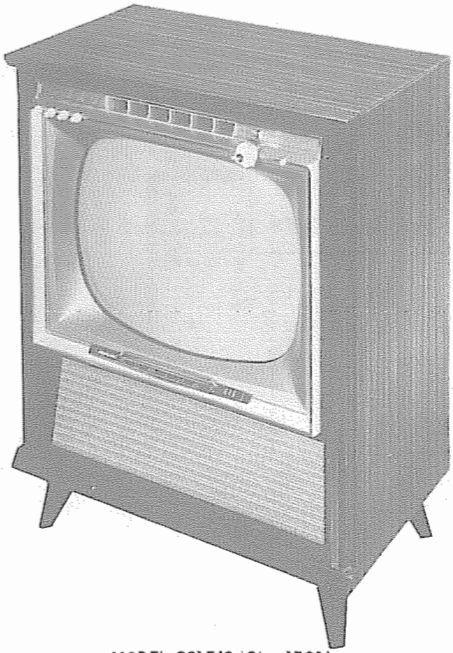




ADMIRAL CHASSIS 17AC1,
17AG1, 17C1, B, 17G1, B



MODEL C21F42 (Ch. 17G1)

ADMIRAL CHASSIS 17AC1,
17AG1, 17C1, B, 17G1, B

ADMIRAL CHASSIS 17AC1,
17AG1, 17C1, B, 17G1, B

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Release 9 spring clips and remove the rear cover.
2. Remove speaker leads.
3. Remove 4 metal screws from the 2 side chassis rails.
4. Remove 1 chassis bolt from the bottom bracket.
5. Remove the chassis from the front of the cabinet.

TRADE NAME	Admiral	MODELS	CHASSIS
		TA21F32, TA21F33	17AC1
		BA21F1, CA21F42, CA21F43	17AG1
		T21F32, T21F33	17C1
			17C1B
		B121F1, C21F42, C21F43, C21F46, C21F48	17G1
			17G1B
MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago 47, Illinois		
TYPE SET	Television Receiver		
TUBES	Seventeen		
POWER SUPPLY	110-120 Volts AC, 60 Cycle		
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)		
		RATING	200 Watts, 1.8 Amp. @ 117 Volts AC

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 from the lowest to the highest channel operating in the area. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

Remove bottom name plate with a non-metallic tool. Remove 2 screws from bracket at bottom of safety glass. Tilt glass out at the bottom and lower to remove.

SPECIAL ADJUSTMENTS

A. Super Range Finder
Tune in the strongest TV station operating in the area. Adjust controls for a normal picture. Turn the super range finder control fully counter clockwise, then clockwise approximately 1/2 turn. If picture becomes unstable, back off the control setting until stable. Check operation on all channels in the area.

B. Focus
The focus may be varied in steps by the position of a plug in the focus adjustment board.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

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

FUSES

One fuse is used for LV power supply protection. (For location, see tube placement chart.)

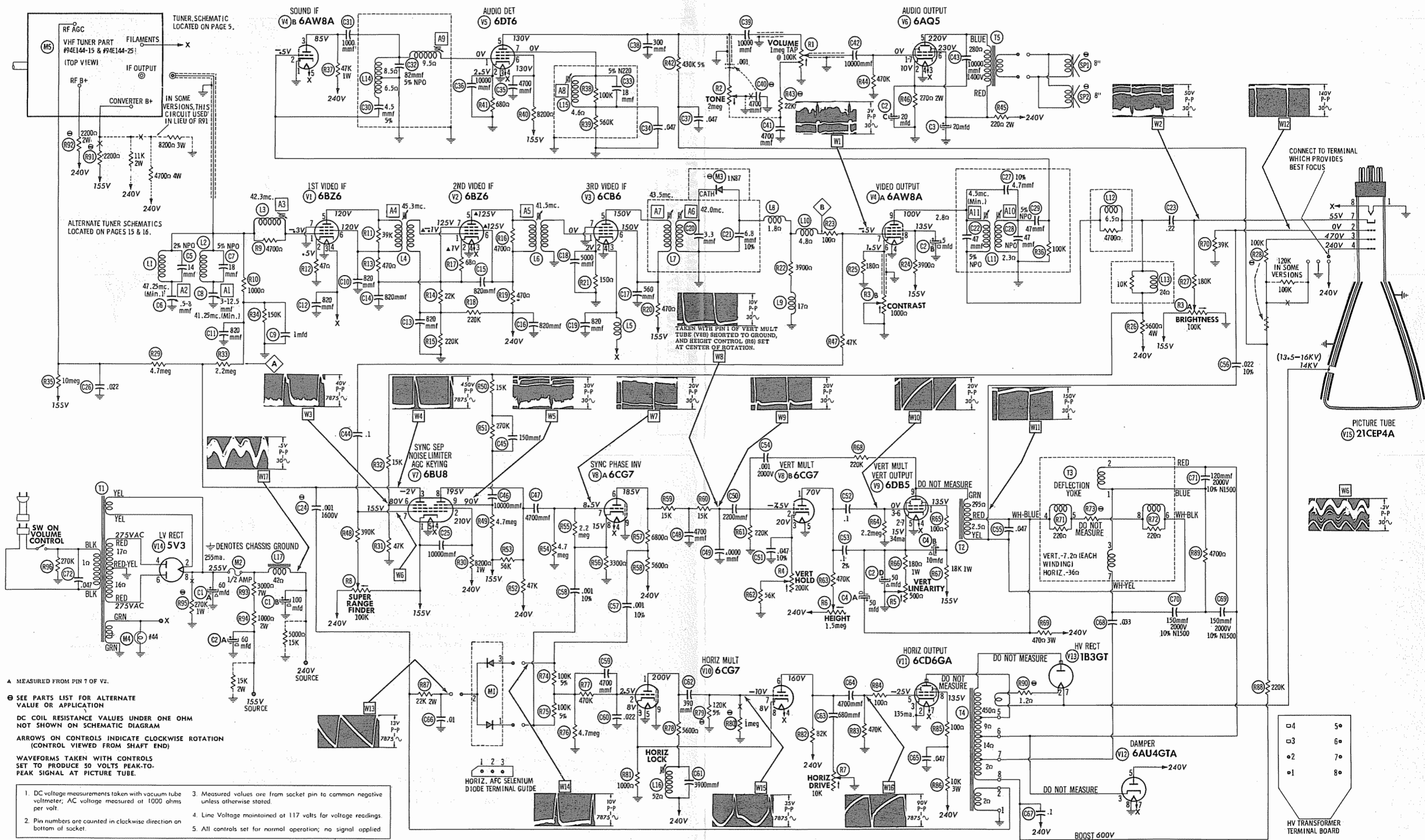
CENTERING

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.

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 H438

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A PHOTOFAC STANDARD NOTATION SCHEMATIC
Howard W. Sams & Co., Inc. 1958

ADMIRAL CHASSIS 17A1,
17G1, 17C1, B, 17G1, B

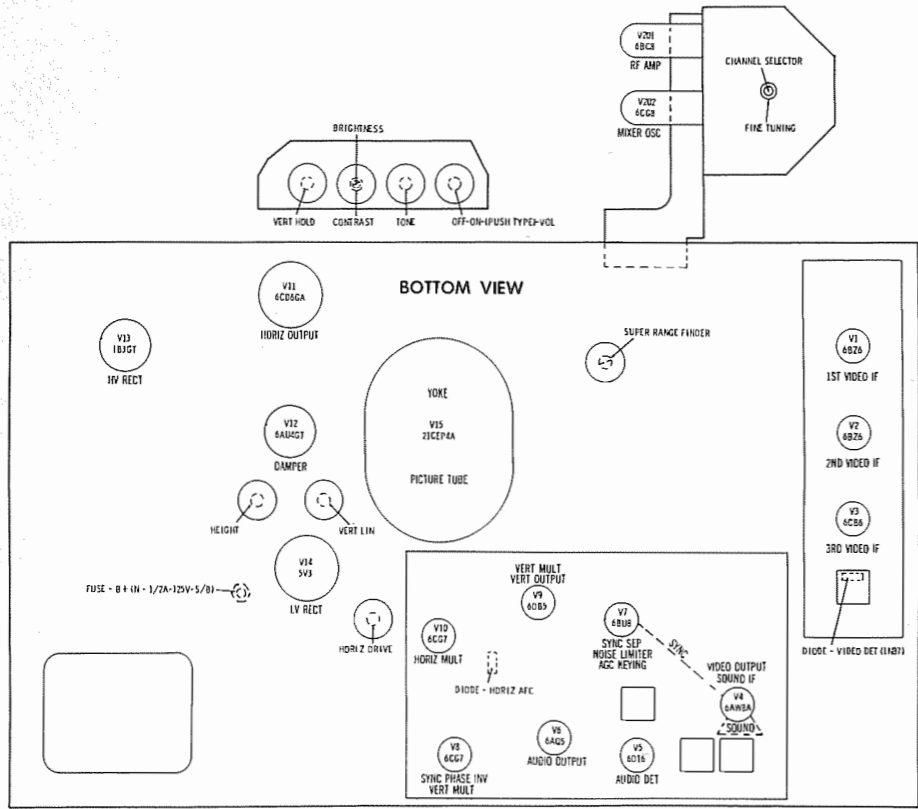
ADMIRAL CHASSIS 17A1,
17G1, 17C1, B, 17G1, B

FOLDER 1

RESISTANCE MEASUREMENTS

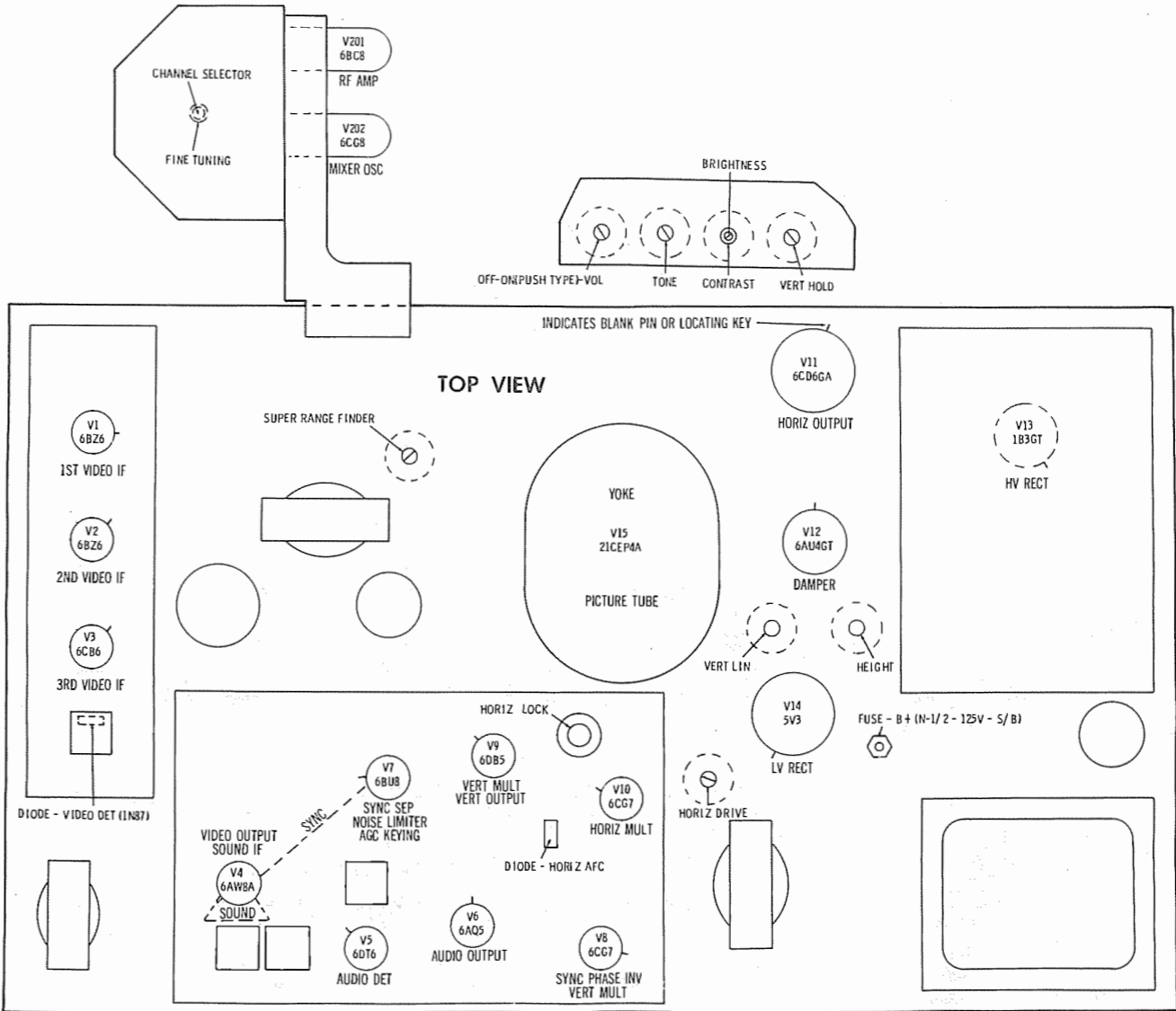
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	150K	47Ω	0Ω	.1Ω	Δ 470Ω	Δ 470Ω	0Ω		
V2	6BZ6	Δ 22K	Δ 68Ω	.1Ω	0Ω	† 470Ω	† 470Ω	130K		
V3	6CB6	.1Ω	150Ω	.1Ω	0Ω	† 4500Ω	† 4500Ω	0Ω		
V4	6AW8A	0Ω	100K	† 47K	0Ω	.1Ω	◊ 25Ω	4000Ω	† 7900Ω	† 5600Ω
V5	6DT6	15Ω	680Ω	0Ω	.1Ω	† 650K	† 12K	560K		
V6	6AQ5	470K	270Ω	.1Ω	0Ω	† 500Ω	† 220Ω	470K		
V7	6BU8	† 4000Ω	† 8200Ω	1.7meg	.1Ω	0Ω	† 14K	† 390K	† 23K	† 4.7meg
V8	6CG7	◊ † 1.3meg	220K	◊ 100K	.1Ω	0Ω	† 12K	1.4meg	3300Ω	0Ω
V9	6DB5	† 18K	◊ 220Ω	2.2meg	.1Ω	0Ω	2.2meg	◊ 220Ω	NC	† 750Ω
V10	6CG7	† 5600Ω	530K	1000Ω	.1Ω	0Ω	† 82K	100K	1000Ω	0Ω
V11	6CD6GA	TP	0Ω	0Ω	NC	470K	TP	.1Ω	† 10K	TOP CAP † 9Ω
V12	6AU4GT	NC	NC	1NF	NC	† 42Ω	NC	.1Ω	0Ω	
V13	1B3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP † 459Ω
V14	5V3	NC	9	NC	17Ω	NC	16Ω	NC	9	
V15	2ICEP4A	0Ω	39K	† 320K	† 0Ω	NC	NC	◊ 200K	.1Ω	
V201	6BC8	† 2200Ω	350K	1NF	.1Ω	0Ω	1NF	7meg	0Ω	0Ω
V202	6CG8	10K	† 12K	0Ω	0Ω	.1Ω	† 7200Ω	† 6200Ω	0Ω	1meg

THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
MEASURED FROM PIN 7 OF V2.
MEASURED FROM PIN 8 OF V14.
MEASURED FROM PIN 3 OF V12.
NC NO CONNECTION.
TP TIE POINT.



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



ADMIRAL CHASSIS 17AC1,
17AG1, 17CI, B, 17G1, B

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 - Fuse (M2), V14
- LOSS OF PICTURE OR SOUND**
No pic, no sound, has raster - V1, V2, V3, Diode (M3), V4
No pic, no sound, has snow - V201, V202, V1
No pic, has sound, has raster - V4, V15
Has pic, no sound - V4, V5, V6
Overloaded picture - V7
- SYNC FAILURE**
No vert. sync - V7, V8
No horiz. sync - V7, V8, Rectifier (M1)
No vert. or horiz. sync - V7, V8
- SWEEP FAILURE**
No raster, has sound - M1, V10, V11, V12, V13, V15
No vertical deflection - V8, V9
Poor vert. linearity or foldover - V8, V9
Poor horiz. linearity or foldover - V10, V11, V12
Narrow picture - V10, V11, V12
Vert. off freq. - V8, V9
Horiz. off freq. - V10

FOLDER 1

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

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

Remove the mixer-osc. tube (V202) and replace with one having the oscillator grid pin removed.
Disconnect the antenna and connect a short across the terminals.
Turn the contrast control fully counter clockwise.
Connect the negative lead of a 3 volt bias supply to point A. Positive to chassis.
For steps 1 and 2 use a high signal generator output but for other steps, use only enough generator output to provide usable indication on the VTVM. Use lowest scale on VTVM.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	High side to ungrounded tube shield floating over mixer-osc. tube (V202). Low side to chassis.	41.25MC (Unmod)	Any non-interfering channel	DC probe thru 10K to point A. Common to chassis. (Across video det. load).	A1	Adjust for MINIMUM deflection.
2. "	"	47.25MC	"	"	A2	"
3. "	"	42.3MC	"	"	A3	Adjust for maximum deflection.
4. "	"	45.3MC	"	"	Mixer Plate Coil	"
5. "	"	45.3MC	"	"	A4	"
6. "	"	41.5MC	"	"	A5	"
7. "	"	42.0MC	"	"	A6	"
8. "	"	43.5MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Use only enough sweep generator output to provide a usable pattern on scope.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9. Direct	High side to ungrounded tube shield floating over mixer-osc. tube (V202). Low side to chassis.	44.0MC (10MC Swp)	41.25MC 42.5MC 45.75MC 47.25MC	Any non-interfering channel	Vert. Amp. thru 10K to point A. Low side to chassis.		Check for response similar to Fig. 1. If necessary, SLIGHTLY retouch A3 thru A7 for desired response.

SOUND IF ALIGNMENT

- Turn the set on and tune in the strongest TV station signal in the area. Set all controls for normal operation.
- Using a non-metallic hexagonal alignment tool, turn A8 very slowly clockwise until a buzz is heard in the sound. Then turn counter clockwise until loudest and clearest sound is heard. There may be two points at which the sound is loud, (approximately 1/2 turn apart). The slug should be set at the center of the second point of loud sound as the slug is turned clockwise.
- Using an attenuator or similar device, reduce the signal strength until a considerable amount of hiss is heard in the sound similar to super regeneration. The signal may also be reduced by disconnecting the antenna lead and placing it near the terminals.
- Carefully adjust A9 for maximum undistorted sound and MINIMUM hiss. If the hiss disappears during alignment, further reduce the signal level until the hiss returns.
- Carefully adjust A10 for maximum undistorted sound and MINIMUM hiss. No further adjustment of the sound IF section should be necessary if this alignment has been carefully made. However, if the sound is still distorted and noisy, repeat the entire alignment procedure.

4.5MC TRAP ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10. .01mfd	High side to point A. Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	AC probe to pin 7 (cathode) of picture tube. Common to chassis.	All	Adjust for MINIMUM deflection.

4.5MC TRAP ALIGNMENT USING ON THE AIR SIGNAL

Tune in a strong station and adjust the fine tuning until a beat pattern appears in the picture. Adjust All for MINIMUM beat pattern while observing the picture.

TUNER ALIGNMENT INSTRUCTIONS LOCATED ON PAGE 6.

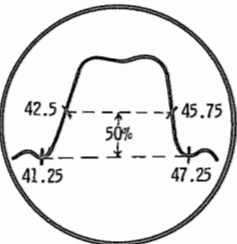
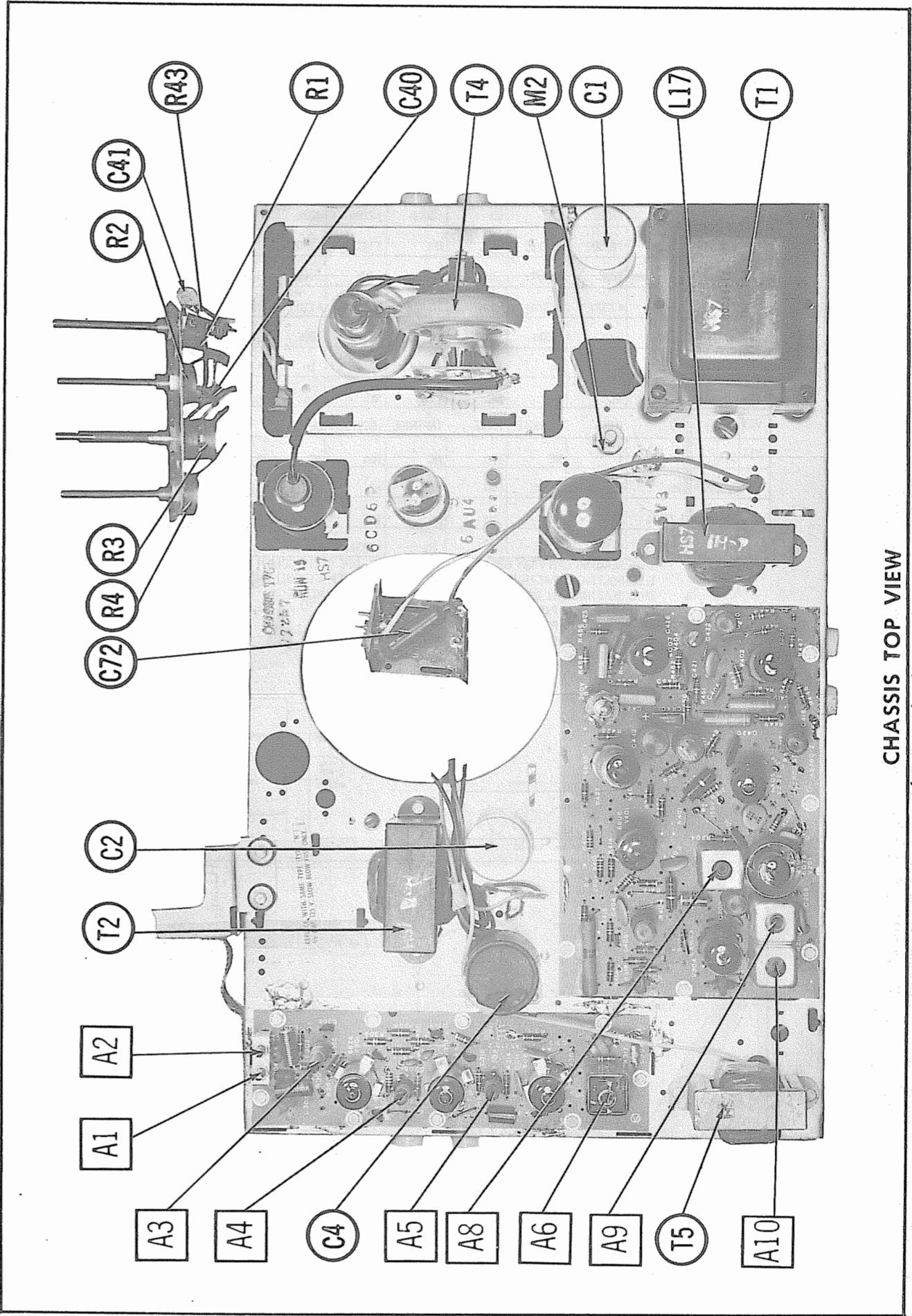


FIG. 1



TUNER PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES	ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	6BC8		V202	Mixer-Osc.	6CG8	

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 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.	
C201	120		65D10-136							N1500 10% N750 10% N750 10% NPO 5%
C202	22		65D10-134	N750-DI 22	TCN-22	C10Q22U	TC7-22		5TCU-Q22	
C203	15		65D10-135	N750-DI 15	TCN-15	C10Q15U	TC7-15		5TCU-Q15	
C204	8.2		65D10-131	NPO-SI 8.2		C10V82C	TCO-8.2			
C205	1000		65B28-5	EF-001	MFT-1000				503C-DI	
C206	3		65B28-030	NPO-SI 3.0		C10V3C	TCO-3.0			10%
C207	2.2		65D10-27	NPO-SI 2.2	TCZ-2R2	C10V22C	TCO-2.2		5TCCB-V22	10%
C208	1000		65B28-5	EF-001	MFT-1000				503C-DI	
C209	1000		65B28-5	EF-001	MFT-1000				503C-DI	
C210	1000		65B28-5	EF-001	MFT-1000				503C-DI	
C211	1.5		65B28-015	NPO-SI 1.5	TCZ-1R5	C10V15C	TCO-1.5	ZT-5515	5TCCB-V15	10%
C212	.5-3		66A38-8		829-3		3115-D	CT565A		N1400 5%
C213	47		65D10-73							
C214	.5-3		66A38-8							
C215	1000		65B28-5	EF-001	MFT-1000				503C-DI	
C216	1000		65B28-5	BPD-001	DD-102	BYA6DI	ED-1000	DC521	5HK-DI	
C217	10		85D10-160							N2200 5% 10%
C218	1		65B28-010							
C219	1000			BPD-001	DD-102	BYA6DI	ED-1000	DC521	5HK-DI	

RESISTORS

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

ITEM No.	RATING		ADMIRAL PART No.	NOTES	ITEM No.	RATING		ADMIRAL PART No.	NOTES
	OHMS	WATT				OHMS	WATT		
R201	3900Ω		60B8-392		R206	1meg		60B8-105	
R202	33Ω		60B8-330		R207	1000Ω		60B8-102	
R203	820K		60B8-824		R208	10K		60B8-103	Note 1
R204	560K		60B8-564		R209	10K		60B8-103	
R205	10K		60B8-103						

Note 1. Some versions may use 22K (Part #60B8-223) in this application.

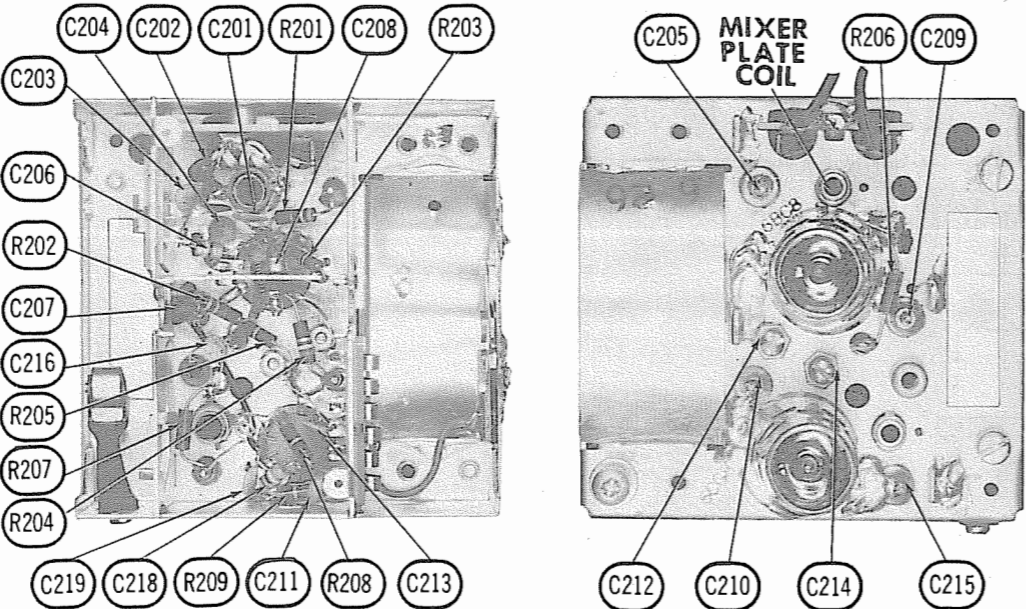
VHF OSCILLATOR ALIGNMENT

TUNER ALIGNMENT INSTRUCTIONS

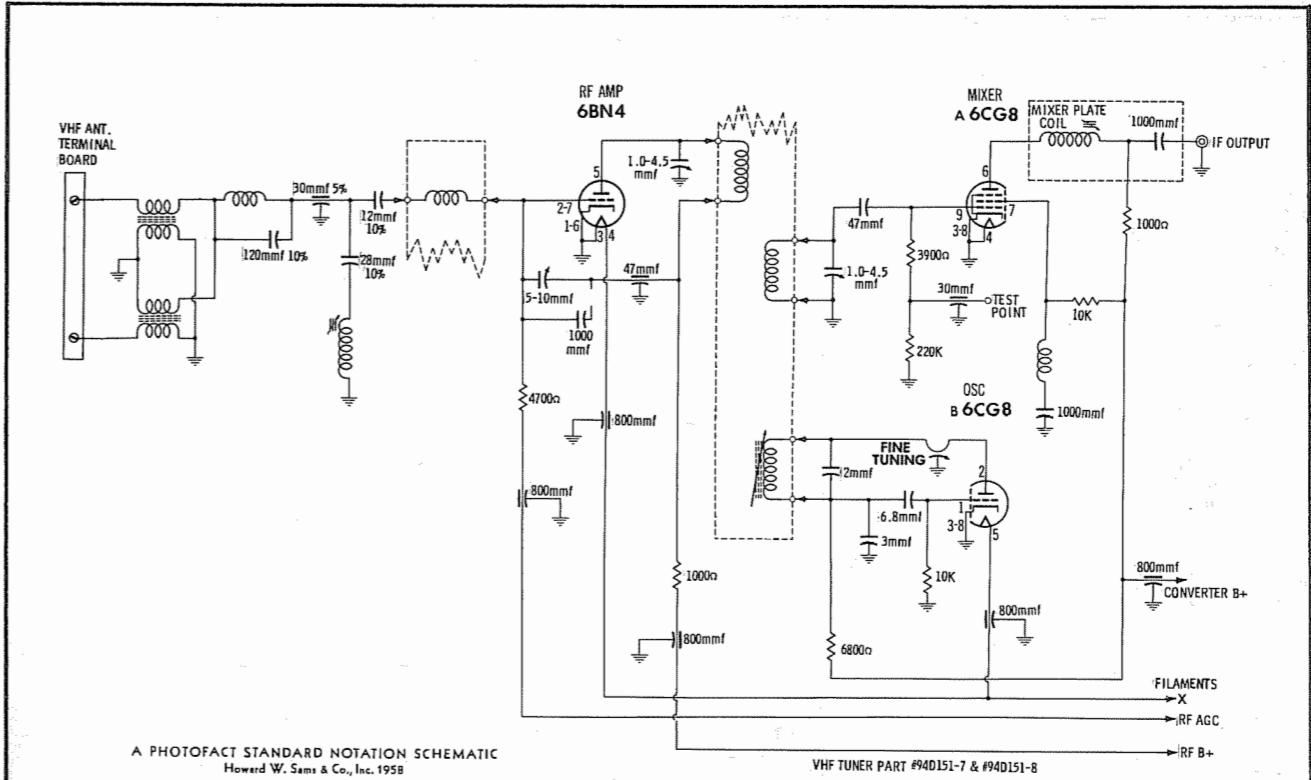
- Turn the set on and allow 15 to 20 minutes warm-up period.
1. Set channel selector to the lowest channel operating in the area.
 2. Set the fine tuning to the center of its range by turning two turns either way, then back 1/4 turn.
 3. Set other controls for normal picture and sound.
 4. Using a 1/8" non-metallic alignment tool, carefully adjust the oscillator slug for best picture and sound. NOTE: This is not necessarily the point of loudest sound. If two slugs are visible at the front of the tuner, adjust the one nearest the top of the tuner chassis. Repeat this procedure for the remaining stations, adjusting them in order of the channel number from the lowest to the highest.

RF AND MIXER ALIGNMENT

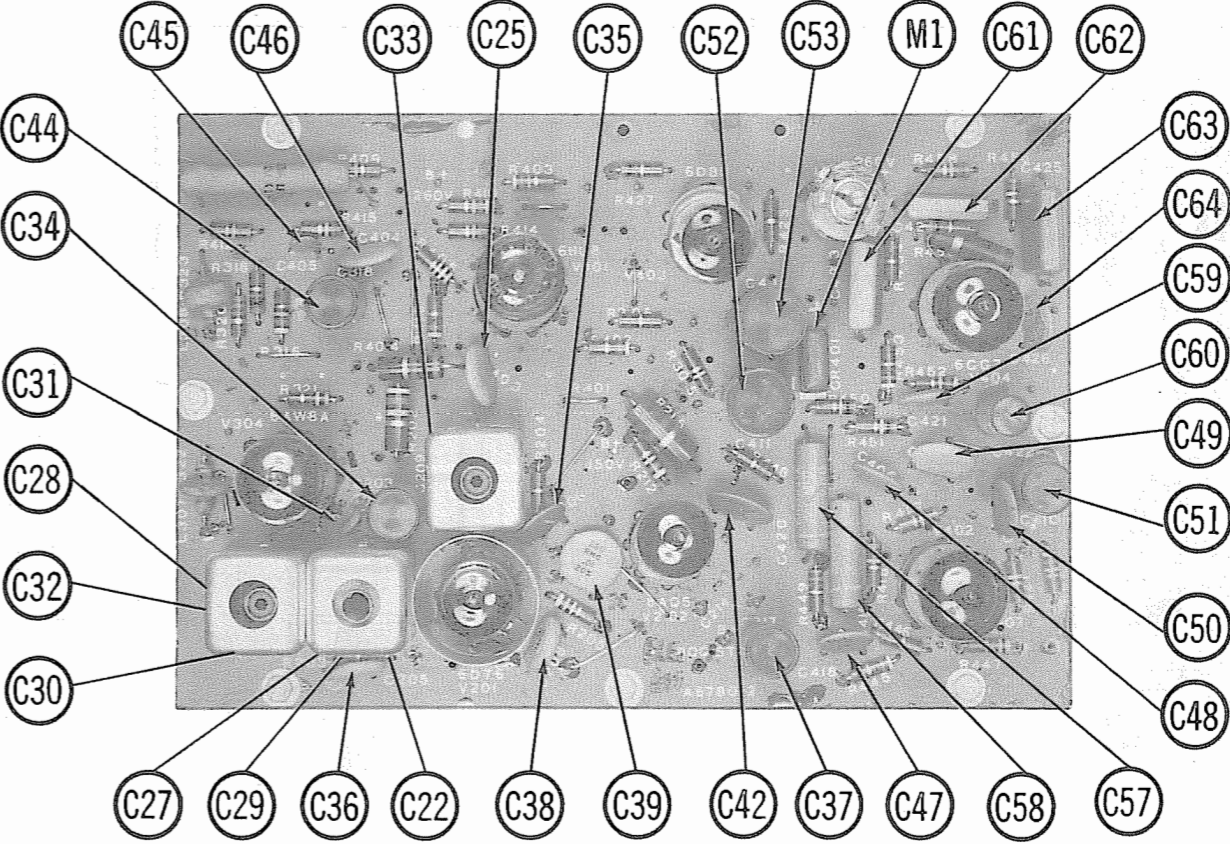
This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



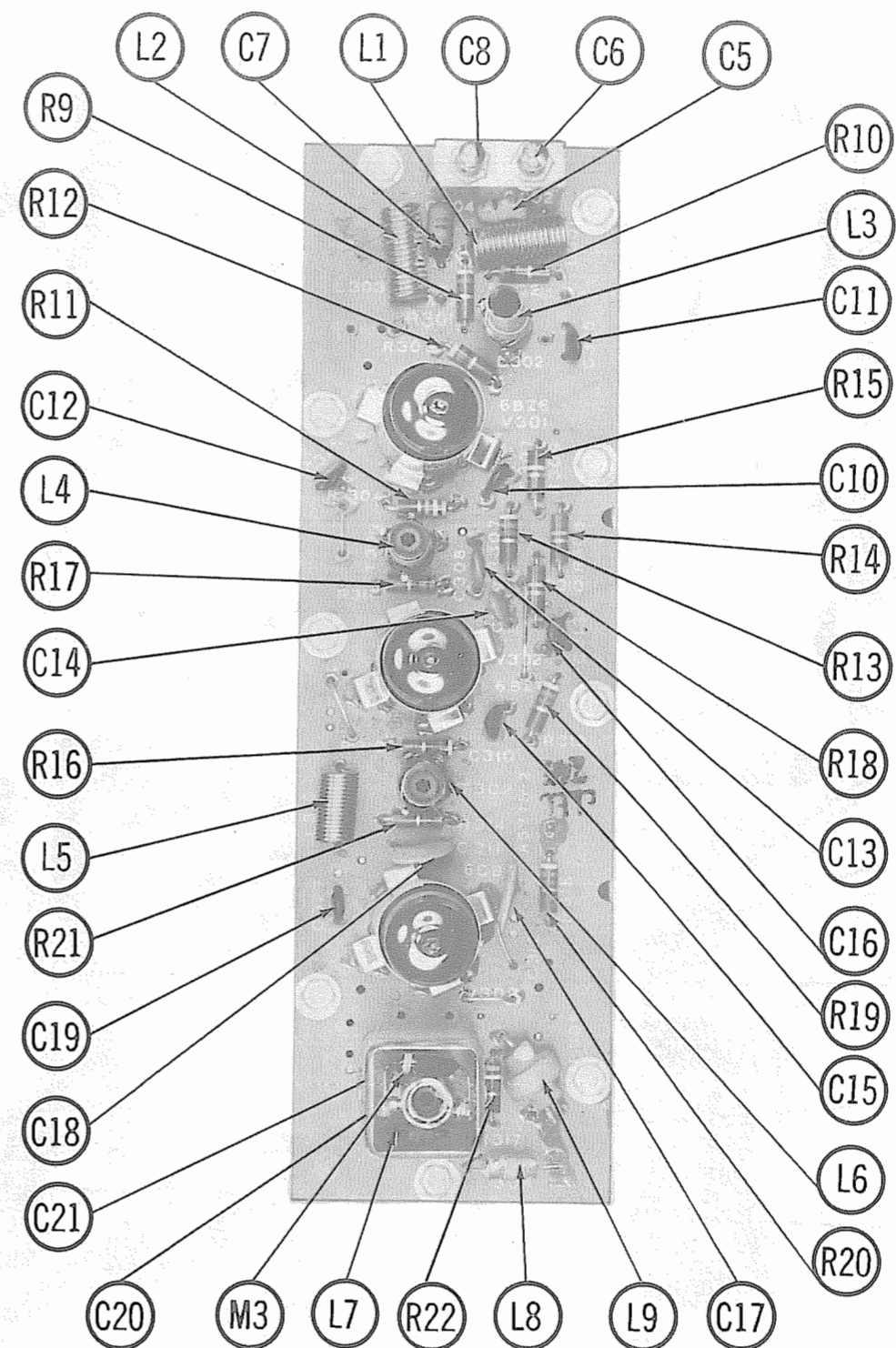
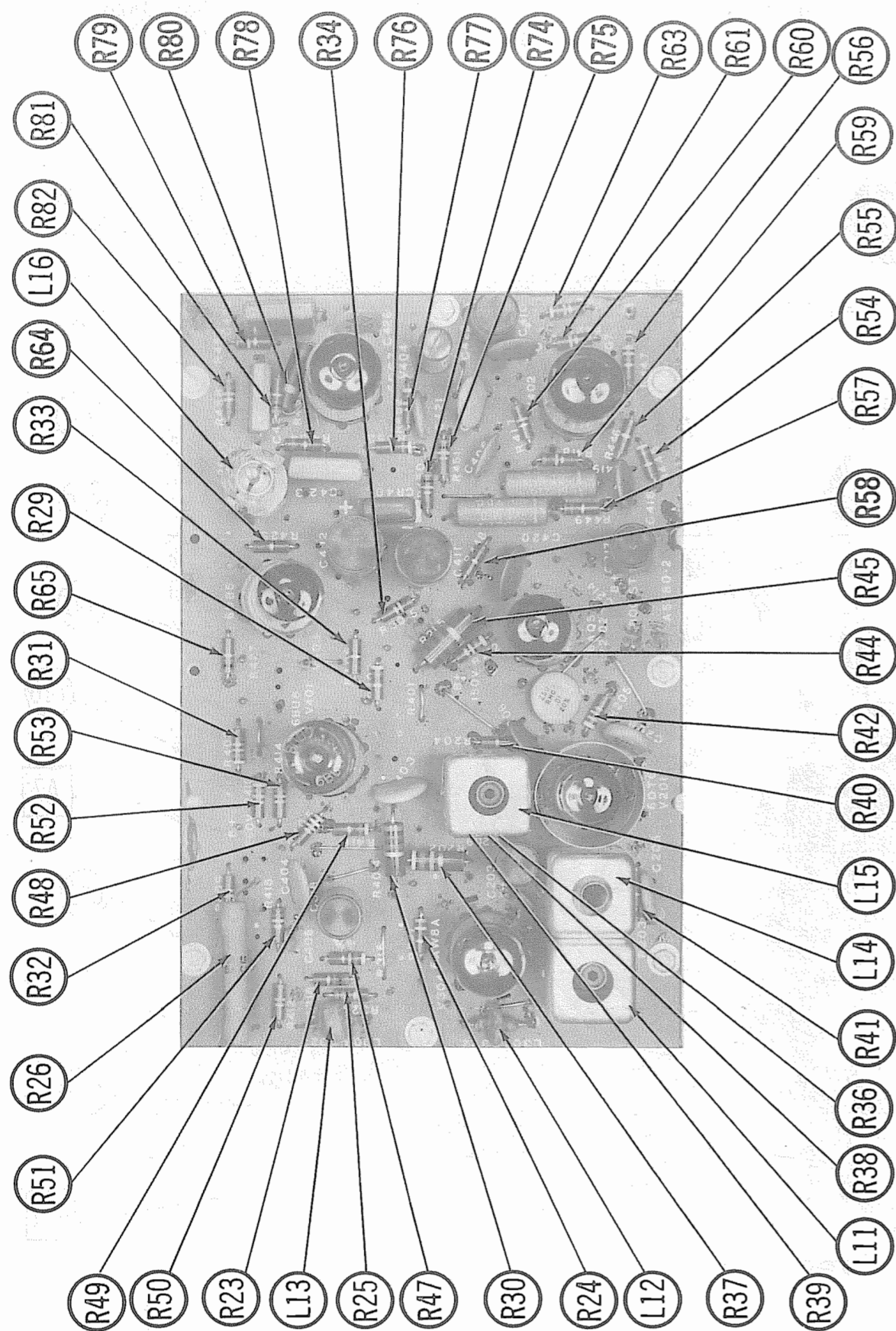
RF TUNER



ALTERNATE VHF TUNER SCHEMATIC



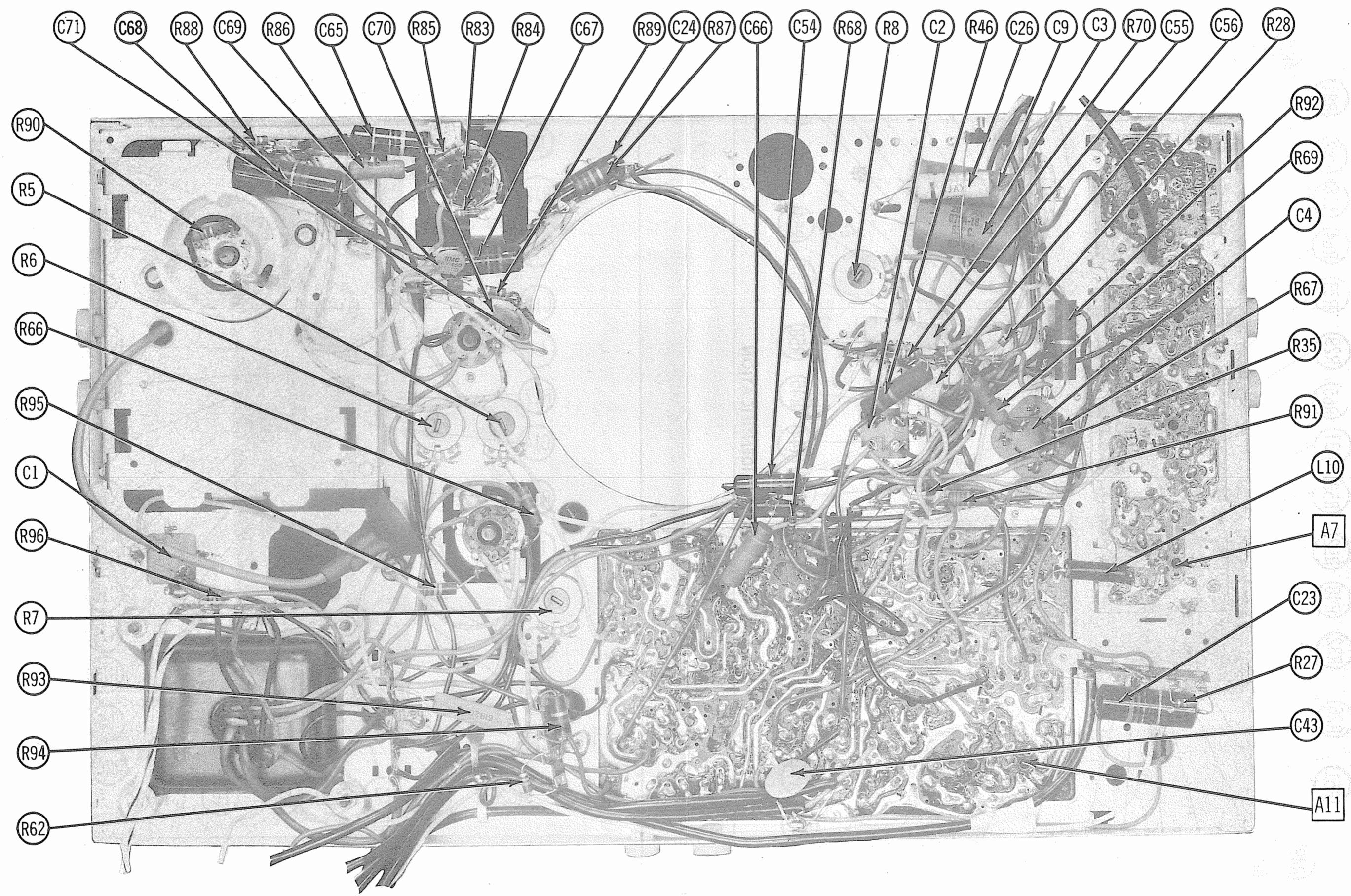
CAPACITOR IDENTIFICATION



VIDEO IF—PRINTED BOARD
SET 397 FOLDER 1

ADMIRAL CHASSIS 17AG1,
17AG1, 17C1, B, 17G1, B

FOLDER 1



CHASSIS-BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS (Continued)
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		ADMIRAL PART No.	CBS PART No.	SYLVANIA PART No.	
M3	1N87 *	1N87	1N60	1N60	Video Detector (Pigtail)

* A 1N295 or 1N60 may be used in some versions.

MISCELLANEOUS

ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M4	Lamp	81A1-5	#44
M5	Tuner	94E144-25	VHF Chassis 17C1, 17G1
	Tuner	94E144-15	VHF Chassis 17C1, 17G1
	Tuner	94D151-7	VHF Chassis 17C1B, 17G1B
	Tuner	94D151-8	VHF Chassis 17C1B, 17G1B
	Tuner	94E144-11	UHF-VHF Chassis 17AC1, 17AG1
	Tuner	94E144-23	UHF-VHF Chassis 17AC1, 17AG1
M6	Tuner	94D112-3	UHF Chassis 17AC1, 17AG1
	Centering Device	94C148-1	Includes yoke rear cover

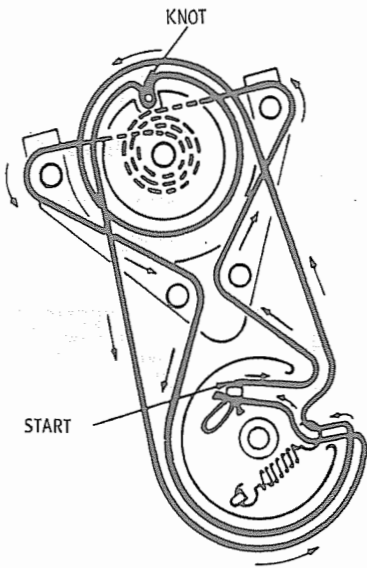
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

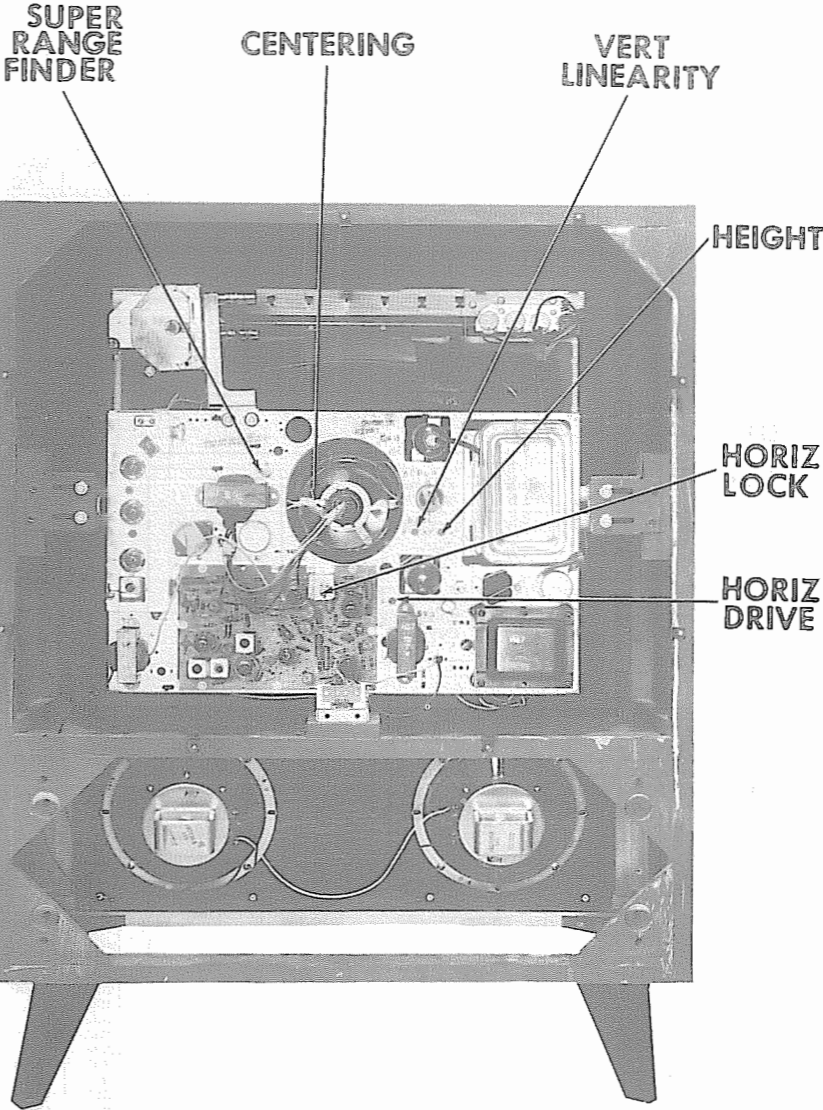
NAME	PART NO.	DESCRIPTION
Safety Glass	21D96-2	Models T21F32, 33, TA21F32, 33
Safety Glass	21D97-2	Models C21F42, 43, CA21F42, 43
Mask	23E285-2	Models T21F32, 33, TA21F32, 33
Mask	23E286-6	Models C21F42, 43, CA21F42, 43
Knob	33D231-4	VHF Channel Selector - Models T21F32, 33
Knob	33D231-10	VHF Channel Selector - Models C21F42, 43, CA21F42, 43
Knob	33D231-2	VHF Channel Selector - Models TA21F32, 33
Knob	33D231-8	Fine Tuning - Models T21F32, 33, TA21F32, 33
Knob	33D231-16	Fine Tuning - Models C21F42, 43, CA21F42, 43
UHF Dial	33D199-46	Models TA21F32, 33
UHF Dial	33C257-3	Models CA21F42, 43
Knob	33C230-5	Brightness
Knob	33C230-2	On-Off-Volume, Contrast
Knob	33C230-3	Tone, Vertical
Cabinet	34E123-2	Models T21F32, TA21F32
Cabinet	34E123-3	Models T21F33, TA21F33
Cabinet	35E399-2	Models C21F42, CA21F42
Cabinet	35E399-3	Models CA21F43, CA21F43

WIRING DATA

High Voltage Lead	Use BELDEN No. 8869
Shielded Hook-up Wire	Use BELDEN No. 8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No. 8874
300Ω Tuner Input Lead	Use BELDEN No. 8225
300Ω Antenna Lead-in	Use BELDEN No. 8230 or 8275
Antenna Rotor Cable	Use BELDEN No. 8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor



DRIVE CORD



CABINET-REAR VIEW

ADMIRAL CHASSIS 17AC1,
17AG1, 17C1, B, 17G1, B

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 lock 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 lock 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 control (R7) 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.

