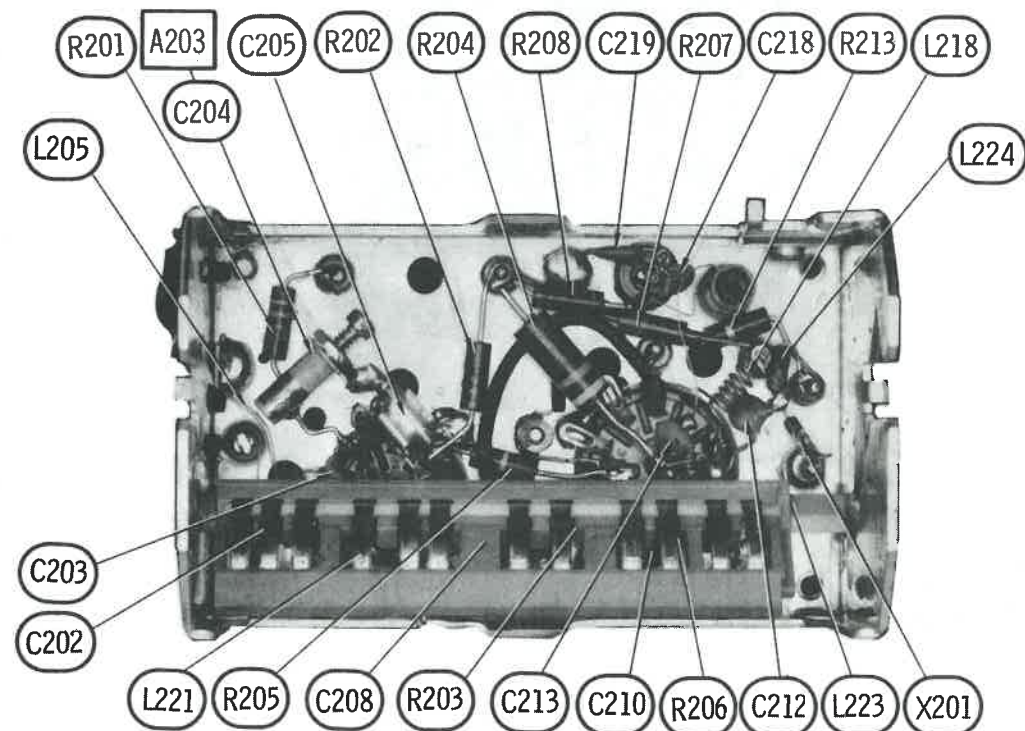




A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1970



VHF TUNER



## VHF TUNER ALIGNMENT INSTRUCTIONS

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

### OSCILLATOR ADJUSTMENTS

The oscillator slug for each channel is preset with the fine tuning control. Adjust the fine tuning for best picture and sound.

### 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 which shows no overloading.

CHANNEL	CONNECT SCOPE	REMARKS
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 of response.
12 thru 2	Vertical input to Point U, low side to ground.	Decrease bias. Check response on all channels. Make compromise adjustments of A201 and A202 if necessary.

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

FIG. 201



## UHF TUNER ALIGNMENT INSTRUCTIONS

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



## TUBES

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

## 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	7.5%		DD-270	CZ601CG150K CZ601CG150K	CCD-270	GP427	10TS-Q27	
B	27	7.5%		DD-270		CCD-270	GP427	10TS-Q27	
C	27	7.5%		DD-270		CCD-270	GP427	10TS-Q27	
D	27	7.5%		DD-270		CCD-270	GP427	10TS-Q27	
C202	15	5%		DD-150		CCD-150	GP415	10TS-Q15	
C203	15	5%		DD-150		CCD-150	GP415	10TS-Q15	
C204	.5-4.5								
C205	30	10%							
C206	.001								
C207	.5-4.5								
C208	1.2	10%					10TCC-V12		
C209	18								
C210	1.2pf	10%					10TCC-V12		
C211	.5-4.5								
C212	8.2								
C213	7.5 N220	+ .25							
C214	.001								
C215	.001								
C216	.001					*	*		
C217	.001					*	*		
C218	.001			GPD X5F102K	DD-102 TCN-27	JBS601YP102K	CCD-102	GP210 CN7427	10TS-D10 10TCU-Q27
C219	27 N750	5%							
C220	.001								
C221	.001								
C222	.22 100V		DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22	

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

## COILS (RF-IF)

ITEM No.	USE	MFGR. PART No.	NOTES
L201	Balun	*	* Antenna Input
L202	Filter	*	Assembly
L203	Filter	*	
L204	Filter	*	
L205	RF Choke		
L206	Ant.,RF,Mixer,Osc.		Channel 2 Strip
L207	Ant.,RF,Mixer,Osc.		Channel 3 Strip
L208	Ant.,RF,Mixer,Osc.		Channel 4 Strip
L209	Ant.,RF,Mixer,Osc.		Channel 5 Strip
L210	Ant.,RF,Mixer,Osc.		Channel 6 Strip
L211	Ant.,RF,Mixer,Osc.		Channel 7 Strip
L212	Ant.,RF,Mixer,Osc.		Channel 8 Strip

### UHF TUNER PARTS LIST 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		UHF Oscillator	H442	GE-11	TR-24	HEP56	SK3019	ECG 108

## POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS	NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.	RCA PART No.	
X301 X302	(1)	1N82A	1N82AG	ECG 112		(1) Variable Capacitor Diode.

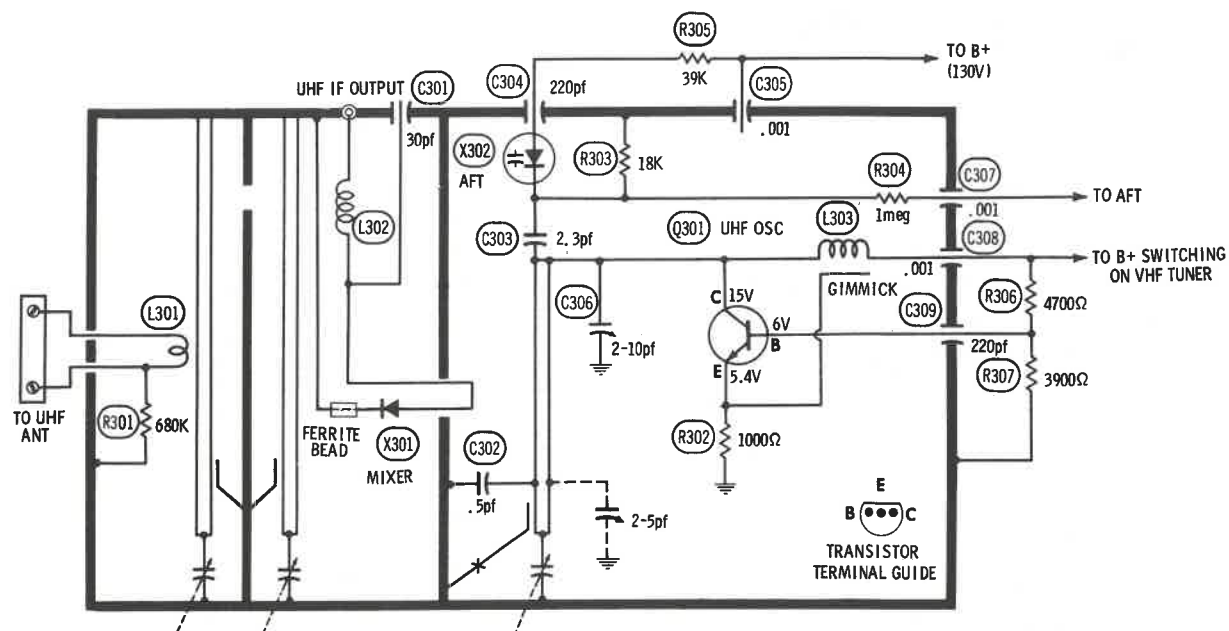
## CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL- DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C301	30pf							
C302	.5pf							
C303	2.3pf							
C304	220pf							
C305	.001							
C306	2-10pf							
C307	.001							
C308	.001							

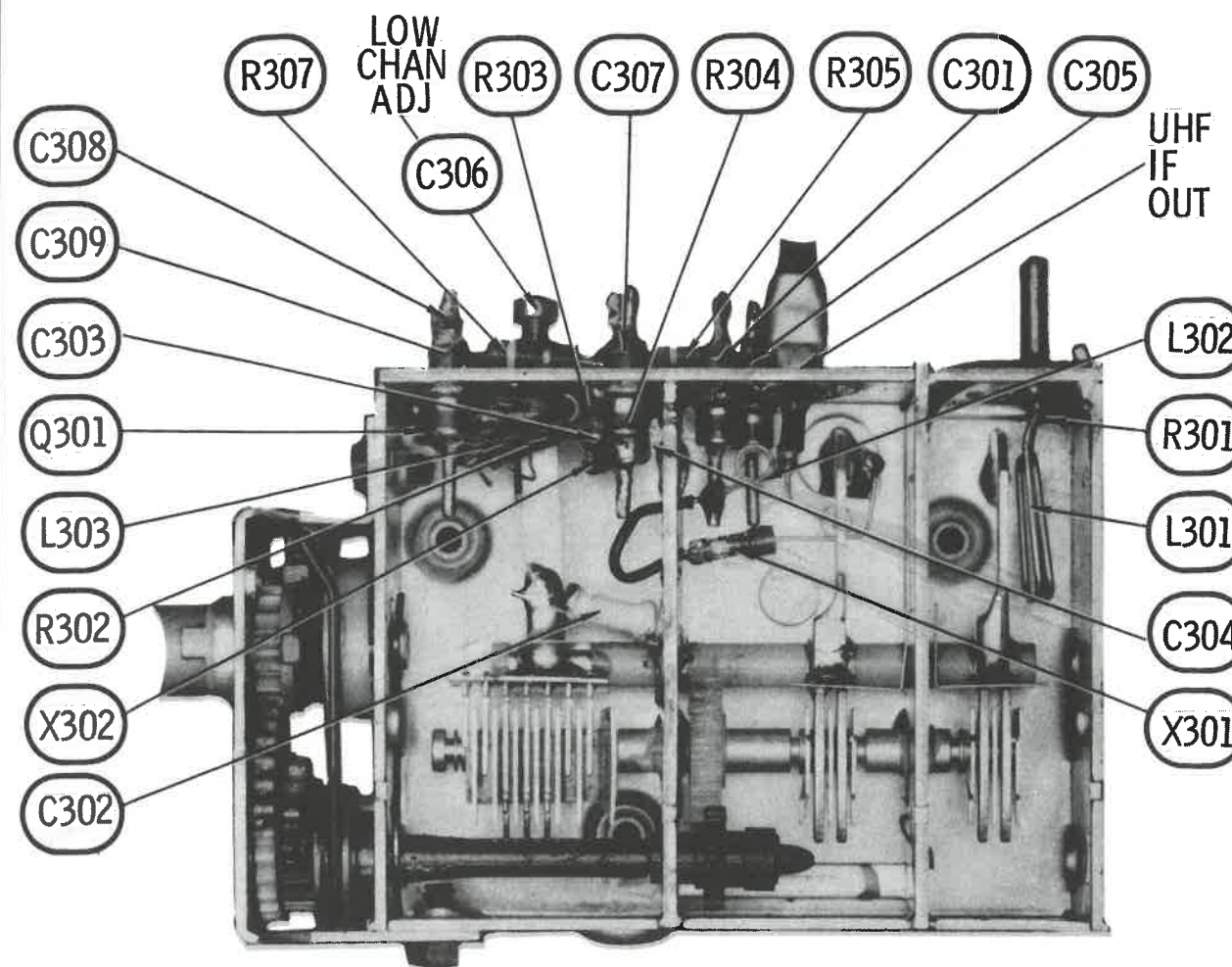
## COILS (RF-IF)

ITEM No.	USE	MFGR. PART No.	NOTES
L301 L302	Antenna Coil IF Choke		

ITEM No.	USE	MFGR. PART No.	NOTES
L303	RF Choke		



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1970



## UHF TUNER

**CHANNEL MASTER MODELS**  
6105A, 6109A, 6113A, 6117A

**FOLDER 2**



PARTS LIST AND DESCRIPTION

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

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

WIRING DATA

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

TUBES

AMPEREX			GENERAL ELECTRIC			RCA			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
Q301	UHF Oscillator (Transistor)	6HQ5	V12	Horiz. Output	6JE6C/6LQ6						
V201	RF Amp.	6HB7	V13	Damper	6DW4B						
V202	Mixer-Oscillator	6JH6	V14	HV Rectifier	3A3A						
V1	1st Video IF	6GM6	V15	Shunt Regulator	6BK4B						
V2	2nd Video IF	6EJ7	V16	Chroma Bandpass Amp.-							
V3	3rd Video IF	6LF8		Color Killer	6GH8A						
V4	1st Video - 2nd Video Amp.	12BY7A	V17	Z Demodulator	6GY6						
V5	Video Output		V18	X Demodulator	6GY6						
V6	Noise Inverter -		V19	B-Y Amp. - R-Y Amp.	6GU7						
	AGC Keying - Sync Separator	6KA8	V20	Horiz. Blanking - G-Y Amp.	6GU7						
V7	Sound IF	6AU6A	V21	Burst Amp.	6EW6						
V8	Audio Detector	6DT6A	V22	Chroma Sync Phase Det.-							
V9	Audio Output	6BQ5		Color Killer Detector	6JU8A						
V10	Vert. Mult.- Vert. Output	6GF7A		Chroma Ref. Osc. Control -							
V11	Horiz. AFC - Horiz. Osc.	6FQ7/6CG7	V23	Chroma Reference Oscillator	6GH8A						

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	MFGR. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V24	25AP22A or 25XP22 or 25GP22A	25AP22A (1) 25AP22A (1) 25AP22A (1)	H25XP22 (2) C25AP22 (4) C25XP22/25AP22A (4)	RE25AP22A (3) (5) RE25AP22A (3) (5) RE25AP22A (3) (5)	(1) Aluminized (2) Hi-Lite (3) Color Bright "85" (4) Colorama

(5) It may be necessary to reverse Red and Green cathode leads for White balance.

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		Color Trac	H102 (002-009900)	GE-10	TR-21	HEP243	SK3020	ECG 123

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MFGR. PART OR TYPE No.	REPLACEMENT RECTIFIERS & DIODES			REPLACEMENT RECTIFIERS	NOTES
		GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	SYLVANIA PART No.		
X1	H109	GE-504A	806 or 18DB8A (2)	ECG 116 or 18DB8A (2)	SK3017A or SK3032	(2) A single unit replacement for all four bridge circuit rectifiers.
X2	H109	GE-504A	806 or 18DB8A (2)	ECG 116 or 18DB8A (2)	SK3017A or SK3032	
X3	H109	GE-504A	806 or 18DB8A (2)	ECG 116 or 18DB8A (2)	SK3017A or SK3032	
X4	H109	GE-504A	806 or 18DB8A (2)	ECG 116 or 18DB8A (2)	SK3017A or SK3032	
X5	H078	GEGR-2	61-8968	ECG 119		(1) Four required.
X6	H070	GEGR-1	61-8969	ECG 118		
X7	H099	GEGR-3 or GE-504A (1)	CD-07 or 8D4 (1)	ECG 120 or ECG 116 (1)		
X8	H091 (1N87)	1N60	1N60	ECG 109		
X9	H091 (1N87)	1N60	1N60	ECG 109		
X10	H101	6GC1	DD04	ECG 113		
X11	H087	1N60	1N60	ECG 109		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA						
		PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MAILORY PART No.	SPRAGUE PART No.
C1A	80 450V	H008 (034-025900)	AFH4-88-10		DD0878	XC4-63.5	FP433.3	TVL-4754
B	30 450V							
C	20 450V							
D	40 150V							
C2A	80 450V	H009 (034-026000)	AFH4-108-35		DD0825.5	XC4-68.1	FP427.67	TVL-4714.6
B	50 450V							
C	20 250V							
D	50 50V							
C3A	2 350V	H014 (034-025800)	AFH3-134-25		DD0956A	XC3-0.5	FP342.75	TVL-3719.10
B	25 25V							
C	80 450V							
C4	5 25V	H025 (034-025200)	CRE604A	EA30-25	NLW5-50	MT1-3	MTA5D50	TE-1202
C5	50 150V	H041 (034-019000)	PRS1480		BR50-150	QT1-17	TC49A	TVA-1414
C6	10 25V	H063 (034-026200)(1)	CRE607A	EA30-10	AL10-25	MT1-5	MTA10D35	TE-1204

(1) Some versions may use 10mfd @ 6V in this application.

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

TRANSFORMERS (Sweep Circuits)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	Vert. Output	H232 (033-013600)					(1) Use original core clamp. (2) Use original yoke plug and extend lead length.
T3	Yoke (Horiz. 12.4mh) 90° (Vert. 24mh)	H264 (027-032800)	MDF-145C (1)	DY-95AC	Y108 (1)(2)	YC-312-2 (1)	
T4	Horiz. Output	H230 (033-013000)	HVO-234C	HO-60TC	FLY-277	D-304	

SWEEP COMPONENT CONNECTION DATA

ORIGINAL →	HORIZONTAL OUTPUT										YOKE	
	Original Connections										Original Connections	
REPLACEMENT ↓	P	D	C1	C2	FC	BB	B1k				NO WIRING CHANGE NECESSARY	
MERIT	P	D	C1	C2	FC	BB	B1k					
STANCOR	P	D	C1	C2	FC	BB	B1k					
THORDARSON	P	D	C1	C2	FC	BB	B1k					
TRIAD	P	D	C1	C2	FC	BB	B1k					

TRANSFORMER (Audio Output)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	3400	3-4	H231 (031-009400)	A-3018	A-3849	26S50	S-67X	

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		MFGR. PART No.	QUAM PART No.	
SP1	5" x 7" PM 6.4 ohms	H488	57A21Z6.4	Models: 6109A, 6113A, 6117A
SP2	5" x 7" PM 6.4 ohms	H488	57A21Z6.4	
	5" x 7" PM 3.2 ohms	H487		

FUSE DEVICES

ITEM No.	DESCRIPTION	REPLACEMENT DATA					
		PART No.		BUSS PART No.		LITTELFUSE PART No.	
		DEVICE	HOLDER	DEVICE	HOLDER	DEVICE	HOLDER
F1	Circuit Breaker	H424 (099-002500)				8153.25	
F2	Break Current 3.1 Amp.						
F3	Hold Current 2.1 Amp.						
	3 1/2" length #22 wire						
	"N" Slow Blow, .5 Amp.	H443		N 1/2	HN 3/10 to 1/2	333.500	346009

MISCELLANEOUS

ITEM No.	PART NAME	PART No.	NOTES
	UHF Antenna	H238	JFD Replacement TA432
	VHF Tuner	H480	
	UHF Tuner	H481	
	Lamp	H074	#755 VHF Indicator
	Lamp	H074	#755 UHF Indicator
M5	Crystal	H252 (136-000100)	3.58MC
M7	Delay Line	H461 (111-023800)	
M8	Degaussing		
S1	Switch	H244	Video Peaking
S2	Switch	H245	Service-Normal-Purity
S3	Switch	H471	AFT Defeat (AFC)
	Magnet	H396 (112-001700)	Purity and Blue Lateral Assembly
	Printed Circuit Board	H440	AFT (AFC)
	Printed Circuit Board	H441	Convergence

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA			
		PART No.	MEISSNER PART No.	MILLER PART No.	WORKMAN PART No.
L1	47.25MC Trap	H434		7553	TA260
L2	1st Video IF	H256	17-3418	7549	T272
L3	2nd Video IF	H257	17-3419	7552	TB644
L4	3rd Video IF	H258	17-3414	7526	TA258
L5	4th Video IF/41.25MC Trap	H259 (109-023300)		6037	TF278
L6	RF Choke (12uh)	H437	19-2016	72F125AP	TA823
L7	4.5MC Trap	H268		7142	TA264
L8	Peaking (620uh)	H270	19-2030	6146	T326
L9	Peaking (36uh)	H269	19-3036	6176	T301
L10	RF Choke (5.6uh)	H399	19-1008	74F566AP	T820
L11	Peaking (390uh)	H266	19-2028	72F394AP	TA338
L12	Peaking (680uh)	H271 (1)	19-3660 (4)	72F684AP (4)	T327 (4)
L13	Peaking (72uh)	H428	19-3075	6172	T303
L14	Peaking (62uh)	H433	19-3060	6110	T338
L15	Peaking (120uh)	H277 (2)	19-3125 (5)	72F124AP (5)	TA344 (5)
L16	Peaking (390uh)	H426	19-2028	72F394AP	TA338
L17	RF Choke (5.6uh)	H276	19-2008	74F566AP	T820
L18	RF Choke (12uh)	H436	19-1008	72F125AP	TA823
L19	RF Choke (1.8uh)	H435	19-1001	74F186AP	TA819
L20	RF Choke (5.6uh)	H399	19-1008	74F566AP	T820
L21	1st Sound IF	H266		SI-187 *	TB639
L22	2nd Sound IF	H255 (109-029800)		7138	T270
L23	Quadrature	H267 (109-029900)	20-1052	7107-R	TF299
L24	Chroma Takeoff	H429		6039	
L25	Chroma Bandpass	H260 (109-023100)		6044	
L26	Burst Phase	H261 (109-023600)		6046	
L27	Chroma Oscillator Control	H430		6040	
L28	3.58MC Oscillator	H262 (109-024500)		6045	
L29	RF Choke (10uh)	H431	19-1005	72F105AP	T860
L30	Peaking (620uh)	H432	19-2030	6146	T326
L31	Peaking (620uh)	H432	19-2030	6146	T326
L32	Peaking (620uh)	H432	19-2030	6146	T326
L33	RF Choke (5.6uh)	H399	19-1008	74F566AP	T820
L34	RF Choke (5.6uh)	H399	19-1008	74F566AP	T820
L35	RF Choke (5.6uh)	H399	19-1008	74F566AP	T820
L36	Peaking (620uh)	H279 (3)	19-2030 (6)	6146 (6)	T326 (6)

(1) Wound on 15K Resistor  
(2) Wound on 2200-ohm Resistor  
(3) Wound on 8200-ohm Resistor

\* Clip unused pin.

(4) Shunt with 15K Resistor.  
(5) Shunt with 2200-ohm Resistor.  
(6) Shunt with 8200-ohm Resistor.

COILS (Sweep Circuits)

ITEM No.	FUNCTION	REPLACEMENT DATA						
		MFGR. PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L37A	Horiz. Osc. Freq.	H275		6349				TB177
L38	Waveform (Sine Wave)	H229		6350		FC-5		TC289
L39	Focus	H278		H-137				TB178 (1)
L40	Horiz. Linearity			H-138				
L41	Dynamic Convergence							
L42	Right R/G Vert. Lines (2mh-6mh)							
L43	Dynamic Convergence			H-139				
L44	Right R/G Horiz. Lines (1.7mh-6mh)							
L45	Dynamic Convergence			H-140				
L46	Right Blue Horiz. Lines (Primary 1.9mh-8.4mh)							
L47	(Secondary 28uh-54uh)							
L48	Blue Horiz. Shape			H-136				
L49	Convergence Yoke Assembly	H237 (027-032700)				Y-113		
L50	Blue Section							
L51	Green Section							
L52	Red Section							

(1) Disregard Tap.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
L45	.47A DC	22	.36 H	H265 (032-002900)	C-4133 (1)	C-2708(1)	26C81 (1)	C-40X (1)	(1) Drill new mounting holes.

TRANSFORMER (Power)

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	MFGR. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	117VAC @ 3.15A AC	315VAC @ .47A DC	H254 (033-011900)		P-9002C			
	SEC. 2	SEC. 3						
	6.3VAC @ 1.85A AC	6.3VAC @ 11.4A 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

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.
C8	9	#H026						
C9	150 NPO 5%		NPO-DI 150	DTZ-150		CCT0-151	CN0315	10TCC-T15
C10	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C11	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C12	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C13	680 N2200 10%	#H028					*	10TCY-T68
C14	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C15	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C16	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C17	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C18	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C19	220 N1500 10%	#H013					CN15-322	10TCW-T22
C20	.0022 10%		GPD X5F222K	DD-222	GP2200	CCD-222	GP222	10TS-D22
C21	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C22	560 N1500 5%	#H031					CN15-322	10TCW-T22
C23	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C24	10 5%		GPD COH100K	DD-100	NP010	CCD-100	GP410	10TS-Q10
C25	100 N33 10%	#H033					*	10TCW-T10
C26	220 N1500 10%	#H013					CN15-322	10TCW-T22
C27	7 NPO 5%						CN0568	10TCC-V68
C28	3.5 NPO		NPO-DI 6.8	DTZ-6R8	NP06P8		CN0533	10TCC-V33
C29	.1 200V		NPO-DI 3.3	DTZ-3R3	NP03P3		PVC201	2PS-P10
C30	.01		DBE2P1		DPMS2P1	2DP-3-104	JF110	10TS-S10
C31	.02 50V		GPD X5S103K	DD-103	GP10000	CCD-103	TA120	T6-S20
C32	.470	10%	TTP-02	CK-203	MGPO2	CCD-203	GP347	10TS-T47
C33	.047 600V		GPD X5F471K	DD-471	GP470	CCD-471	PVC615	6PS-S60
C34	.22 200V		DBE6S5		DPMS6S5	6DP-3-503	PVC4022	4PS-P22
C35	1.5	+ .25	DBE6P22		DPMS4P22	4DP-5-224	CN0515	10TCC-V15
C36	10 5%		NPO-DI 1.5	DTZ-1R5	NP01P5		CN0410	10TCC-Q10
C37	3.3 NPO +.25		NPO-DI 10	DTZ-10	NP010	CCT0-100	CN0533	10TCC-V33
C38	.01		NPO-DI 3.3	DTZ-3R3	NP03P3		JF110	10TS-S10
C39	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C40	.0033 10%		GPD X5R332K	DD-332	GP3300	CCD-332	JF233	10TS-D33
C41	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C42	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C43	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C44	.02		GPD Z5U203P	DD-203		CCD-203	GP120	10TS-S20
C45	680		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C46	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C48	680			DD-681	GP680	CCD-681	JF368	10TS-T68
C49	.0082 1KV		GPD X5R822K	DD-822		CCD-822		10TS-D82
C50	.033 200V		DBE6S33		DPMS6S33	4DP-2-333	PVC6133	4PS-S33
C51	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C52	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C53	.1 200V		DBE2P1		DPMS2P1	2DP-3-104	PVC201	2PS-P10
C54	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C55	.001			CD19F102J500	CD19F102J500	DM-19-102J	SX210	424ME1001J500
C56	180 1KV 10%		GPD X5F181K	DD-181	GP180	CCD-181	GP318	10TS-T18
C57	.1 400V		DBE4P1		DPMS4P1	4DP-3-104	PVC401	4PS-P10
C58	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C59	.0033		GPD X5R332K	DD-332	GP3300	CCD-332	JF233	10TS-D33
C60	390	10%	GPD X5F39KJ	DD-391		CCD-391	GP339	10TS-T39
C61	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C62	.47 NPO 10%		NPO-DI 47	DTZ-47	NP047	CCT0-470	CN0447	10TCC-Q47
C63	.0015		GPD X5F152K	DD-152		CCD-152	GP215	10TS-D15
C64	.0027 N5600 10%	#H046					*	
C65	.036 600V 10%				DPMS-6S36	6DP-3-363		6PS-S35
C66	.0022		GPD X5F222K	DD-222	GP2200	CCD-222	GP222	10TS-D22
C67	.0068 400V 10%		DBE6D68		DPMS6D68	6DP-1-682	PVC6268	6PS-D68
C68	680		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C69	680		GPD X5F681K	DD-681	GP680	CCD-681	GP368	10TS-T68
C70	.047 200V		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C71	.0082 1KV		GPD X5R822K	DD-822		CCD-822		10TS-D82
C72	.1 600V		DBE6P1		DPMS-6P1	6DP-4-104	PVC601	6PS-P10
C73	.1 1KV		BE10P1		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C74	.47 200V		DBE2P47		DPMS2P47	2DP-5-474	PVC2047	2PS-P47
C75	.001 2KV 10%		HVD-301000	DD30-102	HV3-1000	3CCD-102	3HV210	30GA-D10
C76	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C77	330 N2200 2.5KV 10%	#H001					*	10TCY-T33
C78	330 N2200 2.5KV 10%	#H001					*	10TCY-T33
C79	10 NPO 10%							
C80	100 N1500.3KV.5%		NPO-DI 10	DTZ-10	NP010	CCT0-100	CN0410	10TCC-Q10
C81	68 NPO 10%					*	CN15-310	10TCW-Q10
C82	.001		NPO-DI 68					
C83	.15 200V		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C84	.27 N750		DBE6P15		DPMS4P15	4DP-4-154	PVC6015	4PS-P15
C85	820	10%	GPD X5F821K	TCN-27		CCTN-270	CN7427	10TCU-Q27
C86	820	10%	GPD X5F821K	DD-821	GP820	CCD-821	GP382	10TS-T82
C87	.01 400V		V1614S1	DD-821	GP820	CCD-821	GP382	10TS-T82
C88	390 N1500 1.5KV 5%	#H043		CPR-10000J	DPMS6S1	4DP-1-103	PVC411	4PS-S10
C89	680					*	CN15-339	10TCW-T39
C90	.0015 600V 10%		GPD X5F821K	DD-821	GP820	CCD-821	GP382	10TS-T82
C91	.01 600V		DBE6D15		DPMS6D15	6DP-1-152	PVC6215	6PS-D15
C92	.1 600V		DBE6S1		DPMS6S1	6DP-2-103	PVC611	6PS-S10
C93	150	5%	DBE6P1		DPMS6P1	6DP-4-104	PVC601	6PS-P10
C94	68 N1500.4KV.10%	#H006	GPD X5F151K	DD-151	GP150	CCD-151	GP315	

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.
C104	1.3		NPO-DI 1.5	DTZ-1R5	NPO1P5		CN0515	10TCC-V15
C105	330	5%	ADM-15-331	CPR-330J	CD15F331J03	DM-15-331J	SX333	424ME3300J50T
C106	330	5%	ADM-15-331	CPR-330J	CD15F331J03	DM-15-331J	SX333	424ME3300J50T
C107	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C108	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C109	330	N750 5%	N750-DI 330	DTN-330	N330	CCTN-331	CN7333	10TCU-T33
C110	.047	200V	DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C111	820	10%	GPD X5F821K	DD-821	GP820	CCD-821	GP382	10TS-T82
C112	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C113	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C114	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C115	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C116	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C117	330	5%	ADM-15-331	CPR-330J	CD15F0331J03	DM-15-331J	SX333	424ME3300J50T
C118	330	5%	ADM-15-331	CPR-330J	CD15F0331J03	DM-15-331J	SX333	424ME3300J50T
C119	120	N2200 10%					*	10TCY-T12
C120	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C121	.1	200V	DBE2P1		DPMS2P1	2DP-3-104	PVC201	2PS-P10
C122	4	±.5	NPO		NPO3P9			10TCC-V39
C123	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C124	220	N750 10%	N750-DI 220	DTN-220	N220	CCTN-221	CN7322	10TCU-T22
C125	10	NPO 10%	NPO-DI 10	DTZ-10	NPO10	CCTO-100	CN0410	10TCC-Q10
C126	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C127	82	NPO 10%		DTZ-82	NPO82	CCTO-820	CN0482	10TCC-Q82
C128	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C129	200	5%	GPD X5F201K	DD-201	GP200	CCD-201	GP320	10TS-T20
C130	.75pf	*						
C131	.75pf	*						
C132	.22	400V	DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C133	.01	600V	DBE6S1		DPMS-6S1	6DP-2-103	PVC611	6PS-S10
C134	.047		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C135	.047	200V	DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C136	33	N150				*	*	10TCP-Q33
C137	.01		GPD X5S103K	DD-103	GP10000	CCD-103	JF110	10TS-S10
C138	.01	600V	DBE6S1		DPMS6S1	6DP-2-103	PVC611	6PS-S10
C139	.047		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C140	33	N150				*	*	10TCP-Q33
C141	.01	600V	DBE6S1		DPMS6S1	6DP-2-103	PVC611	6PS-S10
C142	.047		DBE6S47		DPMS6S47	4DP-3-473	PVC4147	4PS-S47
C143	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C144	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C145	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C146	.001		GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C147	.01	1.4KV		CI-103	AC-10000		UC110	125L-S10
C148	.047	600V	DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50
C149	.001	1KV	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C150	.001	1KV	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C151	.001	1KV	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C152	.001	1KV	GPD X5F102K	DD-102	GP1000	CCD-102	GP210	10TS-D10
C153	.1	600V	DBE6P1		DPMS6P1	6DP-4-104	PVC601	6PS-P10
C154	.082	400V 10%	DBE6S82		DPMS6S82	6DP-4-823		6PS-S82
C155	.082	400V 10%	DBE6S82		DPMS6S82	6DP-4-823		6PS-S82
C156	.27	200V 10%			DPMS2P25	4DP-5-274		
C157	.1	200V	DBE2P1		DPMS2P1	2DP-3-104	PVC201	2PS-P10
C158	.1	200V	DBE2P1		DPMS2P1	2DP-3-104	PVC201	2PS-P10
C159	.15	200V 10%	DBE6P15		DPMS4P15	4DP-4-154	PVC6015	4PS-P15
C160	.75pf							
C161	.22	400V	DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C162	.047	600V	DBE6S5		DPMS6S5	6DP-3-503	PVC615	6PS-S50
C163	.22	200V	DBE6P22		DPMS4P22	4DP-5-224	PVC4022	4PS-P22
C165	.47pf							

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

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

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFG. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1	Volume/Switch	1meg	H497 (055-069300)				
R2A	Contrast	368	H496 (055-067600)	F5-500,R1-250K, FK101,RK106		(4) QJ-2652	P52R, 3014, RU254L,OK1062, IK1437
R3A	Horiz. Hold (Fine)	20K	H690 (055-067500)				
R3B	Vert. Hold	750K					
R3C	Horiz. Hold (Coarse)	75K					
R4A	Color (Slider Type)	500	H498 (055-067300)				
B	Tint (Slider Type)	1200	H691 (055-067400)				
R5	AGC	6000 2W	H217 (056-037800)	V-5000 (1) or WN752	U39-5000 (1) or [NPW-7500, NML-A-300,TT-2]	P115R502A or [W11-214,SK5] or [BU1,WF8,SS6]* (5) QJ-2336	MR5000T or VW5K or C6MP
R6A	Color Track	10K	H223 (055-056700)	F1-10K, R1-1meg,FFS008			P14L,SLF37, RU16L,OX437, IS437
R7	Tone/Vacation Switch	2.5meg	H221 (055-061400)	F1-2.5meg, SPU304,KR-8FR		B11-239,SK7 (2) or [BU11,CF20, SS10,K (2)]*	RUP255L,SL35, SL250 or PP36L or [P36L,SLF37, FPP-1,SL250]
R8	Green Drive	6000	H224 (055-063800)	F1-7500, SNK010,AK-38		B11-115,TM4 or [BU11,CF8,SS6]*	HVC63L

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) (cont)

ITEM No.	FUNCTION	RESIST-ANCE	REPLACEMENT DATA				
			MFG. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R9	Blue Drive	6000	H224 (055-063800)	F1-7500, SNK010,AK-38	A47-7500-S, RN-3, TT-2 or [NP-7000-S NML-A-300,TT-2]	B11-115,TM4 or [BU11,CF8, SS6]*	HVC63L
R10	Vert. Linearity	3.4meg	H219 (055-037200)	F1-4meg, SNK014,AK-38		HLC4	HVC355L
R11	CRT Bias	250K	H226 (055-059900)	TT-50 or [F1-250K,SNK010]	B47-250K-S or [NP-250K-S, NML-A-300,TT-2]	B11-130,TM4 or [BU11,CF15,SS6]*	RU254L,SL37, SN281 or [UA254L,SN281] or SU46
R12	Height	100K	H220 (055-036600)	TT-40 or [F1-100K,SNK010]	B47-100K-S or [NP-100K-S, NML-A-300,TT-2]	B11-128,TM4 or [BU11,CF13,SS6]*	PTA15L or [RU16L,SL37, SN1000 or [UA15L,SN1000]
R13	Vert. Centering	10 2W	H263 (056-037700)	V-10 (1) or WN100	U39-15 (1) or [NPW-10, NML-A-300,TT-2]	P115R100A or [W11-010,SK5] or [BU1,WF16,SS6]*	MR10T or C10P or VW10
R14	High Voltage Adjust	500K	H213 (055-036500)	TT-59 or [F1-500K,SNK010]	B47-500K-S or [NP-500K-S, NML-A-300,TT-2]	B11-133,TM4 or [BU11,CF16,SS6]*	PTA55L or [RU55L,SL37, SN281] or [UA55L,SN281]
R15	Red Screen	1.5meg	H225 (055-063700)	F1-1.5meg, SNK010,AK-38		B11-138,TM4 or [BU11,CF18,SS6]*	HVC155L
R16	Green Screen	1.5meg	H225 (055-063700)	F1-1.5meg, SNK010,AK-38		B11-138,TM4 or [BU11,CF18,SS6]*	HVC155L
R17	Blue Screen	1.5meg	H225 (055-063700)	F1-1.5meg, SNK010,AK-38		B11-138,TM4 or [BU11,CF18,SS6]*	HVC155L
R18	Adjacent Sound Reject	10K	H227	TR69-1			
R19	Sound Reject	750	H228 (055-038000)	F1-750, SNK010,AK-40	NP-750-S, UP-N-007,TT-3	B11-105,TM9 or [BU11,CF5, SS6,DC2]* P115R100A, P115-117-1	TRS751L
R20	Horiz. Centering	10 2W	H214 (1470827-1)				MR10T,MRS1563
R21	R/G Horiz. Lines (Bottom)	500 3W	056-046700				MR600P
R22	R/G Horiz. Lines (Top)	120 2W	056-047200	V-120	U39-125	110C120	MRC120P
R23	R/G Horiz. Lines (Left)	120 2W	056-047200 (3)	V-120	U39-125	110C120	MRC120P
R24	R/G Vert. Lines (Bottom)	60 3W	056-046800				MR100P
R25	R/G Vert. Lines (Top)	150 2W	056-047300	V-150	U39-150	110C150	MRC150P
R26	R/G Vert. Lines (Left)	150 2W	056-047300	V-150	U39-150	110C150	MRC150P
R27	Blue Horiz. Lines (Bottom)	60 3W	056-046800				MR100P
R28	Blue Horiz. Lines (Top)	60 3W	056-046800				MR100P
R29	Blue Horiz. Lines (Left)	60 3W	056-046800				MR100P

(1) Insulate control from chassis and solder original center terminal lead to metal case of control.

(2) Switch must be CTS Type 080.

(3) Some versions may use 150 ohms.

(4) "CONCENTRIKIT" Equivalent: K-15 Kit with base elements and shafts: B17-103, P9-104 (Panel),

"SNAPTROL" Equivalent: BU4, CF50, CR10, SF55, SR69, DC1.

(5) "CONCENTRIKIT" Equivalent: K-8 Kit with base elements and shafts: B11-116, P22-021 (Panel),

"SNAPTROL" Equivalent: BU7, CF9, CR12, SF2, SR100.

\* "SNAPTROL"

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFG. PART No.
R53	10K 10W	PW10-10K	10W-SQ-10K	H135
R56	6800 3W		36-6.8K	H131
R75	3300 10W	PW10-3300	10W-SQ-3.3K	H124
R103	V.D.R. *			H212
	1480V,10ma			
R104	820 7W	PW10-820	10G-800	H130
R105	1200 7W	PW10-1200	7G-1.2K	H145
R107	1000 3W	PW5-1000	36-1K	H142
R113	Thermistor (4.2 CoId)		FR 4.5	Part of Yoke
R122	V.D.R. *		FS 308	H210
R219	110V @ 1ma			
R134	16K 7W	PW10-15K	7G-16K	H120

\* Voltage Dependent Resistor

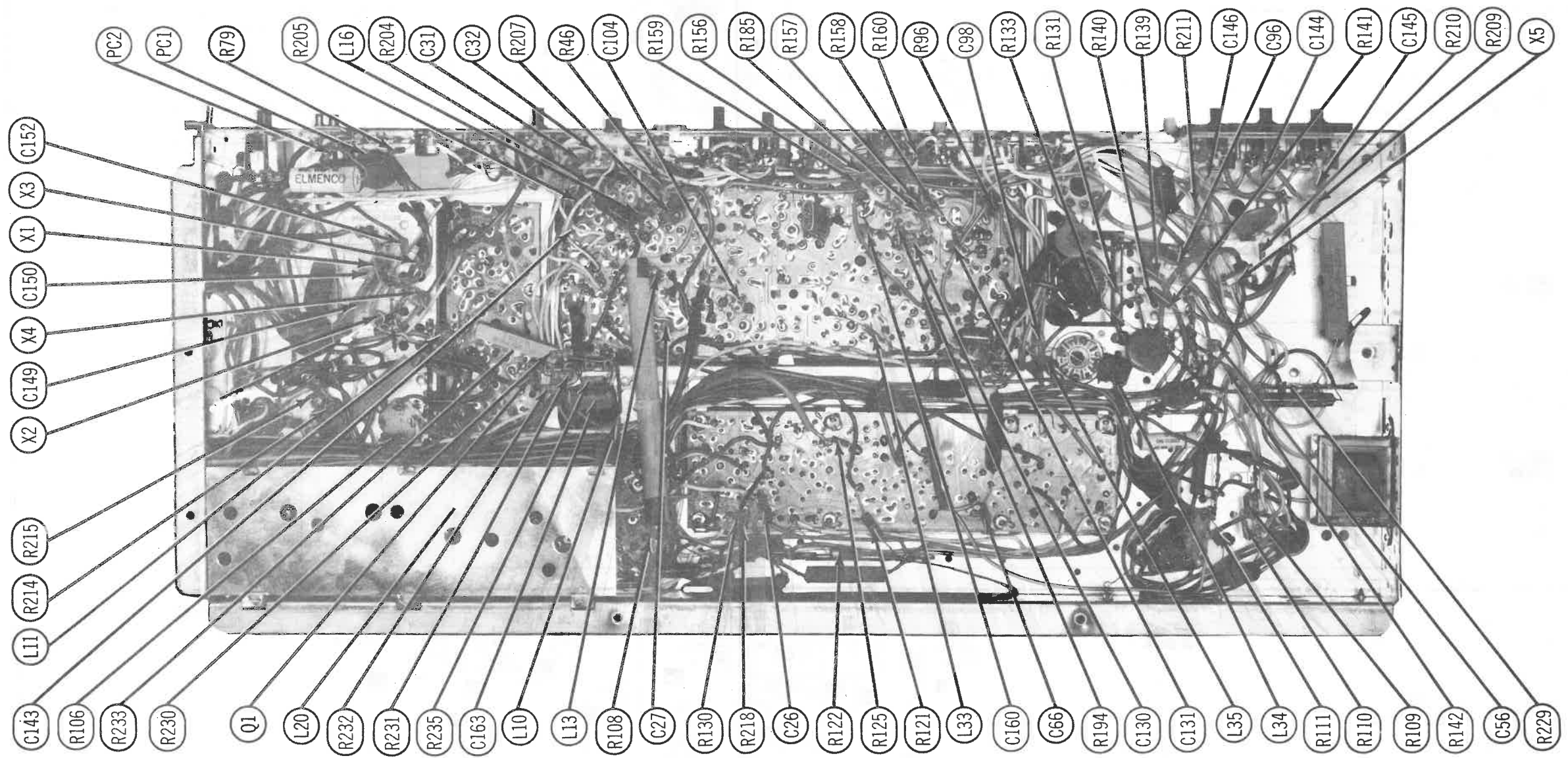
CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

ITEM	PART No.
Knob - VHF Fine Tuning, On/Off/Volume	H485
Knob - UHF/VHF Channel Selector	H484
Knob - Tone	H438

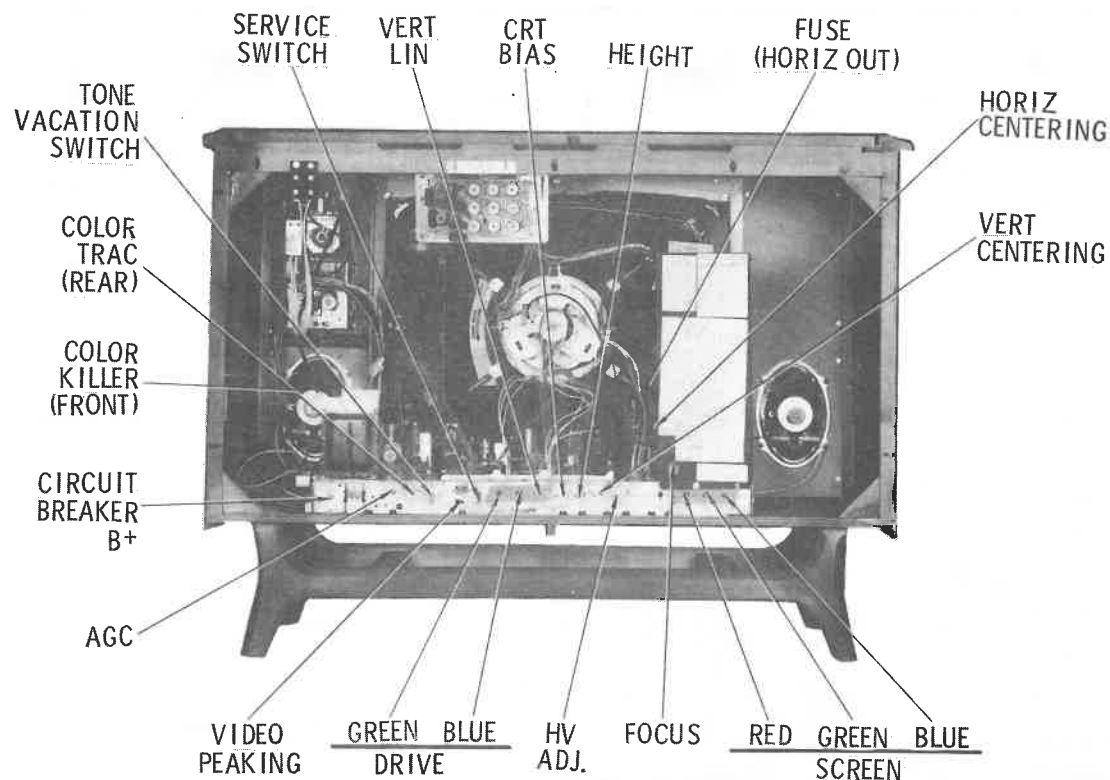
ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	MFG. PART No.
R137	66meg,6KV	MV-66M	66M	H118
R200	270 3W	PW5-250	3G-270	H197
R205	2700 3W	PW5-2500	3G-2.7K	H136
R206	5600 4W	PW5-6000	4G-5.6K	H137
R212	Thermistor (120 CoId)		FR 922	H423
R213	V.D.R. *		FR 066	H211
	20V @ 67ma			
R217	3300 3W	PW5-3300	3G-3.3K	H122
R219	1400 20W	2C-1500	20W-SQ-1.5K	H129
R220	820 7W	PW10-820	10G-800	H130
R221	680 4W	PW5-700	5W-SQ-700	H128

ITEM	PART No.
Knob - Color, Tint	H486
Cup, Plastic (Neck Protector)	H410
Handle (Model 6117A)	H495





CHASSIS - BOTTOM VIEW



## CABINET-REAR VIEW

### DISASSEMBLY INSTRUCTIONS

#### CHASSIS REMOVAL

1. Remove two spring clips and turn plastic retainers holding cabinet back. Disconnect antenna leads and remove cabinet back.
2. Remove all control knobs from the set. Remove picture-tube socket, convergence plug, degaussing-coil plug, speaker leads, HV anode lead, and ground spring.
3. Remove four nuts holding tuners and controls and lay assembly on chassis.
4. Remove four screws holding chassis and lift chassis out of the cabinet.

#### PICTURE TUBE REMOVAL

1. Follow "Chassis Removal" procedure. Lay set face down on a soft protective surface.
2. Remove convergence magnet and deflection yoke from the picture-tube neck.
3. Remove four screws holding degaussing shield.
4. Remove eight screws holding picture-tube brackets and lift tube out. Do not lift picture tube by the neck.

