



**CABINET-REAR VIEW**

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune to a TV station and get all controls for normal operation. Connect a clip lead from point  to ground. Set the Horizontal Hold (Fine) Control, R4, to the center of its range. Connect a clip lead across the Horizontal Stabilizer Coil, L15. Adjust the Horizontal Hold (Coarse)

Control, R8, until the picture tends to float slowly across the screen. Remove the clip lead from Horizontal Stabilizer Coil and adjust B1 until the picture tends to float slowly across the screen. Remove the clip lead from point .

## DISASSEMBLY INSTRUCTIONS

### CHASSIS REMOVAL

1. Remove rear cover and control knobs from front of cabinet. Loosen clamp on yoke.
2. Disconnect picture tube socket, high voltage anode lead, chassis ground wire, and speaker wires.
3. Remove 2 chassis screws from bottom of cabinet and 4 screws from across top of cabinet.

4. Remove 2 screws from tuner mounting bracket and lift chassis up and out.

### PICTURE TUBE REMOVAL

1. Follow "Chassis Removal" instructions and lay cabinet face down on a soft protective surface.
2. Loosen clamp on picture tube mounting band and remove the picture tube.

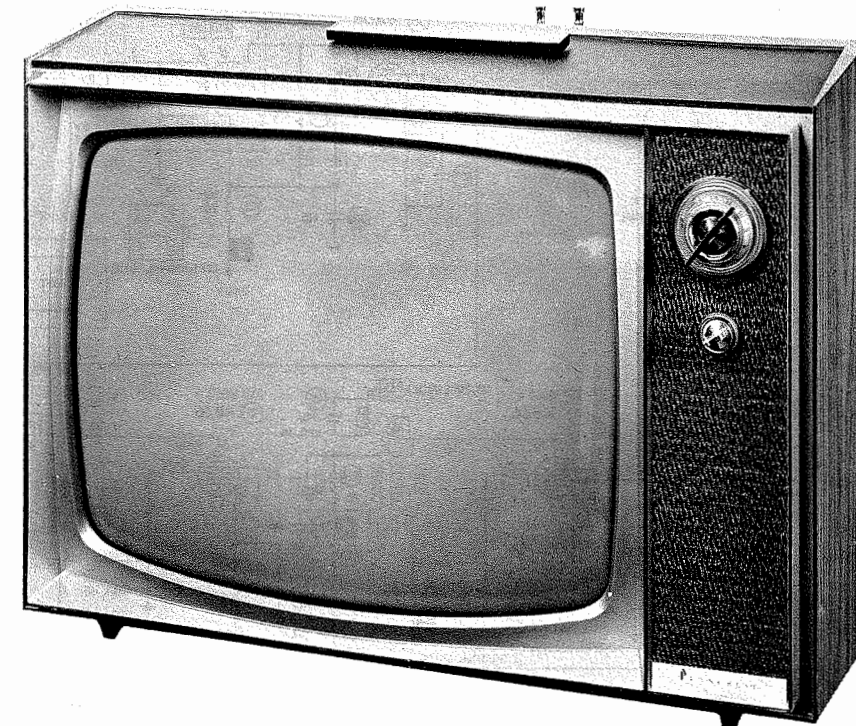
SET 777 FOLDER 4

PENNCREST  
MODELS 2373A-40, 2378A-48

PHOTOFACT® Folder

with CIRCUITRACE®

PENNCREST  
MODELS 2373A-40, 2378A-48



MODEL 2378A-48

**CAUTION**

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

TRADE NAME	Penncrest Models 2373A-40, 2378A-48		
SUPPLIER	For current address, see Master Index.		
TYPE SET	Television Receiver		
TUBES	VHF - Fifteen, UHF - One Transistor		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	140 Watts, 1.5 Amps. @ 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 Circuit Breaker is used for low voltage power supply protection and may be reset by depressing the reset button. (See "Tube Placement Chart" for location.)

### VHF OSCILLATOR ADJUSTMENT

The fine tuning mechanically engages osc. slug for adjustment (one slug for each channel).

### AGC

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

### HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Coarse adjustment of the horizontal hold is accomplished

by the proper setting of the Horizontal Stabilizer Coil and Horizontal Hold Control (Coarse). (See "Tube Placement Chart" for location.)

### WIDTH

The width may be varied by adjusting a metallic sleeve, located between the yoke and the picture tube neck.

### FOCUS

The focus may be varied by connecting the lead from pin 4 of the picture tube to various voltage points. (For location, see "Cabinet - Rear View".)

### CENTERING

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

**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. NA454

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DATE 10-65

SET 777 FOLDER 4

PENNCREST  
MODELS 2373A-40, 2378A-48

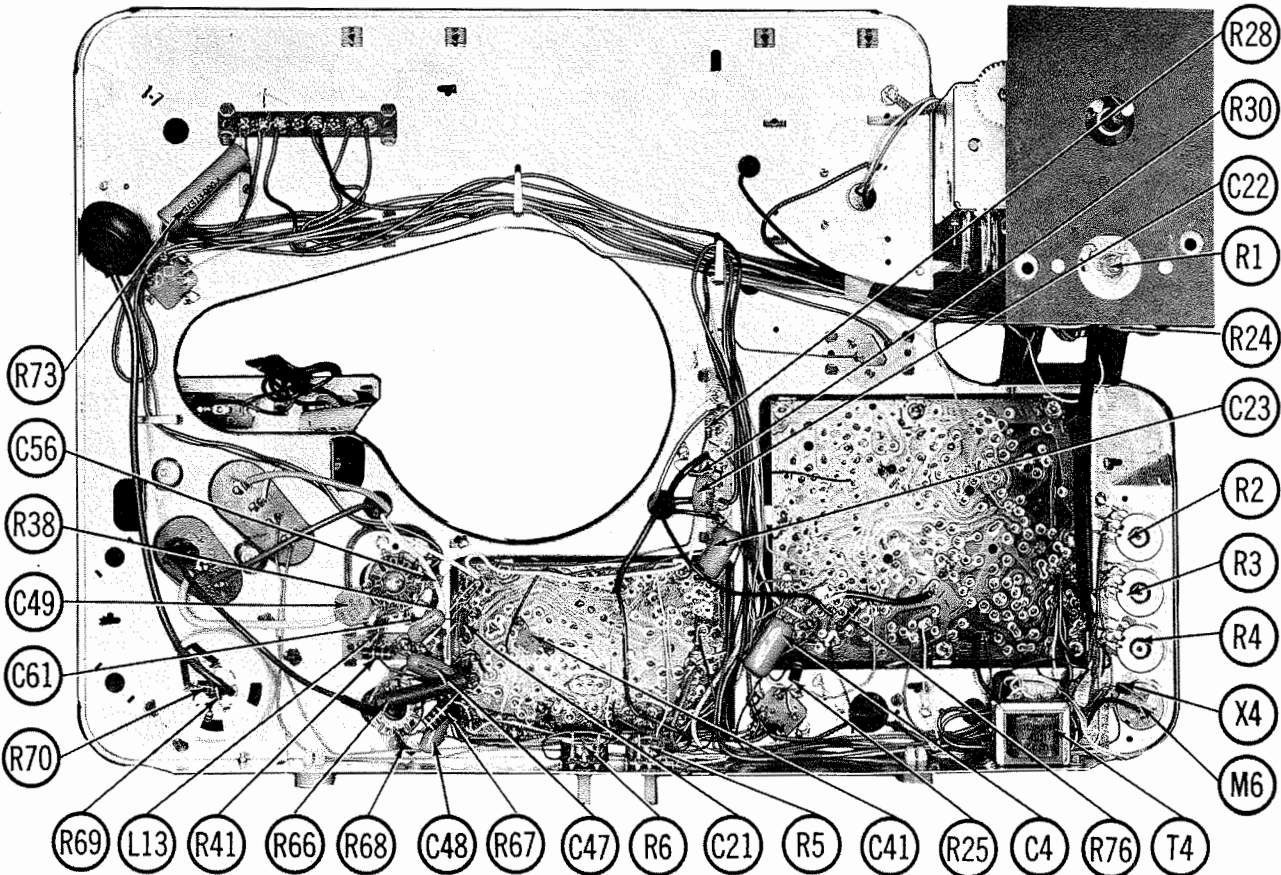
SET 777 FOLDER 4



RESISTANCE MEASUREMENTS

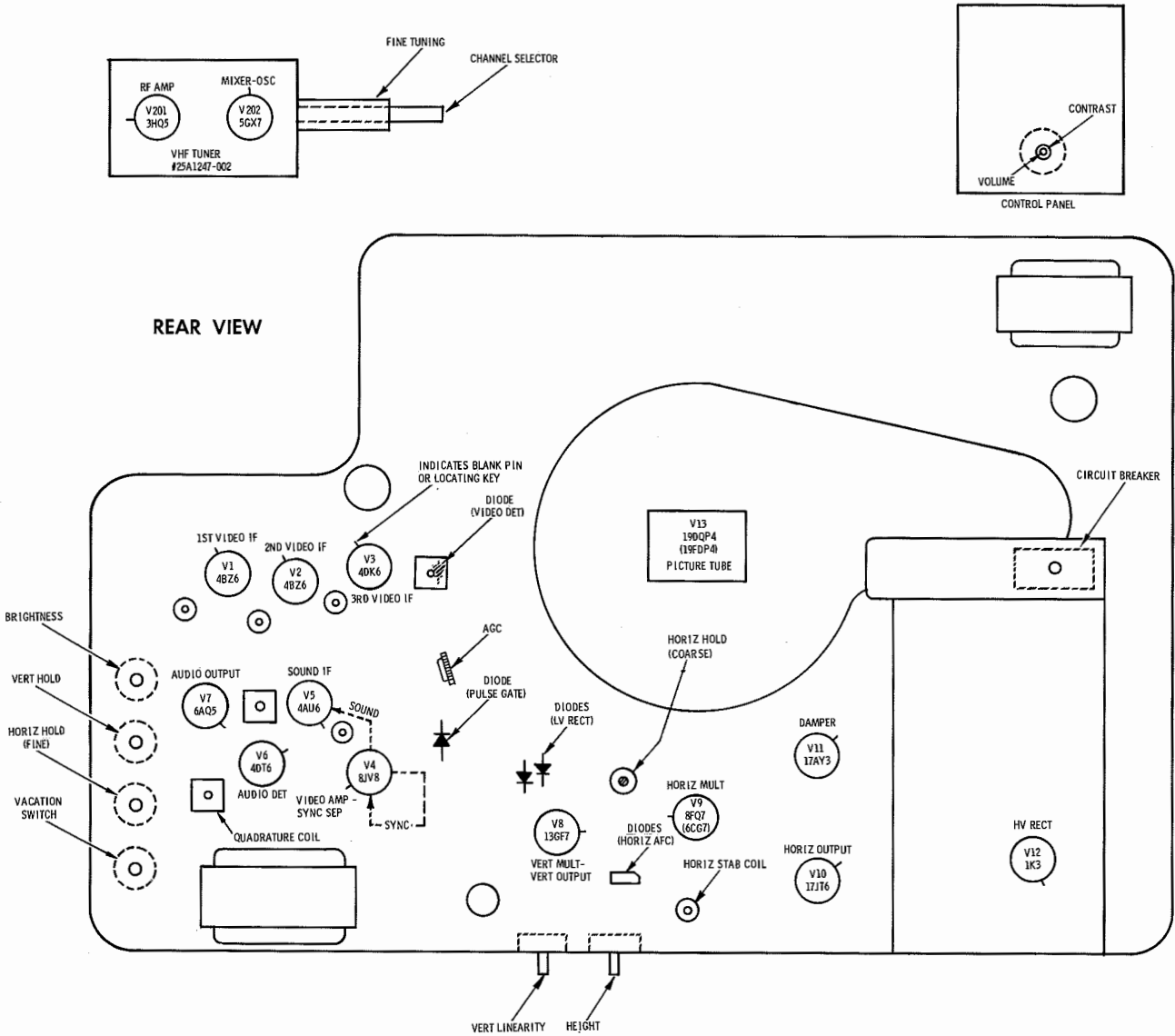
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	4BZ6	335K	47Ω	14Ω	15Ω	3000Ω †	3000Ω †	0Ω		
V2	4BZ6	330K	47Ω	15Ω	16Ω	3000Ω †	3000Ω †	0Ω		
V3	4DK6	.25Ω	180Ω	16Ω	18Ω	3000Ω †	3000Ω †	0Ω		
V4	8JY8	0Ω	2.2meg	24K †	5Ω	8Ω	81Ω	1meg	12K †	5600Ω †
V5	4AU6	5Ω	0Ω	8Ω	10Ω	39K †	39K †	15Ω		
V6	4DT6	5Ω	680Ω	10Ω	12Ω	1meg †	22K †	560K		
V7	6AQ5	NC	390Ω	12Ω	14Ω	750Ω †	355Ω †	45K		
V8	13GF7	0Ω	1.6meg	330Ω	26Ω	20Ω	430Ω †	NC	5.5meg †	530K
V9	8FQ7	24K †	1.8meg	820Ω	18Ω	20Ω	220K †	100K	820Ω	0Ω
V10	17J16	6800Ω †	180K	0Ω	32Ω	26Ω	14K † ‡	NC	NC	8.3Ω †
V11	17AY3	NC	NC	TP	38Ω	32Ω	NC	25Ω †	NC	850K
V12	1K3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP 423Ω †
V13	19DQP4	4Ω	82K	700K †	100K †	NC	NC	280K	5Ω	
V201	3HQ5	1.8meg	0Ω	2Ω	0Ω	3700Ω †	0Ω	0Ω		
V202	5GX7	0Ω	220K	0Ω	2Ω	4Ω	3500Ω †	24K	7200Ω †	47K

# THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.  
† MEASURED FROM OUTPUT OF X3.  
‡ MEASURED FROM PIN 9 OF V11.  
NC NO CONNECTION  
TP TIE POINT



CHASSIS—FRONT VIEW

TUBE PLACEMENT CHART



PENNCREST  
MODELS 2373A-40, 2378A-48

TUBE FAILURE CHECK CHART

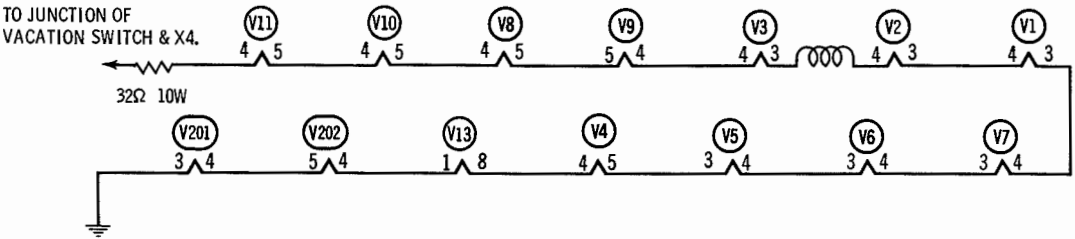
The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

- POWER SUPPLY FAILURE**  
No raster, no sound Circuit Breaker M1, Rectifiers X2, X3, X4

**SWEEP FAILURE**  
No raster, has sound V9, V10, V11, V12, V13  
No vertical deflection V8  
Poor vert. linearity or foldover V8  
Poor horiz. linearity or foldover V8, V10, V11  
Narrow picture V9, V10, V11, X2, X3  
Vert. off freq. V8  
Horiz. off freq. AFC Diode X7, V9
- LOSS OF PICTURE OR SOUND**  
No pic, no sound, has raster V1, V2, V3 Video Det., X6, V4  
No pic, no sound, has snow V201, V202, V1  
No pic, has sound, has raster V4, V13  
Has pic, no sound V5, V8, V7  
Overloaded picture X1

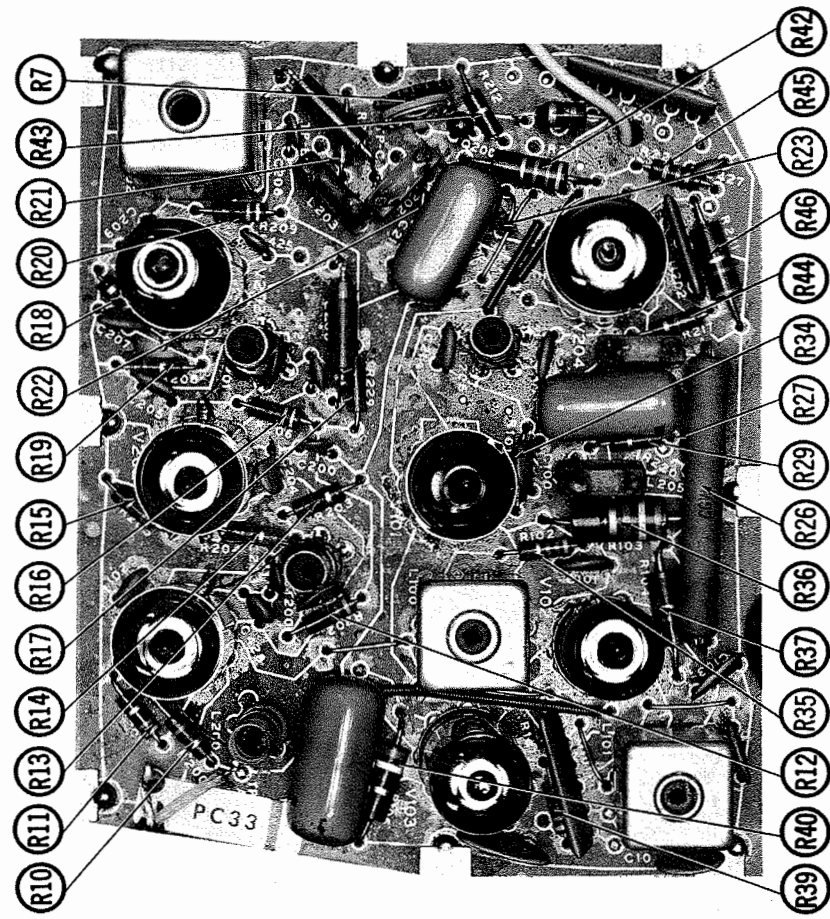
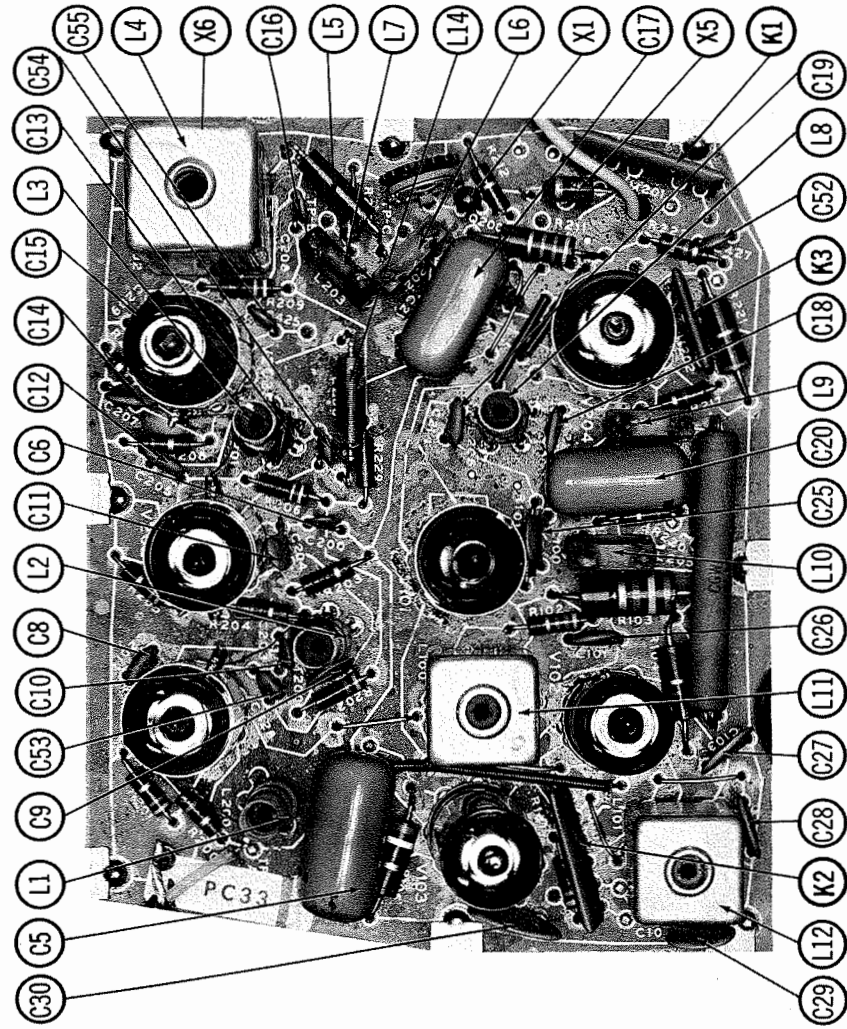
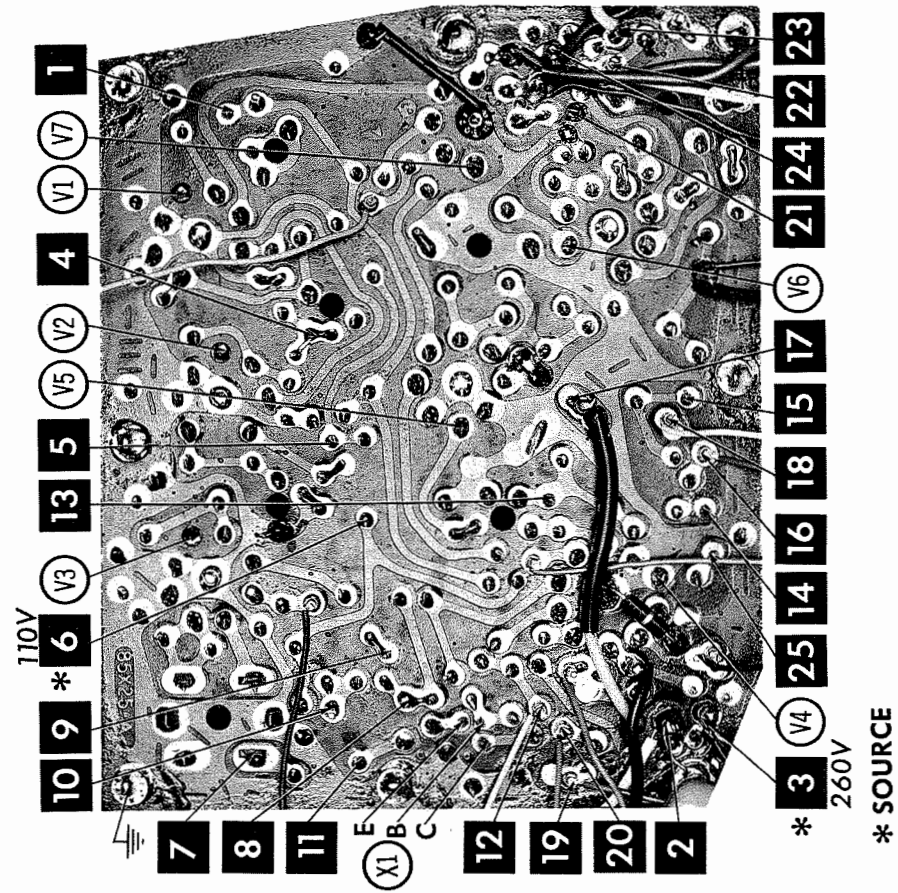
**SYNC FAILURE**  
No vert. sync V4  
No horiz. sync V4  
No vert. or horiz. sync V4

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.)



FOLDER 4

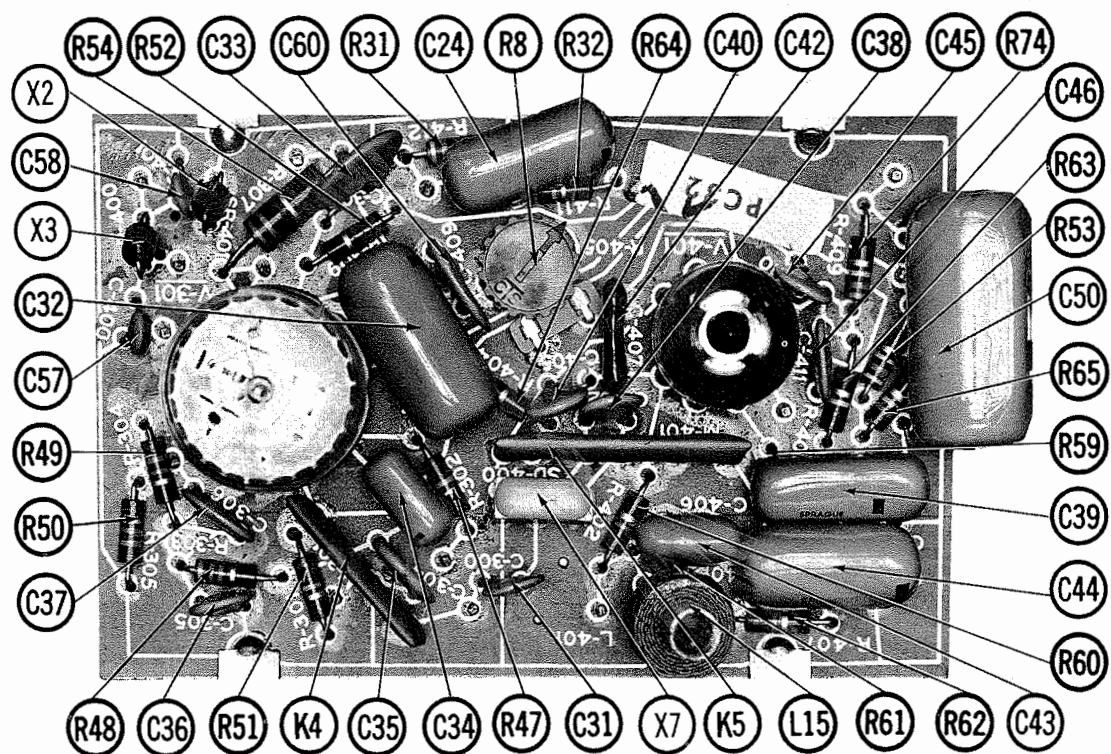
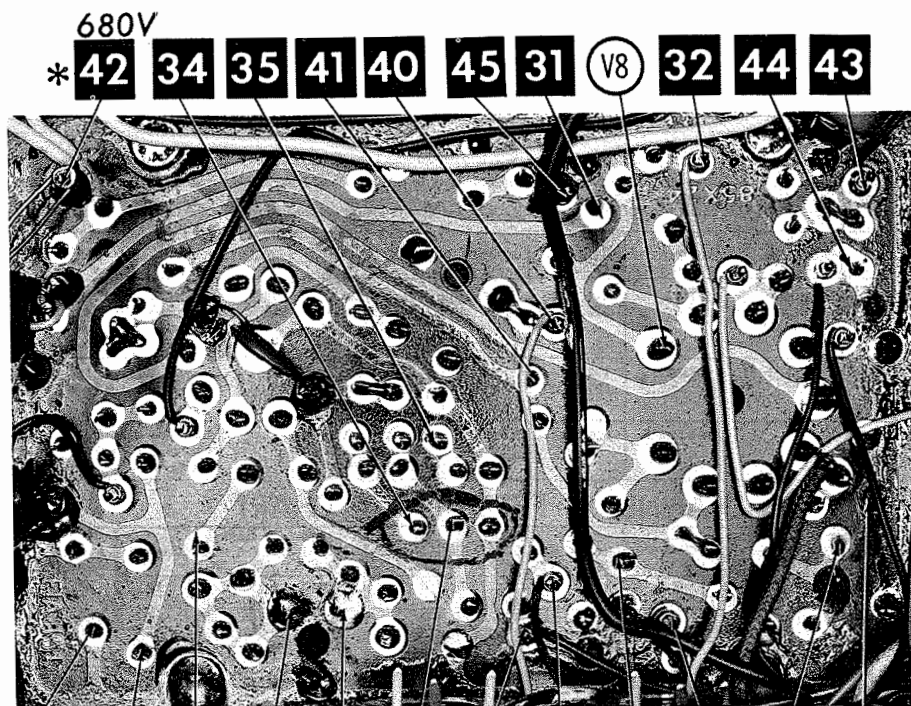




VIDEO, SOUND IF, AGC, SYNC PRINTED BOARD

PENNCREST  
MODELS 2373A-40, 2378A-48

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



SWEEP PRINTED BOARD

## 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 A12 ..... GENERAL CEMENT #8606, 8869, 9302 ... WALSCO #2511, 2543, 2588  
Mixer Plate Coil .. GENERAL CEMENT #9296, 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  $\diamond$ ) 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 $\diamond$ . Common to ground.		41.25MC 45.75MC	A1 A2	Adjust for MINIMUM.
2.	Connect vertical input of a scope to point $\diamond$ . Low side to ground.	44MC (10MC Sweep)	42.75MC 45.75MC	A3, A4	Adjust for maximum amplitude and MINIMUM tilt with markers as shown in Figure 1.
3.	Connect vertical input of a scope to point $\diamond$ . Low side to ground.	44MC (10MC Sweep)	41.25MC 42.75MC 44.25MC 45.75MC 47.25MC	A5, A6, A7 and 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 3 and A 4.

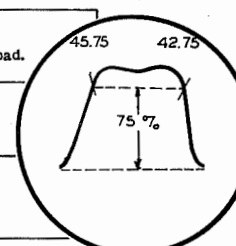


FIG. 1

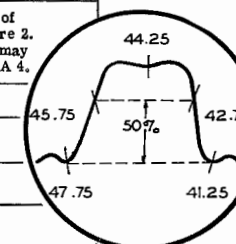


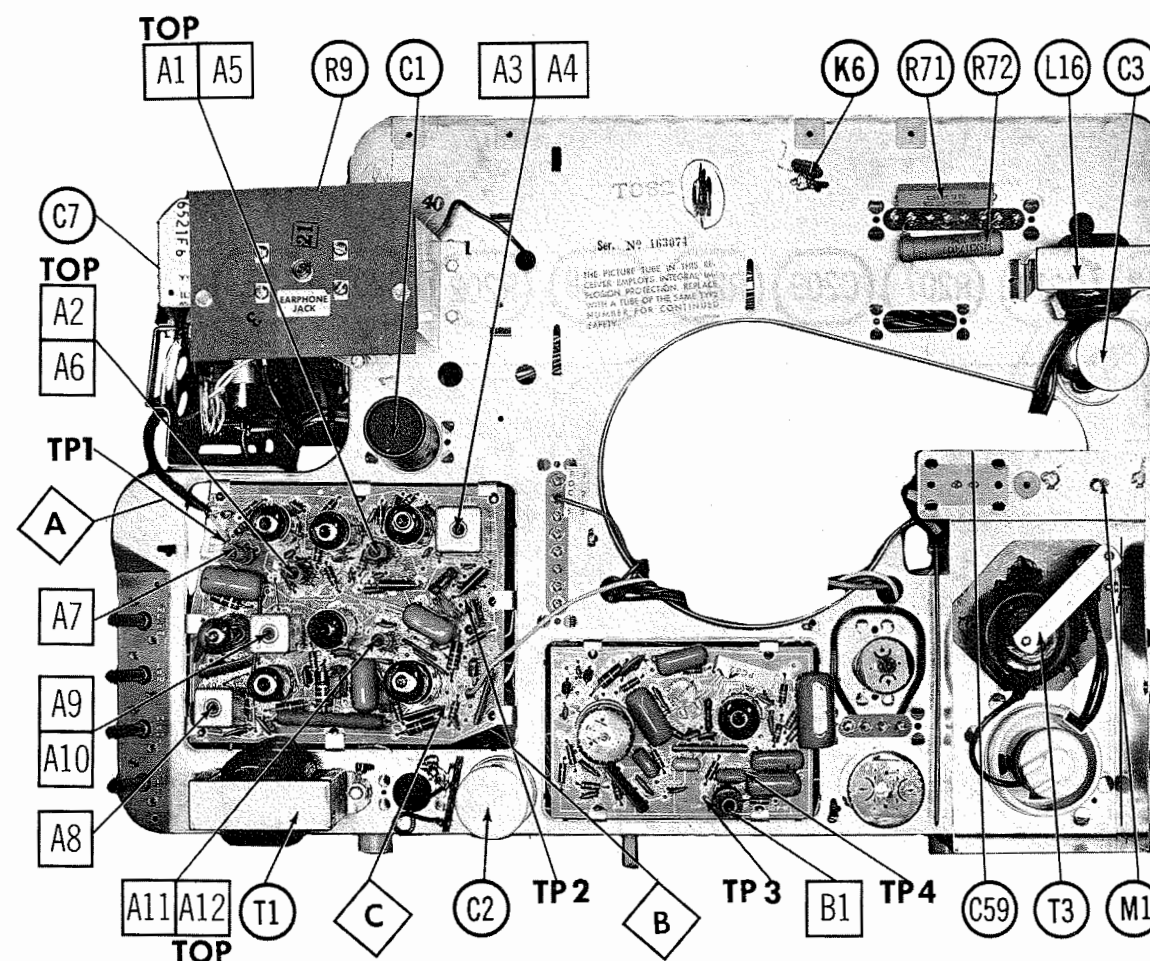
FIG. 2

### 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 A12 for MINIMUM beat interference.

### SOUND IF ALIGNMENT

Tune in a station and adjust A8 for maximum sound. Reduce signal strength at the antenna terminals until distortion appears. Continue to reduce signal while aligning for undistorted output by adjusting A9, A10 and A11.



TP1 -.1V IF AGC TP2 -.8V VIDEO DET OUTPUT TP3, TP4 115V HORIZ STABILIZER COIL

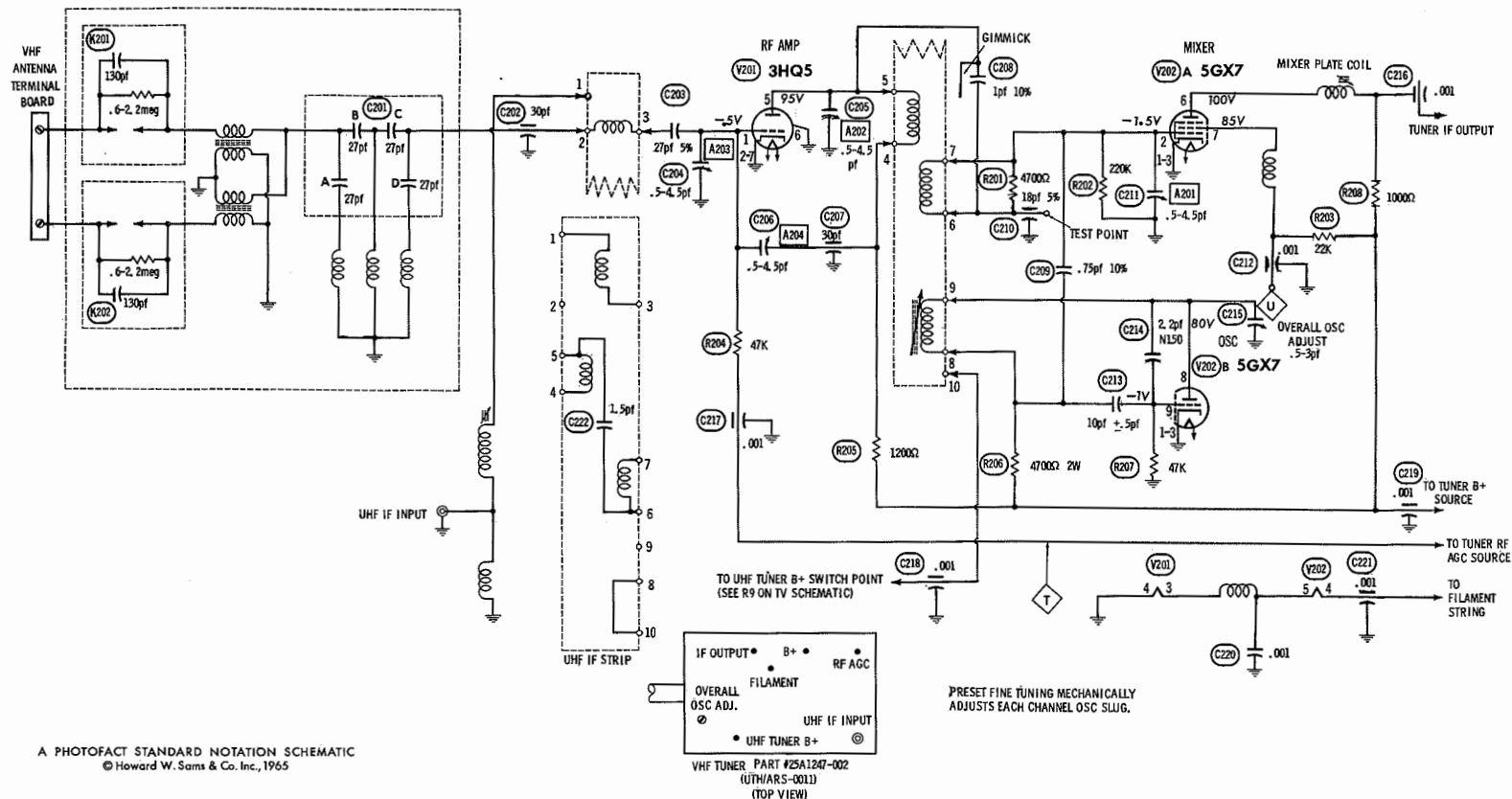
CHASSIS-REAR VIEW

SET 777 FOLDER 4

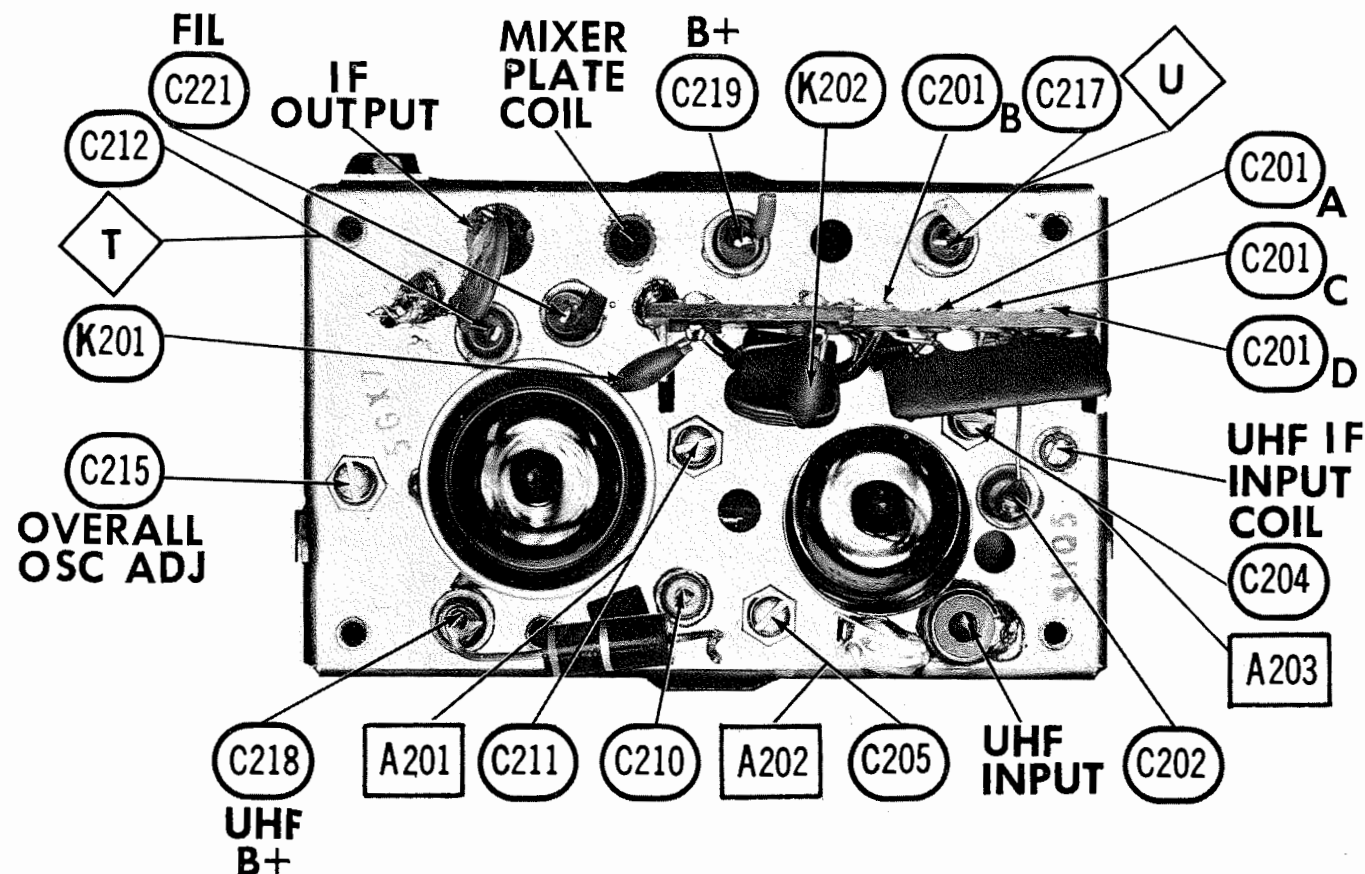
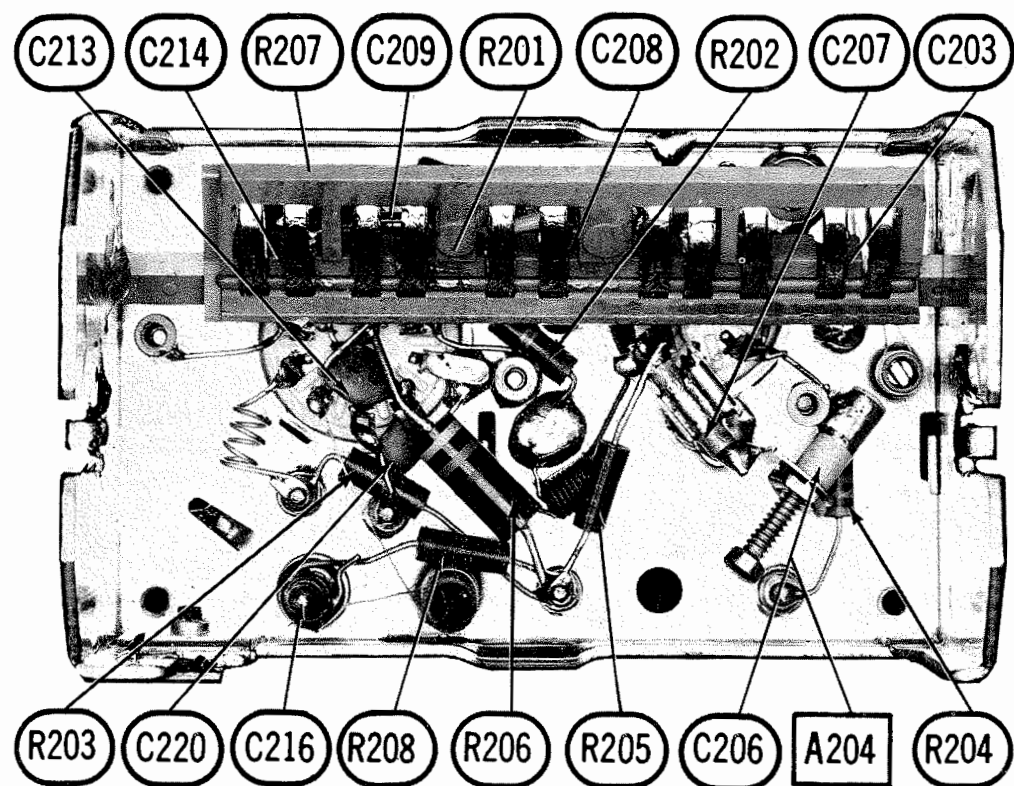
PENNCREST  
MODELS 2373A-40, 2378A-48

FOLDER 4





A PHOTOFACT STANDARD NOTATION SCHEMATIC  
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13-POSITION TURRET-TYPE VHF TUNER 25A1247-002

## VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201 thru A204 ... GENERAL CEMENT #8868, 8987, 9089 ... WALSCO #2531-X, 2541, 2587

### OSCILLATOR ADJUSTMENTS

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 T. Adjust bias to obtain response curve which shows no indication of overloading.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminals with 120Ω in each lead.	213MC	211.25MC 215.75MC	13	Vert. Input to Point U, low side to ground.	A201, A202, A203	Adjust 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.	A204	Increase bias to -15 volts and adjust for MINIMUM amplitude of response.
3. "	See Chart	See Chart	12 thru 2	Vert. Input to Point U, low side to ground.		Decrease bias. Check response on all channels and make compromise adjustments of A201, A202 and A203 if required.

### CHANNEL & FREQUENCY CHART


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



FIG. 201

Tune to a UHF station and adjust UHF IF Input Coil for best picture and sound. Tune UHF Channel Selector to the lowest UHF channel operating in the area (low end of the dial). Adjust UHF Low Channel Oscillator Trimmer for best picture and sound.

PENNCREST  
MODELS 2373A-40, 2378A-48

FOLDER 4

VHF TUNER PARTS LIST AND DESCRIPTION

TUBES					
* AMPEREX * GENERAL ELECTRIC			* RCA * SYLVANIA *		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amp.	3HQ5	V202	Mixer - Osc.	5GX7

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201A	27		DI-27	DD-270		CCD-270	GP427	10TS-Q27
B	27		DI-27	DD-270		CCD-270	GP427	10TS-Q27
C	27		DI-27	DD-270		CCD-270	GP427	10TS-Q27
D	27		DI-27	DD-270		CCD-270	GP427	10TS-Q27
C202	30							
C203	27 5%			TCZ-27			CNO427	10TCC-Q27
C204	.5-4.5							
C205	.5-4.5							
C206	.5-4.5							
C207	30							
C208	1 10%							
C209	.75pf 10%							
C210	18 5%							
C211	.5-4.5							
C212	.001		EF-001	MFT-1000	CZ801CG100J	CCF-102	CT280A	10TCC-Q10
C213	10 ±.5pf		NPO-DI 10	DTZ-10			CNO410	10TCP-V22
C214	2.2 N150							
C215	.5-3			829-3		CV-3	CT565	
C216	.001		EF-001	MFT-1000		CCF-102	CT280A	
C217	.001		EF-001	MFT-1000		CCF-102	CT280A	
C218	.001		EF-001	MFT-1000		CCF-102	CT280A	
C219	.001		EF-001	MFT-1000		CCF-102	CT280A	
C220	.001		BPD-001	DD-102	BYZ601ZU102M	CCF-102	B210	5HK-D10
C221	.001		EF-001	MFT-1000		CCF-102	CT280A	
C222	1.5							

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

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PENNCREST PART No.	REPLACEMENT DATA
K201	Antenna Isolation	.6-2.2meg, 130pf		
K202	Antenna Isolation	.6-2.2meg, 130pf		

UHF TUNER PARTS LIST AND DESCRIPTION

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X301	24T-002	UHF Oscillator				NPN

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		1N82AG					1N82A

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	24							
C302	10		NPO-DI 10	DTZ-10	CZ801CG100J	CCO-100	CNO410	10TCC-Q10
C303	2-8							
C304	.5pf N750 1%							

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	4BZ6	V7	Audio Output	6AQ5
V2	2nd Video IF	4BZ6	V8	Vert. Mult. - Vert. Output	13GF7
V3	3rd Video IF	4DK8	V9	Horiz. Mult. - Horiz. Output	8FQ7 (8CG7) †
V4	Video Amp. - Sync Sep.	8JV8	V10	Horiz. Output	17J78
V5	Sound IF	4AU6	V11	Damper	17AY3
V6	Audio Detector	4DT6	V12	HV Rectifier	1K3

† Alternate

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	PENNCREST PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V13	19DQP4 19DP4		19DQP4 ①	19DWP4 ②	① Aluminized ② Silver Screen "85"

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X1	SE1002	AGC Keying	DS48	GE-10		NPN, Penncrest Part #88X0006-001

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.	
X2	.3A	66X0023-001	GE-504 or 1N1695	1N540 or 1N2070 ①	SK-3018 or SK-3017	40C or F-4 ②	
X3	.3A	66X0023-001	GE-504 or 1N1695	1N540 or 1N2070 ①	SK-3018 or SK-3017	50C or F-4 ②	
X4	.240A	66X0023-001	GE-504 or 1N1695	1N540 or 1N2070	SK-3018 or SK-3017	40C or F-4	
X5		66X0038-001					1N60
X6		66X0020-001					6GC1
X7		66X0025-001					

① A dual unit, VB600, may be used for X2 and X3.

② A dual unit, STFD40, may be used for X2 and X3.

ELECTROLYTIC CAPACITORS

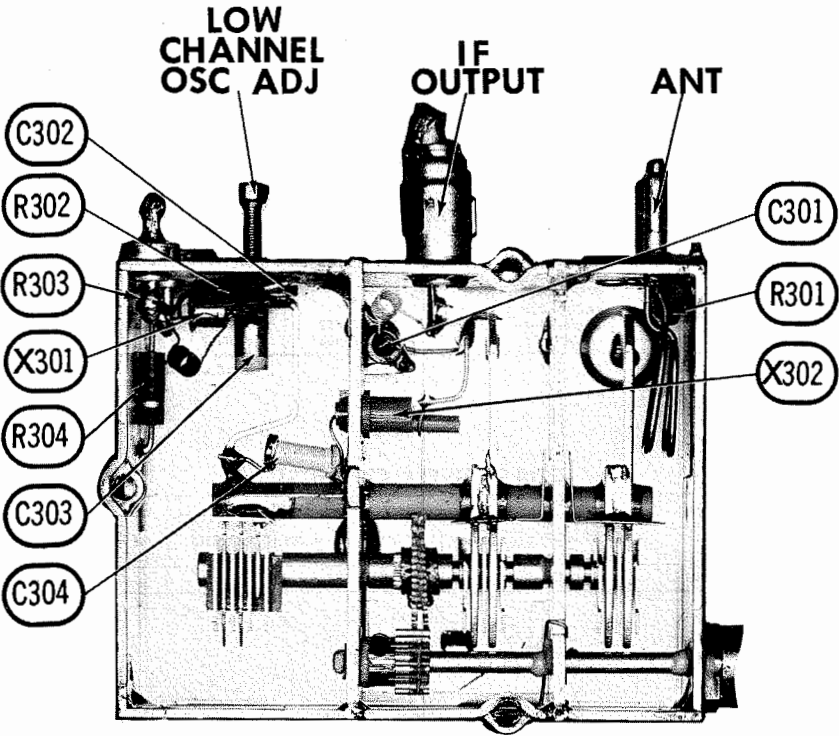
ITEM No.	RATING		PENNCREST PART No.	AEROVOX PART No.	REPLACEMENT DATA			
	CAP.	VOLT.			CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	140	150	45X0500-001	AFH51-31-80 ①	AA0261 ①	XC1-16.1	WP125.5A ①	TVL-1428 ①
C2A	125	300	45X0521-001	AFH4-56-85	DD0473	XC4-37	FP420.28A	TVLS-4573.6 *
B	10	300						
C	20	300						
D	100	50						
C3A	125	300	45X0520-001	AFH3-101-40	CC0875	XC3-34	FP330.26A	TVLS-3754.10 *
B	60	300						
C	20	50						

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

① Use insulating sleeve and mounting wafer.

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.
C4	.22	200V	P288N-22		WMF2P22	2DP-4-224	PVC2022	2PS-P22
C5	.22	200V	P288N-22		WMF2P22	2DP-4-224	PVC2022	2PS-P22
C6	.001		BPD-001	DD-102	BYZ601ZU102M	CCD-102	B210	5HK-D10
C7	68	NPO 5%		DTZ-56			CNO468	10TCC-Q68
C8	680	10%		DD-581			JF368	10TS-T68
C9	56	NPO 5%	DI-680	TCZ-56	JBY601YP681K	CCD-681	CNO456	10TCC-Q56
C10	.001		DD-102	BYZ601ZU102M		CCD-102	B210	5HK-D10
C11	470	10%	DI-470	DD-471	JB601YP471K	CCD-471	JF347	10TS-T47
C12	680	10%	DI-680	DD-681	JBY601YP681K	CCD-681	JF368	10TS-T68
C13	68	NPO 5%		DTZ-68			CNO468	10TCC-Q68
C14	.001	10%	DI-1000	DD-102	JB8601YP102K	CCD-102	JF210	10TS-D10
C15	560	10%	DI-560	DD-561	JBY601YP561K	CCD-561	GP356	10TS-T56
C16	.001		BPD-001	DD-102	BYZ601ZU102M	CCD-102	B210	5HK-D10
C17	.15	200V			PM2P15	2DP-3-154	PVC2015	2PS-P15
C18	33	N150 10%	#80X0099-058				*	10TCP-Q33
C19	33	N150 10%	#80X0099-058				*	10TCP-Q33
C20	.1	400V						
C21	.01		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C22	.015	400V	BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C23	.1	400V	P488N-015		WMF4S15	4DP-1-153	PVC4115	4PS-S15
C24	.047	600V	P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C25	.005		P688N-047	DD-503	PM6S47	6DP-3-473	GEM8147	6TM-S47
C26	.005		BPD-005	DD-502	BYX601ZU502P	CCD-502	B250	5HK-D50
C27	.01		BPD-01	DD-502	BYX601ZU502P	CCD-502	B250	5HK-D50
C28	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C29	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C30	.01	1KV	BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C31	33	N150 10%	#80X0099-058				*	10TCP-Q33



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UHF TUNER

PENNCREST  
MODELS 2373A-40, 2378A-48

FOLDER 4

## 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.

## CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELEMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C32	.1 600V		P688N-1	DF-104	PM6P1	6DP-4-104	GEM601	6TM-P10
C33	.005		BPD-005	DD-502	BYX801ZU502P	CCD-502	B250	5HK-D50
C34	.01 400V 10%		BE451	CPR-10000J	PM4S1	4DP-1-103	GEM411	4PS-S10
C35	.002		BPD-002	DD-202	BYZ801ZU202P	CCD-202	B220	5HK-D20
C36	.001		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C37	.002 1KV		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C38	22 N75 10%	#80X0089-007						
C39	.1 200V		P288N-05	DF-503	PM4S5	4DP-3-503	GEM415	4TM-S50
C40	22 N75 10%	#80X0089-007						
C41	68 N75 10%	#80X0033-001						
C42	330 500V 10%		ADM-15-331	CPR-330J	CD19F331K500	DM-19-331K	5X333	MS-333
C43	.0056 400V 10%		BE3D56	CPR-5600J	PKM4D56	6DP-1-562	PVC6256	6PS-D56
C44	.1 400V		P488N-1	DF-104	PM4P1	4DP-3-104	GEM401	4TM-P10
C45	.001		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C46	.002		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C47	.047 400V		P488N-047	DD-503	PM4S47	4DP-3-473	GEM4147	4TM-S47
C48	.047 400V		P488N-047	DD-503	PM4S47	4DP-3-473	GEM4147	4TM-S47
C49	82 N1500 5KV 10%	(56) †						
C50	22 600V		P688N-22		PKM6S22	6DP-5-224	GEM6022	6TM-P22
C51	68 N750 3KV 10%							
C52	.001		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C53	470 10%		DI-470	DD-471	JB601YP471K	CCD-471	JF347	10TS-T47
C54	.001		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C55	.001		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C56A	.001			DD-102	MLZ501ZV102Z	CCD-102		
C57	.001		BPD-001	DD-102	MLZ501ZV102Z	CCD-102	B210	5HK-D10
C58	.001		BPD-001	DD-102	BYZ801ZU102M	CCD-102	B210	5HK-D10
C59	.001		P688N-1	DF-104	PM6P1	6DP-4-104	GEM601	6TM-P10
C60	.02		BPD-02	DD-203	BYT801ZU203Z	CCD-203	B120	5HK-S20
C61	.033 400V		P488N-033		PM4S33	4DP-2-333	GEM4133	4PS-S33

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

# Penncrest Part Number

† Alternate Value

## CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			PENNCREST PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Contrast	350Ω	78X0059-001				
B	Volume/Switch	1meg	40X0585-010	F1-500K, SNK104 or (AB-59, AK-19)	A47-500K-S, RN-3	B11-133, TM4 or (BU11, CF18, SS6) *	PTA551L, SP2000 ① or (RU551L, SL37, SN1000, SP2000 ①) or (UA551L, SN1000, SP2000 ①) or (RU155L, SL37, SN1000, SP2000 ①) or (UA155L, SN1000, SP2000 ①) or (UA54L, SN1000, SP2000 ①)
R2	Brightness	500K	40X0585-010A				
R3	Vert. Hold	1.5meg	40X0585-008	F1-1.5meg, SNK104 or (AB742, AK-19)	A47-1.5meg-S, RN-3	B11-138, TM4 or (BU11, CF18, SS6) *	PTA261L, SP2000 ① or (RU155L, SL37, SN1000, SP2000 ①) or (UA155L, SN1000, SP2000 ①) or (UA54L, SN1000, SP2000 ①)
R4	Horiz. Hold (Fine)	50K	40X0585-009	F1-50K, SNK104 or (AB-31, AK-19)	A47-50K-S, RN-3	B11-123, TM4 or (BU11, CF12, SS6) *	PTA541L, SP2000 ① or (RU541L, SL37, SN1000, SP2000 ①) or (UA54L, SN1000, SP2000 ①)
R5	Vert. Linearity	1000Ω	40X0585-042	TT-511 or (F1-1000, SNK012)	B47-1000-S	B11-108, TM4 or (BU11, CF8, SS8) *	PTA152L or (RU131L, SL37, SN1000) or (UA131L, SN1000) or (UA755L, SN1000)
R6	Height	7.5meg	40X0585-002	TT-90 or (F1-7.5meg, SNK012)	B47-7.5meg-S	HLC6	PTA755L or (UA755L, SN1000)
R7	AGC Level	500Ω	40X0592-001			X201R501B	MTCS21L
R8	Horiz. Hold (Coarse)	300K	40X0590-001			U201R254B	MTCS253L4

① Use portion of original shaft to obtain desired length.

\* "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
R26	5600Ω 10W	MR 4	10W-SQ-5600	#43X0450-014	R71	32Ω 10W	MR 2	10W-SQ-32.5	#43X0401-021
R57	Thermistor 3.5Ω, Cold		FR 3.5		R72	5Ω 15W	2C-5	20W-SQ-5	#43X0317-001
R66	6800Ω 7W	PW10-7000	10W-SQ-6800	#43X0450-015	R73	2500Ω 5W	1 3/4A-2500	20W-SQ-2500	#43X0313-001

# Penncrest Part Number

## COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PENNCREST PART No.	REPLACEMENT DATA
K1	AGC Network	330K, 680K, 820K, 22meg, .01mfd	78X0072-001	
K2	Audio Network	680Ω, 560K, 680K, 220pf, .001mfd, .0047mfd	78X0071-001	
K3	Sync Takeoff	270K, 2.2meg, 30pf, 150pf, .005mfd	78X0052-001 ①	① Alternate Part #78X8066-001.
K4	Vertical Integrator	12K, 68K, 820pf, .005mfd	78X0070-001	
K5	Horizontal AFC and Oscillator Network	62K, 390K, 390K, 1meg, .001mfd, .002mfd, .002mfd	78X0069-001	
K6	Chassis Isolation	.3-1meg, 470pf	78X0018-001	Centralab RC-471, Sprague AC1-1

## COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		PENNCREST PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.
L1	1st Video IF	9A2541-001					
L2	2nd Video IF - 47.25MC Trap	9A2540-001					
L3	3rd Video IF - 41.25MC Trap	9A2539-001					
L4	4th Video IF - Detector	9A2808-001					
L5	RF Choke (16uh)	9A2432-001					
L6	Peaking (500uh)	38A0094-006	19-3500	BC-678	74F155AP 6174	RTC-8592	T989
L7	Peaking (500uh)	38A0094-005 ①	19-3500 *	BC-678 *	6174 *	RTC-8592 *	T353 *
L8	Sound Takeoff - 4.5MC Trap	9A2599-001					
L9	Peaking (500uh)	38A0094-006	19-3500	BC-678	6174	RTC-8592	T353
L10	Peaking (80uh)	38A0094-015	19-3060	TV-193	6110	RTC-8573	T302
L11	Sound Interstage	9A2811-001					
L12	Quadrature	9A2595-001			7137	RTC-9387	
L13	RF Choke (1.5uh)	9A2380-001	19-1001	BC-562	4604	RTC-8516	T656
L14	FL Choke (2.1uh)	9A2543-001		BC-563	74F226AP		

① Wound on 680Ω Resistor.

\* Shunt with 680Ω Resistor.

## COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		PENNCREST PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	WORKMAN PART No.
L15	Horiz. Stabilizer	9A2515-001		6335-G		HS-16		TA-121

## FILTER CHOKE

ITEM No.	CURRENT (Measured)	REPLACEMENT DATA						NOTES
		DC RES.	INDUCTANCE (0 CURRENT 1000~)	PENNCREST PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	
L16	.3 ADC	25.5Ω	.7 Hy.	52X0112-005	C-4084	C-2347	28C78	C-28X

## \* TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA					NOTES
		PENNCREST PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T1	Vert. Output	51X0239-002	A-2984	VO-115	26S07	A-140X	
T2	Yoke (Horiz. 18.4MH) 114° (Vert. 13.6MH)	9A2625-001	MDF-127 ①	DY-45A ②	Y-52 ③	Y-60-1 ④	
	Yoke Clamp	30X0628-001					
	Width Sleeve	11X0197-001					
T3	Horiz. Output	53X0425-001(-B)					

① Remove yoke plug and leads. Use original leads.

② Use original 68pf ④ 3KV horizontal damping capacitor if necessary.

③ If width is insufficient, add a capacitor (approximately 120pf ④ 6KV in parallel with original 27pf ④ 5KV capacitor.

④ Remove 27pf, 470Ω resistors, and jumper from yoke terminals 5 and 8.

## \* COMPONENT CONNECTION DATA

ORIGINAL → REPLACEMENT ↓	HV TRANSFORMER			VERTICAL OUTPUT			YOKE								YOKE PLUG							
	Original Connections			Original Connections			Original Connections								TO YOKE TERMINAL							
MERIT				Blue	Red	Yellow	1	2	3	4	5	6	7	8								
STANCOR				Green	Red	Yellow	8	7	10	3	2	5	11	4	†	‡						
THORDARSON				Green	Red	Yellow	2	4	5	8	6	7	▲	3								
TRIAD				Blue	Red	Yellow	2	4	5	8	6	7	▲	3								

† Use original thermistor (3.5Ω Cold) and install between yoke terminals 10 and 7.

‡ Use original resistor (5.6K, 2 watt) and install between yoke terminals 4 and 11.

▲ Use original resistor (5.6K, 2 watt) and install between yoke terminals 1 and 3 and horiz. osc. terminal #4.

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	PENNCREST PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T4	4750Ω	3-4Ω	51X0240-002	A-3026	A-3309	24S48	S-6X	

## SPEAKER

ITEM No.	TYPE	RATING	REPLACEMENT DATA		NOTES
			PENNCREST PART No.	QUAM PART No.	
SP1	3" x 5" PM	3-4Ω	12A0845-001	35A05	

## FUSE DEVICES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	Circuit Breaker	2. 25 Amp.	2A0568-001		8152. 25			

## MISCELLANEOUS

ITEM No.	PART NAME	PENNCREST PART No.	NOTES
M2	VHF Tuner	25A1247-002	
M3	UHF Tuner		
M4	VHF Antenna	9A2548-003	JFD Replacement TA477
M5	UHF Antenna	9A2575-001	
M6	Switch	2A0584-003	Vacation
	Printed Circuit Board	38A3115-000	IF Circuit - Complete Assembly, less tubes
	Printed Circuit Board	38A3114-000	Sweep Circuit - Complete Assembly, less tubes

## CABINETS &amp; CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART No.	ITEM	PART No.
Cabinet Front Assembly, Model 2373A-40	38A2970-045	Knob - VHF Channel Selector	38A3000-070
Cabinet Front Assembly, Model 2378A-48	38A2970-044	Knob - UHF Channel Selector	10A1136-901
Cabinet Back, Model 2373A-40	34X0646-006	Knob - Fine Tuning	10A1137-001
Cabinet Back, Model 2378A-48	34X0646-005	Knob - On/Off/Volume	10A1092-901
Handle Assembly, Model 2373A-40	38A3245-000	Knob - Contrast	10A1088-914
Handle Assembly, Model 2378A-48	36A3241-000		

## WIRING DATA

High Voltage Lead .....	Use BELDEN No. 8869 (17KV) or 8868 (25KV)
Shielded Hook-up Wire .....	Use BELDEN No. 8885 (Single Conductor) 8736 (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. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 6 Conductor