

MODEL T23A1B (Ch. 17Z3DB)

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

- 1. Remove 4 push-on type control knobs from the front.
- 2. Remove 7 metal screws and the rear cover.
- 3. Remove 2 screws and the side escutcheon.
- 4. Remove 2 metal screws holding the side control panel.
- 5. Remove the picture tube socket, ion trap, yoke clamp, speaker plug and HV lead.
- 6. Remove the on-off-volume and contrast control by depressing 2 spring clips.
- 7. Remove 2 metal screws and AC interlock.
- 8. Remove 1 metal screw from the top chassis brace.
- 9. Remove 4 chassis bolts from the bottom.
- 10. Remove the chassis.
- 11. Remove 2 hex nuts and the speaker. NOTE: The speaker has the audio output transformer mounted and the plug has a jumper for completing the AC line to chassis.

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS

MODELS	CHASSIS
T23A1, T23A2, T23A3	17Z3D
C23A26, C23A27	17Z3DC
C23A11, C23A12, C23A13, T23A6, T23A7	17Z3DT
	17Z3DB
C23A1C, C23A2C, C23A3C, C23A11B, C23A12B, C23A13B, C23A26B, C23A27B, C23B16C, C23B17C, C23B16CB, C23B17CB, T23A1B, T23A2B, T23A3B, T23A6B, T23A7B	17Z3DBM
	17Z3DBN
	17Z3DCB
	17Z3DF
	17Z3DFB

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound. NOTE: If 2 adjustments appear use the upper adjustment.

PICTURE TUBE SAFETY GLASS CLEANING

- 1. Remove 4 push-on type control knobs from the front.
- 2A. MODELS WITH REMOVABLE UPPER MOLDING
Remove the screws and molding at the top of the safety glass. Pull glass out at top and up to remove from the lower channel.
- 2B. MODELS WITH FRAME FRONT
Remove the screws from the bottom of the frame. Carefully pull the lower part of the frame outward and SLIGHTLY downward until it clears the channel at the top, continue outward and downward motion until the assembly clears the control shafts. NOTE: If this procedure is carefully followed it is NOT NECESSARY to remove the retaining discs behind the knobs or the lower retaining strip at the bottom of the glass.

FOCUS

The focus may be varied by the position of a strap on the

base of the picture tube. The strap can be connected between pins 6 and 2 or 6 and 10. Readjust the ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The horizontal frequency coil is used as the horizontal hold control. Adjust the horizontal hold until the picture synchronizes horizontally. (For location, see tube placement chart).

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the discriminator secondary (A8) located on the bottom of chassis.

FUSES

A 7.5Ω fusible resistor (R97) is used for LV power supply protection. (For location see tube placement chart).

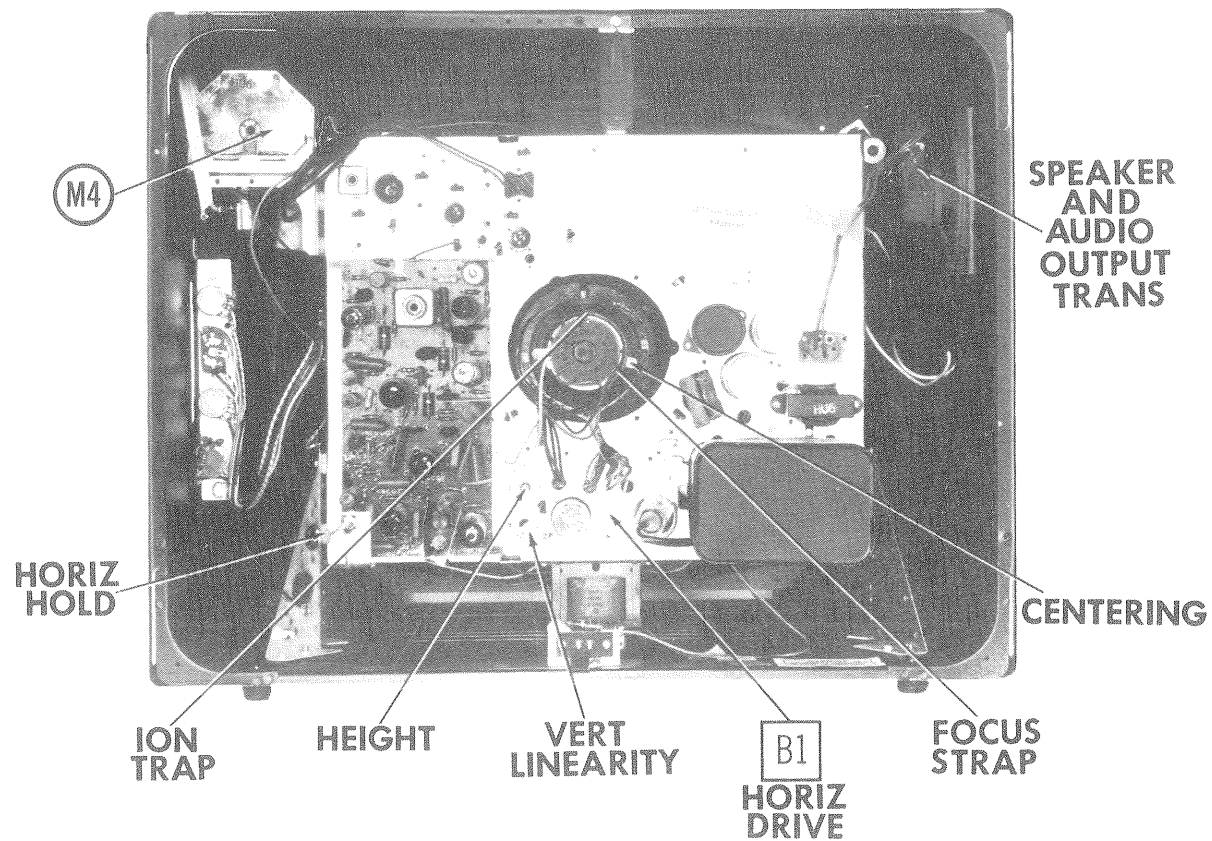
CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

ADMIRAL CHASSIS 17Z3D, DB, DBM, DBN, DC, DCB, DF, DFB, DT, DTB

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CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

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

DISASSEMBLY

CHASSIS REMOVAL

1. Remove 4 push-on type
2. Remove 7 metal screws
3. Remove 2 screws and
4. Remove 2 metal screws
5. Remove the picture tube speaker plug and HV lead
6. Remove the on-off switch pressing 2 spring clips.
7. Remove 2 metal screws
8. Remove 1 metal screw
9. Remove 4 chassis bolts
10. Remove the chassis.
11. Remove 2 hex nuts and has the audio output transformer a jumper for completing

CAUTION

ONE SIDE OF AC LINE

TUNER OSCILLATOR /

Touch-up adjustment of removing the channel is the fine tuning at the center are accessible, one at a time rotated. Adjust for best NOTE: If 2 adjustment

PICTURE TUBE SAFETY

1. Remove 4 push-on type
- 2A. MODELS WITH RETAINING GLASS Remove the screws from the glass. Pull glass out of lower channel.
- 2B. MODELS WITH FRONT PANEL Remove the screws from the front panel. Carefully pull the front panel SLIGHTLY downward. Continue outward until the assembly clears the chassis. The procedure is careful to remove the retaining lower retaining strip.

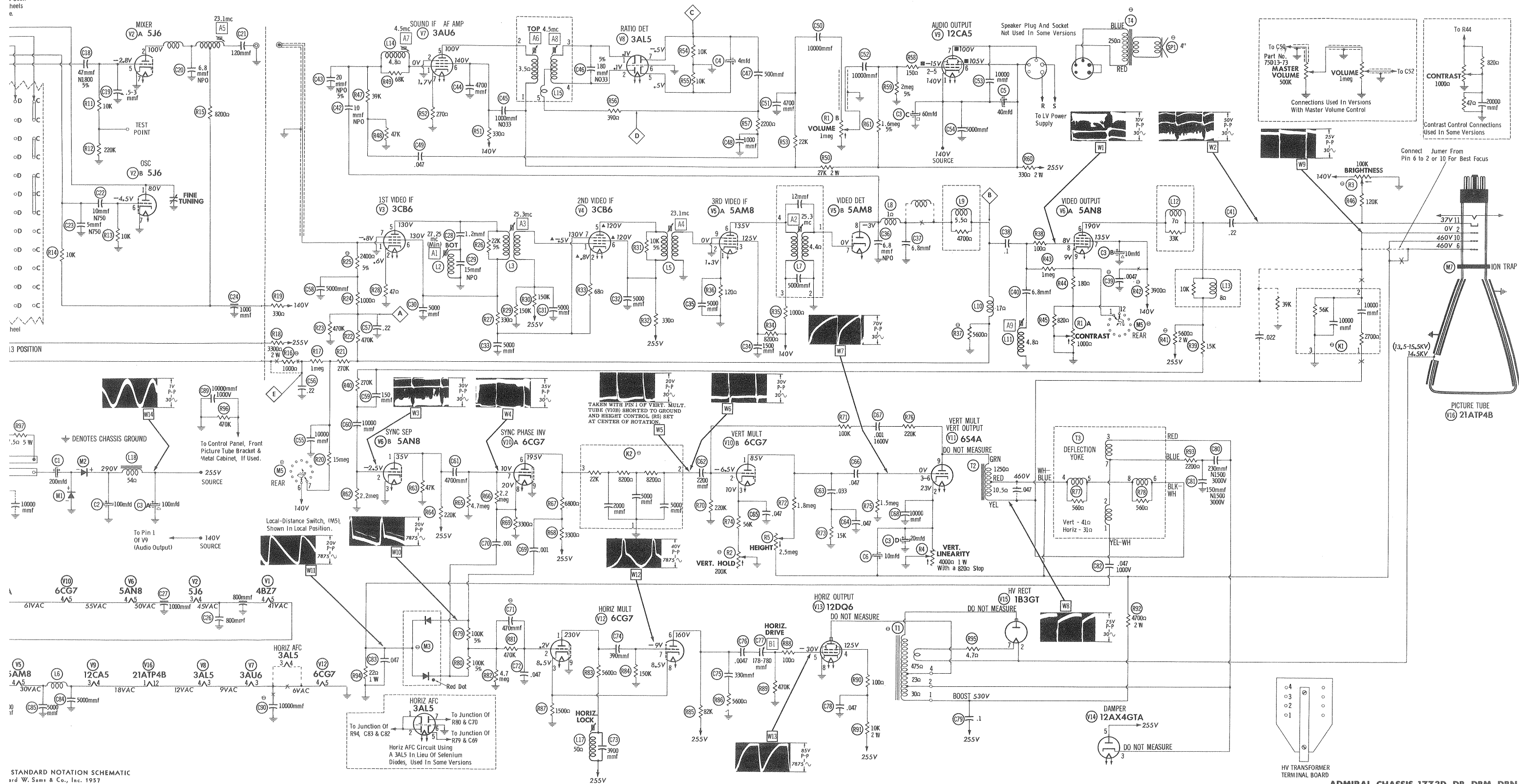
FOCUS

The focus may be varied

HORIZONTAL

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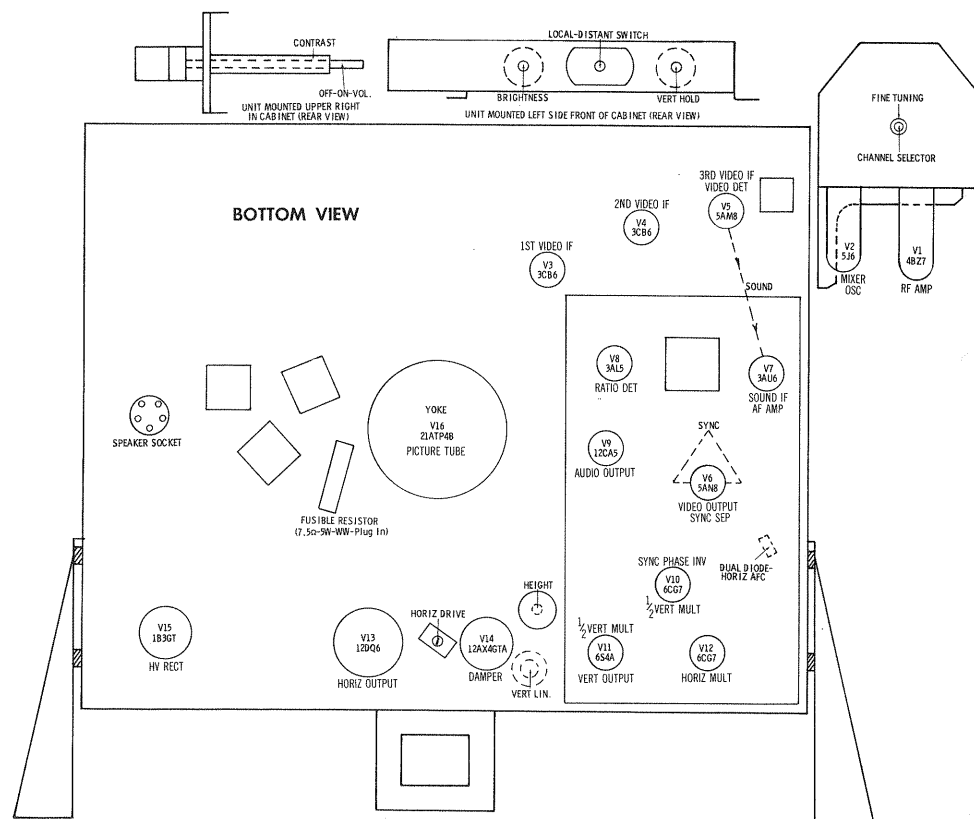


STANDARD NOTATION SCHEMATIC
3rd W. Sams & Co., Inc. 1957

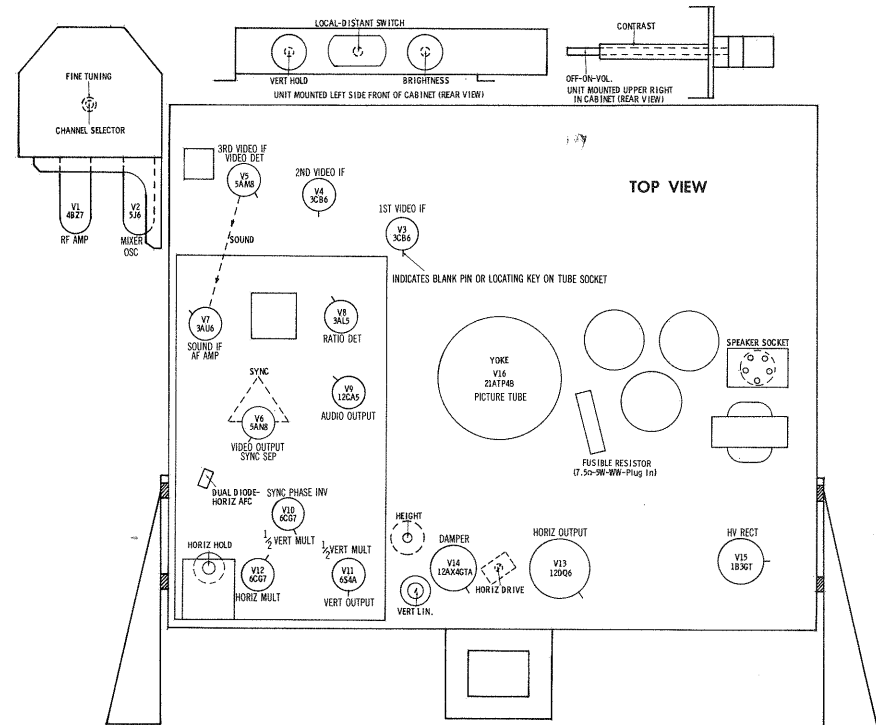
ADMIRAL CHASSIS 17Z3D, DB, DBM, DBN,
DC, DCB, DF, DFB, DT, DTB

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	4B Z 7	† 3300Ω	280K	1N F	11Ω	10Ω	1N F	1.2Meg	0Ω	0Ω
V2	5J6	■ 10K	■ 8500Ω	12Ω	11Ω	230K	10K	0Ω		
V3	3CB6	240K	47Ω	10Ω	9Ω	▲ 330Ω	▲ 330Ω	0Ω		
V4	3CB6	80K	▲ 68Ω	9Ω	8Ω	† 380Ω	† 380Ω	1N F		
V5	5AM8	120Ω	.4Ω	■ 8200Ω	8Ω	6.5Ω	■ 1000Ω	4.4Ω	5600Ω	0Ω
V6	5AN8	† 100K	2.2Meg	0Ω	13Ω	12Ω	† 5600Ω	■ 3900Ω	1Meg	280Ω
V7	3AU6	85K	0Ω	1.5Ω	2.5Ω	† 27K	■ 330Ω	270Ω		
V8	3AL5	1N F	1N F	2.5Ω	3.5Ω	10K	0Ω	10K		
V9	12CA5	¶	800K	6.5Ω	3.5Ω	800K	† 380Ω	† 630Ω		
V10	6CG7	† ● 3.3Meg	220K	● 110K	14Ω	13Ω	† 10K	1.5Meg	3300Ω	0Ω
V11	6S4A	NC	● 1400Ω	1.5Meg	15Ω	14Ω	1.5Meg	NC	NC	† 6000Ω
V12	6CG7	† 5700Ω	550K	1500Ω	1.5Ω	0Ω	† 82K	150K	1500Ω	0Ω
V13	12DQ6	TP	15Ω	TP	† 10K	470K	NC	17Ω	0Ω	TOP CAP † 23Ω
V14	12AX4GT	NC	TP	¶	NC	† 54Ω	TP	22Ω	17Ω	
V15	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP † 500Ω
V16	21ATP4B	4.5Ω	56K	PIN 6 † 4700Ω	PIN 10 † 4700Ω	PIN 11 ● 140K	PIN 12 3.5Ω			

NC	NO CONNECTION					
TP	TIE POINT					
†	MEASURED FROM OUTPUT OF M2.					
■	MEASURED FROM 140 VOLT LINE.					
●	THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.					
‡	MEASURED FROM PIN 3 OF V14.					
¶	THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.					
▲	MEASURED FROM PIN 7 OF V4.					



TUBE PLACEMENT 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.

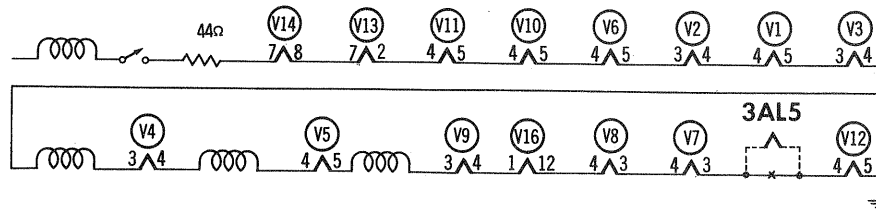
No raster, no sound - Fusible Resistor (R97), Rectifier (M1, M2)

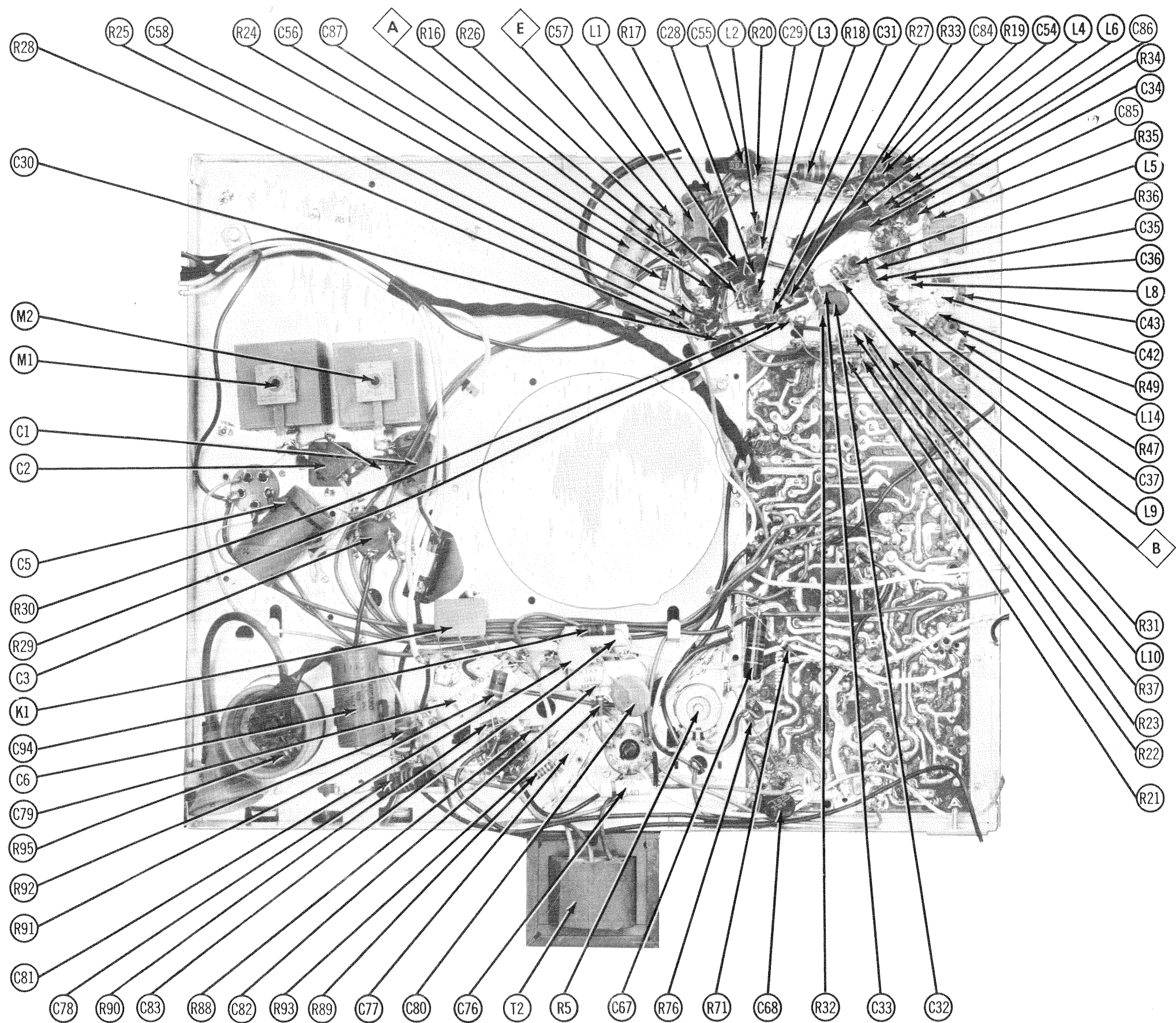
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, V5, V9
No pic, no sound, has snow - V1, V2, V9
No pic, has sound, has raster - V6, V16, V9
Has pic, no sound - V7, V8, V9

No vert. sync - V6, V10
No horiz. sync - V6, V10, Diode (M3) (Some versions 3AL5)
No vert. or horiz. sync - V6, V10

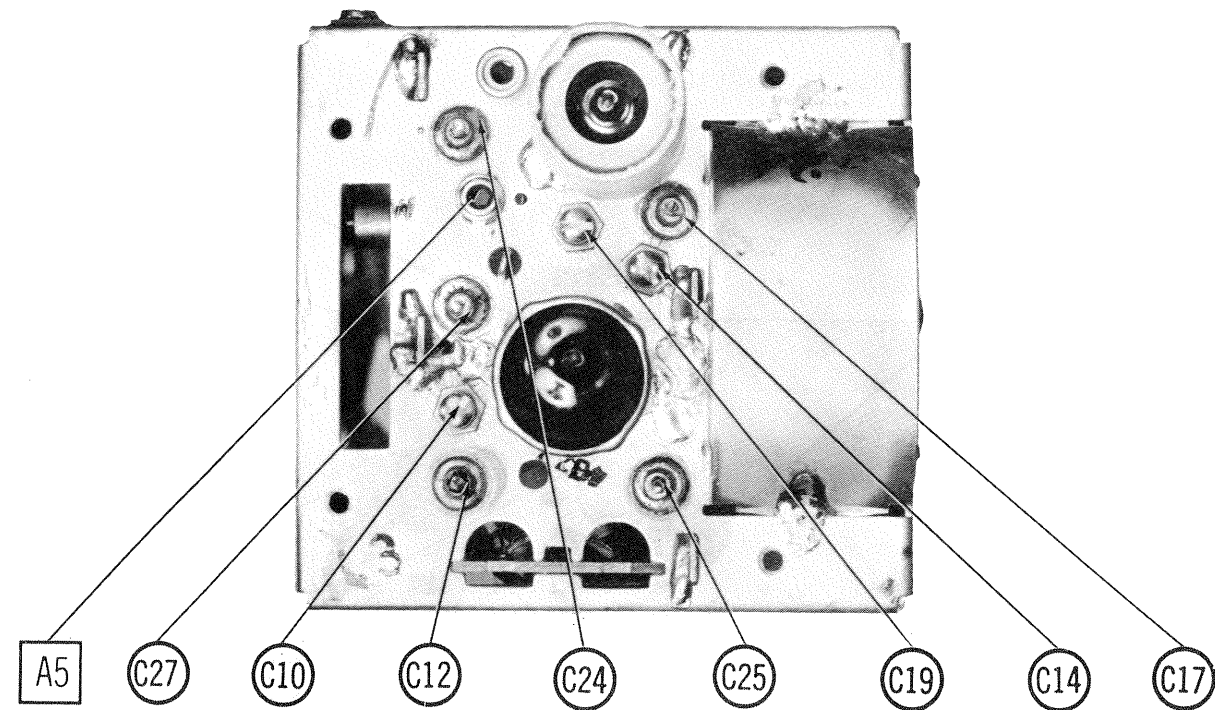
No raster, has sound - V12, V13, V14, V15, V16
No vertical deflection - V10, V11
Poor vert. linearity or foldover - V10, V11
Poor horiz. linearity or foldover - V12, V13, V14
Narrow picture - V12, V13, V14, M1, M2
Vert. off freq. - V10, V11
Horiz. off freq. - V12

This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below).

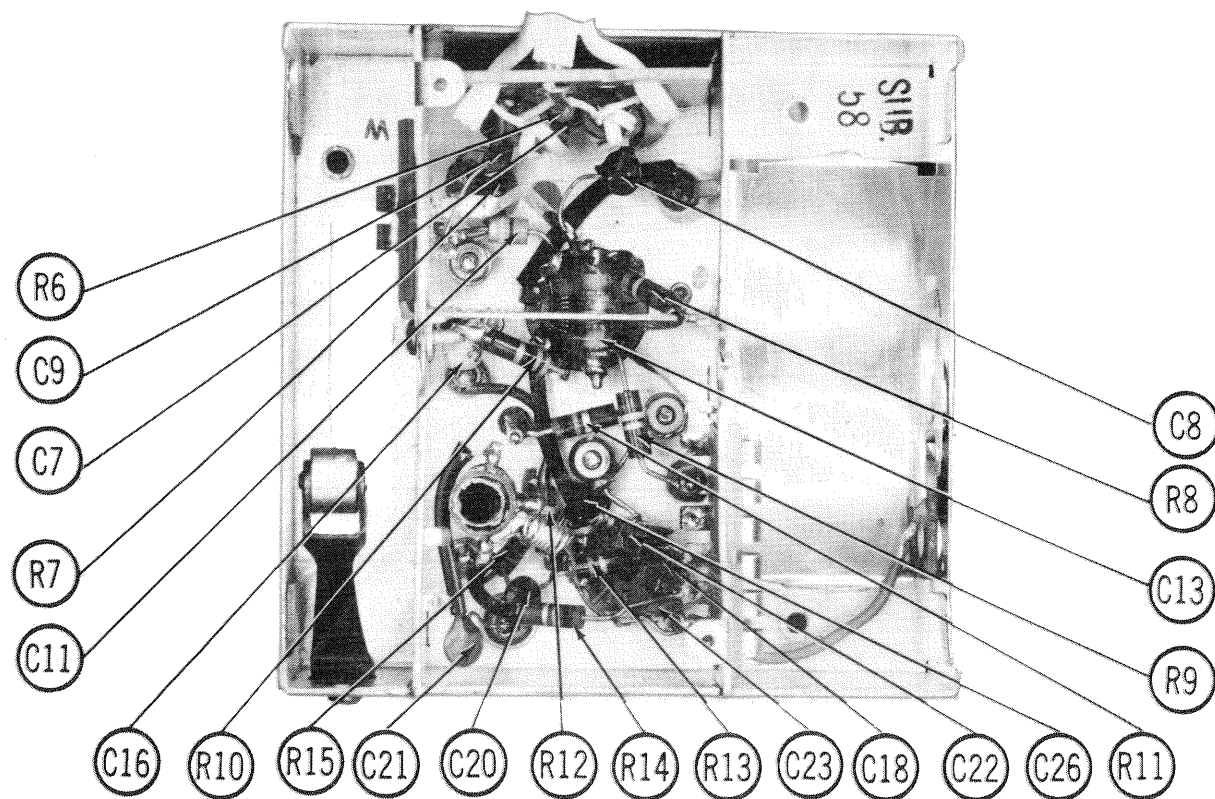




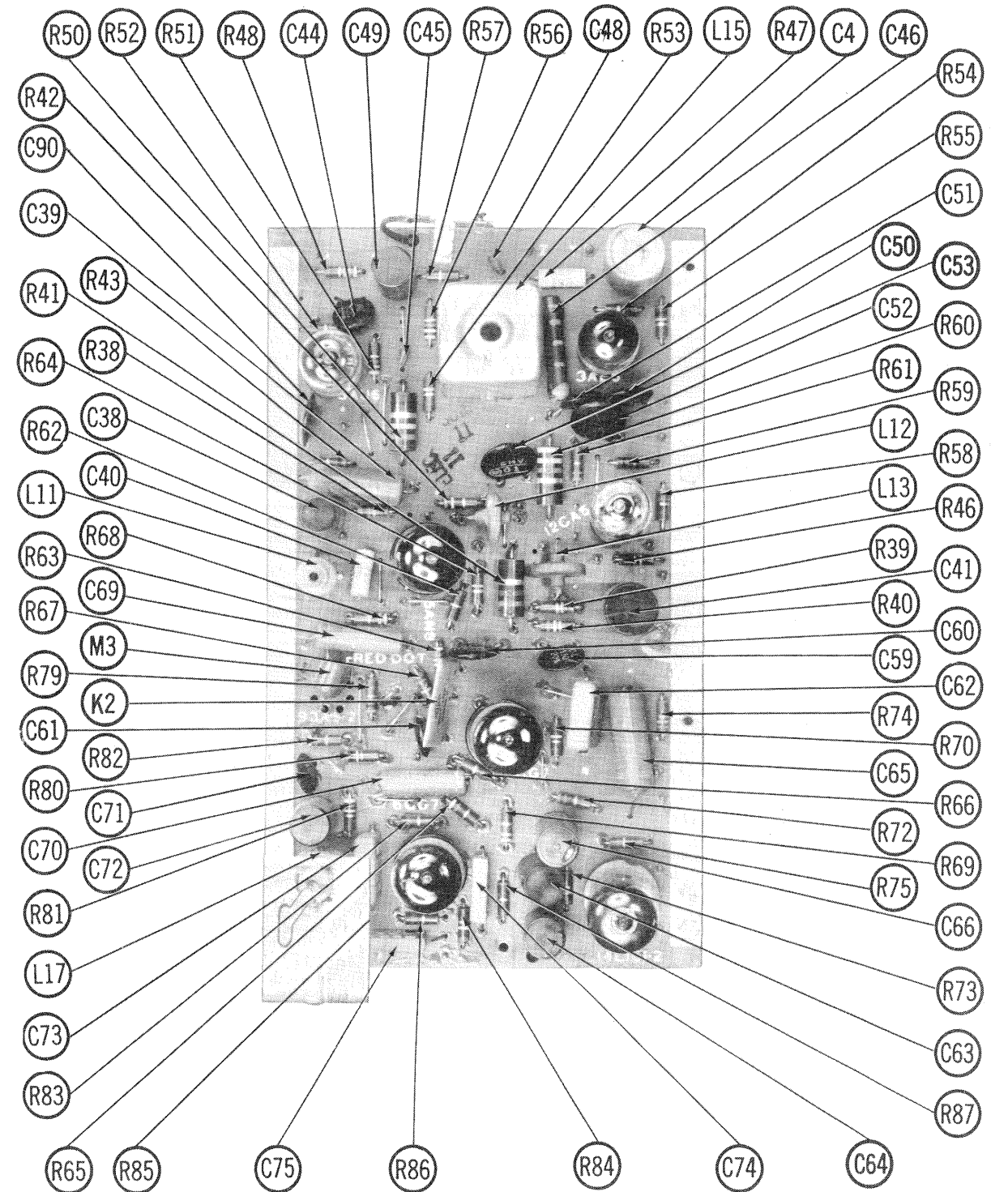
CHASSIS BOTTOM VIEW



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



SOUND & SWEEP PRINTED BOARD

SET 363 FOLDER 2

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.

VIDEO IF ALIGNMENT

Disconnect the antenna leads and connect short jumper across the antenna terminals.
Set the contrast control fully counter clockwise.
Connect the negative lead of a 3 volt bias supply to point \diamond . Positive 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
1. Direct	High side to ungrounded tube shield floating over mixer-oscillator tube (V2). Low side to chassis.	Not used	27.25MC (Unmod)	Any non-interfering channel	USE VTVM. DC probe to point \diamond . Common to chassis.	A1	Adjust for MINIMUM deflection. Use lowest DC scale on the VTVM.
2. "	"	"	25.3MC	"	"	A2, A3	Use only enough generator output to provide usable indication on VTVM. Use lowest DC scale on the VTVM. Adjust for maximum deflection.
3. "	"	"	23.1MC	"	"	A4 A5	Use only enough generator output to provide usable indication on VTVM. Use lowest DC scale on the VTVM. Adjust for maximum deflection. Repeat step 1.
4. "	"	23.0MC (10MC Swp)	21.25MC 24.3MC 25.75MC 27.75MC	"	Vert. Amp. thru 10K to point \diamond . Low side to chassis.		Check for response similar to Fig. 1 with markers as indicated. If necessary, retouch A2 thru A5 for desired response.

SOUND IF ALIGNMENT

Leave jumper across the antenna terminals as under "Video IF Alignment".
Set contrast control fully counter clockwise.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5. .01MFD	High side to pin 7 (cathode) of 5AM8 (V5). Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe to point \diamond . Common to chassis.	A6, A7	Use lowest DC scale on VTVM. Use only enough generator output to provide usable indication on VTVM. Adjust for maximum deflection.
6. "	"	"	"	DC probe to point \diamond . Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

4.5MC TRAP ALIGNMENT

Tune in a TV station and adjust A9 for MINIMUM 4.5MC beat interference in the picture.

OSCILLATOR ALIGNMENT

Turn the set on and allow 15 minutes warm-up period.
Set the channel selector to the channel needing adjustment, set other controls for normal picture and sound. Set the fine tuning to the center of its range. Remove the channel selector and fine tuning knobs. Insert a 1/8" flexible, non-metallic screwdriver type tuning tool thru the hole adjacent to the channel selector shaft and adjust the oscillator slug for the best picture. (NOTE: This is not the point at which the sound is the loudest). Repeat this procedure for all channels operating in the area needing adjustment. (NOTE: When adjusting tuners #94E140-1 or #94E140-2 if two slugs appear, adjust upper slug).

RF AND MIXER ALIGNMENT FOR TUNERS #94E140-1, #94E140-2

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

RF AND MIXER ALIGNMENT FOR TUNER #94D122-1

Connect the negative lead of a 3 volt bias supply to point \diamond . Positive 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.
Use only enough sweep generator output to provide usable pattern on scope.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC (10MC Swp)	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point \diamond . Low side to chassis.	A10, A11	Adjust for response curve similar to Fig. 2, with markers above 90%.
8. "	"	85MC (10MC Swp)	83.25MC 97.75MC	6	"	A12	Adjust for response curve similar to Fig. 2. Adjust for maximum amplitude and flat-topped appearance with markers properly positioned.
9. "	"	213MC (10MC Swp) 207MC (10MC Swp) 201MC (10MC Swp) 195MC (10MC Swp) 189MC (10MC Swp) 183MC (10MC Swp) 177MC (10MC Swp) 171MC (10MC Swp) 165MC (10MC Swp) 159MC (10MC Swp) 153MC (10MC Swp) 147MC (10MC Swp) 141MC (10MC Swp) 135MC (10MC Swp) 129MC (10MC Swp) 123MC (10MC Swp) 117MC (10MC Swp) 111MC (10MC Swp) 105MC (10MC Swp) 99MC (10MC Swp) 93MC (10MC Swp) 87MC (10MC Swp) 81MC (10MC Swp) 75MC (10MC Swp) 69MC (10MC Swp) 63MC (10MC Swp) 57MC (10MC Swp)	211.25MC 215.75MC 205.25MC 209.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC 169.25MC 173.75MC 163.25MC 167.75MC 157.25MC 161.75MC 151.25MC 155.75MC 145.25MC 149.75MC 139.25MC 143.75MC 133.25MC 137.75MC 127.25MC 131.75MC 121.25MC 125.75MC 115.25MC 119.75MC 109.25MC 113.75MC 103.25MC 107.75MC 97.25MC 101.75MC 91.25MC 95.75MC 85.25MC 89.75MC	13 12 11 10 9 8 7 6 5 4 3 2	"		Check for response curve similar to Fig. 2. If markers fall below 70% on any high band channel, make compromise adjustment of A10 and A11 with channel switch set to that channel. If markers fall below 70% on any low band channel, make compromise adjustment of A12 with channel selector set to that channel. Check all other channels to see that they have not been seriously affected.

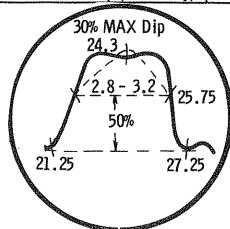


FIG. 1

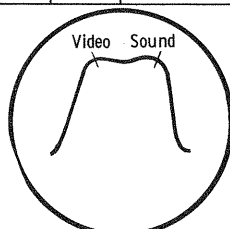
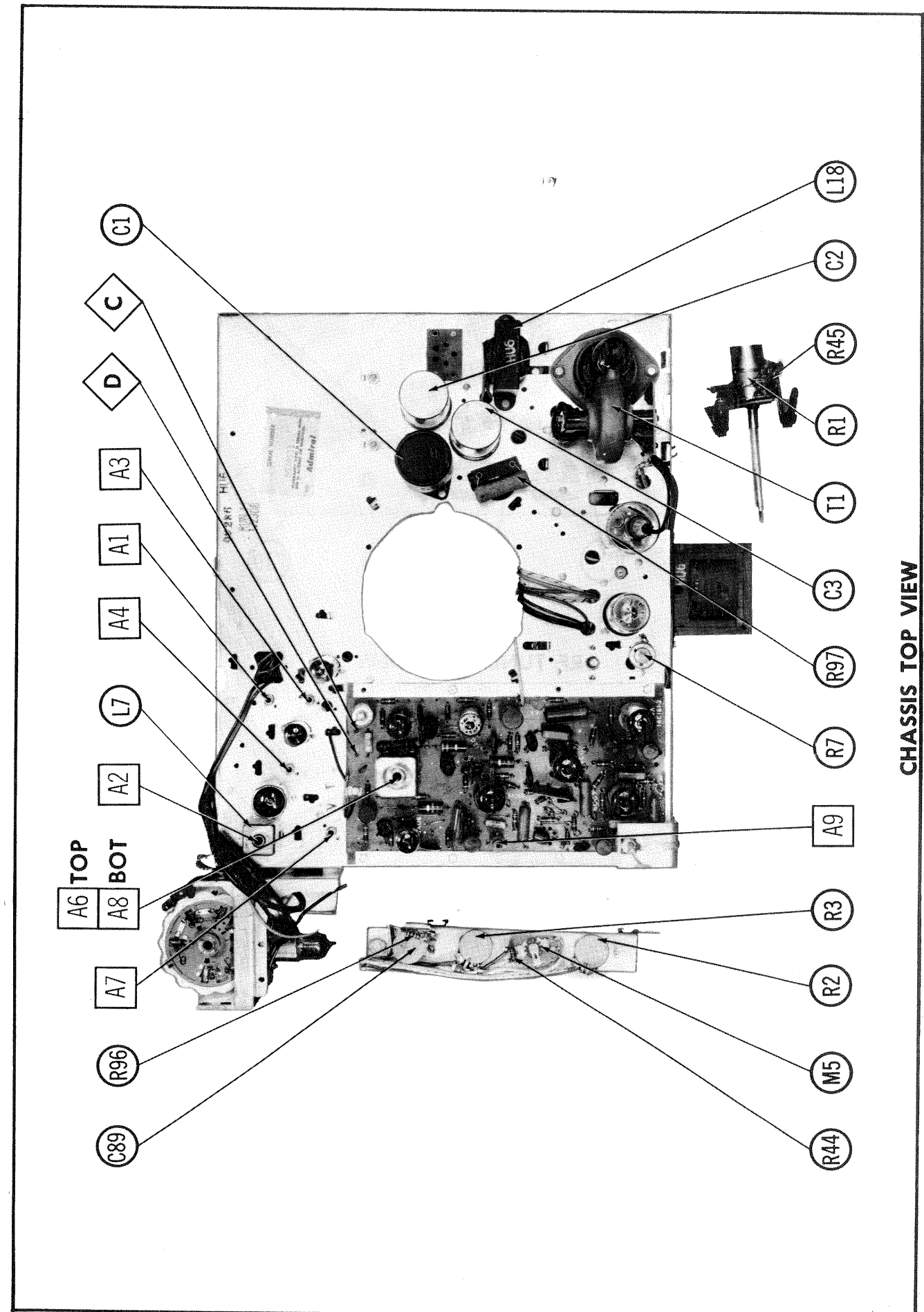


FIG. 2



ADMIRAL CHASSIS 17Z3D, DB, DBM, DBN,
DC, DCB, DF, DFB, DT, DTB
MAIN PDI SSVCH

PARTS LIST AND DESCRIPTIONS (Continued)
FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 μ H)	ADMIRAL PART No.	Holldorson PART No.	Merit PART No.	Stancor PART No.	Thordorson PART No.	Triad PART No.
L18	.210A	54 Ω	1.3 Hy.	74B18-15	C5037 ①	C-2996 ①	C-2326 ①	26C44 ①	C-24X

① Drill one new mounting hole.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	ADMIRAL PART No.	REPLACEMENT DATA
K1	Vert. Blanking	10000MMF, 10000MMF, 2700 Ω , 56K	63C6-12 ①	Aerovox PA282
K2	Vert. Integrator	2000MMF, 5000MMF, 5000MMF, 22K, 8200 Ω , 8200 Ω	63C9-7 ②	Aerovox Centralab Cornell-Dubilier Erie Sprague PA110 PC-100 115TMI 1405-01 V-1

① Chassis marked Run 14 and higher use individual components in this application as shown on the schematic.
② Chassis marked Run 10 may use alternate part #93C9-1 in this application which is electrically identical.

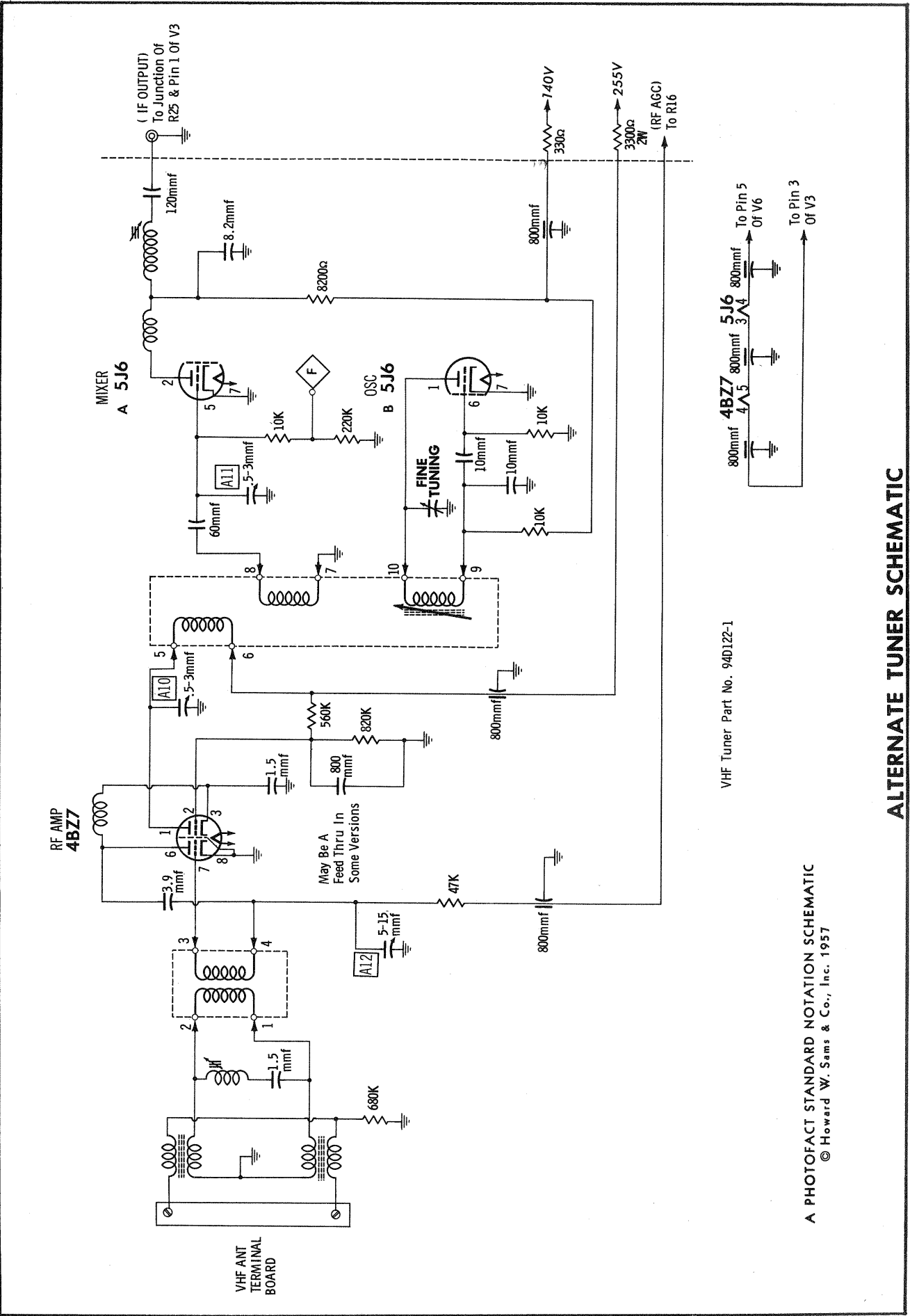
RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA						NOTES
		ADMIRAL PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.	
M1	.210A	93A4-2 ①	1090A ①	1N1007 ②	RS300SL ①	6S300 ①	300 ①	
M2	.210A	93A4-2 ①	1090A ①	1N1007 ②	RS300SL ①	6S300 ①	300 ①	
M3	.210A	93A5-2 ① ④	1215 ① ③		1T1 ① ③			

① Selenium type.
② Germanium type.
③ 2 required.
④ Some versions may use a 6AL5 tube in this application.

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M4	Tuner	94E140-1	Ch. 17Z3DB, DCB, DTB
	Tuner	94E140-2	Ch. 17Z3DBM, DBN
	Tuner	94D122-1	Ch. 17Z3D, DC, DT
M5	Switch	76A3-3	Local-Distant (Rotary wafer) front mounting
	Switch	76B31-3	Local-Distant (Slide type) front mounting
	Switch	76A3-1	Local-Distant (Rotary wafer) side mounting
	Switch	76B31-1	Local-Distant (Slide type) side mounting
M6	Centering Device	94B121-1	Includes yoke rear cover
	Centering Device	94A121-1	
M7	Ion Trap	94A15-4	



ADMIRAL CHASSIS 17Z3D, DB, DBM, DBN,
DC, DCB, DF, DFB, DT, DTB
C14WEHCS JENNI ETATNRELT4

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	4BZ7	
V2	Mixer-Oscillator	5J6	
V3	1st. Video IF Amplifier	3CB6	
V4	2nd. Video IF Amplifier	3CB6	
V5	3rd. Video IF-Video Det.	5AM8	
V6	Video Output-Sync Sep.	5AN8	
V7	Sound IF Amp - AF Amp	3AU6	
V8	Ratio Detector	3AL5	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA				NOTES
	ADMIRAL PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V16	2IATP4B 2IATP4A	2IATP4 ②	2IATP4A/2IATP4②	2IATP4/ 2IATP4A① 2IATP4A①	① Silver screen "85" ② Aluminized

ELECTROLYTIC CAPACITORS

RATING			REPLACEMENT DATA						
ITEM No.	CAP.	VOLT.	ADMIRAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	200	150	67D16-168	AFH51-24-25	XA0318	FP118	TMS-26	S-110	TVL-1431
C2	100	300	67D15-119	AFH1-55-20	A0340	FP150	TMS-40	S-190	TVL-1679
C3A	100	300	67D15-117	AFH4-114-90		FP335		Q-188	TVL-4559.5
B	10	150				TC42		MT-1510	
C	50	200							
D	20	50							
C4	4	50	67B27-3	PR5150V4	BBR4-50	TC30	TD-4-50	MT-0504	TVA-1402
C5	40	200	67A4-21	PR5250V40	BR4025	TC58	TD-40-250	FM-2540	TVA-1511
C6	10	500	67A4-34	PR5500V10	BR1250	TC82	TD-10-500	MT-5010	TVA-1963

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for 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.	
C7	5		65D10-108	NP0-SI 5	TCZ-4R7	C10V5C	TCO-5	ZT-555	5TCCB-V47	NP0
C8	6.8		65D10-26	NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	NP0
C9	6.8		65D10-26	NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	NP0
C10	2.5-12		94E140-38							
C11	3		65B28-030	NP0-SI 3		C10V3C		ZT-553		
C12	1000		65B26-5	EF-001	MFT-1000				503C-D1	
C13	1000		65B26-6	EF-001	MFT-1000				503C-D1	
C14	.5-3		94E140-37		829-3		3115-D	CT565A		
C15	1.5		65B28-015	NP0-SI 1.5	TCZ-1R5	C10V15C		ZT-5515	5TCCB-V15	
C16	2.2		65D10-27	NP0-SI 2.2	TCZ-2R2	C10V22C			5TCCB-V22	
C17	1000		65B26-5	EF-001	MFT-1000				503C-D1	
C18	47		65D10-73							N1800
C19	.5-3		94E140-37		829-3		3115-D	CT565A		
C20	6.8		65D10-26	NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	NP0
C21	120		65D10-90	NP0-SI 120	TCZ-120	LI0T12	ED-120	UC-5312	5GA-T12	
C22	10		65D10-50	N750-SI 10	TCN-10	C10V10	TCO-10	NT-541	5TCCB-V10	N750
C23	5		65D10-22	N750-SI 5.0	TCN-5	C10V5U	TCO-5	NT-555	5TCCB-V5	N750
C24	1000		65B26-5	EF-001	MFT-1000				503C-D1	
C25	1000		65B26-5	EF-001	MFT-1000				503C-D1	
C26	800		65D10-20	BPD-0008	DD-801	LI0T8	ED-800		5GA-T8	
C27	1000		65B26-5	EF-001	MFT-1000				503C-D1	
C28	1.2			NP0-SI 1.0	TCZ-1				5TCCB-V1	
C29	15		65C6-90	NP0-SI 15	TCZ-15	C10Q15C	TCO-15		5TCCB-V15	NP0
C30	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C31	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C32	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C33	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C34	1500			BPD-0015	DD-152	BYA10D15	ED-0015	DC5215	5HK-D15	
C35	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C36	6.8		65C39-5	NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	NP0
C37	6.8			NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	
C38	.1	200				BC2PJL		ACE401	2SE-P10	
C39	.0047	600		BPD-0047	D6-472	GP-4700	GEM-6247		6TM-D47	Note 1
C40	6.8			NP0-SI 6.8	TCZ-6R8	C10V68C	TCO-6.8	ZT-5568	5TCCB-V68	
C41	.22	400				BC6P22J		ACE4022	4SE-P22	
C42	10		65C6-44	NP0-SI 10	TCZ-10	C10Q10	TCO-10	ZT-541	5GA-Q1	NP0 5%
C43	20		65C6-51	NP0-SI 20	TCZ-20	C10Q20	TCO-20	ZT-542	5GA-Q2	NP0 5%
C44	4700			BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C45	1000		65C39-1	BPD-001	DD-102	BYA6D1	ED-001	DC521	5HK-D1	N033
C46	180		65C6-59							N033 5%
C47	500			SI 500	D6-501	LI0T5	GP-500	UC-535	5GA-T5	
C48	1000			BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C49	.047	200				BC2S47J		ACE4147	2SE-S47	
C50	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C51	4700			BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C52	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C53	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C54	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C55	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C56	.22	200		P288N-22	DD-22	CUB2P22	GEM-2022	2TM-P22	5HK-P22	
C57	.22	100		P288N-22	DD-22	CUB2P22	GEM-2022	2TM-P22	5HK-P22	
C58	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C59	150		65C39-4	BPD-00015	DD-151	LI0T15	ED-150	UC-5315	5GA-T15	
C60	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C61	4700			BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C62	2200		64C24-18			IR5D22			MS-222	
C63	.033	600	65B15-10			BC6833J		ACE6133	6SE-S33	
C64	.047	400				BC6847J		ACE4147	4SE-S47	
C65	.047	400				BC6847J		ACE6147	6SE-S47	
C66	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C67	.001	1600		P1688N-001		CUB16D1		GEM-1621	16TM-D1	
C68	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C69	.001	400		BPD-001	D6-102	CUB4D1	GP-1000	GEM-421	4TM-D1	
C70	.001	400		BPD-001	D6-102	CUB4D1	GP-1000	GEM-421	4TM-D1	
C71	.047			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	Note 2
C72	.047	200				BC2S47J		ACE4147	2SE-S47	
C73	3900		65B21-332			IR5D39			MS-239	
C74	390		65B21-331			5R5T39			MS-339	
C75	330		65B21-331			5R5T33			MS-333	
C76	.0047	600		BPD-0047	D6-472	CUB6D47	GP-4700	GEM-6247	6TM-D47	10% Note 3
C77	178-780		66A30-3							
C78	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C79	.1	600		P688N-1	DF-104	CUB6P1		GEM-601	6TM-P1	

PARTS LIST AND DESCRIPTIONS
CAPACITORS (cont)

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.	
C80	230	3000	65C10-69							N1500
C81	150	3000	65C10-68							N1500
C82	.047	1000		P1088N-05		CUB10S47		GEM-10147	10TM-S47	
C83	.047	200		BPD-05	DF-503	CUB2S47		GEM-2147	2TM-S47	
C84	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C85	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C86	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C87	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C88	.047	1000		P1088N-05		CUB10S47		GEM-10147	10TM-S47	
C89	10000	1000				HVE18S1			20HKB-S1	
C90	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	Note 4

Note 1. A 5000MMF is used in some versions, the part is omitted in some versions.

Note 2. A 4700MMF is used in some versions.

Note 3. Some versions may use a 680mmf in this application.

Note 4. Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	ADMIRAL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1000Ω	1/2	75B11-28	F1-5	RTV-552	QJ-884	UE64S	Contrast Volume
B	1Meg	1/2		R2-54				
C	Switch	1/2		KB-1				
R2A	200K	1/2	75D13-65	B-46	A47-200K-S	QJ1-129	U43	Vert. Hold
B	200K	1/2		Not Req.	KSS-3	Not Req.	Not Req.	
A	200K	1/2	75C13-65 ①	B-46	A47-200K-S	QJ1-129	U43	Vert. Hold
B	200K	1/2		Not Req.	KSS-3	Not Req.	Not Req.	
A	200K	1/2	75C13-63 ②	B-46	A47-200K-S	QJ1-129	U43	Vert. Hold
B	200K	1/2		Not Req.	KSS-3	Not Req.	Not Req.	
A	200K	1/2	75C20-29 ③	B-40	A47-100K-S	QJ1-128	U41	Vert. Hold
B	200K	1/2	75D13-53	B-40	Not Req.	Not Req.	Not Req.	Brightness
R3A	100K	1/2	75C13-53 ①	B-40	A47-100K-S	QJ1-128	U41	Brightness
B	100K	1/2		Not Req.	KSS-3	Not Req.	Not Req.	
A	100K	1/2	75C13-62 ②	B-40	A47-100K-S	QJ1-128	U41	Brightness
B	100K	1/2		Not Req.	KSS-3	Not Req.	Not Req.	
A	100K	1/2	75C20-25 ③	B-40	A47-100K-S	QJ1-128	U41	Brightness
B	100K	1/2		Not Req.	KSS-3	Not Req.	Not Req.	
R4	4000Ω	1	75B27-3		A47-2.5Meg-S	39-4000-1000		Vert. Lin. With 820Ω stop, wire wound Height
R5A	2.5Meg	1/2	75C20-30	BX-83	A47-2.5Meg-S	BL1-239	TA255L	
B	2.5Meg	1/2		Not Req.	FKS-1/2	TM2-Kit	Not Req.	

♦ Concentrik Kit Equivalent K-7 Kit, Base Elements & Shafts B17-108, P17-300 (Panel)

B13-137, R2-318 (Rear)

76-1 Switch

① Alternate part number used in side mounted versions.

② Alternate part number used in front mounted versions.

③ Alternate part number used in versions marked Run 10.

RESISTORS

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

ITEM No.	RATING		REPLACEMENT DATA		NOTES		
	OHMS	WATT	ADMIRAL PART No.	IRC PART No.			
R6	680K	2		BTS-680K	Note 1		
R7	4700 Ω			BTS-4700			
R8	820K			BTS-820K			
R9	560K			BTS-560K			
R10	33Ω			BTS-33			
R11	10K			BTS-10K			
R12	220K			BTS-220K			
R13	10K			BTS-10K			
R14	10K			BTS-10K			
R15	8200Ω			BTS-8200			
R16	1000Ω						
R17	1Meg						
R18	3300Ω			BTB-3300			
R19	330Ω			BTS-330			
R20	15Meg						
R21	270K						
R22	470K						
R23	470K			BTS-470K			
R24	1000Ω			BTS-1000			
R25	2400Ω 5%		5%			Note 2	
R26	22K 5%						
R27	330Ω			BTS-330			
R28	47Ω			BTS-47			
R29	150K						
R30	150K						
R31	10K 5%						
R32	330Ω			BTS-330			
R33	68Ω			BTS-68			
R34	8200Ω			BTS-8200			
R35	1000Ω	2			Note 3		
R36	120Ω			BTS-120			
R37	5600Ω			BTS-5600			
R38	100Ω			BTS-100			
R39	15K			BTS-15K			
R40	270K			BTS-270K			
R41	5600Ω			BTS-5600			
R42	3900Ω			BTS-3900			
R43	1Meg			BTS-1Meg			
R44	180Ω			BTS-180			
R45	820Ω	2		BTS-820	Note 4 Note 5		
R46	120K			BTS-120K			
R47	39K			BTS-39K			
R48	47K			BTS-47K			
R49	68K			BTS-68K			
R50	27K			BTB-27K			
R51	330Ω			BTS-330			
R52	270Ω			BTS-270			
ITEM No.	RATING		REPLACEMENT DATA		NOTES		
	OHMS	WATT	ADMIRAL PART No.	IRC PART No.			
R53	22K	2		BTS-22K	2		
R54	10K			BTS-10K			
R55	10K			BTS-10K			
R56	390Ω			BTS-390			
R57	2200Ω			BTS-2200			
R58	150Ω			BTS-150			
R59	2Meg 5%			BTS-2Meg 5%			
R60	330Ω			BTB-330			
R61	1.6Meg 5%			BTS-1.6Meg 5%			
R62	2.2Meg		2			BTS-2.2Meg	2
R63	47K			BTS-47K			
R64	220K			BTS-220K			
R65	4.7Meg			BTS-4.7Meg			
R66	2.2Meg			BTS-2.2Meg			
R67	6800Ω			BTS-6800			
R68	3300Ω			BTS-3300			
R69	3300Ω			BTS-3300			
R70	220K			BTS-220K			
R71	100K			BTS-100K			
R72	1.8Meg	1		BTS-1.8Meg	1		
R73	15K			BTS-15K			
R74	56K			BTS-56K			
R75	1.5Meg			BTS-1.5Meg			
R76	220K			BTS-220K			
R77	560Ω						
R78	560Ω						
R79	100K 5%						
R80	100K 5%						
R81	470K		2				2
R82	4.7Meg						
R83	5600Ω						
R84	150K						
R85	82K						
R86	5600Ω						
R87	1500Ω						
R88	100Ω			BTS-100			
R89	470K			BTS-470K			
R90	100Ω	2			BTS-100	2	
R91	10K			BTB-10K			
R92	4700Ω			BTB-4700			
R93	2200Ω						
R94	22Ω		1		BTB-22		
R95	4.7Ω				BW 4.7		
R96	470K				BTS-470K		
R97	7.5Ω			5			FR7.5-7.5
R98	44Ω				20		