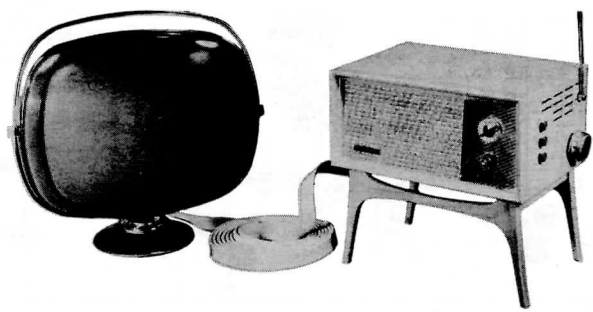


PHOTOFACT* Folder



PHILCO MODELS G4710L, M, G4720L, M, UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

with CIRCUITRACE*



MODEL UG-4710L (Ch. 9L38)

CAUTION
ONE SIDE OF AC LINE CONNECTED TO CHASSIS

TRADE NAME	Philco	MODELS	CHASSIS	MODELS	CHASSIS
		G4710L, G4710M	9L38	UG4710L, UG4710M	9L38U
		G4720L, G4720M	9L38A	UG4720L, UG4720M	9L38AU
MANUFACTURER	Philco Corp., Tioga & "C" Streets, Philadelphia, Pa.				
TYPE SET	Television Receiver With Portable Picture Tube				
TUBES	VHF Ch. 9L38 - Seventeen		UHF-VHF Ch. 9L38U - Eighteen		
	VHF Ch. 9L38A - Twenty-one		UHF-VHF Ch. 9L38AU - Twenty-two		
POWER SUPPLY	110-120 Volts AC, 60 Cycle		RATING 170 Watts, 1.65 Amp. @ 117 Volts AC		
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)				

SERVICING IN THE FIELD LOCATED ON PAGE 3

DISASSEMBLY INSTRUCTIONS

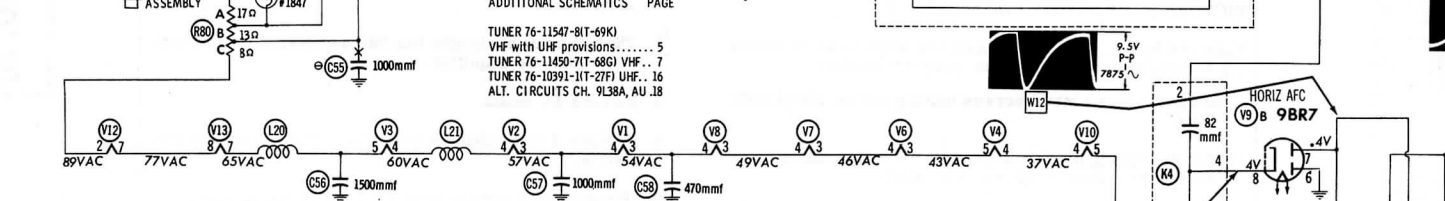
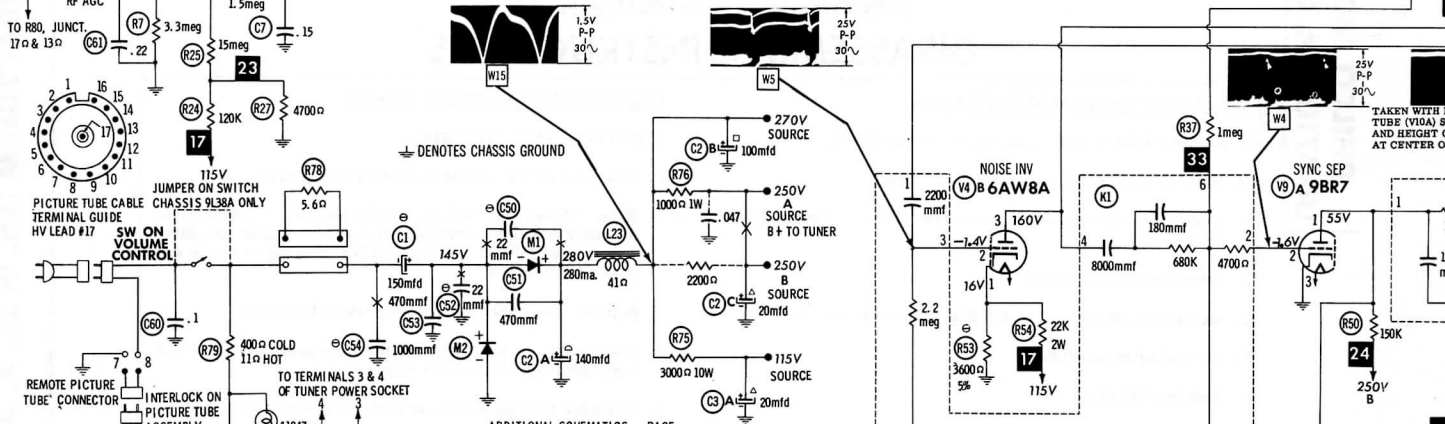
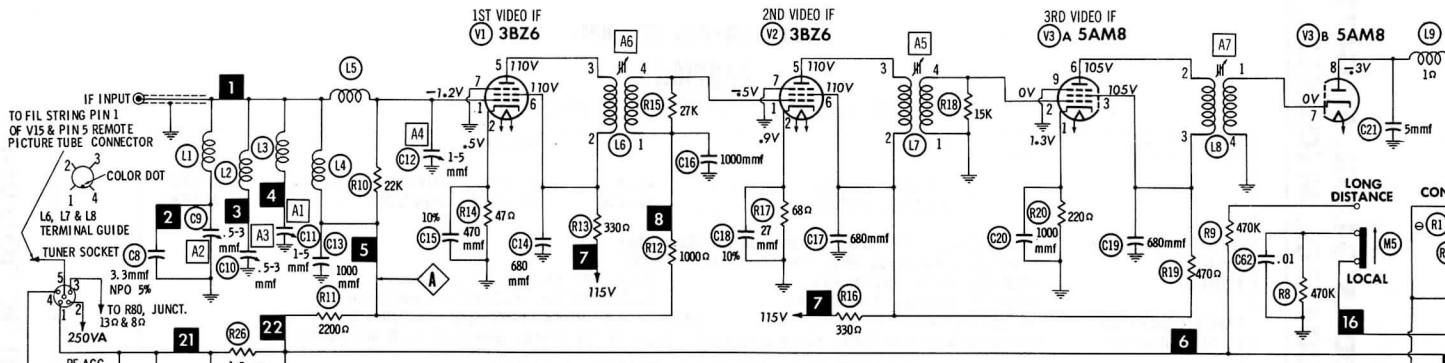
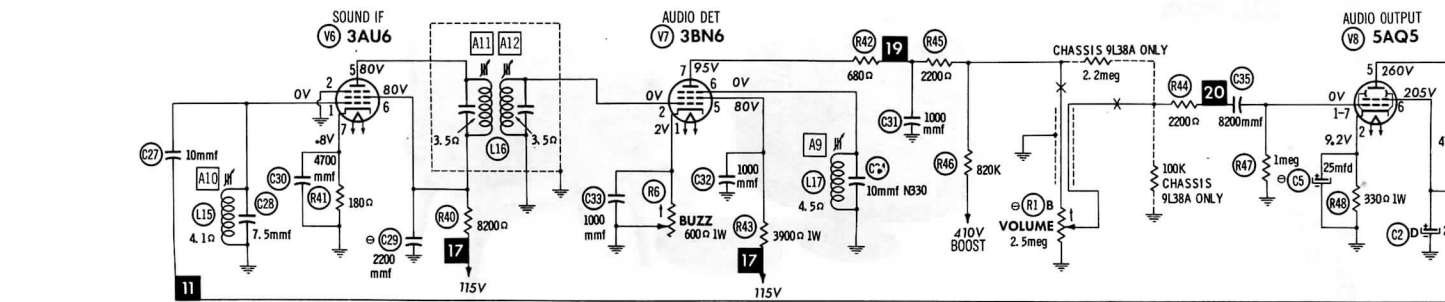
CHASSIS REMOVAL MODEL UG-4710L	CHASSIS REMOVAL MODEL UG-4720
1. Remove 4 front and 4 side push-on type knobs.	1. Remove 4 amplifier knobs.
2. Remove picture tube plug from the rear.	2. Remove two top retaining screws at top rear.
3. Remove 9 wood screws holding rear cover. Remove the rear cover.	3. Slide cabinet top back (approximately 1") to disconnect AC interlock and to free guides at center top of each side. The entire TV and audio amplifier chassis are now exposed for service.
4. Remove speaker leads.	4. Remove the 2 screws from top edge of chassis.
5. Remove 3 metal screws holding chassis at the rear.	5. Disconnect TV a.c., phono input and speaker leads. Pilot lamp removes from front clip.
6. Extend antenna outward.	6. Unsolder two leads that connect to remote socket and TV audio leads.
7. Remove chassis.	7. The bottom lip of chassis fits into a groove of cabinet bottom. Remove amplifier.
PICTURE TUBE HOUSING DISASSEMBLY	
Yoke and Video Amplifier chassis are accessible by removing 4 metal screws holding rear cover to housing.	
1. Remove 2 small metal screws holding bottom metal trim strip.	8. Remove TV knobs.
2. Remove spring holding warp around plastic trim strip at the bottom. Remove plastic trim strip.	9. Remove 2 front chassis mounting screws from cabinet bottom.
3. Remove 2 metal screws now visible holding plastic shell strap at the bottom. Remove strap.	10. Remove the 2 screws from top rear retaining plate.
4. Remove front mask.	11. Remove left hand back section (3 screws). Lift back up and out.
5. Remove snap-in metal trim caps on side support arms.	12. Remove 2 screws from rear chassis mounting strip (1 screw at right top and 1 screw from left rear).
6. Remove 2 metal screws now visible holding support arms to rear shell. Remove support arms by turning to line up bottom slots.	13. Remove 6AW8A (Video Amp. - Noise Inverter) tube from its socket just to rear of speaker.
7. Remove 2 small metal screws holding rear shell to bottom support bracket.	14. Lift rear of TV chassis up and out.
8. Remove rear shell.	

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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 J94

the particular type of replacement part listed. 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. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

PHILCO MODELS G4710L, M, G4720L, M, UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)



SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

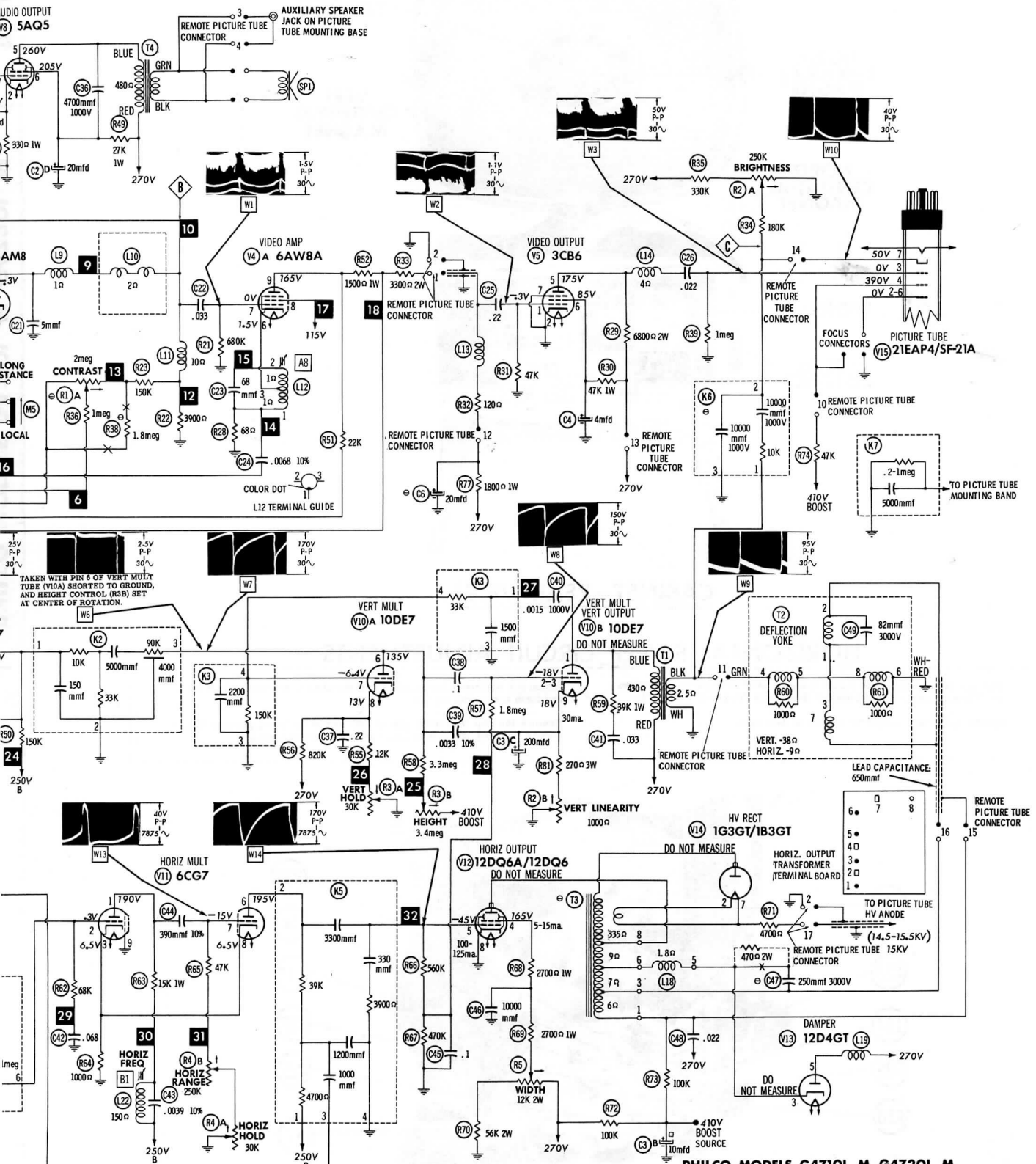
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE GRID

- DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1000 ohms per volt.
- Pin numbers are counted in clockwise direction on bottom of socket.
- Measured values are from socket pin to common negative unless otherwise stated.
- Line Voltage maintained at 117 volts for voltage readings.
- All controls set for normal operation; no signal applied.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

A PHOTOFACIT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

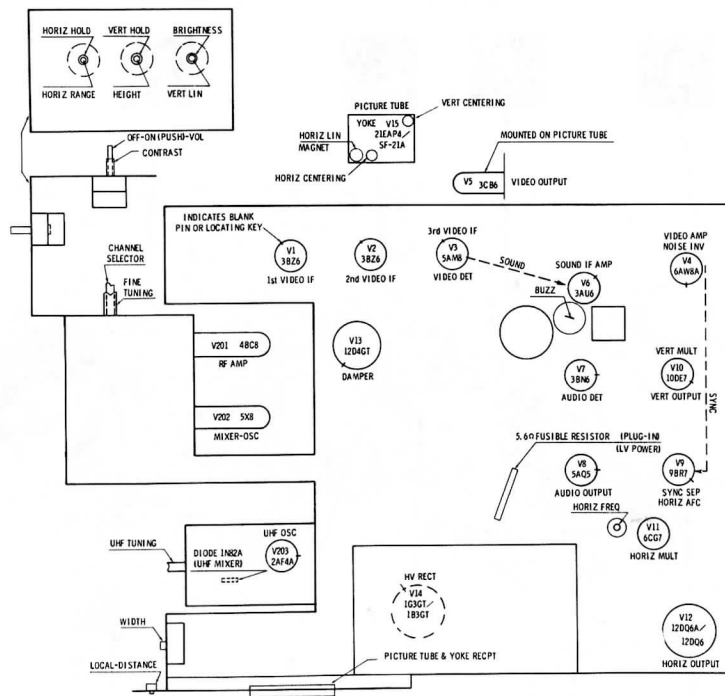
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PHILCO MODELS G4710L, M, G4720L, M,
UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

PHILCO MODELS G4710L, M, G4720L, M,
UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

POWER SUPPLY FAILURE

No raster, no sound - Fusible Resistor (5.6Ω), Rectifiers (B+)

SWEEP FAILURE

No raster, has sound - V9, V11, V12, V13, V14, V15, Rectifiers (B+)

No vertical deflection - V10

Poor vert. linearity or foldover - V10

Poor horiz. linearity or foldover - V11, V12, V13

Narrow picture - V11, V12, V13, Rectifiers (B+)

Vert. off freq. - V10

Horiz. off freq. - V11

LOSS OF PICTURE OR SOUND

No pic, no sound, has raster - V1, V2, V3

No pic, no sound, has snow - V201, V202, V1, (UHF V203), Diode (UHF Mixer)

No pic, has sound, has raster - V4, V5, V15

Has pic, no sound - V6, V7, V8

Overloaded picture

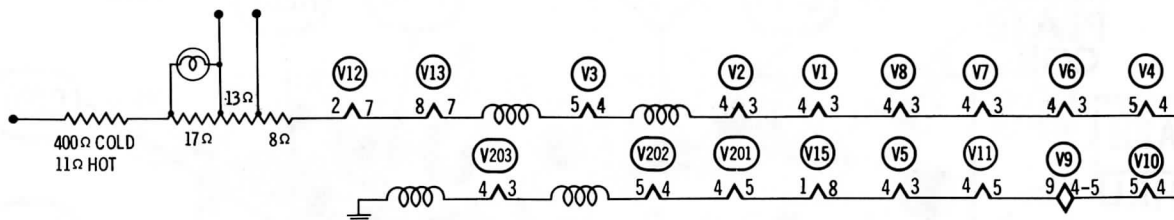
SYNC FAILURE

No vert. sync - V9

No horiz. sync - V9

No vert. or horiz. sync - V9

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF Oscillator is possible by removing the Channel Selector and Fine Tuning knobs.

SAFETY GLASS CLEANING

NOTE: Use only mild soap and water to clean.

AGC

The AGC may be varied by a Local-Distance switch. (For location, see tube placement chart.)

FOCUS

The focus may be varied in steps by the position of a plug in the Focus Adjustment terminals.

WIDTH

The width may be varied by Width control. (For location, see tube placement chart.)

HIDDEN ADJUSTMENTS

The Vertical Linearity, Height and Horizontal Range are the inner shafts beneath the Brightness, Vertical & Horizontal knobs.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

Set Horizontal Hold to the center of its range. Remove knob and adjust Horizontal Range inner shaft until picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Buzz control for MINIMUM buzz and maximum sound. (For location, see tube placement chart.)

FUSE DEVICE

A 5.6Ω fusible resistor (R78) is used for low voltage power supply protection. (For location, see tube placement chart.)

CENTERING

Centering is accomplished mechanically by adjusting Vertical and Horizontal Centering magnets located on yoke housing.

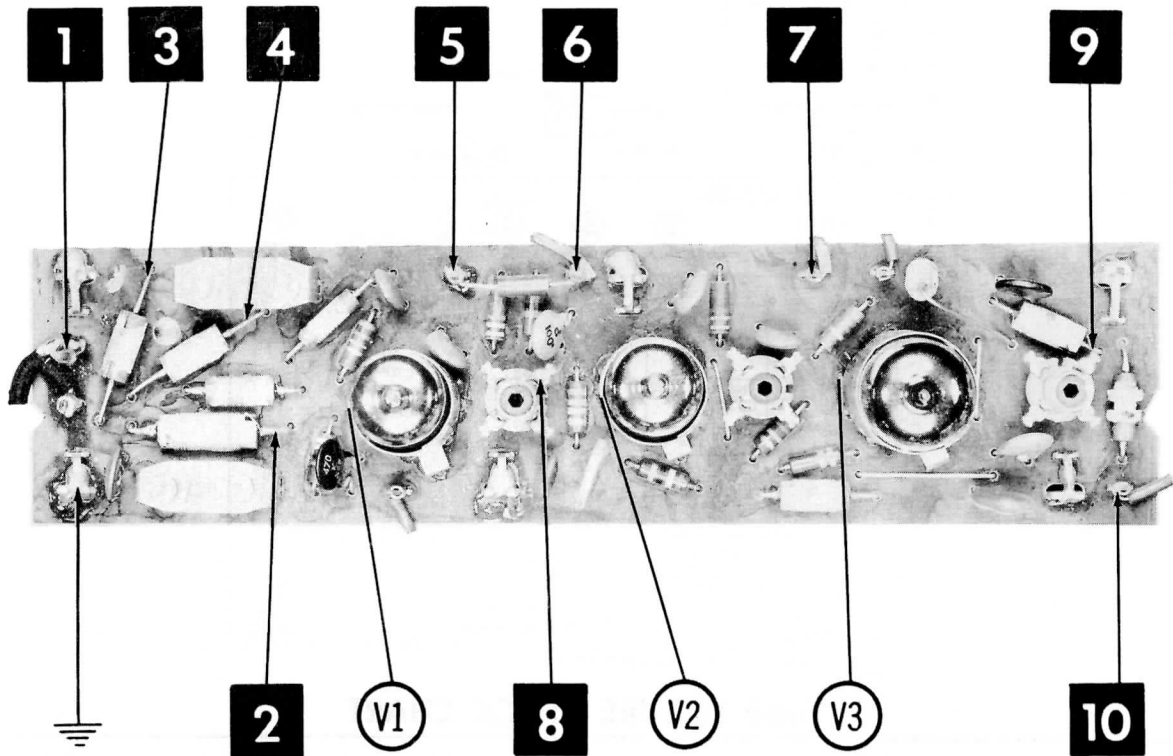
PINCUSHION CORRECTION

One magnet is provided to correct for Horizontal Linearity.

PHILCO MODELS G4710L, M, G4720L, M, UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

FOLDER 2

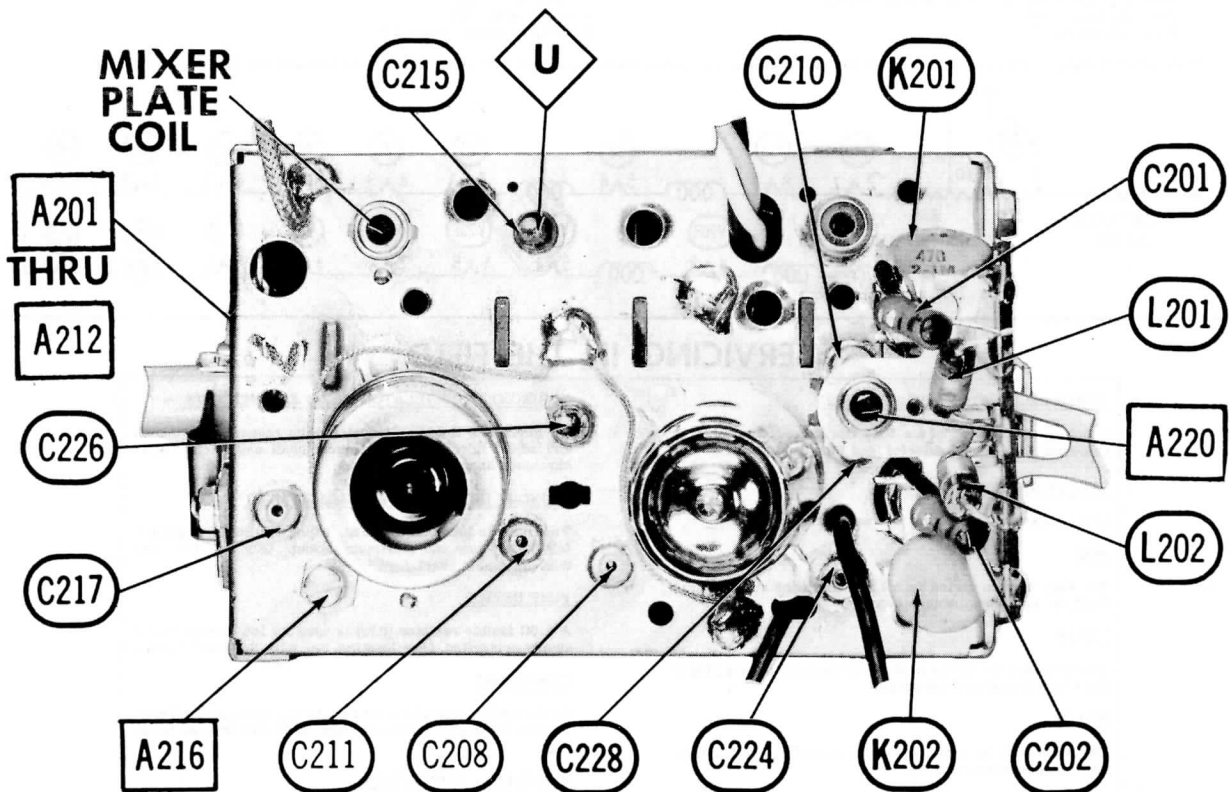
CircuiTrace Numbers 1 thru 10



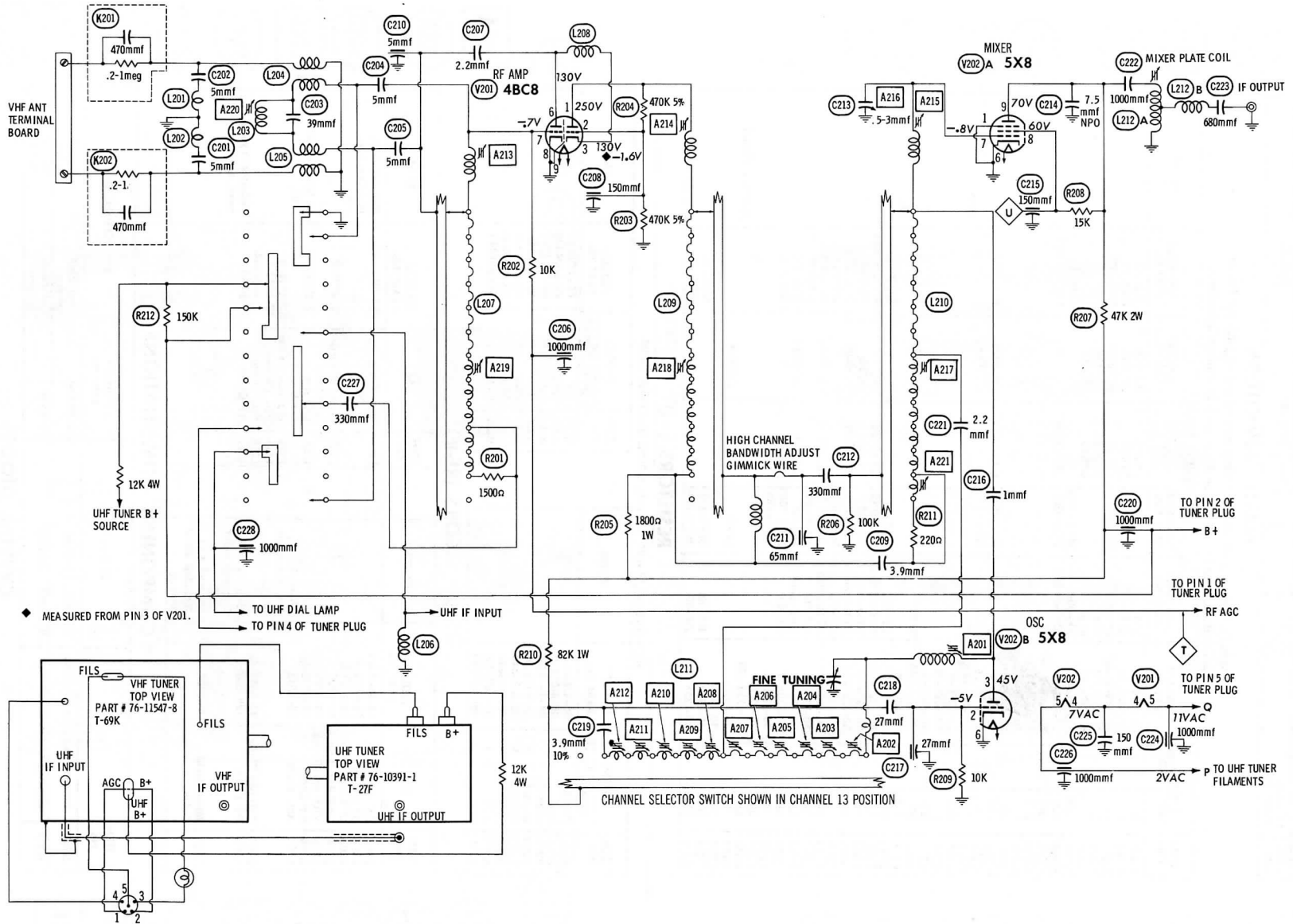
A Howard W. Sams **CIRCUITRACE**® Photo

VIDEO IF
PRINTED BOARD

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



TUNER 76-11547-8 TOP VIEW



A PHOTOFAC STANDARD NOTATION SCHEMATIC
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VHF TUNER with UHF provisions 76-11547-8 (T-69K)
UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)
PHILCO MODELS G4710L, M, G4720L, M,

TUNER PARTS LIST AND DESCRIPTIONS

76-11547-8, 76-10391-1

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES	ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	4BC8		V203	UHF Osc.	2AF4A	
V202	Mixer-Osc.	5X8					

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	5		30-1224-78	SI 5		LT6V5	ZT-555	5GA-V5	NPO
C202	5		30-1224-78	SI 5		LT6V5	ZT-555	5GA-V5	
C203	39		62-039409011	DI-000039	DD-390	LI0Q39	UC-5439	5GA-Q39	
C204	5		30-1224-78	SI 5		LT6V5	ZT-555	5GA-V5	
C205	5		30-1224-78	SI 5		LT6V5	ZT-555	5GA-V5	
C206	1000		30-1268-7	EF-001	MFT-1000			503C-D1	
C207	2.2		30-1221-6	NPO-SI 2.2	TCZ-2R2	CTA6V22C		5TCCB-V22	
C208	150		30-1268-6						
C209	3.9		30-1221-14						
C210	5		30-1268-5						
C211	65		30-1268-2						
C212	330		30-1265-2	BPD-00033	DD-331	LI0T33	UC-5333	5GA-T33	
C213	.5-3		31-6520-25		829-3		CT565A		
C214	7.5		30-1251-19						
C215	150		30-1268-6						
C216	1.0		30-1224-82						
C217	27		30-1268-4						
C218	27		30-1224-146	SI 27	D6-270	LT6Q27	UC-5427	5GA-Q27	
C219	3.9		30-1221-14					10%	
C220	1000		30-1268-7	EF-001	MFT-1000			503C-D1	
C221	2.2		30-1224-143	NPO-SI 2.2	TCZ-2R2	CTA6V22C		5TCCB-V22	
C222	1000		30-1238-13	BPD-001	DD-102	BYA6D1	DC521	5HK-D1	
C223	680		30-1238-22	BPD-00068	DD-681	BYA10T68	UC-5368	5GA-T68	
C224	1000		30-1268-7	EF-001	MFT-1000			503C-D1	
C225	150		30-1265-3	BPD-00015	DD-151	LI0T15	UC-5315	5GA-T15	
C226	1000		30-1268-7	EF-001	MFT-1000			503C-D1	
C227	330		30-1265-2	BPD-00033	DD-331	LI0T33	UC-5333	5GA-T33	
C228	1000		30-1268-7	EF-001	MFT-1000			503C-D1	
C229	.68		30-1221-11		TCZ-R68				
C230	30		76-10170						
C231	15		30-1224-133					N1500 ± .25mmf	
C232	.5-3		31-6520-1		829-3		CT565A		
C233	250		30-1261						
C234	1000		30-1258	EF-001	MFT-1000			503C-D1	
C235	1000		30-1258	EF-001	MFT-1000			503C-D1	

RESISTORS

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

ITEM No.	RATING		PHILCO PART No.	NOTES	ITEM No.	RATING		PHILCO PART No.	NOTES
	OHMS	WATT				OHMS	WATT		
R201	1500Ω		66-2158340		R209	10K		66-3108340	
R202	10K		66-3108340		R210	82K	1	66-3824340	
R203	470K 5%		66-4478240		R211	220Ω		66-1228340	
R204	470K 5%		66-4478240		R212	150K		66-4158340	
R205	1800Ω	1	66-2184340		R213	470K		66-4478340	
R206	100K		66-4108340		R214	5600Ω		66-2568340	
R207	47K	2	66-3475340		R215	1500Ω		66-2158340	
R208	15K		66-3158340						

COILS (RF-IF)

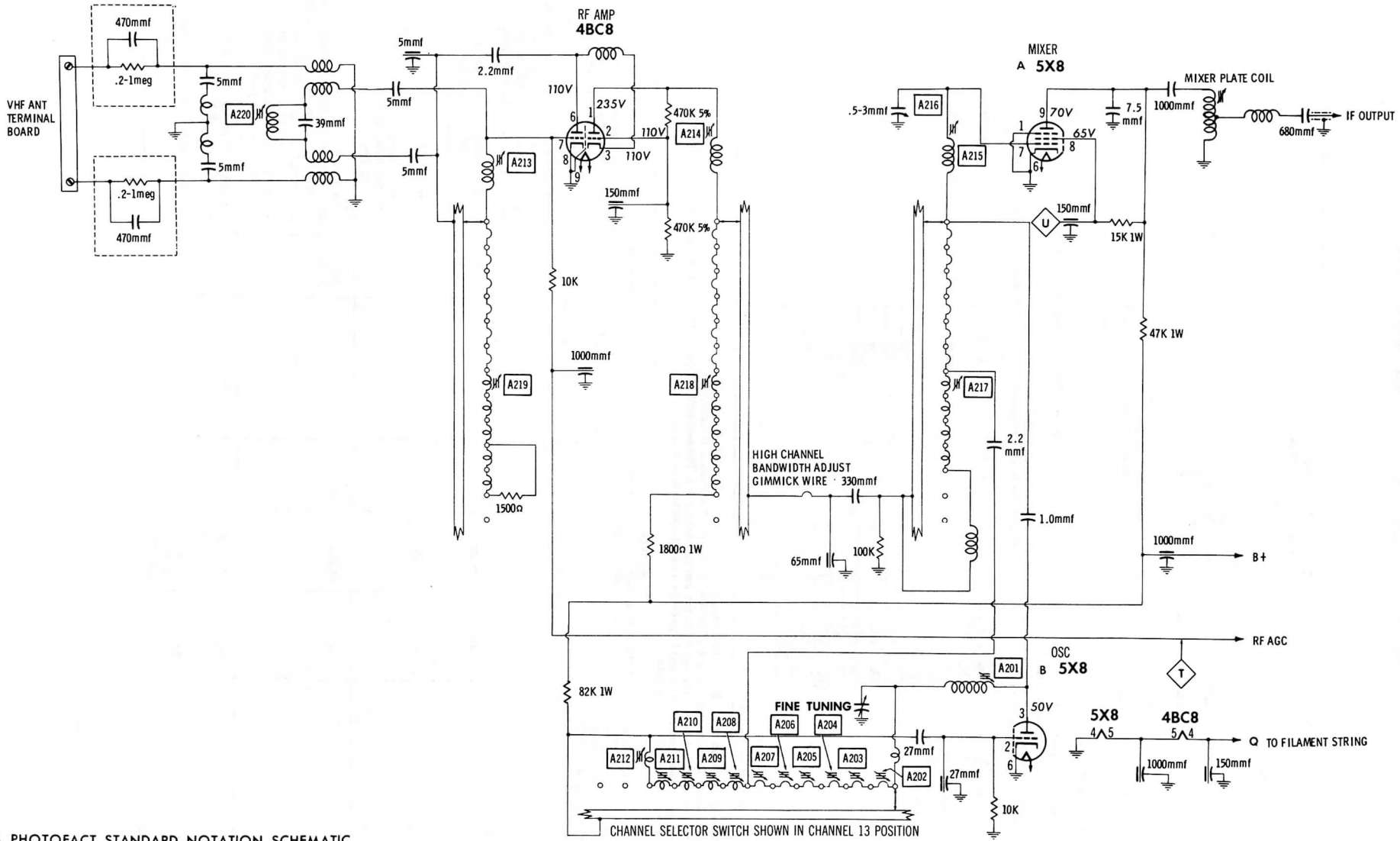
ITEM No.	USE	PHILCO PART No.	NOTES	ITEM No.	USE	PHILCO PART No.	NOTES
L201	RF Choke	32-4645-37		L211	Osc. Coils	328-0113	Channel 2-13, Includes wafer assy.
L202	RF Choke	32-4645-37		L212A	Mixer Plate Coil	32-4629-9	
L203	IF Trap	32-4719-2		L213	RF Choke	76-10072	Includes C229, R213
L204	VHF Ant. Trans.	32-4725		L214	UHF Ant. Input Assy.		
L205	VHF Ant. Trans.	32-4725		L215	Cathode Choke	32-4642-4	
L206	RF Choke	32-4726-10		L216	FI. Choke	32-4642-3	
L207	Ant. Coils	76-10112	Channel 2-13, Includes wafer assy.	L217	FI. Choke	32-4652-44	
L208	Cathode Choke	32-4652-51		L217	RF Choke	76-10170	Includes crystal panel assy.
L209	RF Coils	328-0116	Channel 2-13, Includes wafer assy.				
L210	Mixer Grid Coils	76-10110	Channel 2-13, Includes wafer assy.				

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA
K201	Antenna Isolation Network	470mmf, .2-1meg	30-6028-1	Centralab Sprague RC-47I ACI-1
K202	Antenna Isolation Network	470mmf, .2-1meg	30-6028-1	Centralab Sprague RC-47I ACI-1

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		PHILCO PART No.	CBS PART No.	SYLVANIA PART No.	
M201	1N82A	34-8027	1N82A	1N82A	UHF Mixer (Clip-in)



A PHOTOFAC STANDARD NOTATION SCHEMATIC
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VHF TUNER 76-11450-7 (G89-T)

PHILCO MODELS G4710L, M, G4220L, M, G4720L, M, UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

TUNER ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.

The high voltage lead should be securely taped and kept away from the chassis.

Allow a 20 minute warm-up period for the receiver and test equipment.

Suggest alignment tools: A201 thru A212..... General Cement #5097 or 8727

- Walsco
- A213 thru A215..... General Cement #9291
- Walsco #2520, 2522
- A216..... General Cement #5000, 5003, 5004, 5008, 5009, 8276 or 9291
- Walsco #2515, 2520, 2522, 2525 or 2537
- A217, A218, A221... General Cement #5000, 5003, 8276, 8290 or 8609
- Walsco #2525
- A219..... General Cement #8606, 8606L or 9091
- Walsco #2542, 2543 or 2544
- A220..... General Cement #8282, 8606, 8606L or 9295
- Walsco #2543, 2544, 2545

VHF OSCILLATOR ALIGNMENT

The signal generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

Set the Fine Tuning to the center of its range.

Use only enough signal generator output to provide a usable indication on scope.

This procedure uses the traps of the Video IF strip. They must be in proper alignment before attempting to align the oscillator.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	209.75MC (400% 50% AM Mod)	13	Across Video Detector load.	A201	Adjust for MINIMUM 400v indication.
		203.75MC	12		A202	
		197.75MC	11		A203	
		191.75MC	10		A204	
		185.75MC	9		A205	
		179.75MC	8		A206	
		173.75MC	7		A207	
		81.75MC	6		A208	
		75.75MC	5		A209	
		65.75MC	4		A210	
		59.75MC	3		A211	
		53.75MC	2		A212	

VHF RF AND MIXER ALIGNMENT

Connect the negative lead of a 1.5 volt bias supply to point \diamond . Positive to chassis.

Detune Mixer Plate Coil by connecting a 10 to 20mmf capacitor across it temporarily.

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

Use only enough sweep generator output to provide a usable pattern on scope.

Use 10MC sweep unless otherwise noted.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
2. Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC	21.25MC 215.75MC	13	Vert. Amp. thru 10K to point \diamond . Low side to chassis.	A213	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
3. "	"	"	"	"	"	A214, A215	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown. Adjust A214 to set marker positions, A215 for proper tilt.
4. "	"	177MC	175.25MC	7	"	A216	Adjust to obtain correct tilt on top of curve as in Fig. 202 to compensate for the tuning effect of channel 13.
5. "	"	213MC	213MC	13	"		Retouch A214 and A215 SLIGHTLY for symmetrical response centered about marker. Repeat steps 4 and 5 alternately until optimum response is obtained on channels 7 and 13.
6. "	"	85MC	85MC	6	"	A217, A218, A219	Turn A217 counterclockwise until a single peak appears. (DO NOT unscrew far enough to allow the core to fall out.) Adjust A218 until peak falls at 85MC. (It may be necessary to increase sweep generator output.) Adjust A219 for maximum amplitude and symmetry of single peak.
7. "	"	85MC	83.25MC 87.75MC	"	"		Retouch A217 and A218 for response similar to Fig. 203.
8. "	"	Not used	43.5MC (400% 30% AM Mod)	4	"	A220	Adjust for MINIMUM scope indication.

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.

The High Voltage lead should be securely taped and kept away from the chassis.

Allow a 20 minute warm-up period for the receiver and test equipment.

Suggested alignment tools:

A1 thru A4 General Cement #5004, 5008, or 5009
 Walsco #2520
 A5 thru A12, & Mixer Plate Coil General Cement #8282, 8606, 8606L or 9295
 Walsco #2543, 2544 or 2545

VIDEO IF ALIGNMENT

Connect the negative lead of a 4.5 volt bias supply to point \diamond . Positive to chassis.
 Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
 The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
 Use only enough sweep generator output to provide a usable pattern on scope.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Direct	High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). Low side to chassis.	Not used.	45.75 MC (400% 30% AM Mod)	4	Vert. Amp. thru 10K to point \diamond . Low side to chassis. (Across video detector load).	Mixer Plate Coil	Use only enough generator output to provide a usable indication. Adjust for maximum deflection.
2. "	"	"	41.25 MC (Crystal Accuracy)	"	"	A1	Increase generator output. Adjust for MINIMUM 400% indication.
3. "	"	"	47.4 MC (Crystal Accuracy)	"	"	A2, A3	Increase generator output. Adjust for MINIMUM 400% indication. Repeat steps 2 and 3.
4. "	"	"	45.0 MC	"	"	Mixer Plate Coil	Use only enough generator output to provide a usable indication. Adjust for maximum 400% indication on scope.
5. "	"	"	42.7 MC	"	"	A4, A5	"
6. "	"	"	45.75 MC	"	"	A6	"
7. "	"	"	43.85 MC	"	"	A7	"
8. Two 120 Ω Carbon Resistors	Across antenna terminals with 120 Ω in each lead.	"	65.75 MC	"	"	Fine Tuning	Adjust Fine Tuning for MINIMUM 400% indication on scope. DO NOT change Fine Tuning during balance of alignment.
9. "	"	69 MC (10 MC Swp)	42.7 MC 43.85 MC 45.0 MC 45.75 MC	"	"	"	Check for response similar to Fig. 1. If necessary, retouch Mixer Plate Coil to set carrier level, A7 to adjust curve limit, A5 and A4 to adjust low frequency slope of curve and A6 to adjust high frequency side.

4.5 MC TRAP ALIGNMENT

The detector used in alignment of the 4.5 MC trap must first be padded by connecting to an accurate source of 4.5 MC and a VTVM to the output. Adjust the slug for maximum deflection.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10. .005 mfd	High side to point \diamond . Low side to chassis.	4.5 MC (400% 30% AM Mod)	Any non-interfering channel	DC probe thru detector probe (Fig. 2) to cathode of picture tube (point \diamond). Common to chassis.	A8	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT

Tune in a weak station signal (antenna disconnected) and adjust for best picture. Do not change setting of Fine Tuning during balance of alignment.

Connect the antenna for a strong signal. Adjust A9 for maximum sound. Use peak furthest counterclockwise.

Disconnect antenna. Adjust A10, A11 and A12 for maximum sound.

Connect antenna. Retouch A9 for maximum sound.

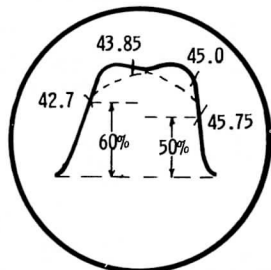


FIG. 1

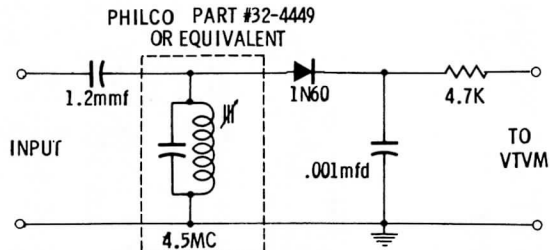


FIG. 2

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	1st Video IF Amp.	3BZ6	
V2	2nd Video IF Amp.	3BZ6	
V3	3rd Video IF Amp. - Video Det.	5AM8	
V4	Video Amp. - Noise Inv.	6AW8A	
V5	Video Output	3CB6	
V6	Sound IF Amp.	3AU6	
V7	Audio Det.	3BN6	

ITEM No.	USE	TYPE	NOTES
V8	Audio Output	5AQ5	
V9	Sync Sep. - Horiz. AFC	9BR7	
V10	Vert. Mult. - Vert. Output	10DE7	
V11	Horiz. Mult.	6CG7	
V12	Horiz. Output	12DQ6A/12DQ6	
V13	Damper	12D4GT	
V14	HV Rect.	1G3GT/1B3GT	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	PHILCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V15	21EAP4/SF-21A			21EAP4/SF-21A ①	① Silver Screen 85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLOY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	150	200	30-2568-75 ①	AFHS1-23	XA0261	FPI17	TMS-25	TVL-1429	
C2A	140	300	30-2590-40	AFHS4-58-94.9					
C2B	100	300							
C2C	20	300							
C2D	20	300							
C3A	20	300	30-2590-46		CI150				
C3B	10	450							
C3C	200	25							
C4	4	300	30-2596-3	PRS350V4	BR435	TC60	TD-4-450	TVA-1601	
C5	25	25	30-2417-9 ②	PRS25V25	BBR25-25	TC26	TD-25-25	TVA-1205	
C6	20	300	30-2417-18 ③	PRS450V20	BR2035	TC65	TD-20-350	TVA-1608	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
 ① Some versions may use 140mfd @ 200V with same part number.
 ② Alternate Part #30-2417-60. Combined with C6 in late production (Part #30-2597-3).
 ③ Alternate Part #30-2417-44. Combined with C5 in late production (Part #30-2597-3).

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA								NOTES
	CAP.	VOLT.	TOL.	PHILCO PART No.	AEROVOX PART No.	CENTRALLAB PART No.	CORNELL-DUBILIER PART No.	MALLOY PART No.	SPRAGUE PART No.			
C7	.15	200		30-4650-48	P288N-15		CUB2P15	GEM-2015	2TM-P15			
C8	3.3		NPO 5%	30-1263-38	NPO-DI 3.3	DTZ-3R3	C10V33C	CNO-533	5TCCB-V33S 5%			
C9	.5-3			31-6535-1		829-3						
C10	.5-3			31-6535-1		829-3						
C11	1-5			31-6535-2		829-6						
C12	1-5			31-6535-2		829-6						
C13	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C14	680			30-1262-15	BPD-00068	DD-681	BYA10T68	B-368	5GA-T68			
C15	470		10%	30-1238-10	DI 470	MD-471	JL-347		5GA-T47S 10% *			
C16	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C17	680			30-1262-15	BPD-00068	DD-681	BYA10T68	B-368	5HK-T68			
C18	27		10%	30-1263-6	DI 27	MD-270	L10Q27	CNO-427	5GA-Q27S 10% *			
C19	680			30-1262-15	BPD-00068	DD-681	BYA10T68	B-368	5GA-T68			
C20	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C21	5			30-1263	DI 5	MD-050	L10V5	ZT-555	5GA-V5			
C22	.033	200		30-4650-44	P288N-033		CUB6S33	GEM-4133	6TM-S33			
C23	68			30-1263-4	BPD-00068	DD-680	L10Q68	UC-5468	5GA-Q68			
C24	.0068	600	10%	30-4650-57			PM6068	GTM-6268	6TM-D68			
C25	.22	400		30-4650-49			CUB4P22	GEM-4022	4TM-P22			
C26	.022	400		30-4650-43	P488N-22		CUB4S22	GEM-4122	4TM-S22			
C27	10			30-1221-25	DI 10	MD-100	L10Q	UC-541	5GA-Q1			
C28	7.5			30-1263-37		DD-7R5	L10V5	5GA-V75				
C29	2200				BPD-0022	DD-222	BYA10D22	B-222	5HK-D22			
C30	4700				BPD-0047	DD-472	BYA10D47M	B-247	5HK-D47			
C31	1000			30-1262-13	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C32	1000			30-1262-13	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C33	1000			30-1262-13	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C34	10		N330	30-1263-36		TCA-10						
C35	8200			30-1262-1	BPD-0082	DD-822	HVE16D8	B-282	20HKB-D6			
C36	4700	1000		30-1269-3	HVD-15-4700	DD-472	BYA10D47M	B-247	5HK-D47			
C37	.22	100		30-4681-6	P288N-22		CUB2P22	GEM-4022	2TM-P22			
C38	.1	400		30-4650-47	P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1			
C39	.0033	400	10%	30-4651-14			PM6D33	GTM-4233	5BF-D33			
C40	.0015	1000		30-4650-87	P1088N-0015	DD-152	CUB10D15	GEM-10215	10TM-D15			
C41	.033	400		30-4650-44	P488N-033		CUB6S33	GEM-4133	6TM-S33			
C42	.068	200		30-4650-46	P288N-068		CUB4S68	GEM-4168	4TM-S68			
C43	.0039	200		30-4681-25			PM6D39	GTM-224	2WF-D39			
C44	390		10%	30-1264-1	1469-00039		5R5T39	MCB243	MS-339			
C45	.1	200		30-4650-47	P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1			
C46	10000			30-1238-2	BPD-01	DD-103	BYA10S1	B-110	5HK-S1			
C47	250	3000		30-1246-23		DD30-251	HVB30T25	3HV-327	30GA-T25			
C48	.022	400		30-4650-43			CUB4S22	GEM-4122	4TM-S22			
C49	82	3000		30-1246-10	HVD-30-82	DD30-820		3DY-482				
C50	570			30-1238-10	BPD-00022	DD-220	L10Q22	UC-5422	5GA-Q22			
C51	470			30-1238-10	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47			
C52	22			30-1238-10	BPD-00022	DD-220	L10Q22	UC-5422	5GA-Q22			
C53	470			30-1238-10	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47			
C54	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C55	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C56	1500			30-1262-9	BPD-0015	DD-152	BYA10D15	B-215	5HK-D15			
C57	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C58	470			30-1262-16	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47			
C59	1000			30-1238-3	BPD-001	DD-102	BYA10DIM	B-210	5HK-DI			
C60	.1	600		30-4650-64	P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1			
C61	.22	200		30-4678-49	P288N-22		CUB2P22	GEM-2022	2TM-P22			
C62	.01	600		30-4650-58	P688N-01	D6-103	CUB6S1	GEM-611	6TM-S1			

① Some versions may use 2700mfm in this application (Part #30-1262-7).
 ② Runs 2 thru 4 use 320mfm @ 3000V in this application (Part #30-1246-24).
 ③ Not used in some versions.
 ④ Not used in Ch. 9L38, A.
 * Not normally in distributor's stock. Available thru distributor on order to manufacturer.

ITEM No.	USE	RATING		PHILCO PART No.	C
		RESIST-ANCE	WATTS		
RIA	2meg			33-5592-34	
B	2.5meg				
C	Switch				
R2A	250K			33-5592-32	FR
B	1000Ω				
R3A	30K			33-5592-28	FR
B	3.4meg				
R4A	30K			33-5592-33	FR
B	250K				
R5A	12K	2(WW)		33-5574-3	FR
B	Shaft				
R6	600Ω	1(WW)		33-5591-6	FR

Note 1. Run 6 and later use Imeg C
 * Cut and split inner shaft before use
 † "Concentrikrit" Equivalent: K-6 K1
 (Not available as a factory assembly)
 †† "Concentrikrit" Equivalent: K-6 K1
 (Not available as a factory assembly)
 ††† "Concentrikrit" Equivalent: K-6 K1
 (Not available as a factory assembly)
 †††† "STA-LOC" Equivalent: FA34L,
 ††††† "STA-LOC" Equivalent: FA254L,
 †††††† "STA-LOC" Equivalent: FA34L,

ITEM No.	USE	RATING		PHILCO PART No.	C
		OHMS	WATT		
R7	3.3meg			66-5338340	
R8	470K			66-4478340	
R9	470K			66-4478340	
R10	22K			66-3228340	
R11	2000Ω			66-2228340	
R12	1000Ω			66-2108340	
R13	330Ω			66-1338340	
R14	47Ω			66-0478340	
R15	27K			66-3278340	
R16	330Ω			66-1338340	
R17	68Ω			66-0688340	
R18	15K			66-3158340	
R19	470Ω			66-1478340	
R20	220Ω			66-1228340	
R21	680K			66-4688340	
R22	3900Ω			66-2398340	
R23	150K			66-4158340	
R24	120K			66-1128340	
R25	15meg			66-5158340	
R26	1.5meg			66-5188340	
R27	4700Ω			66-2478340	
R28	68Ω			66-0688340	
R29	6800Ω	2		66-2685340	
R30	47K	1		66-3474340	
R31	47K			66-3478340	
R32	120Ω			66-1128340	
R33	3300Ω	2		66-2333340	
R34	180K			66-4188340	
R35	330K			66-3338340	
R36	1meg			66-5108340	
R37	1meg			66-5108340	
R38	1.8meg			66-5188340	
R39	1meg			66-5108340	
R40	8200Ω			66-2828340	
R41	180Ω			66-1188340	
R42	680Ω			66-1688340	
R43	3900Ω	1		66-2394340	
R44	2200Ω			66-2228340	
R45	2200Ω			66-2228340	

Note 1. Not used in Run 6 and higher.

ITEM No.	USE	PHILCO PART No.
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PARTS LIST AND DESCRIPTIONS

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLYORY PART No.	
RLA	2meg	1/2W	33-5592-34	F1-34 R2-4 *		† QJ-999	† UE-3949	Contrast, Note 1 Volume, Note 1 Push-Push Off-On Brightness Vert. Lin. Vert. Hold Height Horiz. Hold Horiz. Range Width Buzz
B	2.5meg							
C	Switch							
R2A	250K	1/2W	33-5592-32	F1-34 R2-4 *		† QJ-999	† UE-3949	
B	1000Ω							
R3A	30K	1/2W	33-5592-28	F1-28 R2-34 *		†† QJ-1095	†† UE-3950	
B	3.4meg							
R4A	30K	2(WW)	33-5592-33	F1-28 R2-34 *		† QJ-1094	†† UE-3781	
B	250K							
R5A	12K	1(WW)	33-5574-3	WN-153 Not Req.	A58-15K FKS-1/4	W1-217 SK-5	R15ML Not Req. PFL-600	
B	12K							
R6	600Ω		33-5591-6					

Note 1. Run 6 and later use Imeg Contrast, 2.5meg Volume & Switch (Part #33-5592-42).

* Cut and split inner shaft before assembling.

† "Concentrikt" Equivalent: K-6 Kit with Base Elements & Shafts: B11-130, P1-024 (Panel) B11-108, R15-005 (Rear)

†† "Concentrikt" Equivalent: K-6 Kit with Base Elements & Shafts: B11-121, P1-024 (Panel) B11-141, R15-005 (Rear)

††† "Concentrikt" Equivalent: K-6 Kit with Base Elements & Shafts: B11-121, P1-024 (Panel) B11-130, R15-005 (Rear)

††† "STA-LOC" Equivalent: FA34L, OS687, RU254L, IS437.

††† "STA-LOC" Equivalent: FA254L, OS687, RU13L, IS437.

††† "STA-LOC" Equivalent: FA34L, OS687, RU46L, IS437.

RESISTORS

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

ITEM No.	RATING		PHILCO PART No.	NOTES	ITEM No.	RATING		PHILCO PART No.	NOTES
	OHMS	WATT				OHMS	WATT		
R7	3.3meg		66-5338340		R46	820K		66-3828340	
R8	470K		66-4478340		R47	1meg		66-5108340	
R9	470K		66-4478340		R48	330Ω	1	66-1334340	
R10	22K		66-3228340		R49	27K	1	66-3274340	
R11	2200Ω		66-2228340		R50	150K		66-4158340	
R12	1000Ω		66-2108340		R51	22K		66-3228340	
R13	330Ω		66-1338340		R52	1500Ω	1	66-2154340	
R14	47Ω		66-0478340		R53	3600Ω 5%		66-2368240	Note 2
R15	27K		66-3278340		R54	22K	2	66-3225340	
R16	330Ω		66-1338340		R55	12K		66-3128340	
R17	68Ω		66-0688340		R56	820K		66-4828384	
R18	15K		66-3158340		R57	1.8meg		66-5188340	
R19	470Ω		66-1478340		R58	3.3meg		66-5338340	
R20	220Ω		66-1228340		R59	39K		66-3394340	
R21	680K		66-4688340		R60	1000Ω		66-2108340	
R22	3900Ω		66-2398340		R61	1000Ω		66-2108340	
R23	150K		66-4158340		R62	68K		66-3688340	
R24	120K		66-1128340		R63	15K	1	66-3154340	
R25	15meg		66-6158340		R64	1000Ω		66-2108340	
R26	1.5meg		66-5158340		R65	47K		66-3478340	
R27	4700Ω		66-2478340		R66	560K		66-4568340	
R28	68Ω		66-0688340		R67	470K		66-4478340	
R29	6800Ω	2	66-2685340		R68	2700Ω	1	66-2274340	
R30	47K	1	66-3474340		R69	2700Ω	1	66-2274340	
R31	47K		66-3478340		R70	56K	2	66-3565340	
R32	120Ω		66-128340		R71	4700Ω		66-2478340	
R33	3300Ω	2	66-2335340		R72	100K	1	66-4108340	
R34	180K		66-4188340		R73	100K	1	66-4108340	
R35	330K		66-3338340		R74	47K		66-3474340	
R36	1meg		66-5108340		R75	3000Ω	10	33-1362-12	
R37	1meg		66-5108340		R76	1000Ω	1	66-2104340	
R38	1.8meg		66-5188340	Note 1	R77	1800Ω	1	66-2184340	
R39	1meg		66-5108340		R78	5.6Ω		33-1366-3	
R40	8200Ω		66-2828340		R79	400Ω Cold 11Ω Hot		33-1343-11	
R41	180Ω		66-1188340		R80A	17Ω		33-1368-10	
R42	680Ω		66-1688340		B	13Ω			
R43	3900Ω	1	66-2394340		C	8Ω			
R44	2200Ω		66-2228340		R81	270Ω	3	33-1363-19	
R45	2200Ω		66-2228340						

Note 1. Not used in Run 6 and higher.

Note 2. Some versions may use 3300Ω 5% in this application (Part #66-2338240).

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA
K1	Sync Coupling	180mmf, 2200mmf, 8000mmf, 4700Ω, 680K, 2.2meg	30-6519-1	
K2	Vert. Integrator	150mmf, 4000mmf, 5000mmf, 10K, 33K, 90K	30-6030-7	Sprague V-23
K3	Vert. Feedback	150mmf, 2200mmf, 33K, 150K	30-6509-2A	
K4	Horiz. AFC	82mmf, 200mmf, 3000mmf, 150K, 680K, 1meg	30-6034-1	Sprague C-6
K5	Horiz. Circuit	330mmf, 1000mmf, 1200mmf, 3300mmf, 3900Ω, 4700Ω, 39K	30-6512-7	
K6	Vert. Retrace	10000mmf @ 1000V, 10000mmf @ 1000V, 10K	30-6037-1 ①	Sprague RS-4
K7	Picture Tube Isolation	5000mmf, .2-1meg	30-6028-2	Sprague AC1-4

① Runs 1 and 2 used individual components in this application.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		PHILCO PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	
L1	47.4MC Trap	32-4645-32	19-1001	BC-562	4604	.23 Microhenry
L2	47.4MC Trap	32-4645-19	19-1002	BC-563	4606	
L3	41.25MC Trap	32-4645-34				
L4	RF Choke	32-4645-20			4584	
L5	1st Video IF	32-4645-36	19-3001	TV-189	6175	
L6	2nd Video IF	32-4686-2				
L7	3rd Video IF	32-4686-2				
L8	4th Video IF	32-4686-3				
L9	Resonant Choke	32-4645-7				

3 Microhenries

ITEM No.	USE	
L10	Resonant Choke	32-
L11	Shunt Peaking Coil	32-
L12	4.5MC Trap	32-
L13	RF Choke	32-
L14	Series Peaking Coil	32-
L15	1st Sound IF	32-
L16	2nd Sound IF	32-
L17	Quadrature Coil	32-
L18	Resonant Choke	32-
L19	Resonant Choke	32-
L20	Fl. Choke	32-
L21	Fl. Choke	32-

† Part of T3 (Part #32-8881-2)

ITEM No.	DC RES.		PHILCO PART No.
	PRI.	SEC.	
L22	150Ω		32-4754-

ITEM No.	RATINGS		
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURR 1000 Ω)
L23	.300A	41Ω	1.3 Hy

ITEM No.	USE	PHILCO PART No.
T2	Horiz. Output Alt. Horiz. Output	76-1000-1
T3	Horiz. Output Alt. Horiz. Output	32-8876-1

- ① Use 8 : 1 turns ratio.
- ② Drill new mounting hole(s)
- ③ Used in Run 4 and later.

ITEM No.	IMPEDANCE		PHILCO PART No.
	PRI.	SEC.	
T4	10K	3-4Ω	32-8876-1

ITEM No.	TYPE		
	SIZE	FIELD	V. C. IMP.
SP1	4" x 6"	PM	3-4Ω

ITEM No.	RATING		PHILCO PART No.
	CURRENT (Measured)		
M1	.280A		34-8048-1
M2	.280A		34-8048-1

ITEM No.	PART NAME	PHILCO PART No.
M3	Tuner	76-1154-1
M4	Tuner	76-1145-1
M5	Tuner Switch	76-1039-1
	Focus Magnet	42-2075
	Correction Magnet	76-1063-1
	Printed Board	54-6349
	Printed Board	54-8529
	Printed Board	54-8724
	Picture Tube Cable	41-4264-

(When Ordering)

- High Voltage Lead
- Shielded Hook-up Wire
- General-use Unshielded Hook-up Wire
- Power Cord (Interlock Type)
- 300Ω Tuner Input Lead
- 300Ω Antenna Lead-In
- Antenna Rotor Cable

COILS (cont)

ITEM No.	INSTALLATION NOTES
VP-9	Contrast, Note 1 Volume, Note 1 Push-Push Off-On Brightness Vert. Lin. Vert. Hold Height Horiz. Hold Horiz. Range Width Buzz

ITEM No.	USE	REPLACEMENT DATA					NOTES
		PHILCO PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L10	Resonant Choke	32-4674-1					22 Microhenries 220 Microhenries
L11	Shunt Peaking Coil	32-4762-8	19-4201	TV-197	6154		
L12	4.5MC Trap	32-4644-15					5 Microhenries 180 Microhenries
L13	RF Choke	32-4480-7	19-1008		4609		
L14	Series Peaking Coil	32-4480-36	19-3180	TV-184	6180	VP-5	
L15	1st Sound IF	32-4644-12					.81 Microhenry 2.9 Microhenries 2.9 Microhenries 2.9 Microhenries
L16	2nd Sound IF	32-4745-2					
L17	Quadrature Coil	32-4644-13					
L18	Resonant Choke	32-4112-49 †					
L19	Resonant Choke	32-4645-35					
L20	Flt. Choke	32-4645-35					
L21	Flt. Choke	32-4645-35					

† Part of T3 (Part #32-8881-2).

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.	REPLACEMENT DATA						NOTES
		PHILCO PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	
L22	150Ω	32-4754-3						Horiz. Freq.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 Ω)	PHILCO PART No.	Haldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L23	.300A	4Ω	1.3 Hy.	32-8710-4					26C44	

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							
		PHILCO PART No.	Haldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Vert. Output	32-8829-2	Z1900 ①	A-2823			A-8142 ②	26S72	A-108X
T2	Yoke-Horiz. (5MH) (110°)-Vert. (38MH)	76-10508-8							
T3	Rear Cover & Centering Device	76-10513-5							
	Horiz. Output	32-8881-2 ③							
	Alt. Horiz. Output	32-8881-1 ④							
	Alt. Horiz. Output	32-8877-1 ⑤							

- ① Use 8 : 1 turns ratio.
- ② Drill new mounting hole(s).
- ③ Used in Run 4 and later.
- ④ Used in Run 3.
- ⑤ Used in Runs 1 and 2. Not interchangeable with later units.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	PHILCO PART No.	Haldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T4	10K	3-4Ω	32-8876-1	Z1117	A-2932	AU-608	A-3879	24S52	S-17X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	QUAM PART No.	
SP1	4" x 6"	PM	3-4Ω	36-1676-4	46A1	

RECTIFIERS

ITEM No.	RATING		REPLACEMENT DATA					NOTES
	CURRENT (Measured)		PHILCO PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.280A		34-8048-1 ①	HF504 ①		SD-500 ①	M500 ①	① Silicon Type.
M2	.280A		34-8048-1 ①	HF504 ①		SD-500 ①	M500 ①	

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M3	Tuner	76-11547-8	VHF with UHF provisions (T-69K) Ch. 9L38U, AU VHF(T-68G) Ch. 9L38, A
M4	Tuner	76-11450-7	
M5	Switch	76-10391-1	UHF (T-27F) Local-Distance, SPDT (Slide Type)
	Focus Magnet	42-2075-5	
	Correction Magnet	76-10531-1	Video IF Main
	Printed Board	54-6349-1	
	Printed Board	54-8529-1	
	Picture Tube Cable	54-6724-1	
		41-4264-11	

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
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 Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

92-42).
4 (Panel)
05 (Rear)
24 (Panel)
005 (Rear)
1 (Panel)
05 (Rear)

d.

WATT	PHILCO PART No.	NOTES
1	66-3828340	Note 2
1	66-5108340	
1	66-1343440	
1	66-3274340	
1	66-4153440	
1	66-3228340	
2	66-2154340	
2	66-2368240	
2	66-3225340	
1	66-3128340	
1	66-4828384	
1	66-5188340	
1	66-5338340	
1	66-3394340	
1	66-2108340	
1	66-2108340	
1	66-3688340	
1	66-3154340	
1	66-2108340	
1	66-3478340	
1	66-4568340	
1	66-4478340	
1	66-2274340	
2	66-2274340	
1	66-3565340	
1	66-2478340	
1	66-4108340	
1	66-4108340	
1	66-3474340	
10	33-1362-12	
1	66-2104340	
1	66-2184340	
1	33-1366-3	
1	33-1343-11	
3	33-1368-10	
3	33-1363-19	

2 in this application (Part #66-2338240).

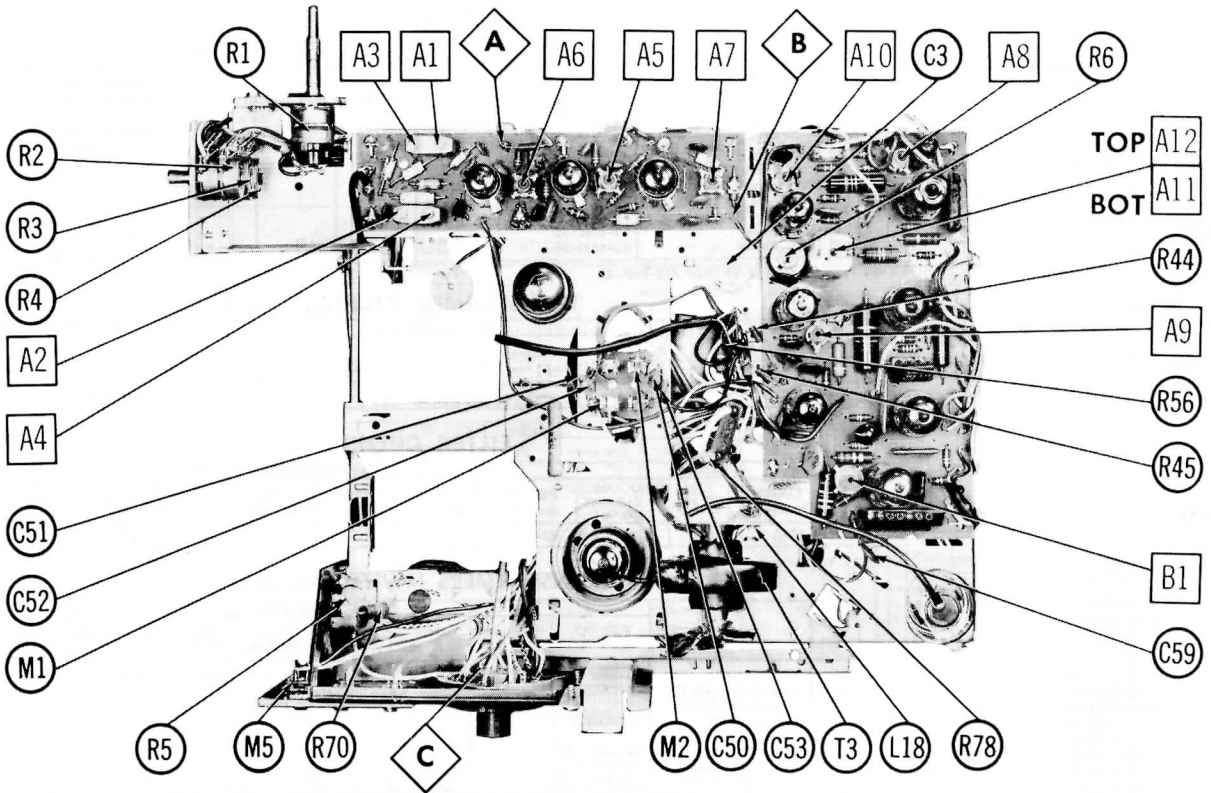
S

REPLACEMENT DATA
Sprague V-23
Sprague C-6
Sprague RS-4
Sprague AC1-4

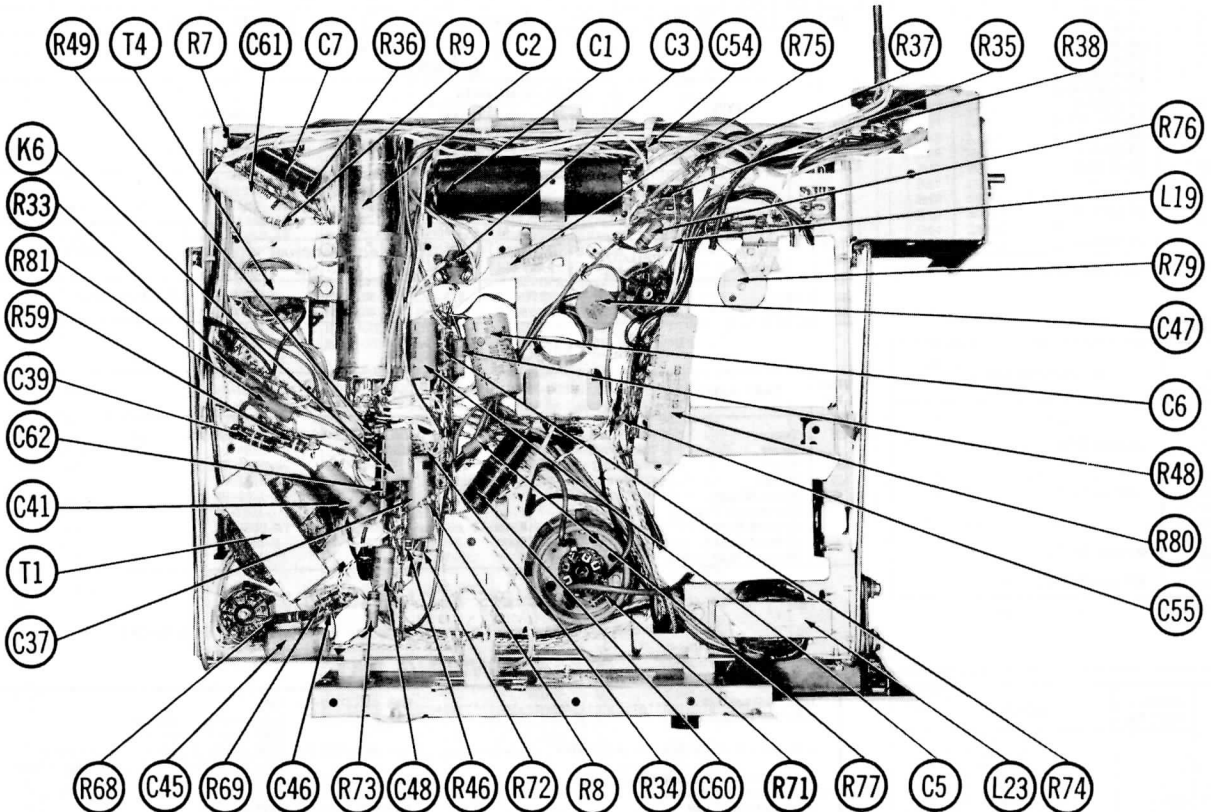
Ram PART No.	NOTES
VP-9	.23 Microhenry
	3 Microhenries

PHILCO MODELS G4710L, M, G4720L, M, UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

FOLDER 2



CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW

TUNER ALIGNMENT INSTRUCTIONS (cont)

UHF IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Use only enough sweep generator output to provide a usable pattern on scope.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9. 1500mmf Ceramic Capacitor	High side to point \diamond . Low side to chassis.	Not used	43.5MC (400% 30% AM Mod)	UHF	Vert. Amp. thru 10K to point \diamond . Low side to chassis.	A22I	Adjust for flat symmetrical response.

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

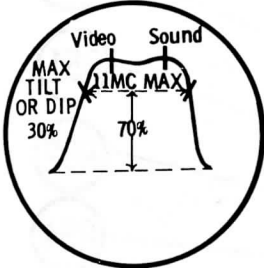


FIG. 201

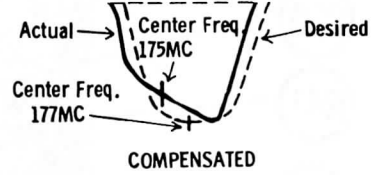
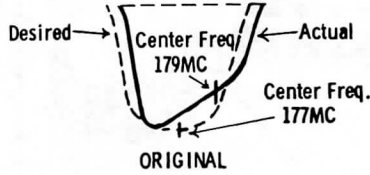


FIG. 202

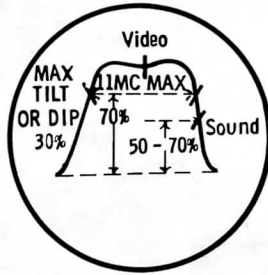
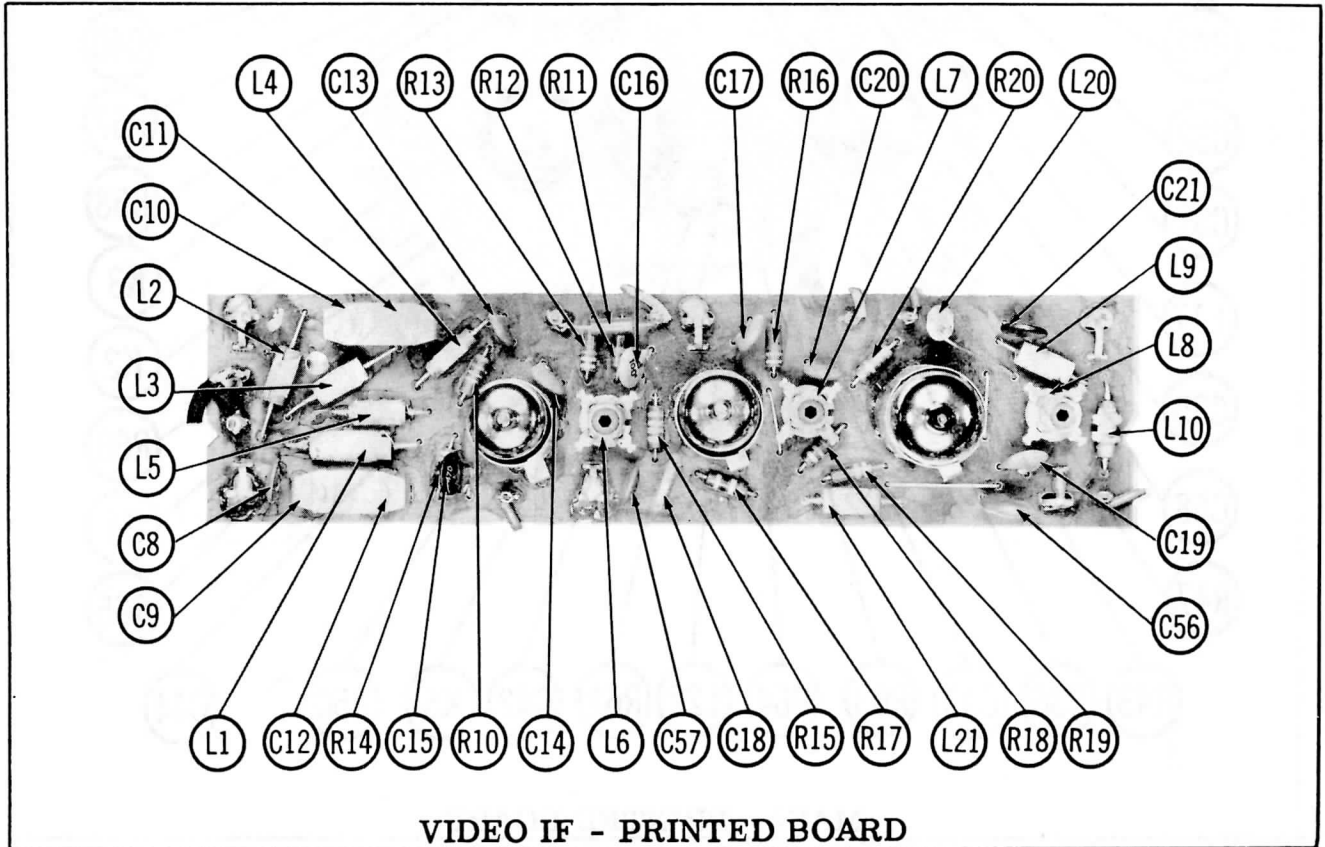


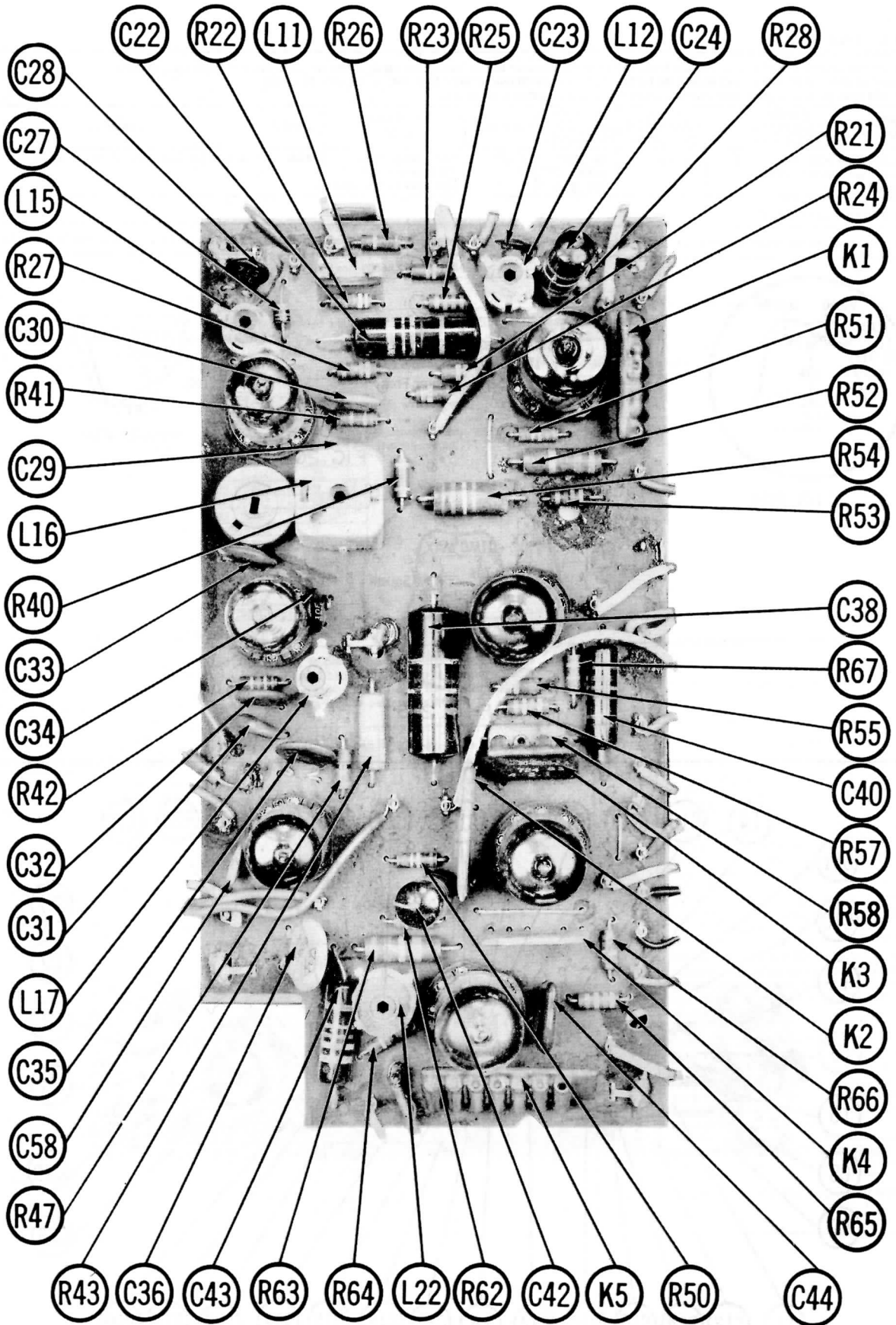
FIG. 203



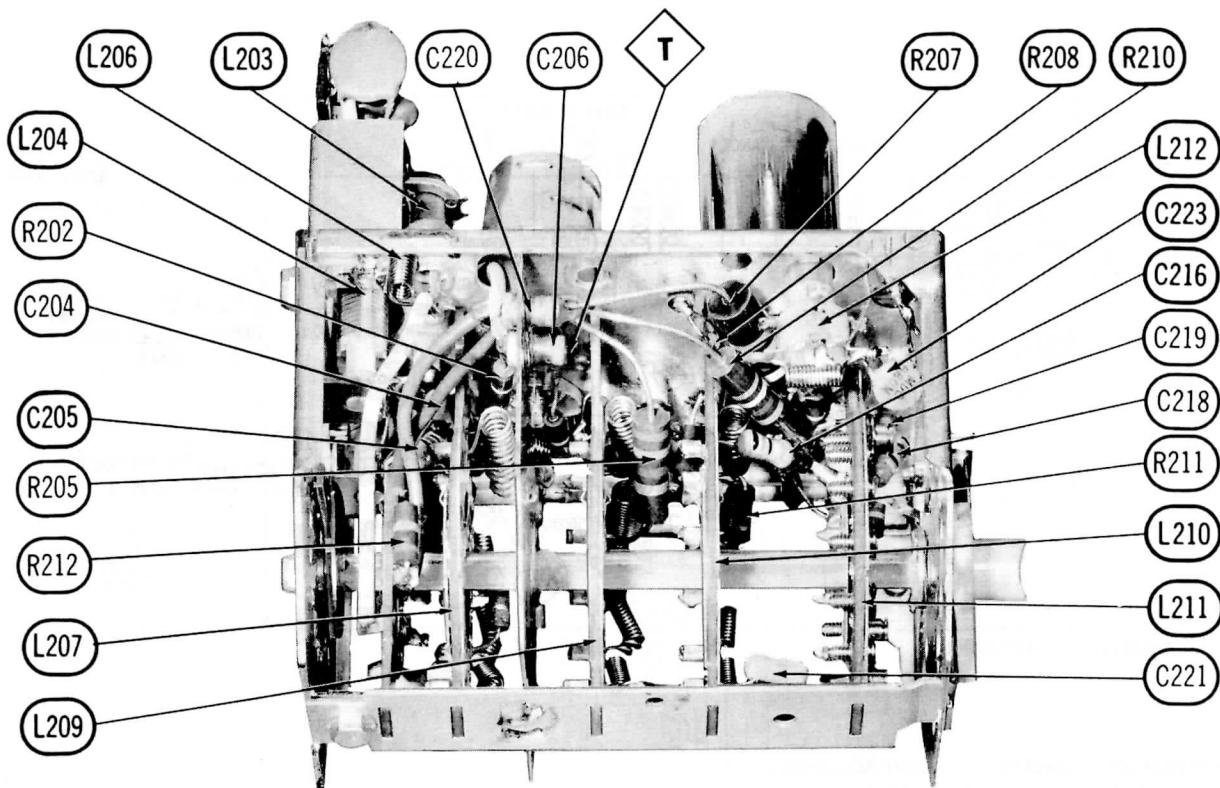
VIDEO IF - PRINTED BOARD

PHILCO MODELS G4710L, M, G4720L, M, UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

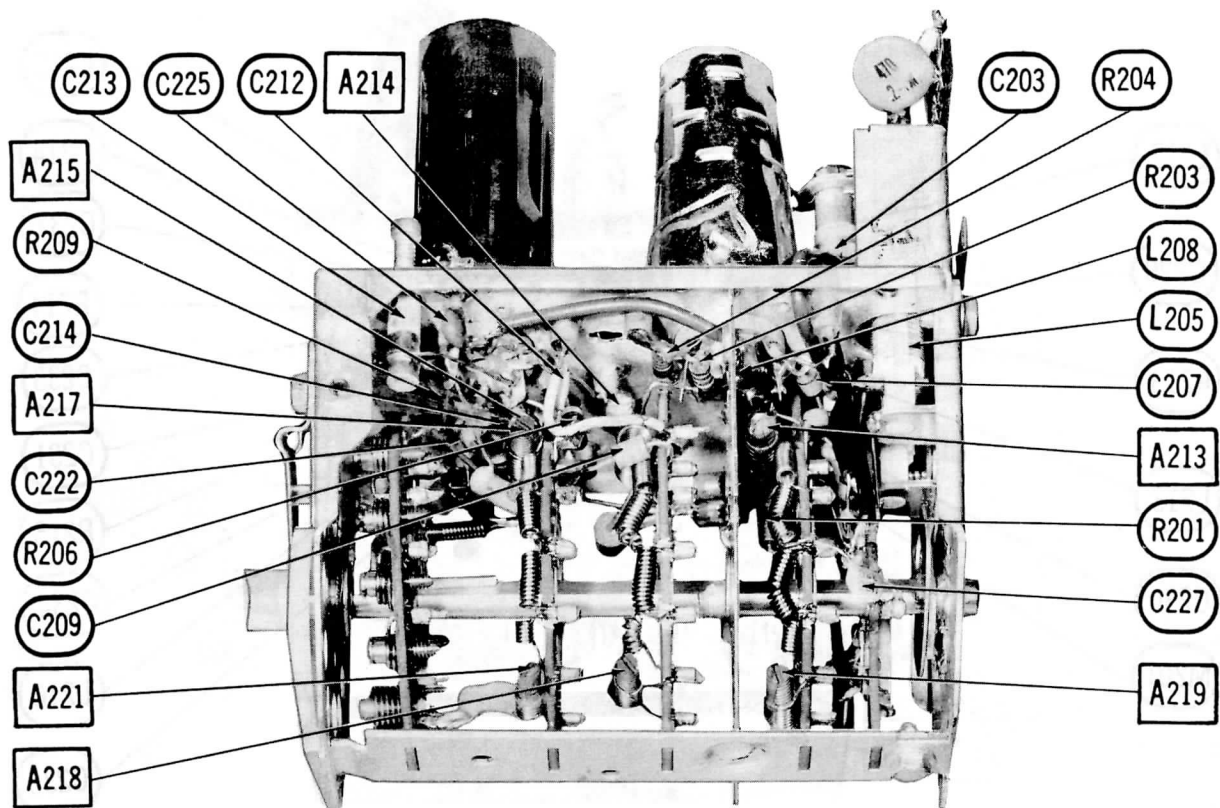
FOLDER 2



MAIN - PRINTED BOARD



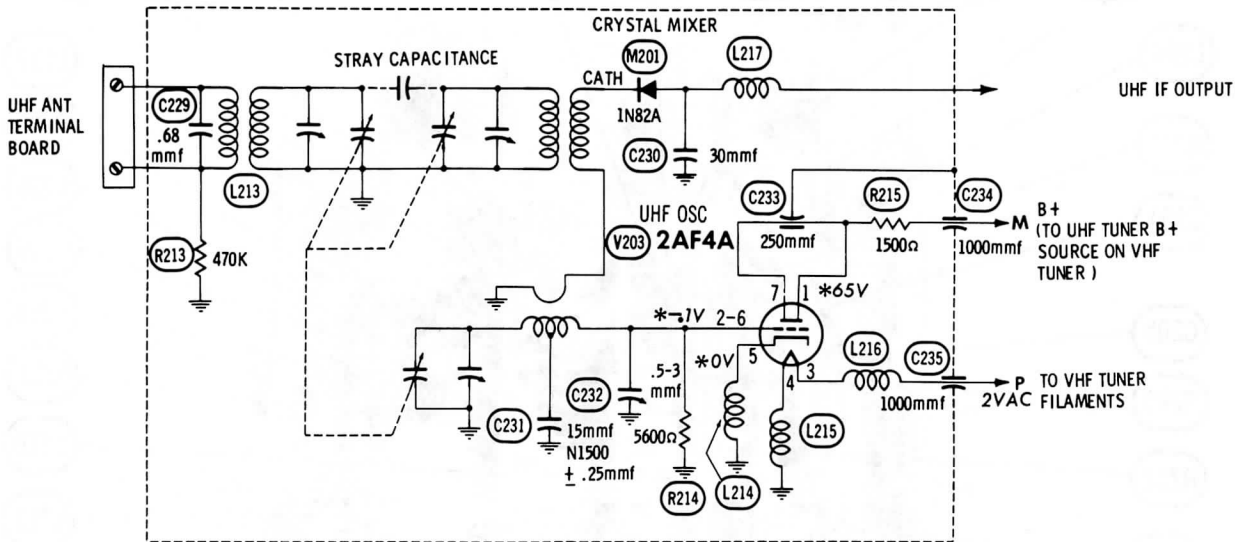
TUNER 76-11547-8 - LEFT SIDE



TUNER 76-11547-8 - RIGHT SIDE

PHILCO MODELS G4710L, M, G4720L, M,
UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

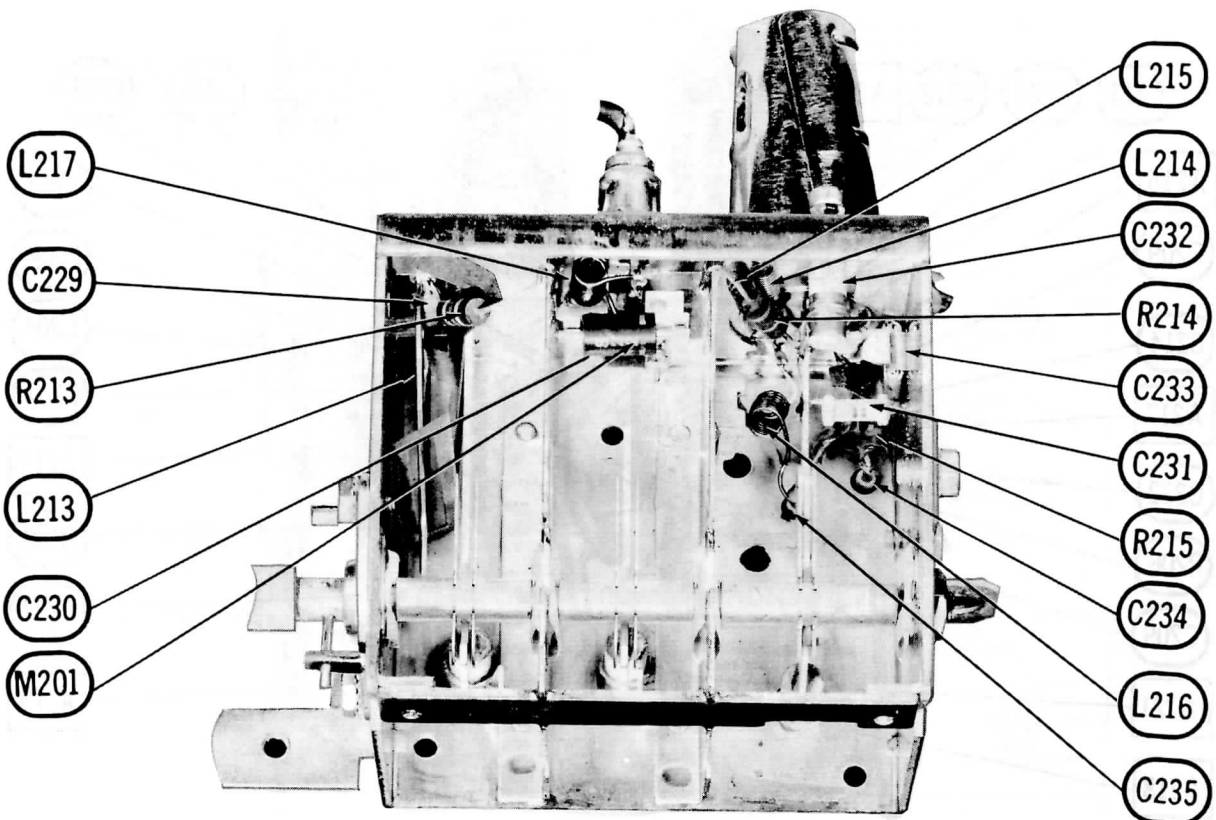
FOLDER 2



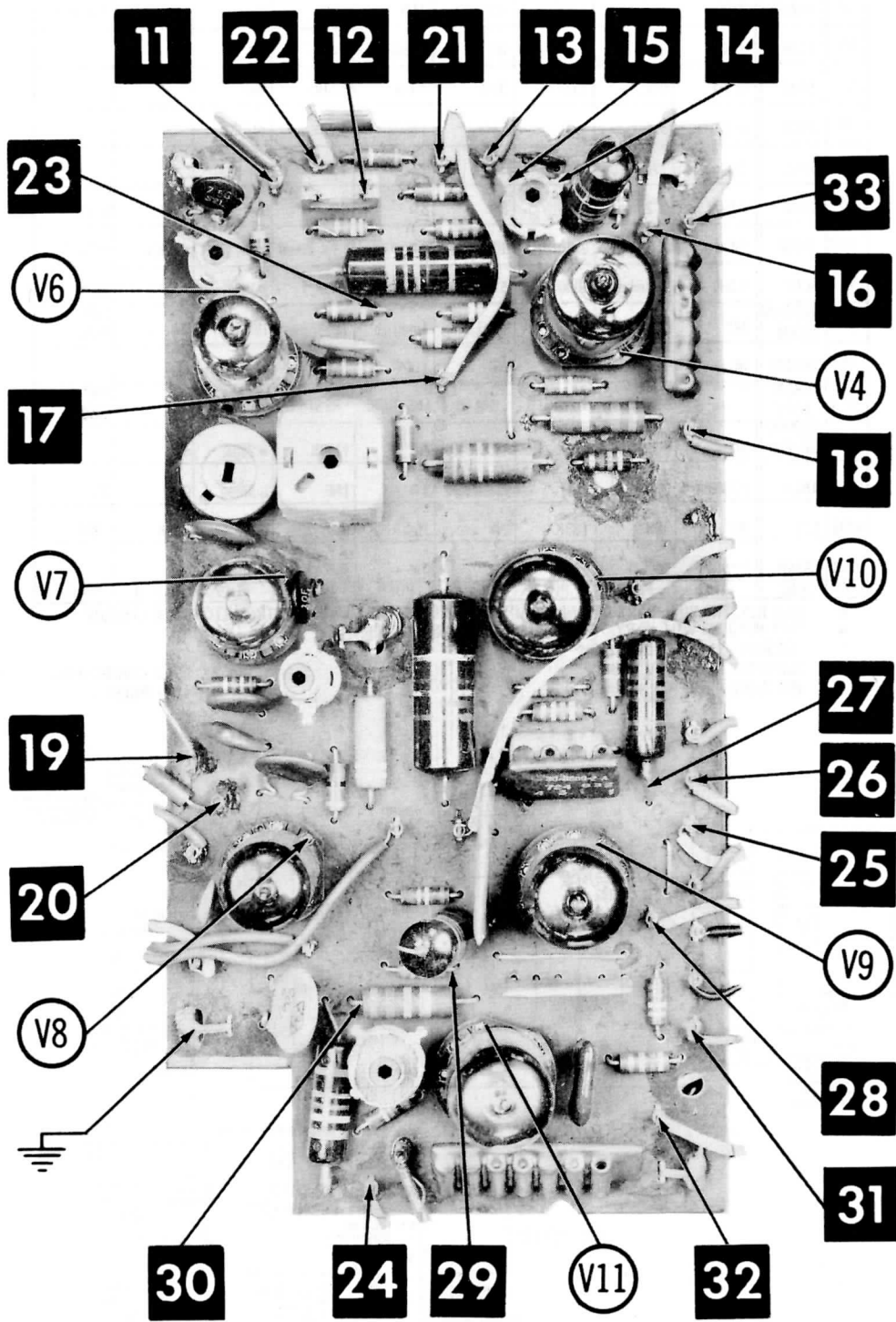
* MEASURED IN UHF POSITION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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UHF TUNER 76-10391-1 (T-27F)



TUNER 76-10391-1



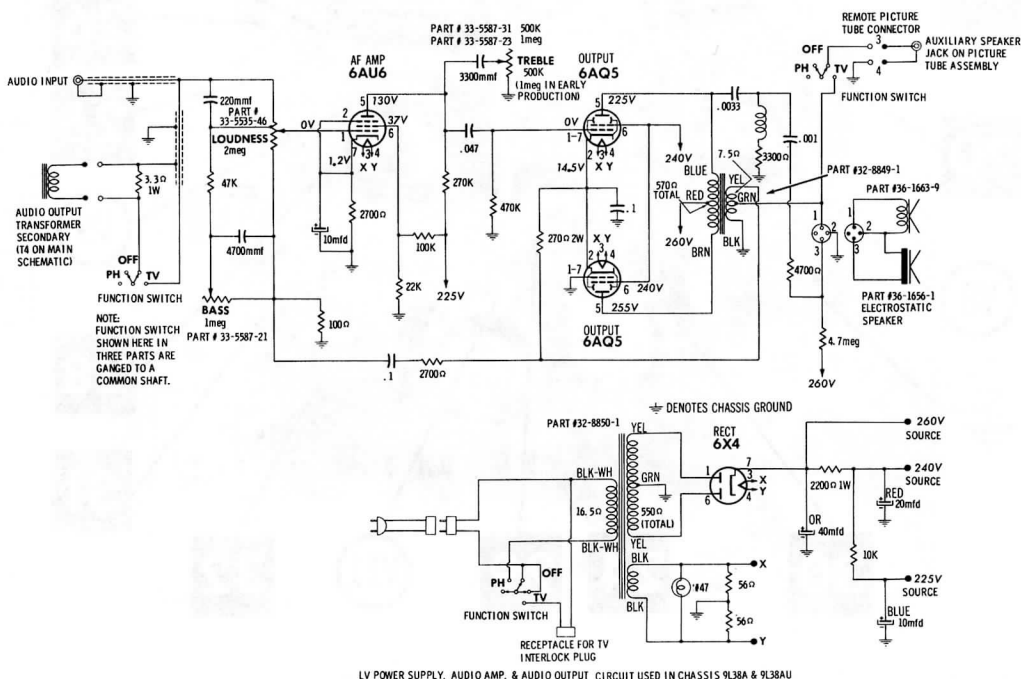
PHILCO MODELS G4710L, M, G4720L, M,
UG4710L, M, UG4720L, M (Ch. 9L38, A, AU, U)

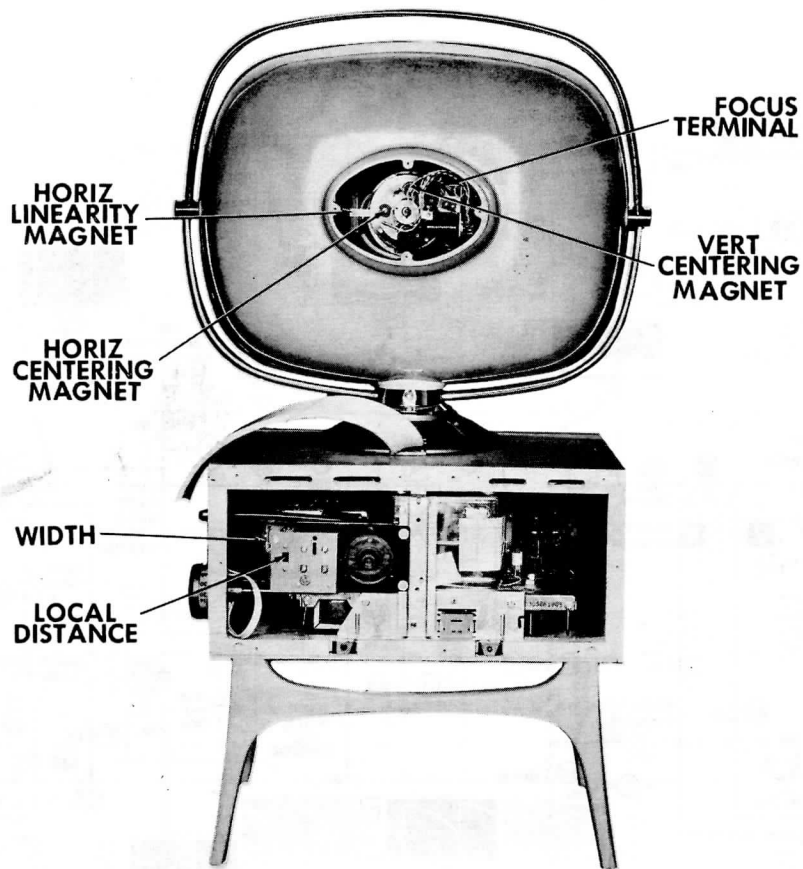
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	1.2meg	47Ω	14Ω	15Ω	†3300Ω	†3300Ω	0Ω		
V2	3BZ6	1.2meg	68Ω	15Ω	16Ω	†3300Ω	†3300Ω	0Ω		
V3	5AM8	220Ω	.1Ω	†3800Ω	16Ω	17Ω	†3800Ω	.1Ω	3900Ω	0Ω
V4	6AW8A	3300Ω	• 4.5meg	†30K	10Ω	11Ω	70Ω	680K	†3000Ω	†6700Ω
V5	3CB6	47K	0Ω	5Ω	4Ω	†6800Ω	†47K	0Ω		
V6	3AU6	4.1Ω	0Ω	11Ω	12Ω	†11K	†11K	180Ω		
V7	3BN6	• 220Ω	3.5Ω	12Ω	13Ω	†6900Ω	4.5Ω	†920K		
V8	5AQ5	1meg	330Ω	13Ω	14Ω	†480Ω	†27K	1meg		
V9	9BR7	†150K	2.2meg	0Ω	8Ω	8Ω	0Ω	830K	150K	6.5Ω
V10	10DE7	†430Ω	2.3meg	2.3meg	10Ω	8Ω	• †4.2meg	150K	• 30K	• 500Ω
V11	6CG7	†16K	1.8meg	1000Ω	5Ω	6.5Ω	†45K	• 120K	1000Ω	NC
V12	12DQ6A/ 12DQ6	NC	21Ω	NC	• †11K	1meg	TP	19Ω	0Ω	TOP CAP †12Ω
V13	12D4GT	NC	NC	†250K	NC	†.5Ω	NC	17Ω	19Ω	
V14	1G3GT/ 1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP †350Ω
V15	21EAP4/ SF-21A	3Ω	†150K	1meg	†150K	NC	†150K	• 250K	4Ω	
V201	4BC8	†2800Ω	250K	1NF	2Ω	3Ω	1NF	1.5meg	0Ω	0Ω
V202	5X8	0Ω	10K	†83K	2Ω	.5Ω	0Ω	100K	†48K	†48K
V203	2AF4A	†*14K	5600Ω	.5Ω	0Ω	0Ω	5600Ω	†*14K		

- THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
- THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
- MEASURED IN "UHF" POSITION.
- † MEASURED FROM 270V SOURCE.
- † MEASURED FROM PIN 3 OF V13.

NC NO CONNECTION.
TP TIE POINT





CABINET—REAR VIEW

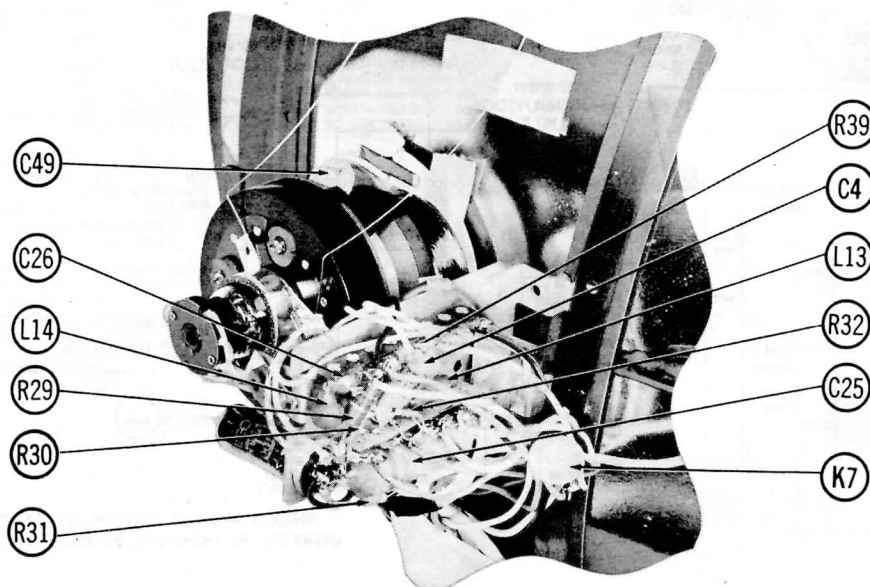
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a station signal. Allow the receiver to warm up. Connect a clip lead across the Horizontal Frequency coil (L22).

Set the Horizontal Hold to the center of its range.

Adjust the Horizontal Range (R4B) until the picture appears to float back and forth across the screen.

Remove the clip lead from across L22 and adjust the Horizontal Frequency slug (B1) until the picture synchronizes horizontally.



SUB CHASSIS