

### CABINET-REAR VIEW DISASSEMBLY INSTRUCTIONS

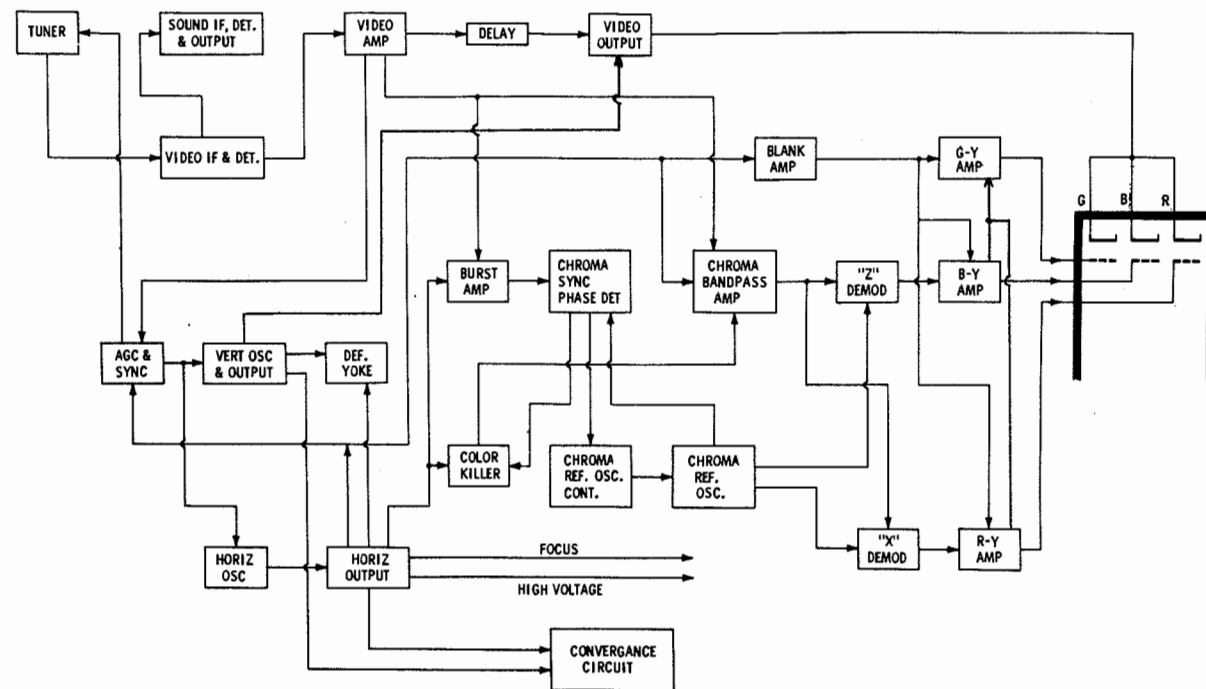
#### CHASSIS REMOVAL

1. Remove 8 push-on type knobs from front. Remove rear cover (7 screws).
2. Remove 2 bolts holding chassis from bottom of cabinet and remove 2 bolts holding top of chassis.
3. Unplug picture tube socket, high voltage lead, yoke, and speaker.

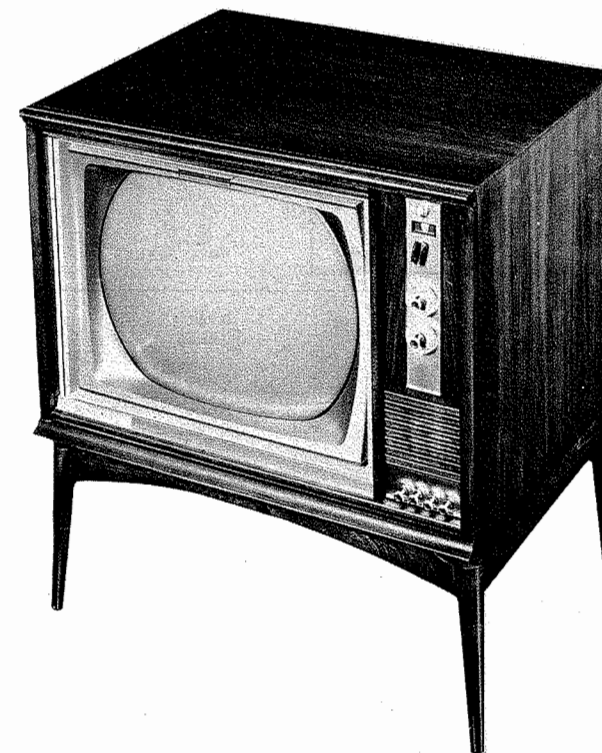
4. Remove one screw holding control bracket.
5. Remove chassis.

#### PICTURE TUBE REMOVAL

It is necessary to remove the chassis for picture tube removal.



BLOCK DIAGRAM



MODEL M940WWD

TRADE NAME	General Electric	Models	Chassis	VHF Tuner	UHF Tuner
		M940WMD/WWD/WMP; M950WMD/WWD; M960WMD/WMP/WWD ... CW ... ET86X128 M941WMD/WMP/WWD; M951WMD/WWD; M961WMD/WMP/WWD ... CW ... ET86X125 ... ET85X26			
MANUFACTURER	General Electric Co., Appliance and Television Receiver Div., Louisville, Kentucky				
TYPE SET	Color Television Receiver				
TUBES	VHF: Twenty-Six UHF: Twenty-Seven				
POWER SUPPLY	110-120 Volts AC, 60 Cycle				
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Inter-carrier)				

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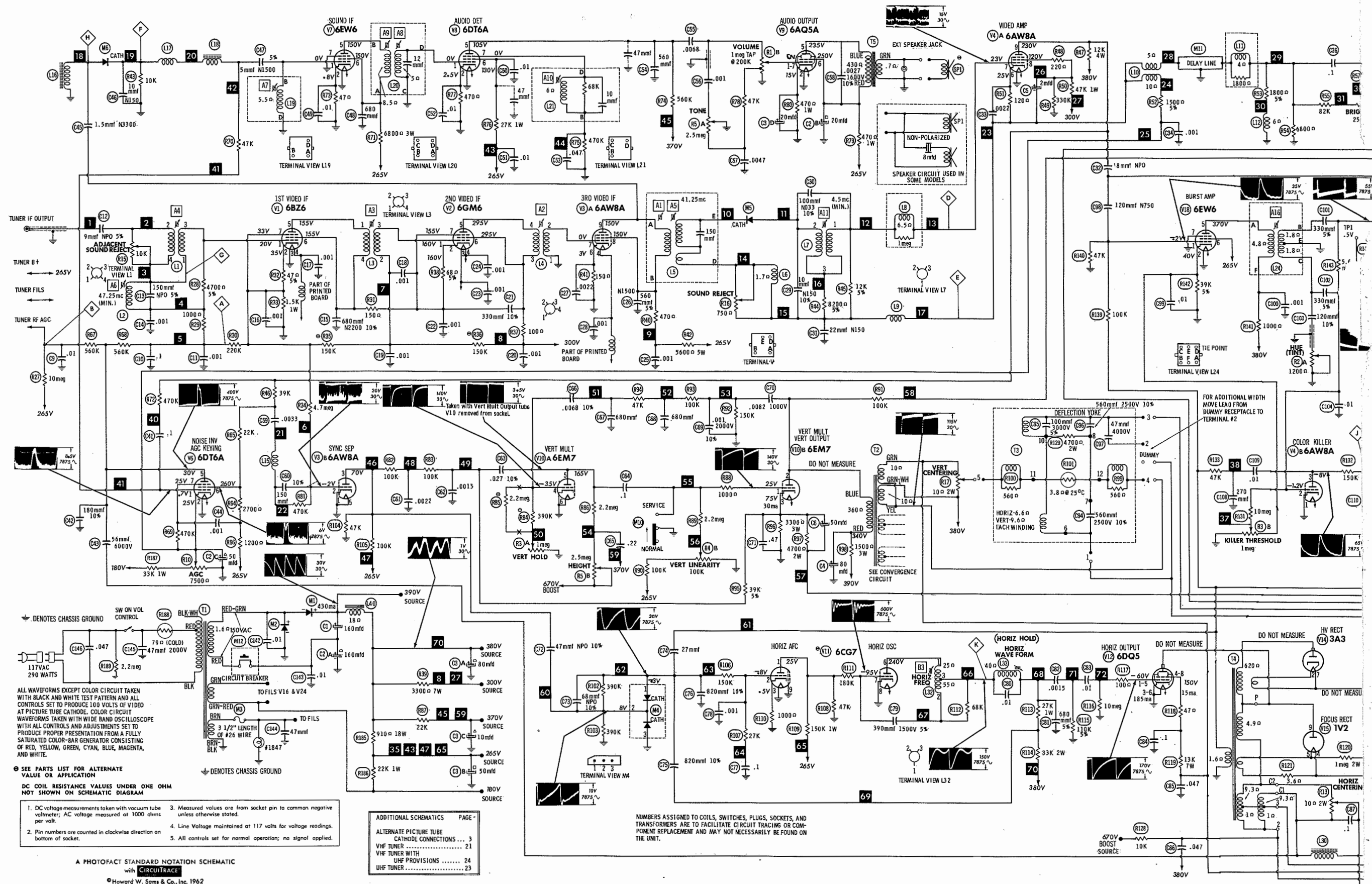
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### HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana



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TUNER PARTS LIST AND DESCRIPTIONS

ET86X128

TUBES

GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	6CW4	V202	Mixer - Osc.	6EA8			

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C202	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C203	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C204	27 5%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C205	27 10%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C206	.033 200V			DD-303	CUB6S33	4DP-2-333	GEM-6133	6TM-S33
C207	.001			MFT-1000		CCF-102	CT280A	
C208	27 10%			TCZ-27	C10Q27C	CCTO-270	CNO-427	10TCC-Q27
C209	2-10 10%	#ET30X67		829-10				
C210	2.7 10%				C10V3C			10TCC-V27
C211	8 NPO ±1mmf				C10V82C			10TCC-V82
C212	47 10%	#ET23X31						
C213	39 10%	#ET23X32						
C214	.5mmf NPO	#ET18X443						
C215	33 N750 5%			TCZ-R5			CNO-550	10TCU-Q33
C216	68 N750 10%			DTN-33	C10Q33U	CCTN-330	CN7-433	10TCU-Q68
C217	10 N330 5%	#ET18X320		DTN-68	C10Q68U	CCTN-680	CN7-468	10TCS-Q10
C218	10 N220 5%	#ET18X144				*		10TCR-Q10
C219	.001					CCF-102	CT280A	
C220	.001			MFT-1000		CCF-102	CT280A	
C221	.001			MFT-1000		CCF-102	CT280A	
C222	680			DI-680	BYA10T68	CCD-681	GP368	10TS-T68
C223	680			DI-680	BYA10T68	CCD-681	GP368	10TS-T68
C224	.001			EF-001		CCF-102	CT280A	

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

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	4700Ω				R208	1000Ω			
R202	47K				R209	5600Ω			
R203	4.7meg				R210	8200Ω			
R204	2.2meg				R211	2200Ω			
R205	12K				R212	13K 4W	PW4-13K	4W-SQ-13K	
R206	1500Ω				R213	18K 2W			
R207	100K								

COILS (RF-IF)

ITEM No.	USE	G. E. PART No.	NOTES	ITEM No.	USE	G. E. PART No.	NOTES
L201	Ant. Matching	ET62X57	Assembly	L205	Osc.	ET52X191	Channel 2-13, Includes Wafer Assembly
L202	Ant.	ET52X194	"	L206	RF Choke		"
L203	RF	ET52X193	"	L207	Mixer Plate	ET36X531	"
L204	Mixer Grid	ET52X192	"	L208	Fil. Choke		"

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	220K	1550Ω	FIL	FIL	220Ω	220Ω	1500Ω		
V2	6GM6	70K	INF	FIL	FIL	3400Ω	3400Ω	68Ω		
V3	6AW8A	0Ω	4.7meg	35K	FIL	FIL	150Ω	.1Ω	7000Ω	7000Ω
V4	6AW8A	0Ω	5.9meg	370K	FIL	FIL	1600Ω	6000Ω	50K	11K
V5	12BY7A	380Ω	350K	0Ω	FIL	FIL	FIL	5800Ω	18K	NC
V6	6DT6A	47K	2000Ω	FIL	FIL	780K	4500Ω	472K		
V7	6EW6	5.5Ω	47Ω	FIL	FIL	7700Ω	7700Ω	0Ω		
V8	6DT6A	5Ω	470Ω	FIL	FIL	580K	28K	470K		
V9	6AQ5A	NC	470Ω	FIL	FIL	1800Ω	1400Ω	10K		
V10	6EM7	2.3meg	1860Ω	2100Ω	600K	3.3meg	0Ω	FIL	FIL	
V11	6CG7	40K	800K	1000Ω	FIL	FIL	60K	240K	0Ω	0Ω
V12	6DQ5	10meg	FIL	0Ω	13K	10meg	0Ω	FIL	13K	TOP CAP 14Ω
V13	6AU4GT	NC	NC	300K	NC	38Ω	NC	FIL	FIL	
V14	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP 650Ω
V15	1V2	NC	NC	NC	66meg	66meg	TP	NC	NC	14Ω
V16	6BK4	38Ω	FIL	NC	NC	1meg	NC	FIL	NC	TOP CAP INF
V17	6AU6A	220K	0Ω	FIL	FIL	1400Ω	1400Ω	390Ω		
V18	6EW6	30K	39K	FIL	FIL	1000Ω	930Ω	0Ω		
V19	6AL5	5.5meg	5.5meg	FIL	FIL	220Ω	0Ω	220Ω		
V20	6GH8	25K	47K	48K	FIL	FIL	9100Ω	0Ω	680Ω	5.5meg
V21	12AZ7	4800Ω	100Ω	855Ω	FIL	FIL	4800Ω	100Ω	855Ω	FIL
V22	6FQ7	15K	1meg	390Ω	FIL	FIL	15K	1meg	390Ω	0Ω
V23	6FQ7	47K	200K	390Ω	FIL	FIL	15K	1meg	390Ω	0Ω
V24	21FBP22	FIL	110K	300K	3000Ω	4000Ω	110K	150K	Pin 9 67meg	Pin 11 250K
		Pin 12 110K	Pin 13 3500Ω	Pin 14 FIL						
V201	6CW4	Pin 2 11K	Pin 4 2meg	Pin 8 0Ω	Pin 10 FIL	Pin 12 FIL				
V202	6EA8	9100Ω	100K	2200Ω	FIL	FIL	3200Ω	0Ω	INF	5600Ω
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.  
† MEASURED FROM OUTPUT OF M1.  
‡ MEASURED FROM PIN 3 OF V13.  
NC NO CONNECTION  
■ MEASURED FROM PIN 2 OF V2.  
▲ MEASURED FROM PIN 8 OF V202.  
TP TIE POINT

GENERAL ELECTRIC  
CHASSIS CW

FOLDER 1

TUNER ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

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

VHF RF AND MIXER ALIGNMENT

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. Coils not containing adjustable cores are adjusted by expanding or compressing coil turns. Connect the negative lead of a 2.5 volt bias supply to point ④. Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Across VHF Antenna Terminals thru pad (Fig. 201).	195MC	193.25MC 197.75MC	10	Vert. Amp. to point ④. Low side to chassis.	A201, A202	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. If oscillation is obtained and distorts the waveform, adjust A203 for MINIMUM gain and repeat adjustments of A201 and A202.
2.	"	"	"	"	"	A203	Increase bias to -10 to -15 volts. Adjust A203 for MINIMUM response.
3.	"	207MC	205.25MC 209.75MC	12	"	A204	Return bias to 2.5 volts. Adjust A204 for maximum gain at center of curve.
4.	"	"	"	"	"	A201, A202, A205	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. Adjust A201 for correct freq. Adjust A202 for correct tilt. Position A205 for bandwidth.
5.	"	195MC	193.25MC 197.75MC	10	"	A206, A207	Adjust for flat response.
6.	"	189MC	187.25MC 191.75MC	9	"	A208, A209	"
7.	"	183MC	181.25MC 185.75MC	8	"	A210, A211	"
8.	"	177MC	175.25MC 179.75MC	7	"	A212, A213	"
9.	"	85MC	83.25MC 87.75MC	6	"	A214, A215, A216, A217	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. Adjust A214 for amplitude, A215 for frequency, A216 for proper tilt and A217 for bandwidth.
10.	Turn off generator.			12	Use VTVM DC probe to point ④. Common to chassis.		Check Oscillator injection voltage. It should be between -2.0 to -5.0 volts.

VHF OSCILLATOR ALIGNMENT

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. Connect the negative lead of a 2.5 volt bias supply to point ④. Positive to chassis.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Across VHF Antenna Terminals thru pad (Fig. 201).	Not Used	257MC	13	Vert. Amp. to point ④. Low side to chassis.	A218	Adjust for zero beat.
12.	"	"	251MC	12	"	A219	"
13.	"	"	245MC	11	"	A220	"
14.	"	"	239MC	10	"	A221	"
15.	"	"	233MC	9	"	A222	"
16.	"	"	227MC	8	"	A223	"
17.	"	"	221MC	7	"	A224	"
18.	"	"	129MC	6	"	A225	"
19.	"	"	123MC	5	"	A226	"
20.	"	"	113MC	4	"	A227	"
21.	"	"	107MC	3	"	A228	"
22.	"	"	101MC	2	"	A229	"

TUNER ALIGNMENT INSTRUCTIONS (cont)

UHF ALIGNMENT

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. Connect the negative lead of a 2.5 volt bias supply to point ④. Positive to chassis. Connect a 180Ω resistor across input cable of scope.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
23.	High side thru input lead (Fig. 203) to point ④. Low side to chassis.	45MC (10MC Swp.)	41.25MC 45.75MC	UHF Any	Vert. Amp. thru 330mmf to plate of Mixer. Low side to chassis.	A230, A231	Adjust for maximum gain and symmetry of response similar to Fig. 204 with markers as shown.
24.	Across UHF Antenna Terminals.	To center frequency of channel to be received. (See Chart)	"	Channel to be received	Scope across Video Det. Load	A230, A231	Retouch for response similar to Fig. 205.

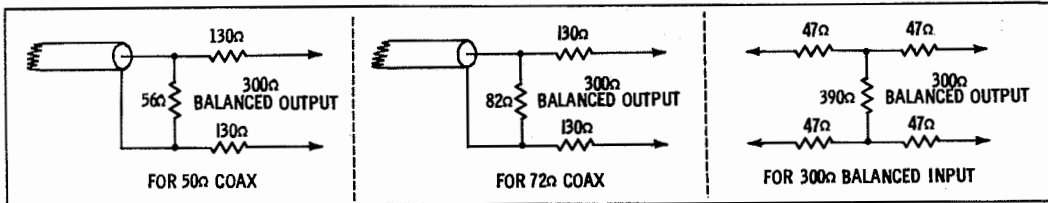


FIG.201

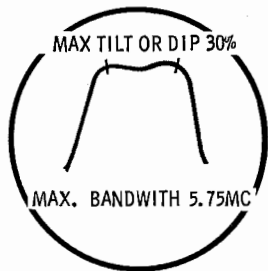


FIG.202

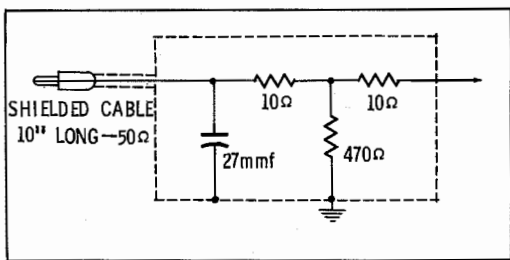


FIG.203

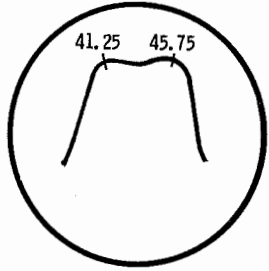


FIG.204

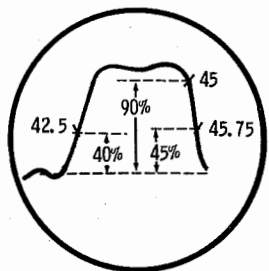
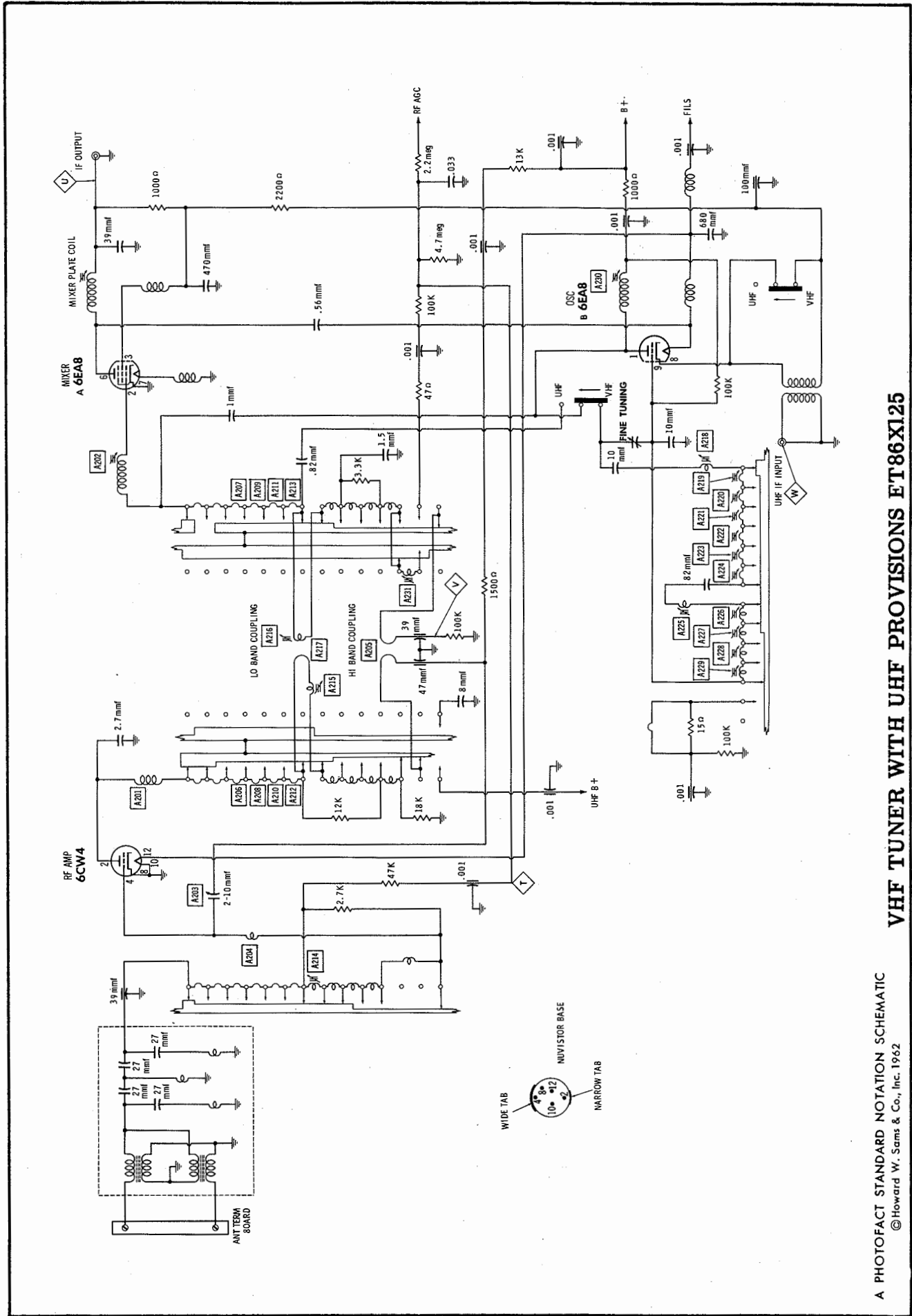


FIG.205

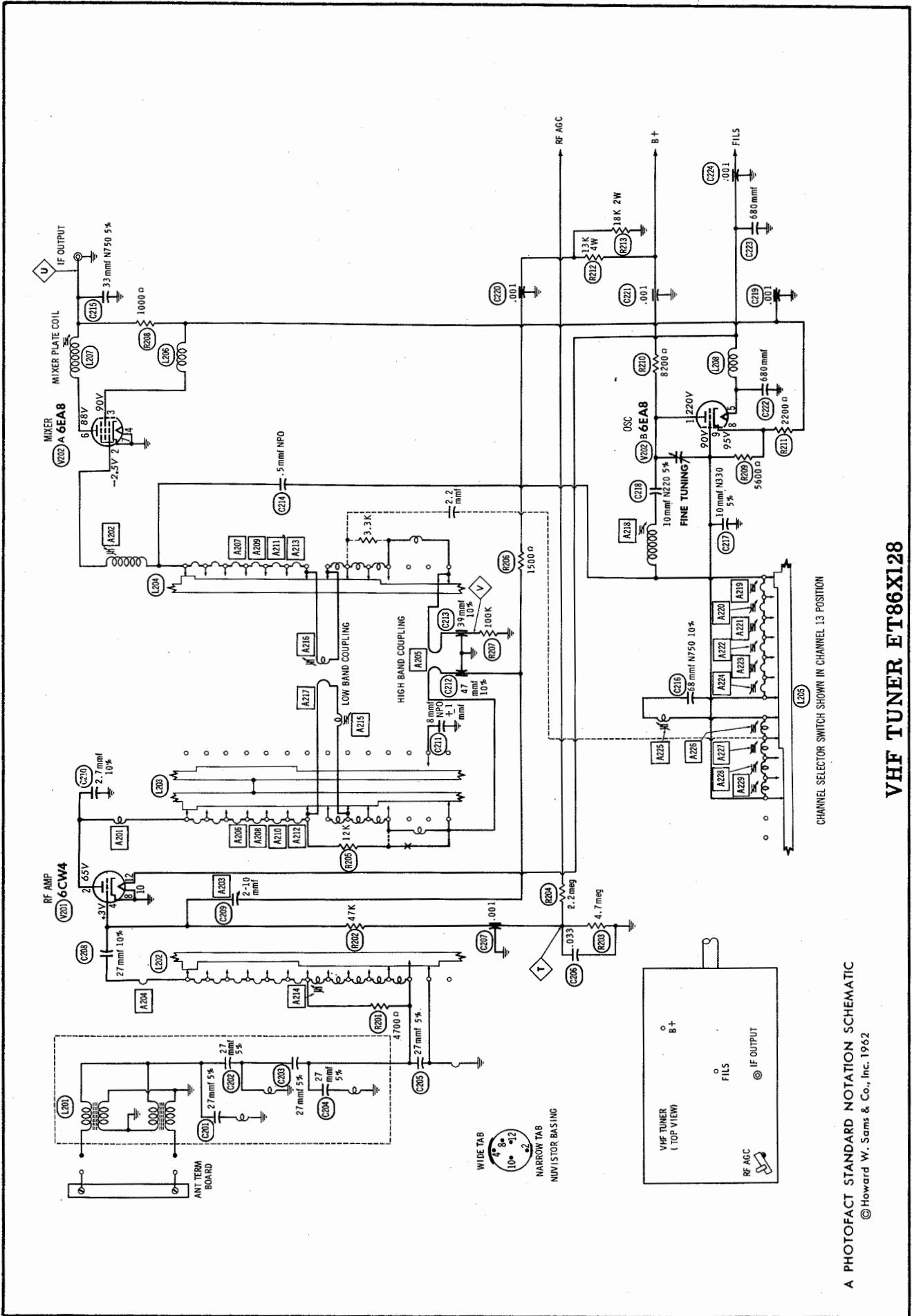
Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier	Channel No.	Frequency Band (Mc)	Video Carrier	Sound Carrier
2	54-60	55.25	59.75	23	524-530	525.25	529.75	44	650-656	651.25	655.75	64	770-776	771.25	775.75
3	60-66	61.25	65.75	24	530-536	531.25	535.75	45	656-662	657.25	661.75	65	776-782	777.25	781.75
4	66-72	67.25	71.75	25	536-542	537.25	541.75	46	662-668	663.25	667.75	66	782-788	783.25	787.75
5	76-82	77.25	81.75	26	542-548	543.25	547.75	47	668-674	669.25	673.75	67	788-794	789.25	793.75
6	82-88	83.25	87.75	27	548-554	549.25	553.75	48	674-680	675.25	679.75	68	794-800	795.25	799.75
7	174-180	175.25	179.75	28	554-560	555.25	559.75	49	680-686	681.25	685.75	69	800-806	801.25	805.75
8	180-186	181.25	185.75	29	560-566	561.25	565.75	50	686-692	687.25	691.75	70	806-812	807.25	811.75
9	186-192	187.25	191.75	30	566-572	567.25	571.75	51	692-698	693.25	697.75	71	812-818	813.25	817.75
10	192-198	193.25	197.75	31	572-578	573.25	577.75	52	698-704	699.25	703.75	72	818-824	819.25	823.75
11	198-204	199.25	203.75	32	578-584	579.25	583.75	53	704-710	705.25	709.75	73	824-830	825.25	829.75
12	204-210	205.25	209.75	33	584-590	585.25	589.75	54	710-716	711.25	715.75	74	830-836	831.25	835.75
13	210-216	211.25	215.75	34	590-596	591.25	595.75	55	716-722	717.25	721.75	75	836-842	837.25	841.75
14	470-476	471.25	475.75	35	596-602	597.25	601.75	56	722-728	723.25	727.75	76	842-848	843.25	847.75
15	476-482	477.25	481.75	36	602-608	603.25	607.75	57	728-734	729.25	733.75	77	848-854	849.25	853.75
16	482-488	483.25	487.75	37	608-614	609.25	613.75	58	734-740	735.25	739.75	78	854-860	855.25	859.75
17	488-494	489.25	493.75	38	614-620	615.25	619.75	59	740-746	741.25	745.75	79	860-866	861.25	865.75
18	494-500	495.25	499.75	39	620-626	621.25	625.75	60	746-752	747.25	751.75	80	866-872	867.25	871.75
19	500-506	501.25	505.75	40	626-632	627.25	631.75	61	752-758	753.25	757.75	81	872-878	873.25	877.75
20	506-512	507.25	511.75	41	632-638	633.25	637.75	62	758-764	759.25	763.75	82	878-884	879.25	883.75
21	512-518	513.25	517.75	42	638-644	639.25	643.75	63	764-770	765.25	769.75	83	884-890	885.25	889.75
22	518-524	519.25	523.75	43	644-650	645.25	649.75								





A PHOTOFACT STANDARD NOTATION SCHEMATIC  
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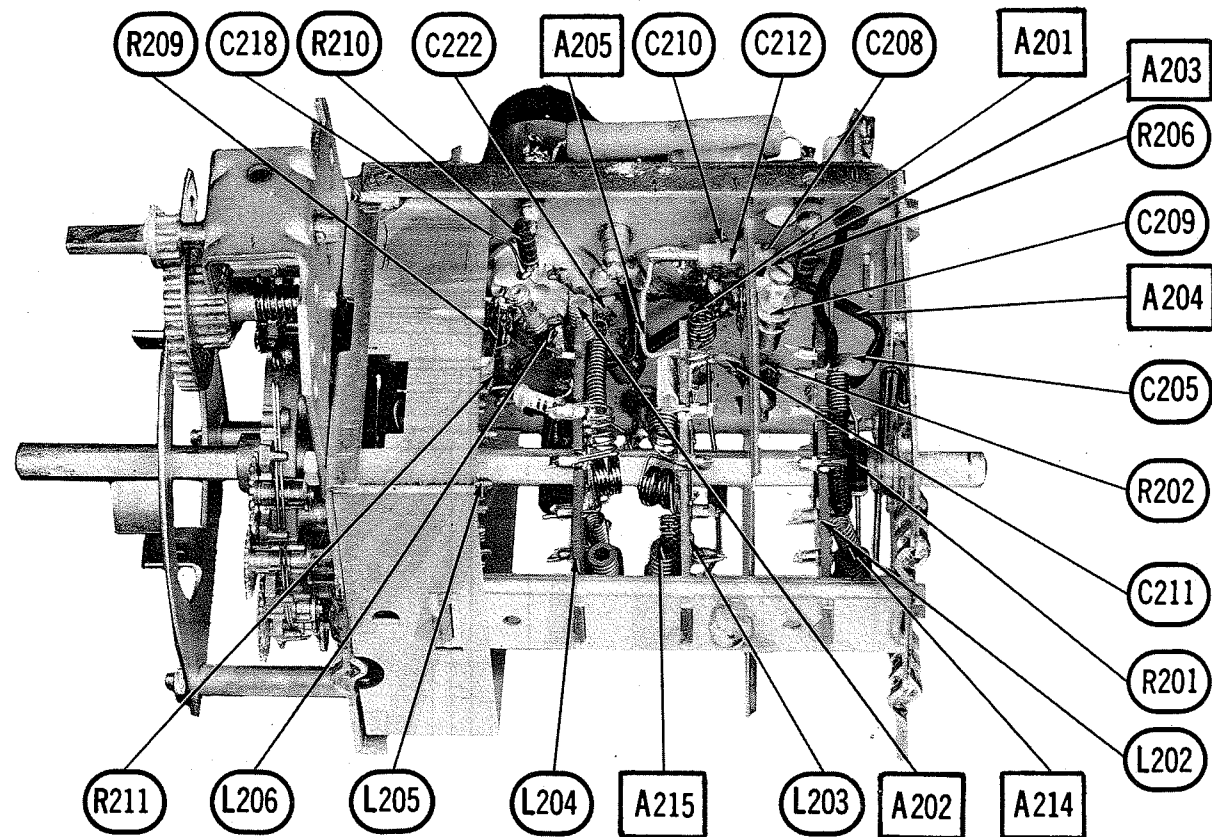
VHF TUNER WITH UHF PROVISIONS ET86X125



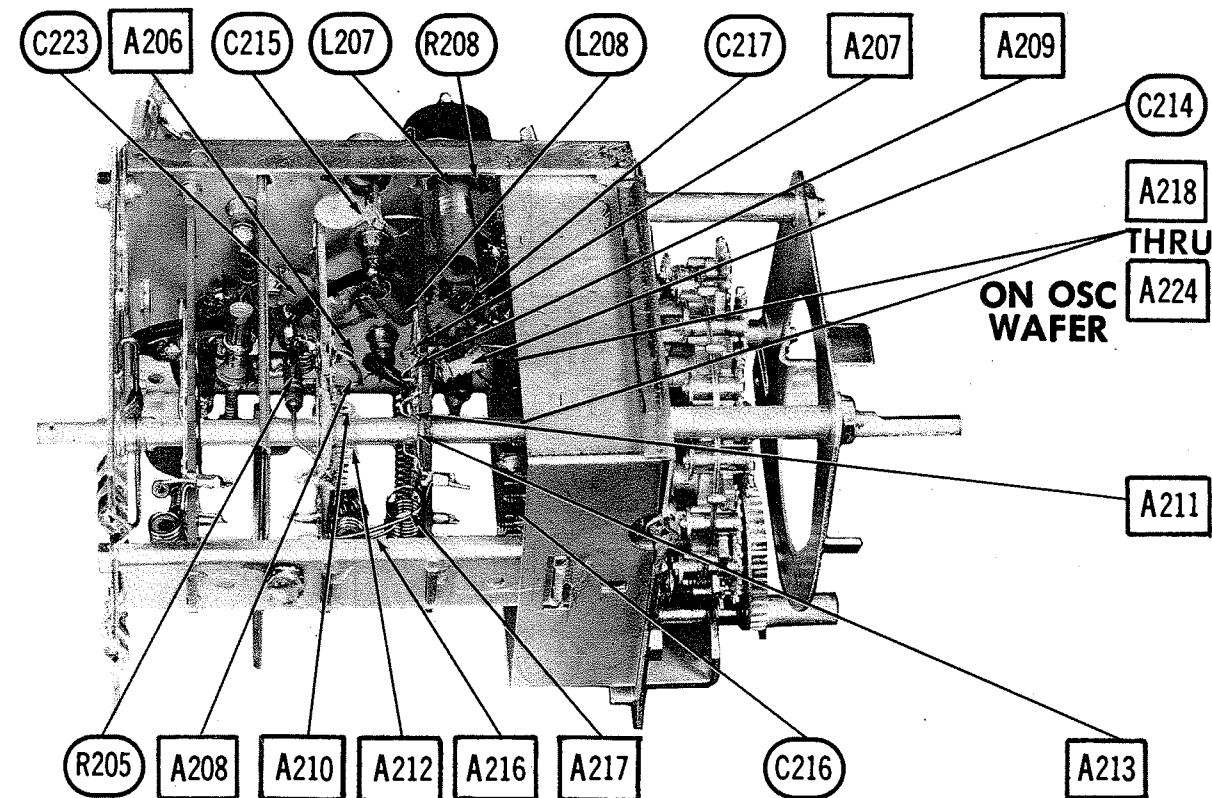
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VHF TUNER ET86X128

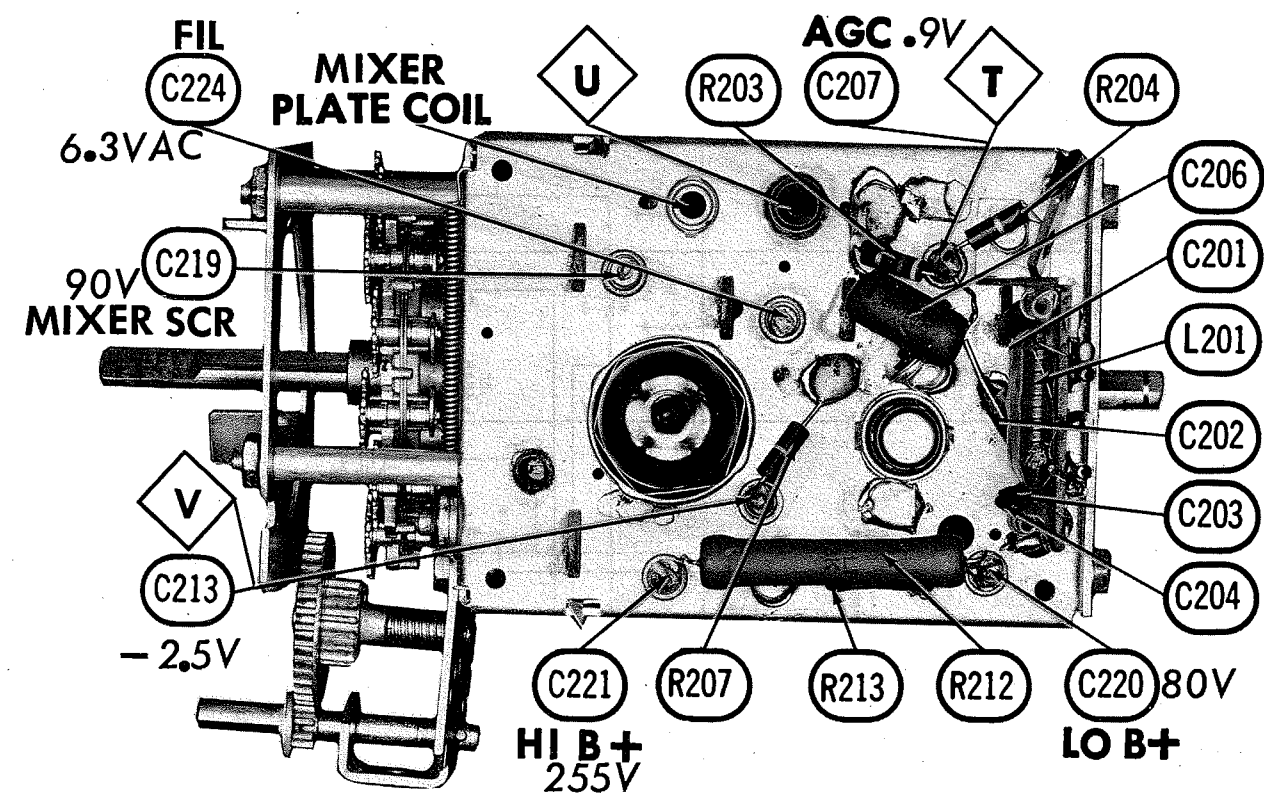
GENERAL ELECTRIC  
CHASSIS CW



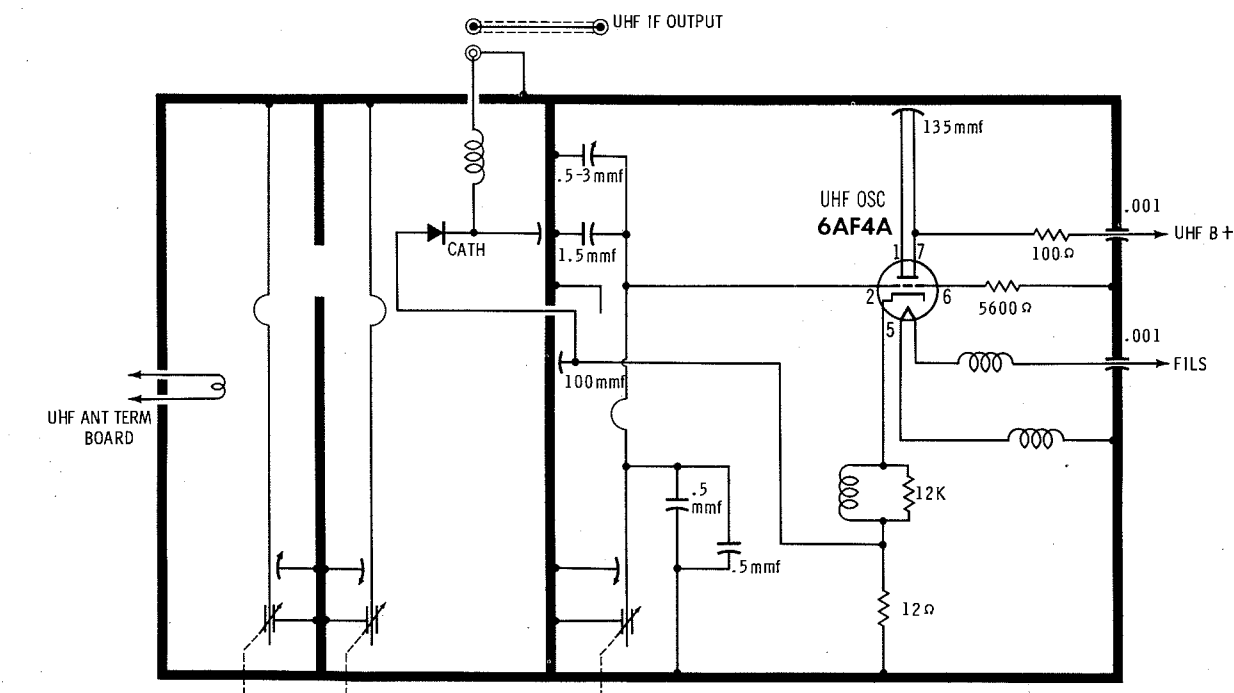
VHF TUNER ET86X128 - RIGHT SIDE



VHF TUNER ET86X128 - LEFT SIDE

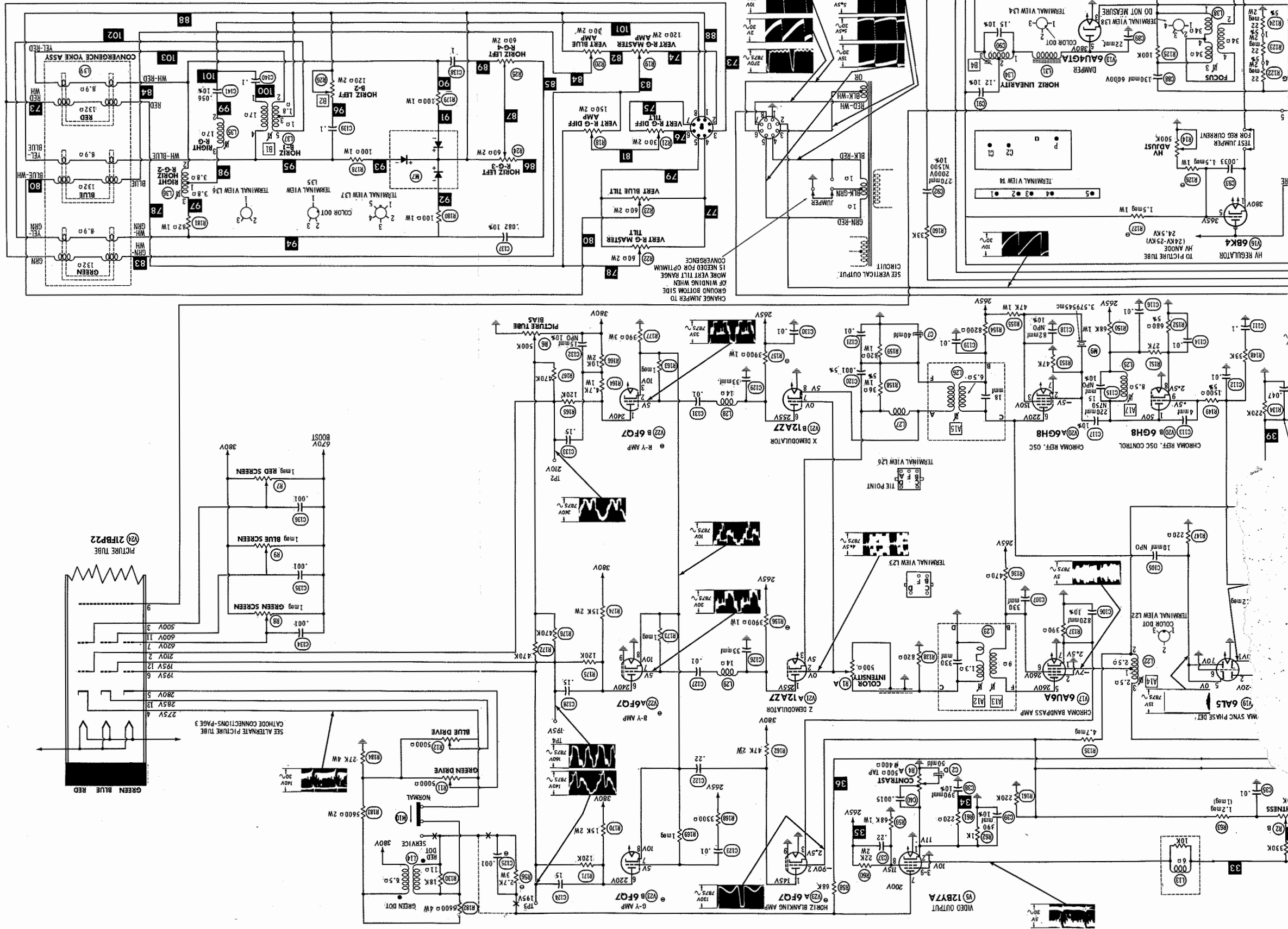


VHF TUNER ET86X128 - TOP VIEW

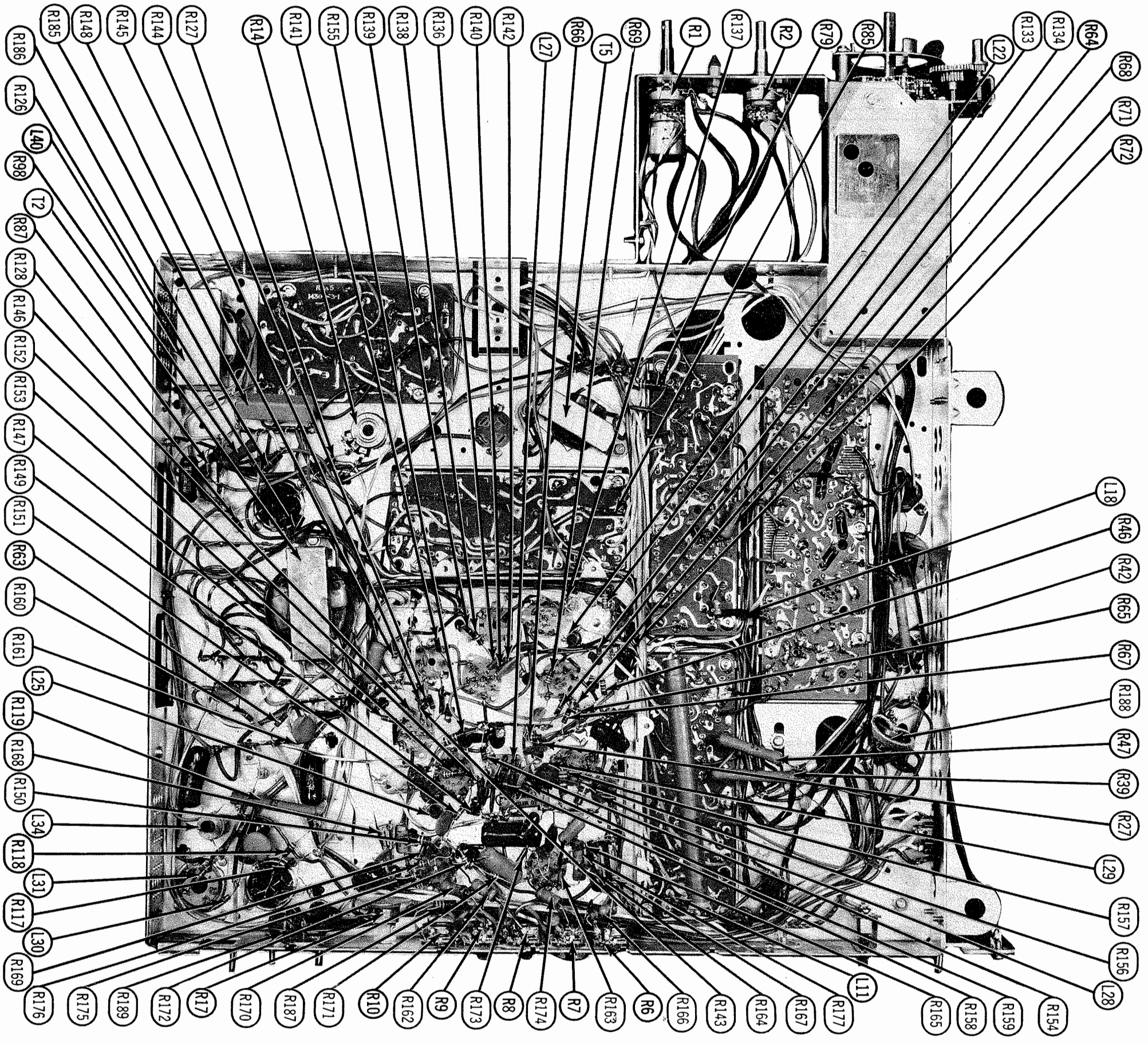


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UHF TUNER ET85X26







CHASSIS BOTTOM VIEW  
RESISTOR, INDUCTOR, TRANSFORMER IDENT.



[illegible][illegible]

**FOLDER 1**

IF PICTURE APPEARS CYAN (BLUE TINGE), CONNECT AS IN FIG. A

IF PICTURE APPEARS MAGENTA (PURPLISH-RED), CONNECT AS IN FIG. B

IF PICTURE APPEARS YELLOW, CONNECT AS IN FIG. C

FIG. A

FIG. B

FIG. C

SET 565 FOLDER 1

TV ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

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 A19 ..... GENERAL CEMENT #8606, 8606L, 8282, 9295  
WALSCO #2526, 2543, 2544, 2545  
A20 ..... GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290  
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

VIDEO IF ALIGNMENT

Remove Horizontal Output Tube.  
Connect the negative lead of a 6 volt bias supply to point Ⓐ. Positive to chassis.  
Connect the negative lead of a 15 volt bias supply to point Ⓑ. Positive to chassis.  
Connect the negative lead of a 15 volt bias supply to pin 2 of V23. Positive to chassis.  
Connect a clip lead from point Ⓒ to chassis. Preset Sound Reject (R16) at 75% clockwise rotation. Preset Adjacent Sound Adjust (R15) at 50% rotation.  
Video IF Shield must be in place during alignment.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	Across antenna terminals.	43.8MC (Unmod.)	4	DC probe thru 10K to point Ⓐ. Common to chassis. Use negative scale.	A1	Adjust for maximum deflection. Use peak with core nearest printed board end of coil. Maintain VTVM reading of 1.5 volts by adjusting signal generator output.
2. "	"	42.5MC	"	"	A2	"
3. "	"	45.75MC	"	"	A3	"
4. "	"	44.0MC	"	"	A4	"
5. "	"	"	"	"	Mixer Plate Coil	Adjust for maximum deflection with peak at top end of coil.
6. "	"	41.25MC	"	"	A5, R16	Adjust A5 and Sound Reject (R16) simultaneously for MINIMUM deflection with slug away from chassis. Reduce bias at point Ⓐ if necessary for sufficient indication.
7. "	"	47.25MC	"	"	A6, R15	Adjust A6 and Adjacent Sound (R15) simultaneously for MINIMUM deflection with slug away from chassis.

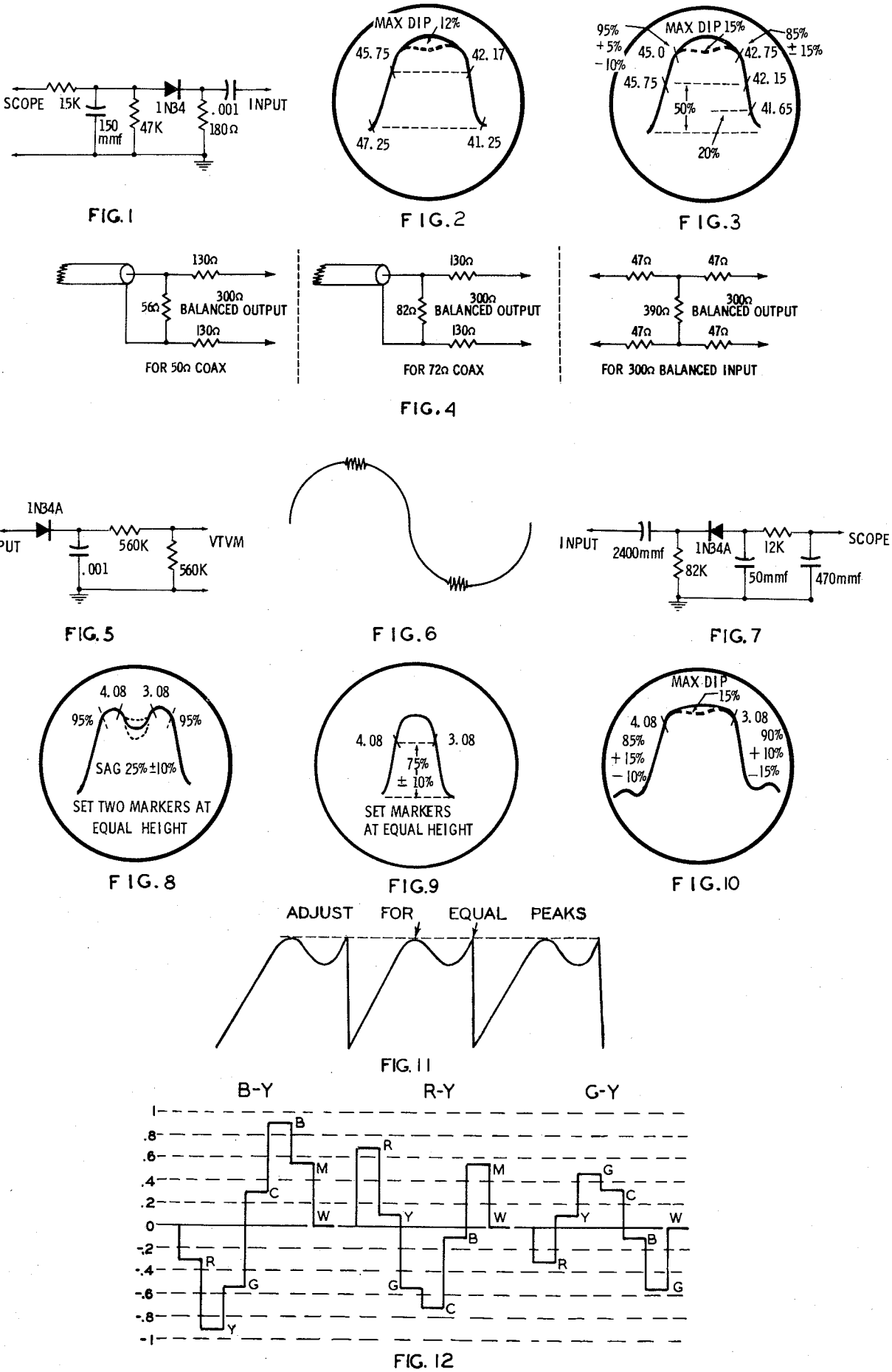
OVERALL VIDEO IF RESPONSE CHECK

The following alignment will require the use of an RCA RF modulator (WG-304A) or similar device.  
Connect bias as under "Video IF Alignment".  
Connect a .001mfd capacitor in series with a 180Ω resistor from pin 5 (plate) of 6GM6 (V2) to chassis with the resistor next to chassis.  
Connect a 1000mfd capacitor across the scope leads.  
The Video IF Shield must be in place during alignment.  
Connect the DC probe of the VTVM to point Ⓐ. Common to chassis. (Use negative scale.)  
Use 10MC sweep unless otherwise noted.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8. Direct	Across antenna terminals.	Unused Channel	42.17MC 45.75MC	Unused Channel	Vert. Amp. thru demodulator probe (Fig. 1) to pin 5 (plate) of 6BZ6 (V1).		Set sweep output for .1 volt peak to peak on scope. Retouch Mixer Plate Coil and A4 for maximum gain and symmetry of response similar to Fig. 2. Reduce bias to -4 volts at point Ⓐ if necessary.
9. "	"	"	47.25MC	"	"		Retouch A6 and R15 to place marker in trap notch as in Fig. 2. Remove capacitor and resistor load from 6GM6 (V2). Increase bias at point Ⓐ to -6 volts. Remove .001mfd and 180Ω from pin 5 of V2.
10. "	"	"	41.65MC 42.17MC 42.75MC 45.0MC 45.75MC	"	Vert. Amp. thru 10K to point Ⓐ. Low side to chassis.		Use 3 volts peak to peak on scope. Retouch A1, A2 and A3 for response similar to Fig. 3 with markers as shown. A1 controls tilt, A2 affects 42.17MC side of curve and A3 affects 45.75MC side. Connect a .001mfd capacitor from point Ⓒ to chassis.
11. "	"	"	41.25MC	"	"		Retouch A5 and R16 to place 41.25MC in trap notch if necessary. Remove .001mfd.
12. Fig. 4	Across VHF Antenna Terminals thru matching network (Fig.4)	All VHF Channels separately	42.17MC 45.0MC 45.75MC	All VHF Channels separately	"		Decrease bias at point Ⓐ to -3 volts. SLIGHTLY retouch A1, A2 and A3 to correct for any overall tilt that is approximately the same on all channels. Repeat step 11.

SEE PAGE 17 FOR WAVEFORMS

TV ALIGNMENT INSTRUCTIONS (cont)



GENERAL ELECTRIC  
CHASSIS CW

FOLDER 1

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools: BI, R-G-1, R-G-2 .....  
GENERAL CEMENT #8282, 8606, 8606-L, 9295, 9440  
WALSCO #2526, 2543, 2544, 2545

Connect a 0-500MA meter in series with the cathode circuit of the Horizontal Output tube (V12). Connect a .47mfd capacitor across the meter terminals. Connect a 0-1500 microammeter in series with the cathode circuit of the HV Regulator (V16). Connect the Vertical Amp. of the scope to point Ⓐ. Low side to chassis. Connect the DC probe of the VTVM thru a high voltage probe to the High Voltage Rectifier "cup". Common to chassis.  
Set the Focus to the center of its range. Set the High Voltage Adjust control at two thirds clockwise rotation.  
Tune the receiver to a station signal and synchronize the picture. Adjust the Horizontal Hold (Waveform Slug) for a waveform similar to Fig. 11 with the round and sharp peaks at equal amplitudes. Keep the picture in sync during this adjustment with the Horizontal Frequency Slug (B3). Adjust the Horizontal Linearity Slug (B4) for MINIMUM current indication on the 500MA meter, not to exceed 200MA.  
Adjust the High Voltage Adjust for 24KV on the VTVM. Check the current reading on the 0-1500 microammeter. It should not exceed 850 microamps.

AGC ADJUSTMENT

Tune in the strongest station signal in the area. Connect the Vertical Amp. of the scope thru a low capacity probe to point Ⓐ. Common to chassis. Adjust the AGC control for 11 volts peak to peak on the scope.

COLOR AFC ALIGNMENT

Set the Color Fidelity control to the center of its range. Turn the Killer control fully counterclockwise. Connect the DC probe of the VTVM thru 470K to pin 1 (cathode) of the Phase Detector (V19). Common to chassis. Connect the Color Bar Generator to the antenna terminals. Connect a short clip lead from pin 1 (grid) of the Burst Amplifier to chassis. Adjust A15 for maximum deflection on the VTVM. If no reading is obtained the 3.58MC Osc. is not operating, in which case A17 should be adjusted to start the Osc. and make the color lock in on the screen. Adjust A15 for maximum deflection.  
Adjust A16 for maximum deflection on the VTVM making sure that the 3.58MC Osc. is running and locked in.  
Remove the clip lead from the grid of the Burst Amplifier. Connect clip lead from TP-1 to chassis. Disconnect VTVM from pin 1 of the Phase Detector. Adjust A17 for zero beat while observing the screen. (Color bars will stand still on the screen or drift very slowly).  
Remove the clip lead from TP-1 and repeat adjustment of A17 using a low chroma low level signal. Adjust for zero beat and best hold.  
Connect the Vertical Amp. of scope to TP-2. Low side to chassis. Observe bar pattern on scope and retouch A16 if necessary to obtain proper response curve similar to R-Y signal in Fig. 12 with equal change when rotating the Color Fidelity control from one extreme to the other. Return the Color Fidelity control to the center of its range. Move the scope connection to TP-4. Check for B-Y signal as shown in Fig. 12. Move the scope connection to TP-3. Check for G-Y signal as shown in Fig. 12.  
With a strong black and white signal, adjust the Killer Threshold control so that all color disappears from the picture. Recheck with a color signal to make sure that the setting is not killing on color.

PRELIMINARY CONVERGENCE ADJUSTMENT

Connect the RF output of a white dot generator to the antenna terminals. Preset all Red, Green and Blue Horizontal and Vertical Convergence controls and coils to the center of their ranges.

Adjust the Red, Green and Blue Convergence Magnets and the Lateral Magnet to produce a white dot in the center of the screen. Keep the receiver in sharp focus while making these adjustments. The Convergence Magnets may be reversed to produce a greater range of adjustment if necessary.

COLOR PURITY ADJUSTMENTS

If necessary, demagnetize picture tube and associated components. Set the red tabs of the Purity Magnet together.  
Loosen the yoke clamp and slide the deflection yoke to the rear as far as possible. Shunt TP-3 & TP-4 to chassis thru individual 100K Resistors.

Slide the Purity Magnet around the neck of the picture tube and at the same time spread the red tabs apart to produce a uniform red screen area at the center of the screen. Move the yoke forward and adjust for best overall red screen without neck shadow. Tighten yoke clamp.

GRAY SCALE ADJUSTMENT

Turn the Bias and Screen controls fully counterclockwise. Move the "Normal-Service" switch on the rear apron of the chassis to "Service" position. Advance the Screen controls so that each control just produces a horizontal line on the screen.  
If any one of the Screen controls fail to provide a line, advance Bias control slightly. Readjust other screen controls so the screen is just lighted. Return the "Normal-Service" switch to "Normal". Alternately adjust Blue and Green Video Drive controls to produce a normal black and white picture. Check the picture from lowlight areas to highlight areas at all brightness levels to check the picture for proper tracking. (See Alternate Cathode Connections - Page 3.)

VERTICAL CONVERGENCE ADJUSTMENTS

Recheck the "Preliminary Convergence Adjustments" for correct setting of the Red, Green and Blue Magnets and Lateral Magnet to produce a white dot in the center of the screen. Loosen the two screws holding the Convergence Board, slide the board to the left and remove. Fasten the board to the two screws provided on the top rear rail of the cabinet with the controls facing forward so that convergence adjustments may be made from the front of the receiver. Slots are provided in the lower edge of the board for making this mounting.  
Switch the dot generator to vertical bars. Connect a 100K Resistor from TP-4 to chassis.  
Referring to the center vertical bar, adjust the Vertical R-G Master Amp. control to converge the red and green bars at the bottom end. Adjust the Vertical R-G Master Tilt to converge the red and green bars at the top end. Touch up both controls for best convergence along the entire length of the center vertical bar. NOTE: Change grounding jumper from Black/Green lead of T2 to Black/Red lead if necessary to provide more vertical tilt range.

Switch the generator to horizontal bars. Referring to the center portion of the lower horizontal bars, adjust the Vertical R-G Differential Amp. control to converge the red and green bars. Adjust the Vertical R-G Differential Tilt control to converge the center portion of the top horizontal green and red bars. Retouch both controls until the center portion of all red and green horizontal bars are converged.  
Switch the generator to the dot or cross hatch pattern and converge the center area of the screen using the convergence magnets. Switch back to the horizontal bars. Remove the 100K Resistor from point TP-4. Advance the Vertical Blue Amp. control to cause displacement of the center portion of the bars at the top and bottom of the screen. Adjust the Vertical Blue Tilt control to cause the vertical displacement of the center portion of the horizontal bars to be equal at top and bottom. Switch the generator to dots or cross hatch and again converge the center area of the screen. Retouch the Vertical Blue Tilt and Amp. controls for best convergence along the vertical center of the screen.

HORIZONTAL CONVERGENCE ADJUSTMENTS

Switch the generator to cross hatch pattern and recheck convergence in the center area.  
Adjust B-1 to make the blue line at the right center a straight line.  
Adjust B-2 to make the blue line from the center to the left side of the screen a straight line.  
Adjust R-G-1 to make the vertical lines at the right side of the screen converge.  
Adjust R-G-2 to make the horizontal red and green lines at the right side converge.  
Adjust B-1 to make the blue line at the right center fall on the converged red and green line. Retouch R-G-1 for convergence of the vertical lines at the right side.  
Adjust R-G-3 to make vertical lines at the left side converge. Adjust R-G-4 to make the red and green horizontal lines at the left side of the screen converge. After adjusting R-G-4 repeat the adjustment of R-G-3 to compensate for any interaction. Retouch B-2 to make the blue line at the left center fall on the converged red and green lines.  
The screen should now show proper convergence.  
After completion of the vertical and horizontal convergence, repeat the Gray Scale Adjustment.

TV ALIGNMENT INSTRUCTIONS (cont)

SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point Ⓐ. Positive to chassis. In the following steps, the signal level may be reduced by disconnecting the lead from the terminal at point Ⓐ and connecting a 1meg potentiometer from point Ⓐ to chassis. The lead is then connected to the center arm of the control. This control is then used to control the level of the signal applied to the Sound IF strip. Start alignment with the control turned to maximum signal.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13. .001mfd	High side to point Ⓐ. Low side to chassis.	4.5MC (Unmod.)	Any non-interfering channel	DC probe thru diode probe (Fig.5) to pin 1 (grid) of 6DT6A (V8). Common to chassis. Connect scope across voice coil of speaker.	A7	Connect a jumper from pin 7 (grid) of V8 to chassis. Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Use peak with slug nearest top of coil form.
14. "	"	"	"	"	A8, A9	Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Peak with maximum core separation. Repeat steps 13 and 14.
15.	Remove the diode probe and jumper. Turn off signal generator and tune in strongest signal in the area. Set volume control for normal volume. Set A10 so that core is flush with top of coil form. Observe scope and listen to sound. Change bias at point Ⓐ to zero. Adjust A10 clockwise to a peak. Continue clockwise to second louder peak and adjust for maximum output at this second peak. Gradually decrease signal until sound become distorted. Maintain distorted signal and adjust A8 for maximum output.					

ALTERNATE SOUND IF ALIGNMENT USING FM GENERATOR

Connect the negative lead of a 10 volt bias supply to point Ⓐ. Positive to chassis.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13. .001mfd	High side to point Ⓐ. Low side to chassis.	4.5MC (400v FM Mod. 15KC Swp.)	Any non-interfering channel	DC probe thru diode probe (Fig.5) to pin 1 (grid) of 6DT6A (V8).	A7	Connect a jumper from pin 7 (grid) of V8 to chassis. Adjust for maximum deflection. Set generator for 1 volt on VTVM. Use peak with slug nearest top of coil form.
14. "	"	"	"	"	A8, A9	Adjust for maximum deflection. Set generator for 1 volt on VTVM. Remove VTVM, diode probe and jumper.
15.	"	"	"	Use SCOPE Across speaker voice	A10	Starting with the slug fully counterclockwise, adjust to a peak. Continue turning clockwise until a second peak is reached and adjust for maximum at this second peak. Decrease signal until detector breaks out of lock as indicated by jagged portions of the sine wave on the scope. Retouch A8 for symmetrical breakout similar to Fig. 6.

4.5MC TRAP ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
16. .001mfd	High side to point Ⓐ. Low side to chassis.	4.5MC (400v AM)	Any non-interfering channel	Use SCOPE Across speaker voice coil	A11	Adjust for MINIMUM 400v indication on scope.

CHROMA BANDPASS ALIGNMENT

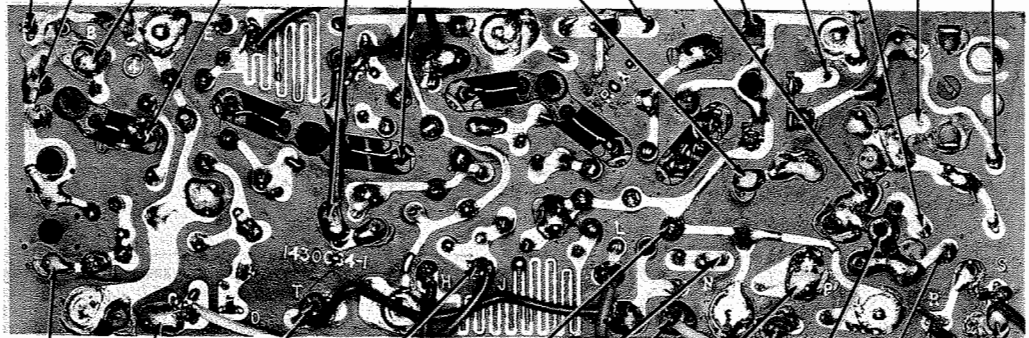
Connect the negative lead of a 7 volt bias supply to point Ⓐ. Positive to chassis. Connect a clip lead from point Ⓐ to chassis. Turn Color Intensity Control fully clockwise.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7. .1mfd	High side to pin 1 (grid) of 6AU6A (V17). Low side to chassis	3.58MC (3-5MC Sweep)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru de-modulator probe (Fig. 7) to pin 2 (grid) of 12AZ7 (V21). Low side to chassis.	A12, A13	Adjust for response similar to Fig. 8 with equal marker height.
8. Turn Brightness and Contrast controls fully counterclockwise. Connect 330Ω resistor and 4mfd capacitor in series from Plate (Pin 5) of 6AU6A (V17) to chassis.							
9. Direct	High side of sweep generator to video sweep input of RF modulator. High side of signal generator to picture carrier input of RF modulator. Output of RF modulator across antenna terminals	Sweep Gen. 3MC (6MC Swp.) Set signal generator to unused channel.	3.08MC 4.08MC	Unused channel	Vert. Amp. thru de-modulator probe (Fig. 7) to pin 2 (grid) of 12AZ7 (V21). Low side to chassis.	A14	Remove clip lead between point Ⓐ and chassis. Adjust A14 for response similar to Fig. 9. Peak with core nearest chassis end of coil form.
10. "	"	"	"	"	"		Disconnect the 330Ω resistor and 4mfd capacitor from V17. Check for response similar to Fig. 10. If necessary, retouch A12, A13 and A14 to obtain desired response.

SEE PAGE 17 FOR WAVEFORMS

GENERAL ELECTRIC  
CHASSIS CW

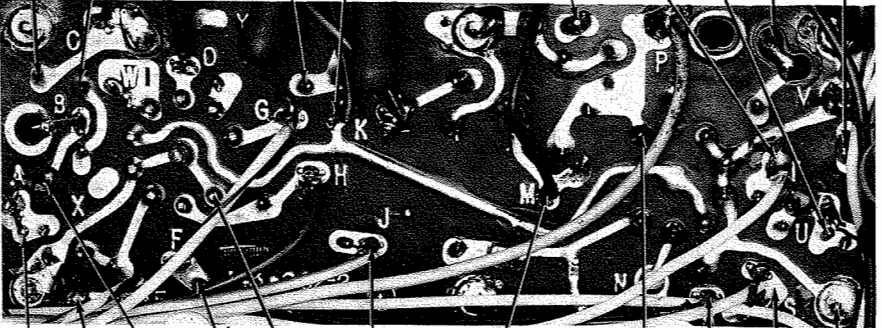
FOLDER 1





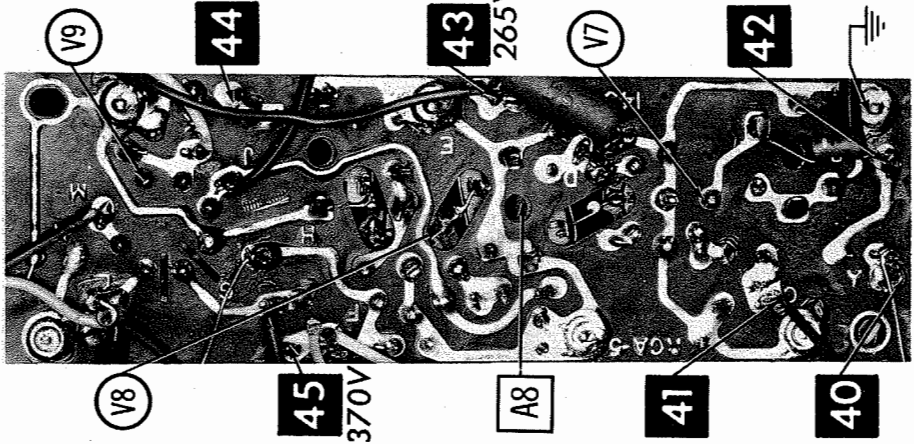
1 3 2 V1 7 V2 18 9 11 10 16 15 14

4 5 6 8 300V V3 22 21 19 20 A1 12 17 13



23 24 26 27 34 32 29 33 30

25 38 28 39 V4 37 35 265V V5 36 31



V9 44 43 265V V7 42

V8 45 370V A8 41 40

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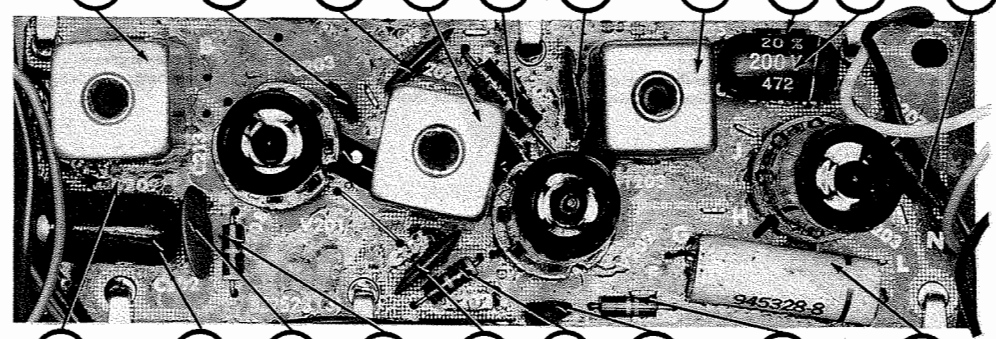
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ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

VIDEO IF - SYNC SEP. PRINTED BOARD

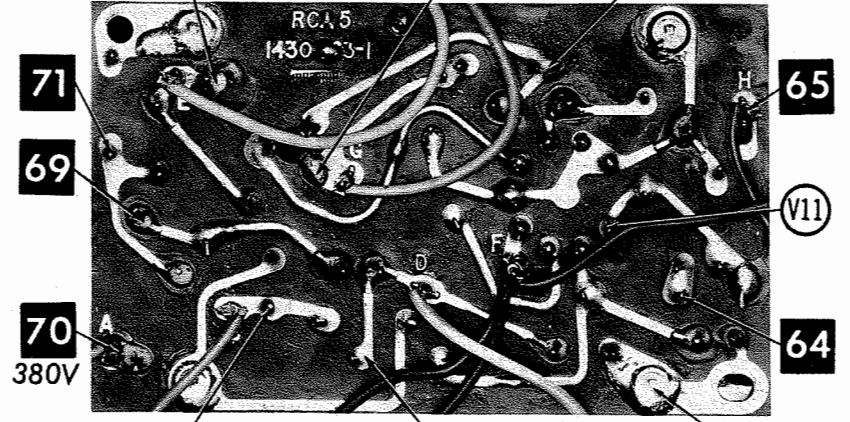
VIDEO AMP. - OUTPUT PRINTED BOARD

SOUND PRINTED BOARD

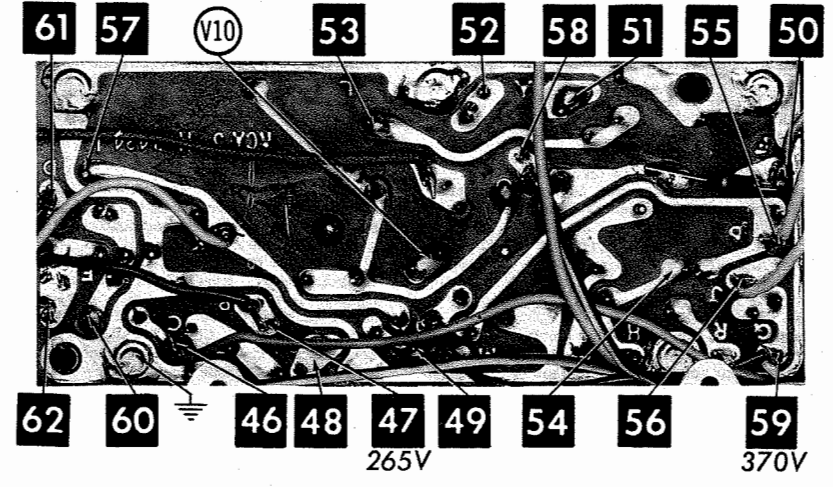


L19 C48 C51 L20 R76 C50 L21 R75 C53 R80

R70 C41 C49 R73 C52 R77 C54 R74 C58



68 66 67 71 69 70 380V 72 63 65 V11 64



61 57 V10 53 52 58 51 55 50

62 60 46 48 47 49 54 56 59 370V

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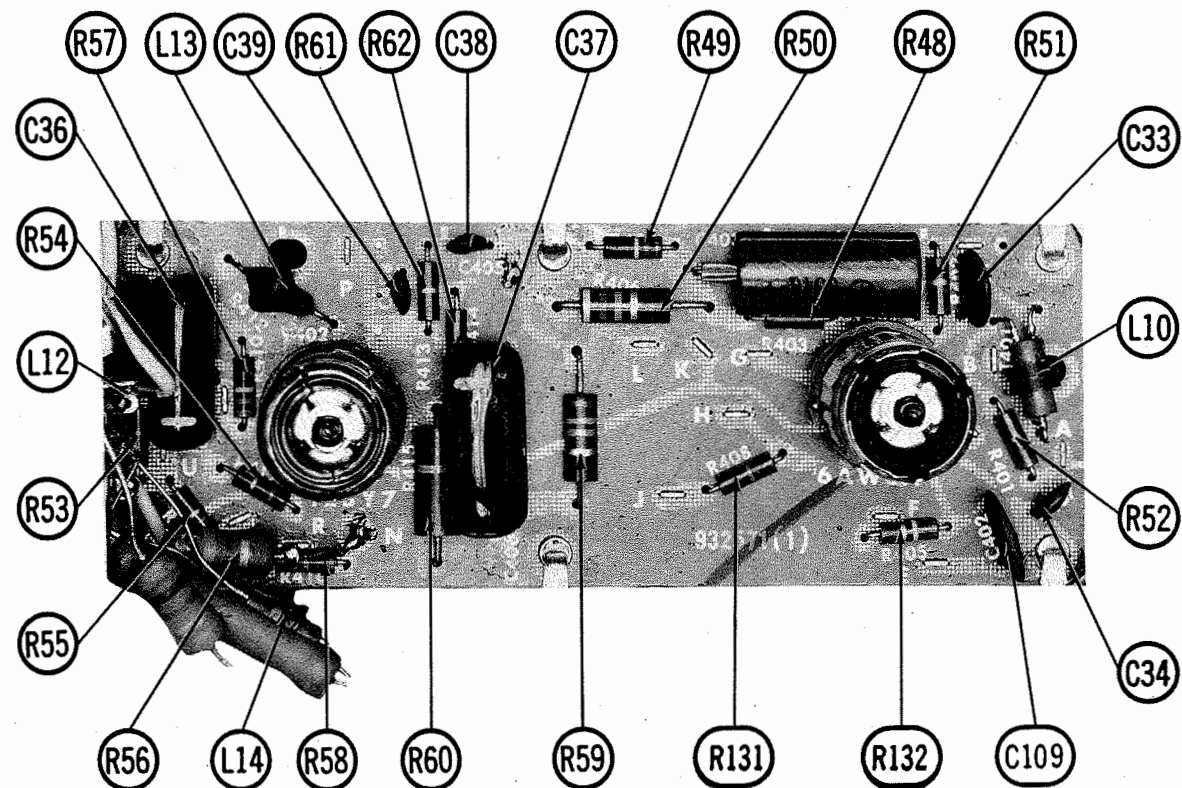
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ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

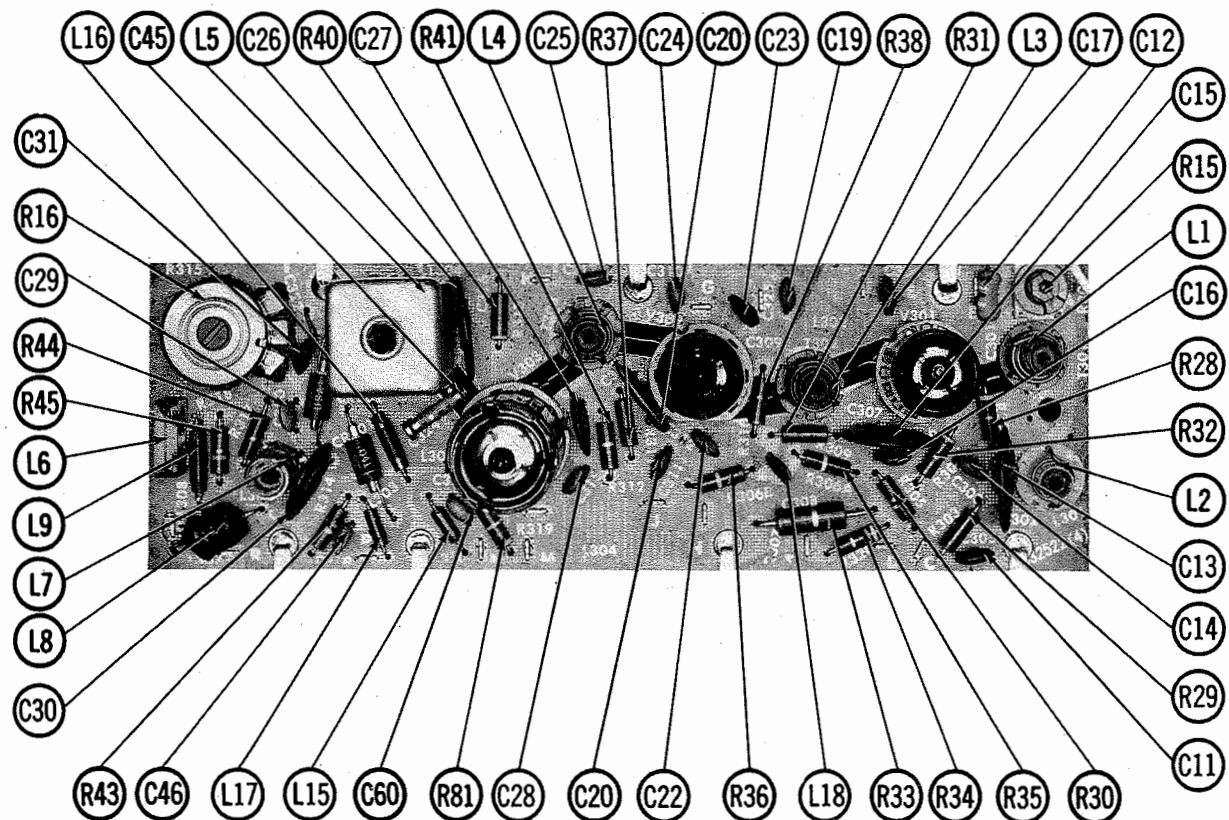
SOUND PRINTED BOARD

HORIZ. AFC - OSC. PRINTED BOARD

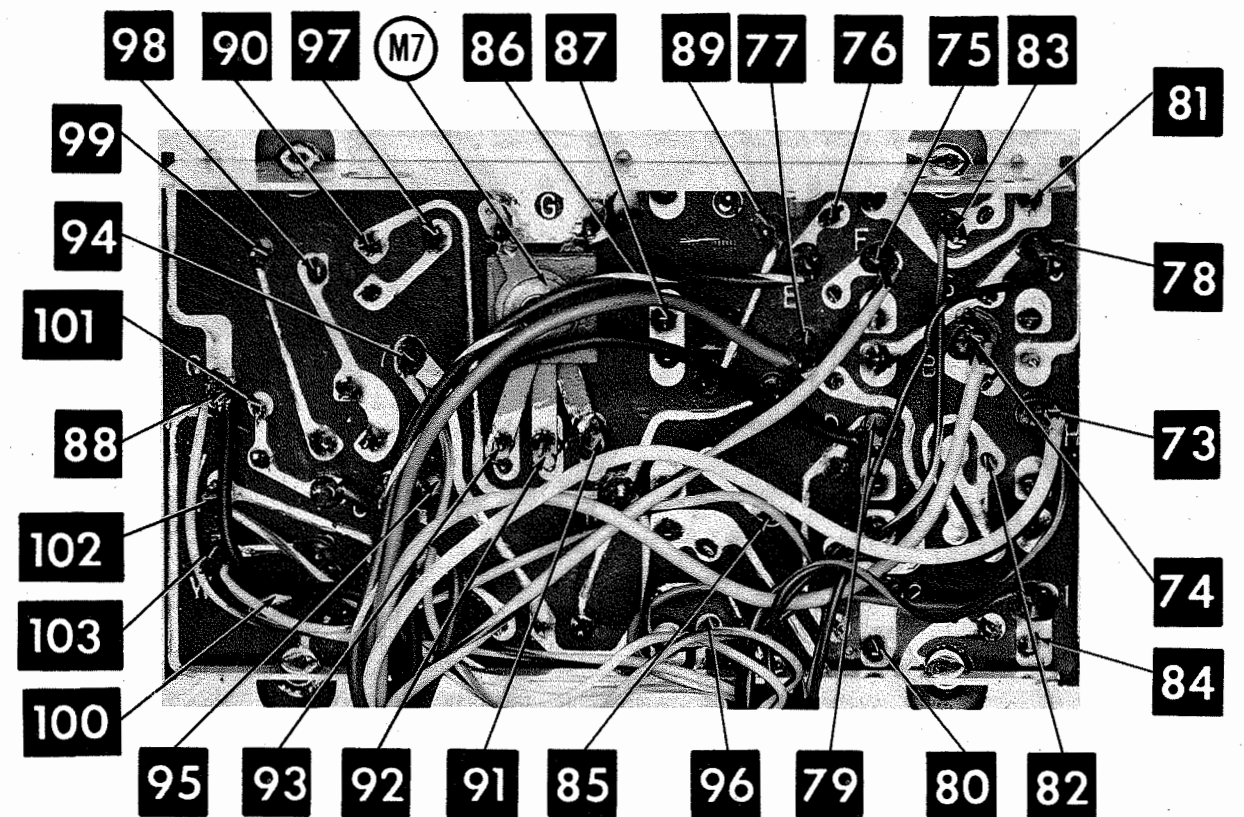
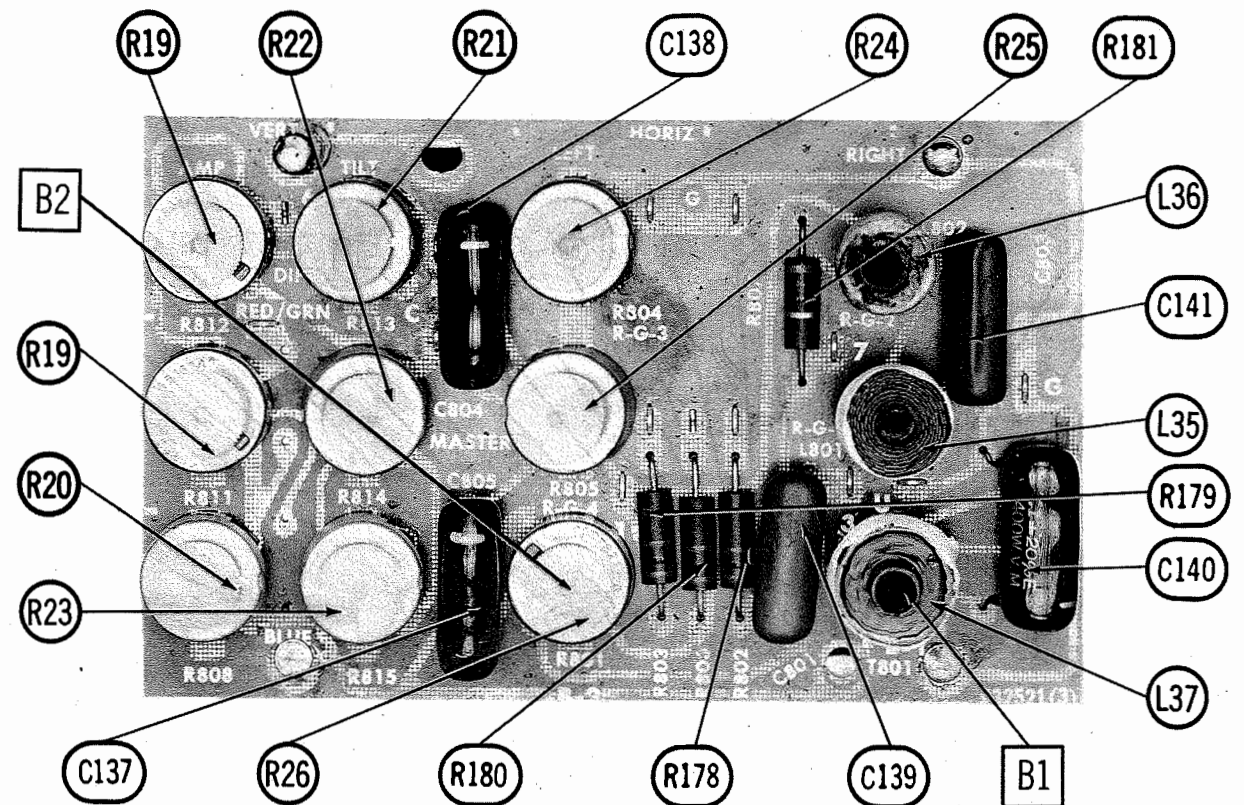
VERT. MULT. - OUTPUT PRINTED BOARD



VIDEO AMP - OUTPUT PRINTED BOARD



VIDEO IF - SYNC SEP. PRINTED BOARD



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

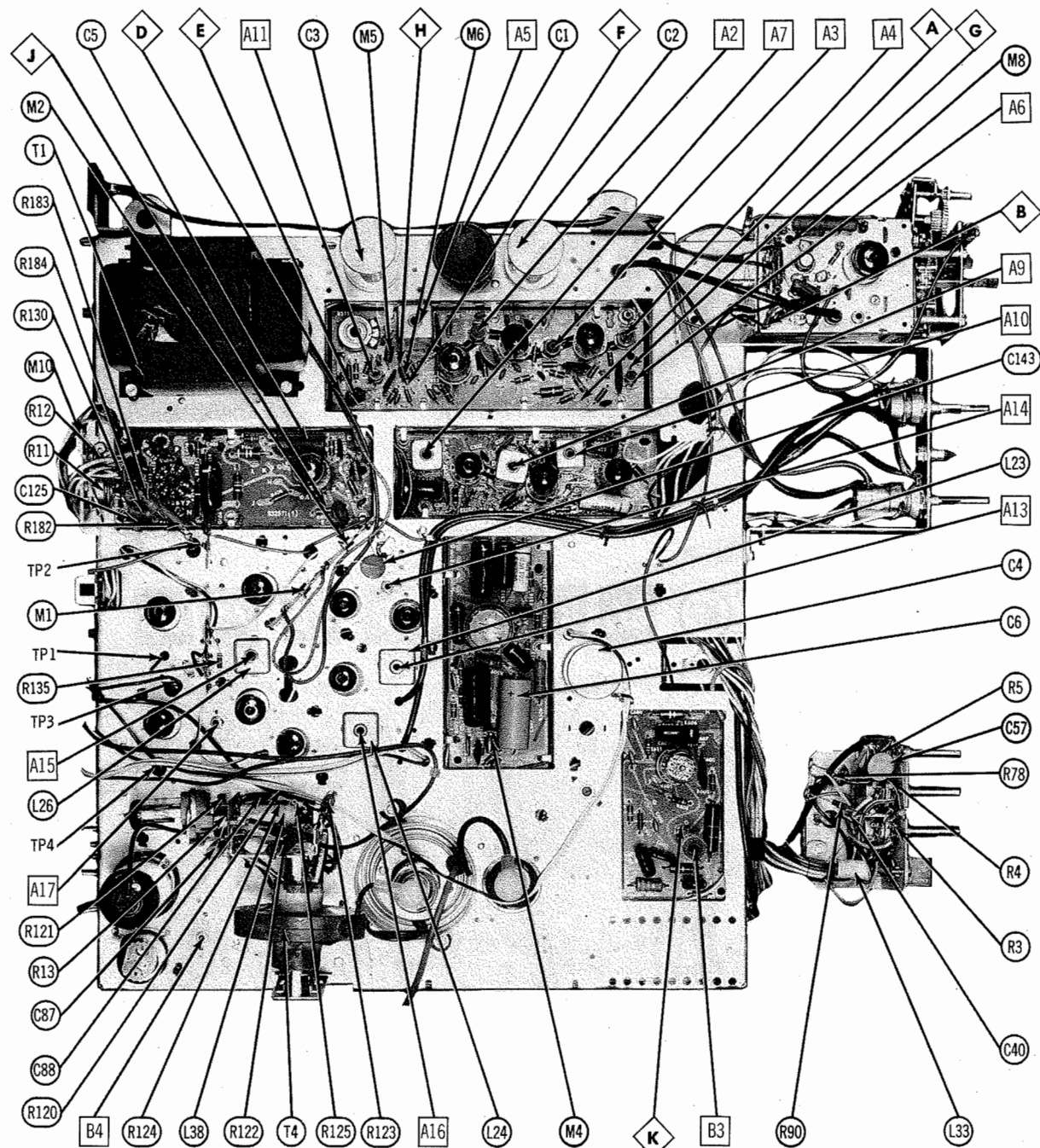
CONVERGENCE PRINTED BOARD

SET 565 FOLDER 1

GENERAL ELECTRIC  
CHASSIS CW

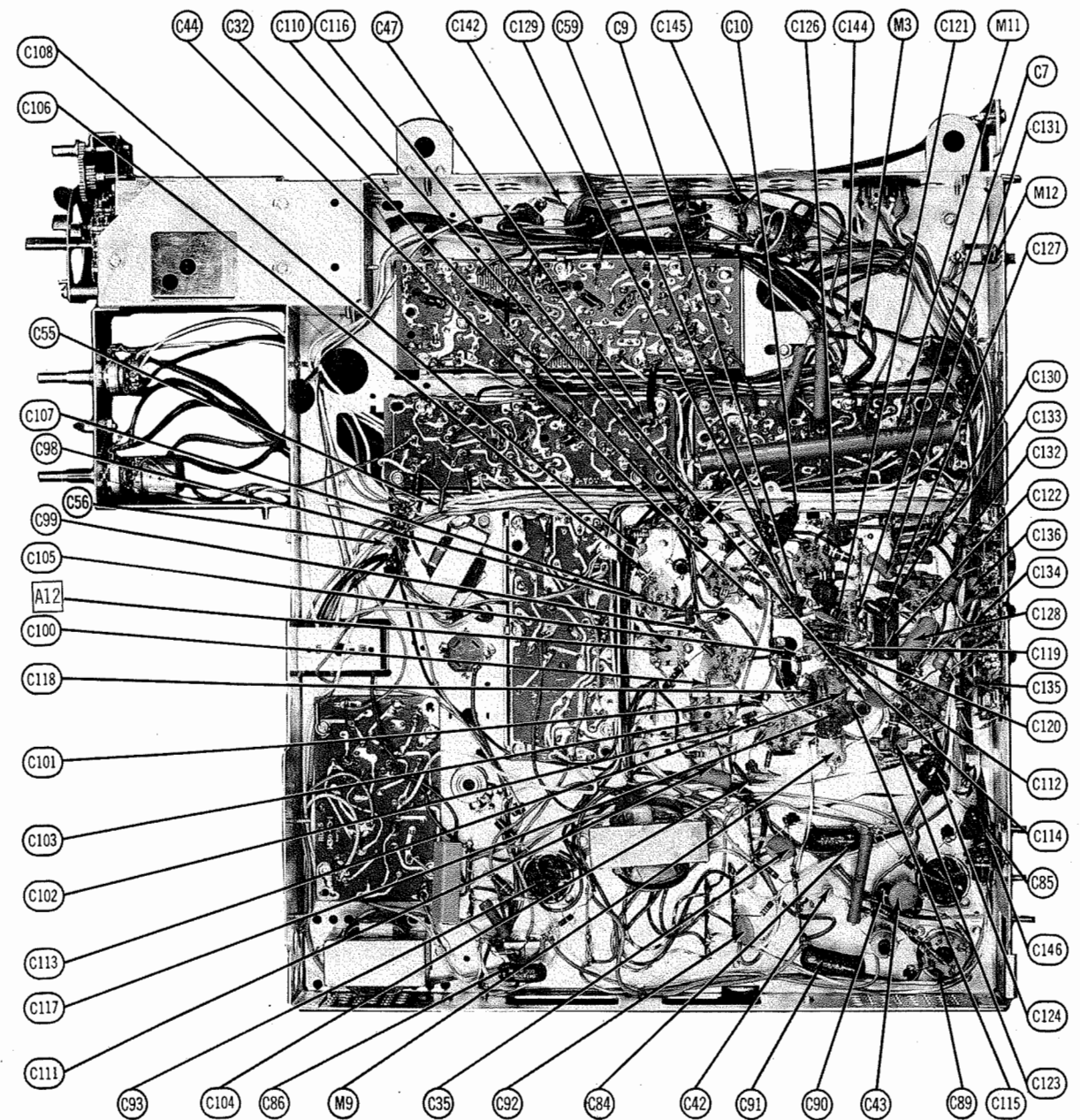
FOLDER 1





TP1 .5V CHROMA REF OSC CONTROL GRID TP3 195V GREEN GUN GRID  
 TP2 210V RED GUN GRID TP4 195V BLUE GUN GRID

CHASSIS-TOP VIEW



CHASSIS BOTTOM VIEW-  
 ALIGNMENT, CAPACITOR, MISC. IDENT.

GENERAL ELECTRIC  
 CHASSIS CW

FOLDER 1



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R163	1meg				R177	390Ω 3W	PW3-390	3G-390	
R164	4700Ω 1W				R178	100Ω 1W			
R165	120K				R179	100Ω 1W			
R166	10K 2W				R180	100Ω 1W			
R167	470K				R181	82Ω 1W			
R168	3300Ω				R182	5600Ω 4W	PW5-5600	4G-5600	
R169	1meg				R183	5600Ω 2W			
R170	15K 2W				R184	27K 4W	PW5-27K	4G-27K	#ET14X156
R171	120K				R185	910Ω 18W			
R172	470K				R186	22K 1W			
R173	1meg				R187	33K 1W			
R174	15K 2W				R188	79Ω (Cold)			#ET14X152
R175	120K				R189	2.2meg			
R176	470K								

Note 1. May not be used in some versions. \* Alternate Value # G. E. Part Number  
Note 2. Some versions may use single 390K for R84 and R85.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		G. E. PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Workman TV PART No.	
L1	1st Video IF	ET6LX125					
L2	47.25MC Trap	ET36X540					
L3	2nd Video IF	ET6LX126					
L4	3rd Video IF	ET6LX127					
L5A	4th Video IF	ET6LX128					
L6	41.25MC Trap						
L7	RF Choke (12uh)	ET36X542	BC-566	4612	RTC-8522	T861	
L8	4.5MC Trap	ET6LX121					
L9	Peaking (62uh)	ET36X544	TV-193	6110	RTC-8573	T302	① Wound on 1meg Resistor.
L10A	RF Choke (1.8uh)	ET36X545	BC-562	4604	RTC-8516	T856	↑ Parallel with 1meg Resistor.
L11	Peaking	ET5LX17					
L12	Peaking (62uh)	ET36X539	TV-193	6110	RTC-8573	T302	
L13	Peaking (82uh)	ET36X547	TV-193	6110	RTC-8573	T302	
L14A	Peaking (120uh)	ET36X548	TV-195	6153	RTC-8585	T307	② Wound on 10K Resistor.
L15	Peaking	ET6LX123					↑ Parallel with 10K Resistor.
L16	RF Choke (1.8uh)	ET36X541	BC-562	4604	RTC-8516	T856	
L17	RF Choke (12uh)	ET36X546	BC-566	4612	RTC-8522	T861	
L18	RF Choke (1.8uh)	ET36X541	BC-562	4604	RTC-8516	T856	
L19	RF Choke (5.6uh)	ET36X538	SW-631	4609	RTC-8518	T820	
L20	1st Sound IF	ET36X543					
L21	2nd Sound IF	ET36X124					
L22	Quadrature	ET56X57					
L23	Chroma Takeoff	ET6LX120					
L24	1st Bandpass	ET6LX129		6023			
L25	Burst Phase Det.	ET6LX130					
L26	Reactance Plate	ET36X550					
L27	Osc.	ET6LX134					
L28	RF Choke (1.5uh)	ET36X551	BC-562	4604	RTC-8516	T856	
L29	Peaking (62uh)	ET36X552	TV-205	6146	RTC-8582	T326	
L30	Peaking (62uh)	ET36X552	TV-205	6146	RTC-8582	T326	
L31	RF Choke (5.6uh)	ET36X536	SW-631	4609	RTC-8518	T820	
L32	RF Choke (5.6uh)	ET36X536	SW-631	4609	RTC-8518	T820	

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							NOTES
		G. E. PART No.	Merit PART No.	Miller PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	Workman TV PART No.	
L32	Horiz. Osc.	ET36X549							
L33	Horiz. Waveform (Horiz. Hold)	ET36X538		6314					
L34	Horiz. Linearity (.28MH-1MH)	ET36X537							
L35	Right Red/Green #1 (3.5MH-7.5MH)	ET36X553							
L36	Right Red/Green #2 (1.1MH-4.5MH)	ET36X554							
L37	Right Horiz. Blue #1 (Pri. 3.6MH-9.4MH) (Sec. .097MH-.15MH)	ET36X555							
L38	Focus Coil	ET36X558							
L39	Convergence Yoke								
A	Blue (Coil & Core)	ET36X557							
B	Red (Coil & Core)	ET36X557							
C	Green (Coil & Core)	ET36X557							

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA					NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 Hz)	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	
L40	.400A	18Ω	.54 Hy.	ET63X59				C-40X

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	117V @ 2.95A	150V @ 1.8A AC	6.3V @ 2.5A	ET88X61					
	SEC. 3	SEC. 4	SEC. 5						
	6.3V @ 11.5A								

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	Vert. Output Yoke (Horiz. 12MH)	ET64X87					
T3	Yoke (Vert. 39MH)	ET76X32					
T4	Horiz. Output	ET77X66					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	G. E. PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T5	8700Ω	3-4Ω	ET6LX132	A-3020	A-3823	26S48	S-18X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	G. E. PART No.	QUAM PART No.	
SP1	5 1/4" 6 1/2" 8" x 9"	PM PM PM	3-4Ω 3-4Ω 6-8Ω	ET95X38 ① ET95X14 ② ET95X30 ③	52A1	① Used in Models M940WMD/WWD/WMP; M941WMD/WWD/WMP; M951WMD/WWD/WMP; M951WMD/WWD/WMP; M961WMD/WWD/WMP; M961WMD/WWD/WMP

POWER RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT (Measured)	G. E. PART No.	RCA PART No.	SARKES TAZIAN PART No.	
M1	.430A	ET57X25	1N1763	F8	
M2	.430A	ET57X25	1N1763	F8	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA			
			G. E. PART No.	LITTELFUSE PART No.	BUSS PART No.	
M3	3 1/2" length #26 Wire		ET10X33			

SIGNAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		G. E. PART No.	GENERAL ELECTRIC PART No.	RAYTHEON PART No.	
M4		ET16X10 *	6GCI *	1N295 *	* Horiz. AFC Diode, Dual Selenium, Common Cath.
M5		ET16X11 *		1N295 *	* Crystal Diode, Video Detector
M6		ET16X11 †		1N295 †	† Crystal Diode, Sound Detector
M7A	Selenium	ET57X26 †			† Selenium, 3 Section, Convergence Circuit
B					
C					

MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M8	Tuner	ET86X128	VHF
M9	Tuner	ET86X125	VHF with UHF Provisions
M10	Tuner	ET86X126	UHF
M11	Crystal	ET41X27	3.58MC
M12	Switch	ET55X40	Normal-Service
M13	Delay Line	ET36X556	
M14	Circuit Breaker	ET10X32	
	Magnet Assembly	ET42X37	Lateral
	Magnet	ET42X36	Convergence (3 Required)

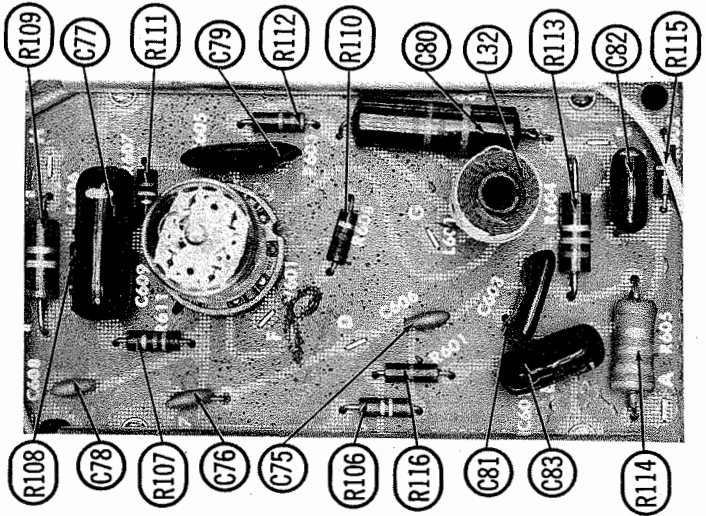
CABINETS & CABINET PARTS

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

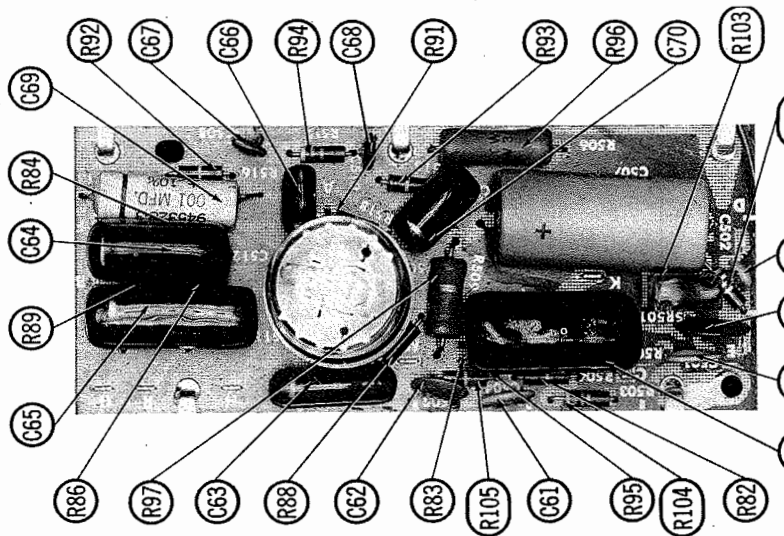
NAME	PART NO.	DESCRIPTION
Safety Glass	ET94X94	
Mask	ET96X87	
Knob	ET43X40	
Knob	ET43X289	Channel Selector
Knob	ET43X403	UHF Tuning, Models M941WMD/WWD/WMP, M951WMD/WWD, M961WMD/WWD/WMP, Compression Ring Pt. #ET3X165
Knob	ET43X399	UHF Channel Indicator, Models M941WMD/WWD/WMP, M951WMD/WWD, M961WMD/WWD/WMP, Compression Ring Pt. #ET3X161
Knob	ET43X401	Fine Tuning, Compression Ring Pt. #ET3X172
Knob	ET43X392	On-Off Volume, Brightness
Knob	ET43X402	Horizontal, Vertical, Contrast, Tone
Cabinet	ET97X483	Hue (Tint), Color Intensity
Cabinet	ET97X484	Mahogany, Less Legs and Stretcher, Models M940WMD, M941WMD
Cabinet	ET97X485	Walnut, Less Base, Models M940WMD, M941WMD
Cabinet	ET97X490	Maple, Less Base, Models M940WMP, M941WMP
Cabinet	ET97X491	Mahogany, Models M950WMD, M951WMD
Cabinet	ET97X491	Walnut, Models M950WMD, M951WMD
Cabinet	ET97X497	Mahogany, Models M960WMD, M961WMD
Cabinet	ET97X498	Walnut, Models M960WMD, M961WMD
Cabinet	ET97X499	Maple, Models M960WMP, M961WMP

WIRING DATA

High Voltage Lead .....	Use BELDEN No. 8889
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. 8495 (Round) - 5 Conductor
	8488 (Round) - 6 Conductor



HORIZ. AFC-OSC. PRINTED BOARD  
GENERAL ELECTRIC  
CHASSIS CW



VERT. MULTI-OUTPUT PRINTED BOARD  
FOLDER 1

## PARTS LIST AND DESCRIPTIONS

## TUBES

GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6	V14	HY Rectifier	3A3			
V2	2nd Video IF Amp.	6GM6	V15	Focus Rectifier	1V2			
V3	3rd Video IF Amp. - Sync Sep.	6AW8A	V16	HY Regulator	6BK4			
V4	Video Amp. - Color Killer	6AW8A	V17	Chroma Bandpass Amp.	6AU6A			
V5	Video Output	12BY7A	V18	Burst Amp.	6EW8			
V6	AGC Keying - Noise Inv.	6DT8A	V19	Chroma Sync Phase Det.	6AL5			
V7	Sound IF Amp.	6EW8	V20	Chroma Ref. Osc. Control				
V8	Audio Detector	6DT8A	V21	X Demodulator - Z Modulator	6GH8			
V9	Audio Output	6AQ5A						
V10	Vert. Mult. - Vert. Output	6EM7	V22	R-Y Amp. - B-Y Amp.	12AZ7			
V11	Horiz. AFC - Horiz. Osc.	6CG7 (6FQ7) *	V23	Horiz. Blanking Amp. - G-Y Amp.	6FQ7 (6CG7) *			
V12	Horiz. Output	6DQ6						
V13	Damper	6AU4GTA						

\* Alternate

## PICTURE TUBE

REPLACEMENT DATA						NOTES
ITEM No.	G. E. PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V24	21FBP22	21FBP22 ①	21FBP22 ①			① Aluminized

## ELECTROLYTIC CAPACITORS

REPLACEMENT DATA								
ITEM No.	RATING		G. E. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	160 250		ET3LX148	AFH1-31-75	XA0315	XC1-19	WP131.5	TMS-1480
C2A	250 250		ET3LX189	AFH54-117-49		XC4-75	FP341.6	TMT-3259
C2B	250 450						TC75	TD-50-50
C3	50 75							
C4	50 50							
C5A	80 450		ET3LX190	AFH4-86-25		XC4-34	FP450.08	TMQ-4589
C5B	80 450							
C5C	10 450							
C6	20 25							
C7	80 25		ET3LX191	AFH1-55	A0510	XC1-8	FP149	TMS-1600
C8	2 350		ET3LX192	PRSL705	BR245	QTL-1	TC595	TD-2-450
C9	50 150		ET3LX193	PRSL480	BR5015	QTL-17	TC48	TD-50-150
C10	40 25		ET3LX194	PRSL470	BR4015	QTL-15	TC48	TD-40-150

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

## FIXED CAPACITORS

REPLACEMENT DATA								
ITEM No.	RATING	REMARKS	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.	
C9	.01		BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C10	.1	200V	P288N-1	DD-104	CUB2P1	2DM-3-104	GEM-201	2TM-P10
C11	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C12	9	NPO 5%	NPO-SI 10	TCZ-10	C10V9C	CCTO-100	CNO-410	10TCC-Q10
C13	150	NPO 5%		DTZ-150			CNO-315	10TCC-T15
C14	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C15	560	N2200 10%						
C16	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C17	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C18	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C19	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C20	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C21	330	10%		DI-330	LIOT33	10TS-T33	GP333	10TS-T33
C22	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C23	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C24	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C25	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C26	560	N1500 5%						
C27	.0022		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C28	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C29	10	N150 10%						
C30	100	N033 10%						
C31	22	N150						
C32	18	NPO						
C33	.0022		NPO-SI 18	TCZ-18	C10Q18C	CCTO-180	CNO-418	10TCC-Q18
C34	.001		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C35	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C36	.01		BPD-001	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C37	.1	200V	P288N-1	DD-104	CUB2P1	2DM-3-104	GEM-201	2TM-P10
C38	.22	200V	P288N-22	DD-391	CUB2P22	2DM-4-224	GEM-2022	2TM-P22
C39	390	10%	DI-390	DD-391	LIOT39	10TS-T39	GP339	10TS-T39
C40	.0015		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C41	.1	400V	P488N-1	DD-104	CUB4P1	4DM-3-104	GEM-201	4TM-P10
C42	180	10%	DI-180	DD-181	LIOT18	10TS-T18	GP318	10TS-T18
C43	56	6000V	HVD-60-56	DD-560	6DQ6-560	6DQ6-560	6DQ6-560	6DQ6-560
C44	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C45	1.5	N3300						
C46	10	N150						
C47	5	N1500 5%						
C48	680							
C49	.01		DI-680	DD-681	BYA10T68	CCD-681	B-388	10TS-T68
C50	.01		BPD-001	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C51	.01		BPD-001	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C52	.01		BPD-001	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C53	.047	200V	P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-2047	4TM-S47
C54	560		DI-560	DD-561	LIOT56	10TS-T56	B-358	10TS-T56
C55	.0068		BPD-0068	DD-682	BYA10D68	CCD-682	B-268	5HK-D68
C56	.001		BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10
C57	.0047		BPD-0047	DD-472	BYA10D47M	CCD-472	B-247	5HK-D47
C58	.0027	1600V 10%			DPMS6D3	16DP-2-302	GEM-1623	MB-D3
C59	.0033		BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C60	150	10%	DI-150	DD-151	LIOT15	10TS-T15	GP315	10TS-T15
C61	.0022		BPD-0022	DD-222	BYA10D22	CCD-222	B-222	5HK-D22
C62	.0015		BPD-0015	DD-152	BYA10D15	CCD-152	B-215	5HK-D15
C63	.027	600V 10%	P684CM-027	DD-103	DPMS6S27	6DP-3-273	GEM-1613	6PS-27
C64	.1	600V	P688N-1	DD-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C65	.22	400V	P488N-22	DD-102	CUB4P22	4DP-5-224	GEM-2022	4TM-P22

## FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOR PART No.	MALLORY PART No.	SPRAGUE PART No.
C66	.0068 400V 10%	#ET26X66	V84C6D68-10%	DD-681	PM6D68	6DP-1-682	GEM-16268	6TM-D68
C67	680		DI-880	DD-681	BYA10T68	CCD-681	B-388	10TS-T68
C68	680		DI-880	DD-681	BYA10T68	CCD-681	B-388	10TS-T68
C69	.001 2000V 10%		P1084CM-0082	DD-822	CUB16D8	16DP-3-802	GEM-16282	MS-D8
C70	.0082 1000V		P288N-47	DD-47	CUB2P47	2DP-5-474	GEM-2047	12TM-P47
C71	.47 200V		NPO-DI 47	DTZ-47	C10Q47C	CCTO-470	CNO-447	10TCC-Q47
C72	.47 NPO 10%		NPO-DI 68	DTZ-68	C10Q68C	CCTO-680	CNO-468	10TCC-Q68
C73	.68 NPO 10%		DI-27	DD-270	LIQ27	CCD-270	GP427	10TS-Q27
C74	.27		DI-680	DD-681	5R5T68	CCD-681	GP368	10TS-T68
C75	.820 10%		DI-820	DD-821	5R5T82	CCD-821	GP382	10TS-T82
C76	820 10%	P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10	
C77	.1 200V	BPD-001	DD-102	BYA10D1	CCD-102	B-210	5HK-D10	
C78	.001	#ET18X460	P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C79	.390 1500V 5%		1489-00068		5R5T68	CM-19B-681J	MCJ249	MS-368
C80	.01 600V		V84C8D15-10%		PM6D15	8DP-1-152	GEM-16215	6TM-D15
C81	.680		P688N-01	D6-103	CUB6S1	6DP-2-103	GEM-611	6TM-S10
C82	.0015 600V 10%		P688N-01	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C83	.01 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C84	.1 600V		P688N-047	DD-503	CUB6S47	6DP-3-473	GEM-6147	6TM-S47
C85	.047 600V		P288N-1	DF-104	CUB2P1	2DP-3-104	GEM-201	2TM-P10
C86	.047 600V		HVD-60-120	DD60-121		6CCD-121		60GA-T12
C87	.1 200V		DI-22	DD-220	LIQ22	CCD-220	GP422	10TS-Q22
C88	130 6000V	V84C2P15-10%		PM2P15	2DP-3-154	GEM-2015	2TM-P15	
C89	.15 200V 10%	#ET18X440						
C90	.12 600V 10%							
C91	.12 600V 10%							
C92	.270 2000V N1500 10%		BPD-0033	DD-332	BPD-0033	VCM-20-271K	B-233	5HK-D33
C93	.0033							
C94	.560 2500V 10%		#ET18X465					
C95	100 3000V 5%		#ET18X455					
C96	.560 2500V 10%		#ET18X465					
C97	.47 4000V							
C98	120 N750							
C99	.01							
C100	.001							
C101	.330 5%							
C102	.330 5%							
C103	.120 10%							
C104	.01							
C105	.10 NPO							
C106	.820 10%							
C107	.330							
C108	.270							
C109	.01							
C110	.047 200V							
C111	.1 200V							
C112	.01							
C113	.4							
C114	.01							
C115	.15 NPO 10%							
C116	.01							
C117	.220 N750 10%							
C118	.82 NPO 10%							
C119	.01							
C120	.001							
C121	.01							
C122	.22 400V							
C123	.01 600V							
C124	.15 400V							
C125	.001							
C126	.33							
C127	.01 600V							
C128	.15 400V							
C129	.33							
C130	.01 600V							
C131	.15 NPO 10%							
C132	.15 400V							
C133	.001							
C134	.001							
C135	.001							
C136	.001							
C137	.082 200V 10%							
C138	.1 200V 10%							
C139	.1 200V							
C140	.1 400V							
C141	.056 400V 10%							
C142	.01							
C143	.01							
C144	.47							
C145	.47 2000V							
C146	.047 600V							