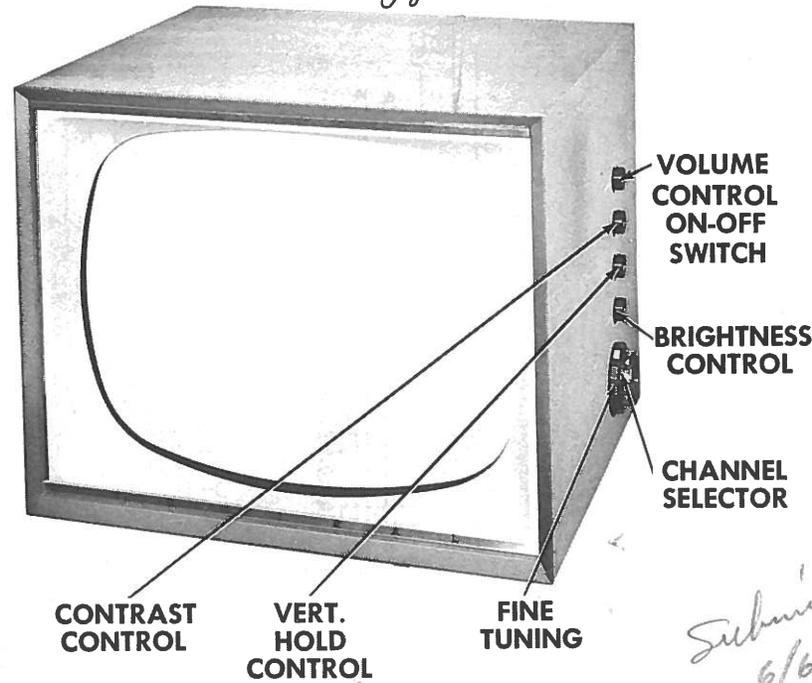




22pgs



*Submitted
6/6/56*

ADMIRAL MODEL T2302ZN

TRADE NAME	Admiral	MODELS	CHASSIS	TUNER
		T2301Z, ZN, T2302Z, ZN, T2326Z, ZN, T2327Z, ZN.....	18XP4BZ	94D77-1 (VHF only)
		TS2301Z, ZN, TS2302Z, ZN, TS2326Z, ZN, TS2327Z, ZN.....	18SX4BZ	94E75-2 (VHF-UHF)
			18X4CZ	94D46-5 (VHF only)
			18X4EZ	94D46-6, -7, -8 (VHF only)
			18X4FZ	94D46-6, -7, -8 (VHF only)
			18X4GZ	94D46-6, -7, -8 (VHF only)
			18XP4HZ	94D77-1 (VHF only)
			18X4EZ	94E75-2 (VHF-UHF)
			18SX4FZ	94E75-2 (VHF-UHF)
			18SX4GZ	94E75-2 (VHF-UHF)
MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago 47, Ill.			
TYPE SET	Television Receiver			
TUBES	Eighteen			
POWER SUPPLY	110-120 Volts AC - 60 Cycles			
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 25.75MC (VHF Models) 45.75MC (VHF-UHF Models) Sound IF 21.25MC (VHF Models) 4L25MC (VHF-UHF Models) (Intercarrier)			

18SX →

INDEX

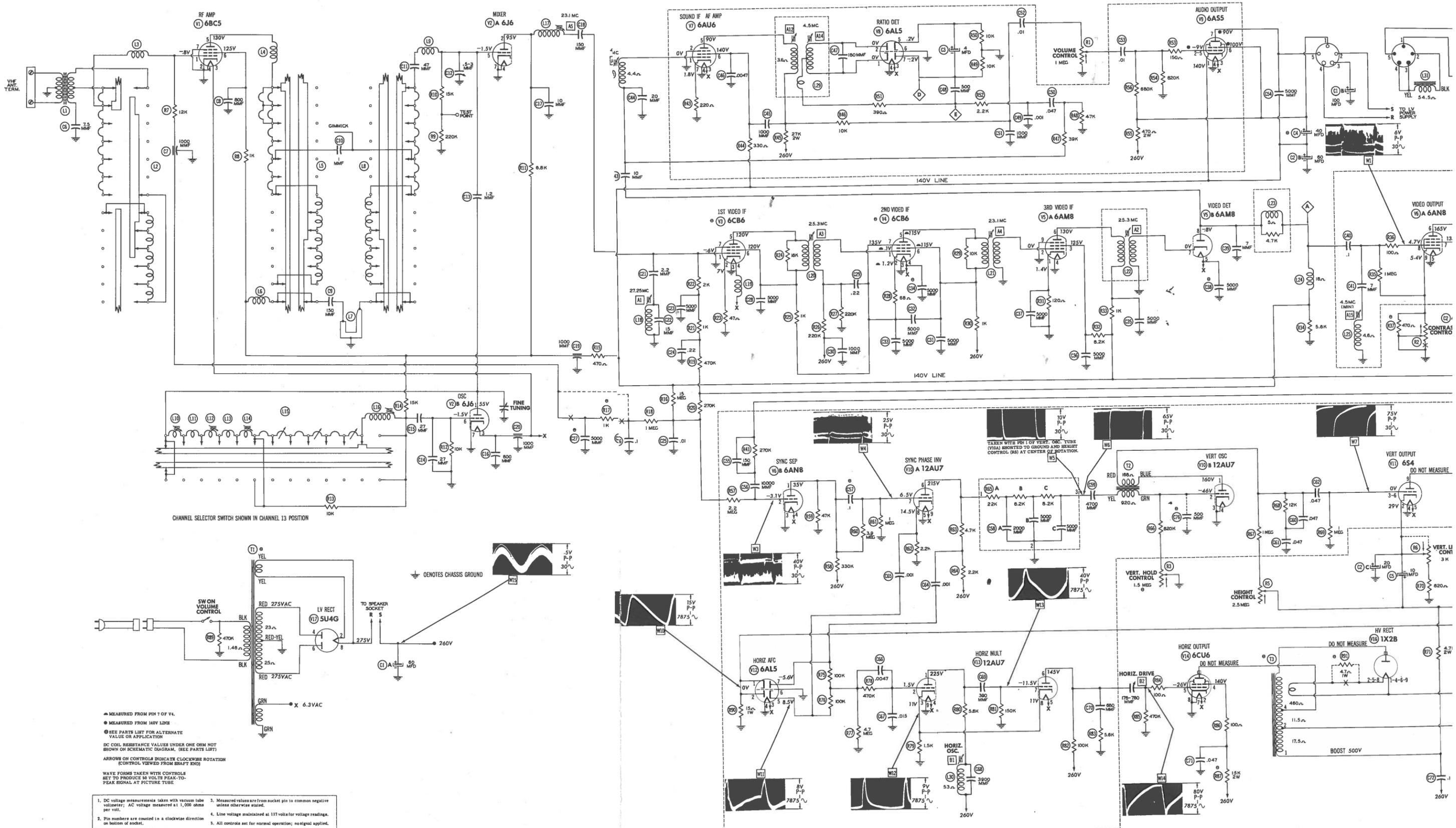
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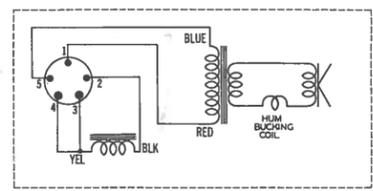
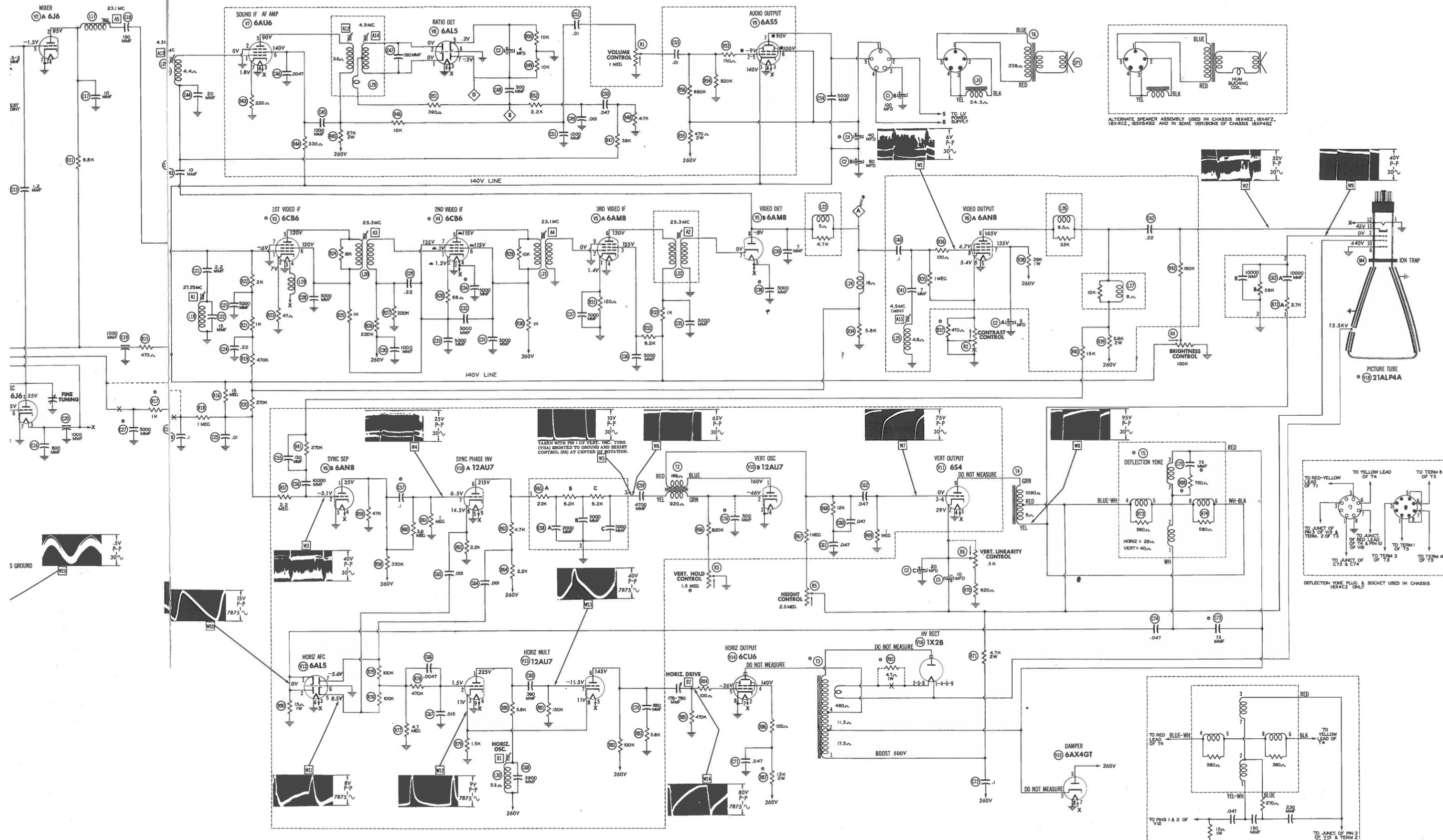
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**ADMIRAL CHASSIS 18SX4BZ, 18X4CZ,
18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ**

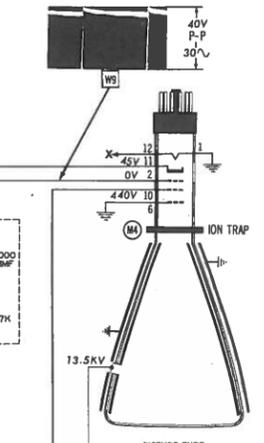


- ▲ MEASURED FROM PIN 7 OF V4.
 - MEASURED FROM 140V LINE.
 - ◎ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION.
 - DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM. (SEE PARTS LIST)
 - ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM BRACKET END)
 - WAVE FORMS TAKEN WITH CONTROLS SET TO PRODUCE 30 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1,000 ohms per volt.
 2. Pin numbers are counted in a clockwise direction on bottom of socket.
 3. Measured values are from socket pin to common negative unless otherwise stated.
 4. Line voltage maintained at 117 volts for voltage readings.
 5. All controls set for normal operation; no signal applied.

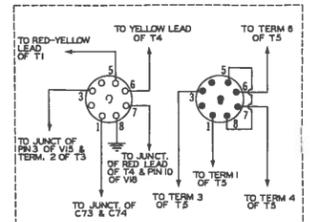
A PHOTOFAC STANDARD NOTATION SCHEMATIC
 © Howard W. Sams & Co., Inc. 1955



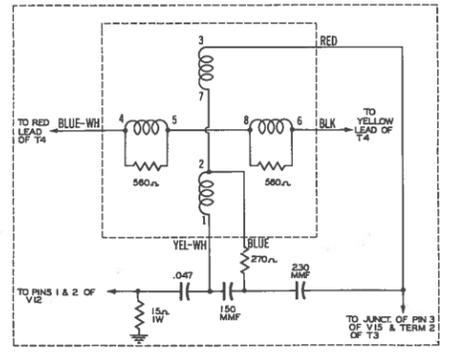
ALTERNATE SPEAKER ASSEMBLY USED IN CHASSIS 18X4EZ, 18X4FZ, 18X4GZ, 18X4BZ AND IN SOME VERSIONS OF CHASSIS 18X4BZ.



PICTURE TUBE
21ALP4A



DEFLECTION YOKE PLUG & SOCKET USED IN CHASSIS 18X4EZ, 18X4FZ, 18X4GZ, & 18X4BZ.

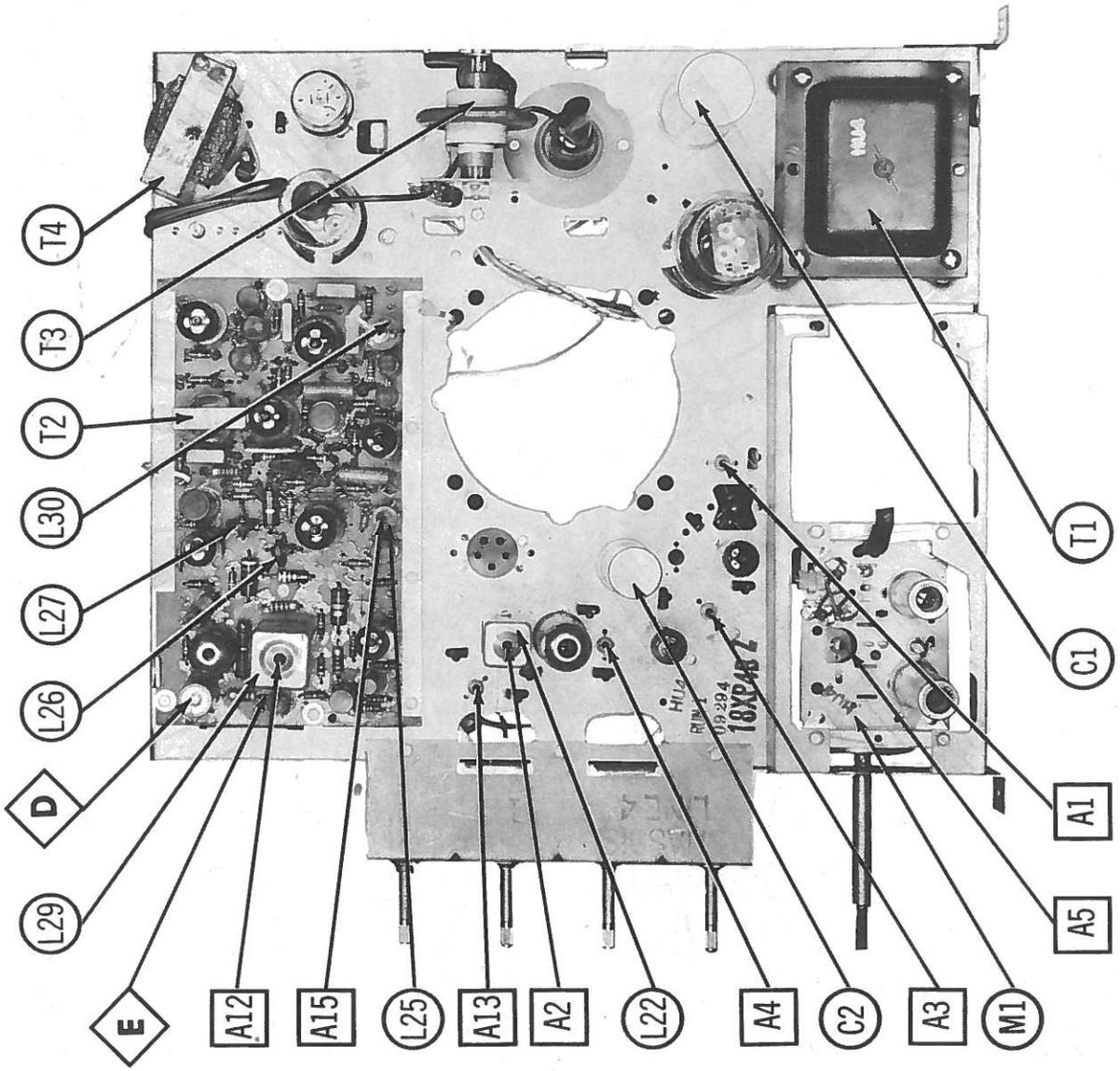


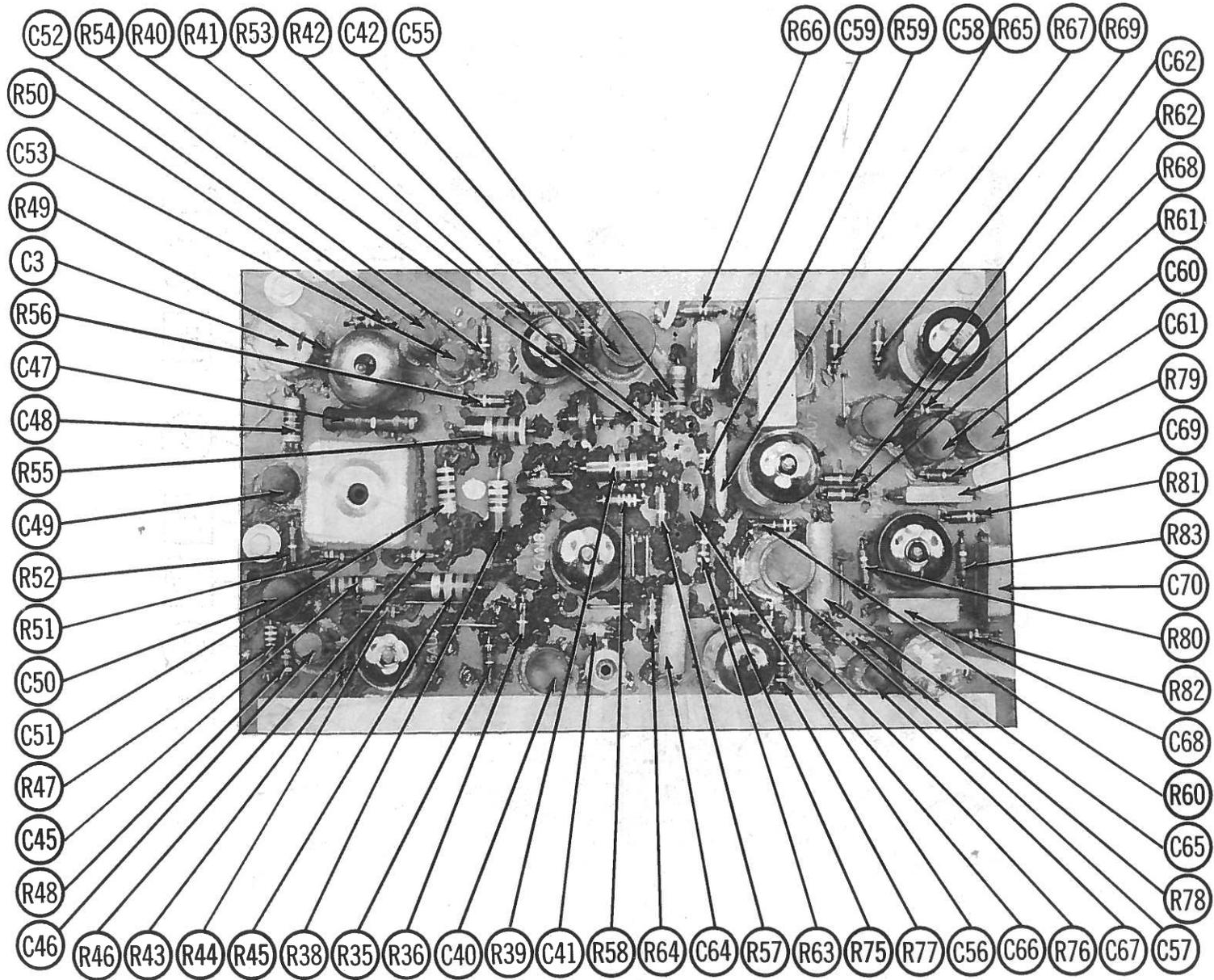
DEFLECTION YOKE USED IN CHASSIS 18X4EZ, 18X4FZ, & 18X4GZ.

ADMIRAL CHASSIS 18X4BZ, 18X4CZ, 18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ

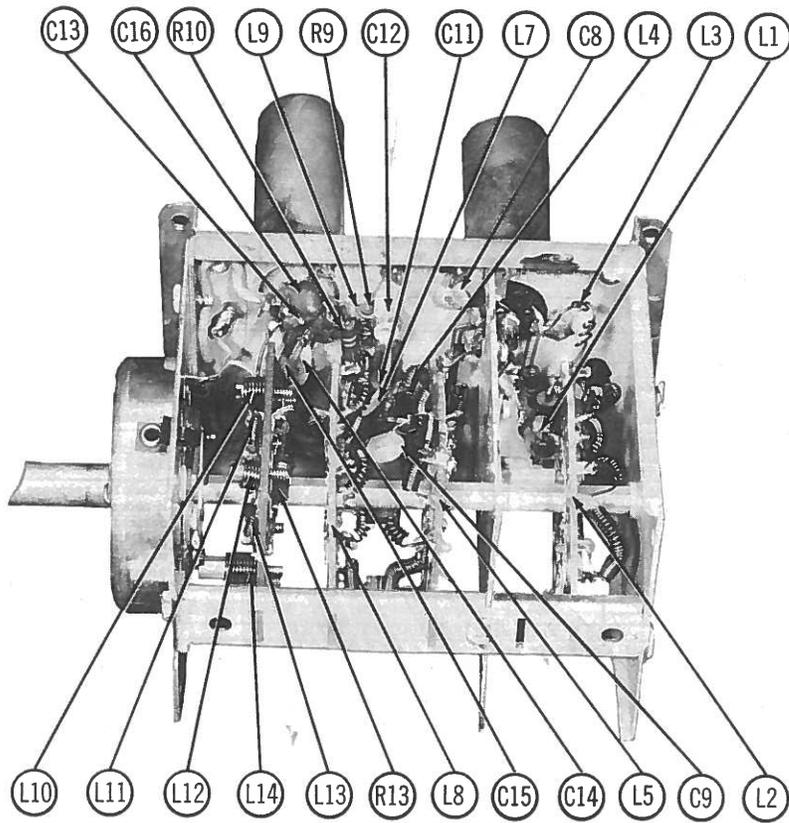
ADMIRAL CHASSIS 18X4BZ, 18X4CZ, 18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ

ADMIRAL CHASSIS 18SX4BZ, 18X4CZ,
 18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ,
 18XP4CZ, 18XP4FZ, 18XP4GZ, 18XP4H
 MAIN POINTS

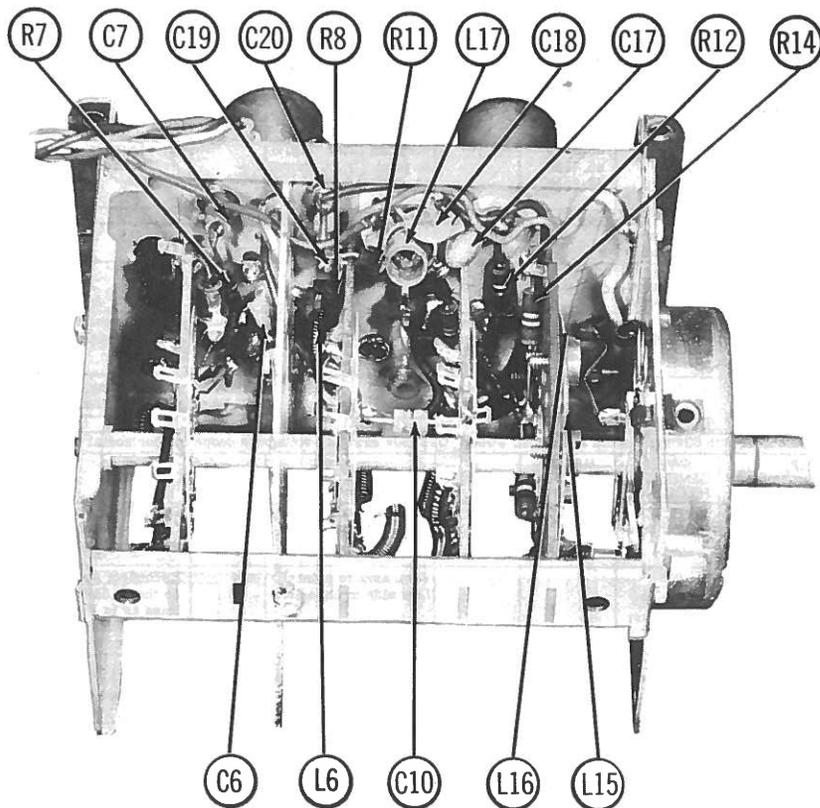




PRINTED CIRCUIT SUB-CHASSIS - RESISTOR & CAPACITOR IDENTIFICATION



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

**ADMIRAL CHASSIS 185X4BZ, 18X4CZ,
18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ**

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
The high voltage lead should be securely taped and kept away from chassis.							
VIDEO IF ALIGNMENT FOR VHF MODELS							
Remove the converter tube (V2) from its socket and replace with a 6J6 with pin 1 removed. Disconnect antenna and short antenna terminals with a short jumper. Set the contrast control for minimum contrast. Connect the negative lead of a 3 volt battery thru 10KΩ to the ungrounded side of C24. Positive lead to chassis. Use only enough generator output to provide a usable indication on VTVM. (1 volt maximum.) Allow about 15 to 20 minutes for test equipment and receiver warm-up time.							
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.	27.25MC (Unmod)	Any unused high band channel.	DC probe thru de-coupling filter (Fig. 1) to point Ⓢ. Common to chassis.	A1	Adjust for MINIMUM deflection.	
2. "	"	25.3MC	"	"	A2, A3	Adjust for maximum deflection.	
3. "	"	23.1MC	"	"	A4, A5	"	
OVERALL VIDEO IF RESPONSE CHECK FOR VHF MODELS							
Leave bias battery connected as under "Video IF Alignment". Use only enough sweep generator output to provide usable indication on scope. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4. Direct	High side to ungrounded tube shield floating over dummy converter tube. Low side to chassis.	24MC (10MC Swp)	21.25MC 22.0MC 24.3MC 25.75MC 27.25MC	Any unused high band channel.	Vert. amp. thru de-coupling filter (Fig. 1) to point Ⓢ. Low side to chassis.		Check for response curve similar to Fig. 2. If necessary, retouch A1 thru A5 to obtain desired response. Adjust A2 and A3 for position of 25.75MC marker and amplitude of response curve on high frequency side. Adjust A4 and A5 for position of 22MC marker and amplitude of response curve on low frequency side.
VIDEO IF ALIGNMENT FOR UHF-VHF MODELS							
Set the contrast control for minimum contrast. Connect the negative lead of a 3 volt battery to point Ⓢ. Positive lead to chassis. Use only enough generator output to provide a usable indication on VTVM. (2 volt maximum.)							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
5. Direct	High side to an ungrounded tube shield floating over converter tube (6U8). Low side to chassis.	47.25MC	12	DC probe thru de-coupling filter (Fig. 1) to point Ⓢ. Common to chassis.	A6	Adjust for MINIMUM deflection. If necessary, reduce bias to -1.5 volts to provide reading on VTVM.	
6. "	"	43.5MC	"	"	A7, A8	Adjust bias back to -3 volt if reduced for adjustment of A6. Adjust A7 and A8 for maximum deflection.	
7. "	"	45.3MC	"	"	A7, A9, A10	Adjust for maximum deflection.	
8. "	"	43.3MC	"	"	All	"	
OVERALL VIDEO IF ALIGNMENT FOR UHF-VHF MODELS							
Leave bias connected as under "Video IF Alignment For UHF-VHF Models". Use only enough sweep generator output to provide usable indication on scope. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9. Direct	High side to an ungrounded tube shield floating over converter tube (6U8). Low side to chassis.	44MC (10MC Swp)	43.0MC 45.0MC 45.75MC 47.25MC	12	Vert. amp. thru de-coupling filter (Fig. 1) to point Ⓢ. Common to chassis.		Check for response curve similar to Fig. 3. If necessary, retouch A6 thru A11 to obtain desired response.
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM							
Disconnect antenna and short terminals together. Set the contrast control for minimum contrast.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
10. .01MFD	High side to pin 8 (plate) of 6AM8 (V5). Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel.	DC probe to point Ⓢ. Common to chassis.	A12, A13	Attenuate generator output to maintain 1 volt at VTVM. Adjust for maximum deflection.	
11. "	"	"	"	DC probe to point Ⓢ. Common to chassis.	A14	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
10. .01MFD	High side to pin 8 (plate) of 6AM8 (V5). Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any	Vert. amp. to point Ⓢ. Low side to chassis.	A12, A13	Disconnect stabilizing capacitor C3. Adjust f for curve of maximum amplitude and symmetry similar to Fig. 4.
11. "	"	"	"	"	Vert. amp. to point Ⓢ. Low side to chassis.	A14	Reconnect stabilizing capacitor (C3). Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 5. SLIGHTLY retouch A12 for maximum amplitude and straightness of crossover lines.
SOUND IF ALIGNMENT USING ON THE AIR SIGNAL							
Remove bias battery and replace original tuner oscillator tube in its socket. Tune in a TV station. Adjust A12 and A13. VTVM connected as in step 10 of "Sound IF Alignment Using AM Signal Generator and VTVM". Adjust A14 for best program sound with minimum buzz. This point will be found between two maximum buzz peaks.							
4.5MC TRAP ALIGNMENT							
Short L23 with a short jumper wire.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
12. .01MFD	High side to pin 8 (plate) of 6AM8 (V5). Low side to chassis.	4.5MC	Any	DC probe to point Ⓢ. Common to chassis.	A15	Connect a 10MMF capacitor from pin 6 (plate) of 6AM8 (V5) to pin 7 (cathode) of 6AU6 (V7). Use lowest scale on VTVM and adjust for MINIMUM deflection.	

ALIGNMENT INSTRUCTIONS (cont)

ALTERNATE 4.5MC TRAP ALIGNMENT							
Tune in a TV station and adjust A15 for minimum 4.5MC beat interference in picture.							
VHF TUNER 94D77-1 ALIGNMENT							
This tuner has been properly aligned at the factory. Alignment is not recommended in the field.							
OSCILLATOR ALIGNMENT FOR VHF TUNER 94D46-6-7 or-8							
Replace original tuner oscillator tube 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 screws are accessible through this hole as the channel switch is turned to each channel. Leave bias battery connected as under "Video IF 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. Set the fine tuning control to the mid-position of its range.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13. Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp) 207MC (10MC Swp) 201MC (10MC Swp) 195MC (10MC Swp) 189MC (10MC Swp) 183MC (10MC Swp) 177MC (10MC Swp) 85MC (10MC Swp) 79MC (10MC Swp) 69MC (10MC Swp) 63MC (10MC Swp) 57MC (10MC Swp)	211.25MC 215.75MC 205.25MC 209.75MC 199.25MC 203.75MC 189.25MC 197.75MC 181.25MC 191.75MC 175.25MC 179.75MC 83.25MC 87.75MC 77.25MC 81.75MC 67.25MC 71.75MC 65.25MC 55.25MC 59.75MC	13 12 11 10 9 8 7 6 5 4 3 2	Vert. amp. thru de-coupling filter to point Ⓢ. (Point Ⓢ as shown on VHF chassis. Low side to chassis.)	A16 A17 A18 A19 A20 A21 A22 A23 A24 A25 A26 A27	Adjust to place video marker at 50% as in Fig. 6. Sound marker should not exceed 5% on response curve.
RF ALIGNMENT FOR VHF TUNER 94D46-6-7 or -8							
Leave bias connected as under "Video IF Alignment". The bias supply may be removed if it is difficult to obtain a response of sufficient amplitude. If bias is removed, short out to chassis point where bias supply was connected.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14. Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	195MC (10MC Swp)	193.25MC 197.75MC	10	Vert. amp. thru 10KΩ to point Ⓢ. Low side to chassis.	A28, A29 A30	Adjust for response curve similar to Fig. 7 with markers above 90%.
15. "	"	213MC (10MC Swp) 207MC (10MC Swp) 201MC (10MC Swp) 195MC (10MC Swp) 189MC (10MC Swp) 183MC (10MC Swp) 177MC (10MC Swp) 85MC (10MC Swp) 79MC (10MC Swp) 69MC (10MC Swp) 63MC (10MC Swp) 57MC (10MC Swp)	211.25MC 215.75MC 205.25MC 209.75MC 199.25MC 203.75MC 189.25MC 197.75MC 181.25MC 191.75MC 175.25MC 179.75MC 83.25MC 87.75MC 77.25MC 81.75MC 67.25MC 71.75MC 65.25MC 55.25MC 59.75MC	13 12 11 10 9 8 7 6 5 4 3 2	"		Check for response similar to Fig. 7. If markers fall below 70% on any channel, make slight compromise adjustments of A28, A29 and A30 with channel switch set to that channel. Reread all other channels to see that they have not been seriously affected.
OSCILLATOR ALIGNMENT FOR VHF PORTION OF UHF-VHF TUNER 94E75-2							
Switch tuner to VHF position and remove trimmer knobs. With the fine tuning control near the center of its range, the VHF channel oscillator adjustment screws are accessible thru a hole just above and slightly to the left of the channel switch shaft. This hole extends thru the UHF tuner only when the channel switch is turned to each channel. Connect the negative lead of a 3 volt battery to point Ⓢ. Positive lead to chassis. 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	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
16. Two 120Ω carbon resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC (10MC Swp) 207MC (10MC Swp) 201MC (10MC Swp) 195MC (10MC Swp) 189MC (10MC Swp) 183MC (10MC Swp) 177MC (10MC Swp) 85MC (10MC Swp) 79MC (10MC Swp) 69MC (10MC Swp) 63MC (10MC Swp) 57MC (10MC Swp)	211.25MC 215.75MC 205.25MC 209.75MC 199.25MC 203.75MC 189.25MC 197.75MC 181.25MC 191.75MC 175.25MC 179.75MC 83.25MC 87.75MC 77.25MC 81.75MC 67.25MC 71.75MC 65.25MC 55.25MC 59.75MC	13 12 11 10 9 8 7 6 5 4 3 2	Vert. amp. thru 10KΩ to point Ⓢ. (Point Ⓢ as shown on UHF-VHF chassis using 41MC 1F.) Low side to chassis.	A31 A32 A33 A34 A35 A36 A37 A38 A39 A40 A41 A42	Adjust to place sound marker in trap notch as shown in Fig. 6. Video marker should be at 50%.

ADMIRAL CHASSIS 18SX4BZ, 18X4CZ, 18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT FOR UHF PORTION OF UHF-VHF TUNER 94E75-2

Switch tuner to UHF position and remove tuner knobs. The UHF channel oscillator adjustment screws are reached thru a hold just above and slightly to the left of the channel switch shaft. The correct adjustment screw is accessible thru this hole as the channel switch is turned to each channel.
 Leave bias connect as under "VHF Oscillator 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.
 Set the fine tuning control to the mid-position of its range.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17. Two 120Ω carbon resistors	Across UHF antenna terminals with 120Ω in each lead.	473MC (10MC Swp)	471. 25MC	14	Vert. amp. thru 10KΩ to point C . (Point C as shown on UHF-VHF chassis using 41MC IF.) Low side to chassis.	A43	Adjust bias to place sound marker in trap notch as in Fig. 6. Video should be at 50%.
		515MC (10MC Swp)	513. 25MC	21		A44	
		575MC (10MC Swp)	573. 25MC	31		A45	
		635MC (10MC Swp)	633. 25MC	41		A46	
		695MC (10MC Swp)	693. 25MC	51		A47	
		755MC (10MC Swp)	753. 25MC	61		A48	
		815MC (10MC Swp)	813. 25MC	71		A49	
		875MC (10MC Swp)	873. 25MC	81		A50	

RF AND MIXER ALIGNMENT FOR VHF PORTION OF UHF-VHF TUNER 94E75-2

Connect the negative lead of a 3 volt battery to point G . Positive lead to chassis.
 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	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
17. Two 120Ω carbon resistors	Across VHF antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205. 25MC 209. 75MC	12	Vert. amp. thru 10KΩ to point H . Low side to chassis.	A51, A52, A53	Adjust generator to provide a readable marker, but does not distort response curve. Adjust for response similar to Fig. 7.
		213MC (10MC Swp)	211. 25MC 215. 75MC	13			
18. "	"	201MC (10MC Swp)	199. 25MC 203. 75MC	11			
		195MC (10MC Swp)	193. 25MC 197. 75MC	10			
		189MC (10MC Swp)	187. 25MC 191. 75MC	9			
		183MC (10MC Swp)	181. 25MC 185. 75MC	8			
		177MC (10MC Swp)	175. 25MC 179. 75MC	7			
		85MC (10MC Swp)	83. 25MC 87. 75MC	6			
		79MC (10MC Swp)	77. 25MC 81. 75MC	5			
		69MC (10MC Swp)	67. 25MC 71. 75MC	4			
		63MC (10MC Swp)	61. 25MC 65. 75MC	3			
		57MC (10MC Swp)	55. 25MC 59. 75MC	2			

RF AND MIXER ALIGNMENT FOR UHF PORTION OF UHF-VHF TUNER 94E75-2

The UHF RF and mixer portion of this receiver has been properly aligned at the factory and is very stable. Alignment of this portion of the receiver should not be required in the field.

IF TRAP ADJUSTMENT

The IF trap adjustment (A54) is for the purpose of eliminating any IF interference from nearby transmitters operating in the 40MC band. If the IF interference is noted, turn to channel 2 and adjust A54 to minimize interference.

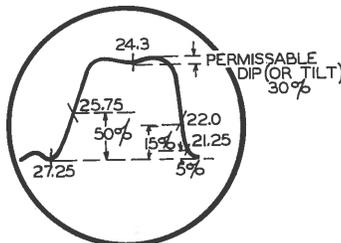
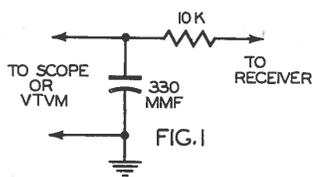


FIG. 2

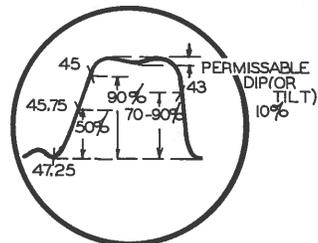


FIG. 3

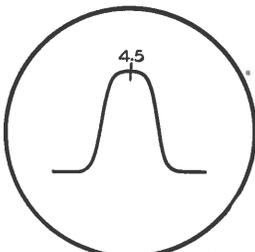


FIG. 4

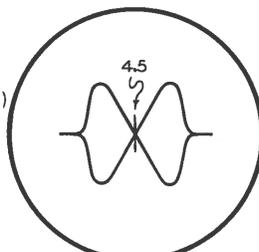


FIG. 5

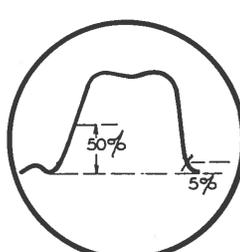


FIG. 6

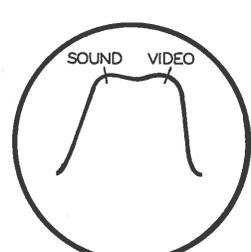
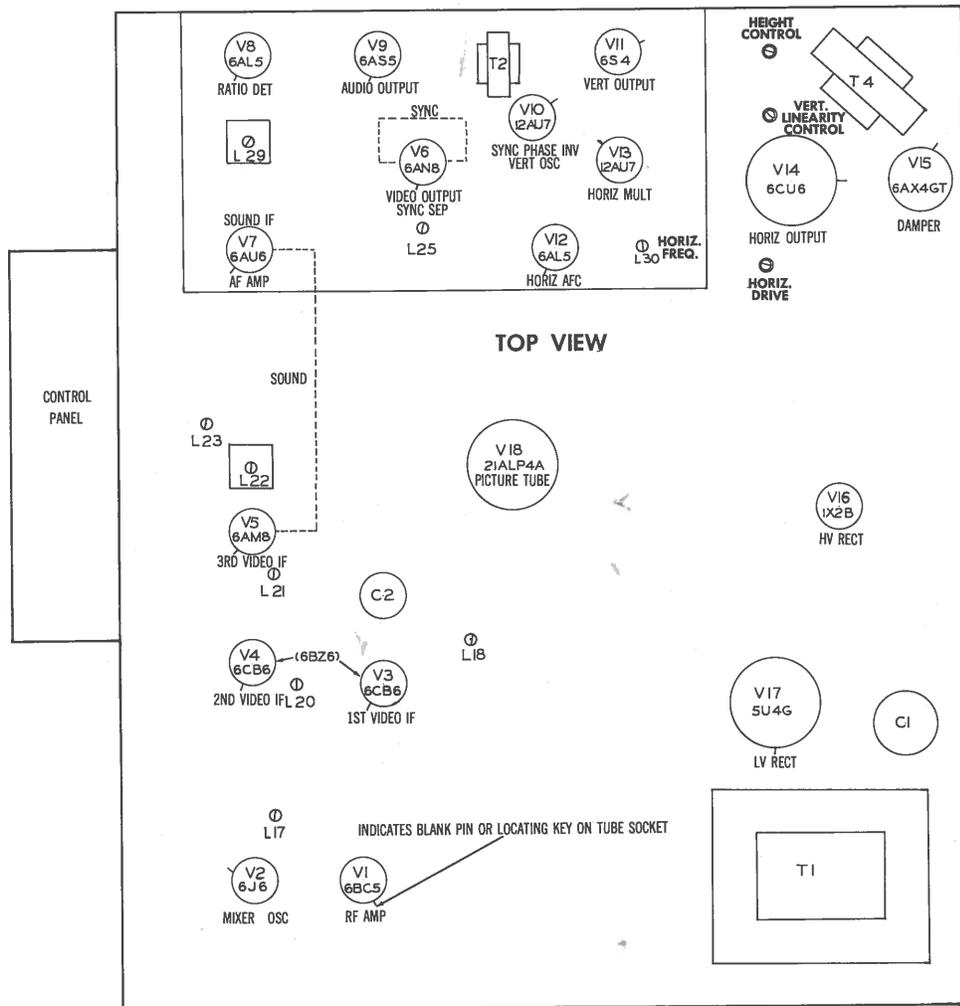


FIG. 7

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 - V17

LOSS OF PICTURE OR SOUND

No pic, no sound, has raster - V2, V3, V4, V5

No pic, no sound, has snow - V1, V2, V8

No pic, has sound, has raster - V6, V18

Has pic, no sound - V7, V8, V9

SYNC FAILURE

No vert. sync - V10

No horiz. sync - V10, V12, V13

No vert. or horiz. sync - V6, V10

SWEEP FAILURE

No raster, has sound - V13, V14, V15, V16, V18

No vertical deflection - V10, V11

Poor vert. linearity or foldover - V10, V11

Poor horiz. linearity or foldover - V13, V14, V15

Narrow picture - V13, V14, V15, V16, V17

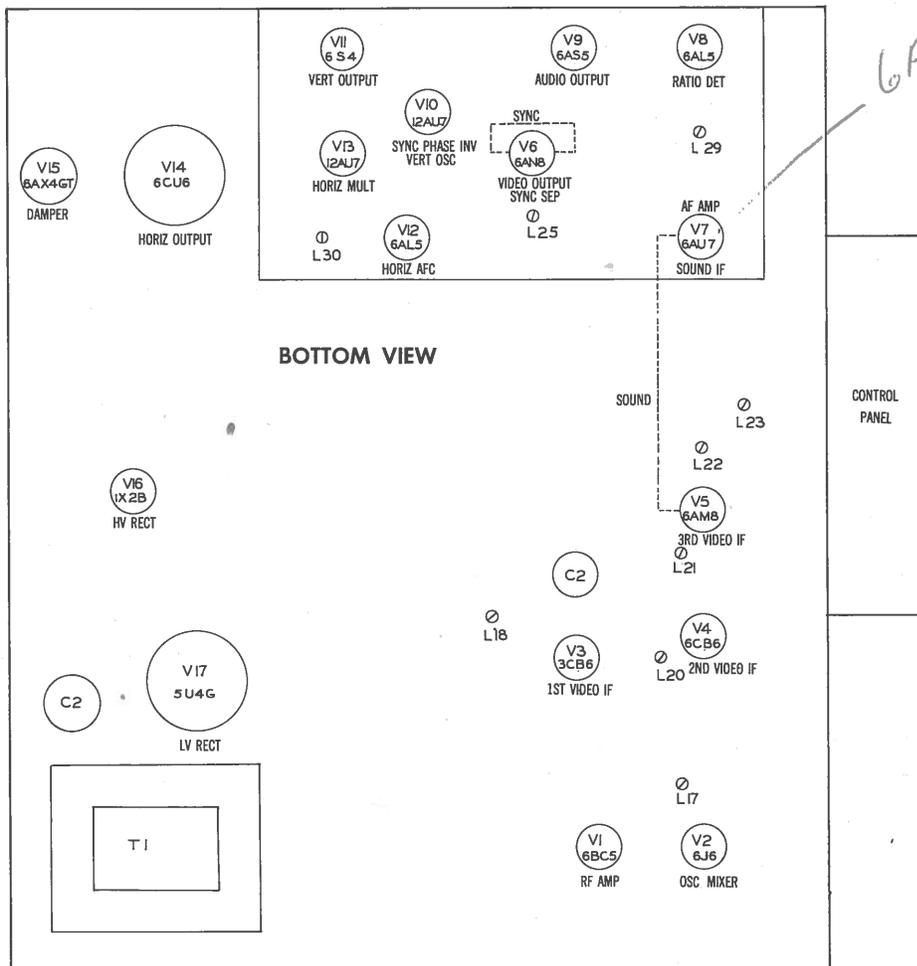
Vert. off freq. - V10

Horiz. off freq. - V10, V12, V13

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	1.3Meg	0Ω	.1Ω	0Ω	≈500Ω	≈1.5KΩ	0Ω		
V 2	6J6	≈15KΩ	≈7KΩ	.1Ω	0Ω	235KΩ	10KΩ	0Ω		
V 3	6CB6	470KΩ	47Ω	0Ω	.1Ω	△1KΩ	△1KΩ	0Ω		
V 4	6CB6	100KΩ	△68Ω	0Ω	.1Ω	↑1KΩ	↑1KΩ	INF		
V 5	6AM8	120Ω	.4Ω	≈8.2KΩ	0Ω	.1Ω	≈1KΩ	.2Ω	5.6KΩ	0Ω
V 6	6AN8	↑190KΩ	2.5Meg	0Ω	.1Ω	0Ω	↑5.6KΩ	↑40KΩ	1Meg	300Ω
V 7	6AU6	90KΩ	0Ω	.1Ω	0Ω	↑27KΩ	≈390Ω	220Ω		
V 8	6AL5	INF	INF	.1Ω	0Ω	10KΩ	0Ω	10KΩ		
V 9	6AS5	40KΩ	350KΩ	.1Ω	0Ω	350KΩ	↑550Ω	↑800Ω		
V 10	12AU7	≈1.5Meg	1.5Meg	0Ω	0Ω	0Ω	↑7KΩ	800KΩ	2.2KΩ	.1Ω
V 11	684	NC	2.2KΩ	1Meg	0Ω	.1Ω	1Meg	NC	NC	≈5KΩ
V 12	6AL5	15Ω	15Ω	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 13	12AU7	↑5.7KΩ	5Meg	1.5KΩ	.1Ω	.1Ω	↑100KΩ	150KΩ	1.5KΩ	0Ω
V 14	6CU6	TP	.1Ω	NC	↑15KΩ	470KΩ	NC	0Ω	0Ω	Top Cap ≈11.5Ω
V 15	6AX4GT	TP	NC	140KΩ	NC	↑55Ω	NC	.1Ω	0Ω	
V 16	1X2B	PINS 1 - 8 HAVE INFINITE RESISTANCE								Top Cap ≈470Ω
V 17	5U4G	NC	60KΩ	NC	23Ω	TP	25Ω	TP	60KΩ	
V 18	21ALP4A	0Ω	56KΩ	Pin 6 0Ω	Pin 10 ≈4.7KΩ	Pin 11 ≈200KΩ	Pin 12 .1Ω			

■ MEASURED FROM 140V LINE
 △ MEASURED FROM PIN 7 OF V4
 † MEASURED FROM PIN 8 OF V17
 ≈ MEASURED FROM PIN 3 OF V15
 NC - NO CONNECTION
 TP - TIE POINT



ADMIRAL CHASSIS 185X4BZ, 18X4CZ,
 18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ

TUBE PLACEMENT CHART

SET 280 FOLDER 2

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL	VERTICAL		
<p>LOSS OF SWEEP Follow procedure outlined under "Loss of High Voltage".</p> <p>INSUFFICIENT SWEEP Check by substitution V14, V15 and V17. Check adjustment B2. Check C72, C69, R87, T3, T5A and other associated components.</p> <p>DRIVE LINES Check by substitution V14 and V15. Check adjustment B2. Check T3, T5A, R82, R87 and other associated components.</p> <p>COMPRESSED LEFT SIDE Check by substitution V14 and V15. Check horizontal output and damper stages for component failure or change of value.</p> <p>FOLDS Follow procedure outlined under "Drive Lines".</p> <p>PIE CRUST EFFECT Check by substitution V13, V14 and V15. Check C67 for open. Check L30, R80, C68, C69 and other associated components.</p> <p>XMAS TREE EFFECT Check by substitution V13, V14 and V15. Check T3 and T5 for internal arcing. Check L30, C74, C69, C68, R80, R82, R90 and other associated components.</p>	<p>LOSS OF SWEEP Check by substitution V10 and V11. Check waveform W7.</p> <table border="0"> <tr> <td data-bbox="878 373 1154 443">If Satisfactory Check T4, T5B, R71, C5 and other associated components.</td> <td data-bbox="1159 373 1490 443">If Unsatisfactory Check T2, R66, R67, R5, C62 and other associated components.</td> </tr> </table> <p>INSUFFICIENT SWEEP Check by substitution V10 and V11. Check height and vertical linearity controls for proper operation. Check R67, T4 and other associated components.</p> <p>COMPRESSED AT BOTTOM Check by substitution V10 and V11. Check R67, R5, R70, R71, C62 and other associated components.</p> <p>COMPRESSED AT TOP Check by substitution V10 and V11. Check R6, R70, R71, T4 and other associated components.</p> <p>FOLDS Check by substitution V10 and V11. Check C60, C61, C62, T4, R68, R71 and other associated components.</p>	If Satisfactory Check T4, T5B, R71, C5 and other associated components.	If Unsatisfactory Check T2, R66, R67, R5, C62 and other associated components.
If Satisfactory Check T4, T5B, R71, C5 and other associated components.	If Unsatisfactory Check T2, R66, R67, R5, C62 and other associated components.		

SYNC

<p>LOSS OF VERTICAL AND HORIZONTAL SYNC Check by substitution V6 and V10. Check C55, C56, C57, R63, R58, R59 and other associated components.</p> <p>LOSS OF VERTICAL SYNC - HORIZONTAL SYNC SATISFACTORY Substitute V10. Check vertical integrator network. Check C59, T2, R66, R3 and other associated components.</p>	<p>LOSS OF HORIZONTAL SYNC - VERTICAL SYNC SATISFACTORY Check by substitution V12 and V13. Check C64, C65, C68, C69, L30, R75, R76, R80 and other associated components.</p> <p>HORIZONTAL BENDING Check by substitution V6, V10, V12 and V13. Check horizontal AFC network.</p>
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VIDEO

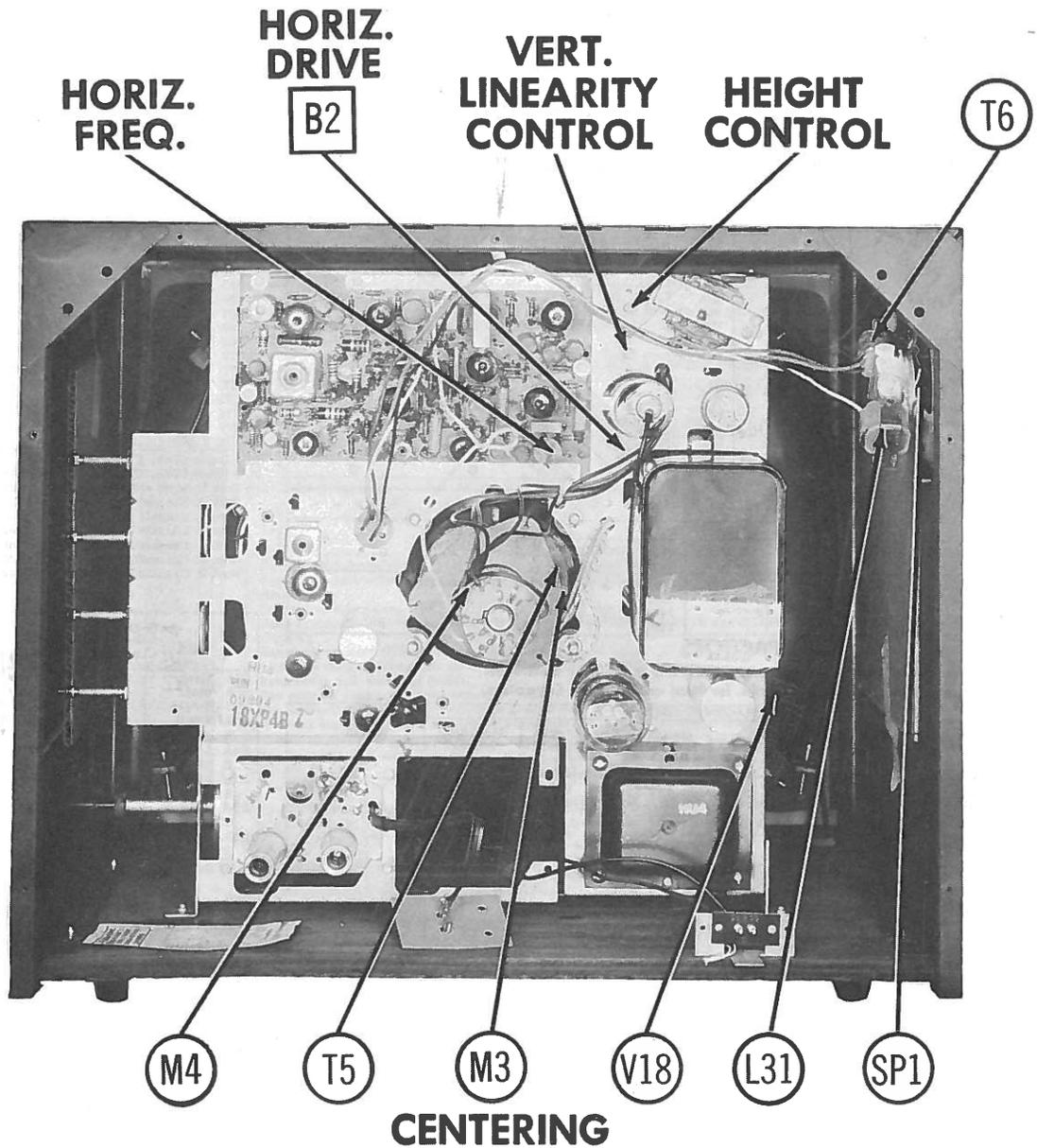
<p>LOSS OF VIDEO Substitute V6. Check C40, C42, R38, R40, R37 and other associated components.</p> <p>SOUND BARS (4.5MC BEAT) Adjust tuner fine tuning for best sound and picture. Check adjustment A15. Check video IF alignment.</p> <p>POOR CONTRAST Substitute V6. Check contrast control. Check L26, L27, C40, C42 and other associated components.</p>	<p>NEGATIVE PICTURE Substitute V6. Check picture tube. Check L23, R34, C40, C42 and other associated components.</p> <p>SMEAR Substitute V6. Check L23, L24, L26, L27, C40, C42 and other associated components.</p> <p>WIDE BLACK BAR ACROSS PICTURE Check by substitution V1, V3, V4, V5 and V6 for heater to cathode leakage.</p>
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AUDIO

<p>WEAK OR NO SOUND Check by substitution V7, V8 and V9. Check stage V9 using audio signal generator. Apply audio signal across R1.</p> <table border="0"> <tr> <td data-bbox="259 1633 548 1749">If Satisfactory Check ratio detector and audio IF stages for component failure or change of value.</td> <td data-bbox="553 1633 873 1749">If Unsatisfactory Check C52, C53, C54, C4, C2B, R55, R53, T6, speaker and other associated components.</td> </tr> </table>	If Satisfactory Check ratio detector and audio IF stages for component failure or change of value.	If Unsatisfactory Check C52, C53, C54, C4, C2B, R55, R53, T6, speaker and other associated components.	<p>BUZZ Adjust tuner fine tuning for best sound and picture. Check adjustment A14 for minimum buzz. If still unsatisfactory, check audio IF alignment.</p> <p>DISTORTED Follow procedure outlined under "Weak or No Sound".</p>
If Satisfactory Check ratio detector and audio IF stages for component failure or change of value.	If Unsatisfactory Check C52, C53, C54, C4, C2B, R55, R53, T6, speaker and other associated components.		

POWER

<p>DEAD SET IF filaments fail to light, check AC interlock assembly. Check switch on volume control and T1. If filaments light, substitute V17. Check B+ filter and decoupling network.</p>	<p>SMALL AND/OR DIM PICTURE Substitute V17. Check B+ filter and decoupling network.</p>
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CENTERING

CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably a test pattern.
2. Set the brightness and contrast control for normal picture.
3. Turn the horizontal oscillator slug (B1) clockwise until the picture loses sync. It may be necessary to switch off channel momentarily for picture to lose sync.
4. Turn B1 slowly counter clockwise until picture just falls into sync.
5. Turn to an unusual channel. If vertical lines appear near the center of the screen slowly adjust the horizontal drive trimmer (B2) until the white lines disappear.
6. If in step 5 the horizontal drive was adjusted, tune in a station and repeat steps 3 and 4. Check horizontal sync by switching off channel, then back.

ADMIRAL CHASSIS 18SX4BZ, 18X4CZ,
18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ

TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETM 8A5E TYPE	NOTES
		ADMIRAL PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BC5	6BC5	7BD	6BZ6 used in chassis 18X4EZ, 18X4FZ, 18X4GZ 6BZ6 used in chassis 18X4EZ, 18X4FZ, 18X4GZ
V2	Osc.-Mixer	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Detector	6AM8	6AM8	9CY	
V7	Video Output-Sync Separator	6AN8	6AN8	8DA	
V8	AF Amplifier	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	Audio Output	6AS5	6AS5	7CV	
V11	Vert. Osc.	12AU7	12AU7	9A	9A 9AC 8BT 9A 8BD 4CG 8Y 5T
V12	Vert. Output	6S4	6S4	9AC	
V13	Horiz. AFC	6AL5	6AL5	6BT	
V14	Horiz. Mult.	12AU7	12AU7	9A	
V15	Horiz. Output	6CU6	6CU6	8BD	
V16	Damper	6AX4GT	6AX4GT	4CG	
V17	HV Rectifier	1X2B	1X2B	8Y	
V18	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	ADMIRAL PART No.	REPLACEMENT DATA				RETM 8A5E TYPE	NOTES
		CRS-HYTRON PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.		
V18	21ALP4A	21ALP4A	21ALP4A	21ALP4A	21ALP4A	12L	Aluminized

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 CAP. VOLT	REPLACEMENT DATA						NOTES
		ADMIRAL PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C1A	.100	67D15-110				TM-808060-350	D-177	
C2A	.100	67D15-109				TM-3123	T-395	
C3	.050	67A4-9				TC50X	MT-2508	
C4	.050	67A4-21				TC30	FM-1504	Note 1
C5	.050	67A4-22				TC58	FM-2540	
C6	.050	94D77-78				TC82	S-310	
C7	.050	94D77-88						
C8	.050	94D77-84	DD-801	801-001	DC-521			
C9	.050	94D77-81	D6-151	811-151	UC-5315			
C10	.050	94D77-86	TCZ-1	NP0A-010	UC-5447			
C11	.050	94D77-77	D6-470	831-470	CT585A			
C12	.050	94D77-83	829-3	3115-01-0R5				
C13	.050	94D77-87	TCZ-1.2	NP0A-1R2				
C14	.050	94D77-79						
C15	.050	94D77-79						
C16	.050	94D77-84	DD-801	801-001	DC-521			
C17	.050	94D77-76	TCN-10	N750K-100	NT-541			
C18	.050	94D77-81	D6-151	811-151	UC-5315			
C19	.050	94D77-88						
C20	.050	94D77-88						
C21	.050		TCZ-2.2	NP0A-2R2	ZT-5522			
C22	.050		TCZ-15	NPOK-150	ZT-5415			
C23	.050		DD-502	811-005	DC-525			
C24	.050							
C25	.050		D6-103	GP2-333-103	PT4022	IMP2-P22	3302022	
C26	.050		DF-104	PT411	IMP4-51	IMP2-P1	330411	
C27	.050		DD-502	811-005	DC-525			
C28	.050		DD-502	811-005	DC-525			
C29	.050		DD-502	811-005	DC-525			
C30	.050		DD-502	811-005	DC-525			
C31	.050		DD-502	811-005	DC-525			
C32	.050		DD-502	811-005	DC-525			
C33	.050		DD-502	811-005	DC-525			
C34	.050		DD-502	811-005	DC-525			
C35	.050		DD-502	811-005	DC-525			
C36	.050		DD-502	811-005	DC-525			
C37	.050		DD-502	811-005	DC-525			
C38	.050		DD-502	811-005	DC-525			
C39	.050		DD-502	811-005	DC-525			
C40	.050		DD-502	811-005	DC-525			
C41	.050		DD-502	811-005	DC-525			
C42	.050		DD-502	811-005	DC-525			
C43	.050		DD-502	811-005	DC-525			
C44	.050		DD-502	811-005	DC-525			
C45	.050		DD-502	811-005	DC-525			
C46	.050		DD-502	811-005	DC-525			
C47	.050		DD-502	811-005	DC-525			
C48	.050		DD-502	811-005	DC-525			
C49	.050		DD-502	811-005	DC-525			
C50	.050		DD-502	811-005	DC-525			
C51	.050		DD-502	811-005	DC-525			
C52	.050		DD-502	811-005	DC-525			
C53	.050		DD-502	811-005	DC-525			
C54	.050		DD-502	811-005	DC-525			
C55	.050		DD-502	811-005	DC-525			
C56	.050		DD-502	811-005	DC-525			
C57	.050		DD-502	811-005	DC-525			
C58A	.050		DD-502	811-005	DC-525			
C58B	.050		DD-502	811-005	DC-525			
C58C	.050		DD-502	811-005	DC-525			

PARTS LIST AND DESCRIPTIONS CAPACITORS (cont)

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA						NOTES
		ADMIRAL PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C59	.050	65B21-472						
C60	.050							
C61	.050							
C62	.050							
C63A	.050	†63C6-12	DD-103	811-01	DC-511			
C64	.050		DD-103	811-01	DC-511			
C65	.050		D6-102	GP2L-102	PT621	IMP6-D1	330621	
C66	.050		D6-102	GP2L-102	PT621	IMP6-D1	330621	
C67	.050							
C68	.050							
C69	.050							
C70	.050							
C71	.050							
C72	.050							
C73	.050							
C74	.050							
C75	.050							
C76	.050							

† Items C58A, C58B, C58C, R65A, R65B, and R65C are combined in one unit.
‡ Items C63A, C63B, R72A and R72B are combined in one unit.
Note 1. Some versions use a 300V unit in this application (part #67A4-19).
Note 2. Not used in chassis 18X4EZ, 18X4FZ, 18X4GZ and 18X4CZ.
Note 3. Chassis 18X4EZ, 18X4FZ and 18X4GZ use .01MFD in this application.
Note 4. Chassis 18X4EZ, 18X4FZ and 18X4GZ use 230MMF in this application (part #65C10-69).
Note 5. Chassis 18X4EZ, 18X4GZ and 18X4CZ use 150MMF in this application (part #65C10-69).
Note 6. Not used in chassis 18XP4BZ.
Note 7. Chassis 18XP4BZ uses 800MMF in this application.

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	75C2-21	Q13-137	A47-1Meg-Z	AB-744	U-53	Volume
R1B	Shaft	Not Req.	K8S-3	Not Req.	AK-4	Not Req.	Attach to R1A
R1C	Switch	Not Req.	76-1	SWE-12	KB-1	US-26	Attach to R1A
R2A	1000Ω	75C13-48	Q17-108	Not Req.	AK-4	U-3	Contrast
R2B	Shaft	Not Req.	Not Req.	Not Req.	AK-4	Not Req.	Attach to R2A
R3A	1.5Meg	75C13-45	Q11-138	A47-1.5Meg-S	AB-75	U-155	Vert. Hold - Note
R3B	Shaft	Not Req.	Not Req.	K8S-3	AK-4	Not Req.	Attach to R3A
R4A	100KΩ	75C13-43	Q11-128	A47-100K-S	AB-40	U-41	Brightness
R4B	Shaft	Not Req.	Not Req.	K8S-3	AK-4	Not Req.	Attach to R4A
R5A	2.5Meg	75C20-1	Q11-239	A47-2.5Meg-S	BX-83	U-255	Height
R5B	Shaft	Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R5A
R6A	3000Ω	75C20-7	Q11-112	A47-3000-S	AB-8	U-8	Vert. Linearity
R6B	Shaft	Not Req.	Not Req.	RQ	AK-1	Not Req.	Attach to R6A

Note: Some versions may use an alternate control part no. 75C20-45.

RESISTORS

ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		NOTES	ITEM No.	RATING OHMS WATT	REPLACEMENT DATA		NOTES
		ADMIRAL PART No.	IRC PART No.				ADMIRAL PART No.	IRC PART No.	
R7	12KΩ		BTS-12K		R61	390Ω		BTS-390	
R8	1000Ω		BTS-1000		R62	2200Ω		BTS-2200	
R9	220KΩ		BTS-220K		R63	150Ω		BTS-150	
R10	15KΩ		BTS-15K		R64	820KΩ 5%	60B7-824	BTS-820K 5%	
R11	6800Ω		BTS-6800		R65	470Ω	60B20-471	BTB-470	
R12	10KΩ		BTS-10K		R66	680KΩ 5%	60B7-684	BTS-680K 5%	
R13	10KΩ		BTS-10K		R67	2.2Meg		BTS-2.2Meg	
R14	15KΩ		BTS-15K		R68	330KΩ		BTS-330K	
R15	470Ω		BTS-470		R69	47KΩ		BTS-47K	
R16	15Meg		BTS-15Meg		R70	3.9Meg		BTS-3.9Meg	
R17	1000Ω		BTS-1000		R71	1Meg		BTS-1Meg	
R18	1Meg		BTS-1Meg		R72	2200Ω		BTS-2200	
R19	470KΩ		BTS-470K		R73	4700Ω		BTS-4700	
R20	270KΩ		BTS-270K		R74	2200Ω		BTS-2200	
R21	1000Ω		BTS-1000		R75	22KΩ		BTS-22K	
R22	2000Ω 5%	60B7-202	BTS-2000 5%		R76	8200Ω	†63B6-9	BTS-8200	
R23	47Ω		BTS-47		R77	8200Ω		BTS-8200	
R24	16KΩ 5%	60B7-163	BTS-16K 5%		R78	820KΩ		BTS-820K	
R25	1000Ω		BTS-1000		R79	1Meg 5%	60B7-105	BTS-1Meg 5%	
R26	220KΩ		BTS-220K		R80	12KΩ		BTS-12K	
R27	220KΩ		BTS-220K		R81	1Meg		BTS-1Meg	
R28	68Ω		BTS-68		R82	820Ω		BTS-820	
R29	10KΩ 5%	60B7-103	BTS-10K 5%		R83	4700Ω		BTS-4700	
R30	1000Ω		BTS-1000		R84	2200Ω		BTS-2200	
R31	120Ω		BTS-120		R85	22KΩ		BTS-22K	
R32	8200Ω		BTS-8200		R86	8200Ω		BTS-8200	
R33	1000Ω		BTS-1000		R87	820KΩ		BTS-820K	
R34	5600Ω		BTS-5600		R88	1Meg 5%		BTS-1Meg 5%	
R35	1Meg		BTS-1Meg		R89	12KΩ		BTS-12K	
R36	100Ω		BTS-100		R90	1Meg			

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.	
L24	Shunt Peak- ing Coil	16Ω		73A5-15	19-3500		6174	510 Microhenries
L25	4.5MC Trap Series Peak- ing Coil	4.6Ω		72A132				
L26		6.5Ω		73B5-21	19-3300	TV-185	6155	280 Microhenries, wound on 33KΩ resistor
L27	Shunt Peak- ing Coil	8Ω		73B5-22	19-4412	TV-190	4648	375 Microhenries, wound on 10KΩ resistor
L28	Sound IF	4.4Ω		72B99-14	20-1005	TV-151	1470	
L29	Ratio Det.	3.6Ω	.3ΩCT	72C68-4	17-1033	TV-110	1468	Tertiary winding-.8Ω
L30	Horiz. Osc.	53Ω		94C17-4				

- * Enlarge mounting hole.
- Detune trap winding.
- ▲ Parallel with 4.7KΩ resistor.
- ▲ Parallel with 33KΩ resistor.
- † Parallel with 10KΩ resistor.
- ◆ Remove spade bolts.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	ADMIRAL PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.
L31	.230ADC	54.5Ω	1.3 Hy.	Part of Spkr.					

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M1	Tuner	94D77-1	VHF - Chassis 18XP4BZ, 18XP4HZ
	Tuner	94D46-5	VHF - Chassis 18X4CZ
	Tuner	94D46-6	VHF - Chassis 18X4EZ, 18X4FZ, 18X4GZ
	Tuner	94D46-7	VHF - Chassis 18X4EZ, 18X4FZ, 18X4GZ
	Tuner	94D46-8	VHF - Chassis 18X4EZ, 18X4FZ, 18X4GZ
M2	Tuner	94E75-2	VHF-UHF - Chassis 18SX4BZ, 18SX4EZ, 18SX4FZ, 18SX4GZ
M3	Centering Device	94A71-1	
M4	Ion Trap	94A15-4	
B2	Trimmer Cap.	66A30-3	Horiz. Drive (178-780MMF)
	Cabinet	34E83-1	Models T2301Z, TS2301Z, TS2302Z, TS2326Z, TS2327Z
	Cabinet	34E83-2	Model T2302Z
	Cabinet	35E316-2	Model T2326Z
	Cabinet	35E316-3	Model T2327Z
	Knob	33A143-1	On-Off-Volume, Contrast, Vert. and Brightness - Model T2301Z
	Knob	33A143-5	On-Off-Volume, Contrast, Vert. and Brightness - Model T2302Z
	Knob	33A143-3	On-Off-Volume, Contrast, Vert. and Brightness - Model T2326Z
	Knob	33A143-2	On-Off-Volume, Contrast, Vert. and Brightness - Model T2327Z
	Knob	33D143-1	On-Off-Volume, Contrast, Vert. and Brightness - Model TS2301Z
	Knob	33D143-5	On-Off-Volume, Contrast, Vert. and Brightness - Model TS2302Z
	Knob	33D143-3	On-Off-Volume, Contrast, Vert. and Brightness - Model TS2326Z
	Knob	33D143-2	On-Off-Volume, Contrast, Vert. and Brightness - Model TS2327Z
	Knob	33D144-1	VHF Channel Sel. - Model T2301Z, T2327Z
	Knob	33D144-6	VHF Channel Sel. - Models T2302Z, T2326Z
	Knob	33D144-2	VHF Fine Tuning - Models T2301Z, T2327Z
	Knob	33D144-7	VHF Fine Tuning - Models T2302Z, T2326Z
	Knob	33B146	UHF Channel Sel. - Models TS2301Z, TS2302Z, TS2326Z, TS2327Z
	Knob	33D144-3	VHF Channel Sel. - Models TS2301Z, TS2327Z
	Knob	33D144-8	VHF Channel Sel. - Models TS2302Z, TS2326Z
	Knob	33D144-4	Fine Tuning - Models TS2301Z, TS2327Z
	Knob	33D144-9	Fine Tuning - Models TS2302Z, TS2326Z
	Safety Glass	21B62-11	All Models (21" tubes)
	Mask	23D205-2	All Models (21" tubes)

TROUBLE SHOOTING AIDS (cont)

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check by substitution V13, V14, V15 and V16. Check waveform W14.

If Satisfactory

Check T3, T5A, C73, C72, C71, R87 and other associated components.

If Unsatisfactory

Check L30, C66, C69, R82, R80 and other associated components.

INSUFFICIENT HIGH VOLTAGE

Check by substitution V14, V15 and V17. Check C72, C69, R87 and other associated components.

BLOOMING

Check by substitution V14, V15, V16 and V17. Check T3, R87 and other associated components.

GENERAL

RASTER, SOUND, NO PICTURE

Follow procedure outlined under "Loss of Video".

RASTER, PICTURE, NO SOUND

Follow procedure outlined under "Weak or No Sound".

RASTER, NO SOUND, NO PICTURE

Check by substitution V1, V2, V3, V4, V5, V6 and V9. Check video IF components for failure or change of value.

NO RASTER, NO SOUND

Follow procedure outlined under "Dead Set".

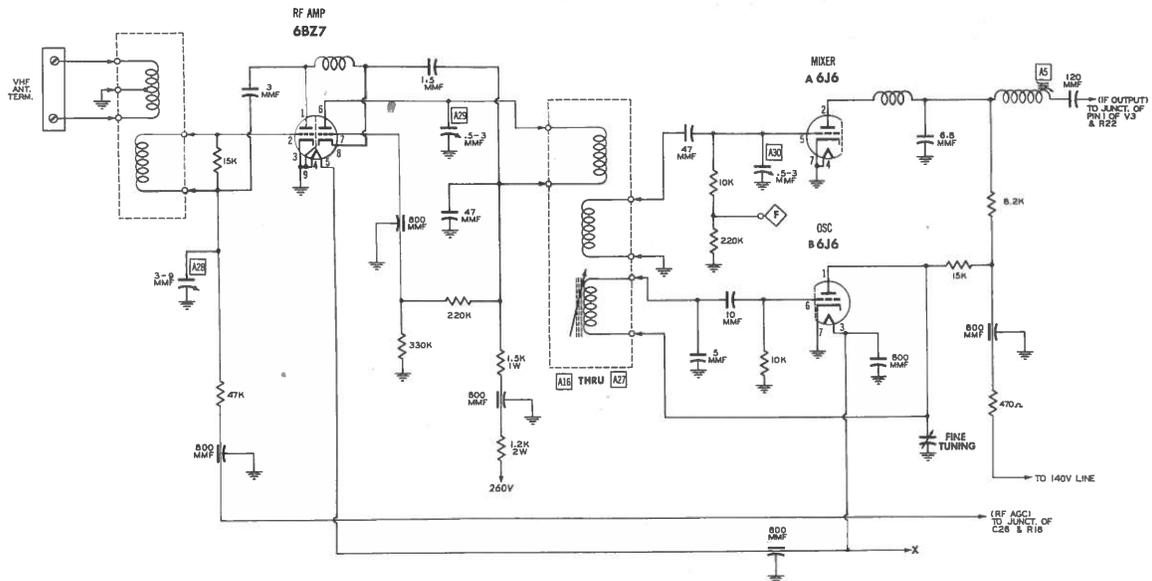
KEYSTONE EFFECT

Check T5 and its associated components.

INTERMITTENT STREAKS

Check high voltage section for corona discharge and arcing.

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



VHF TUNER USED ON CHASSIS 18X4EZ, 18X4FZ, 18X4GZ, AND 18X4CZ

A PHOTOFAC STANDARD NOTATION SCHEMATIC
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ALTERNATE TUNER SCHEMATIC

ADMIRAL CHASSIS 18X4BZ, 18X4CZ,
18X4EZ, 18X4FZ, 18Z4GZ, 18XP4BZ

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, thru 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 wood screws holding metal strip at the top of safety glass. Remove metal strip and safety glass. 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

See tube placement chart on page 10.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made by adjusting the flexible shaft at back of set. Adjust horizontal frequency slug of L30 until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate "Sound IF Detector Buzz" adjust the Ratio Detector Secondary (L29) located on bottom of chassis. Adjustment can be made from top of chassis by inserting alignment tool thru hollow hex slug (primary adjustment) to bottom adjustment (A8) on L29.

CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

DISASSEMBLY INSTRUCTIONS

1. Remove 6 push-on type control knobs from side panel of cabinet.
2. Remove 7 wood screws. Remove rear cover.
3. Remove 2 metal screws from antenna bracket.
4. Remove 2 metal screws from interlock bracket.
5. Disconnect speaker plug.
6. Remove 5 chassis bolts. Lift cabinet from mounting board and slide forward.
7. Remove 2 speaker nuts. Remove speaker.

NOTE: If it is necessary to remove the chassis for servicing, it is also necessary to remove the speaker. The filter choke and the audio output transformer is mounted on the speaker and must be connected to receiver for proper operation.

PRODUCTION CHANGES

Admiral chassis 18XP4HZ is identical to chassis 18XP4BZ, except for the changes listed below.

R17 is omitted.

C27 is omitted.

R22 is increased from $2K\Omega$ to $3.9K\Omega$.

R24 is decreased from $18K\Omega$ to $12K\Omega$.

C30 is increased from 1000MMF to 5000MMF.

R28 is decreased from 68Ω to 47Ω .

R29 is decreased from $10K\Omega$ to $6.2K\Omega$.

C31 is omitted.

R37 is increased from 470Ω to $1K\Omega$.

R38 is decreased from $39K\Omega$ to $33K\Omega$.

C57 is decreased from .1MFD to .01MFD.

R87 is decreased from $15K\Omega$ to $8.2K\Omega$.

C75 is increased from 75MMF to 230MMF.

R88 is decreased from 750Ω to 270Ω .

L19 is omitted.

A 5000MMF capacitor is added from pin 4 of V3 to ground.

A high voltage filament resistor (4.7Ω) is added.

C73 is increased from 75MMF to 150MMF and is disconnected from pin 3 of V15, and reconnected to the junction of C75 and R88.

The 2nd. video IF coil (L20) is changed to part #72C132-2.

The 3rd. video IF coil (L21) is changed to part #72C132-2.

The 4th. video IF coil (L22) is changed to part #72B152-2.

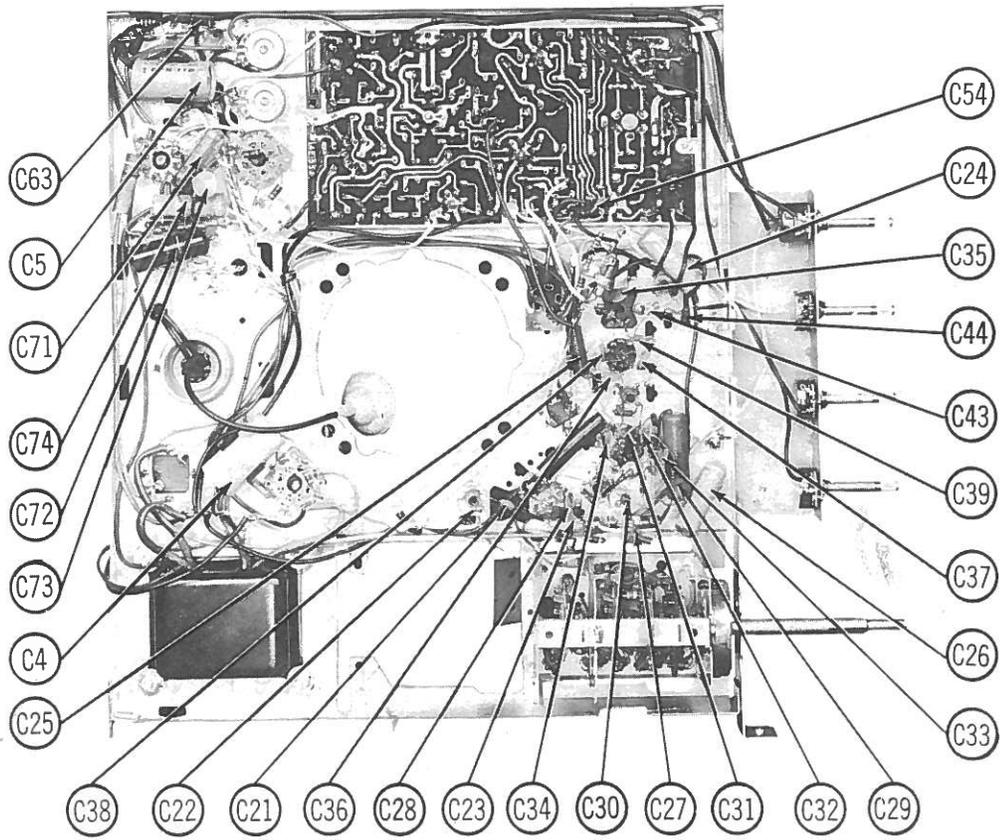
The vertical oscillator transformer (T1) is changed to part #79B63-3.

The deflection yoke (T5A, T5B) changed to part #94D87-1.

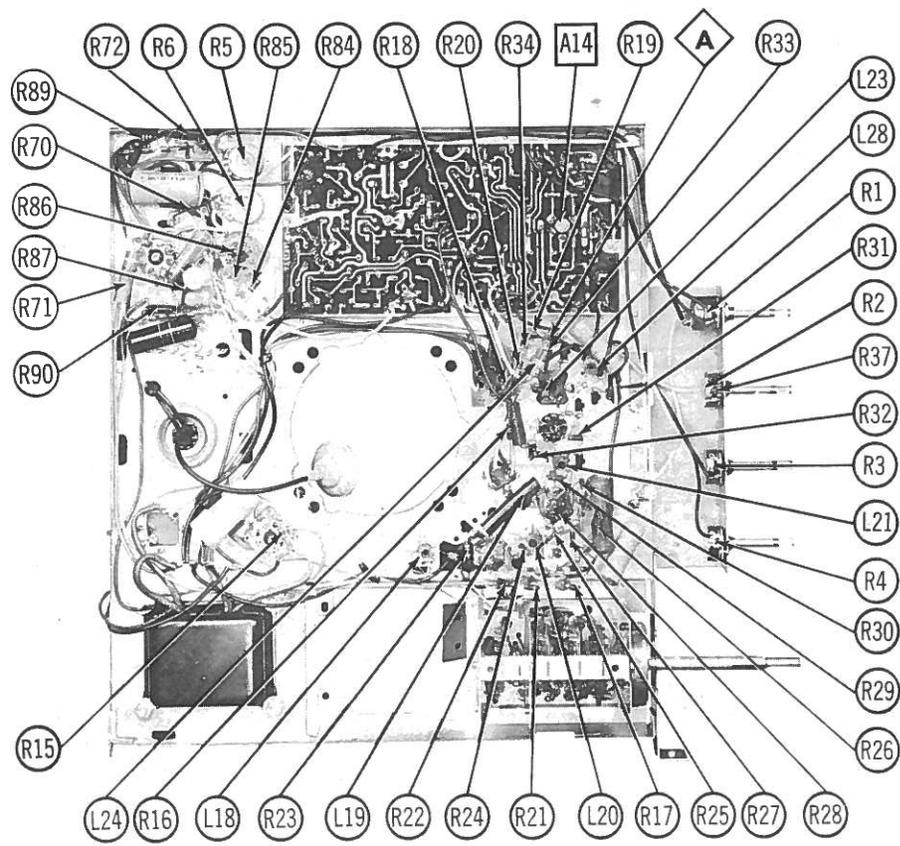
The horizontal output transformer (T3) is changed to part #79C60-6.

A PM speaker may be used in some models.

A peaking coil (part #73A24-2) is added between pin 8 of V5 and L23.



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION