

## PHOTOFACT® Folder

PACKARD BELL  
CHASSIS 98C9, 98C10

MODEL 23CC1

TRADE NAME	Packard Bell	Models	Chassis	AM-FM Chassis	MPX Chassis	Amp. Chassis
		23CC1, 23CC2 ...	98C10			
		25CC3, 25CC3A ..	98C9			
		25CC4, 25CC4A ..	98C9			
		25CD1, 25CD1A ..	98C9			
		25CK1, 25CK1A ..	98C9 ...	8TU8 ...	MPX5-1 ...	DPA-150
		25CK1B .....	98C9 ...	8TU8 ...	MPX5-1 ...	DPA-150-1

## SUPPLIER

For current address, see Annual Index.

## TYPE SET

Color Television Receiver

## TUBES

VHF: Twenty-Seven, UHF: One Transistor

## POWER SUPPLY

110-120 Volts AC, 60 Cycles

## TUNING RANGE

Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

RATING 340 Watts, 3.15 Amps. @ 117 Volts AC

## 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 oscillator slug for adjustment (one slug for each channel). It may be necessary to adjust Overall Oscillator Trimmer for best results.

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, L35. (See "Tube Placement Chart" for location.)

FOCUS

The focus may be varied by means of a Focus coil. (See "Tube Placement Chart" for location.)

CENTERING

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

PINCUSHION ADJUSTMENT

If top and bottom horizontal lines are straight, adjust as follows:

Turn R17, Pincushion control, fully clockwise. Adjust L38 Pincushion Phase coil to move the curvature of lines to the center of crosshatch pattern. Then adjust R17 for straight lines.

HOWARD W. SAMS &amp; CO., INC. Indianapolis, Indiana 46206



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. NB945

Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1966 Howard W. Sams & Co., Inc., Indianapolis, Indiana 46206. Printed in U. S. of America

DATE 12 -66

SET 854 FOLDER 3

PACKARD BELL  
CHASSIS 98C9, 98C10

## 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.

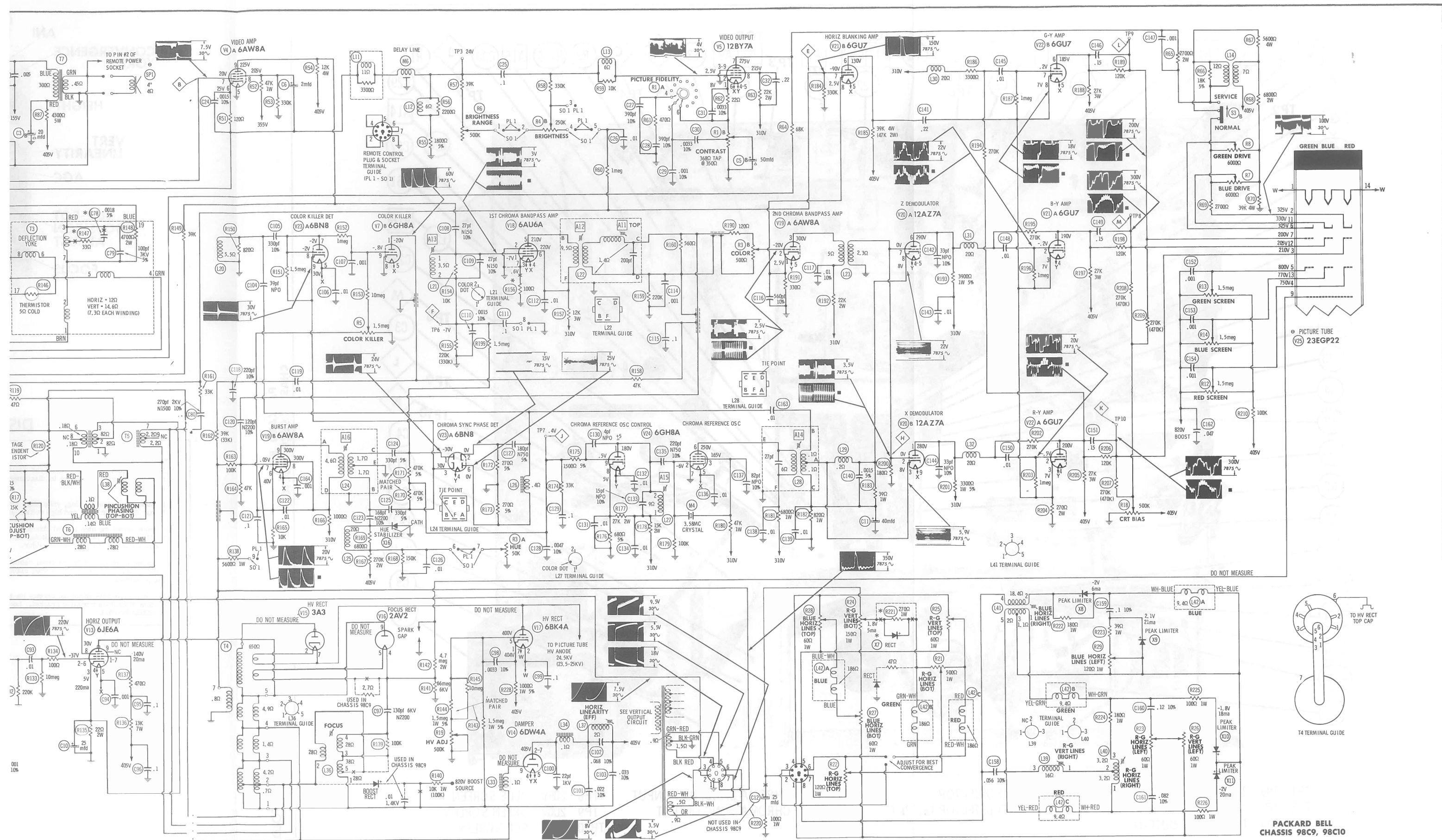
## INDEX

AM-FM Chassis 8TU8,  
FM Stereo MPX-5-1,  
Amplifier DPA-150, DPA-150-1 .. SET 854, FOLDER 3-A

PACKARD BELL  
CHASSIS 98C9, 98C10

SET 854 FOLDER 3





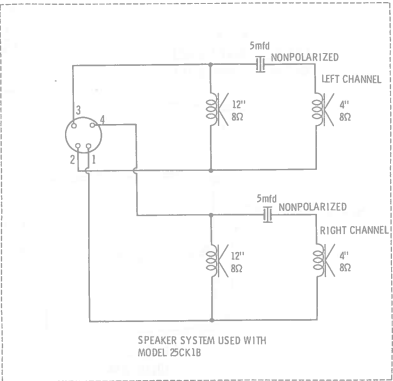
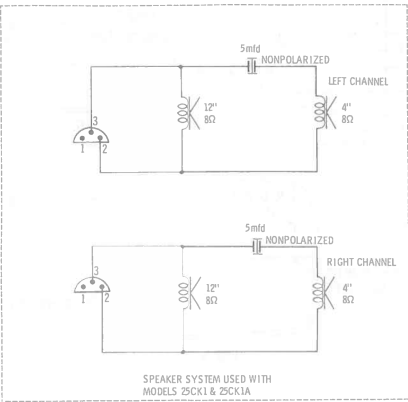
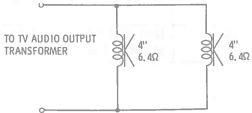
PACKARD BELL  
CHASSIS 98C9, 98C10



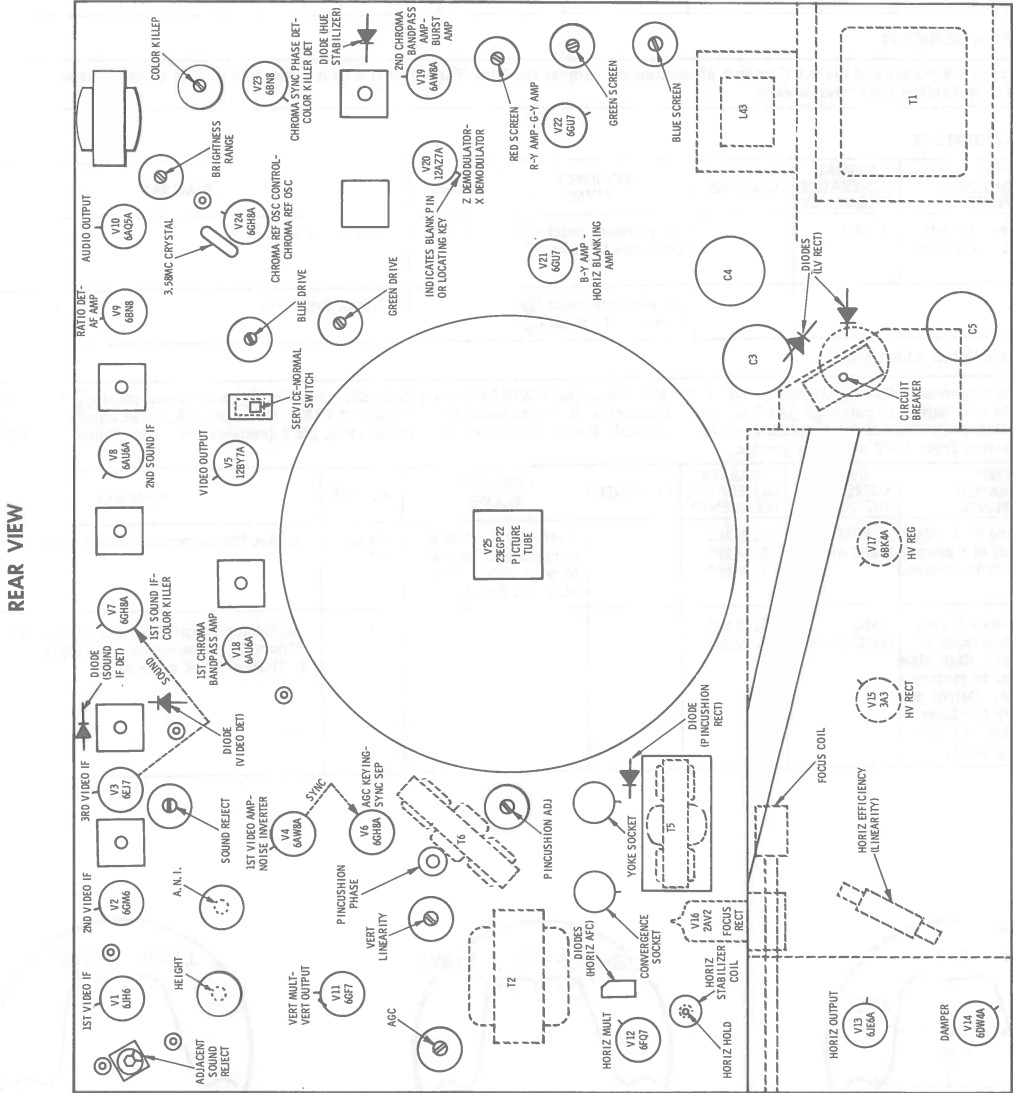
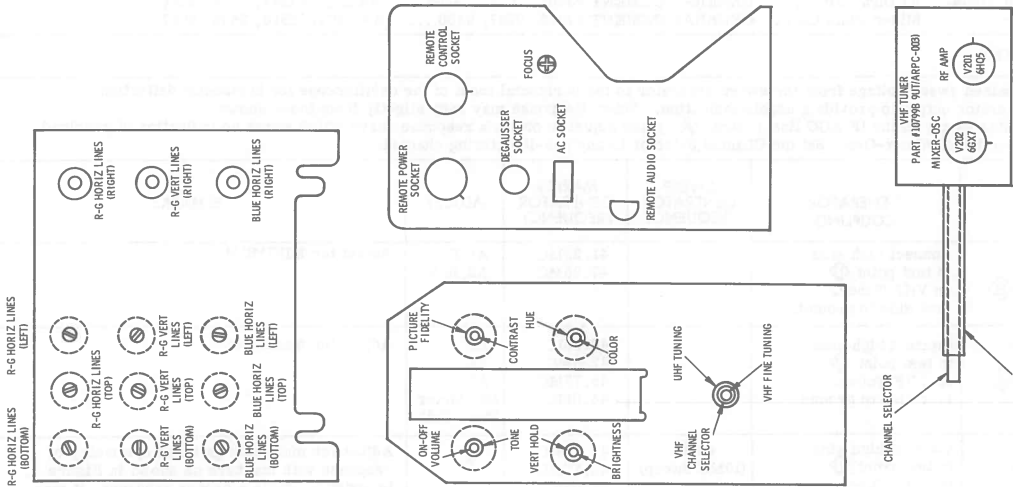
RESISTANCE MEASUREMENTS

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	6JH6	223K	1547Ω	FIL	FIL	218Ω ▲	218Ω ▲	1500Ω					
V2	6GM6	80K	INF	FIL	FIL	3468Ω †	3468Ω †	68Ω ▲					
V3	6EJ7	180Ω	0Ω	180Ω	FIL	FIL	0Ω	4390Ω †	4390Ω †	0Ω			
V4	6AW8A	0Ω	650K	101K †	FIL	FIL	1550Ω	2000Ω ●	50.3K †	12K †			
V5	12BY7A	390Ω	650K	0Ω	FIL	FIL	FIL	8337Ω †	23K †	0Ω			
V6	6GH8A	30K †	10K †	927Ω †	FIL	FIL	770K	7800Ω †	0Ω	4.7meg			
V7	6CH8A	267K	100K	10.5K †	FIL	FIL	10.5K †	330Ω	0Ω	10meg			
V8	6AU6A	100K	0Ω	FIL	FIL	10.5K	25.7K †	120Ω					
V9	6BN8	INF	0Ω	INF	FIL	FIL	24K	337K †	4.7meg	18Ω			
V10	6AQ5A	470K	270Ω	FIL	FIL	4617Ω †	7200Ω †	NC					
V11	6GF7	0Ω	2.25meg	4000Ω	FIL	FIL	1320Ω †	TP	4meg	750K			
V12	6FQ7	7728Ω †	1.4meg	1200Ω	FIL	FIL	69K †	120K	1200Ω	100Ω			
V13	6JE6A	13K †	10meg	22Ω	FIL	FIL	10meg	13K †	1800Ω	NC			TOP CAP 5Ω ‡
V14	6DW4A	NC	20.1Ω †	NC	FIL	FIL	NC	20.1Ω †	NC	460K			
V15	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE											TOP CAP 655Ω ‡
V16	2AV2	NC	NC	NC	66meg	66meg	NC	NC	NC	5Ω ‡			
V17	6BK4A	1018Ω †	FIL	NC	NC	900K	NC	FIL	NC				TOP CAP INF
V18	6AU6A	230K	0Ω	FIL	FIL	13K †	13K †	0Ω					
V19	6AW8A	330Ω	220K	23K †	FIL	FIL	10K	35K	1928Ω †	1933Ω †			
V20	12AZ7A	4228Ω †	2.3Ω	820Ω	FIL	FIL	4828Ω †	2.3Ω	820Ω	FIL			
V21	6GU7	26.5K †	1meg	270Ω	FIL	FIL	47K †	210K	330Ω	0Ω			
V22	6GU7	26.5K †	1meg	270Ω	FIL	FIL	27K †	1meg	270Ω	0Ω			
V23	6BN8	1.65meg	270Ω	2.4meg	FIL	FIL	270Ω	3.3meg	3.3meg	2.5meg			
V24	6GH8	11.5K †	100K	48K †	FIL	FIL	7734Ω †	0Ω	680Ω	2.12meg			
V25	23EGP22	FIL	6400Ω †	100K †	500K †	450K †	3500Ω †	110K †	NC	71meg	NC	4200Ω †	110K †
							Pin 13 510K ‡	Pin 14 FIL					
V201	6HQ5	3.3meg	0Ω	FIL	FIL	6028Ω †	0Ω	0Ω					
V202	6GX7	0Ω	220K	0Ω	FIL	FIL	4828Ω	27K †	9520Ω †	47K			
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

● READING DEPENDS ON POLARITY OF METER CONNECTIONS.  
† MEASURED FROM CATHODE OF X2.  
‡ MEASURED FROM PIN 9 OF V14.  
▲ MEASURED FROM PIN 2 OF V2.  
NC NO CONNECTION  
TP TIE POINT



TUBE PLACEMENT CHART



PACKARD BELL  
CHASSIS 98C9, 98C10

FOLDER 3



## 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 #8606, 8606L, 8869 ... WALSCO #2543, 2544, 2588  
Mixer Plate Coil .. GENERAL CEMENT #9296, 9297, 9300 ..... WALSCO #2510, 2546, 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.	Connect high side to test point $\diamond$ on VHF Tuner. Low side to ground.		41.25MC 47.25MC	A1, R9 A2, R20	Adjust for MINIMUM.
2.	Connect DC probe of a VTVM thru a 47K resistor to point $\diamond$ . Common to ground.	Connect high side to test point $\diamond$ on VHF Tuner. Low side to ground.		43.8MC 42.5MC 45.75MC 44.0MC	A3 A4 A5 A6, Mixer Plate Coil	Adjust for maximum.
3.	Connect vertical input of a scope to point $\diamond$ . Low side to ground.	Connect high side to test point $\diamond$ on VHF Tuner. Low side to ground.	44MC (10MC Sweep)	41.25MC 42.17MC 44.0MC 45.75MC 47.25MC		Adjust for maximum gain and symmetry of response with markers as shown in Figure 1. In order to obtain a proper response, it may be necessary to slightly retouch A3, A4, A5, A6, and Mixer Plate Coil.

### 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

	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	High side thru .01 mfd to point $\diamond$ . Low side to ground.	4.5MC		DC probe to point $\diamond$ . Low side to ground.	A7, A8	Adjust for maximum.
5.	"	"		DC probe to point $\diamond$ . Low side to point $\diamond$ .	A9	Adjust for zero.

### CHROMA BANDPASS ALIGNMENT

The following alignment will require the use of an RF Modulator (RCA WG304A or equivalent). Connect a jumper from point  $\diamond$  to ground. Connect a -15 volt supply to point  $\diamond$  (pin 7 of V21). Connect a -6 volt to point  $\diamond$  (off pin 1 of V18). Connect a -2.5 volt supply to point  $\diamond$  (tuner AGC line). Positive of all supplies to ground. Disable Horizontal Sweep by disconnecting pin 3 (cathode ) of V13. Connect a 2000 $\Omega$ , 100-watt resistor from 405V supply to ground.

	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	High side thru a .1 mfd to pin 1 (grid) of Chroma Amp. Low side to ground.	3.58MC (3MC Sweep)	3.08MC 3.58MC 4.08MC		Vert. Amp. thru a demodulator probe to point $\diamond$ . Low side to ground.	A11, A12	Adjust for response similar to Figure 2.
7.	High side of sweep gen. to Video Sweep input of RF modulator. High side of signal gen. to picture carrier input. Output of RF modulator to Mixer Grid test point on tuner. Low side to ground.	3MC (6MC Sweep)	3.08MC 4.08MC		"	A13	Adjust for response curve similar to Figure 3. If necessary, readjust A11 to flatten top of response.

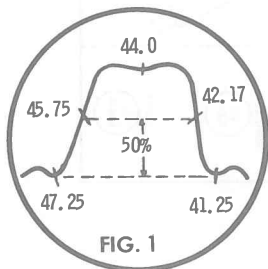


FIG. 1

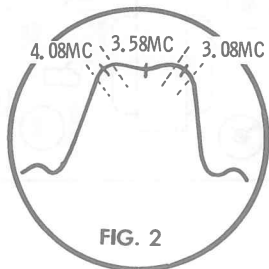


FIG. 2

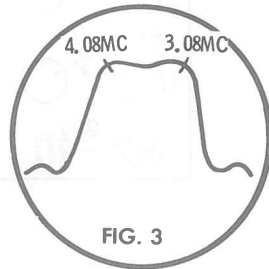


FIG. 3

## MISCELLANEOUS ADJUSTMENTS

### HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect:  
A 2-500 ma meter in series with the cathode lead of the Horizontal Output tube.  
A .47 mfd capacitor across meter.  
A VTVM across R228, located in High Voltage Regulator tube cathode.  
A VTVM through a high voltage probe to the picture tube anode connector.

Set all controls for normal operation. Adjust the Horizontal Linearity coil slug for MINIMUM horizontal output cathode current. Current should not exceed 210 ma. Adjust the High Voltage control for 23.5 to 24KV on VTVM. Turn the Brightness to MINIMUM and check regulator current. VTVM should read at least .85 volts (equivalent 850 microamps). If less than .85 volts, adjust Horizontal Linearity while observing horizontal output cathode current. (Do not exceed 210 ma.)

Adjust Focus, Height, and Vertical Linearity controls.

### AGC ADJUSTMENT

Tune in a strong TV station and advance AGC control until the picture begins to overload. Slowly reduce the control for a stable picture. Check all available channels for proper AGC action.

### PURITY ADJUSTMENTS

Perform step 1 of "Convergence Adjustments". If the picture tube appears to be magnetized, use a degaussing coil to demagnetize tube and mounting brackets. Connect the Blue and Green grids of the picture tube through individual 100K resistors to ground. Loosen the deflection yoke and move it backward until it is against the convergence yoke assembly. Adjust the tabs on the Purity magnet and rotate the assembly until a red spot appears in the center of the picture. Slide the deflection yoke forward to obtain a uniform red over the entire face of the picture tube. A low power microscope is useful to observe the beam landings.

### GREY SCALE ADJUSTMENTS

Tune in a black and white picture or a color picture with Color control set to MINIMUM. Turn the CRT Bias control and Red, Blue, and Green Screen controls to MINIMUM (fully counterclockwise). Move Normal-Service switch to Service position. Advance the screen controls one at a time until each produces a barely visible line on the screen. If any control fails to produce a line, leave that control at maximum and turn

### GREY SCALE ADJUSTMENTS (CONTINUED)

the other two controls back to MINIMUM. Advance the CRT Bias control to produce a barely visible line. Then advance remaining controls one at a time to produce a barely visible line. Return the Normal-Service switch to Normal position. Adjust the Blue and Green Video Drive controls to eliminate coloring in the bright and dark areas of the picture tube.

Turn Contrast and Brightness controls to maximum (fully clockwise). Adjust the Brightness Range control (R6) until the picture blooms, then reduce the control to the point just below where the picture returns to normal.

### COLOR AFC ADJUSTMENT

Set the Color Killer control fully counterclockwise. Set the Hue control and Color control to midrange. Connect a color bar generator to the antenna terminals and adjust the receiver for normal color reception. Short pin 7 (grid) of Burst Amp. (V19) to ground. Connect the DC probe of a VTVM through a 470K resistor to pin 1 of Phase Detector, V23.

Adjust A14 for maximum deflection on VTVM. If no reading is obtained, oscillator is not operating. Adjust A15 to start oscillator, then adjust A14 for maximum. Remove the short from pin 7 of Burst Amp. Adjust A16 for maximum deflection on VTVM. Make sure the oscillator is running and locked in.

Short point  $\diamond$  to ground. Remove VTVM. Adjust A15 until the color bars stand still or drift slowly across screen. Remove the short from point  $\diamond$  and check to see that the color bars will sync with a low level input signal. If necessary, retouch A15 for best hold.

Connect the vertical input of a scope to point  $\diamond$ . Check for proper waveform with the color bar generator being used. See waveform on schematic for pattern obtained from a standard N.T.S.C. signal.

Check the range of the Hue control. The bars should move 30° either side of proper signal. If necessary, retouch A16 for proper range of Hue control.

Check for proper waveform at G-Y and B-Y outputs (points  $\diamond$  and  $\diamond$ ). Tune in a weak signal or reduce the signal at the antenna terminals to obtain a snowy picture. Adjust the Color Killer control to eliminate the color in the snow. Check with a color signal to make sure the killer is not eliminating color.

### CONVERGENCE ADJUSTMENTS

Step	Control	Use to Converge (or Straighten)	Remarks
1.			Perform center dot convergence using convergence magnets. If more range is needed, rotate magnet 180°. See Fig. A.
2.	R-G Vertical lines Top and Bottom	Red and Green vertical bars at top and bottom of screen.	Touch up both controls for best convergence from top to bottom along vertical center line (Fig. B).
3.	R-G Horizontal lines Top and Bottom	Red and Green horizontal bars at top and bottom of screen.	Touch up both controls for best convergence of horizontal bars along vertical center line (Fig. B).
4.	Blue Horizontal lines Top and Bottom	Blue horizontal bars at top and bottom of screen.	Touch up both controls for best convergence of horizontal bars along vertical center line (Fig. C).
5.			Perform center dot static convergence (Fig. A).
6.	Blue Horizontal lines Right	Blue horizontal bars at right side of screen.	Touch up both controls for best convergence along horizontal center line (Fig. D).
7.	Blue Horizontal lines Left	Blue horizontal bars at left side of screen.	(Fig. D)
8.	R-G Vertical lines Right	Red and Green vertical lines at right side of screen.	(Fig. E)
9.	R-G Horizontal lines Right	Red and Green horizontal bars at right side of screen.	Use control to converge blue bar with red and green bars on right side of screen (Fig. E).
10.	R-G Vertical lines Left	Red and Green vertical bars at left side of screen.	(Fig. E)
11.	R-G Horizontal lines Left	Red and Green horizontal bars at left side of screen.	Use control to converge blue bar with red and green bars at left side of screen (Fig. E).

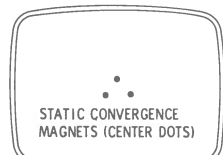


FIG. A

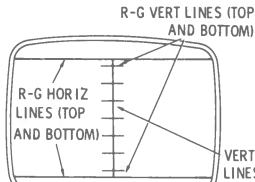


FIG. B  
(RED AND GREEN ONLY)

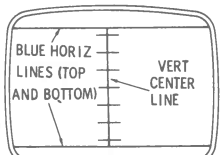


FIG. C  
(BLUE BARS)

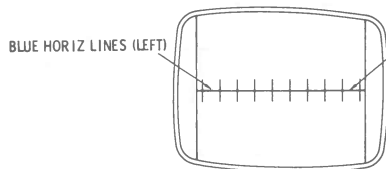


FIG. D  
(BLUE BARS)

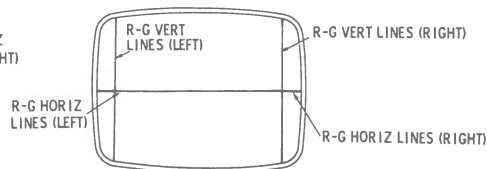
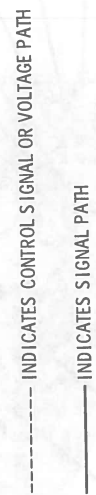


FIG. E



**PACKARD BELL  
CHASSIS 98C9, 98C10**







**PAGE 18**

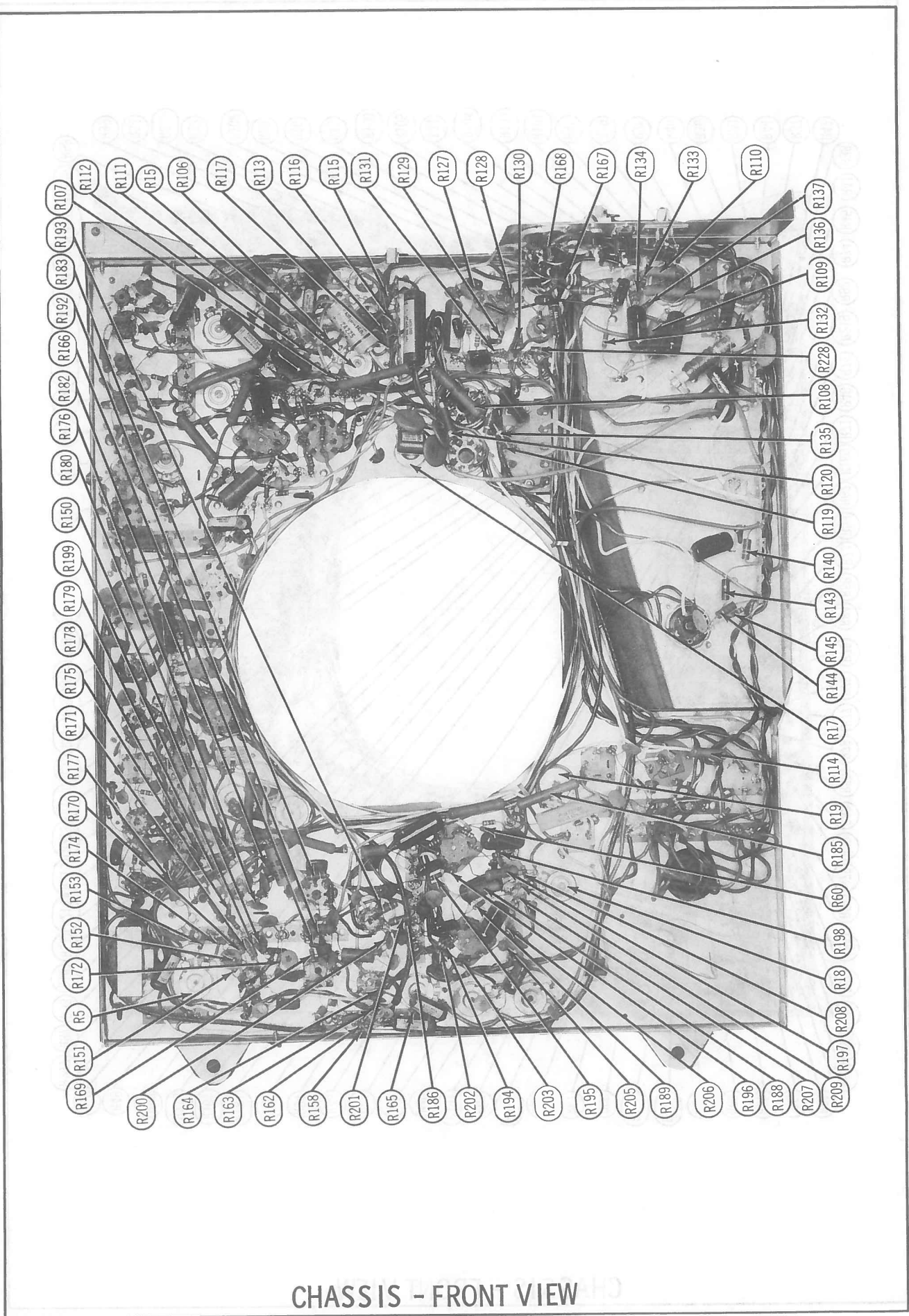
**PAGE 18**



**PAGE 18**

**PAGE 18**

**PAGE 18**



CHASSIS - FRONT VIEW

VHF TUNER PARTS LIST

VHF TUNER 10799B

TUBES

♦ AMPEREX ♦		♦ GENERAL ELECTRIC ♦		♦ RCA ♦		♦ SYLVANIA ♦	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE	
V201	RF Amp.	6HQ5		V202	Mixer - Osc.	6GX7	

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201A	27	(22) †	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 NPO 5%							
C204	.5-4.5							
C205	.5-4.5							
C206	47							
C207	.001		EF-001	MFT-1000		CCF-102	CT280A	
C208	.5-3							10TCC-V12
C209	1.2 10%							
C210	18							
C211	10 N220 5%		NPO-DI 2.2	DTZ-2R2	CZ801CJ2R2D	* CCTO-2R2	* CNO522	10TCR-Q10 10TCC-V22
C212	2.2							
C213	.5-3							
C214	.75pf 10%							
C215	.5-3							
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		EF-001	MFT-1000		CCF-102	CT280A	
C221	1.5		NPO-DI 1.5	DTZ-1R5			CNO615	10TCC-V15

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

UHF TUNER PARTS LIST

UHF TUNER 107933

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
Q301	24T002	UHF Oscillator		GE-11	SK-3019	NPN

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X301		1N82AG					

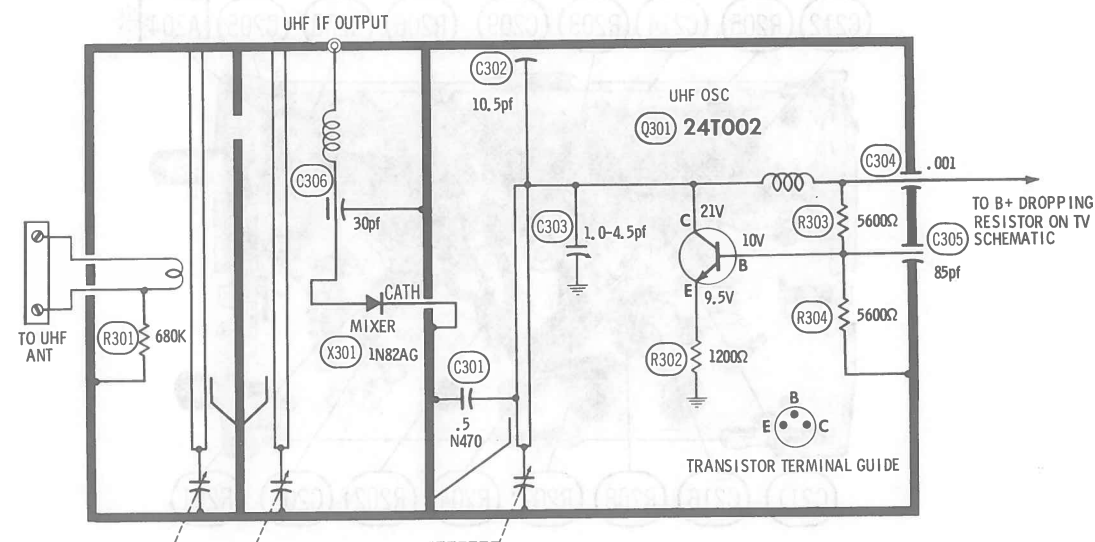
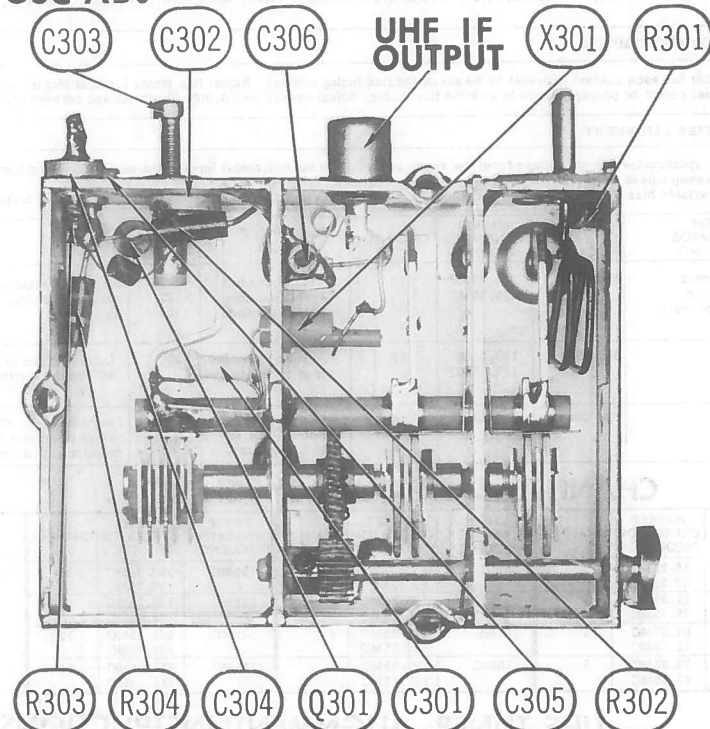
CAPACITORS

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	.5 N470		DI-10	DD-100		CCD-100	GP410	10TS-Q10
C302	10.5							
C303	1.0-4.5		EF-001	MFT-1000		CCF-102	CT280A	
C304	.001							
C305	85							
C306	30							

PACKARD BELL  
CHASSIS 98C9, 98C10

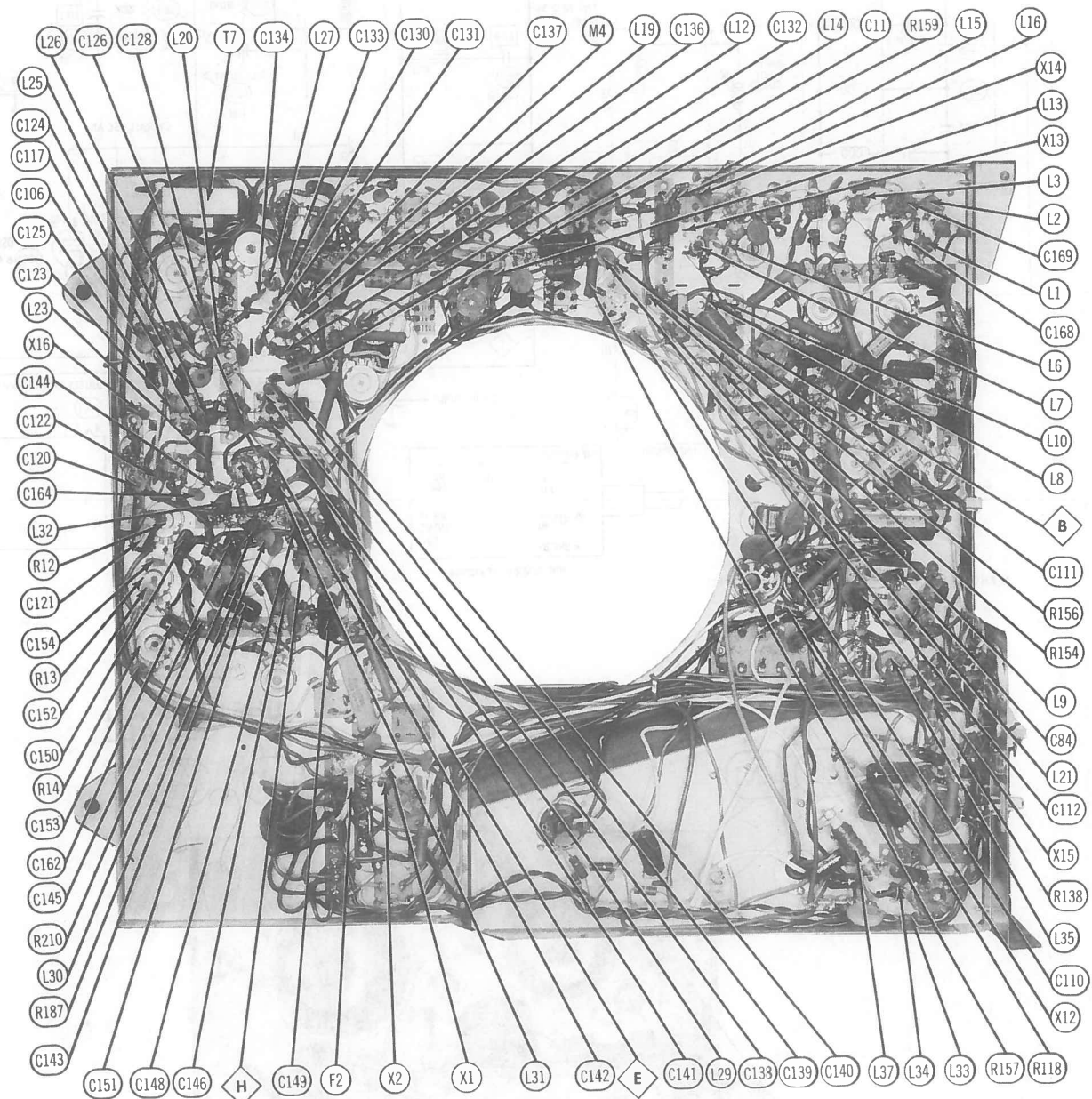


LOW CHANNEL  
OSC ADJ



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1966

UHF TUNER 107933

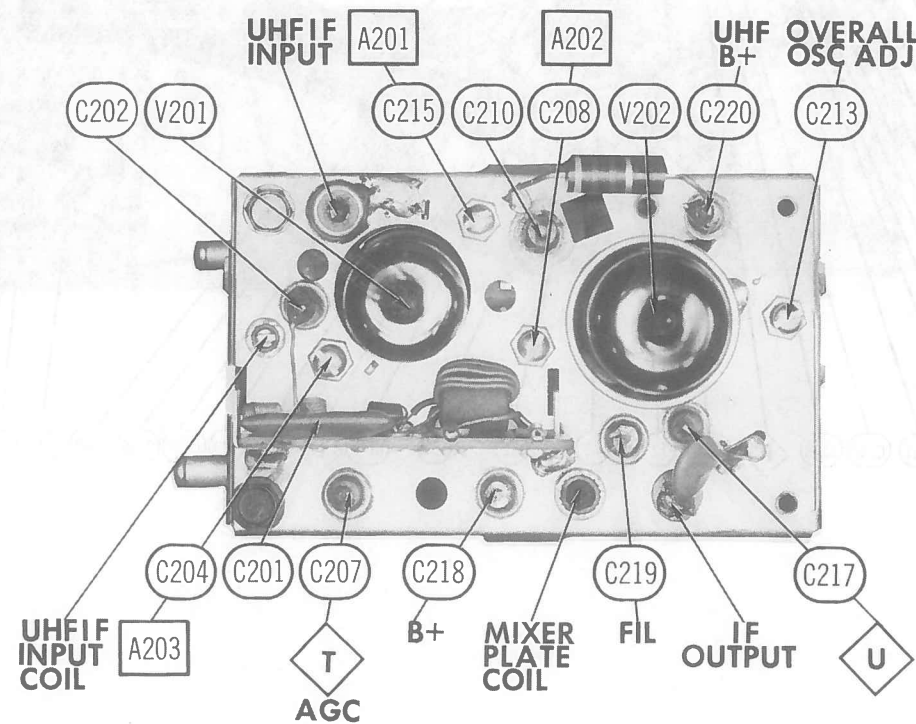
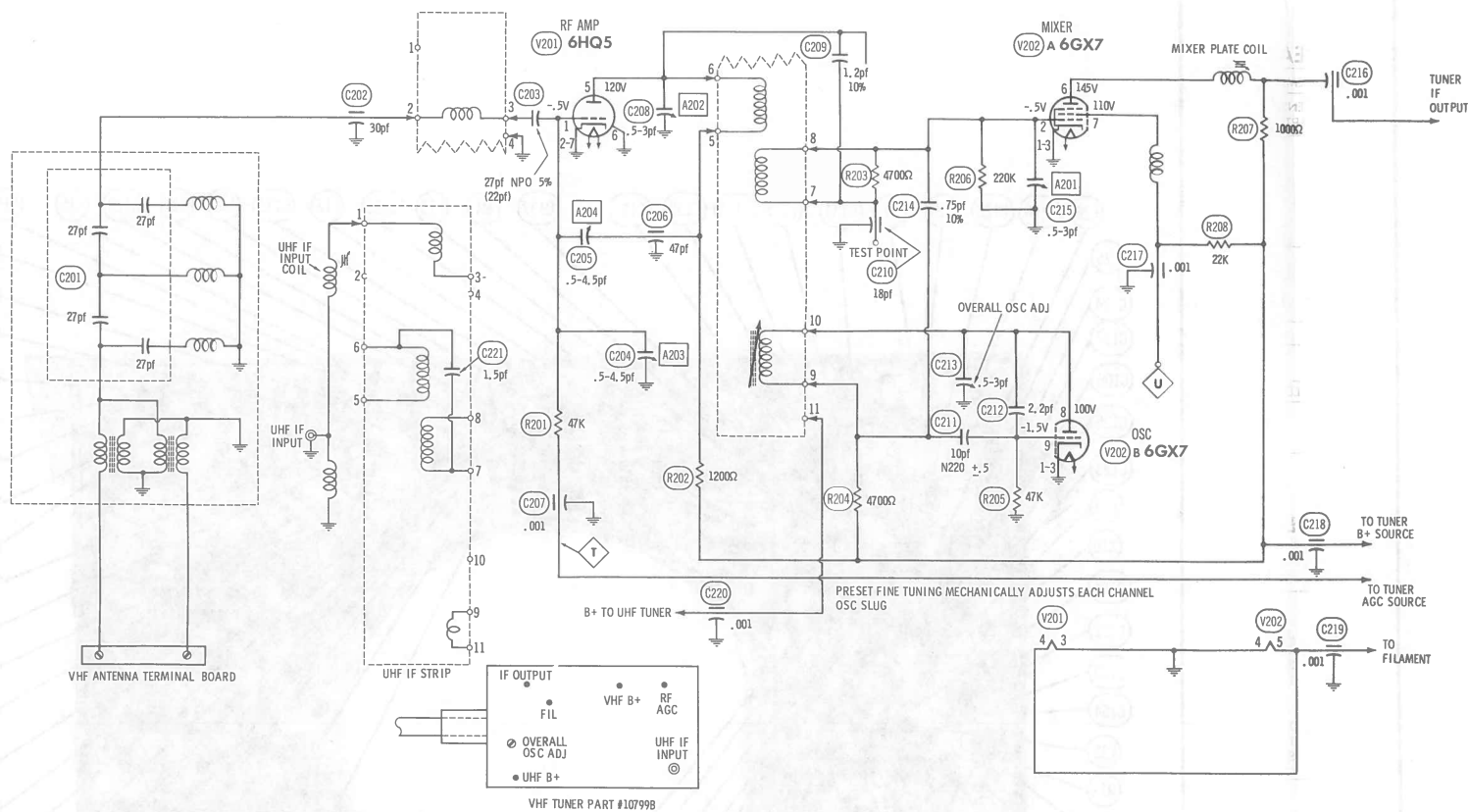


CHASSIS - FRONT VIEW

PACKARD BELL  
CHASSIS 98C9, 98C10

FOLDER 3





VHF TUNER 10799B

## VHF TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: A201 thru A204 ... GENERAL CEMENT #8888, 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.

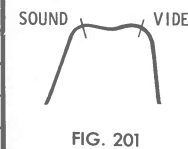
### RF AND MIXER ALIGNMENT

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 1200 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 all channels for response similar to Fig. 201. Make compromise adjustments of A201, A202 & A203.

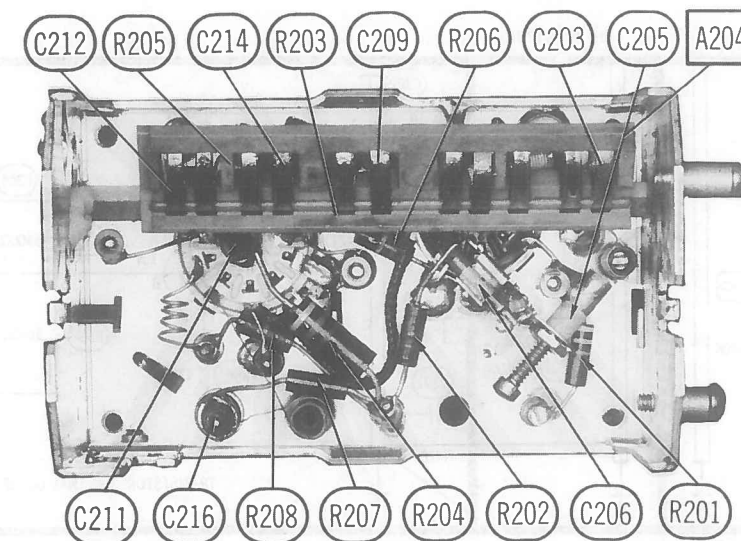
## CHANNEL & FREQUENCY CHART

SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	SWEEP GENERATOR FREQUENCY	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



## UHF TUNER ALIGNMENT INSTRUCTIONS

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.



PACKARD BELL  
CHASSIS 98C9, 98C10

FOLDER 3

PARTS LIST AND DESCRIPTION (CONTINUED)

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

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

COILS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		Packard Bell PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	THORDARSON MEISSNER PART No.	TRIAD PART No.	WORKMAN PART No.
L35	Horiz. Stab. (Hold)	29894 † 29895D † 29896 29897	TV-163 ① TV-163 ①	6210 ① 6210 ① 6350	RTC-8622 ① RTC-8622 ①	HS-5 ① HS-5 ①	WLC-25 ① WLC-25 ①	T103 ① T103 ① TC289
L36	Focus	29897						
L37	Horiz. Linearity (Effic.)	29897						
L38	Pincushion Phase	29895(A)						
L39	Dynamic Convergence	29807(A)						
	Right R/G Vert. lines (3.3mh-9.7mh)			H-122				
L40	Dynamic Convergence	29808(A)						
	Right R/G Horiz. lines (1.1mh-4.6mh)			H-123				
L41	Dynamic Convergence	29843A						
	Right Bule Horiz. line (Pri. 3.7mh-9.7mh) (Sec. .17mh-.3mh)			H-125				
L42	Convergence Yoke							
	A Blue Section	29893						
	B Green Section	29893						
	C Red Section	29893						

† Used in Chassis 98C10.

‡ Used in Chassis 98C9.

① Install plastic sleeve on adjustment screw.

SPEAKER

ITEM No.	TYPE	REPLACEMENT DATA			NOTES
		Packard Bell PART No.	JENSEN PART No.	QUAM PART No.	
SP1	4" PM 3-4Ω 4" PM 6.4Ω 4" x 6" PM 6.4Ω 4" PM 6.4Ω 6" x 9" PM 3-4Ω 4" PM 8Ω 12" PM 8Ω	83019B 83017 83146 83017F 83112D 83141B 83813A		4A05	Models 23CC1, 23CC2, 25CC4/A. Models 25CC3/A. Models 25CC3/A. Models 25CC3/A, 25CK1/A/B. Models 25CD1/A (2 used). Models 25CK1/A/B (2 used). Models 25CK1/A/B (2 used).

FUSE DEVICES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
F1	Circuit Breaker	7 Amp.	86722					
F2	3" length of #22 fuse wire		92041					

MISCELLANEOUS

ITEM No.	PART NAME	Packard Bell PART No.	NOTES
M1	VHF Tuner	10799B	
M2	UHF Tuner	107933	
M3	UHF Antenna	10804B	JFD Replacement TA543 - Models 23CC1, 23CC2, 25CK1/A/B.
	UHF Antenna	10804A	JFD Replacement TA543 - Models 25CC3/A, 25CC4/A, 25CD1/A.
M4	Cryatal	72059	3.58MC
M5	Magnet	56016	Lateral Purity
M6	Delay Line	29749	
M7	Degaussing Coil	29881A	
S1	Switch	86105A	Program (Wafer on Tuner)
S2	Switch	86111	Degaussing
S3	Switch	86712	Service-Normal
	Circuit Board	10821	Convergence Board Assembly

CABINETS & CABINET PARTS

(When Ordering Specify Model, Chassis & Color)

ITEM	PART NO.	MODEL									
		23C1	23C2	25C3	25C3A	25C4	25C4A	25C1	25C1A	25C1	25C1B
Mask	55205-1C			X		X		X			
Mask	55207				X		X		X	X	
Mask	55205-10									X	
Mask, 25"	55205-2E										X
Knob-VHF Channel Selector	52491C			X	X	X	X	X	X		
Knob-VHF Channel Selector	52491D	X	X						X	X	X
Knob-VHF Fine Tuning	52499A	X	X	X	X	X	X	X	X	X	X
Knob-UHF Channel Indicator	52497B			X	X	X	X	X			
Knob-UHF Indicator	52497C	X	X						X	X	X
Knob-Control (Outer)	52456A	X	X	X	X	X	X	X	X	X	X
Knob-Control (Inner)	52493A	X	X	X	X	X	X	X	X	X	X
Knob-Tuning	52502								X	X	X
Knob-Selector	52503-1								X	X	X
Knob-Loudness	52503-2								X	X	X
Knob-Bass	52503-3								X	X	X
Knob-Treble	52503-4								X	X	X
Knob-Balance	52503-5								X	X	X
Dial Glass	38220B								X	X	X
Escutcheon Control, Radio	41410B								X	X	X
Escutcheon Control, TV	41391-5F *										X
Escutcheon-Solid State Name Plate	41423A										X
Escutcheon, ICP Inlay	41440-2B										X

\* Used with Spacers 82189 (Top) and 82190 (Bottom).

PARTS LIST AND DESCRIPTION

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

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

WIRING DATA

High Voltage Lead .....	Use BELDEN No. 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 8874 (Rubber) or 8896 (Plastic)
Power Cord (Interlock Type) .....	Use BELDEN No. 8275 (Foam Core) or 8285 (Foam Jacketed)
3000 Tuner Input Lead .....	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor
3000 Antenna Lead-in .....	Use BELDEN No. 8485 (Round) - 5 Conductor
Antenna Rotor Cable .....	Use BELDEN No. 8488 (Round) - 8 Conductor

TUBES

* AMPEREX		* GENERAL ELECTRIC		* RCA		* SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE		
Q301	UHF Osc. (Transistor)	24T002	V13	Horiz. Output	6JE6A		
V201	RF Amp.	6HQ5	V14	Damper	8DW4A		
V202	Mixer - Osc.	6GX7	V15	HV Rectifier	3A3		
V1	1st Video IF	6TH6	V16	Focus Rectifier	2AV2		
V2	2nd Video IF	6GM6	V17	HV Regulator	6BK4A		
V3	3rd Video IF	6EJ7	V18	1st Chroma Bandpass Amp.	6AU6A		
V4	Video Amp. - Noise Inverter		V19	2nd Chroma Bandpass Amp. - Burst Amp.			
V5	Video Output	6AW8A		Z Demodulator - X Demodulator	6AW8A		
V6	AGC Keying - Sync Sep.	12BY7A	V20		12AZ7A		
V7	1st Sound IF - Color Killer	6GH8A	V21	B-Y Amp. - Horiz. Blanking Amp.	6GU7		
V8	2nd Sound IF	6AU6A	V22	R-Y Amp. - G-Y Amp.	6GU7		
V9	Ratio Detector - AF Amp.	6BN8	V23	Chroma Sync Phase Det. - Color Killer Detector	6BN8		
V10	Audio Output	6AQ5A	V24	Chroma Ref. Osc. Control - Chroma Reference Osc.	6GH8A		
V11	Vert. Mult. - Vert. Output	6GF7					
V12	Horiz. Mult.	6FQ7					

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	Packard Bell PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	SYLVANIA PART No.	
V25	23EGP22 ① 25AP22 ②	23EGP22 25AP22A ③	25AP22A ④	RE25AP22A ④	① Used in Ch. 98C10. ② Used in Ch. 98C9. ③ Aluminised ④ Color Bright "85"

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1	.5A	72058 (1N1764)	GE-504A	5A6-D or SD600	1N1096 or V1800 ①	SK-3016	F-6 or S-5960-2 ①
X2	.5A	72058 (1N1764)	GE-504A	5A6-D or SD600	1N1096 or V1800 ①	SK-3016	F-6 or S-5960-2 ①
X3		72041	GE-504A or GE-505	SD500 or 10DB6A ②	1N540 or FW600 ②	SK-3016 or SK-3017	F-4 or S-5959-2 ②
X4		72041	GE-504A or GE-505	SD500 or 10DB6A ②	1N540 or FW500 ②	SK-3016 or SK-3017	F-4 or S-5959-2 ②
X5		72041	GE-504A or GE-505	SD500 or 10DB6A ②	1N540 or FW600 ②	SK-3016 or SK-3017	F-4 or S-5959-2 ②
X6		72041	GE-504A or GE-505	SD500 or 10DB6A ②	1N540 or FW600 ②	SK-3016 or SK-3017	F-4 or S-5959-2 ②
X7	.005A	72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D	1N536	SK-3016 or SK-3017	F-4 or 40C
X8	.006A	72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D	1N536	SK-3016 or SK-3017	F-4 or 40C
X9	.021A	72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D	1N536	SK-3016 or SK-3017	F-4 or 40C
X10	.018A	72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D	1N536	SK-3016 or SK-3017	F-4 or 40C
X11	.020A	72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D	1N536	SK-3016 or SK-3017	F-4 or 40C
X12		72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D	1N536	SK-3016 or SK-3017	F-4 or 40C
X13		72080 (1N295A)	1N295	1N295	A100 or 1N537	SK-3016 or SK-3017	
X14		72080 (1N295A)	1N295	1N295			
X15		72053	6GC1	DD04	A50 or 1N536	SK-3016 or SK-3017	F-4 or 40C
X16		72113 (1N3754)	GE-505 or GE-504A	8D4 or 5A4-D			

① A single unit replaces X1 and X2.

② A single unit replaces X3 thru X6.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	Packard Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1	160	250	24198	AFHS1-31-81 ②	AA0316 ②	XC1-19 ②	WP131.5 ②	TVL-1541 ②
C2	160	250	24198	AFHS1-31-81 ③	AA0316 ③	XC1-19 ③	WP131.5 ③	TVL-1541 ③
C3A	160	250	24228	AFHS2-94-75	BB0473	XC3-34	WP230.2	TVL-2722.7
B	20	450			BR80-350			
C4A	80	450	24227	AFH3-142-50	BB0489.5	XC2-35	FP368.5	TVL-3754.9
B	65	450			BR50-50	QT1-15		
C	50	50						
C5A	65	450	24227	AFH3-142-50	BB0489.5	XC2-35	FP368.5	TVL8-3757.2 *
B	50	50			BR50-50	QT1-15		
C	80	450						
C6	2	350	24185	PRS1705	BR2-450	QT1-1	TC595	TVA-1701
C7	5	50	24038	PRS1310	NLW5-50	MT1-3	TT50X5	TE-1303
C8	50	150	24225	PRS1480	BR50-150	QT1-16	TC49	TVA-1414
C9	10	50NP	24264	PRS7555	BRNP10-400	NPQT-3	TCN5010	TVAN-1304.1
C10	25	25	24167	CRE612A	NLW25-25	MT1-11	TT25X25	TL-1207
C11	40	25	24195	CRE615A	NLW40-25	MT1-17	TT25X35	TE-1208
C12	25	25	25167 ①	CRE612A	NLW25-25	MT1-11	TT25X25	TL-1207

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

① Not used in Chassis 98C9.

③ Uses insulating sleeve and mounting wafer.

② Uses insulating sleeve.



## PARTS LIST AND DESCRIPTION (CONTINUED)

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

Replacement parts shown may be superseded by the availability of newly introduced replacements.

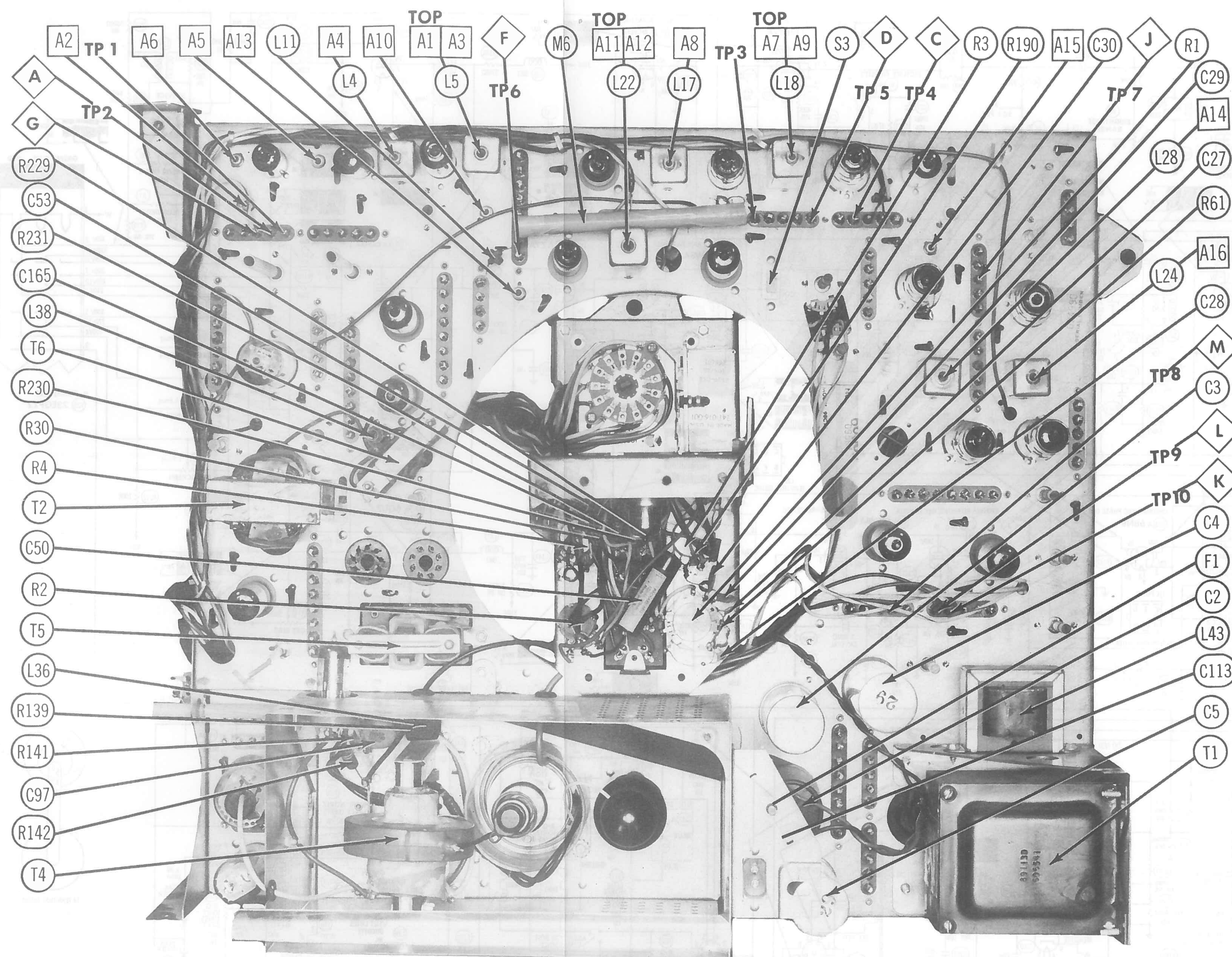
Have your local distributor check Sams COUNTER FACTS for the most up-to-date replacement.

## CAPACITORS (cont)

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOT PART No.	MALLORY PART No.	SPRAGUE PART No.
C13	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C14	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C15	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C16	.330	10%	DI-330	DD-331	JBZ601YPI02K	CCD-331	GP331	10TS-T33
C17	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C18	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C19	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C20	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C21	22	NPO 10%	NPO-DI 22	DTZ-22	CY801CG220K	CCTO-220	CNO422	10TCC-Q22
C22	10	N150				*		10TC P-Q10
C23	100	N037 5%				*		
C24	.0015	10%	DI-1500	DD-152	DMF2P1	CCD-152	GP215	10TS-D15
C25	.1	200V	DBE2P1		BYX801ZU103M	2DP-3-104	PVC201	2PS-P10
C26	.01		DI-390	DD-103		CCD-103	GP110	10TS-S10
C27	390	10%	DI-390	DD-391		CCD-391	GP339	10TS-T39
C28	390	10%	DI-390	DD-391		CCD-391	GP339	10TS-T39
C29	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C30	.0033	10%	DI-3300	DD-332	JBV601YPI02K	CCD-332	GP233	10TS-D33
C31	.0033	10%	DI-3300	DD-332	JBV601YPI02K	CCD-332	GP233	10TS-D33
C32	.22	400V	DBE4P22		DMF4P22	4DP-5-224	PVC4022	4PS-P22
C33	.002	10%	DI-2000	DD-202	JBX801YPI02K	CCD-202	GP220	10TS-D20
C34	1.5	NPO ±.25	NPO-DI 1.5	DTZ-1R5		*	CNO615	10TCC-V15
C35	10	N150 ±.25				*		10TC P-Q10
C36	47	NPO 10%				*		
C37	.001	10%	NPO-DI 47	DTZ-47	CX801CG470K	CCTO-470	CNO447	10TCC-Q47
C38	.01		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C39	47	NPO 10%	DI-1000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C40	.01		NPO-DI 47	DTZ-47	CX801CG470K	CCTO-470	CNO447	10TCC-Q47
C41	.01		DI-1000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C42	.0015	10%	DI-1000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C43	.01		DI-1000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C44	.0012	10%	DI-1200	DD-122G	JBS801YPI22K	CCD-103	GP110	10TS-D12
C45	.002		DI-2000	DD-202	JBX801YPI02K	CCD-202	GP220	10TS-D20
C46	.1	200V	DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C47	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C48	880	10%	DI-680	DD-681	JBY801YPI02K	CCD-681	GP368	10TS-T68
C49	.01	600V	DBE6P1		DMF6P1	6DP-1-103	PVC601	6PS-P10
C50	.1	100V		CPR-10000J	DMF6P1	6DP-1-104	PVC601	6PS-P10
C51	.005		DI-5000	DD-502	JBT801YPI02K	CCD-502	GP250	10TS-D50
C52	200		AMD-15-201	CPR-200J	CD15F201J500	DM-15-201	SKX20	MS-32
C53	.1	200V 10%	DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C54	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C55	180	1KV 10%	DI-180	DD30-181	JBZ601YPI02K	CCD-181	GP318	5GA-T18
C56	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C57	.1	200V	DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C58	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C59	.1	600V	DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C60	.0033	10%	DI-3300	DD-332	JBV601YPI02K	CCD-332	GP233	10TS-D33
C61	150	NPO 5%				*		10TC P-T15
C62	56	N1500 6KV				*		
C63	.001		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C64	.027	600V 10%	DBE6S27		DMF6S27	6DP-2-273	GP368	6PS-S27
C65	.0068	400V 10%	DBE6D68		DMF6D68	6DP-1-682	PVC601	6PS-P10
C66	680	10%	DI-680	DD-681	JBY801YPI02K	CCD-681	GP368	10TS-T68
C67	.1	600V	DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C68	.1	600V	DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C69	.0022	10%	DI-2200	DD-222	JBX801YPI02K	CCD-222	GP222	10TS-D22
C70	.001	1.5KV 10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C71	.0082	1KV 10%			DMF2S47	4DP-3-822	GEM1628	16PS-D80
C72	.47	200V	DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C73	.1	200V	DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C74	.01					*		
C75	560	2.5KV 10%				*		
C76	560	2.5KV 10%				*		
C77	.15	200V 10%				*		
C78	.0018	5%				*		
C79	100	3KV 5%				*		
C80	270	N1500 2KV 10%				*		
C81	56	N1500 6KV				*		
C82	47	NPO 10%	NPO-DI 47	DTZ-47	CX801CG470K	CCTO-470	CNO447	10TCC-Q47
C83	88	NPO 5%	DI-88	DTZ-68	CX801CG680K	CCTO-680	CNO468	10TCC-Q68
C84	.001	600V 10%	DBE6D1		DMF6D1	6DP-1-102	PVC601	6PS-P10
C85	.15	200V	DBE4P15		DMF4P15	4DP-4-104	PVC601	4PS-P15
C86	.001	10%	DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C87	88	NPO 5%	NPO-DI 88	DTZ-68	CX801CG680K	CCTO-680	CNO468	10TCC-Q68
C88	.004	10%	DBE6D4		DMF6D4	6DP-1-402	PVC601	6PS-P10
C89	470	5%	ADM-15-471	CPR-470J	CD15F471J500	DM-15-471	SKX37	MS-347
C90	330	5%	ADM-15-331	CPR-330J	CD15F331J500	DM-15-331	SKX33	MS-333
C91	.001	600V 10%	DBE6D1	CPR-1000J	DMF6D1	6DP-1-102	PVC601	6PS-P10
C92	.0022	600V 10%	DBE6D22	CPR-2200J	DMF6D22	6DP-1-222	PVC601	6PS-P10
C93	.01	600V	DBE6P1	CPR-10000J	DMF6P1	6DP-1-103	PVC601	6PS-P10
C94	.001		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C95	.1	600V	DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C96	.1	600V	DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C97	130	N2200 6KV				*		
C98	.0033	10%	DI-3300	DD-332	JBV601YPI02K	CCD-332	GP233	10TS-D33
C99	.1	600V	DBE6P1		DMF6P1	6DP-4-104	PVC601	6PS-P10
C100	22	1KV	DI-22	DD-220	DMF6S22	6DP-2-223	GP368	6PS-S22
C101	.022	600V 10%	DBE6S22		DMF6S22	6DP-3-683	PVC6168	4PS-S88
C102	.068	200V 10%	DBE6S68		DMF6S68	6DP-2-333	PVC6133	6PS-S33
C103	.033	600V 10%	DBE6S33		DMF6S33	6DP-2-333	PVC6133	6PS-S33
C104	39	NPO	NPO-DI 39	TCZ-39		CCTO-390	CNO439	10TCC-Q39
C105	330	10%	DI-330	DD-331	JBZ601YPI02K	CCD-331	GP331	10TS-T33
C106	.001		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C107	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C108	27	N150 10%				*		
C109	27	N150 10%				*		
C110	.0015	10%	DI-1500	DD-152	DMF2P1	CCD-152	GP215	10TS-D15
C111	.1	200V	DBE2P1		BYX801ZU103M	2DP-3-104	PVC201	2PS-P10
C112	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C113	.1	400V	DBE4P1		DMF4P1	4DP-3-104	PVC601	4PS-P10
C114	.001		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10
C115	.1	200V	DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C116	560	10%	DI-560	DD-561	JBY801YPI02K	CCD-561	GP356	10TS-T56
C117	.01		DI-10000	DD-103	JBX801ZU103M	CCD-103	GP110	10TS-S10
C118	220	10%	DI-220	DD-221	JBZ601YPI02K	CCD-221	GP322	10TS-T22
C119	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C120	120	N2200 10%				*		
C121	.1	200V	DBE2P1		DMF2P1	2DP-3-104	PVC201	2PS-P10
C122	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C123	168	N2200 10%				*		
C124	330	5%				*		
C125	330	5%				*		
C126	.01		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10
C127	180	N750 5%				*		
C128	.0047	10%	DI-4700	DD-472	JBT601YPI02K	CCD-472	GP247	10TS-D47

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.		
C129	.01	200V	DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10		
C130	.01	NPO ±.5	#24504	DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C131	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C132	.01			NPO-DI 15	DTZZ	CZ601CG150J	CCTO-150	CNO415	10TCC-Q15	
C133	15	NPO 10%		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C134	.01			N750-DI 220	DTN-220	CV801UJ221K	CCTN-221	CNT7322	10TCU-T22	
C135	220	N750 10%		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C136	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C137	82	NPO 10%		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C138	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C139	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C140	.0015	5%		ADM-20-152	CPR-1500J	CD19F152J500	DM-19-152	SKX215	MS-215	
C141	.22	400V		DBE4P22	DMF4P22	4DP-5-224	PVC4022	4PS-P22		
C142	.33	NPO 10%		NPO-DI 33	DTZ-33	CS801CG330K	CCTO-330	CNO433	10TCC-Q33	
C143	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C144	.33	NPO 10%		NPO-DI 33	DTZ-33	CS801CG330K	CCTO-330	CNO433	10TCC-Q33	
C145	.01	600V		DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C146	.15	400V		DBE4P15	DMF4P15	4DP-4-154	PVC6015	4PS-P15		
C147	.001			DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10	
C148	.01	600V		DBE6S1	CPR-10000J	DMF6S1	6DP-1-103	PVC601	6PS-S10	
C149	.15	400V		DBE4P15	CPR-10000J	DMF4P15	4DP-4-154	PVC6015	4PS-P15	
C150	.01	600V		DBE6S1		DMF6S1	6DP-1-103	PVC601	6PS-S10	
C151	.15	400V		DBE4P15		DMF4P15	4DP-4-154	PVC6015	4PS-P15	
C152	.001			DI-1000	DD-102	JBS801YPI02K	CCD-103	GP210	10TS-D10	
C153	.001			DI-1000	DD-102	JBS801YPI02K	CCD-103	GP210	10TS-D10	
C154	.001			DI-1000	DD-102	JBS801YPI02K	CCD-103	GP210	10TS-D10	
C155	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C156	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C157	.01	1.4KV			CI-103	ACT142ZU103P		UAC110	126L-S10	
C158	.056	400V 10%		DBE6S56	PKM4S56	4DP-3-563	PVC4056	4PS-S56		
C159	.1	400V 10%		DBE4P1	DMF4P1	4DP-3-104	PVC601	4PS-P10		
C160	.12	200V 10%		DBE2P1	DMF2P1	2DP-2-104	PVC201	2PS-P10		
C161	.082	200V 10%		DBE6S82	DFMS6S82	6DP-4-823		6PS-S82		
C162	.047	600V		DBE6S47	DFM6S47	6DP-3-473	PVC6147	6PS-S47		
C163	.01			DI-10000	DD-103	BYX801ZU103M	CCD-103	GP110	10TS-S10	
C164	.001			DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10	
C165	.2	NPO 10%		NPO-DI 22	DTZ-22	CY601CG220K	CCTO-220	CNO422	10TCC-Q22	
C166	.9	NPO ±.25								
C167	100	N033 5%								
C168	.001	10%		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10	
C169	.001	10%		DI-1000	DD-102	JBS801YPI02K	CCD-102	GP210	10TS-D10	
C170	680	10%		DI-680	DD-681	JBV801YP681K	CCD-681	GP368	10TS-T68	



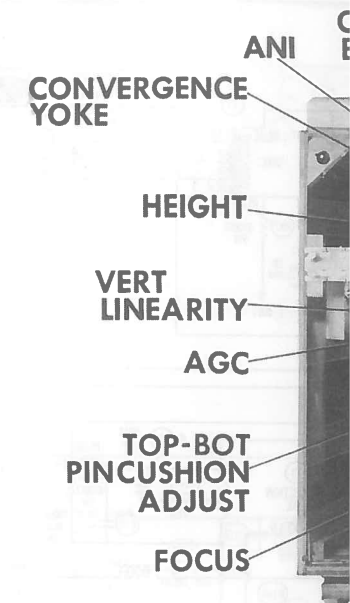


TP1	19V	1ST VIDEO IF
TP2	17V	AGC
TP3	24V	DELAY LINE OUTPUT

TP4	-7.5V	RATIO DETECTOR
TP5	-4.6V	RATIO DETECTOR OUTPUT

TP6 -7V CHROMA BANDPASS INPUT  
TP7 .4V CHROMA SYNC OUTPUT

TP8	205V	BLUE SCREEN
TP9	200V	GREEN SCREEN
TP10	210V	RED SCREEN

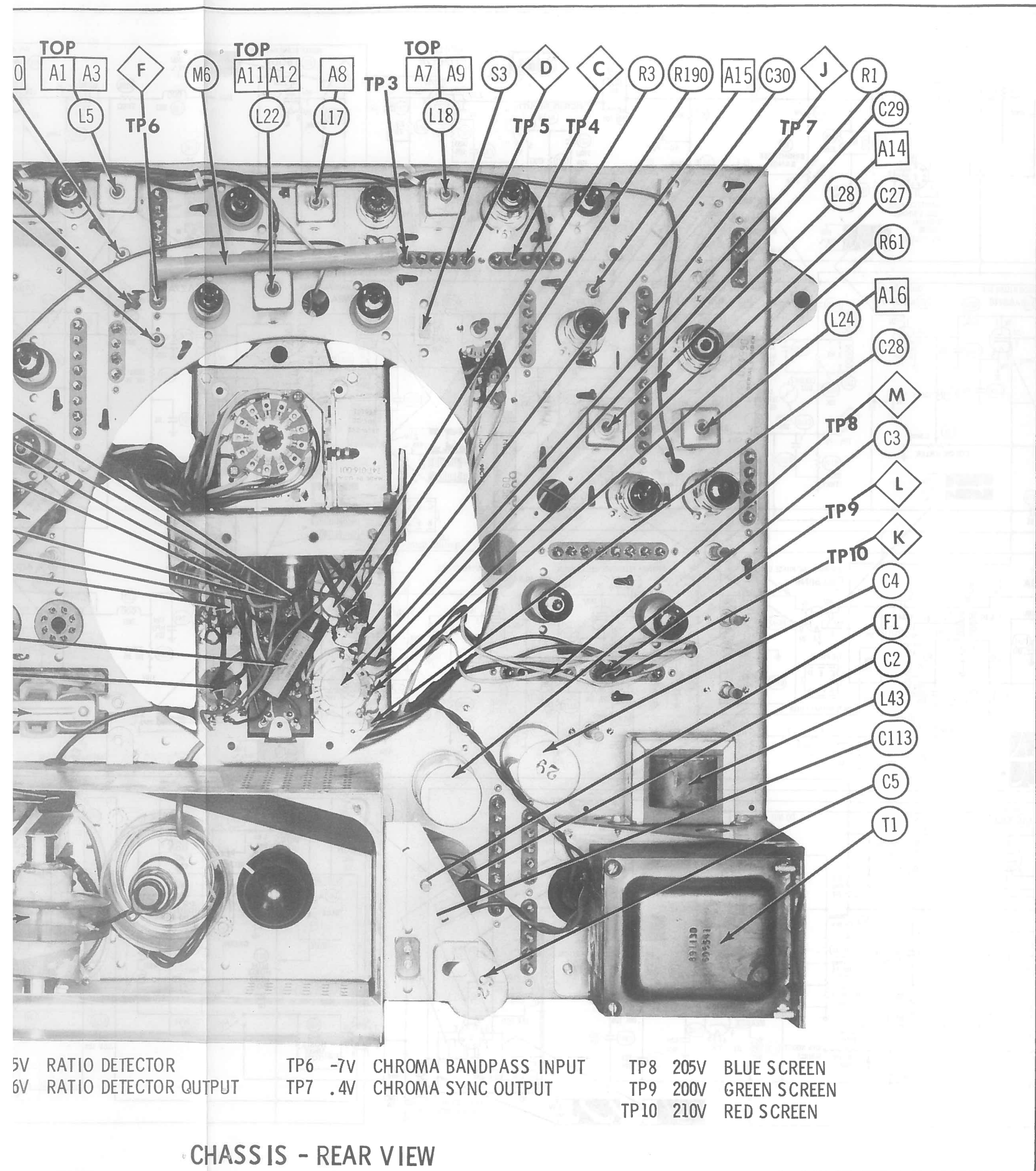


**PACKARD BELL  
CHASSIS 98C9, 98C10**

### TV CHASSIS REMOVAL

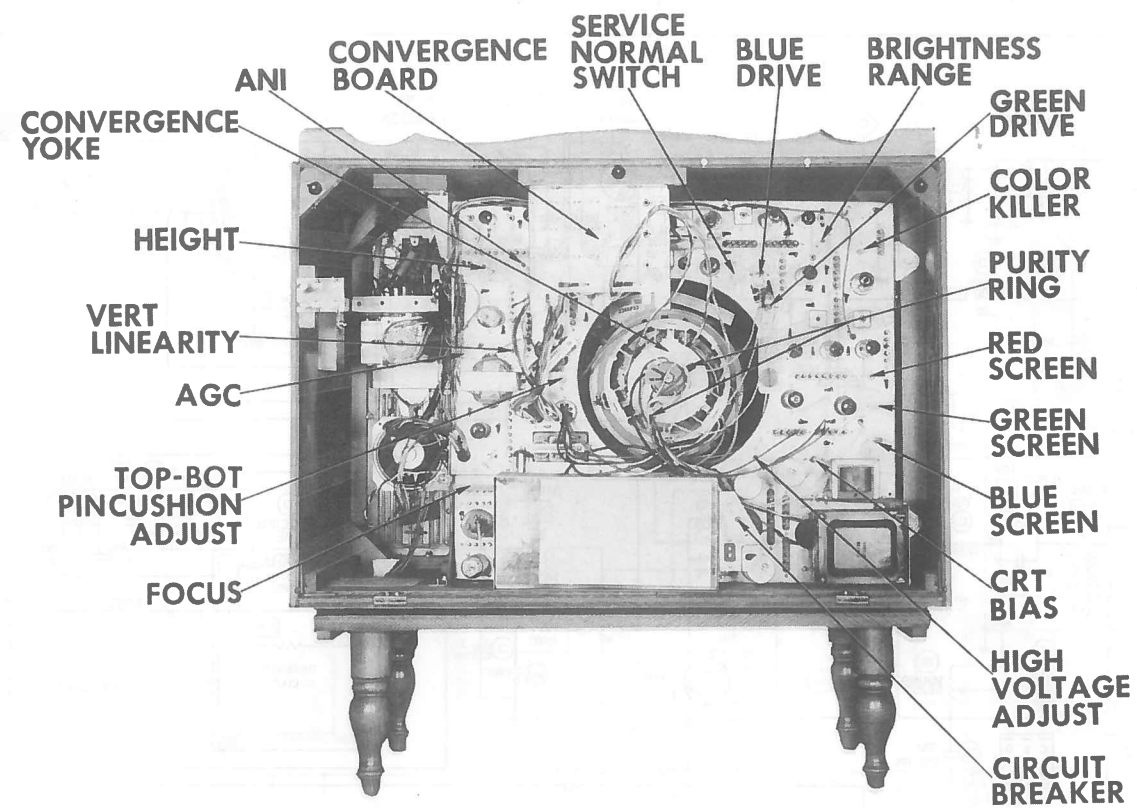
1. Turn clip to release interlock and remove models if may be necessary to disconnect all knobs.
2. Remove convergence plug, yoke plug, picture leads, degaussing plug, and high voltage anode.
3. Loosen screw on blue lateral clamp. Remove purifying magnet assembly by sliding off picture tube. Remove 3 convergence coils from yoke holder.
4. Unmount convergence board from cabinet. Remove convergence yoke. Loosen screw on yoke clamp and remove picture tube.
5. Remove 2 chassis mounting screws on rear bottom of chassis mounting bracket. Loosen mounting bracket.

FOLDER 3



PACKARD BELL  
CHASSIS 98C9, 98C10

FOLDER 3



### CABINET-REAR VIEW DISASSEMBLY INSTRUCTIONS

#### TV CHASSIS REMOVAL

1. Turn clip to release interlock and remove back cover. On some models it may be necessary to disconnect antenna leads. Remove all knobs.
2. Remove convergence plug, yoke plug, picture tube socket, speaker leads, degausser plug, and high voltage anode.
3. Loosen screw on blue lateral clamp. Remove the blue lateral and purifying magnet assembly by sliding off picture tube neck. Remove 3 convergence coils from yoke holder.
4. Unmount convergence board from cabinet top and slide off convergence yoke. Loosen screw on yoke clamp and slide the yoke from the picture tube.
5. Remove 2 chassis mounting screws on right side and 1 on the left bottom of chassis mounting bracket. Loosen nut on left top chassis mounting bracket.

6. Remove 5 tuner mounting screws and remove tuner and hang it on the 2 hooks on the chassis.

7. Remove 2 screws on degausser switch bracket and remove switch.

8. Lift chassis up and remove from cabinet. (On models with remote, the remote receiver will have to be removed first.)

#### PICTURE TUBE REMOVAL

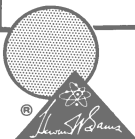
1. Follow "Chassis Removal" procedure. Lay set face down on a soft protective surface.

2. Remove picture tube shield and degaussing assembly by removing 4 screws. The long ground spring is part of the assembly.

3. Remove 8 screws holding picture tube brackets and lift out picture tube. Do not lift out by the neck of the tube.



## PHOTOFACT® Folder

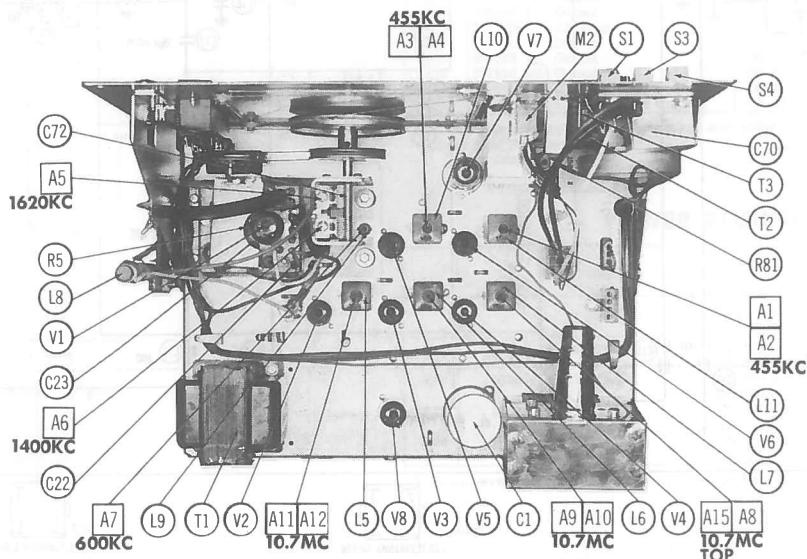


**PACKARD BELL CHASSIS**  
**8TU8, MPX-5-1, DPA-150, DPA-150-1**

**IMPORTANT FILING NOTICE**

This PHOTOFACT Folder covers equipment used with the TV chassis covered in PHOTOFACT SET 854 FOLDER 3. File this Folder with the TV Folder in the yellow filing jacket provided.

**PACKARD BELL CHASSIS**  
**8TU8, MPX-5-1, DPA-150, DPA-150-1**

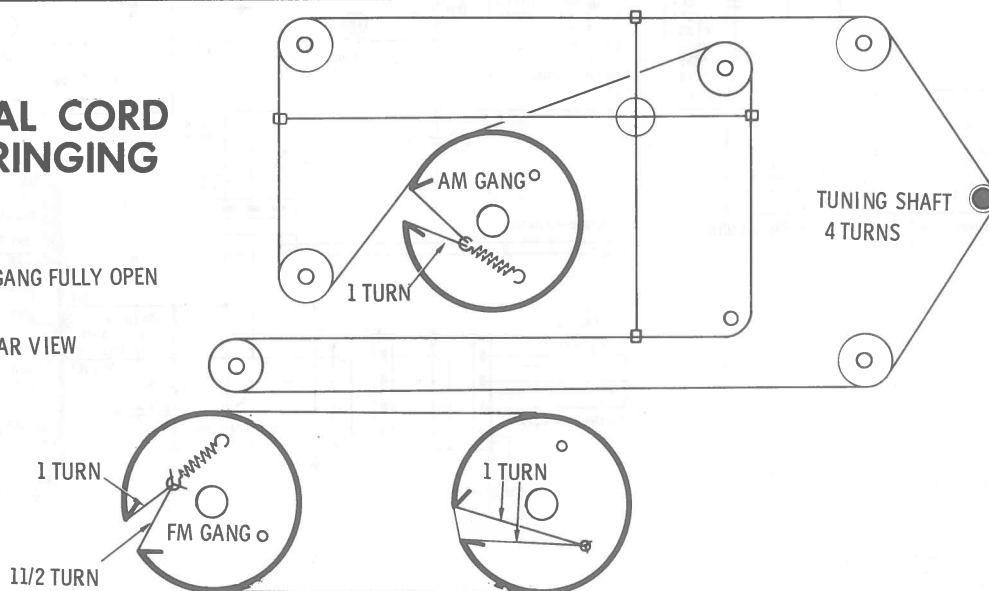


TRADE NAME	Packard Bell AM-FM Chassis 8TU8	Amplifier Chassis DPA-150, DPA-150-1
SUPPLIER	MPX Chassis MPX-5-1	
TYPE SET	For current address, see Annual Index.	
POWER SUPPLY RATING	8-Tube AM-FM Tuner, 1-Tube FM Stereo, 10-Transistor Amplifier w/4 Speed Record Changer	
TUNING RANGE	110-120 Volts AC, 60 Cycles	
	52 Watts, .5 Amp. @ 117 Volts AC (AM-FM Tuner, less Motor),	
	15 Watts, .3 Amp. @ 117 Volts AC (Amplifier)	
	BROADCAST: 535-1620KC, FREQ. MOD.: 87.5-108MC	

**DIAL CORD STRINGING**

TUNING GANG FULLY OPEN

REAR VIEW



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



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. NN339R

Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1966 Howard W. Sams & Co., Inc., Indianapolis, Indiana 46206. Printed in U. S. of America

DATE 12-66

SET 854 FOLDER 3-A

**PACKARD BELL CHASSIS**  
**8TU8, MPX-5-1, DPA-150, DPA-150-1**









## ALIGNMENT INSTRUCTIONS

Maintain line voltage at 117 volts. Use only enough generator output to obtain a suitable indication. Allow a 15 minute warmup for receiver and equipment.  
CAUTION: Use isolation transformer, if available. If not, observe polarity when connecting test equipment.  
Suggested Alignment Tools:  
A1 thru A4, A8 thru A15, A19 thru A22. GENERAL CEMENT: 8806, 8869, 9302 WALSCO: 2511, 2543, 2588  
A5, A6, A7, A16, A17, A18. GENERAL CEMENT: 8868, 8987, 9089 WALSCO: 2531-X, 2541, 2587

### AM ALIGNMENT — SELECTOR IN AM POSITION

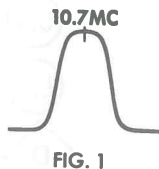
Fashion loop of several turns of wire and connect generator across loop. Set volume control at maximum.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
1. 455KC (400v Mod.)	Tuning gang fully open.	Output Meter across Voice coil.	A1, A2, A3, A4.	Adjust for maximum. Repeat until no further improvement can be made.
2. 1620KC	"	"	A5.	Adjust for maximum.
3. 1400KC	Tune to signal.	"	A6.	"
4. 600KC	"	"	A7.	Rock tuning gang and adjust for maximum. Repeat steps 2 thru 4 until no further improvement can be made.

### FM ALIGNMENT USING AM SIGNAL GENERATOR — SELECTOR IN FM POSITION

High side to ungrounded shield over FM converter tube, low side to ground.

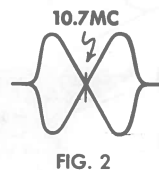
GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (Unmod.)	Point of non-interference.	DC probe of VTVM to point A; common to ground.	A8, A9, A10, A11, A12, A13, A14.	Adjust for maximum.
6. "	"	DC probe to point B; common to ground.	A15.	Adjust for zero reading. A positive or negative reading will be obtained on either side of the correct setting.



### FM IF ALIGNMENT USING FM SIGNAL GENERATOR — SELECTOR IN FM POSITION

High side to ungrounded shield over FM converter, low side to ground. Use only enough marker signal to obtain indication. Use 60% frequency modulated signal with 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
5. 10.7MC (450KC Swp.)	Point of non-interference	Vert. amp. of Scope to point A; low side to ground.	A8, A9, A10, A11, A12, A13, A14.	Disconnect stabilizing capacitor C3. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown. Reconnect C3.
6. "	"	Vert. amp. to point B; low side to ground.	A15.	Adjust A15 (Secondary) to place marker at center of crossover lines similar to Fig. 2. Adjust A8 (Primary) for maximum amplitude and straightness of crossover lines.



### FM RF ALIGNMENT

Connect generator across antenna terminals with 120Ω carbon resistors in series with each lead.

GENERATOR FREQUENCY	DIAL SETTING	INDICATOR	ADJUST	REMARKS
7. 108MC	Set at high end.	DC probe of VTVM to point A; common to ground.	A16, A17, A18.	Adjust for maximum.
8. 90MC	Tune to signal.	"	A19.	Rock tuning and adjust for maximum. Repeat steps 7 and 8 until no further improvement can be made.

### FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (± .0001% ACCURACY)

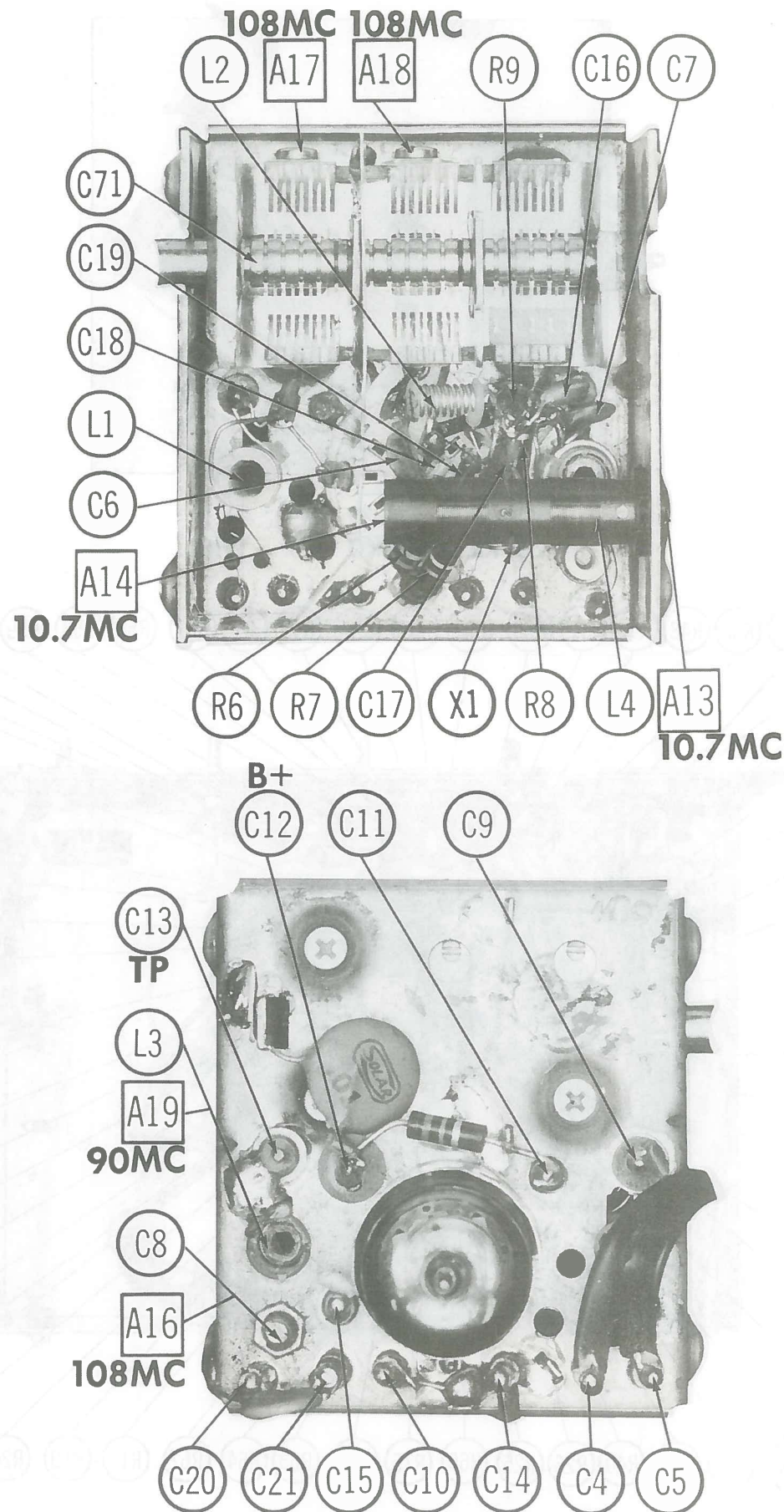
Connect high side of generator to point B, low side to ground.

GENERATOR FREQUENCY	INDICATOR	ADJUST	REMARKS
9. 67KC	Vert. amp. of Scope thru a 1 meg to point C; low side to ground.	A20.	Adjust for MINIMUM.
10. 19KC	Vert. amp. thru 47K to point D; low side to ground.	A21.	Adjust for maximum.
11. "	Vert. amp. thru 47K to point E; low side to ground.	A22.	Adjust maximum for 38KC response.
12. Modulated Left Channel	Vert. amp. to point F; low side to ground.	A21, A22 and R69A.	Adjust for MINIMUM. This step should require only slight adjustment.
13. Modulated Right Channel	Vert. amp. to point G; low side to ground.		Check for MINIMUM. Make compromise adjustments, of A21, A22 and R69A, if necessary.

To align multiplex section using an air signal, first make sure FM section is properly aligned. Tune in a strong FM stereo signal. Follow steps 9 thru 13 above, except in step 9 adjust to eliminate whistle or interference.

### STEREO LAMP CIRCUIT ADJUSTMENT

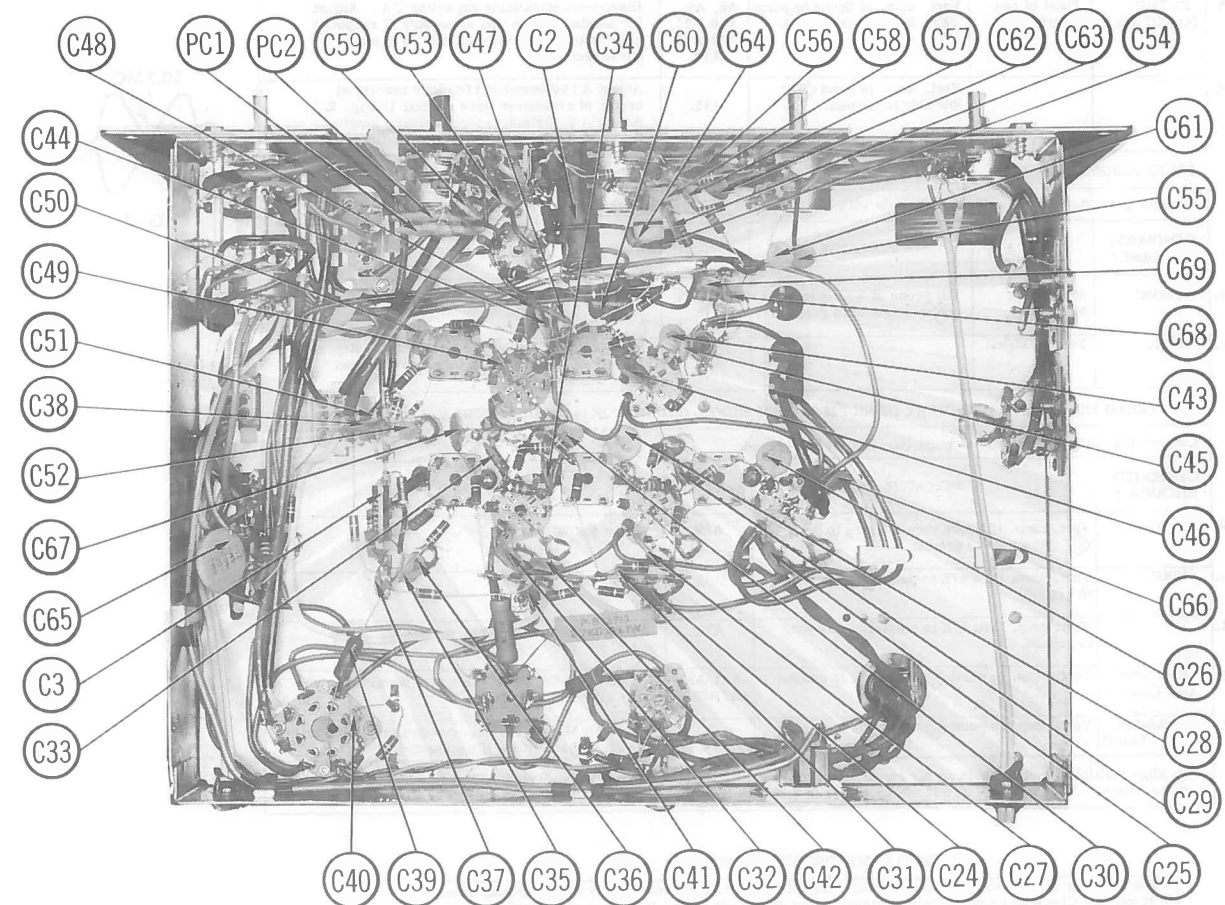
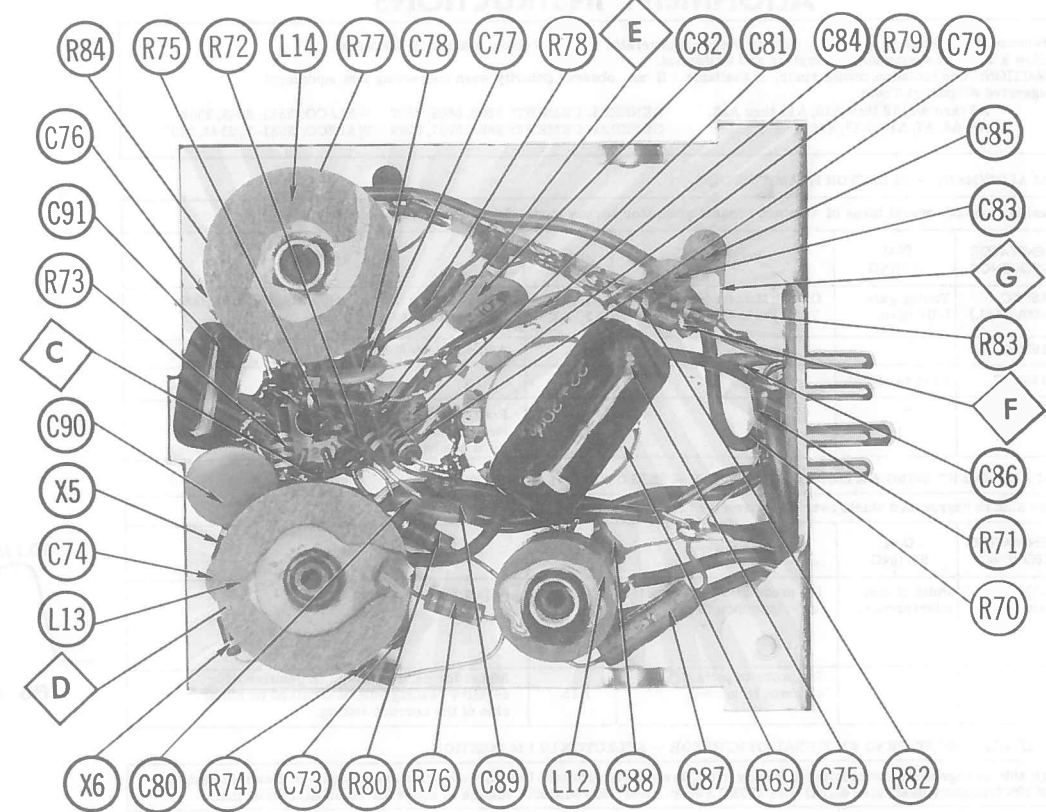
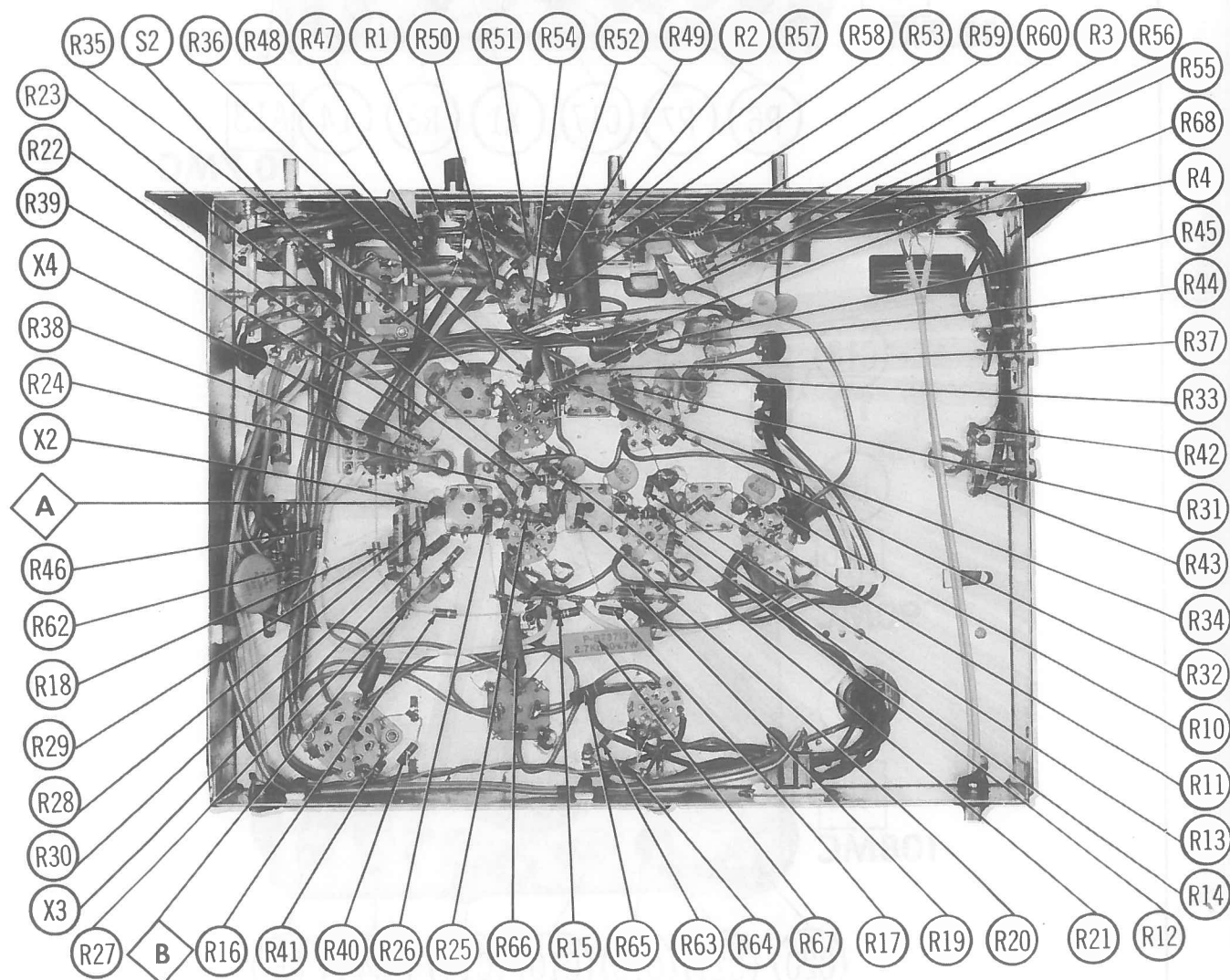
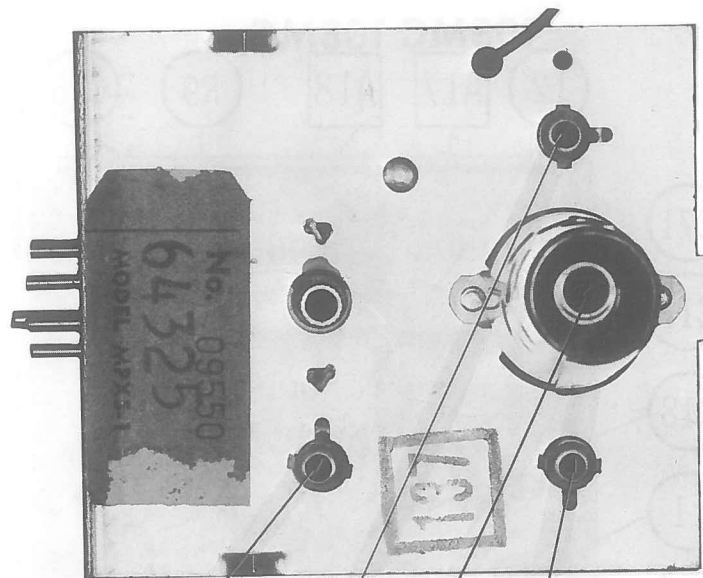
Tune Receiver to a known FM Stereo signal. Adjust Stereo Lamp control R69B until indicator lamp just glows. Check on known monaural signal, lamp should not glow. If lamp glows adjust R69B until lamp is extinguished. Re-check on known FM Stereo signal. Lamp should glow on stereo signals and be extinguished at all other times.



8TU8, MPX-5-1, DPA-150, DPA-150-1

FOLDER 3-A











## TUNER

### TUBES

♦ AMPEREX ♦		♦ GENERAL ELECTRIC ♦		♦ RCA ♦		♦ SYLVANIA ♦	
ITEM No.	USE	TYPE		ITEM No.	USE	TYPE	
V1	FM RF Amp. & Conv.	6C9		V6	AM Conv.	6BE6	
V2	1st. FM IF	6BA6		V7	AM IF	6BA6	
V3	2nd. FM IF	6BA6		V8	AF Amp.	7025	
V4	Limiter	6HS6			Rectifier	6X4	

### POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X1		72027 ② (1N541) 72027 ② (1N541) 72089 (1N541) 72104 ③ (1N3605) 72104 ③ (1N3605)	1N60	1N542			
X2			1N60	1N542			
X3			1N34A	1N541			
X			1N34A	1N34AS			
X5			1N34A	1N34AS			
X6							

② X2 and X3, matched pair.

③ X5 and X6, matched pair.

### ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	Packard Bell PART No.	AEROVOX PART No.	CORNELL- DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.	SPRAGUE PART No.
C1A	20	350	24229	AFH4-04-25	DO174	XC4-20	FP447	TVLS-4635. 12*
B	40	350						
C	40	350						
D	10	350						
C2	2	350	24165	PRS1705	BR2-450	QT1-1	TC595	TVA-1701
C3	5	50	24164	PTT90	NLW5-50	MT1-3	TT50X5	TE-1303

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

### 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	7							
C5	15	NPO						
C6	6.8	NPO ± .25						
C7			NPO-DI 15	DTZ-15	CZ601CG150J	CCTO-150	CN0415	10TCC-Q15
C8			NPO-DI6.8	DTZ-6R8	CZ601CH6R8D	CCTO-6R8	CN0568	10TCC-V68
C9	.001		EF-001	MFT-1000		CCF-102	CT280A	
C10	.001		EF-001	MFT-1000		CCF-102	CT280A	
C11	.001		EF-001	MFT-1000		CCF-102	CT280A	
C12	.001		EF-001	MFT-1000		CCF-102	CT280A	
C13	15							
C14	.001		EF-001	MFT-1000		CCF-102	CT280A	
C15	.002							
C16	4	NPO ± .25		DTZ-4R7		CCTO-4R7	CN0547	10TCC-V47
C17	33	N470						10TCT-Q33
C18	1.5		NPO-DI 1.5	DTZ-1R5		CCTO-1R5	CN0515	10TCC-V15
C19	33		NPO-DI33	DTZ-33	CS601CG330K	CCTO-330	CN0433	10TCC-Q33
C20	2							
C21	2							
C22	18	NPO		TCZ-18	CY601CG180J	CCTO-180	CN0418	10TCC-Q18
C23	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C24	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C25	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C26	.005		BPD-005	DD-502	BYX601ZU502P	CCD-502	B250	5HK-D50
C27	.05		TTD-05		HOV101ZV503Z	TA150	TH-S50	
C28	.005		BPD-005	DD-502	BYX601ZU502P	CCD-502	B250	5HK-D50
C29	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C30	47		NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CN0447	10TCC-Q47
C31	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C32	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C33	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C34	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C35	100		NPO-DI 100	DTZ-100	CV601CG101K	CCTO-101	CN0810	10TCC-T10
C36	100		NPO-DI 100	DTZ-100	CV601CG101K	CCTO-101	CN0810	10TCC-T10
C37	100		NPO-DI 100	DTZ-100	CV601CG101K	CCTO-101	CN0810	10TCC-T10
C38	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C39	.033	200V	P288N-033		WMF2S33	6DP-3-333	PVC2133	4PS-S33
C40	.002		BPD-002	DD-202	BYX601ZU202P	CCD-202	B220	5HK-D20
C41	.05		TTD-05		HOV101ZV503Z	TA150	TH-S50	
C42	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C43	.001		BPD-001	DD-102	HVX162XP102M	CCD-102	B210	5HK-D10
C44	.05		TTD-05		HOV101ZV503Z	TA150	TH-S50	
C45	47		NPO-DI 47	DTZ-47	CX601CG470K	CCTO-470	CN0447	10TCC-Q47
C46	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C47	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C48	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C49	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C50	100		NPO-DI 100	DTZ-100	CV601CG101K	CCTO-101	CN0810	10TCC-T10
C51	220		DI-220	DD-221	JBZ601YP221K	CCD-221	B322	5GA-T22
C52	470		DI-470	DD-471	JB601YP471K	CCD-471	JF347	10TS-T47
C53	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C54	.033	200V	P288N-033		WMF2S33	6DP-3-333	PVC2133	4PS-S33
C55	.001		BPD-001	DD-102	HVX162XP102M	CCD-102	B210	5HK-D10
C56	.0033		BPD-0033	DD-332	BYX601ZU332P	CCD-332	B233	5HK-D33
C57	.0033		BPD-0033	DD-332	BYX601ZU332P	CCD-332	B233	5HK-D33
C58	.033	200V	P288N-033		WMF2S33	6DP-3-333	PVC2133	4PS-S33
C59	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C60	.033	200V	P288N-033		WMF2S33	6DP-3-333	PVC2133	4PS-S33
C61	.001		BPD-001	DD-102	HVX162XP102M	CCD-102	B210	5HK-D10
C62	.0033		BPD-0033	DD-332	BYX601ZU332P	CCD-332	B233	5HK-D33
C63	.0033		BPD-0033	DD-332	BYX601ZU332P	CCD-332	B233	5HK-D33
C64	.033	200V	P288N-033		WMF2S33	6DP-3-333	PVC2133	4PS-S33
C65	.01	1400V	DAC-27	DD16-103	ACT142ZU103P	16DP-3-103	UAC110	12SL-S10

## PARTS LIST AND DESCRIPTION

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

### 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.
C66	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C67	.01		BPD-01	DD-103	BYV102ZU103M	CCD-103	B110	5HK-S10
C68	.001		BPD-001	DD-102	HVX162XP102M	CCD-102	B210	5HK-D10
C69	.001		BPD-001	DD-102	HVX162XP102M	CCD-102	B210	5HK-D10
C70	.001		BPD-001	DD-102	HVX162XP102M	CCD-102	B210	5HK-D10
C71								
C72								

# Packard Bell Part Number.

### CONTROLS

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

ITEM No.	USE	RESISTANCE	REPLACEMENT DATA				
			Packard Bell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R1A	Loudness/Left	3meg 500K Tap 1.8meg Tap	25122A (25122)	F59-3.3meg, R59-3.3meg, SF012, CPL-2		(BU1,CF73TT, CR54TT,SS14, SS7A,DC1)*	FA36DT155, RU36DT155,CS3500
B	Loudness/Right	3meg 500K Tap 1.8meg Tap					
R2A	Bass/Left	300K	25563A (25563)	F1-250K,R1-250K SF012, CPL-2	NP-250K-S, NR-250K-S, UP-B-400, DC-2	B11-131,B11-131, SK1,QCM or (BU1,CF15,CR10, SS14,SS7A,DC1)*	FB35L,RU35L, CS3500
B	Bass/Right	300K					
R3A	Treble/Left	300K	25563A (25563)	F1-250K,R1-250K SF012, CPL-2	NP-250K-S, NR-250K-S, UP-B-400, DC-2	B11-131,B11-131, SK1,QCM or (BU1,CF15,CR10, SS14,SS7A,DC1)*	FB35L,RU35L, CS3500
B	Treble/Right	300K					
R4	Balance	500K	25674A (25674)	F1-500K, SF012	A47-500K-S,FS-3 or (NP-500K-S, UP-B-400)	B11-133 or (BU1, CF16,SS14,DC1)*	UA55L,SF1000 or (RU55L,SL38, SF1000) or (U50)

\* " SNAP TROL "

### RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Packard Bell PART No.			IRC PART No.	WORKMAN PART No.	Packard Bell PART No.
R66	1000Ω 3W	PW5-1000	361000	73317	R67	2700Ω 7W	MR4	10W-SQ-3850	73713

### COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA					
		Packard Bell PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	STANCOR PART No.	WORKMAN PART No.
L1	FM Antenna						
L2	FM RF						
L3	FM Oscillator						
L4	1st. FM IF	29269A	18-3490	FM-258	1483-PC	RTC-9046	T654
L5	2nd. FM IF	29269A	18-3490	FM-258	1483-PC	RTC-9046	T654
L6	3rd. FM IF	29269A	18-3490	FM-258	1483-PC	RTC-9046	T654
L7	Ratio Det.	29268	17-3492	FM-257	1485-PC	RTC-9053	T659
L8	Loopstick	29364B	14-9015#*	BC-419 †	7782	RTC-9360	TA526
L9	AM Oscillator	29247B	14-1077	BC-393	71-Osc.	RTC-8648	T510
L10	1st. AM IF	29276	16-6780	BC-356	16PC-1	RTC-9299	T614
L11	2nd. AM IF	29276	16-6780	BC-357	16PC-2	RTC-9300	T615

# Drill mounting hole.

\* Disregard Tap.

† Disregard Primary.

### TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA				
	PRI.	SEC. 1	SEC. 2	Packard Bell PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.
T1	117V AC @ .5A AC	540V AC CT @ .05A DC	6.3V AC 1.1A AC	89110				
	SEC. 3	SEC. 4	SEC. 5					
	6.3V AC @ 2.8A AC							

### TRANSFORMER BALANCE INDICATOR

ITEM No.	TURNS RATIO	REPLACEMENT DATA					NOTES
		Packard Bell PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T2	1 35	89574B					
T3	1 35	89574B					

### COMPONENT COMBINATIONS

ITEM No.
----------



AMP PARTS LIST AND DESCRIPTION

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

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA			NOTES
			DELCO PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	
X7	2N2613	AF Amp.	DS-26	GE-2	SK-3004	PNP
X8	2N2431	Driver	DS-26	GE-2	SK-3004	PNP
X9	PB110	Output	DS-520	GE-3	SK-3004	PNP ♦
X10	PB110	Output	DS-520	GE-3	SK-3004	PNP ♦
X11	2N2613	AF Amp.	DS-26	GE-2	SK-3004	PNP
X12	2N2431	Driver	DS-26	GE-2	SK-3004	PNP
X13	PB110	Output	DS-520	GE-3	SK-3004	PNP ♦
X14	PB110	Output	DS-520	GE-3	SK-3004	PNP ♦
X15	2N406	Balance, Light Control	DS-26	GE-2	SK-3003	PNP
X16	2N406	Balance, Light Control	DS-26	GE-2	SK-3003	PNP

♦ When replacing, apply silicone grease to both sides of insulator. Tighten mounting screws securely. Check bias adjustment.

POWER RECTIFIERS & SIGNAL DIODES

ITEM No.	MEASURED CURRENT	ORIGINAL Part or Type No.	RECTIFIERS & DIODES		RECTIFIERS		
			GENERAL ELECTRIC PART No.	INTERNATIONAL RECTIFIER PART No.	MALLORY PART No.	RCA PART No.	SARKES TARZIAN PART No.
X17	.160A	72119 ①	GE-505 or GE-504A	5A4-D or 8D4	1N2069 or 1N538	SK-3016 or SK-3017	F-2 or 20C
X18	.160A	72119 ①	GE-505 or GE-504A	5A4-D or 8D4	1N2069 or 1N538	SK-3016 or SK-3017	F-2 or 20C
X19	.160A	72119 ①	GE-505 or GE-504A	5A4-D or 8D4	1N2069 or 1N538	SK-3016 or SK-3017	F-2 or 20C
X20	.160A	72119 ①	GE-505 or GE-504A	5A4-D or 8D4	1N2069 or 1N538	SK-3016 or SK-3017	F-2 or 20C

① Some versions may use a single unit (Bridge Rectifier)Part #72123A.

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA				
	CAP.	VOLT.	Packard Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	GENERAL ELECTRIC PART No.	MALLORY PART No.
C92	500	6	24248 ④	PRS1120	BR500-6	QT1-30	TC605
C93	50	20	24247	CRE617A	NLW50-25	MT1-17	TT25X50
C94	50	50	24289	CRE767A	NLW50-50	MT1-17	TT50X50
C95	10	50 NP	24264 ①	NP-PRS7555	BRNP10-400	NPQT-3	TCN5010
	25	50 NP	(24265) ②	NP-PRS7560	BRNP20-400	NPQT-4	TCN3520
	5	50 NP	(24266) ③	NP-PRS7550	BRNP5-400	NPQT-2	TCN505
C96	50	3	24246	CRE617A	NLW50-25	MT1-17	TT25X50
C97	50	20	24247	CRE617A	NLW50-25	MT1-17	TT25X50
C98	500	6	24248 ④	PRS1120	BR500-6	QT1-30	TC605
C99	50	20	24247	CRE617A	NLW50-25	MT1-17	TT25X50
C100	50	50	24289	CRE767A	NLW50-50	MT1-17	TT50X50
C101	10	50 NP	24264 ①	NP-PRS7555	BRNP10-400	NPQT-3	TCN5010
	25	50 NP	(24265) ②	NP-PRS7560	BRNP20-400	NPQT-4	TCN3520
	5	50 NP	(24266) ③	NP-PRS7550	BRNP5-400	NPQT-2	TCN505
C102	1500	50	24250	CRE617A	NLW50-25	MT1-20	TT25X50
C103	50	25	24247 ④	CRE617A	NLW50-25	MT1-20	TT25X50
C104	1500	50	24252		BR1500-50		TVLP-2335.5
B	500	50			BR500-50		
C105	50	3	24246	CRE217A	NLW50-3	MT1-15	TT3X50
C106	50	20	24247	CRE617A	NLW50-25	MT1-17	TT25X50

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.  
① 10/50V NP used in Models RPC-38, RPC-41A. ② 25/50V NP used in Models RPC-38, RPC-41A.  
③ 5/50V NP used in Model RPC-40. ④ May be used in some versions.

CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C107	56	NPO		TCZ-56	BYV102ZU103M	CCTO-560	CN0456	10TCC-Q56
C108	.01		BPD-01	DD-103		CCD-103	B110	5HK-S10
C109	56	NPO		TCZ-56	BYV102ZU103M	CCTO-560	CN0456	10TCC-Q56
C110	.01		BPD-01	DD-103		CCD-103	B110	5HK-S10
C111	.047	400V	P488N-047	DD-503	PM4847	4DP-3-473	GEM4147	4TM-S47

CONTROLS

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

ITEM No.	USE	RESIST-ANCE	REPLACEMENT DATA				
			Packard Bell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.
R85	Balance Indicator	300K	25138	TT-50 or(F1-250K SNK010)	A47300KS,RN3 or (NP-300K-S, UP-C-400)	B11-131, TM4 or (BU11, CF15, S86)*	PTA35L or(RU35L, SL37, SN1000) or (UA254L, SN1000)

\* "SNAPTROL".

RESISTORS (Power and Special)

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN PART No.	Packard Bell PART No.			IRC PART No.	WORKMAN PART No.	Packard Bell PART No.
R94	1000Ω 3W	PW5-1000	361000	73317	R113	1000Ω 3W	PW5-1000	361000	73317
R95	2.7Ω 2W	BWH-2.7	WS-2.7	73897	R114	2.7Ω 2W	BWH-2.7	WS-2.7	73897
R96	1000Ω 3W	PW5-1000	361000	73317	R115	1000Ω 3W	PW5-1000	361000	73317
R97	2.7Ω 2W	BWH-2.7	WS-2.7	73897	R116	2.7Ω 2W	BWH-2.7	WS-2.7	73897
R99	.68Ω 2W	BWH-.68	WS-.68	73898	R117	.68Ω 2W	BWH-.68	WS-.68	73898
R100	.68Ω 2W	BWH-.68	WS-.68	73898	R118	.68Ω 2W	BWH-.68	WS-.68	73898
R103	10Ω 5W	PW5-10	5W-SQ-10		R121	10Ω 5W	PW5-10	5W-SQ-10	

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2	Packard Bell PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T4	117V AC @ .31A AC	55V AC CT @ .23A DC		89108A (89108)					

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO				REPLACEMENT DATA					NOTES
	PRI.	SEC. 1	SEC. 2		Packard Bell PART No.	MERIT PART No.	STANCOR PART No.	THORDARSON PART No.	TRIAD PART No.	
T5	4	1	1		89575A (89575)					
T6	4	1	1		89575A (89575)					

FUSE DEVICES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
F1	Circuit Breaker	3 1/4A	86723		8153.25			

MISCELLANEOUS

ITEM No.	PART NAME	Packard Bell PART No.	NOTES
S7	Switch-Speaker Selector (Includes Knob 86109-1)	86109	
S8	Switch-Speaker	86725	External Speaker Assembly.

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in 12 Colors 8524 (Stranded) Available in 12 Colors  
Power Cord ..... Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft. 17109 (Plastic) or 17129 (Rubber) - 9 Ft.  
Power Cord (Interlock Type) ..... Use BELDEN No. 8874 (Rubber) or 8895 (Plastic)  
Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401 or 8421  
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor-Unshielded) 8429 (Two Conductor-Shielded) 8419 (Three Conductor-Shielded)