

## PHOTOFACT® Folder

with CIRCUITRACE®

GENERAL ELECTRIC  
CHASSIS DA

## IMPORTANT FILING NOTICE

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

## INDEX

Remote Control RW364 ..... SET 745, FOLDER 3-A



MODEL M403AVY

## CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

TRADE NAME	GENERAL ELECTRIC	Models	Chassis
		M400ASD, M401ASD, M402ABG/AEB/AVY, M403ABG/AEB/ATS/AVY/AWD, M411AFB/AVY, M413ABG/AWD, M415AVY/AWD, PAM403ATS, R413ABG/AWD ..... DA	
SUPPLIER	For current address, see Master Index.		
TYPE SET	Television Receiver with Remote Control used in some models		
TUBES	VHF - Twelve, UHF - One Transistor		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	100 Watts, 1.2 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

SAFETY GLASS

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

FUSE OR FUSE DEVICE

A 1½ Amp. fuse is used for low voltage power supply protection. (See "Tube Placement Chart" for location.)

VHF OSCILLATOR ADJUSTMENT

Set fine tuning at the center of its range and adjust channels 6 through 13 by adjusting the brass tuning slugs through holes in front of the tuner. To adjust channels 2 through 5, use a plastic tool to expand or compress the coils.

AGC

No provision is made to vary the AGC on this receiver.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the horizontal hold is accomplished by the proper setting of the Horizontal Stabilizer Coil, L19. (See "Tube Placement Chart" for location.)

WIDTH

The width may be varied by a Width Coil Slug. (See "Tube Placement Chart" for location.)

FOCUS

No provision is made to vary the focus on this receiver.

CENTERING

Centering is accomplished by 2 magnetic rings located on yoke rear cover.

HOWARD W. SAMS &amp; 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 the particular type of replacement part listed. NA156

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DATE 3-65

SET 745 FOLDER 3

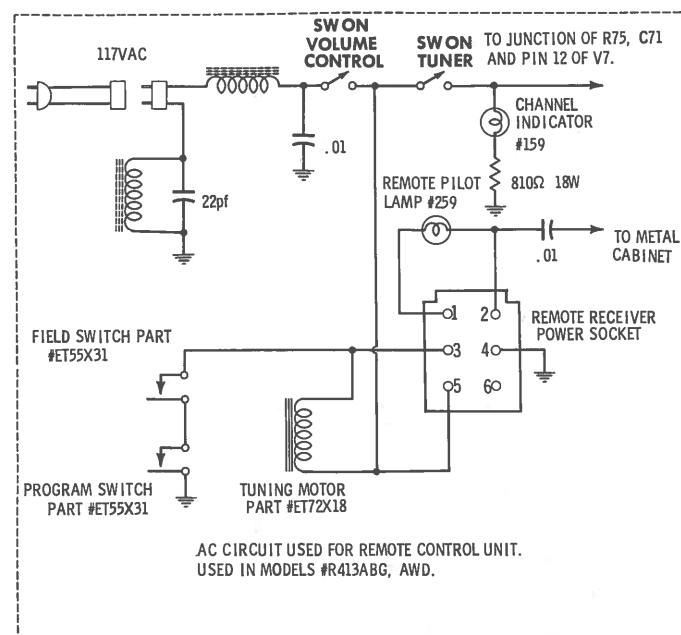


## RESISTANCE MEASUREMENTS

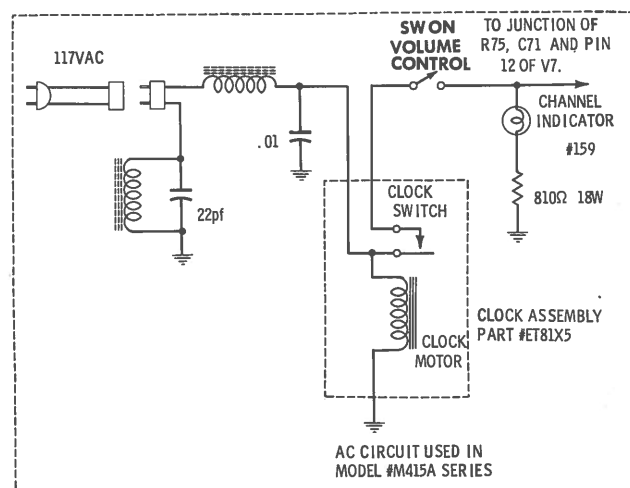
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10	Pin 11	Pin 12
V1	11AR11	19Ω	† 500Ω	† 500Ω	0Ω	220K	18Ω	0Ω	† 500Ω	† 500Ω	220K	33Ω	15Ω
V2	6JN8	† 37K	1.1meg	† 27Ω	19Ω	21Ω	† 500Ω	† 500Ω	180Ω	0Ω			
V3	15BD11	26Ω	† 3800Ω	1.9meg	† 19K	680Ω	100K	0Ω	† 47K	0Ω	† 1500Ω	● 1200Ω	21Ω
V4	17BF11	26Ω	680Ω	9.6Ω	0Ω	470K	† 12K	† 430K	470K	110Ω	† 8200Ω	† 255Ω	31Ω
V5	17JZ8	6Ω	1.7meg	NC	† 167Ω	NC	1.6meg	1.6meg	† 127Ω	0Ω	1.1meg	0Ω	14Ω
V6	8B10	6Ω	1500Ω	2.5meg	† 12K	91K	† 83K	1500Ω	120K	800K	1.2meg	0Ω	3Ω
V7	21HB5A	36Ω	† 587Ω	NC	NC	NC	NC	† 9Ω	NC	NC	0Ω	560K	43Ω
V8	12BT3	31Ω	TP	NC	† 27Ω	NC	TP	3.3meg	NC	NC	NC	TP	36Ω
V9	1K3												TOP CAP † 324Ω
V10	19DVP4	14Ω	NC	† 582K	0Ω	TP	4700Ω	130K	15Ω				
V201	3GK5	0Ω	1.4meg	3Ω	2Ω	† 2200Ω	0Ω	0Ω					
V202	6EA8	† 12K	150K	† 22K	2Ω	0Ω	† 27Ω	0Ω	0Ω	10K			

● READING DEPENDS ON POLARITY OF METER CONNECTIONS.  
NC NO CONNECTION TP TIE POINT

† MEASURED FROM OUTPUT OF X1.  
‡ MEASURED FROM PIN 7 OF V6.

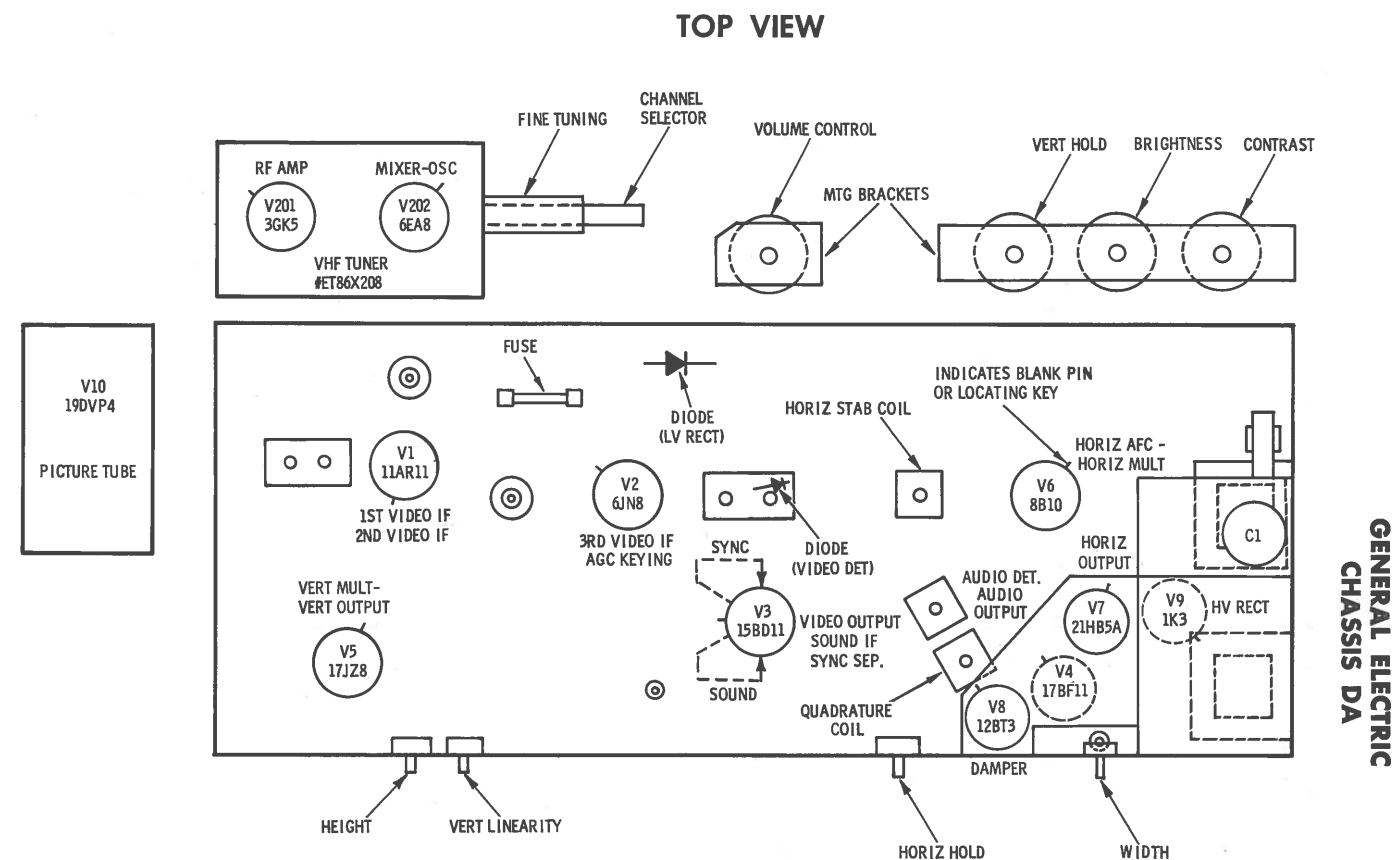


A PHOTOFAC STANDARD NOTATION SCHEMATIC  
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## ALTERNATE LV. POWER SUPPLY

## 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 M1 (Line Fuse), X1

### SWEEP FAILURE

No raster, has sound V6, V7, V8, V9, V10

No vertical deflection V5

Poor vert. linearity or foldover V5

Poor horiz. linearity or foldover V6, V7, V8

Narrow picture V8, V7, V8

Vert. off freq. V5

Horiz. off freq. V6

### LOSS OF PICTURE OR SOUND

No pic, no sound, has raster V1, V2, X2 (Video Det. Diode), V3

No pic, no sound, has snow V201, V202, V1

No pic, has sound, has raster V3, V10

Has pic, no sound V3, V4

Overloaded picture V2

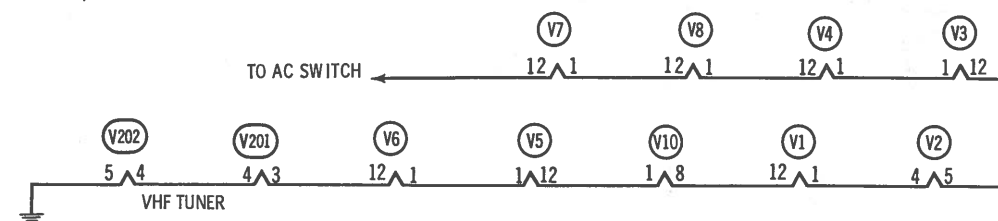
### SYNC FAILURE

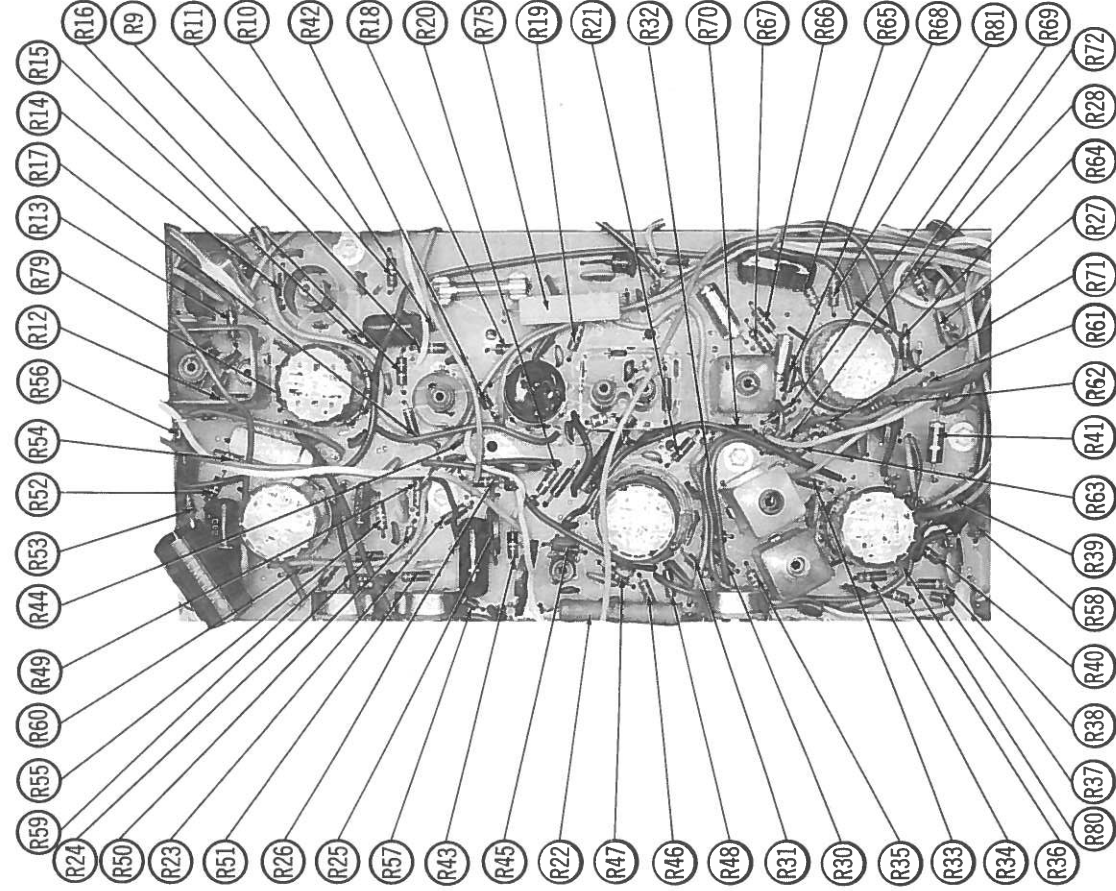
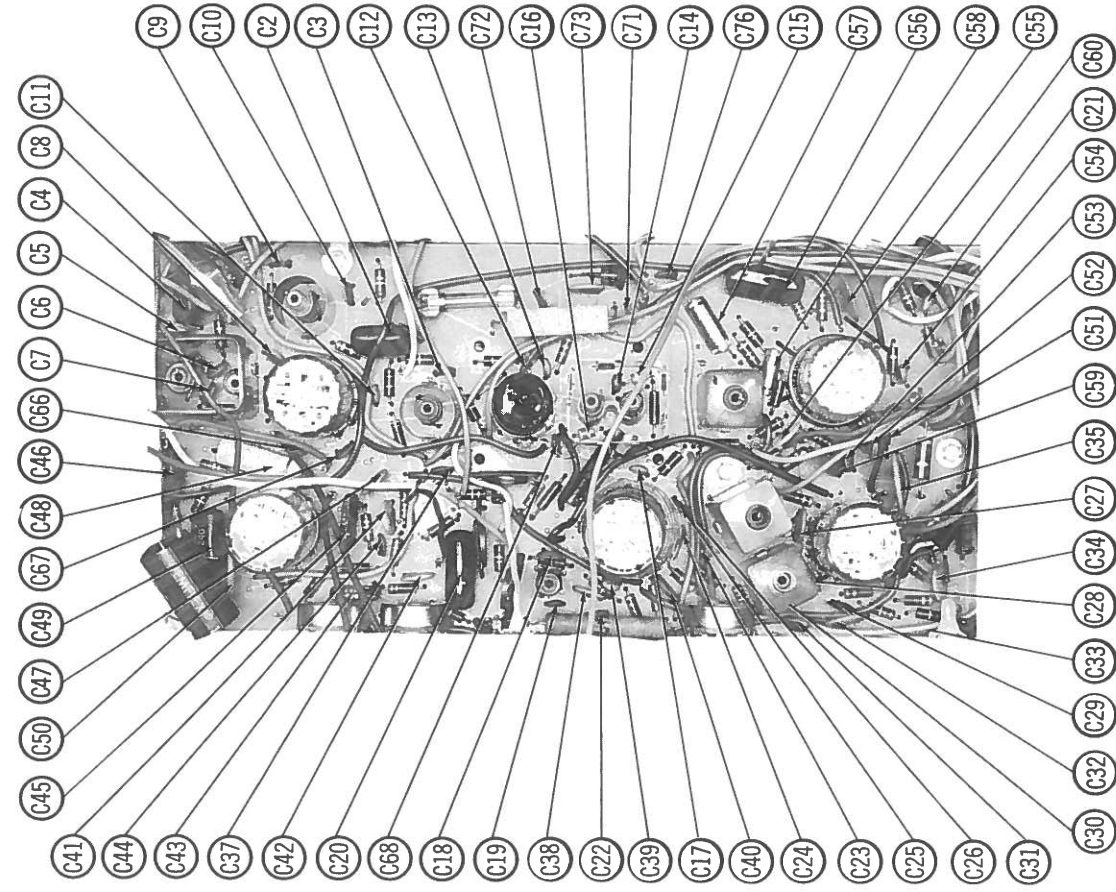
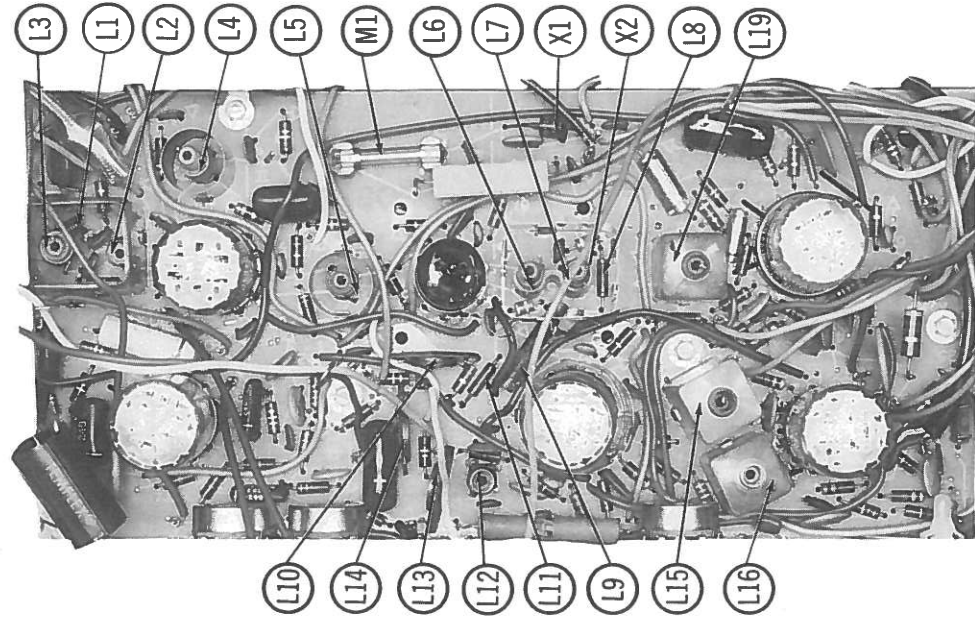
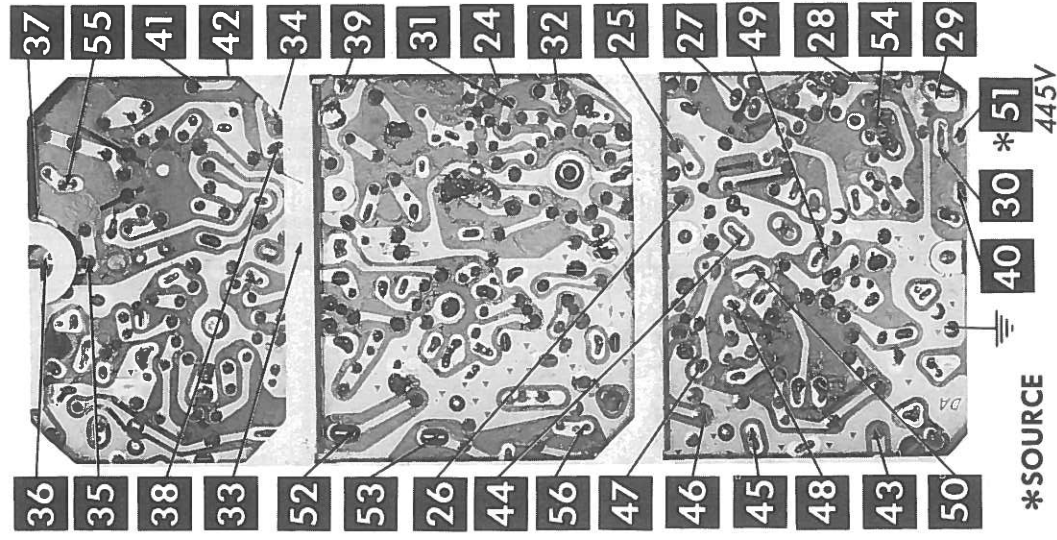
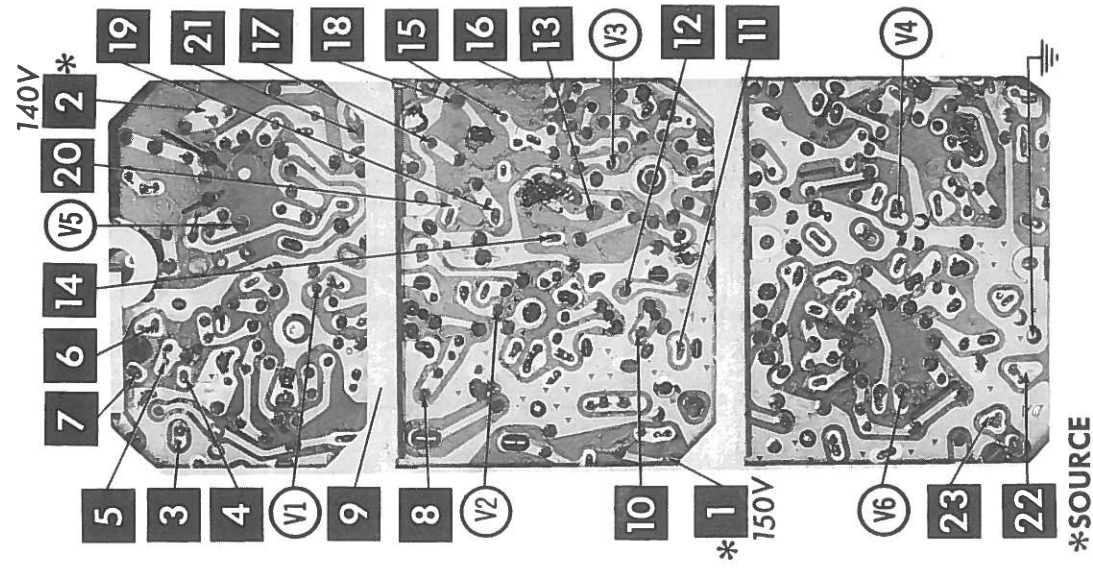
No vert. sync V3

No horiz. sync V3

No vert. or horiz. sync V3

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.)







# VHF TUNER ALIGNMENT INSTRUCTIONS

## OSCILLATOR ADJUSTMENT TUNER ET86X208

Set the fine tuning to the center of its range and adjust Channels 6 thru 13 by adjusting the brass tuning slugs through holes in front of the tuner. To adjust Channels 2 thru 5, use a plastic tool to expand or compress the coils.

## OSCILLATOR ADJUSTMENTS TUNERS ET86X215 and ET86X233

The individual oscillator slugs are accessible one at a time through a hole in the front of the tuner. Set the Fine Tuning to the center of its range and adjust oscillator for best picture and sound on each active channel.

## OSCILLATOR ADJUSTMENTS TUNERS ET86X214 and ET86X232

The oscillator for each channel is preset by means of the fine tuning control. Adjust fine tuning for best picture and sound on each channel.

## OSCILLATOR ADJUSTMENTS TUNER ET86X216

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

## RF AND MIXER ALIGNMENT

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

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	TUNERS ET86X208/216 REMARKS
1.	Across antenna terminals with 120 $\Omega$ in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point $\nabla$ , low side to ground	Gimmick #1	Adjust for maximum gain and symmetry of response similar to Fig. 201 with markers as shown. Expand or compress appropriate coils if necessary.
2.	"	195MC	193.25MC 197.75MC	10	Across Video Det. load resistor.	Gimmick #2	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3.	"	See Chart	See Chart	12 thru 2	Vert. Input to Point $\nabla$ , low side to ground.		Decrease bias. Check response on all channels and make compromise adjustments of Gimmick #1. Expand or compress coils.
	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	TUNERS ET86X214/215/232/233 REMARKS
1.	Across antenna terminals with 120 $\Omega$ in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point $\nabla$ , low side to ground		Expand or compress appropriate coils for maximum gain and symmetry of response similar to Fig. 201 with markers as shown.
2.	"	195MC	193.25MC 197.75MC	10	Across Video Det. load resistor.	Gimmick	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3.	"	See Chart	See Chart	12 thru 2	Vert. Input to Point $\nabla$ , low side to ground.		Decrease bias. Check all channels and make compromise adjustments by expanding or compressing appropriate coils.

## CHANNEL & FREQUENCY CHART

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

SOUND VIDEO

FIG. 201

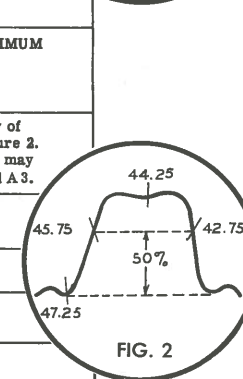
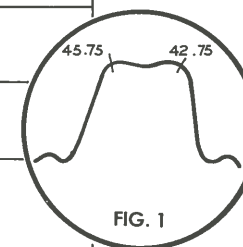
# ALIGNMENT INSTRUCTIONS

Use an isolation transformer and maintain voltage at 117 volts. Allow a 20-minute warm-up period for the receiver and test equipment. Suggested Alignment Tools: A1 thru A10 ..... GENERAL CEMENT #8608, 8869, 9302 ... WALSCO #2511, 2543, 2588 Mixer Plate Coil .. GENERAL CEMENT #9286, 9300, 9302 ... WALSCO #2510, 2511, 2547

## VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Use only enough generator output to provide a usable indication. Note: Response may vary slightly from those shown. Connect a variable bias supply to the IF AGC line (point  $\nabla$ ) and adjust to obtain a response curve which shows no indication of overload. Disable Oscillator section of Mixer-Osc. Set the Channel Selector to any non-interfering channel.

INDICATOR	GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	ADJUST	REMARKS
1.	Connect DC probe of a VTVM thru a 47K resistor to point $\nabla$ . Common to ground.		45.75MC	A1	Adjust for MINIMUM.
2.	Connect DC probe of a VTVM thru a 47K resistor to point $\nabla$ . Common to ground.		44.15MC 45.25MC 42.8MC 42.5MC 45.75MC	A2, A3, A4, A5, A6, Mixer Plate Coil	Adjust for maximum.
3.	Connect vertical input of a scope to point $\nabla$ . Low side to ground.	44MC (10MC Sweep)	42.75MC 45.75MC	A2, A3	Adjust for maximum amplitude and MINIMUM tilt with markers as shown in Figure 1.
4.	Connect vertical input of a scope to point $\nabla$ . Low side to ground.	44MC (10MC Sweep)	42.75MC 44.25MC 45.75MC 47.25MC	A4, A5, A6 & Mixer Plate Coil	Adjust for maximum gain and symmetry of response with markers as shown in Figure 2. In order to obtain a proper response, it may be necessary to slightly retouch A 2 and A 3.

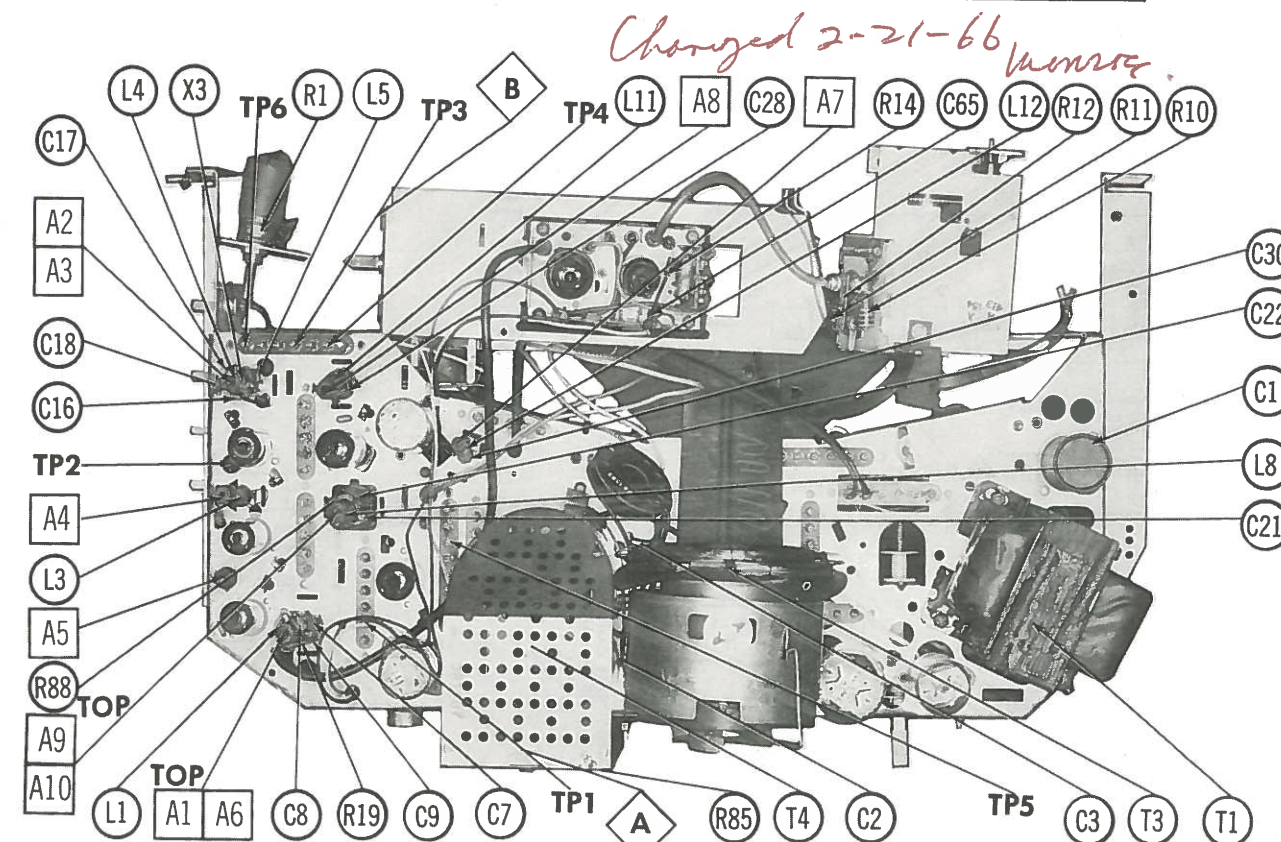


## 4.5 MC TRAP ALIGNMENT

Tune in a strong TV signal and set the Contrast at maximum. Adjust the Fine Tuning until a beat pattern is visible on the screen. Adjust A10 for MINIMUM beat interference.

## SOUND IF ALIGNMENT

Tune in a station and adjust A 7 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce signal while aligning for undistorted output by adjusting A8 and A9.



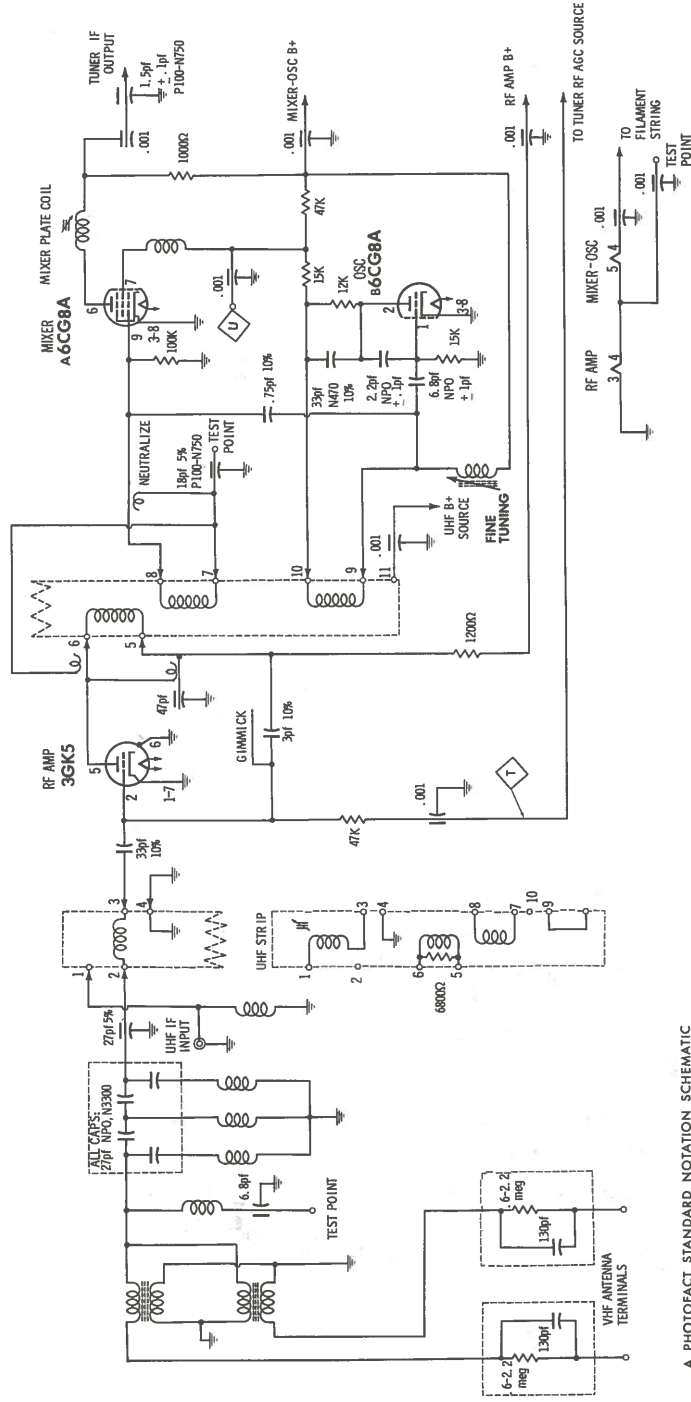
TP1 22V IF AGC TP3 -.1V DETECTOR OUTPUT TP5 10V PICTURE TUBE CATH  
TP2 0V 3RD IF GRID TP4 -.1V NOISE CANCELLER TP6 0V SOUND DET OUTPUT

## CHASSIS—TOP VIEW

SET 745 FOLDER 3

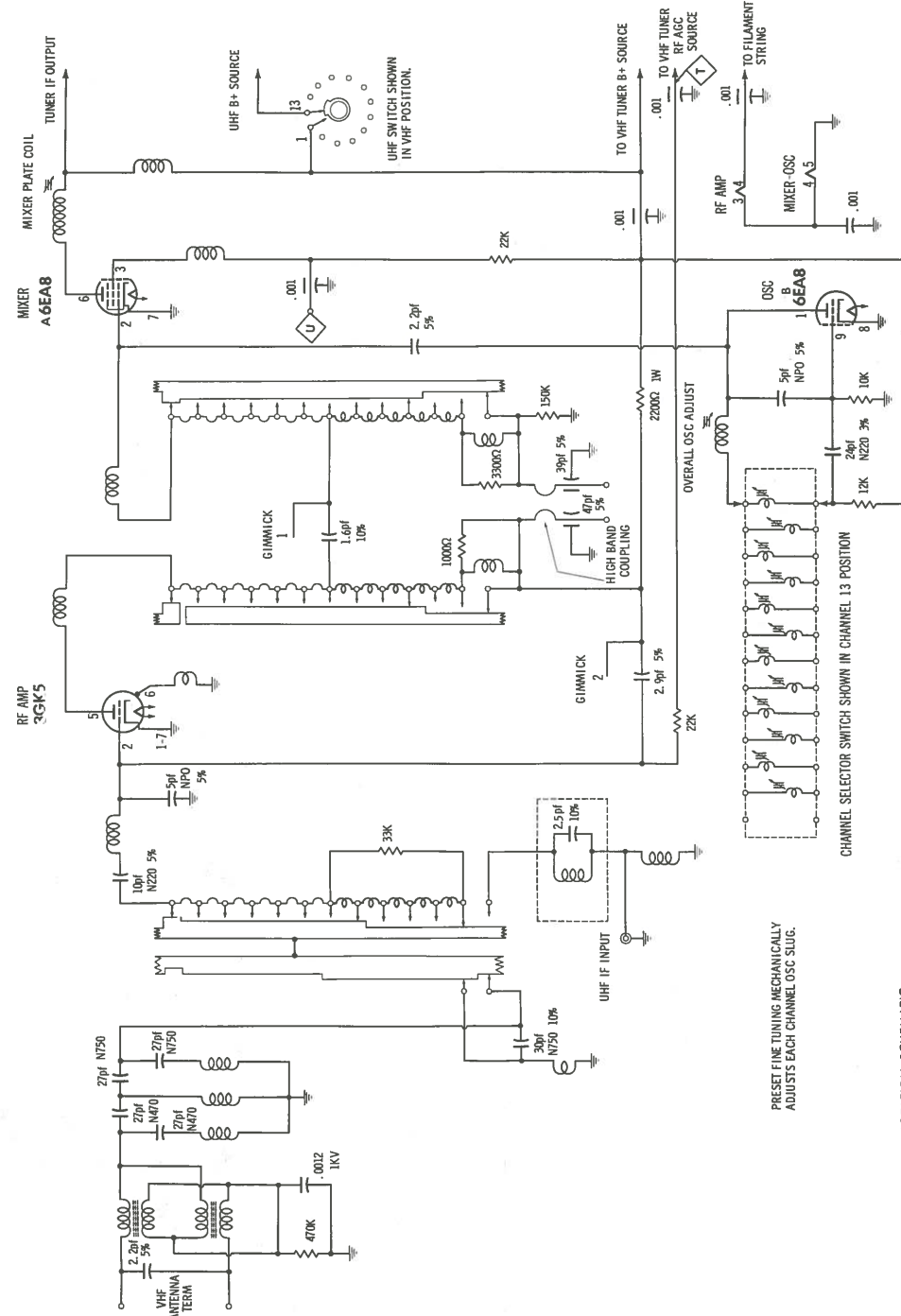
THIS PHOTO GOES  
ON PG 5, 745-4

CONNECTION NOTICE SENT 9/10/65



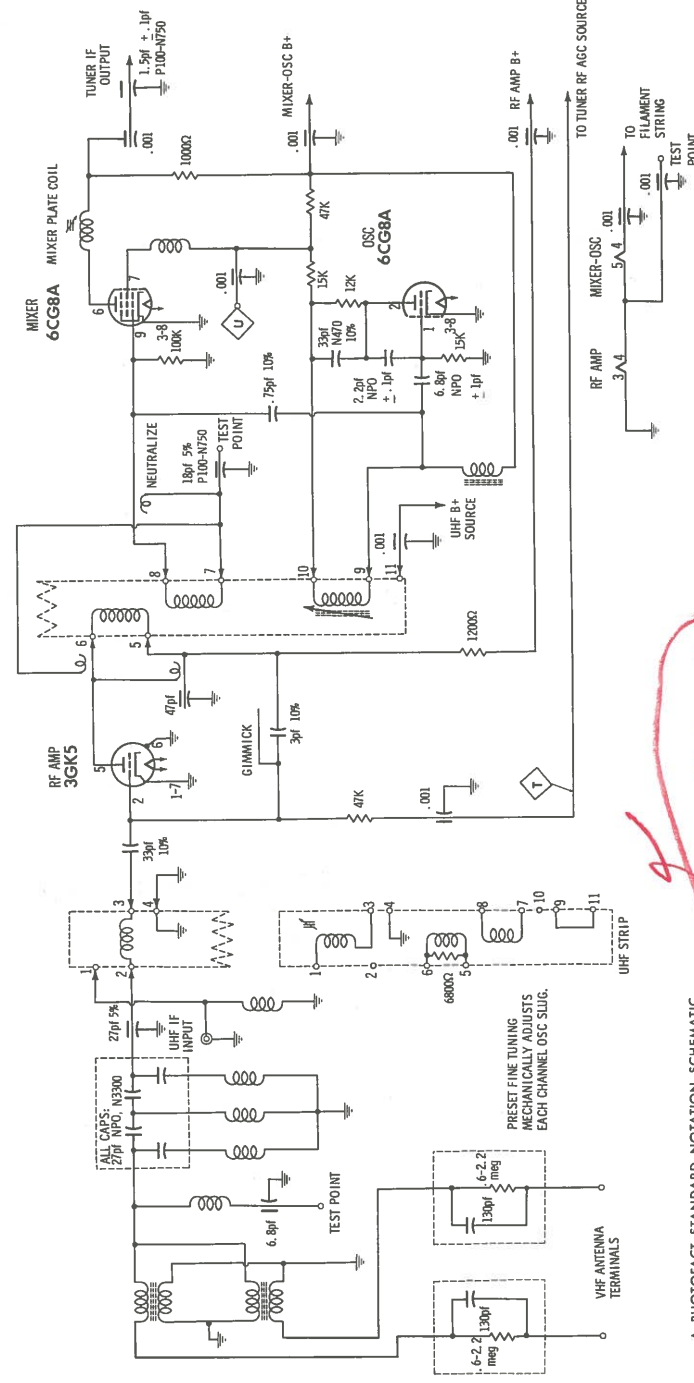
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## 13 POSITION TURRET-TYPE VHF TUNER ET86X233



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## 13 POSITION SWITCH-TYPE VHF TUNER ET86X216



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## 13 POSITION SWITCH-TYPE VHF TUNER ET86X232

GENERAL ELECTRIC  
CHASSIS DA

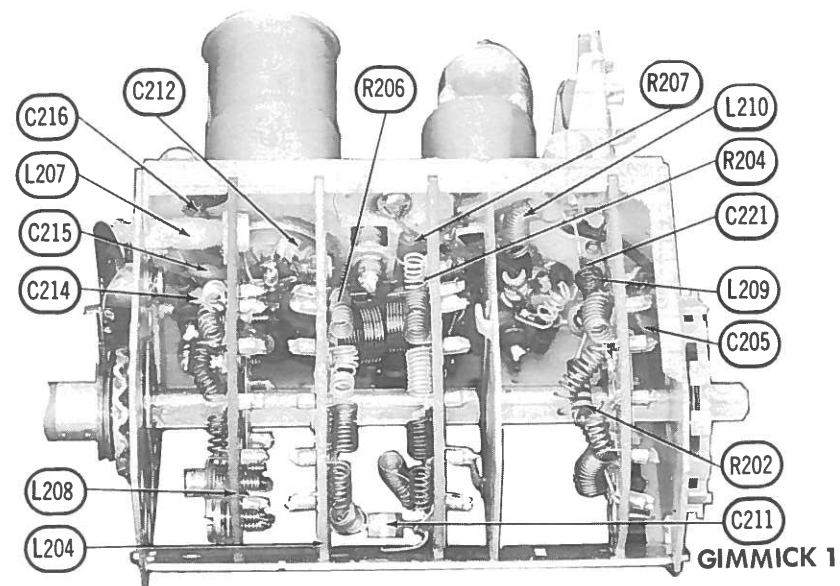
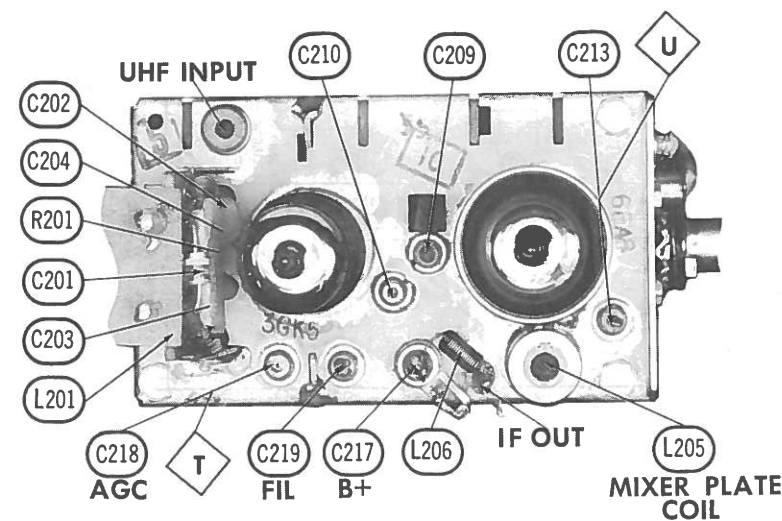
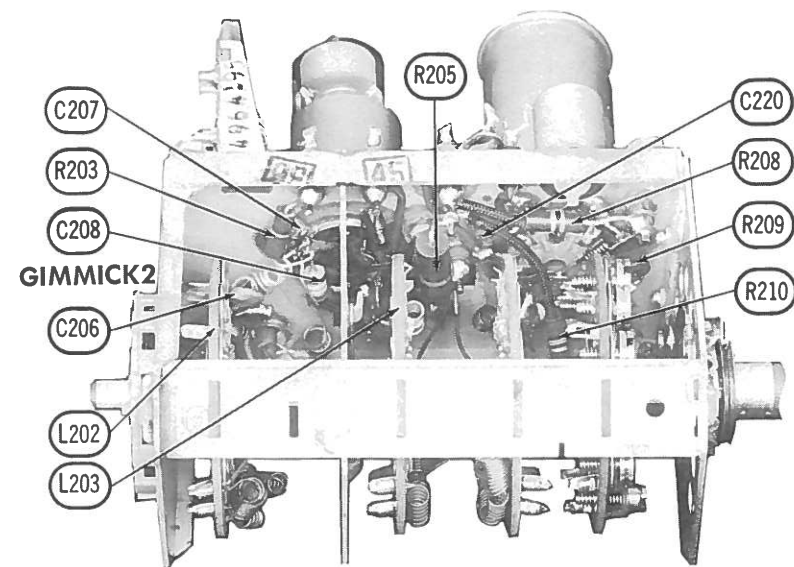
NOT TRUE



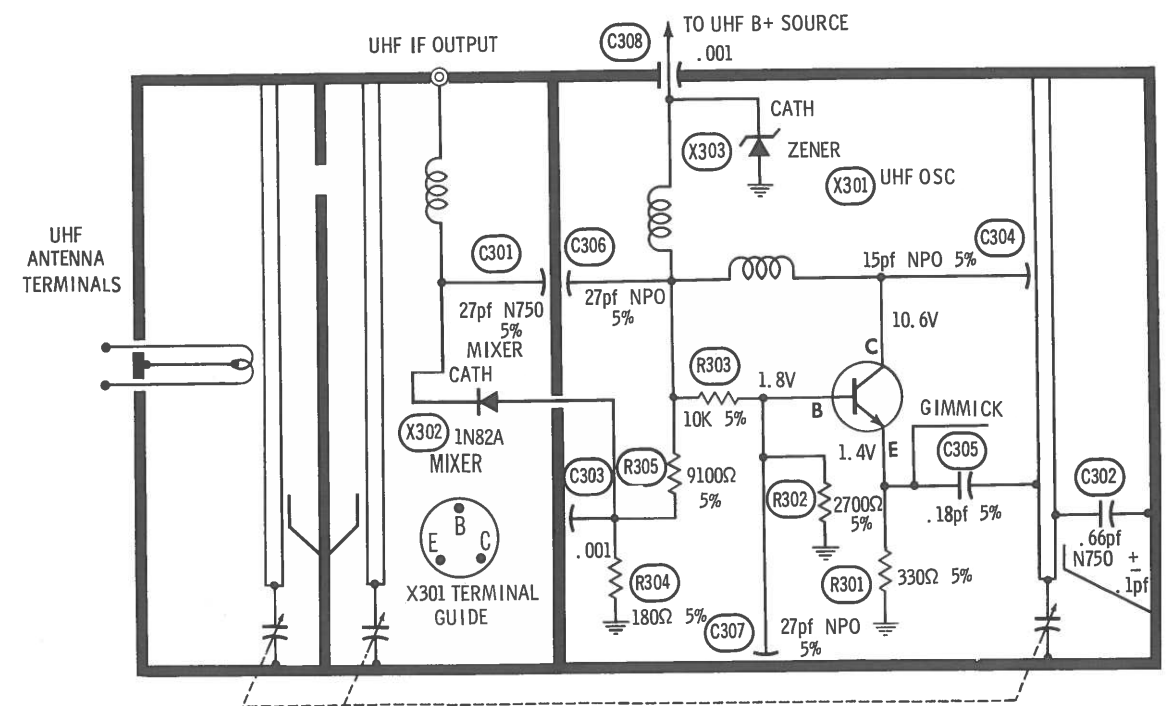
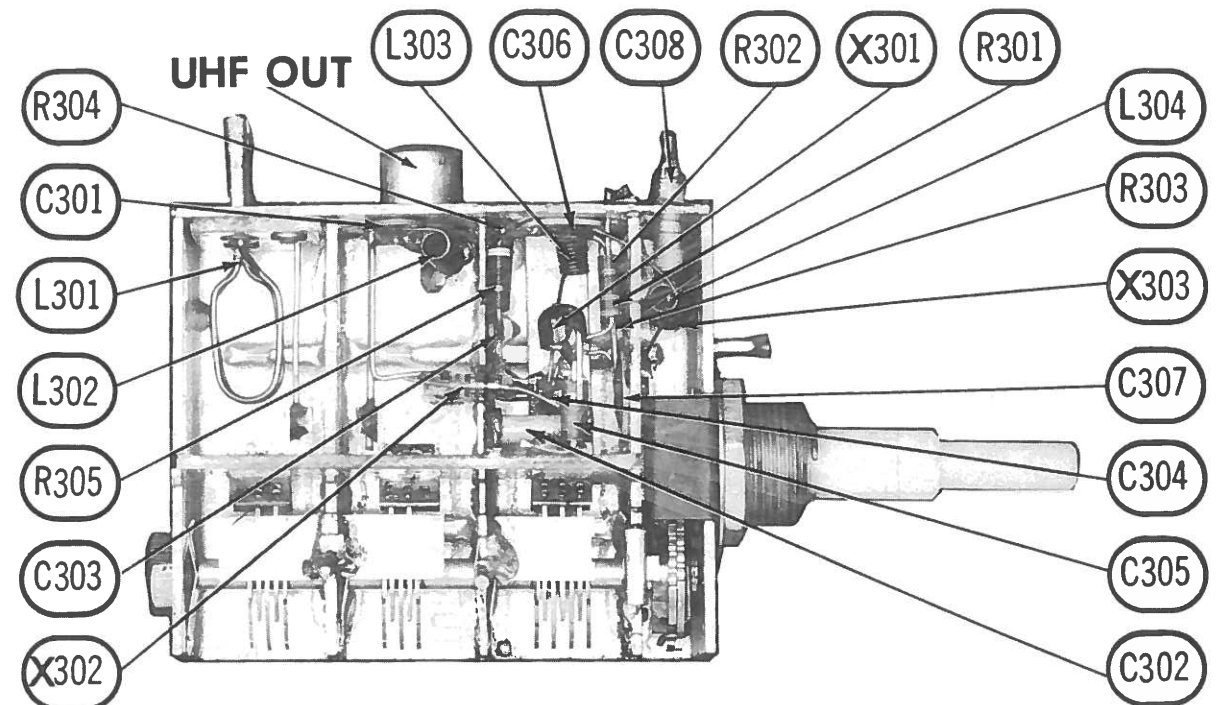


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VHF TUNER ET86X208



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UHF TUNER ET85X43



CABINETS & CABINET PARTS  
(When Ordering Specify Model, Chassis & Color)

ITEM	PART NO.	MODELS															
		M400ASD	M401ASD	M402ABG	M402AEB	M402AVY	M403ABG	M403AEB	M403ATS	M403AVY	M403AWD	M41AEB	M41AVY	M413ABG	M413AWD	M415AVY	M415AWD
Cabinet Front-Off White and Sandal Brown	ET99X126	X	X														
Cabinet Front-Brown and Off White	ET99X127			X		X	X			X							
Cabinet Front-Dark Brown and Grey	ET99X128				X			X									
Cabinet Front-Brown and Off White	ET99X142								X								
Cabinet Front-Brown and Off White	ET99X141									X							
Cabinet Front-Turquoise	ET99X151																X
Cabinet-Metal, Ebony	ET99X707										X						
Cabinet-Metal, Ivory	ET97X699											X					
Cabinet-Metal, Beige	ET97X701												X				X
Cabinet-Metal, Walnut	ET97X700													X		X	X
Cabinet-Metal, Ivory	ET97X702														X		
Cabinet Back-Beige	ET98X305	X	X														
Cabinet Back-Olive Beige	ET98X307			X			X										
Cabinet Back-Ebony	ET98X308				X			X									
Cabinet Back-Off White	ET98X406					X				X							
Cabinet Back-Turquoise	ET98X332								X								X
Cabinet Back-Walnut	ET98X333										X						
Cabinet Back-Ebony	ET98X319										X						
Cabinet Back-Off White	ET98X310											X					
Cabinet Back-Brown	ET98X313												X	X			X X
Cabinet Back-Off White	ET98X311														X		
Cabinet Back-Brown	ET98X312															X	
Knob-VHF Channel Selector	ET43X533	X	X		X			X									X
Knob "	ET43X532			X		X	X		X	X	X						
Knob "	ET43X547										X	X					
Knob "	ET43X551												X	X			
Knob "	ET43X517														X	X	X X
Knob-VHF Fine Tuning	ET43X535	X	X	X				X									
Knob "	ET43X534		X			X	X		X	X	X						X
Knob "	ET43X546										X	X					
Knob "	ET43X550												X	X			
Knob "	ET43X518														X	X	X X
Knob-UHF Channel Selector	ET43X529		X					X									
Knob "	ET43X528					X			X	X	X						X
Knob "	ET43X544										X	X					
Knob "	ET43X549												X	X			
Knob-UHF Fine Tuning	ET43X531		X					X									
Knob "	ET43X530						X		X	X	X						X
Knob "	ET43X522										X	X					
Knob "	ET43X552												X	X			
Knob-Off/On/Volume	ET43X536	X	X		X			X									
Knob "	ET43X537			X		X	X		X	X							
Knob "	ET43X587		X														
Knob "	ET43X590						X		X	X	X						X
Knob "	ET43X545										X	X	X	X	X	X	X X
Knob-Vertical Hold, Contrast	ET43X539	X	X		X			X									
Knob "	ET43X538			X		X	X		X	X	X						X
Knob "	ET43X548										X	X	X	X	X	X	X X
Knob "	ET43X592		X														

VHF TUNER PARTS LIST AND DESCRIPTION ET86X208 TUBES

AMPEREX		GENERAL ELECTRIC		RCA		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE	
V201	RF Amp.	3GK5		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	2.2 10%	#ET21X45	DI-1200	DD-122	LA10D12-C4	CCD-122	GP212	10TS-D12 10TCT-Q27 10TCT-Q27 10TCU-Q27 10TCU-Q27 10TCU-Q30 10TCR-Q10 10TCC-V50
C202	.0012 1KV	#ET18X550						
C203A	27 N470 5%							
B 27	N470 5%							
C204A	27 N750 5%							
B 27	N750 5%							
C205	30 N750 5%	(20) †						
C206	10 N220 5%	#ET18X361						
C207	5 NPO 5%	#ET18X101						
C208	2.9 5%	#ET21X61						
C209	47 5%	#ET23X46	EF-001	MFT-1000	BYA10D1	CCF-102	CT280A	5HK-D10
C210	39 5%	#ET23X47						
C211	1.6 10%	#ET21X51						
C212	1.8 10%	#ET21X16						
C213	.001							
C214	3.3 N75 ±.25pf	#ET18X549						
C215	6.8 N150 ±.25pf	#ET18X551						
C216	.001							
C217	.001							
C218	.001							
C219	.001							
C220	.001							
C221	2.4 5%	#ET21X12						

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

COILS (RF-IF)

ITEM No.	USE	G. E. PART No.	NOTES	ITEM No.	USE	G. E. PART No.	NOTES
L201	Ant. Matching	ET62X124		L204	Mixer Wafer	ET52X246	
A	Ant. Balun	ET37X48		A	Channel 2	ET36X461	
B	Ant. Filter	ET36X593		B	Channel 3	ET36X460	
C	Ant. Filter	ET36X588		C	Channel 4	ET36X461	
L202	Ant. Filter	ET36X726		D	Channel 5	ET36X697	
A	Ant. Wafer	ET52X248		E	Channel 6	ET36X594	
A	Channel 2	ET36X700		F	Channel 13	ET36X456	
B	Channel 3	ET36X461		G	UHF Mixer	ET36X738	
C	Channel 4	ET36X735		L205	Mixer Plate	ET36X690	
D	Channel 5	ET36X561		L206	IF Coupling	ET36X733	
E	Channel 6	ET36X724		L207	Fine Tuning	ET36X598	
F	Channel 13	ET36X698		L208	Osc. Wafer	ET52X245	
L203	RF Wafer	ET52X247		A	Channel 2	ET36X698	
A	Channel 2	ET36X593		B	Channel 3	ET36X697	
B	Channel 3	ET36X460		C	Channel 4	ET36X458	
C	Channel 4	ET36X564		D	Channel 5	ET36X592	
D	Channel 5	ET36X561		E	Channel 6	ET36X595	
E	Channel 6	ET36X468		F	Channel 13	ET36X596	
F	Channel 13	ET36X698		L209	UHF Input (2.4pf)	ET36X736	
G	UHF RF	ET36X737		L210	UHF Input	ET36X736	

UHF TUNER PARTS LIST AND DESCRIPTION ET85X43 TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X301	85670E	UHF Oscillator				NPN, General Electric Part #ET15X3

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS				DIODES
			GENERAL ELECTRIC PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.	
X302		ET16X14 (D3530)					1N82A
X303		ET16X15					

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.
C301	27 N750 5%	#ET18X495	EF-001	MFT-1000				
C302	.68pf N750 ±.1pf	#ET18X497						
C303	.001	#ET22X166						
C304	15pf NPO 5%	#ET18X500						
C305	.18pf 5%	#ET21X57						
C306	27 NPO 5%	#ET18X496						
C307	27 NPO 5%	#ET18X496						
C308	.001							
C309								
C310								

# General Electric Part Number

COILS (RF-IF)

ITEM No.	USE	G. E. PART No.	NOTES	ITEM No.	USE	G. E. PART No.	NOTES
L301	Ant. Input	ET38X105		L303	Collector	ET36X861	
L302	IF Choke	ET36X859		L304	RF Choke	ET36X860	

PARTS LIST AND DESCRIPTION

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

TUBES

AMPEREX		GENERAL ELECTRIC		RCA		SYLVANIA	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE	
V1	1st Video IF Amp. - 2nd Video IF Amp. - 3rd Video IF Amp. - AGC Keying - Video Output - Sound IF - Sync Separator	11AR11		V4	Audio Det. - Audio Output Vert. Mult. - Vert. Output Horiz. AFC - Horiz. Mult.	17BF11 17J28 8B10 21HB5A 12BT3 1K3	
V2		6JN8		V5			
V3		15BD11		V6			
				V7			
				V8			
				V9			



## PARTS LIST AND DESCRIPTION (CONTINUED)

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

## FIXED CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA						
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELENCO PART No.	MALLORY PART No.	SPRAGUE PART No.	
C39	470		BPD-00047	DD-471	BYA10T47	CCD-471	B347	10TS-T47	
C40	200	N750 10%	N750-DI 200	DTN-200	C10T20	CCTN-201	CN7320	10TCU-T20	
C41	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50	
C42	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50	
C43	.027	200V 10%	BE8S27		PM4S27	BDP-3-273	PVC8125	6PS-S27	
C44	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C45	.015	400V 10%	BE4S15		PM4S15	4DP-1-153	PVC4115	4PS-S15	
C46	.0033	600V 10%	BE8D33		PM8D33	8DP-1-332	PVC8233	8PS-D33	
C47	.001	1KV	BPD-001	CF-332	BYA10D1	CCD-102	B210	5HK-D10	
C48	.0047	1KV 10%	BE10D47	DD-102	DPMS16D47	16DP-2-473	GEM16247	10PS-D47	
C49	.1	400V 10%	BE4P1		PM4P1	4DP-3-104	PVC401	4PS-P10	
C50	.0018	2KV	#ET22X161						
C51	68	N750 10%	N750-DI 68	DTN-68	C10Q68U	CCTN-680	CN7468	10TCU-Q68	
C52	75	N750 10%	N750-DI 75	DTN-75	C10Q75U	CCTN-750	CN7475	10TCU-Q75	
C53	.0012	10%		CF-122	JB6D12	CCD-122	JF212	10TS-D12	
C54	560	10%		DI-560	JB7S56	CCD-561	JF356	10TS-T56	
C55	.005	10%		DI-5000	JB6D5	CCD-502	JF250	10TS-D50	
C56	.12	200V 10%			PM4P12				
C57	.0033	500V 5%		CPR-3300J	CD19F332J	DM-19-332J		MS-233	
C58	820	500V 5%		CPR-820J	CD19F821J	DM-19-821J		MS-38	
C59	470	500V 10%		CPR-470J	CD19F471J	DM-19-471J	JF347	MS-347	
C60	.005		BPD-005	DD-502	BYA10D5	CCD-502	B250	5HK-D50	
C61	.1	1KV	BPD-01	DD-103	BYA10S1	CCD-103	B110	5HK-S10	
C62	250	4KV 10%	#ET18X412						
C63	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C64	.039	600V	BE8S39		PM8S39	8DP-3-393	PVC8139	8PS-S39	
C65	47	2KV N1500 10%	#ET18X459						
C66	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C67	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C68	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C69	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C70	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C71	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C72	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C73	.001	1KV	P88N-01	DD-102	BYA10D1	CCD-102	B210	5HK-D10	
C74	.01	600V		DD16-103	PM6S1	6DP-2-103	PVC611	6TM-S10	
C75	22	1KV N750		NPO-DI 22	C10Q22U	CCTN-220	CN7422	10TCU-Q22	
C76	800		BPD-0008	DD-801	LA10T8-C4	CCD-801	B382	5GA-T80	
C77	470	1.4KV	HVD-15470	DD30-471	HVB20T47	3CCD-471	2DY347	30GA-T47	
C78	470	1.4KV	HVD-15470	DD30-471	HVB20T47	3CCD-471	2DY347	30GA-T47	

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer. † Alternate Value  
① Not used in some versions. # General Electric Part Number

## CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA					
			G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	
R1	Volume, Switch	2meg	ET49X454 ② (M128J206-2)	F2-2meg, SN100, KR-1	A47-2meg-Z RN-3 ①, SWE-12	(BU11, CF27, S88 ①, GC) *	RU26A, SL37, SN1000 ①, U541 or (UA26A, SN1000 ①, U541)	
R2	Brightness	300K	ET49X501 ③ (K122J519-1)	F1-250K, SNK010 or (AB-50, AK-19)	B47-250K-S	B11-131, TM4 or (BU11, CF15, S88) *	PTA35L or (RU35L, SL37, SN1000) or (UA254L, SN1000)	
R3	Contrast	25K 3K Stop	ET49X502 ④ (K122J518-1)	F1-25K ⑥, SNK010 or (AB-28 ⑥, AK-19)	B47-25K-S ⑥	B11-120 ⑥, TM4 or (BU11, CF11 ⑥, S88) *	RU253L ⑥, SL37, SN1000 or (UA253L ⑥, SN1000)	
R4	Vert. Hold	1.5meg	ET49X503 ⑤ (K122J520-1)	F1-1.5meg, SNK010 or (AB-742, AK-19)	B47-1.5meg-S	B11-138, TM4 or (BU11, CF18, S88) *	PTA28L or (RU155L, SL37, SN1000) or (UA155L, SN1000)	
R5	Height	500K	ET49X500 (K122J517-3)	TT-59 or (F1-500K, SNK010)	B47-500K-S	B11-133 ⑦, TM4 or (BU11, CF18, S88) *	PTA55L or (RU55L, SL37, SN1000) or (UA55L, SN1000)	
R6	Vert. Linearity	2meg	ET49X499 (K122J517-2)	TT-75 or (F1-2meg, SNK010)	B47-2meg-S	HLC1	PTA28L or (RU28L, SL37, SN1000) or (UA28L, SN1000)	
R7	Horiz. Hold	1meg	ET49X498 (K122J517-1)	TT-69 or (F1-1meg, SNK010)	B47-1meg-S	B11-137 ⑦, TM4 or (BU11, CF17, S88) *	PTA1254L or (RU16L, SL37, SN1000) or (UA16L, SN1000)	

① File flat.  
② Models M411, M413 and M415 use Part #ET49X515.  
③ Models M411, M413 and M415 use Part #ET49X512.  
④ Models M411, M413 and M415 use Part #ET49X513.  
⑤ Models M411, M413 and M415 use Part #ET49X514.  
⑥ Connect a 3300Ω resistor in series with the left hand terminal of the control and the lead connected to the same terminal of the original control (control viewed from shaft end, terminals down).  
⑦ Use base element with PC terminals. \* "SNAPTROL"

## RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	REMARKS			IRC PART No.	WORKMAN PART No.	REMARKS
R22	4300Ω 5W		5W-SQ-4400	#ET14X173	R75	3.6Ω 7W			#ET14X183
R58	500K (Cold) Thermistor			#ET14X187		Fusible			

# General Electric Part Number

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		G. E. PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.		
L1	RF Choke (7 turns)	ET36X846						
L2	1st Video IF	ET36X886						
L3	47.25MC Trap	ET36X847						
L4	2nd Video IF	ET61X156						
L5	3rd Video IF	ET61X157						
L6	4th Video IF Pri.	ET36X886						
L7	4th Video IF Sec.	ET36X887						
L8	RF Choke (10uh)	ET36X420	BC-566	74F105AP	RTC-8522	T860		
L9	Peaking (36.2uh)	ET36X583	TV-180	6176	RTC-8593	T301		
L10	Peaking (390uh)	ET36X264	TV-201	72F94AP	RTC-8578	T350		
L11	RF Choke (10uh)	ET36X420	BC-566	74F105AP	RTC-8522	T860		
L12	Sound Takeoff - 4.5MC Trap	ET36X731						
L13	Peaking (470uh)	ET36X271	TV-204	72F474AP	RTC-8580	T323		
L14	Peaking (200uh)	ET36X845	TV-197	6154	RTC-8586	T345		
L15	Sound Interstage	ET36X895						
L16	Quadrature	ET36X732						
L17	RF Choke (10uh)	ET36X105	BC-566	4612	RTC-8522	T860		
L18A	Line Choke (125uh)	ET36X729						

## COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		G. E. PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	WORKMAN PART No.
L19	Horiz. Stabilizer	ET36X864						TA112
L20	Width Bracket	ET36X851						
	Crank	ET92X307						
	Shaft	ET2X248						
	Core	ET69X250						
		ET12X87						

## FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						NOTES
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000~)	G. E. PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.		
L21	.34ADC	27.1Ω	.58 Hy.	ET84X65 (M123J722-3)	C-4084	C-2347	26C78	C-28X		

## \* 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.		
T1	Vert. Output	ET64X106 (M128J532-1)						
T2	Yoke (Horiz. 19MH) 114° (Vert. 20MH)	ET76X39 (ET76X39-2)	MDF-141		Y-81	YT-101		
T3	Centering Ring Ass'y Horiz. Output	ET42X43 ET77X80						

## \* COMPONENT CONNECTION DATA

ORIGINAL →	HV TRANSFORMER	VERTICAL OUTPUT	YOKE	YOKE PLUG
REPLACEMENT	Original Connections	Original Connections	Original Connections	1 2 3 4 5 6 7 8
				TO YOKE TERMINAL
MERIT				
STANCOR				
THORDARSON				
TRIAD				

▲ Install original .039mfd (600V) capacitor between yoke terminal #7 and flyback terminal #5. Use TP furnished.  
Use original 47pf horizontal damping capacitor if necessary.

## 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.		
T4	2550Ω	3-4Ω	ET64X103 (M128J391-2)	A-3025	A-3332	24S53	S-12X		

## SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA		NOTES
		G. E. PART No.	QUAM PART No.	
SP1	2 1/4" x 6 1/4", PM, 3-4Ω	ET95X44 ① ET95X21 ②	26A07 4A05	Used in Model Series M400, M401, M402, M403, PAM403. Used in Model Series M411, M413, M415, and R413.

## FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			G. E. PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	1.5A 125V Slo-Blo	ET10X42	ET3X537	31301.5 (3AG, 1.5A, 125V, S/B)	357001	MDX 1 1/2	4405

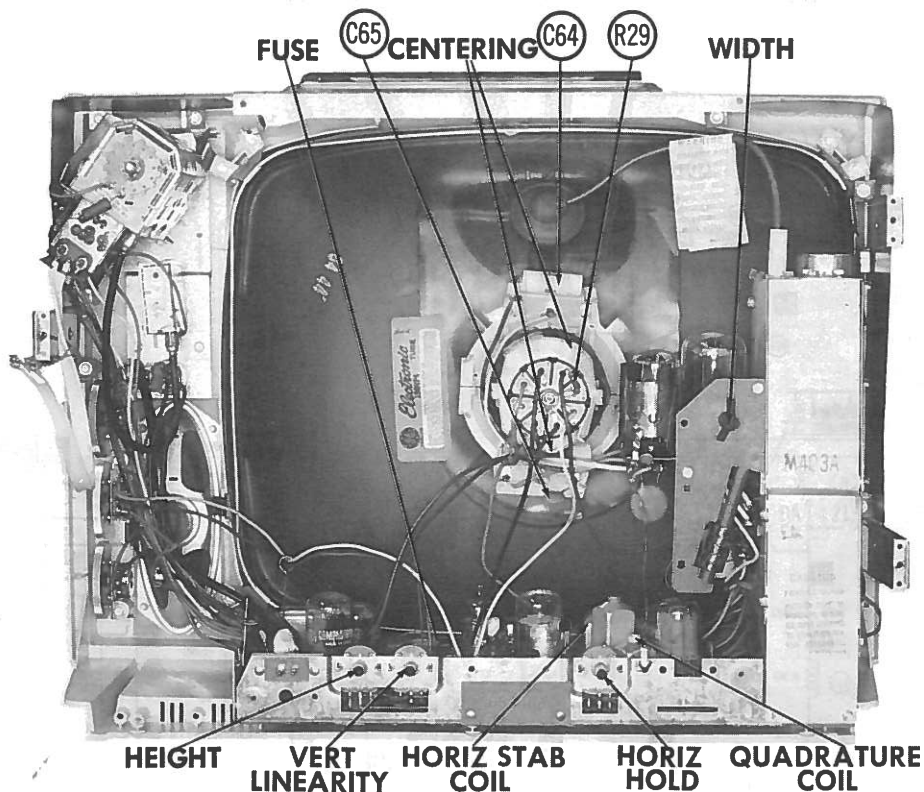
## MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M2	VHF Tuners	ET86X208	Used in Models M400ASD, M401ASD, M402ABG/AEB/AVY, M403ABG/AEB/ATS/AVY/AVD, PAM403ATS.
	VHF Tuners	ET86X214/215/216 ET86X232/233	Used in Models M411AFB/AVY, M413ABG/AWD, M415AVY/AVD, R413ABG/AWD.
M3	UHF Tuners	ET85X42/43/45/46/47	Used in Model Series M411/M413/M414 and R413 as above.
M4	VHF Antenna	ET83X63	Retractable, Used in Models M400/401ASD and M402/403AEB.
	VHF Antenna	ET83X64	Retractable, Used in Models M402ABG/AVY, PAM403ATS, M403ABG/ATS/AVY/AVD.
	VHF Antenna	ET83X78	Gold, Brown Housing, Models M413ABG/AWD, M415AWD.
	VHF Antenna	ET83X79	Gold, Black Housing, Models M411AEB.
	VHF Antenna	ET83X77	Gold, White Housing, Models M411AVY, M415AVY.
M5	UHF Antenna	ET83X46	Loop Assembly, Used in Models M401ASD, PAM403ATS, M403ABG/AEB/ATS/AVY/AVD.

## WIRING DATA

High Voltage Lead .....	Use BELDEN No. 8869 (17KV) or 8868 (25KV)
Shielded Hook-up Wire .....	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire .....	Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors
Power Cord (Interlock Type) .....	Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)
300Ω Tuner Input Lead .....	Use BELDEN No. 8225
300Ω Antenna Lead-in .....	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable .....	Use BELDEN No. 8404 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor

CABINET PARTS LIST PAGE 12



## CABINET-REAR VIEW

### HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune to a TV station and set all controls for normal operation. Set the Horizontal Hold control to the center of its range. Adjust the Horizontal Stabilizer Coil Slug, B1, until the picture is in sync. Interrupt the signal momentarily to see if the picture remains in sync.

Adjust the Width Coil Slug, B2, until the picture is just wider than necessary to fill the screen.

### DISASSEMBLY INSTRUCTIONS

#### CHASSIS REMOVAL

1. Remove rear cover (8 screws) and 3 knobs from front of cabinet.
2. Disconnect UHF-VHF antenna terminals and remove 2 screws from the control bracket.
3. Disconnect picture tube socket and high voltage cable. Unsolder speaker wires and remove spring clamp from yoke assembly.
4. Remove 4 screws from UHF-VHF tuner mounting and remove control panel and UHF and VHF tuners.

5. Remove grounding strap from chassis to picture tube. Remove 2 screws from chassis mounting and remove chassis.

#### PICTURE TUBE REMOVAL

1. Remove chassis by "Chassis Removal" instructions and lay cabinet face down on a soft protective surface.
2. Remove clamp bolt and remove picture tube.



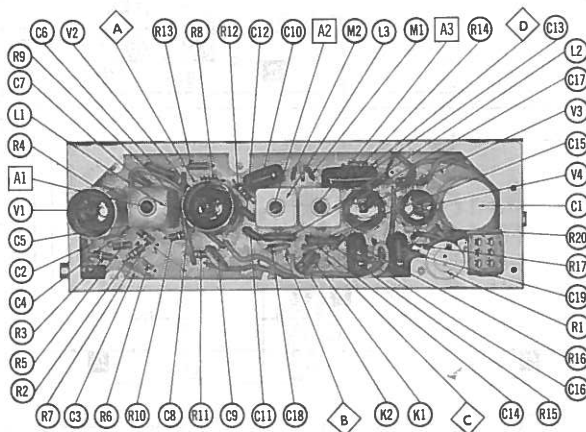
## PHOTOFACT® Folder

with CIRCUITRACE™

GENERAL ELECTRIC  
REMOTE RECEIVER RW365

## IMPORTANT FILING NOTICE

This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 745 FOLDER 3. File this Folder with the TV Folder in the yellow filing jacket provided.



TRADE NAME	General Electric		
SUPPLIER	For current address, see Master Index.		
TYPE SET	Remote Control Receiver		
TUBES	Four (Receiver)		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	TRANSISTOR	One (Transmitter)
		RATING	20 Watts, .175 Amp. @ 117 Volts AC

## ALIGNMENT INSTRUCTIONS

The receiver must be aligned in its upright position.

Suggested Alignment Tools: A1 thru A4 .. GENERAL CEMENT #8606, 8606L, 8869 .. WALSCO #2543, 2544, 2588  
A5 ..... GENERAL CEMENT #8868, 9087, 9089 .... WALSCO #2528, 2541, 2587

## REMOTE CONTROL RECEIVER ALIGNMENT

Allow the receiver at least fifteen minutes to warm up. Unplug the receiver transducer and connect a short from the input jack to ground. Connect the DC Probe of the VTVM to point  $\diamond$ . Common to ground. Adjust Bias Control, R1, for -6 volts on VTVM. Remove the short from the input jack.

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	High side thru 100K to Transducer Input Jack, low side to ground.	40KC		DC probe to point $\diamond$ , common to ground.	A1	Adjust for maximum.
2.	"	39KC		DC probe to point $\diamond$ , common to point $\diamond$ .	A2	Attenuate signal until relay just fails to function. Adjust for maximum.
3.	"	41KC		DC probe to point $\diamond$ , common to point $\diamond$ .	A3	"

4. With remote receiver installed, operate the transmitter at the maximum distance at which it will normally be used. Slowly approach the receiver while pressing the select button at two-second intervals. At some point during the approach, the receiver may fail to respond to the transmitter (a void). Reduce the receiver bias until this void no longer exists.

## REMOTE CONTROL TRANSMITTER ALIGNMENT

The receiver is properly aligned, then used for the transmitter alignment.

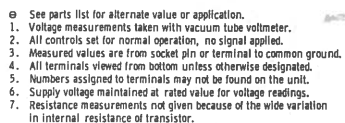
	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	None - Place transmitter one foot from receiver transducer.			DC probe to point $\diamond$ , common to point $\diamond$ .	A4	Press "Select" button and adjust A4 for maximum.
6.	"			DC probe to point $\diamond$ , common to point $\diamond$ .	A5	Press "Volume" button and adjust A5 for maximum. Repeat steps 5 and 6.

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 the particular type of replacement part listed.

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DATE 3-65 SET 745 FOLDER 3-A



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## GENERAL ELECTRIC REMOTE RECEIVER RW365