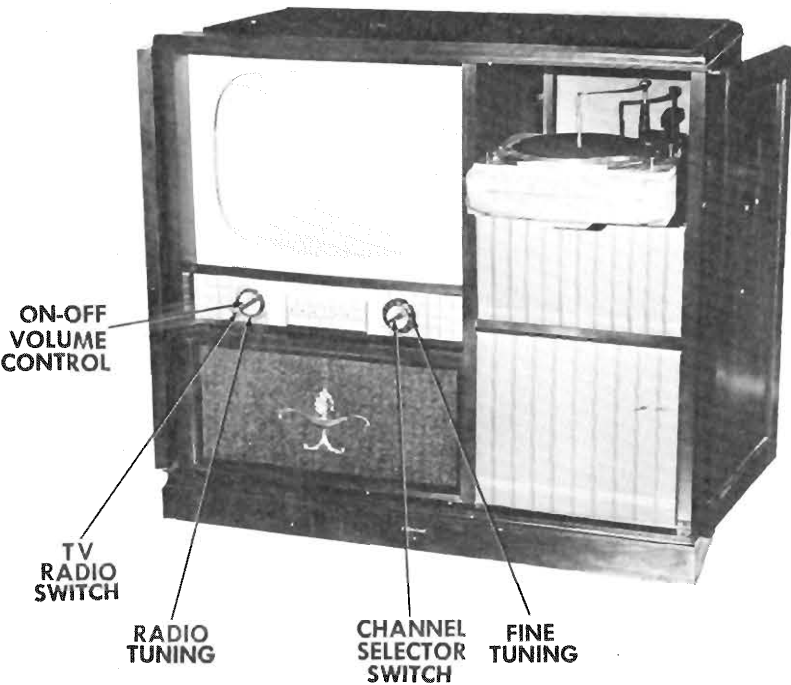


SISTOR IDENTIFICATION



ADMIRAL MODEL 322DX16A						
NAME	Admiral	MODELS	CHASSIS	RADIO	RECORD CHANGER	
		122DX12	22F2			
		222DX15B	22M2			
		222DX16B	22M2			
		222DX17B	22M2			
		222DX27B	22M2			
		322DX16A	22P2	Built-in AM Radio	RC600	
MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.					
TYPE SET	TV-AM-Phono Combination Receiver					
TUBES	Twenty-four					
POWER SUPPLY	110-120 Volts AC-60 Cycle		RATING 1.7 Amp. @ 117 Volts AC			
TUNING RANGE-	Channels 2 thru 13, Video IF 25.75MC, Sound IF 21.25MC (Inter-carrier)					
	AM Radio 540-1620KC, AM IF 455KC					
INDEX						
Alignment Instructions		6, 7	Photographs (Cont)			
Drive Cord Stringing		7	Resistor Identification		19, 20	
Disassembly Instructions		18	Trans., Inductor and Alignment Identification 17			
Horizontal Sweep Circuit Adjustments		11	Resistance Measurements			8
Parts List and Descriptions		13 thru 16	Servicing in the Field			18
Photographs			Schematic			2
Cabinet-Rear View		11	Trouble Shooting Aids			12, 17
Capacitor Identification		4, 9	Tube Failure Check Chart			5
Chassis-Top View		3	Tube Placement Chart (Bottom View)			8
Radio Chassis		16	Tube Placement Chart (Top View)			5
RF Tuner		10				

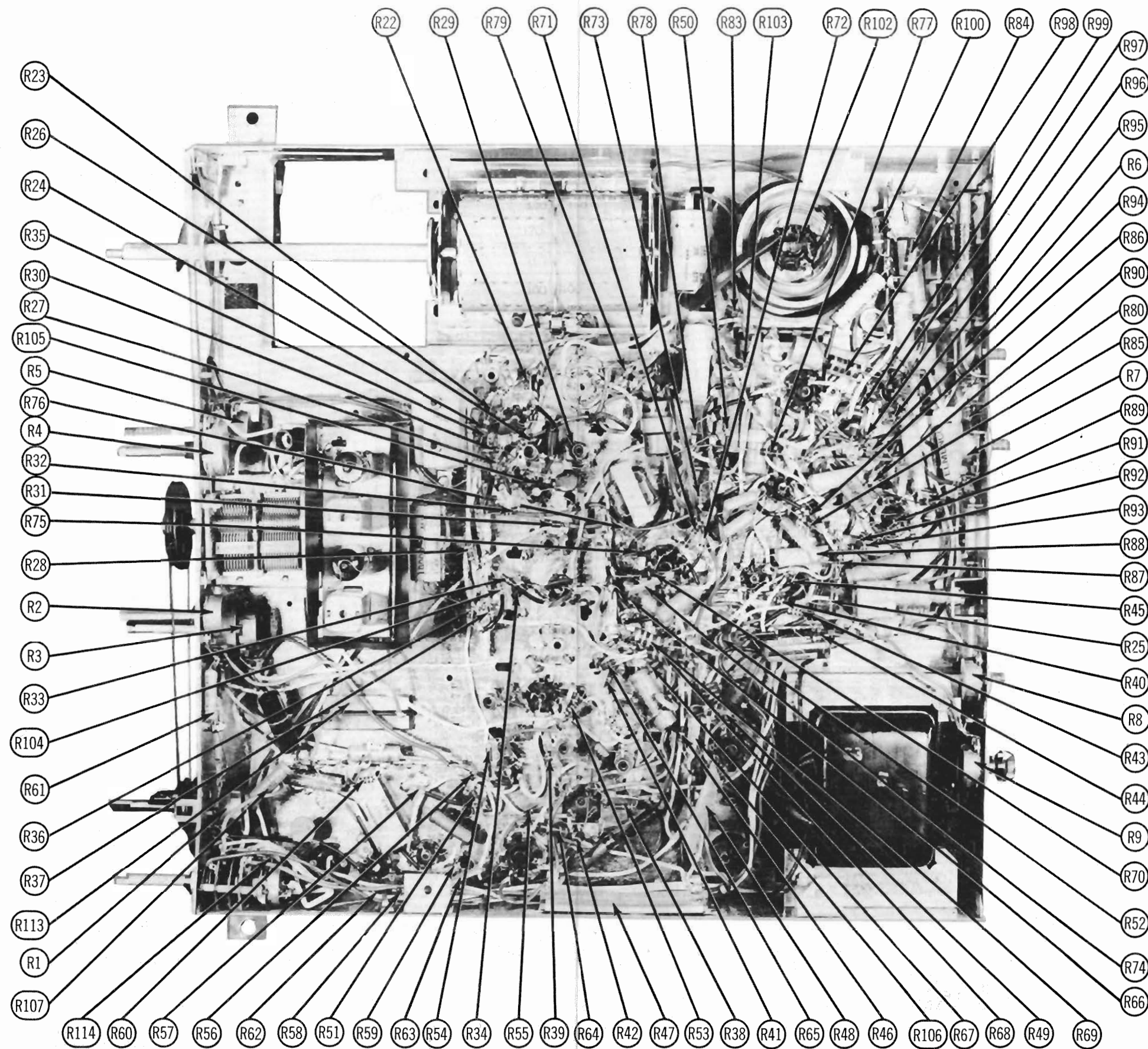
FOR SERVICE INFORMATION ON RECORD CHANGER, SEE MODEL RC600, PHOTOFACT SET 218, FOLDER 2.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, 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."

"Reproduction or use, without express permission, of editorial or pictorial con-

tent, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1953 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

NAME Ad

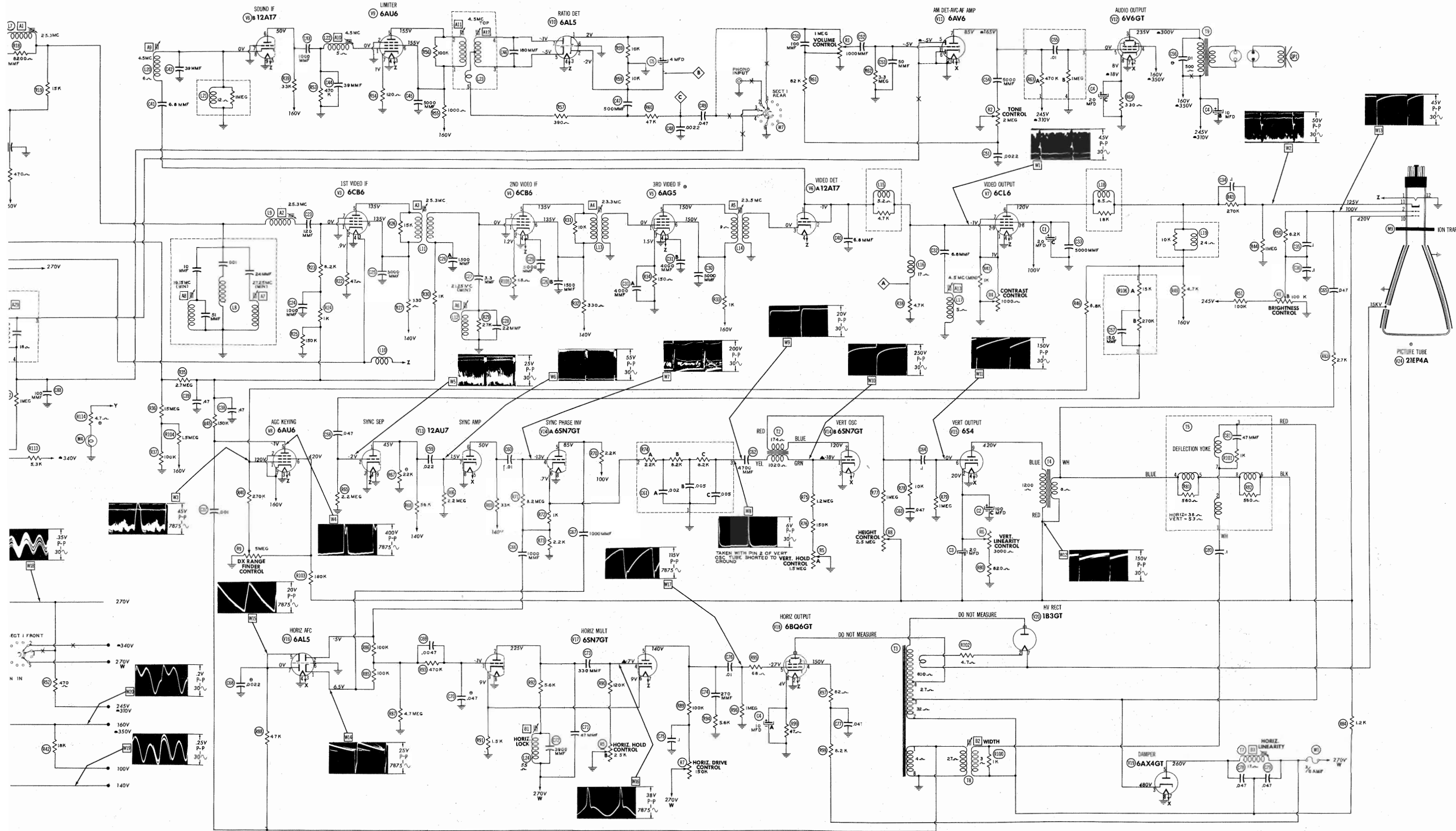
MANUFACTU
TYPE SET
TUBES
POWER SUPP
TUNING RANC

Alignment Instru
Drive Cord Strir
Disassembly Ins
Horizontal Sweep
Parts List and D
Photographs
Cabinet-Rear
Capacitor Ide
Chassis-Top
Radio Chassis
RF Tuner ...

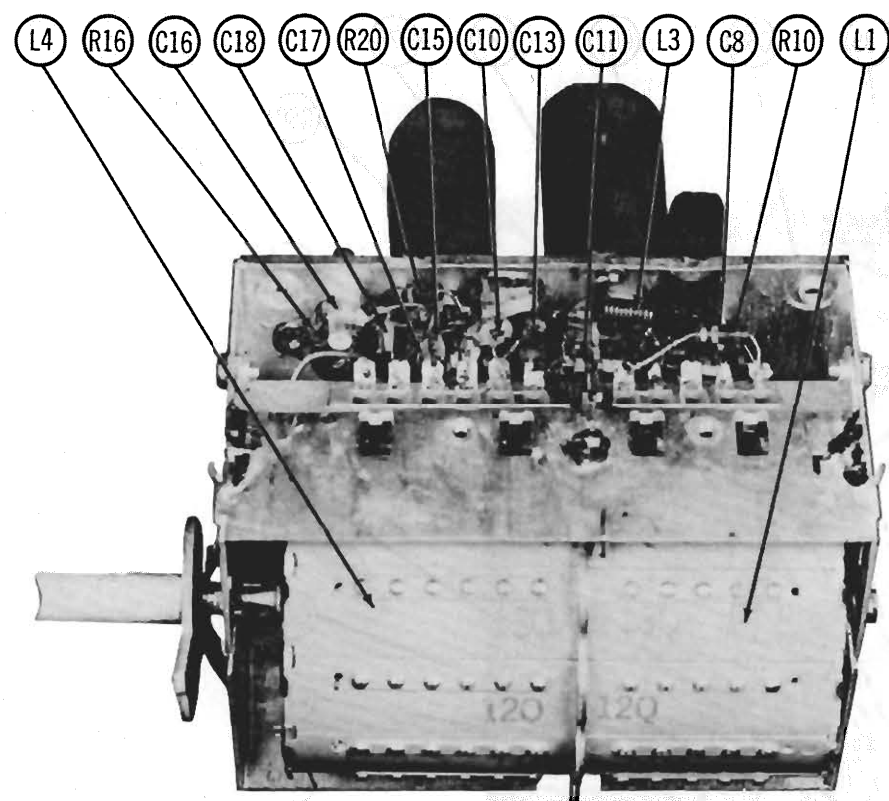
FOR SERVICE I

"The listing of any avc
case a recommendatio
as to the quality and s
parts have been compi
Inc., by the manufactu
"Reproduction or use,

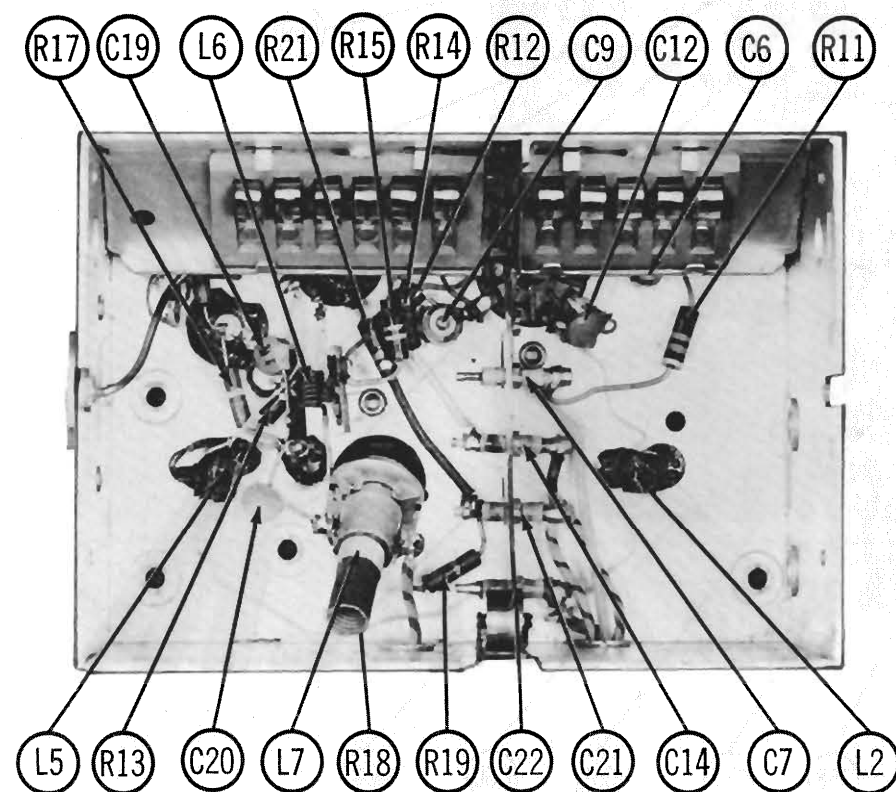
ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2



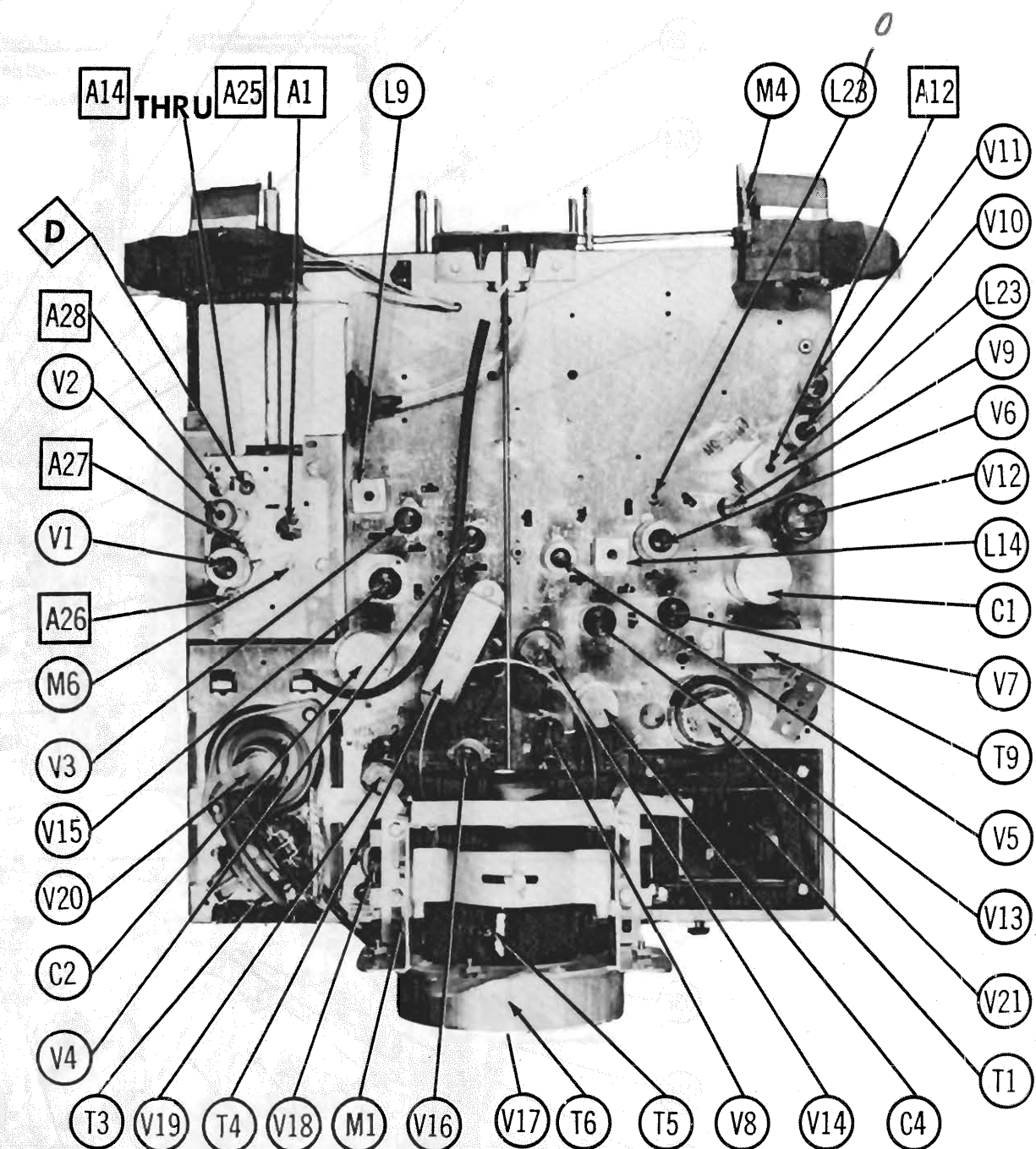
ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2



RF TUNER-RIGHT SIDE



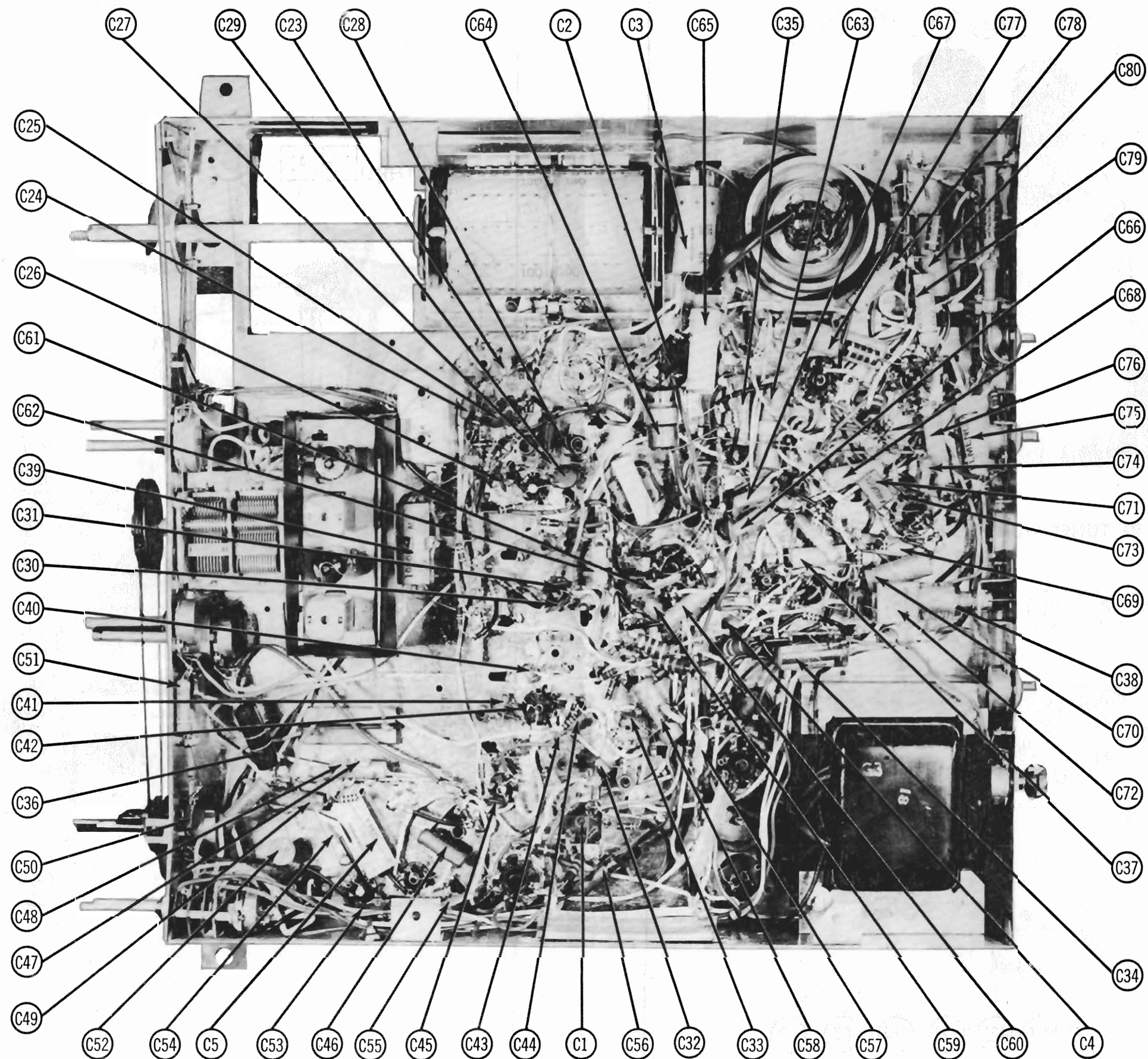
RF TUNER-BOTTOM VIEW



CHASSIS TOP VIEW

SET 222 FOLDER 2

ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2

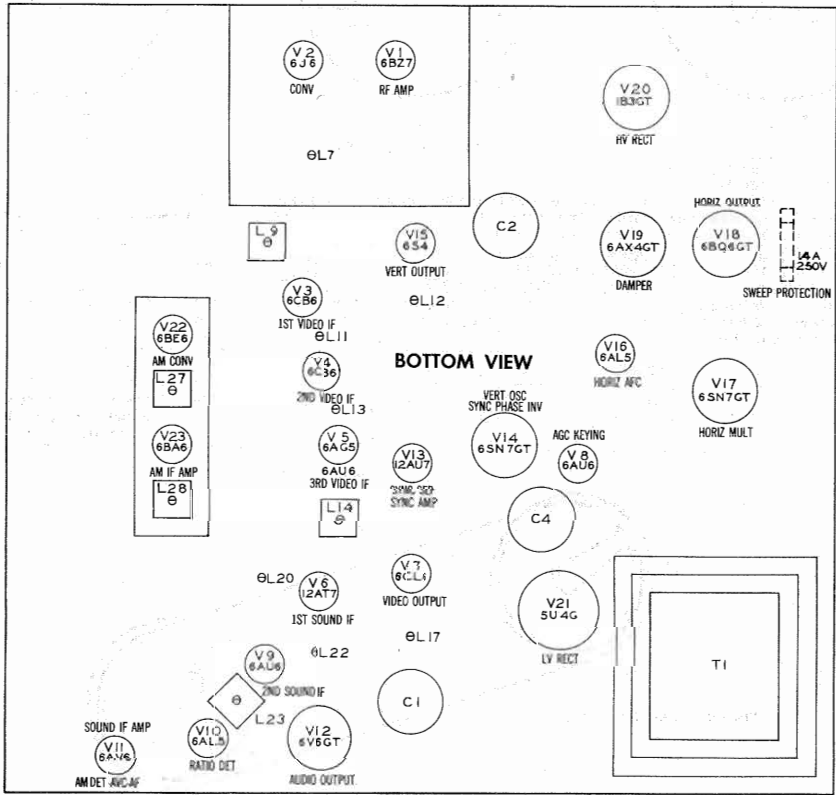


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

RESISTANCE MEASUREMENTS

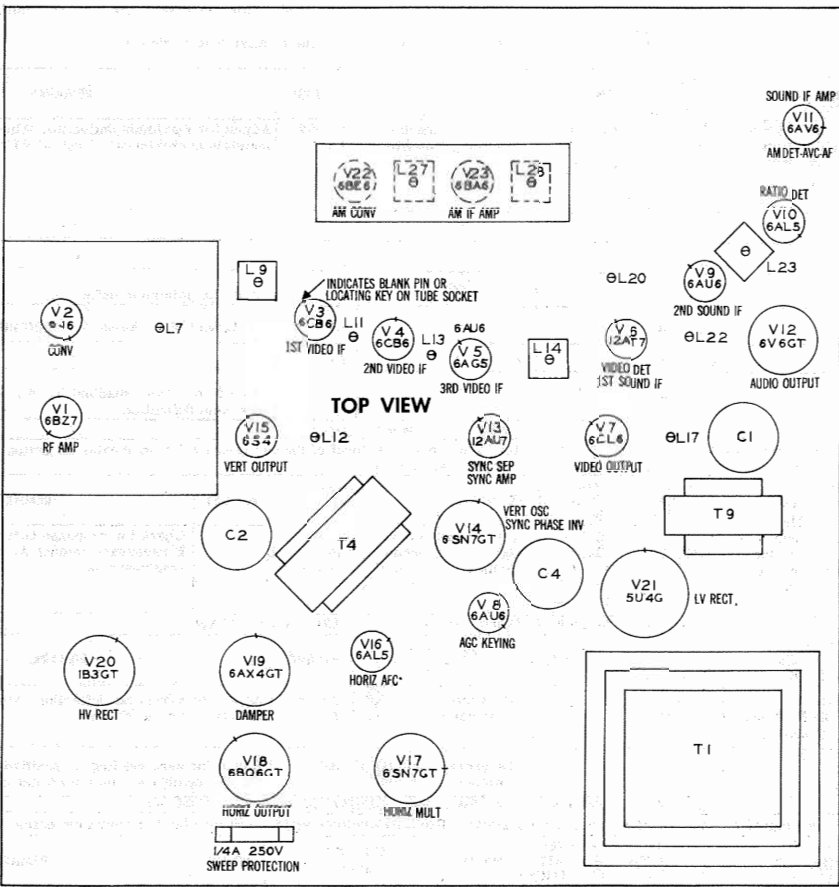
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BZ7	INF	3Meg	0Ω	.1Ω	0Ω	1.8KΩ	170KΩ	INF	0Ω
V 2	6J6	18KΩ	18KΩ	.1Ω	0Ω	230KΩ	10KΩ	0Ω		
V 3	6CB6	180KΩ	47Ω	.1Ω	0Ω	4.5KΩ	4.5KΩ	0Ω		
V 4	6CB6	150KΩ	88Ω	.1Ω	0Ω	4.5Ω	4.5Ω	0Ω		
V 5	6AG5	.4Ω	0Ω	.1Ω	0Ω	4KΩ	4KΩ	150Ω		
V 6	12AT7	4.7KΩ	4.7KΩ	.3Ω	.1Ω	.1Ω	33KΩ	0Ω	10Ω	0Ω
V 7	6CL6	80Ω	4.7KΩ	21KΩ	0Ω	.1Ω	8KΩ	80Ω	21KΩ	4.7KΩ
V 8	6AU6	14.5K	3KΩ	0Ω	.1Ω	300KΩ	180KΩ	3KΩ		
V 9	6AU6	470KΩ	0Ω	.1Ω	0Ω	4KΩ	4KΩ	120Ω		
V 10	6AL5	10KΩ	10KΩ	.1Ω	0Ω	INF	0Ω	INF		
V 11	6AV6	3.3meg	0Ω	.1Ω	0Ω	2meg	0Ω	470KΩ		
V 12	6V6GT	INF	.1Ω	1.4KΩ	3KΩ	1meg	900Ω	0Ω	330Ω	
V 13	12AU7	35KΩ	2.2meg	0Ω	.1Ω	.1Ω	37KΩ	2.2meg	0Ω	
V 14	6SN7GT	1.6meg	2.4meg	0Ω	8.2meg	25KΩ	3.2KΩ	.1Ω	0Ω	
V 15	684	INF	1.5KΩ	INF	0Ω	.1Ω	1meg	INF	INF	2KΩ
V 16	6AL5	4.8meg	4.8meg	.1Ω	0Ω	47KΩ	0Ω	47KΩ		
V 17	6SN7GT	5.2meg	6KΩ	1.5KΩ	130KΩ	140KΩ	1.5KΩ	.1Ω	0Ω	
V 18	6BQ6GT	INF	0Ω	INF	8.5KΩ	1meg	1meg	.1Ω	47Ω	TOP CAP 27Ω
V 19	6AX4GT	750KΩ	INF	480KΩ	INF	440Ω	650KΩ	.1Ω	0Ω	
V 20	1B3GT	PINS 1-8 HAVE INF RESISTANCE								
V 21	5U4G	INF	40KΩ	40KΩ	26Ω	INF	24Ω	40KΩ	40KΩ	
V 22	6BE6	22KΩ	.4Ω	.1Ω	0Ω	5.4KΩ	15KΩ	INF		
V 23	6BA6	2meg	0Ω	.1Ω	0Ω	5.4KΩ	32KΩ	150Ω		
V 24	21EP4A	.1Ω	50KΩ	Pin 10 1.2KΩ	Pin 11 290KΩ	Pin 12 0Ω				

■ MEASURED FROM PIN 2 OF V21.
▲ MEASURED FROM PIN 3 OF V19.
† MEASURED IN TV POSITION
MEASURED IN RADIO POSITION



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

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

POWER SUPPLY FAILURE
No raster, no sound - V21

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5, V6
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V7, V24
Has pic, no sound - V8, V9, V10, V11, V12
Overloaded picture - V8

SYNC FAILURE
No vert. sync - V14, V15
No horiz. sync - V14, V18, V17
No vert. or horiz. sync - V13, V14

SWEEP FAILURE
No raster, has sound - V17, V18, V19, V20, V24, Fuse (M1)
No vertical deflection - V14, V15
Poor vert. linearity or foldover - V14, V15
Poor horiz. linearity or foldover - V17, V18, V19
Narrow picture - V17, V18, V19, V20, V21
Vert. off freq. - V14, V15
Horiz. off freq. - V14, V16, V17



ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT						
The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator to disable the high voltage.						
VIDEO IF ALIGNMENT						
Remove the converter tube (V2) from its socket and replace with a 6J6 which has pin 1 removed. This will disable the local oscillator and reduce the possibility of erroneous indications. Connect the negative lead of a 4.5 volt bias supply to the ungrounded side of C39. Connect the positive lead to chassis. Set the contrast control to minimum.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	25.3MC (unmod)	Any unused high channel	DC probe thru decoupling filter (fig. 1) to point A. Common to chassis.	A1, A2, A3	Adjust for maximum deflection. Alternate generator to maintain approximately 1 volt at VTVM.
2. "	"	22.3MC	"	"	A4	"
3. "	"	23.5MC	"	"	A5	"
4. "	"	21.25MC	"	"	A6	Adjust for minimum deflection
5. "	"	27.25MC	"	"	A7	Use 1.5 volt bias. Adjust for MINIMUM deflection.
6. "	"	19.75MC	"	"	A8	"
7. "	"	25.3MC	"	"	"	Use 4.5 volt bias. Readjust A1, A2, and A3 for maximum deflection.

OVERALL VIDEO IF RESPONSE CHECK						
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. Connect 4.5 volt bias battery and set contrast control as under Video IF Alignment.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8. Direct	High side to an ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	Any unused high channel	Vertical Amp. thru decoupling filter (fig. 1) to point A. Low side to chassis.	"	Check for response curve similar to fig. 2. If necessary retouch A1 thru A5 for desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
9. .01MFD	High side to pin 1 (plate) of 12AT7 (V6A). Low side to chassis.	4.5MC (unmod)	Any	DC probe to point B. Common to chassis.	A9, A10, A11	Adjust for maximum deflection. Alternate generator to maintain 1 volt at VTVM.
10. "	"	"	"	DC probe to point C. Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

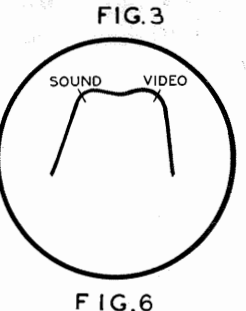
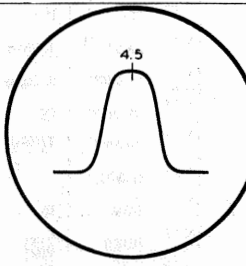
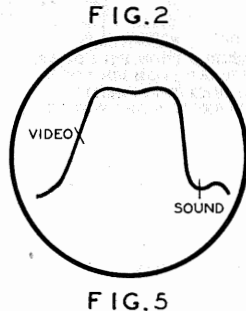
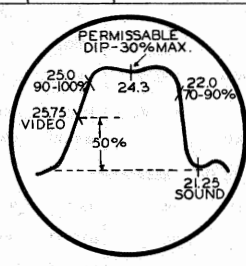
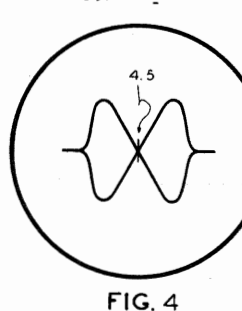
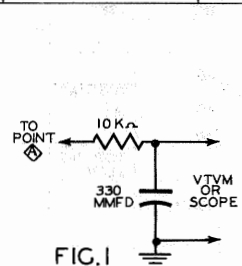
SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE							
Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9. .01MFD	High side to pin 1 (plate) of 12AT7 (V6A). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. Amp. to point  . Low side to chassis	A9, A10, A11	Disconnect stabilizer capacitor C5. Adjust for curve of maximum amplitude and symmetry as in Fig. 3.
10. "	"	"	"	"	Vert. Amp. to point  . Low side to chassis.	A12	Reconnect stabilizer capacitor C5. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 4. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ALIGNMENT						
Connect a 10MFD capacitor from pin 6 of V7 to pin 8 of V6B.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11. .01MFD	High side to pin 1 (plate) of 12AT7 (V6A). Low side to chassis.	4.5MC (Unmod.)	Any	DC probe to point D. Common to chassis.	A13	Adjust for MINIMUM deflection.

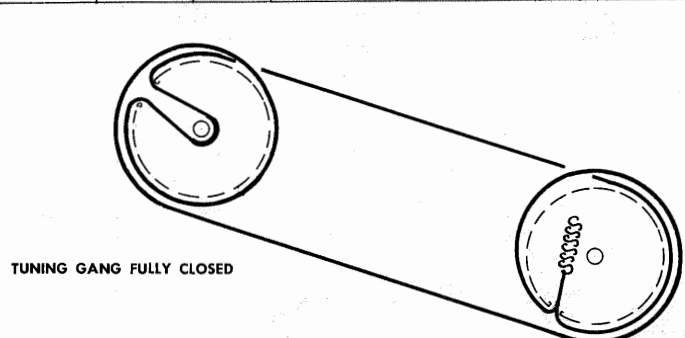
OSCILLATOR ALIGNMENT						
Remove the dummy converter tube and replace the original 6J6 in its socket. The channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. Set the fine tuning control to the mid-position of its range.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12. Two 1200 Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	13	Vert. Amp. to point A. Low side to chassis.	A14	Adjust to place sound marker in trap notch as in Fig. 4. Video marker should be at 50%.
		207MC (10MC Swp)	12		A15	
		201MC (10MC Swp)	11		A16	
		195MC (10MC Swp)	10		A17	
		189MC (10MC Swp)	9		A18	
		183MC (10MC Swp)	8		A19	
		177MC (10MC Swp)	7		A20	
		171MC (10MC Swp)	6		A21	
		165MC (10MC Swp)	5		A22	
		159MC (10MC Swp)	4		A23	
		153MC (10MC Swp)	3		A24	
		147MC (10MC Swp)	2		A25	
		141MC (10MC Swp)				
		135MC (10MC Swp)				
		129MC (10MC Swp)				
		123MC (10MC Swp)				

ALIGNMENT INSTRUCTIONS (cont)

RF AND MIXER ALIGNMENT						
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13. Two 1200 Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	12	Vert. Amp. thru 10KΩ to point D. Low side to chassis.	A26, A27, A28	Adjust for response curve similar to Fig. 6.
14. "	"	213MC (10MC Swp)	13	"	"	Check for response similar to Fig. 6. If markers fall below 70% on any channel make slight compromise adjustments of A26, A27 and A28 with channel switch set to that channel. Recheck all other channels to see that they have not been seriously affected.
		201MC (10MC Swp)	11			
		195MC (10MC Swp)	10			
		189MC (10MC Swp)	9			
		183MC (10MC Swp)	8			
		177MC (10MC Swp)	7			
		171MC (10MC Swp)	6			
		165MC (10MC Swp)	5			
		159MC (10MC Swp)	4			
		153MC (10MC Swp)	3			
		147MC (10MC Swp)	2			
		141MC (10MC Swp)				
		135MC (10MC Swp)				
		129MC (10MC Swp)				
		123MC (10MC Swp)				
		117MC (10MC Swp)				



RADIO ALIGNMENT						
Turn function switch to "radio" position. Turn tone control fully clockwise. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.						
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST
15. .01MFD	High side to stator plates of antenna section of tuning gang. Low side to chassis.	455KC (400v Mod)	Radio	Tuning gang fully open	Across voice coil	A29, A30, A32
16. "	"	1620KC	"	"	"	A33
17. Loop	"	1400KC	"	Tune to 1400KC signal.	"	A34



DRIVE CORD STRINGING

ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the RF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, through the small hole in the cabinet to the right of the channel selector shaft.

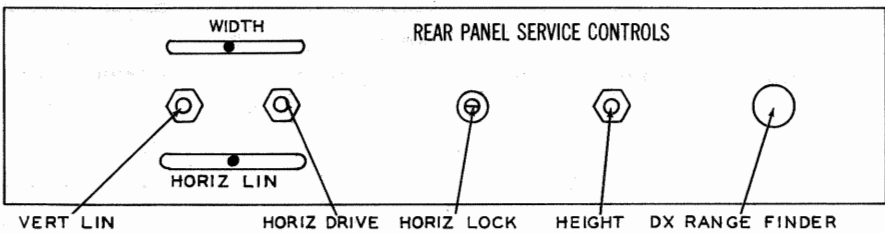
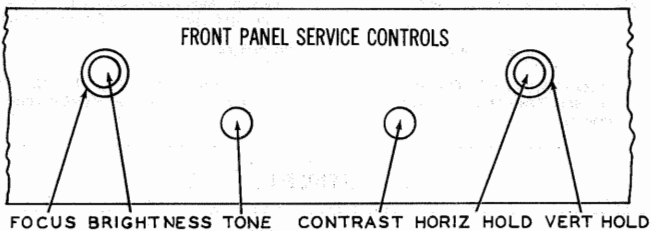
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove 4 phillips head screws holding wood strip at top of cabinet. Remove wood strip and safety glass by lifting up and out. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION



SPECIAL ADJUSTMENTS - DX RANGE FINDER

Reception of weak signals can often be improved by advancing the DX range finder in a clockwise direction. However, if the range finder control is turned too far in this direction the picture may disappear entirely on strong signals.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the rear panel of the chassis. Set the horizontal hold control at the mid-position of its range and adjust the horizontal lock slug (L24) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L23) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for horizontal sweep circuit protection. (See tube placement chart, for location).

CENTERING

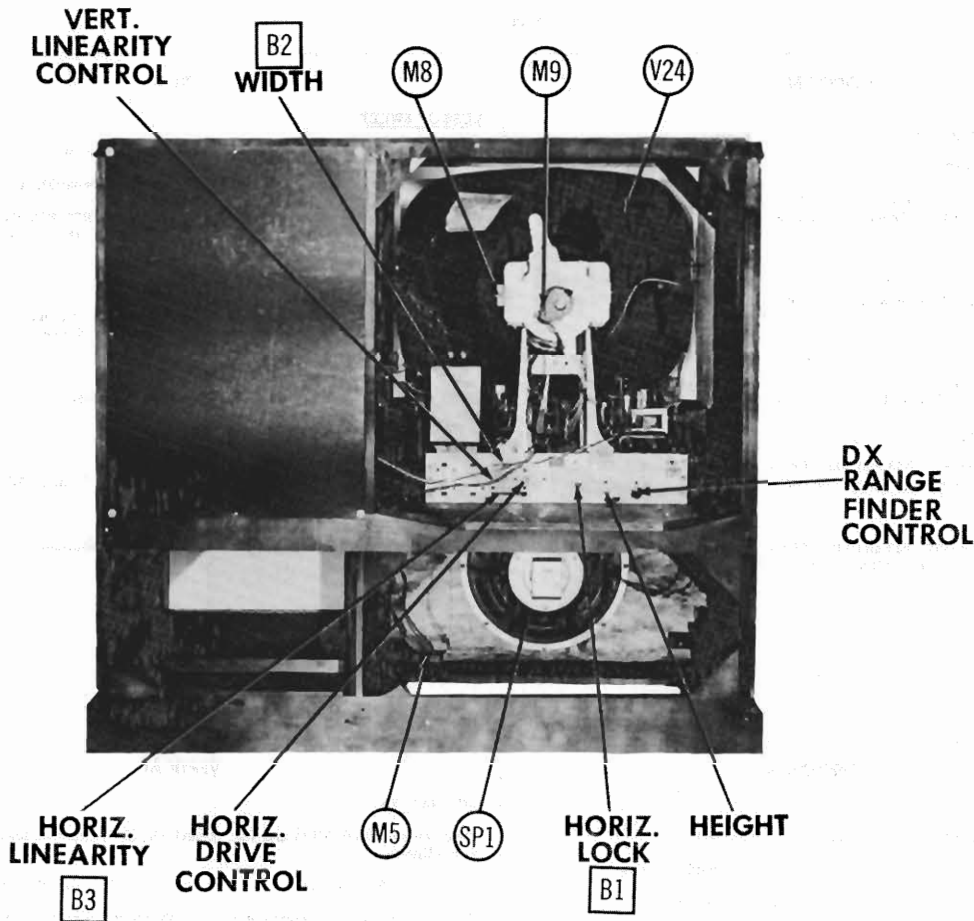
Centering is accomplished mechanically by means of a centering lever on the PM focusing assembly. Adjust the centering lever from side to side, and up and down until the picture is properly centered.

ANTI-PIN CUSHION CORRECTION

Reduce the picture size so that the side of the raster are visible, and position the magnets so that all sides are straight lines and the corners are at right angles.

DISASSEMBLY INSTRUCTIONS

1. Remove 7 push on type control knobs from front panel.
2. Remove 7 wood and 2 metal screws. Remove rear cover.
3. Disconnect built-in antenna speaker plug, phono motor and audio plugs, and AM antenna loop leads.
4. Remove Jewel Lite from front base of cabinet.
5. Remove 4 chassis bolts. Remove chassis.
6. Remove 4 speaker nuts. Remove speaker.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably a test pattern.
Set the DX range finder control as near the "zero" position as possible consistent with satisfactory pictures.
2. Set brightness control below average setting. Turn contrast control and horizontal hold controls fully counter clockwise.
3. Turn the horizontal drive control fully clockwise.
4. Turn horizontal lock slug (B1) clockwise until picture loses sync. It may be necessary to switch off channel momentarily for picture to lose sync.
5. Turn B1 slowly counter clockwise until picture just falls into sync.
6. Switch to an unused channel.
If vertical white lines appear near center of screen slowly rotate the horizontal drive control counter clockwise until the white lines just disappear.
7. If in step 6 the horizontal drive control was readjusted tune in a station and repeat steps 4 and 5.
8. To check for satisfactory operation slowly rotate the horizontal hold control in either direction while interrupting the signal by switching off channel, then back. The picture should fall into sync through at least half of the range of the horizontal hold control. Adjust the width control slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.
Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL	VERTICAL								
<p>LOSS OF SWEEP See "Loss of High Voltage".</p> <p>INSUFFICIENT SWEEP Check by substitution V17, V18, V19 and V21. Check adjustment of horiz. drive control, B2 and B3. Check waveform at W17.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check C77, C78, C79, C80, T3, T5A, R97, R98, R99 and other associated circuit components.</td><td>Check C73, C74, C75, C76, R89, R90, R94, R91 and other associated components.</td></tr> </table> <p>DRIVE LINES Check adjustment of horiz. drive control. Substitute V17, V18 and V19. Check R89, R7, C74, C75, C76, C78, C79, T3 and T5A.</p> <p>COMPRESSED LEFT SIDE Check by substitution V17, V18 and V19. Check adjustment B2 and B3. Check T3, T5A and other associated components.</p> <p>FOLDS Check by substitution V17, V18 and V19. Check T3, T5A and other components associated with the horizontal output stage.</p> <p>XMAS TREE EFFECT Substitute V17. Check C71, C72, C73, L24 and other components associated with V17.</p>	If Satisfactory	If Unsatisfactory	Check C77, C78, C79, C80, T3, T5A, R97, R98, R99 and other associated circuit components.	Check C73, C74, C75, C76, R89, R90, R94, R91 and other associated components.	<p>LOSS OF SWEEP Check by substitution V14 and V15. Check waveform at W11.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T4, T5B, R84 and other associated components.</td><td>Check R76, R77, R78, R79, R75, C63, C64, T2 and other associated components.</td></tr> </table> <p>INSUFFICIENT SWEEP Check by substitution V14 and V15. Check adjustment of height and vertical linearity controls. Proceed as outlined under "Loss of Sweep".</p> <p>COMPRESSED AT BOTTOM Check by substitution V14 and V15. Check R8, R77, R84, C63, C64 and other associated components.</p> <p>COMPRESSED AT TOP Check by substitution V14 and V15. Check C2C, C3, T4 and T5B.</p> <p>FOLDS Substitute V14 and V15. Check associated circuit components.</p>	If Satisfactory	If Unsatisfactory	Check T4, T5B, R84 and other associated components.	Check R76, R77, R78, R79, R75, C63, C64, T2 and other associated components.
If Satisfactory	If Unsatisfactory								
Check C77, C78, C79, C80, T3, T5A, R97, R98, R99 and other associated circuit components.	Check C73, C74, C75, C76, R89, R90, R94, R91 and other associated components.								
If Satisfactory	If Unsatisfactory								
Check T4, T5B, R84 and other associated components.	Check R76, R77, R78, R79, R75, C63, C64, T2 and other associated components.								

SYNC

HORIZONTAL	VERTICAL								
<p>LOSS OF SYNC Check by substitution V17 and V16. Check waveform W15.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check C66, C67 and components associated with V17.</td><td>Check C68 and R88.</td></tr> </table> <p>CRITICAL HOLD Check by substitution V17 and V16. Check components associated with these stages.</p> <p>HORIZONTAL FLUTTER Check horiz. AFC filter network which is formed by R87 and R93, C69 and C70.</p>	If Satisfactory	If Unsatisfactory	Check C66, C67 and components associated with V17.	Check C68 and R88.	<p>LOSS OF SYNC Check by substitution V14 and V13. Check signal W5 for overload and for sync clipping.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check components associated with V13 and V14, vert. integrator network and C62.</td><td>Check video section for component failure or change of value including V6 and V7.</td></tr> </table> <p>CRITICAL HOLD Check by substitution V14 and V13. Check C62, T2, R75, R5A and other components associated with V14.</p> <p>TRIGGERING Check by substitution V13 and V14. Check circuit near these stages for filament lead dress.</p>	If Satisfactory	If Unsatisfactory	Check components associated with V13 and V14, vert. integrator network and C62.	Check video section for component failure or change of value including V6 and V7.
If Satisfactory	If Unsatisfactory								
Check C66, C67 and components associated with V17.	Check C68 and R88.								
If Satisfactory	If Unsatisfactory								
Check components associated with V13 and V14, vert. integrator network and C62.	Check video section for component failure or change of value including V6 and V7.								

VIDEO

<p>LOSS OF VIDEO Substitute V7. Check picture tube and component associated with V7 and picture tube.</p> <p>SOUND BARS (4.5 MC BEAT) Check adjustment of local oscillator. Check 4.5 MC trap adjustment (A13). Check video IF alignment.</p> <p>NEGATIVE PIX Check by substitution V6, V7 and V8. Check adjustment of DX Rangefinder. Check components associated with V6 and V7 for change of value or failure. Check picture tube.</p>	<p>POOR CONTRAST Check by substitution V6 and V7. Check associated circuit components. Check video IF tubes and alignment.</p> <p>SMEAR Check by substitution V6 and V7. Check R42 and R46 for Change of value. Check L14 and L19. Check C34. Check picture tube and other associated components.</p> <p>WIDE BLACK BAR ACROSS PIX Check RF tuner, video IF, video detector and video amplifier tubes for heater to cathode leakage.</p>
--	---

AUDIO

<p>WEAK OR NO SOUND Check by substitution V6, V9, V10, V11 and V12. Check stages of V11 and V12 by switching to AM Radio.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check TV audio IF amplifier and Ratio detector alignment and components.</td><td>Check components associated with V12 and V11 especially C52 and C55.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check TV audio IF amplifier and Ratio detector alignment and components.	Check components associated with V12 and V11 especially C52 and C55.	<p>BUZZ Realign ratio detector following procedure outlined in the alignment table. If buzz is still objectionable substitute V10 and readjust A10 and A11. Check C5 and C47.</p> <p>DISTORTED Follow procedure outlined under "Weak or No Sound".</p>
If Satisfactory	If Unsatisfactory				
Check TV audio IF amplifier and Ratio detector alignment and components.	Check components associated with V12 and V11 especially C52 and C55.				

TROUBLE SHOOTING AIDS (cont)

POWER

<p>DEAD SET If all filaments fail to light, check AC interlock assembly, switch on volume control and T1. If sweep and video IF filaments fail to light, check TV, Radio Phono switch. If filaments light, check V21 and B+ filter and decoupling network components.</p>	<p>SMALL PIX AND/ OR DIM RASTER Substitute V21. Check B+ filter and decoupling components. Proceed as outlined under Horiz. "Insufficient Sweep".</p>
--	--

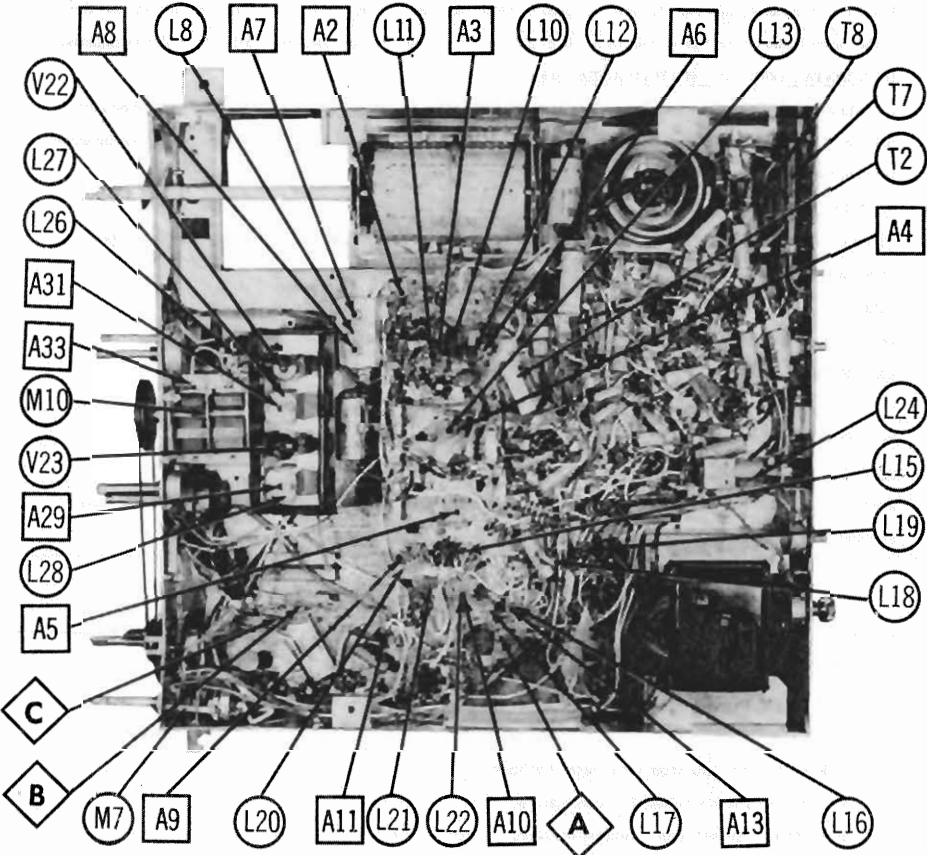
HIGH VOLTAGE

<p>LOSS OF HIGH VOLTAGE Check fuse M1. Check by substitution V17, V18, V19 and V20. Check waveform W17.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check R102, T3, T5A, R97, R98, C77 and other associated components.</td><td>Check C73, C74, C75, C76, R89, R96 and other associated circuit components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check R102, T3, T5A, R97, R98, C77 and other associated components.	Check C73, C74, C75, C76, R89, R96 and other associated circuit components.	<p>INSUFFICIENT HIGH VOLTAGE Check by substitution V17, V18, V19, V20 and V21. Check picture tube and associated components. Proceed as outlined under "Loss of High Voltage".</p> <p>BLOOMING Check by substitution V17, V18, V19, V20 and V21. Check R102, T3, T5A, picture tube and other associated components.</p>
If Satisfactory	If Unsatisfactory				
Check R102, T3, T5A, R97, R98, C77 and other associated components.	Check C73, C74, C75, C76, R89, R96 and other associated circuit components.				

GENERAL

<p>RASTER SOUND NO PIX See "Loss of Video".</p> <p>RASTER NO SOUND NO PIX Check by substitution V1, V2, V3, V4, V5 and V6. Check associated components.</p> <p>NO RASTER NO SOUND See "Dead Set".</p>	<p>TOTAL LOSS OF SYNC Check by substitution V13 and V14. Check associated circuit components.</p> <p>INTERMITTENT STREAKS Check high voltage section for Corona discharge and arcing.</p>
--	---

Symptoms shown are assumed and are not indicative of the quality and workmanship of this receiving equipment.



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR & ALIGN. IDENTIFICATION

ADMIRAL
CHASSIS MODELS 22F2, 22M2, 22P2

PARTS LIST AND DESCRIPTIONS (Continued)
COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L27	Input IF	18Ω	18Ω	72B28-7	16-8758	BC-352	12-C1	
L28	Output IF	18Ω	18Ω	72B28-7	16-8758	BC-353	12-C2	

* Some Models use part #72B113-1 in this application. Used when V5 is a 6AU6.
† Detune trap.
‡ Enlarge mounting holes.
▲ Parallel with 4.7KΩ resistor.
◆ Disconnect capacitor in parallel
‡ Parallel with 18KΩ resistor
**Parallel with 1Meg resistor
◆ Disconnect C46 when using as a replacement.
† Drill mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ADMIRAL PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
ML	8AG	3/8A 250V	84A 4-3	84A5-1	38L 375 (8AG-3/8Amp)	387001	AGX3/8	4520

PHONO CARTRIDGE

ITEM No.	ADMIRAL PART No.	REPLACEMENT DATA						REMARKS
		ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2	409A13	AC-AG-J	A-AG	W26B	A66U	33	0-2orS-2	

ASTATIC SHURE AND ELECTRO VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

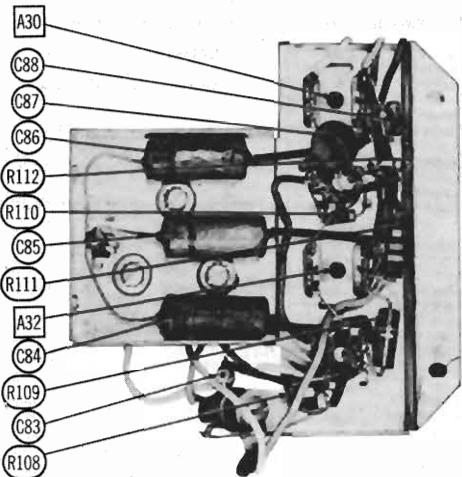
PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	ADMIRAL PART No.	WALCO PART No.	JENSEN PART No.	
M3	88A15-19	W-30AGA	JP-312	

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M4	Dial Light	81A1-5	Radio-Phono indicator - Type #44
M5	Pilot Light	81A1-8	Power Indicator - Type #47
M6	RF Tuner	94D61-1	
M7	Switch	77C42	Phono-Radio-TV, function (Two used)
M8	Correction Magnet	94A44	
M9	Ion Trap	94A15-3	
M10	Tuning Cap.	68B53-1	(12-422MMF & 17-120MMF)
	Cabinet	35E233-2	Model 322DX16A
	Back Cover (TV)	A3773	Model 322DX16A
	Control Panel	23D129-4	Model 322DX16A
	Control Panel Door	23D129-5	Model 322DX16A
	Spring	19A70	Model 322DX16A
	Doors, Front	35E233-51	Matched Set
	Door Handle	37A82	
	Safety Glass	21B64-2	
	Mask	21E132	Plastic
	Knob	33D88-19	Radio tuning
	Knob	33B90-4	TV-Radio-Phono
	Knob	33A23-4	DX Range finder (Black)
	Knob	33C53-23	Channel Selector (Includes gold inserts, maroon)
	Knob	33C53-25	Off/On/Volume (Includes gold inserts, maroon)
	Knob	33D88-20	Contrast (Maroon with gold trim)
	Knob	33D88-21	Fine tuning (Maroon with gold trim)
	Knob	33A92-3	Vertical hold and focus



RADIO CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		ADMIRAL PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BZ7	6BZ7	9AJ	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7C M	
V4	2nd. Video IF Amp.	6CB6	6CB6	7C M	
V5A	3rd. Video IF Amp.	6AG5	6AG5	7BD	
V5B	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	Video Detector - Sound IF Amp.	12AT7	12AT7	9A	
V7	Video Output	6CL6	6CL6	6CL6	
V8	AGC Keying	6AU6	6AU6	7BK	
V9	Limiter	6AU6	6AU6	7BK	
V10	Ratio Detector	6AL5	6AL5	6BT	
V11	AM Det-AVC - AF Amp.	6AV6	6AV6	7BT	
V12	Audio Output	6V8GT	6V8GT	7S	
V13	Sync Amplifier	12AU7	12AU7	9A	
V14	Sync Separator	6SN7GT	6SN7GT	8BD	
V15	Vert. Oscillator - Vert. Output	6B4	6B4	8AC	
V16	Horiz. AFC	6AL5	6AL5	6BT	
V17	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V18	Horiz. output	6BQ6GT	6BQ6GT	6AM	
V19	Damper	6AX4GT	6AX4GT	4CG	
V20	HV Rectifier	1B3GT	1B3GT	3C	
V21	LV Rectifier	5U4G	5U4G	5T	
V22	AM Converter	6BE6	6BE6	7CH	
V23	AM IF Amplifier	6BA6	6BA6	7BK	

CATHODE-RAY TUBE

ITEM No.	ADMIRAL PART No.	REPLACEMENT DATA		RTMA BASE TYPE	NOTES
		SYLVANIA PART No.	GENERAL ELECTRIC PART No.		
V24A	21EP4A	21EP4A	21EP4A	12D	① Circuit changes necessary.
		21EP4①		12D	
		21FP4①		12C	
		21FP4A①		12C	
B	21ZP4	21ZP4		12D	

CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲60	450	87C15-27	AFH4-93		BO46		FP447	TVL-2770	
B	▲40	350				BR4035			TVA-1608	
C	▲20	350								
C2A	▲80	400	87C15-28	AFH3-142		C109		FP245.3	TVL-3764	
B	▲20	350		PR8450/20		BR2035A		TC3501	TVA-1608	
C	▲100	50								
C3	20	475	67A25-1	PR8500/16		BR2050A		TC83	TVA-1804	
C4A	10	25	67C15-19	AFH3-180		BO63		FP345.2	TVL-3719	
B	▲10	450				BR102A				
C	▲20	25								
C5	4	50	67A4-9	PR8150/4		BR415		TC30	TVA-1402	
C6	3-9		98A45-96		829-10					
C7	800		94C37-90	EF-001	MFT-1000				503C-D1	
C8	3		94D47-54	SI3NP0	TCZ-3					
C9	.5-3		98A45-23		829-3			CT565A	5GA-Q47	
C10	47		94D47-50	BPD-000047	D6-470		GPIK-470	UC-5447	503C-D1	
C11	800		94C37-91	EF-001	MFT-1000				5HK-D1	
C12	1000		98A45-24	BPD-001	DD-102	TM5D1	801-001	DC-521	5TCCB-V15	
C13	1.5		94D46-84	SI1.5NP0	TCZ-1.5		NP0K-IR5	ZT-5515	503C-D1	
C14	800		94C37-90	EF-001	MFT-1000				503C-D1	
C15	47		94D47-50	BPD-000047	D6-470		GPIK-470	UC-5447	5GA-Q47	
C16	.5-3		98A45-23		829-3			CT565A	503C-D1	
C17	10		94D47-51	SI10NP0	TCZ-10		NP0K-100	ZT-541	5TCC-Q1	
C18	5		94D47-52	SI5N750	TCN-5		N750K-050		5TCCB-V5	
C19	1000		98A45-24	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C20	6.8		94D47-53	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C21	800		94C37-90	EF-001	MFT-1000				503C-D1	
C22	800		94C37-90	EF-001	MFT-1000				503C-D1	
C23	120		65B1-10	SI120	D6-121	TM5T12	GP2K-121	UC-5312	5GA-T12	
C24	1000		65C6-41	SI1000	D6-102	TM5D1	GP2L-102	UC-521	5HK-D1	
C25	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C26A	1500		65A17-2	BPD-2X0015	DD2-152	TM5DD15	812-0015	DCD-5215	5HK-2D15	
B	1500									
C27	3.3		65C6-89	SI3.3NP0	TCZ-3.3		NP0K-3R3	ZT-5533	5TCCB-V33	
C28	22		65C6-47	SI22NP0	TCZ-22		NP0K-220	ZT-5422	5TCC-Q22	
C29	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C30	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C31A	4000		65A17-1	BPD-2X004	D6-402	TM5DD4	GP2-333-402	DCD-524	5HK-2D4	
B	4000									
C32	6.8		65C6-71	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C33	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5	
C34	.1	400	64B5-5	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C35	.1	400	64B5-5	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C36	.1	400	64B5-5	P488-1	DF-104	PTE4P1		PT401	4TM-P1	
C37	.001	600	64B9-19	P688-001	D6-102	PTE6D1	GP2L-102	PT821	6TM-D1	
C38	.47	100	64A10-51	P288-47		PJ2P5		PT4047	2TM-P47	
C39	.47	100	64A10-51	P288-47		PJ2P5		PT4047	2TM-P47	
C40	6.8		65C6-71	SI6.8NP0	TCZ-6.8		NP0K-6R8	ZT-5568	5TCCB-V68	
C41	6.8		65C6-71	SI39	D6-390		GPIK-390	UC-5439	5GA-Q39	
C42	39		65C6-88	BPD-001	DD-102	TM5D1	801-001	DC-521	5HK-D1	
C43	1000									

CAPACITORS (cont)										
ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA							NOTES	
		ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.		
C44	39 5000	65C6-88	SI39	D6-390	GPIK-390	UC-5439	5GA-Q39			
C45	180	65C6-59	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5		
C46	500	65C6-6	SI500	D6-501	TM5T5	UC-535	5GA-T5			
C48	.0022	64B9-9	P688-0022	D6-222	PTE6D22	GP2K-333-222	PT8222	6TM-D22		
C49	.047	64B9-17	P488-047	DF-503	PTE4S47		PT4147	2TM-S47		
C50	100	65C6-3	SI100	D6-101	TM5T1	UC-531	5GA-T1			
C51	.0022	64B9-17	P688-0022	D6-222	PTE6D22	GP2K-333-222	PT8222	6TM-D22		
C52	10000	65C10-3	BPD-01	DD-103	TM5S1	DC-511	5HK-S1			
C53	50	65C6-4	SI50	D6-500	TM5Q5	UC-545	5GA-Q5			
C54	5000	65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525	5HK-D5		
C55	.01	65B6-5	TPA-159	D6-103	PTE6S1	GP2K-333-103	PT611	6TM-S1		
C56	.01	64B6-4	P688-01	D6-103	PTE6S1	GP2K-333-103	PT611	6TM-S1		
C57	.047	64B9-9	P488-047	DF-503	PTE4S47		PT4147	4TM-S47		
C59	.022	64B9-11	P488-022	DF-203	PTE4S22		PT4122	4TM-S22		
C60	.01	64B9-13	P488-01	D6-103	PTE4S1	GP2K-333-103	PT411	4TM-S1		
C61A	.002									
B	.005									
C	.005									
C62	4700	65B21-472	1464-005							
C63	.047	64A2-14								
C64	.1	64B5-5	P688-1	DF-104	PTE6P1		PT601	6TM-P1		
C65	.047	64B9-9	P688-047	DF-503	PTE6S47		PT6147	6TM-S47		
C66	1000	65B21-102	1468-001							
C67	1000	65B21-102	1468-001							
C68	.0022	64B9-17	P688-0022	D6-222	PTE6D22	GP2K-333-222	PT8222	6TM-D22		
C69	.0047	64B9-15	P688-0047	D6-472	PTE4S47	GP2K-333-472	PT8247	6TM-D47		
C70	.047	64B9-9	P488-047	DF-503	PTE4S47		PT4147	4TM-S47		
C71	47	1500	65B21-470							
C72	3900	500	65B1-63	1464-004						
C73	330	500	65B21-331	1468-00035						
C74	270	500	65B21-271							
C75	.1	600	64B8-57	P688-1	DF-104	PTE6P1		6TM-P1		
C76	.01	600	64B9-13	P688-01	D6-103	PTE6S1		6TM-S1		
C77	.047	600	64B9-9	P688-047	DF-503	PTE6S47		6TM-S47		
C78	.047	400	64B9-9	P488-047		PTE4S47		4TM-S47		
C79	.047	400	64B9-9	P488-047		PTE4S47		4TM-S47		
C80	.1	400	64A2-6	P488-1	DF-104	PTE4P1		4TM-P1		
C81	47	1500	65B1-64	HVD15-000047	DIG-470			20GA-Q47		
C82	5		65B1-62	SIS	TCZ-4.7			5GA-V5		
C83	47		65C6-79	SI47NP0	TCZ-47	5W5V5		5TCC-Q47		
C84	.1	400	64A3-15	P488-1	DF-104	PTE4P1		4TM-P1		
C85	.1	400	64A3-15	P488-1	DF-104	PTE4P1		4TM-P1		
C86	.1	400	64A3-15	P488-1	DF-104	PTE4P1		4TM-P1		
C87	5000		65C10-1	BPD-005	MD-502	TM5D5	811-005	DC-525		
C88	100		65C6-3	SI100	D6-101	TM5T1	UC-531	5GA-T1		

Note 1. Some Models use .0047MFD in this application (part #64B9-15).
Note 2. Some Models use .01MFD in this application (part #64B9-13).
Note 3. Some Models use .0022MFD in this application (part #64B9-17).
† Items C55, R63A, R63B are combined in one unit.
‡ Items C57, R106A, R106B are combined in one unit.
♦ Items C61A, C61B, C61C, R74A, R74B, R74C are combined in one unit.

CONTROLS										
ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA					INSTALLATION NOTES			
		ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.				
R1A	1Meg	75C12-16	Q19-137X	AT-112	BT-74-S	UT-443	Volume (Tap at 500KΩ)			
B	Shaft	Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A			
C	Switch	Not Req.	76-1	SW-A	Not Req.	US-26	Attach to R1A			
R2A	2Meg	75B13-22	Q11-139	AQ-83-S	AB-75	U-56	Tone			
B	Shaft	Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R2A			
R3A	750Ω	75B17-1	QJ-425*			WF-751	Focus-Panel (Wire wound)			
B	100KΩ					UR15L	Brightness-rear			
R4A	1000Ω	75B13-21	Q17-108	AG-8-S	AB-5	U-4	Contrast			
B	Shaft	Not Req.	Not Req.	KSS-3	AK-4	Not Req.	Attach to R4A			
R5A	1.5Meg	75B17-2	QJ-424**	RTV-403		UF26L	Vert. Hold-Panel			
B	25KΩ					UR253L	Horiz. Hold-Rear			
R6A	3000Ω	75B13-7	Q11-112	AG-15-S	AB-8	U-8	Vert. Linearity			
B	Shaft	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R6A			
R7A	150KΩ	75B13-29	Q11-129	AG-52-S	AB-46	U-43	Horiz. Drive			
B	Shaft	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R7A			
R8A	2.5Meg	75B13-3	Q11-239	AG-84-S	AB-83	SU-565	Height			
B	Shaft	Not Req.	Not Req.	FKS-1/4	AK-1	Not Req.	Attach to R8A			
R9A	5Meg	75B1-54	Q11-141	AG-85-S	AB-87	SU-67	DX Range Finder			
B	Shaft	Not Req.	Not Req.	FS-3	AK-1	Not Req.	Attach to R9A			

*CONCENTRIKIT EQUIVALENT-KIT K-3 BASE ELEMENTS & SHAFTS W13-105 & P3-121 (panel)
B11-128 & R12-131 (rear)
**CONCENTRIKIT EQUIVALENT-KIT K-5 BASE ELEMENTS & SHAFTS B11-138 & P1-121 (panel)
B11-120 & R12-129 (rear)

RESISTORS										
ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		NOTES						
		ADMIRAL PART No.	IRC PART No.							
R10	15KΩ	98A45-67								
R11	47KΩ	98A45-17								
R12	100KΩ	94C37-87								
R13	160KΩ	94D47-59								
R14	1500Ω	94D47-58								
R15	100KΩ	94C37-87								
R16	10KΩ	98A45-18	BTS-10K							
R17	220KΩ	98A45-21	BTS-220K							
R18	8200Ω	60B8-822	BTS-8200							
R19	15KΩ	98A45-67	BTS-15K							
R20	10KΩ	98A45-18								
R21	15KΩ	98A45-67								
R22	47Ω	60B28-45								
R23	8200Ω 5%	60B7-822								
R24	1000Ω 5%	60B8-102								
R25	150KΩ	60B8-154								
R26	15KΩ 5%	60B8-153								
R27	330Ω	60B8-331								
R28	470Ω	60B8-471								
R29	27KΩ	60B8-273								
R30	1000Ω	60B8-102	BTS-1000							
R31	10KΩ 5%	60B7-103								
R32	330Ω	60B8-331	BTS-330							
R33	1000Ω 5%	60B8-102	BTS-150							
R34	150Ω	60B8-151	BTS-150							
R35	2.7Meg	60B8-275	BTS-2.7Meg							
R36	15Meg	60B8-156	BTS-15Meg							
R37	100KΩ	60B8-104	BTS-100K							
R38	4700Ω	60B7-472	BTS-4700							
R39	33KΩ	60B8-333	BTS-33K							

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		NOTES						
		ADMIRAL PART No.	IRC PART No.							
R40	270KΩ		BTS-270K							
R41	1000Ω 5%	60B8-102								
R42	18KΩ	60B14-183	BTA-18K							
R43	270KΩ	60B8-274	BTS-270K							
R44	1Meg	60B8-105	BTS-1Meg							
R45	150KΩ	60B8-154	BTS-150K							
R46	6800Ω		BTS-6800							
R47	3000Ω	61A3-14	2D-3000							
R48	4250Ω	61A1-25	1 3/4A-4500							
R49	4700Ω	60B20-472	BTB-4700							
R50	6200Ω 5%	60B7-622								
R51	100KΩ	60B8-104	BTS-100K							
R52	470Ω	60B20-471	BTB-470							
R53	470KΩ	60B8-474	BTS-470K							
R54	120Ω	60B8-121	BTS-120							
R55	1600Ω	60B8-102	BTS-1000							
R56	100KΩ	60B8-104	BTS-100K							
R57	390Ω	60B8-391	BTS-390							
R58	10KΩ	60B8-103	BTS-10K							
R59	10KΩ	60B8-103	BTS-10K							
R60	47KΩ	60B8-473	BTS-47K							
R61	82KΩ	60B8-823	BTS-82K							
R62	3.3Meg		BTS-3.3Meg							
R63A	470KΩ	†63B-5	BTS-470K							
B	1Meg		BTS-1Meg							
R64	330Ω	60B14-331	BTA-330							
R65	2.2Meg	60B8-225	BTS-2.2Meg							
R66	2.2Meg	60B8-225	BTS-2.2Meg							
R67	22KΩ	60B14-223	BTA-22K							
R68	56KΩ	60B20-563	BTB-56K							
R69	33KΩ	60B20-333	BTB-33K							
R70	2200Ω	60B8-222	BTS-2200							
R71	8.2Meg	60B8-8-25	BTS-8.2Meg							
R72	1000Ω 5%	60B7-102								
R73	2200Ω	60B8-222	BTS-2200							
R74A	22KΩ		BTS-22K							
B	8200Ω	†63B-2	BTS-8200							
C	8200Ω		BTS-8200							
R75	1.2Meg	60B8-125	BTS-1.2Meg							
R76	150KΩ	60B8-154	BTS-150K							

Note 1. Some Models may use a 4.7Meg resistor in this application.
Note 2. Some Models may use 10Ω resistor in this application.
Note 3. Some Models may use 270KΩ resistor in this application.
† Items R63A, R63B, C55 are combined in one unit.
‡ Items R74A, R74B, R74C, C61A, C61B, C61C are combined in one unit.
♦ Items R106A, R10