

CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a station, preferably with a test pattern.

for best sync on all channels.

Set the Horizontal Hold control at the center of its range and adjust the Horizontal Frequency slug (BI) until the picture synchronizes horizontally.

Turn Horizontal Drive (R6) clockwise until drive lines (bright vertical bars running vertically on the left side of the screen) appear on screen. Slowly turn counterclockwise until drive lines just disappear. If necessary, repeat adjustment of BI.

Check horizontal sync on other channels and if necessary, retouch BI

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 2 screws holding mask at bottom edge. Tilt mask out at bottom and lower to remove.

FUSE DEVICE

A Circuit Breaker is used for low voltage power supply protection, and may be reset by depressing the reset button. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENTS

To touch-up the VHF Oscillator, it is necessary to remove the rear cover.

AGC

The AGC may be varied by means of an AGC control. (For location, see "Tube Placement Chart".)

FOCUS

The focus may be varied by means of a Focus control. (For

location, see "Tube Placement Chart".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

Coarse adjustment of the Horizontal Hold is accomplished by the proper setting of the Horizontal Frequency slug. (For location, see "Tube Placement Chart".)

WIDTH

The width may be varied by adjusting a metallic sleeve, located between the yoke and the picture tube neck, in or out of the yoke.

HORIZONTAL DRIVE

The horizontal drive may be varied by a Horizontal Drive control. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

FOLDER 2
SET 461

SILVERTONE CHASSIS 456.52200, 201,
202, 203, 528.52200, 201, 202, 203

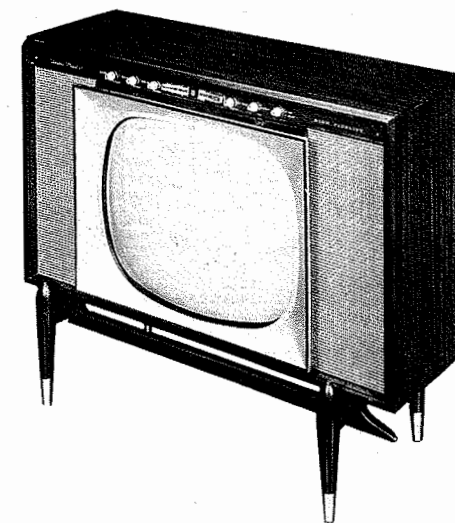
PHOTOFACT* Folder



with CIRCUITRACE*



SILVERTONE CHASSIS 456.52200, 201,
202, 203, 528.52200, 201, 202, 203



MODEL 160 (Ch. 528.52200)

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

Care should be exercised when connecting test equipment or physically contacting chassis. Isolation devices employed by manufacturer should be checked and properly connected before returning receiver to owner.

TRADE NAME	Silvertone	MODELS	CHASSIS
		PC-160, PC-162, PC-164, PC-180, PC-182, PC-184, PC-186	456.52200
			456.52202
		PC-160-5, PC-162-5, PC-164-5, PC-180-5, PC-182-5, PC-184-5, PC-186-5	456.52201
			456.52203
		160, 162, 164, 180, 182, 184, 186	528.52200
			528.52202
		160-5, 162-5, 164-5, 180-5, 182-5, 184-5, 186-5	528.52201
			528.52203

SUPPLIER Sears, Roebuck & Co., 925 S. Homan Avenue, Chicago, Illinois

TYPE SET Television Receiver with Power Tuning

TUBES VHF-Seventeen, UHF-Eighteen

POWER SUPPLY 110-120 Volts AC, 60 Cycle

RATING 175 Watts, 1.8 Amp. @ 117 Volts AC

While Tuning 190 Watts, 2.15 Amp. @ 117 Volts AC

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

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL 160

1. Remove 3 wood screws at top, 1 near AC interlock and loosen 9 other wood screws holding rear cover. Remove tuner antenna leads. Remove rear cover by lifting and pulling straight out.
2. Remove 7 push-on type knobs from the front.
3. Remove 2 wood screws holding AC interlock assembly.
4. Remove speaker leads, yoke plug, picture tube socket, and HV lead.
5. Remove 2 wood screws holding tuner mounting bracket to the cabinet.

6. Remove 2 nuts holding front control bracket and 2 nuts holding the chassis at the bottom.

7. Remove the chassis.

PICTURE TUBE REMOVAL

1. Remove 2 screws holding front mask at bottom edge. Pull mask out at bottom and down to remove. Repeat steps 1 and 4 of "Chassis Removal".
2. Remove 4 picture tube mounting bracket bolts at front of cabinet.
3. Remove picture tube from front.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

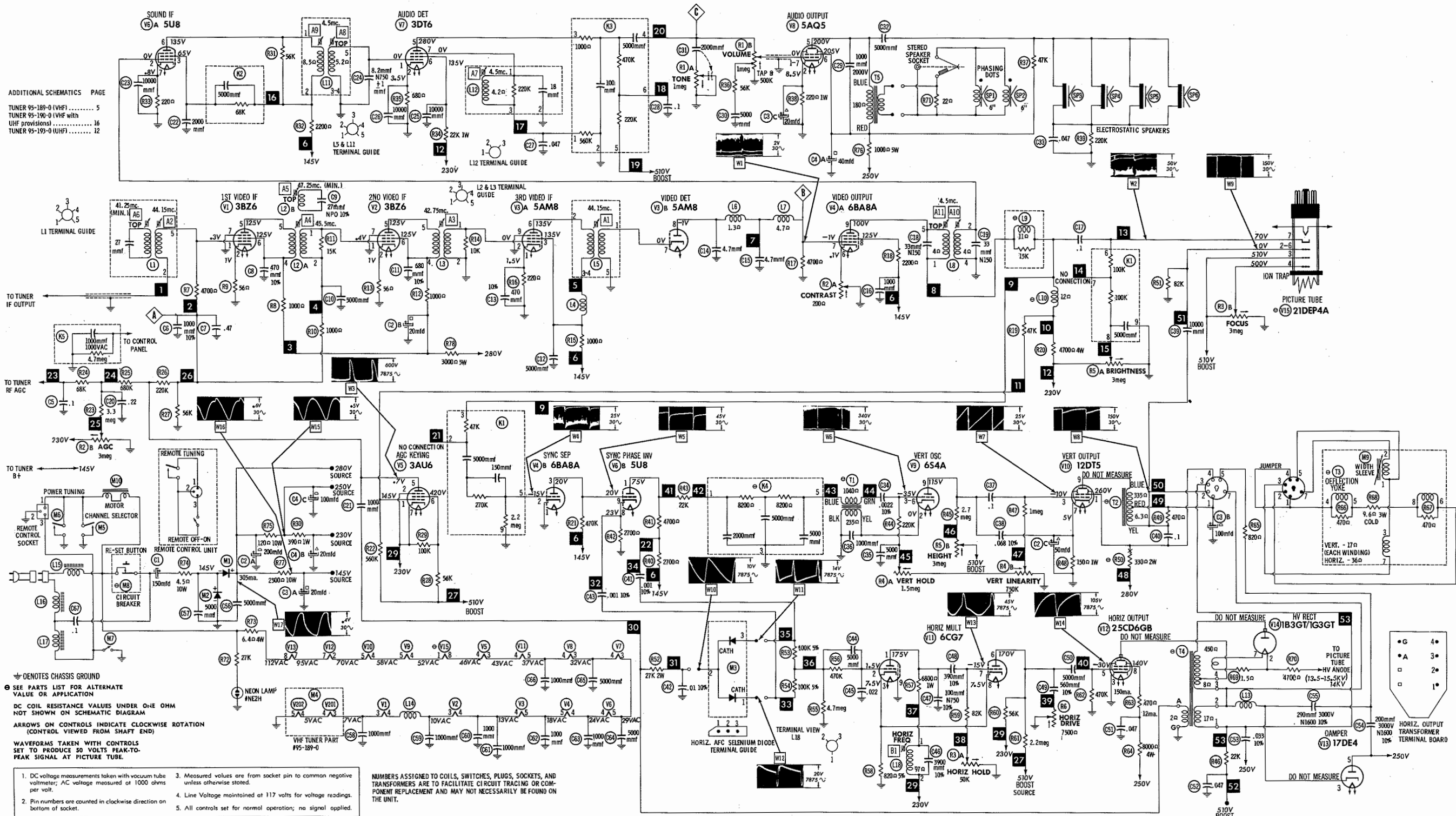
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JA564

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SILVERTONE CHASSIS 456.52200, 201,
202, 203, 528.52200, 201, 202, 203

SET 461 FOLDER 2

ADDITIONAL SCHEMATICS PAGE
 TUNER 95-189-0 (VHF) 5
 TUNER 95-190-0 (VHF with
 UHF provisions) 16
 TUNER 95-191-0 (UHF) 12



⊕ DENOTES CHASSIS GROUND

SEE PARTS LIST FOR ALTERNATE
 VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM
 NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION
 (CONTROL VIEWED FROM SHAFT END)

WAVEFORMS TAKEN WITH CONTROLS
 SET TO PRODUCE 50 VOLTS PEAK-TO-
 PEAK SIGNAL AT PICTURE TUBE

1. DC voltage measurements taken with vacuum tube
 voltmeter; AC voltage measured at 1000 ohms
 per volt.
2. Pin numbers are counted in 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.

NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND
 TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COM-
 PONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON
 THE UNIT.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
 with CIRCUITRACE

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SILVERTONE CHASSIS 456.52200, 201, 202, 203,
 528.52200, 201, 202, 203

SILVERTONE CHASSIS 456.52200, 201, 202, 203,
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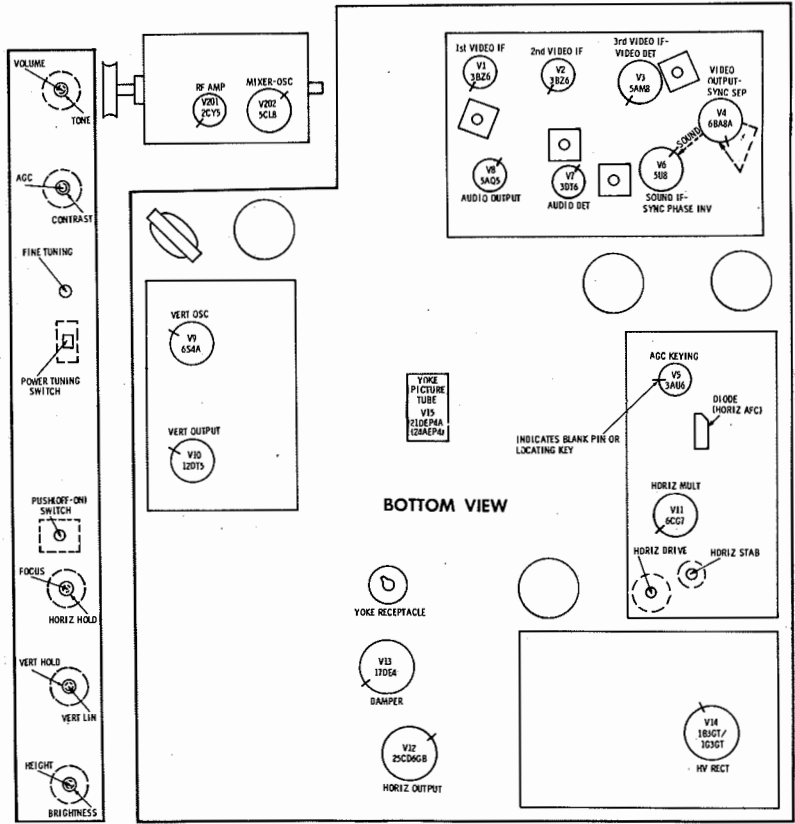
FOLDER 2

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BZ6	61K	56Ω	2Ω	2.5Ω	†4000Ω	†4000Ω	0Ω		
V2	3BZ6	57K	56Ω	2.5Ω	3Ω	†4000Ω	†4000Ω	0Ω		
V3	5AM8	220Ω	.2Ω	†3500Ω	3Ω	4.5Ω	†3500Ω	.1Ω	4700Ω	0Ω
V4	6BA8A	0Ω	2.2meg	†470K	6Ω	4.5Ω	•15Ω	4700Ω	†4700Ω	†5200Ω
V5	3AU6	†53K	†510Ω	11Ω	11.5Ω	275K	†78K	†510Ω		
V6	5U8	†10K	4Ω	†72K	6Ω	7Ω	†4700Ω	220Ω	2700Ω	†470K
V7	3DT6	5.2Ω	680Ω	7Ω	8Ω	†710K	†22K	560K		
V8	5AQ5	0Ω	220Ω	8Ω	9.5Ω	†1300Ω	†1100Ω	0Ω		
V9	6S4A	NC	235Ω	•1.5meg	13Ω	14.5Ω	•1.5meg	NC	NC	•†4.2meg
V10	12DT5	†330Ω	NC	•1.3meg	14.5Ω	16.5Ω	•1.3meg	150Ω	NC	†965Ω
V11	6CG7	†7000Ω	2.8meg	820Ω	11Ω	9.5Ω	†56K	•130K	820Ω	NC
V12	25CD6GB	NC	16.5Ω	0Ω	NC	470K	TP	20Ω	†8600Ω	TOP CAP †8Ω
V13	17DE4	NC	NC	†170K	NC	†120Ω	NC	20Ω	26Ω	
V14	1B3GT/ 1G3GT	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								
V15	21DEP4A	13Ω	82K	†22K	•†50K	NC	82K	•500K	11.5Ω	
V201	2CY5	1meg	0Ω	2Ω	1.5Ω	†4000Ω	†15K	0Ω		
V202	5CL8	15K	†20K	0Ω	1.5Ω	0Ω	†4700Ω	†29K	0Ω	225K

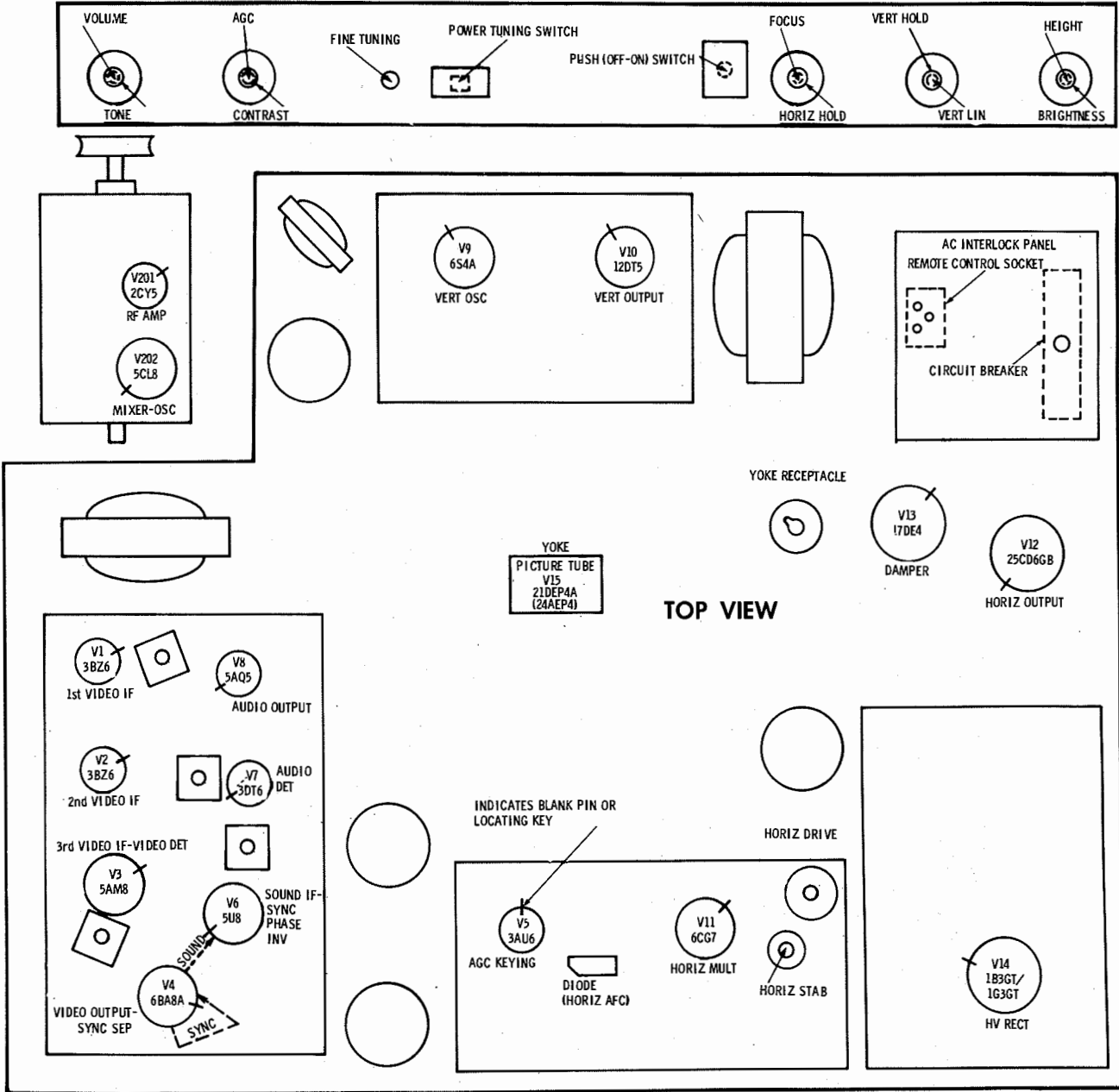
† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 280V SOURCE.
† MEASURED FROM PIN 3 OF V13.

NC NO CONNECTION
TP TIE POINT



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

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

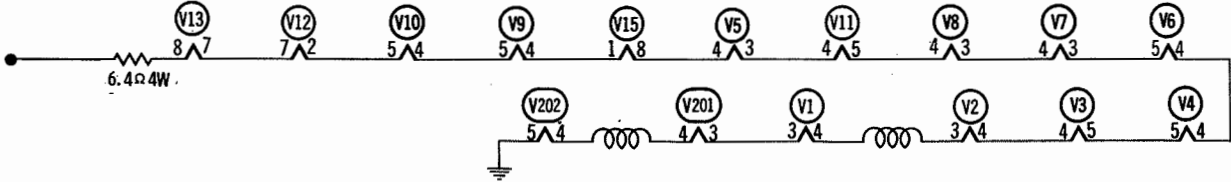
POWER SUPPLY FAILURE
No raster, no sound Circuit Breaker, Rect. (B+)

SWEEP FAILURE
No raster, has sound V1, V2, V3, V4
No vertical deflection V9, V10
Poor vert. linearity or foldover V9, V10
Narrow picture V11, V12, V13, Rect. (B+)
Vert. off freq. V9, V10
Horiz. off freq. Diode (Horiz. AFC), V1

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V3, V4, V15
Has pic, no sound V8, V7, V8
Overloaded picture V5

SYNC FAILURE
No vert. sync V8, V9
No horiz. sync Diode (Horiz. AFC), V1
No vert. or horiz. sync V4, V6

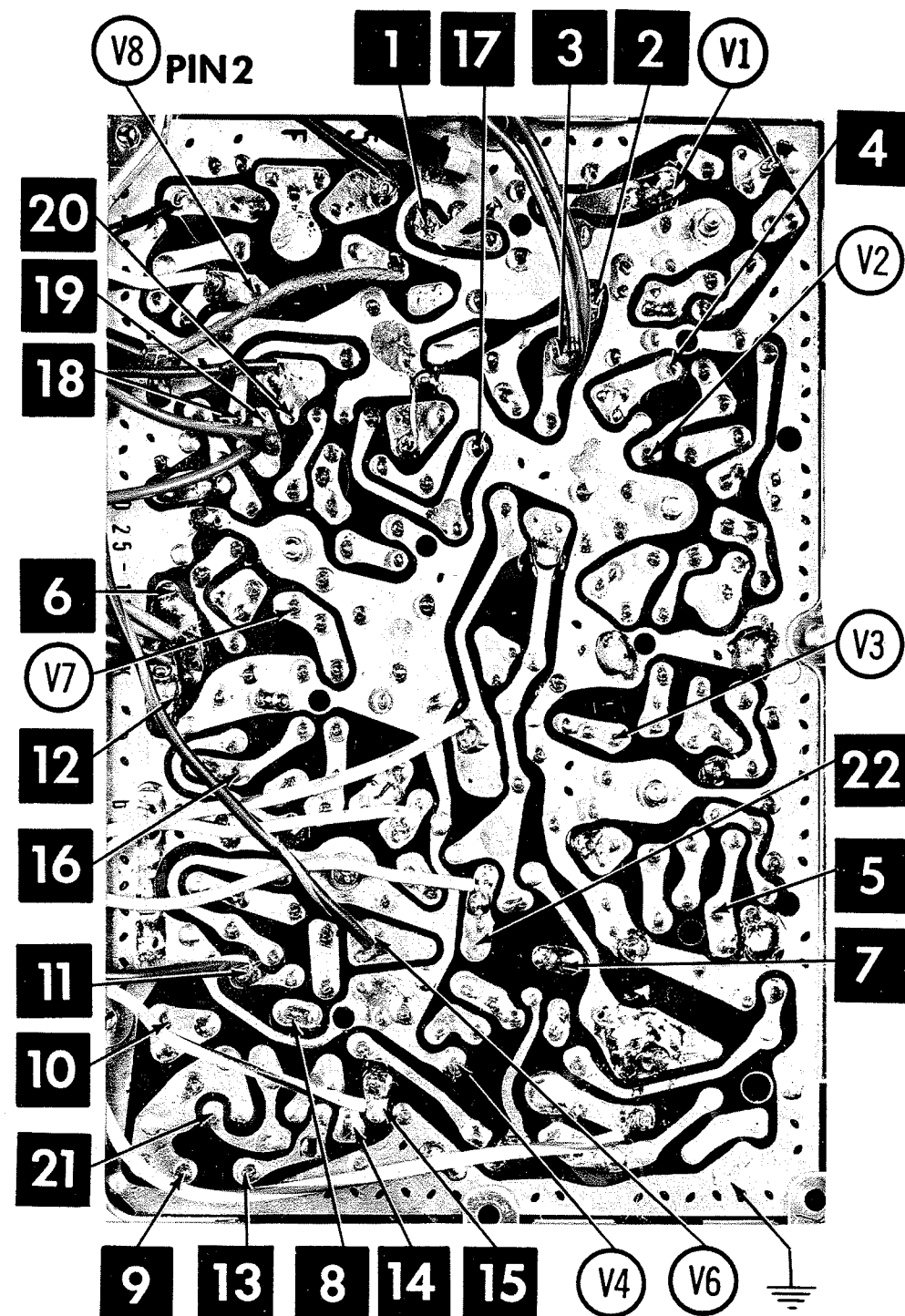
This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)



SILVERTONE CHASSIS 456.52200, 201,
202, 203, 528.52200, 201, 202, 203

FOLDER 2

CircuiTrace Numbers 1 thru 22

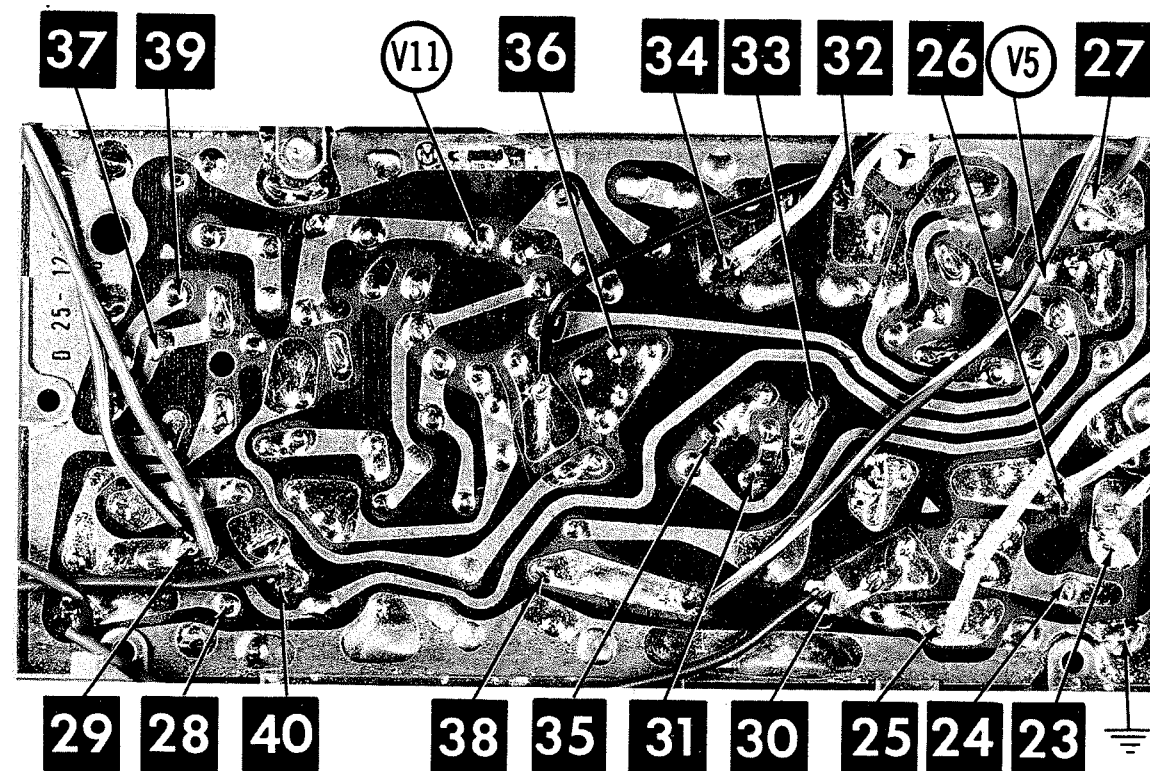


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**MAIN
PRINTED BOARD**

ARROWS INDICATING TUBE LOCATIONS ARE
POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CircuiTrace Numbers 23 thru 40

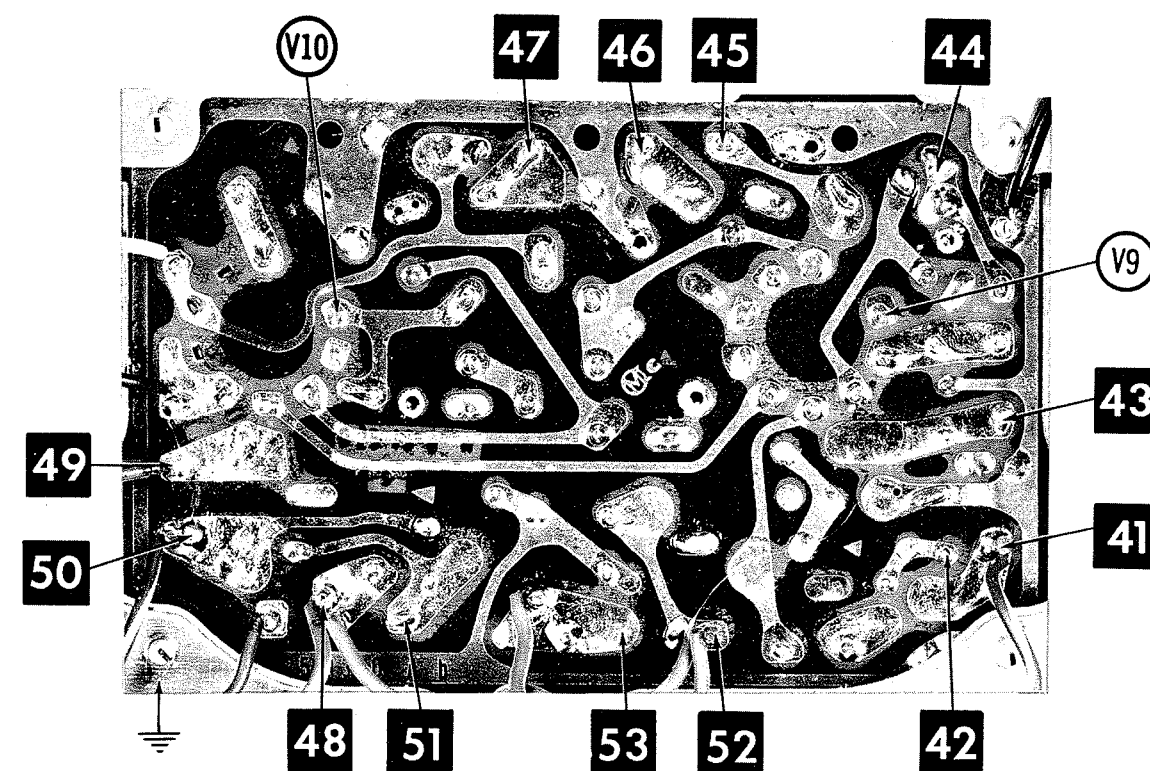


A Howard W. Sams **CIRCUITRACE** Photo

**HORIZONTAL
PRINTED BOARD**

ARROWS INDICATING TUBE LOCATIONS ARE
POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CircuiTrace Numbers 41 thru 53



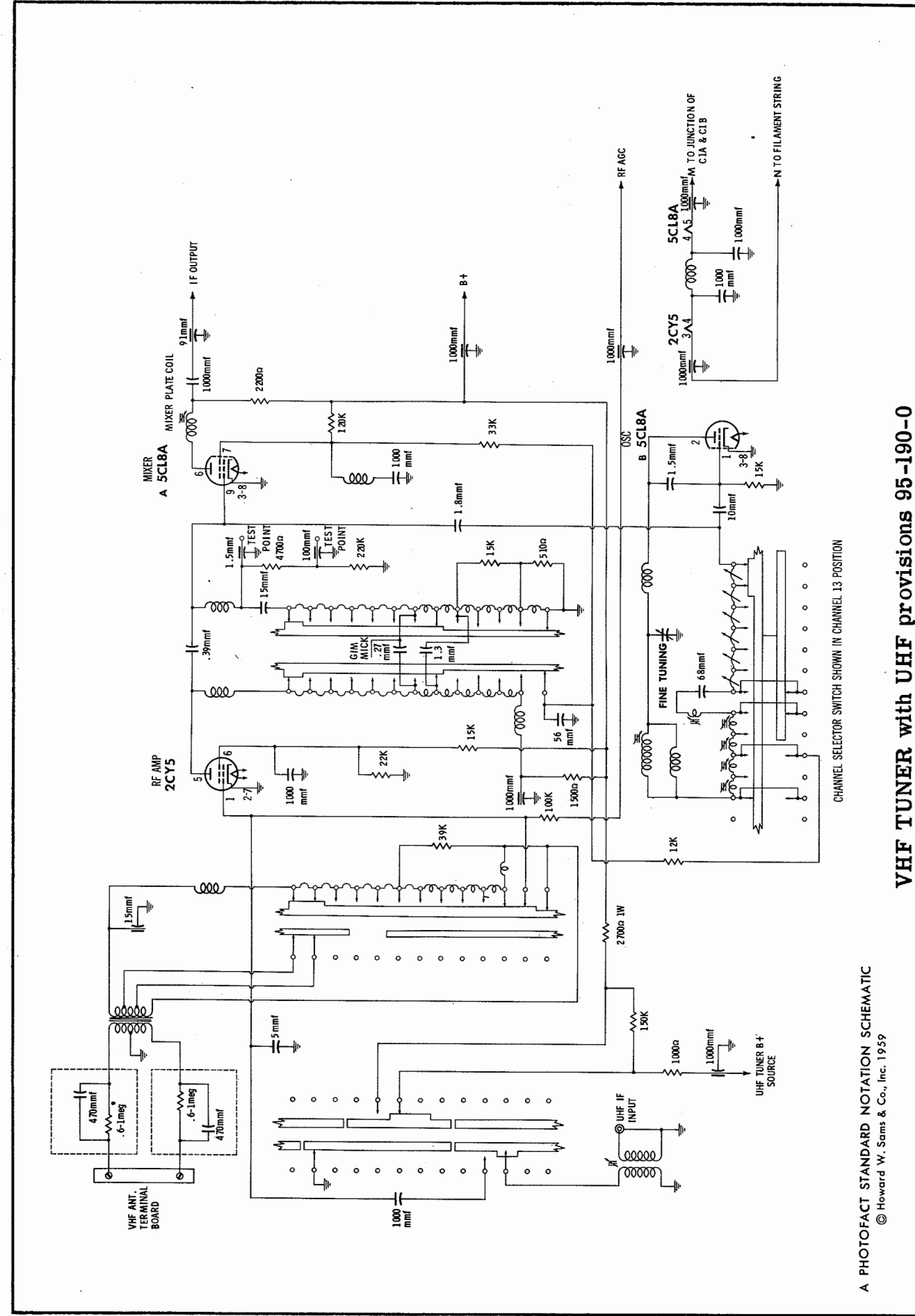
A Howard W. Sams **CIRCUITRACE** Photo

**VERTICAL
PRINTED BOARD**

ARROWS INDICATING TUBE LOCATIONS ARE
POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

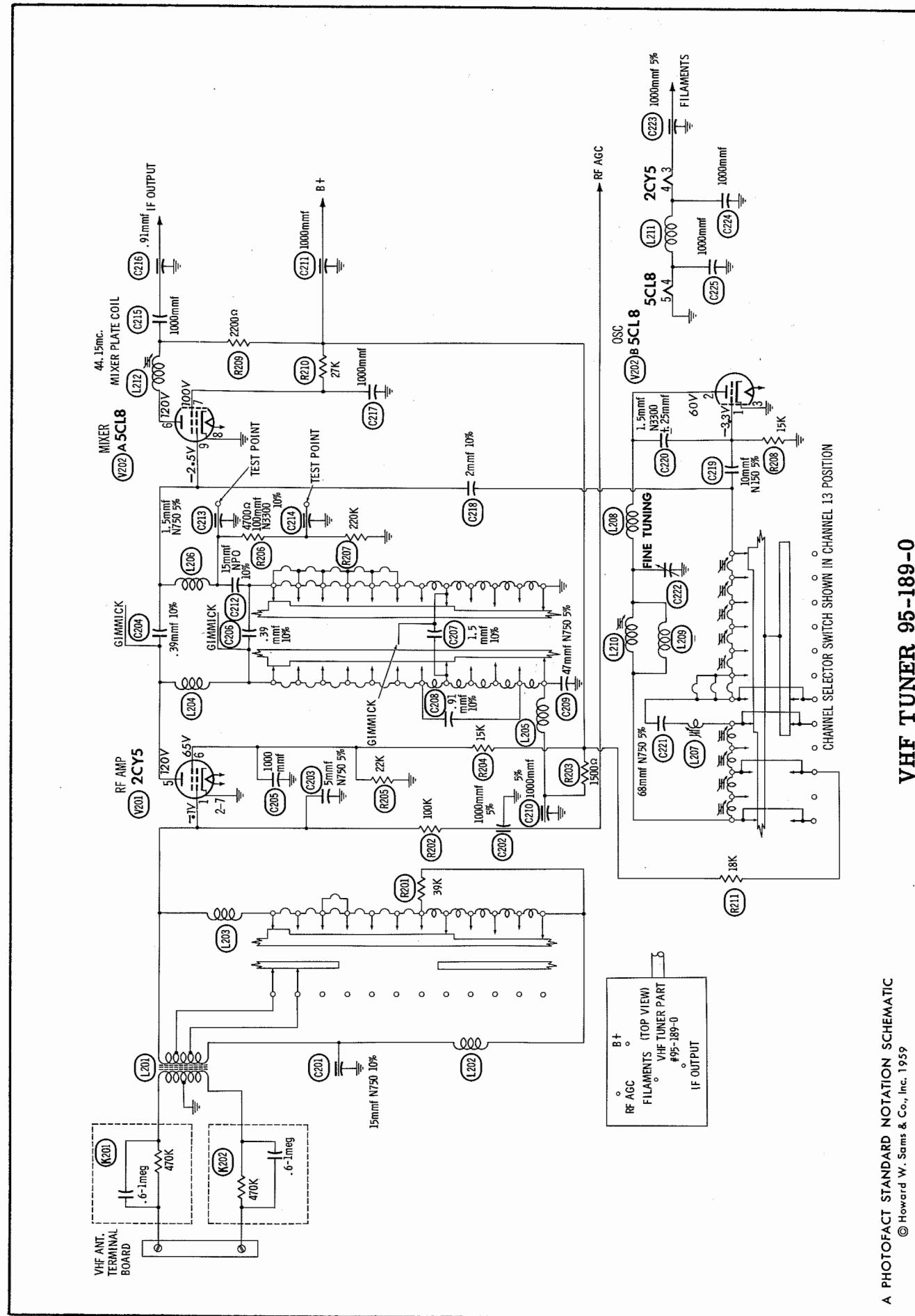
SILVERTONE CHASSIS 456.52200, 201, 202, 203,
528.52200, 201, 202, 203

FOLDER 2



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VHF TUNER with UHF provisions 95-190-0



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SILVERTONE CHASSIS 456.52200, 201, 202, 203, 528.52200, 201, 202, 203

0-681-56 RENU L FHA

TUNER PARTS LIST AND DESCRIPTIONS

95-189-0

TUBES

CBS			GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE		TYPE			ITEM No.	USE		TYPE		
V201	RF Amplifier		2CY5			V202	Mixer-Osc.		5CL8		

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	TOL	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	15		N750 10%	258-150						
C202	1000		5%	244-1						
C203	5		N750 5%	225-509	N750-DI 5	DTN-5	C10V5U	NT-555	10TCU-V5	
C204	.39		10%	2101-398						
C205	1000		10%	2033-23	BPD-001	DD-102	BYA10DI	B-210	5HK-D10	
C206	.39		10%	2101-398						
C207	1.5		10%	2101-159	NPO-SI 1.5	TCZ-1R5	C10V15C	ZT-5515	10TCC-V15	
C208	.91		10%	2101-918						
C209	47		N750 5%	233-470		DTN-47	C10Q47U	CN7-447	10TCU-Q47	
C210	1000		5%	244-1						
C211	1000			271-1	EF-001	MFT-1000				
C212	15		NPO 10%	222-150	NPO-DI 15	DTZ-15	C10Q15C	CNO-415	10TCC-Q15	
C213	1.5		N750 5%	259-159						
C214	100		N3300 10%	252-101						
C215	1000			2033-23	BPD-001	DD-102	BYA10DI	B-210	5HK-D10	
C216	.91			253-910						
C217	1000			2033-23	BPD-001	DD-102	BYA10DI	B-210	5HK-D10	
C218	2		10%	2101-209	NPO-SI 2	TCZ-2R2	C10V2C	CNO-522	10TCC-V22	
C219	10		N150 5%	164-100					10TCP-Q10	
C220	1.5		N3300 ± .25 mmf	166-159						
C221	68		N750 5%	233-680		DTN-68	C10Q68U	CN7-468	10TCU-Q68	
C222				1713-516						
C223	1000		5%	244-1						
C224	1000			2033-23	BPD-001	DD-102	BYA10DI	B-210	5HK-D10	
C225	1000			2033-23	BPD-001	DD-102	BYA10DI	B-210	5HK-D10	

RESISTORS

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

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R201	39K		R205	22K		R209	2200Ω	
R202	100K		R206	4700Ω		R210	27K	
R203	1500Ω		R207	220K		R211	18K	
R204	15K		R208	15K				

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SILVERTONE PART No.	REPLACEMENT DATA
K201	Antenna Filter	470K, .6-1meg	330-1	Centralab RC-471 Sprague AC1-1
K202	Antenna Filter	470K, .6-1meg	330-1	Centralab RC-471 Sprague AC1-1

COILS (RF-IF)

ITEM No.	USE	SILVERTONE PART No.	NOTES
L201	Ant. Trans.	2309-5	
L202	RF Choke	310-4	
L203	RF Choke	310-4	
L204	RF Choke	363-7	
L205	RF Choke	301-23	
L206	RF Choke	362-6	

ITEM No.	USE	SILVERTONE PART No.	NOTES
L207	Osc. Coil	2746-5	Channel 6
L208	RF Choke	310-4	
L209	RF Choke	312-9	
L210	Osc. Coil	2746-1	Channel 13
L211	Fl. Choke	350-20	
L212	Mixer Plate	2110-9	

TUNER ALIGNMENT INSTRUCTIONS

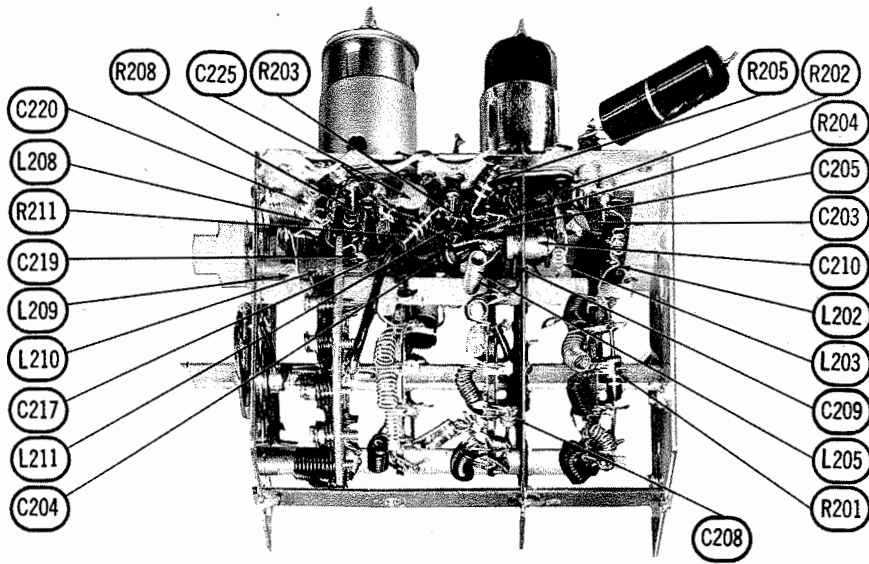
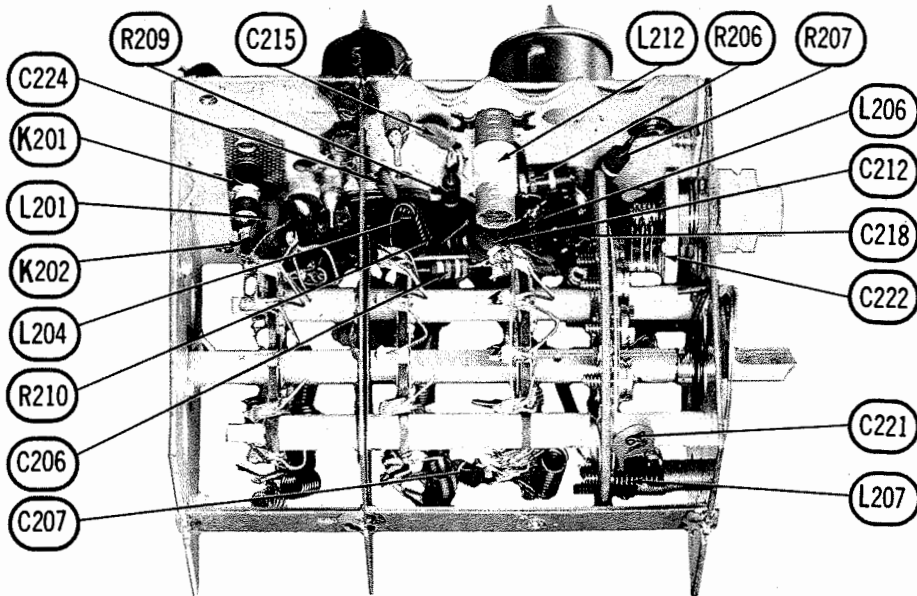
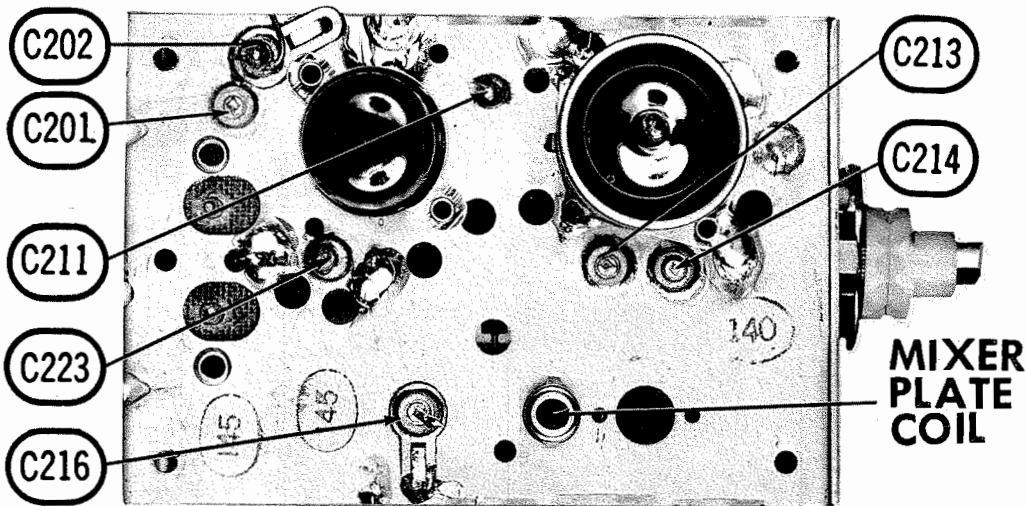
Suggested Alignment Tools: GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

OSCILLATOR ALIGNMENT

Turn the set on and allow 15 minute warm-up period. Set the Fine Tuning to the center of its range. To center Fine Tuning align the dot on the drive wheel with the dot on tuner case.
Turn the Channel Selector to the highest frequency channel operating in the area. Adjust the proper oscillator adjustment screw for clearest picture. The oscillator adjustment screws are identified by the channel number stamped into the metal next to the proper adjustment opening. Channels 7 and 8 share the same screw for adjustment, all others have separate adjustment screws.
Be very careful not to turn any of the adjustment screws too far counterclockwise, or they will fall out.
Always adjust the highest operating channel first, then the others in descending order.

RF AND MIXER ALIGNMENT

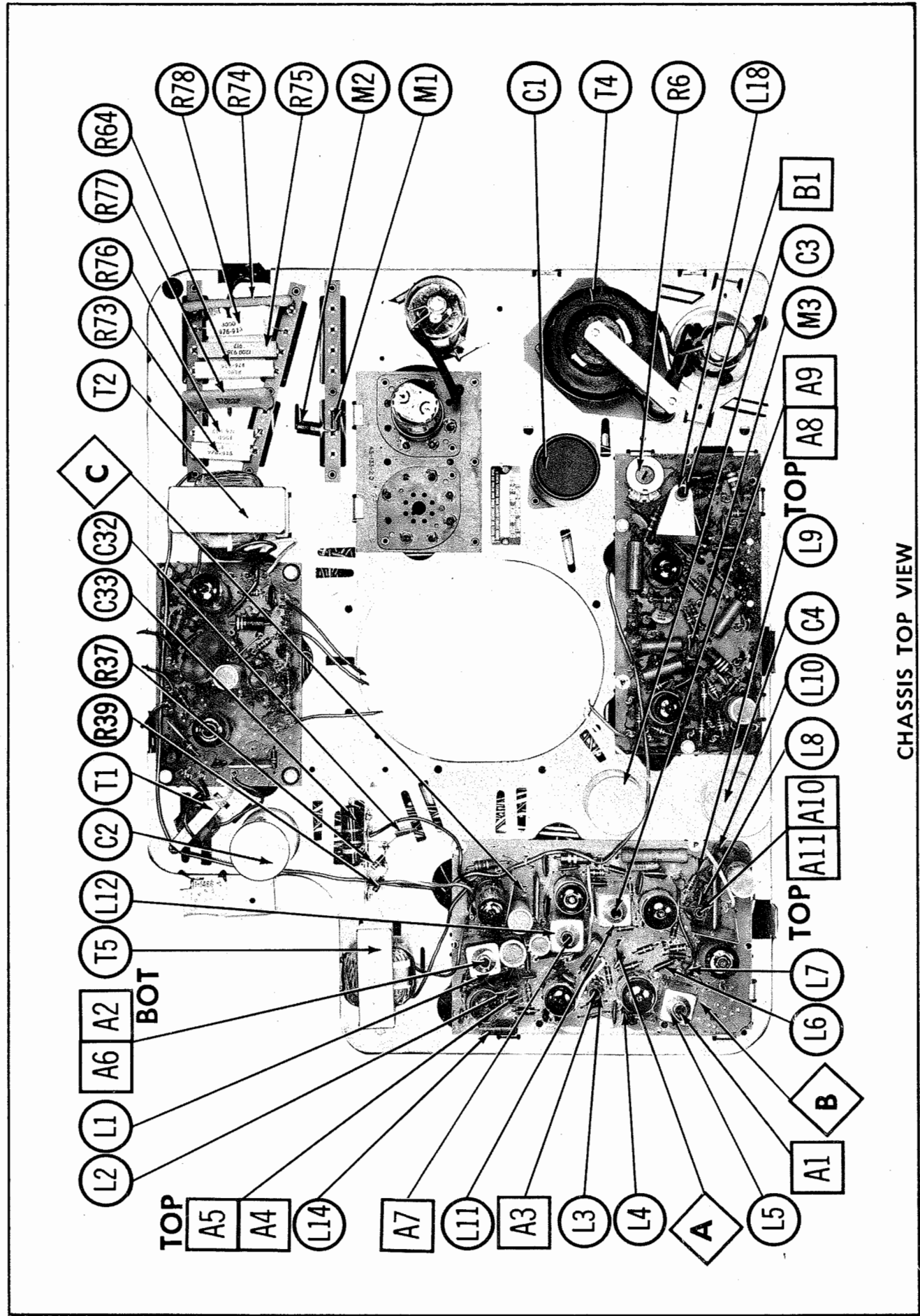
This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.



TUNER 95-189-0

SILVERTONE CHASSIS 456,52200, 201, 202, 203,
528,52200, 201, 202, 203

FOLDER 2



PRE-ALIGNMENT INSTRUCTIONS ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295
 WALSCO #2526, 2543, 2544, 2545
 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

Short the antenna leads together but not to chassis.
 Connect the negative lead of a 3 volt bias supply to point \diamond . Positive to chassis.
 Detune Mixer Plate Coll by turning core fully counterclockwise.
 Detune A2, A4, A5 and A6 by presetting for maximum core separation.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44.15MC (Unmod)	Any non-interfering channel	DC probe thru 10K to point \diamond . Common to chassis. (Across Video Det. load)	A1, A2, & Mixer Plate Coll	Adjust for maximum deflection.
2. "	"	42.75MC	"	"	A3	"
3. "	"	45.5MC	"	"	A4	"
4. "	"	47.25MC	"	"	A5	Adjust for MINIMUM deflection. Repeat steps 3 and 4.
5. "	"	41.25MC	"	"	A6	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Short antenna terminals together but not to chassis.
 Attenuate sweep generator output to maintain not more than 2 volts peak to peak on the scope (-3 volts DC at point \diamond).
 If separate marker generator is used, couple loosely to the sweep cable.
 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
6. Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44.15MC (10MC Swp)	41.25MC 42.5MC 43.5MC 44.15MC 45.0MC 45.75MC 47.25MC	Any non-interfering channel	Vert. Amp. thru 10K to point \diamond . Low side to chassis.		Check for response similar to Fig. 1. Retouch Mixer Plate Coll if necessary to place 45.75MC marker at 50%. A2 may be retouched for correct tilt.

SOUND IF ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7. .001mfd	High side to point \diamond . Low side to chassis. Use high output.	4.5MC (400v FM 15KC Swp)	Any non-interfering channel	AC probe to point \diamond . Common to chassis.	A7, A8	Adjust A7 for maximum deflection. (If two peaks occur, use highest peak). Adjust A8 for maximum deflection. Retouch A7.
8. "	"	"	"	"	A9, A10, A11	Reduce output to 500 microvolts. Adjust A9, A10 and A11 for maximum deflection. Keep reducing generator signal to keep VTVM reading from exceeding 4.5 volts.

4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and check the picture tube for evidence of 4.5MC beat interference. If necessary, retouch A11 until the horizontal scanning lines are smooth and continuous.

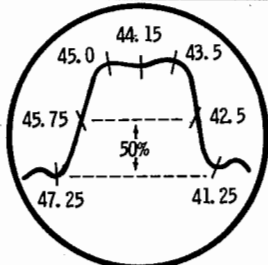
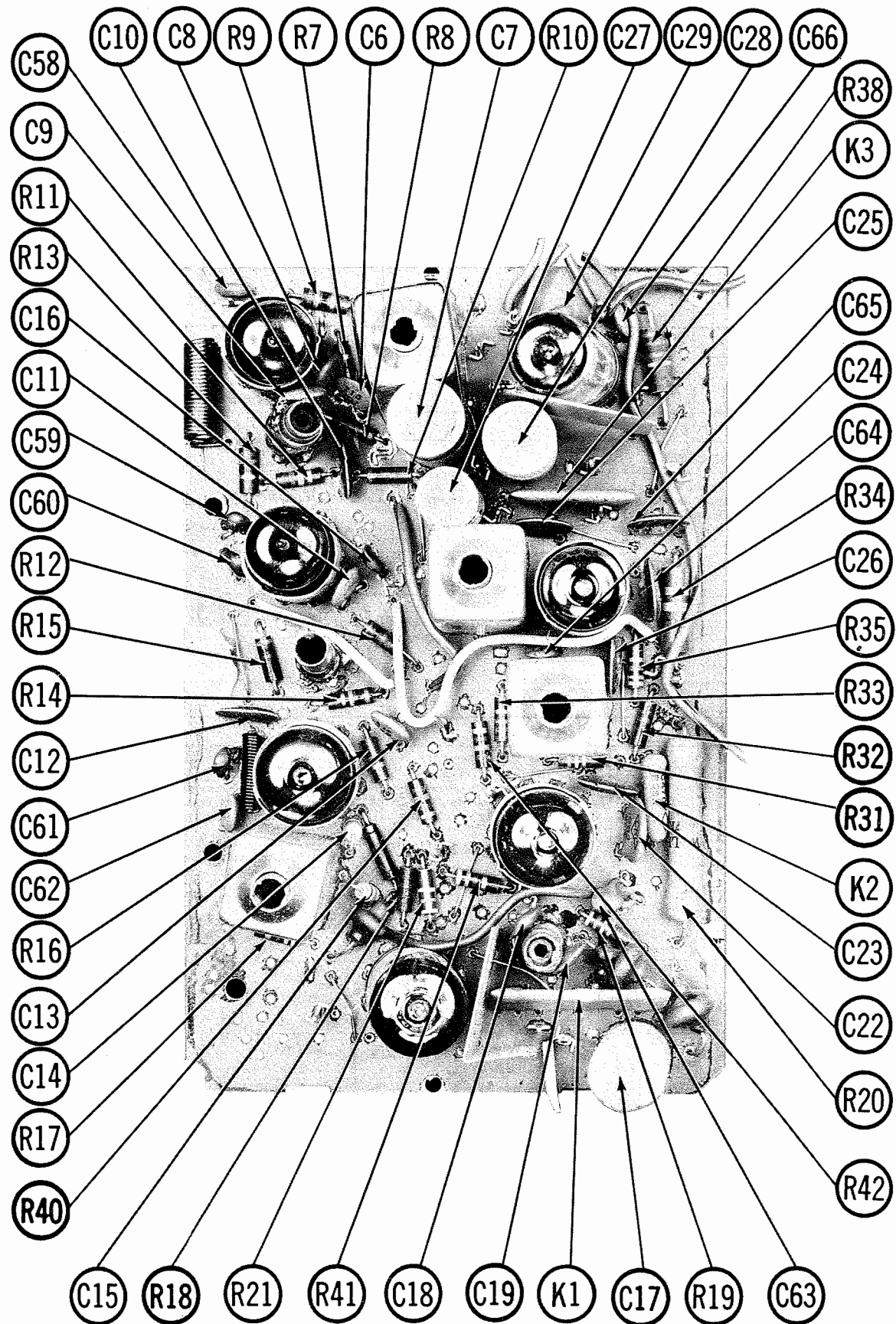
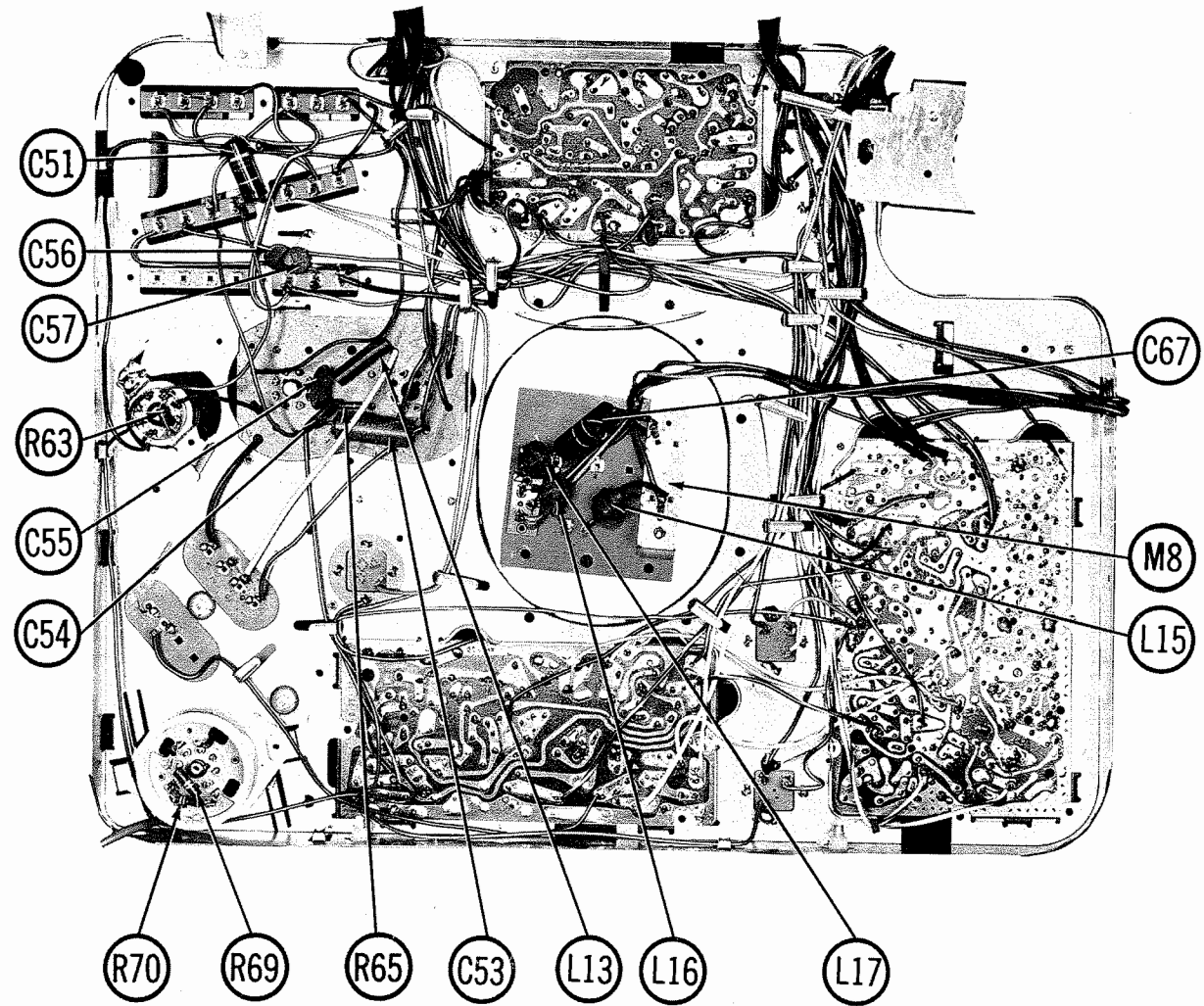
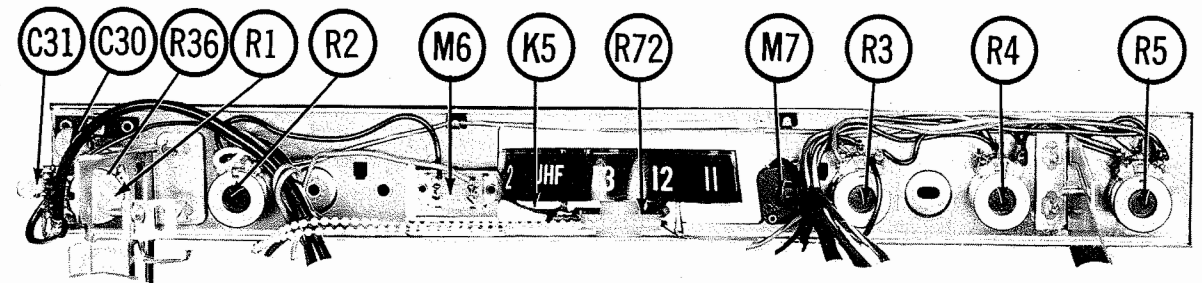


FIG. 1

SILVERTONE CHASSIS 456, 52200, 201, 202, 203,
 528, 52200, 201, 202, 203



MAIN PRINTED BOARD



CHASSIS BOTTOM VIEW

SILVERTONE CHASSIS 456,52200, 201, 202, 203,
528,52200, 201, 202, 203

FOLDER 2

PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS (cont)

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M7	Switch	69-290-0	Off-On
M8	Circuit Breaker	43-6-2	
M9	Circuit Breaker	43-7-2	Alternate part number.
M10	Width Sleeve	63-1204	
	Motor	59-145	
	Magnet	27-70-2	Beam Alignment used with some picture tubes
	Lamp	69-23	Neon, Includes leads
	Printed Board	84-7389	IF, Sync, Sound, less tubes
	Printed Board	84-7370	Vert., less tubes Ch. 456/528.52200, 201
	Printed Board	84-7370-1	Vert., less tubes Ch. 456/528.52202, 203
	Printed Board	84-7371	Horiz., less tubes

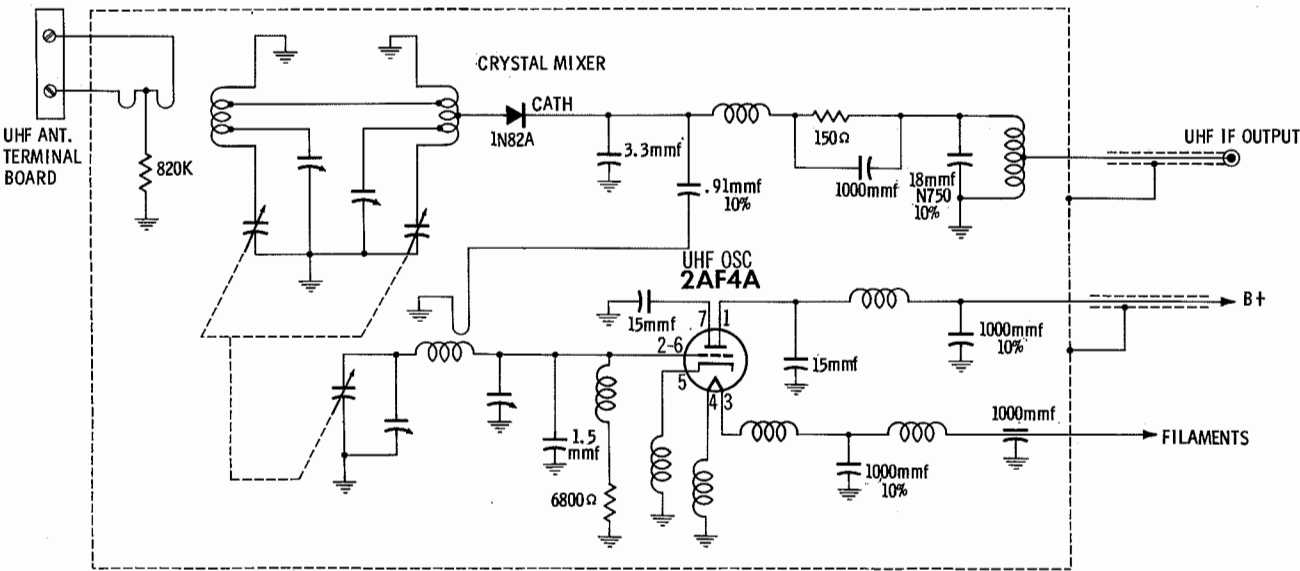
CABINETS & CABINET PARTS

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

NAME	PART NO.	DESCRIPTION
Safety Glass	48-142-0	Models 180, 180-5, 182, 182-5
Safety Glass	48-156-0	Models 164, 164-5
Safety Glass	40-154-0	Models 160, 160-5, 162, 162-5
Safety Glass	48-155-0	Models 184, 184-5, 186, 186-5
Mask	40-14-4	Models 164, 164-5
Mask	40-13-4	Models 180, 180-5, 182, 182-5
Mask	40-15-4	Models 184, 184-5, 186, 186-5
Bezel	40-30-5	Rear, Models 160, 160-5, 162, 162-5
Bezel	40-29-5	Front, Models 160, 160-5, 162, 162-5
Window	48-166-1	Channel Indicator, Models 184, 184-5, 186, 186-5, 164, 164-5
Knob	52-1195-0	Fine Tuning
Knob	52-926-0	UHF Fine Tuning
Knob	52-1194-0	Volume
Knob	52-1196-0	Brightness, Vert. Hold, Horiz. Hold, Contrast
Knob	52-1197-0	Tone
Knob	67-859-0	VHF Dial Indicator, Models 160, 160-5, 162, 162-5
Knob	67-852-0	VHF Dial Indicator, Models 184, 184-5, 186, 186-5, 164, 164-5
Knob	52-924-0	UHF Dial Indicator
Pushbutton	84-7506	Assembly, Power Tuning
Pushbutton	84-7505	Assembly, Off-On
Cabinet	42-155-0	Mahogany, Models 184, 184-5
Cabinet	42-156-0	Fruitwood, Models 186, 186-5
Cabinet	42-154-0	Mahogany, Models 164, 164-5
Cabinet	42-149-0	Mahogany, Models 180, 180-5
Cabinet	42-150-0	Blond, Models 182, 182-5
Cabinet	42-128-0	Mahogany, Models 160, 160-5
Cabinet	42-138-0	Blond, Models 162, 162-5
Cabinet Leg	49-484	Blond, Models 162, 162-5
Cabinet Leg	49-476	Models 160, 160-5

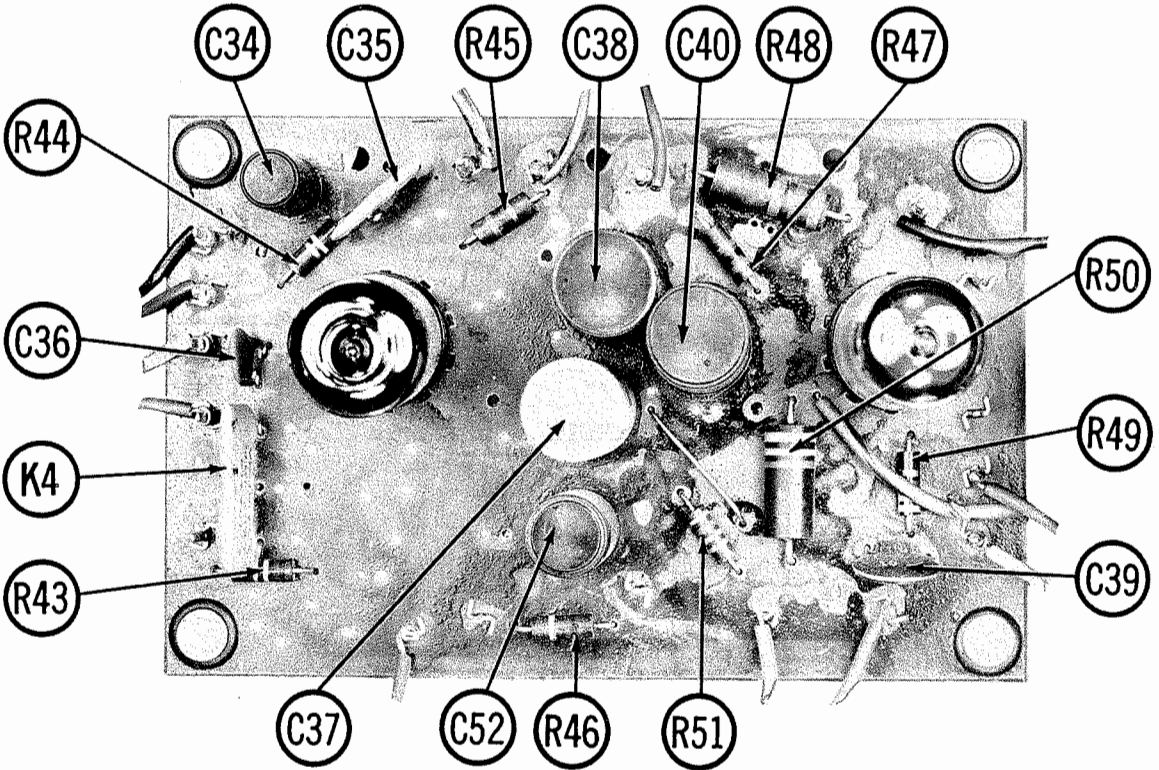
WIRING DATA

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) - 6 Conductor

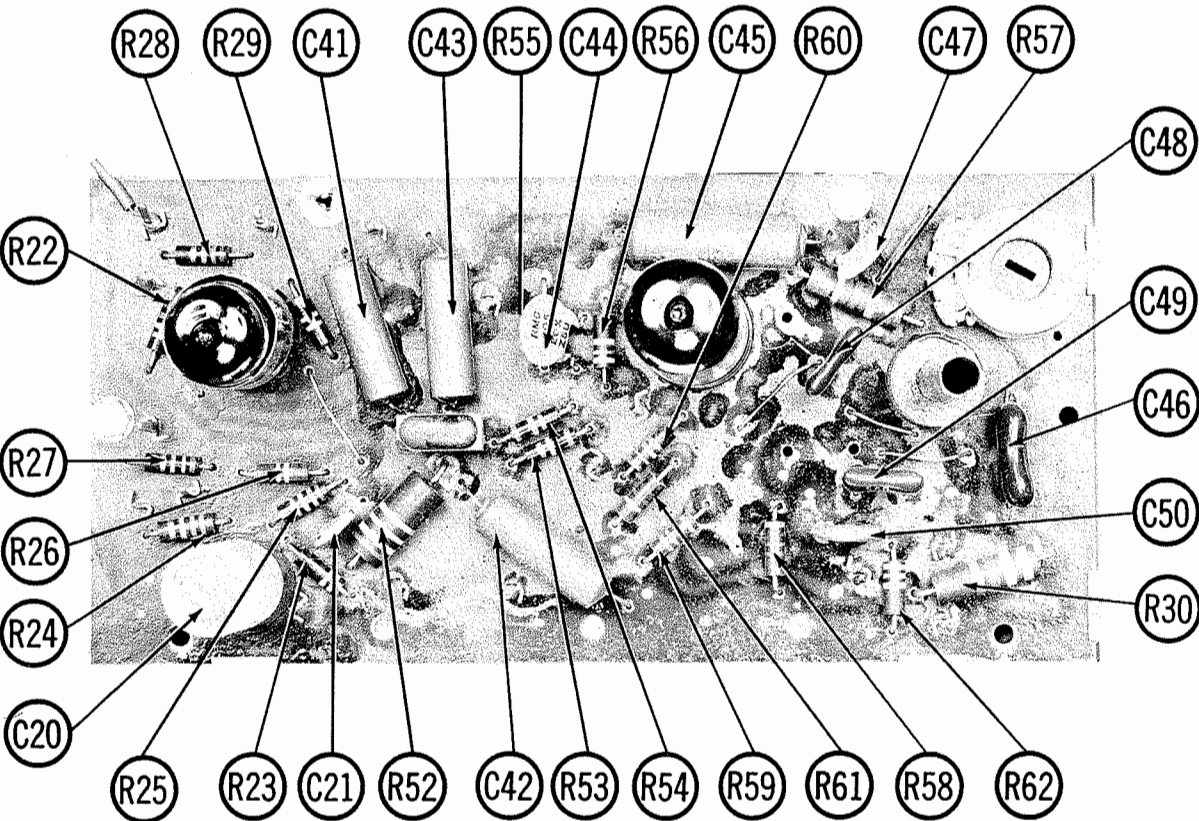


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UHF TUNER 95-193-0



VERTICAL PRINTED BOARD



HORIZONTAL PRINTED BOARD

SET 461 FOLDER 2

SILVERTONE CHASSIS 456.52200, 201, 202, 203,
528.52200, 201, 202, 203

FOLDER 2

PARTS LIST AND DESCRIPTIONS

TUBES

CBS		GENERAL ELECTRIC		RAYTHEON		SYLVANIA	
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE
V1	1st Video IF Amp.	3B28	V8	Audio Output	5A05		
V2	2nd Video IF Amp.	6B28	V9	Vert. Osc.	684A		
V3	3rd Video IF Amp. - Video Det.	5AM8	V10	Vert. Output	12DT5		
V4	Video Output-Sync Sep.	6BA8A	V11	Horiz. Mult.	6CG7		
V5	AGC Keying	3AU8	V12	Horiz. Output	25CDB6B		
V6	Sound IF Amp. - Sync Phase Inv.	5U6	V13	Damper	17DE4		
V7	Audio Det.	3DT6	V14	HV Rect.	1B3GT/1G3GT		

PICTURE TUBE

REPLACEMENT DATA						NOTES
ITEM No.	Silvertone PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V15	21DEP4A	24AHP4	21DEP4A ① 21DEP4 ① 21CZP4 ① 24AHP4 ①		21DEP4A ②	① Aluminized ② Silver Screen "85"

ELECTROLYTIC CAPACITORS

RATING		REPLACEMENT DATA						NOTES
ITEM No.	CAP.	VOLT.	Silvertone PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	
C1	150	200	18-42-3	AFH1-31-75	XA0915	FP131	TMS-34	TVL-1540
C2A	200	325	18-46-3	AFH3-111-85	CO735	FP330.13	TMT-185	
B	20	300			BR4015		TD-60-25	TVL-3636.6
C	50	15						
C3A	20	300	18-47-3	AFH4-56-60	CO894	FP333.15	TMQ-67	
B	100	300						
C	20	15						
C4A	40	300	18-45-3	AFH4-05-60	D0044	FP333.95	TMT-184	TVL-4634
B	20	300						
C	100	300						

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

FIXED CAPACITORS

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

RATING		REPLACEMENT DATA						NOTES
ITEM No.	CAP.	VOLT.	TOL.	Silvertone PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
C5	.1	200		20-78-0	P288N-1	DF-104	CUB 2P1	2TM-P1
C6	1000		10%	20-117-1	DI-1000	DD-102	IR5D1	10TS-D10
C7	.47	100		20-86-0	P215N-47	DD-471	BC2P4TJ	2SE-P47
C8	470		10%		DI-470	DD-471	2R5T47	10TS-T47
C9	27		NPO 10%	20-67-0	NPO-DI 25	DD-502	C10Q27C	10TCC-Q27
C10	5000			20-116-0	BPD-005	DD-502	BYA10D5	B-250
C11	680		10%	20-67-0	DI-680	DD-502	GP368	10TS-T68
C12	5000			20-66-0	BPD-005	DD-471	BYA10D5	B-250
C13	470		10%	20-23-0	DI-470	DD-471	2R5T47	10TS-T47
C14	4.7			20-23-0	NPO-SI 4.7	TCZ-4R7	C10V47C	10TCC-V47
C15	4.7			20-23-0	NPO-SI 4.7	TCZ-4R7	C10V47C	10TCC-V47
C16	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C17	.1	400		20-42-1	P415N-1	DF-104	BC6PLJ	4SE-P10
C18	33		N150					
C19	33		N150					
C20	.22	200		20-43-1	P215N-22	DD-102	BC2P22J	2SE-P22
C21	1000			20-148-0	BPD-001	DD-102	BYA10D1	B-210
C22	2000			20-69-0	BPD-002	DD-202	BYA10D2	B-220
C23	10000			20-86-0	BPD-01	DD-103	BYA10S1	B-110
C24	8.2		N750 ±1mmf	20-118-0				
C25	10000			20-86-0	BPD-01	DD-103	BYA10S1	B-110
C26	10000			20-86-0	BPD-01	DD-103	BYA10S1	B-110
C27	.047	400		20-44-1	P415N-047	DD-503	BC6S47J	4SE-S47
C28	.1	600		20-124-1	P615N-1	DF-104	BC6PLJ	6SE-P10
C29	1000	2000		20-78-0	HYD-30-1000	DD30-102	HVB20D1	2HV-210
C30	5000			15-50216	BPD-005	DD-502	BYA10D5	B-250
C31	2000			15-50216	BPD-002	DD-202	BYA10D2	B-220
C32	5000			15-50216	BPD-005	DD-502	BYA10D5	B-250
C33	.047	600		20-647-1	P688N-047	DD-503	CUB6847	GEM-6147
C34	.0022	600	10%	20-128-1			PM6D22	6TM-D22
C35	5000			20-177-0	BPD-005	DD-502	BYA10D5	B-250
C36	1000			20-134-0	BPD-001	DD-102	BYA10D1	B-210
C37	.1	400		20-42-1	P415N-1	DF-104	BC6PLJ	4SE-P1
C38	.068	600	10%	20-125-1			PM6S88	6TM-S88
C39	10000			20-86-0	BPD-01	DD-103	BYA10S1	B-110
C40	.1	600		20-124-1	P615N-1	DF-104	BC6PLJ	6SE-P1
C41	.001	400	10%	16-10247			PM4S1	6TM-D1
C42	.01	200	10%	16-10327	V84C2S1-10%			6TM-D1
C43	.001	400	10%	16-10247	V84C2S1-10%			6TM-D1
C44	5000			20-81-0	BPD-005	DD-502	BYA10D5	B-250
C45	.022	200		16-22328	P288N-022	DD-502	CUB4522	GEM-4122
C46	3900			20-16-2	I464-0039K	DTN-100	IR5D39	MS-239
C47	100		N750 10%	20-132-0	N750-DI 100		C10T10	10TCU-T10
C48	390		10%	20-15-2	I468-00039K		22R5T39	MS-339
C49	560		10%	20-14-2	I468-00056K		22R5T56	MS-356
C50	5000			20-67-0	BPD-005	DD-502	BYA10D5	B-250
C51	.047	400		16-47348	P488N-047	DD-503	CUB6847	GEM-6147
C52	.047	600		20-128-1	P615N-047	DD-503	BC6S47J	6SE-S47
C53	.033	600	10%	16-33357	V84C6S33-10%		PM6S33	GEM-1613
C54	200	3000	N1600 10%	20-137-0				
C55	290	3000	N1600 10%	20-138-0				
C56	5000			15-50217	BPD-005	DD-502	BYA10D5	B-250

CAPACITORS (cont)

RATING		REPLACEMENT DATA						NOTES
ITEM No.	CAP.	VOLT.	TOL.	Silvertone PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	
C57	5000			15-50217	BPD-005	DD-502	BYA10D5	B-250
C58	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C59	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C60	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C61	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C62	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C63	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C64	5000			20-67-0	BPD-005	DD-502	BYA10D5	B-250
C65	5000			20-67-0	BPD-005	DD-502	BYA10D5	B-250
C66	1000			20-65-0	BPD-001	DD-102	BYA10D1	B-210
C67	.1	400		16-10448	P488N-1	DF-104	CUB4P1	GEM-401

CONTROLS

RATING		REPLACEMENT DATA					INSTALLATION NOTES
ITEM No.	RESISTANCE	WATTS	Silvertone PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	
R1A	1meg		24-342-0	F1-52		† QJ-1126	⊞ UE-4061
B	1meg			R2-80			
R2A	200Ω		24-147-1	F1-0		†† QJ-1124	⊞ UE-4058
B	3meg			R2-78 *			
R3A	50K		24-146-1	F1-29		† QJ-1123	⊞ UE-4057
B	3meg			R2-78 *			
R4A	1.5meg		24-148-1	F1-64		†† QJ-1125	⊞ UE-4059
B	750K			R2-51 *			
R5A	3meg		24-149-1	F1-78		† QJ-1127	⊞ UE-4060
B	3meg			R2-78 *			
R8A	7500Ω		24-144-1	B11-115			
B	Shaft			TM4			

* Cut and split inner shaft before assembling.

† "Concentrik" Equivalent: K-8 Kit with Base Elements & Shafts: B13-137, P17-118 (Panel)

B19-137X, R1-202 (Rear)

R-5 Retainer

†† "Concentrik" Equivalent: K-8 Kit with Base Elements & Shafts: B11-201, P17-118 (Panel)

B11-140, R15-005 (Rear)

R-5 Retainer

† "Concentrik" Equivalent: K-8 Kit with Base Elements & Shafts: B11-123, P17-118 (Panel)

(Not available as a factory assembled unit.)

†† "Concentrik" Equivalent: K-8 Kit with Base Elements & Shafts: B11-138, P17-118 (Panel)

(Not available as a factory assembled unit.)

⊞ "STA-LOC" Equivalent: FA16A, RU16T55, OSI562A, IS2062.

⊞ "STA-LOC" Equivalent: FA22L, RU36L, OSI562A, IS437.

⊞ "STA-LOC" Equivalent: FA54L, RU36L, OSI562A, IS437.

⊞ "STA-LOC" Equivalent: FA155L, RU754L, OSI562A, IS437.

⊞ "STA-LOC" Equivalent: FA36L, RU36L, OSI562A, IS437.

RESISTORS

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

ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS	ITEM No.	RATING	REMARKS
R7	4700Ω		R31	56K		R55	4.7meg	
R8	1000Ω		R32	2200Ω		R56	470K	
R9	56Ω		R33	220Ω		R57	6800Ω 1W	
R10	1000Ω		R34	22K 1W		R58	820Ω 5%	
R11	15K		R35	680Ω		R59	82K	
R12	1000Ω		R36	56K		R60	56K	
R13	56Ω		R37	47K		R61	2.2meg	
R14	10K		R38	220Ω 1W		R62	470K	
R15	1000Ω		R39	220K		R63	470Ω	
R16	220Ω		R40	2700Ω		R64	8000Ω 4W	#61-20-1
R17	4700Ω		R41	4700Ω		R65	820Ω	
R18	2200Ω		R42	2700Ω		R66	470Ω	
R19	47K		R43	22K		R67	470Ω	
R20	4700Ω 4W		R44	220K		R68	9.6Ω COLD 4W	#61-30-0
R21	470K		R45	2.7meg		R69	1.5Ω	
R22	560K		R46	22K		R70	4700Ω	
R23	3.3meg		R47	1meg		R71	22Ω	
R24	68K		R48	150Ω 1W		R72	27K	
R25	680K		R49	470Ω		R73	6.4Ω 4W	#61-156-0
R26	220K		R50	330Ω 2W		R74	4.5Ω 10W	#61-152-0
R27	56K		R51	82K		R75	120Ω 10W	
R28	56K		R52	27K 2W		R76	1000Ω 5W	
R29	100K		R53	100K 5%		R77	2500Ω 10W	
R30	390Ω 1W		R54	100K 5%		R78	3000Ω 5W	

Note 1. Not used in Ch. 456/528. 52201, 203.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Silvertone PART No.	REPLACEMENT DATA
K1	Video & Sync Coupling	150mmf, 5000mmf, 5000mmf, 47K, 100K, 100K, 270K, 2.2meg	13-24-3A	Sprague ST-16
K2	Sound IF Screen	5000mmf, 68K	13-21-3	
K3	Audio Coupling	100mmf, 5000mmf, 1000Ω, 220K, 470K, 560K	13-25-3	Sprague HN-6
K4	Vert. Integrator	2000mmf, 5000mmf, 5000mmf, 8200Ω, 8200Ω	13-31-3A ①	Aerovox Centralab Sprague Mallory
K5	Control Panel Isolation	1000mmf (1000VAC), 4.7meg	13-17-3	PA-110-4 PC-105 V-4 MS-104

① Alternate Part #13-30-3.

COILS (RF-IF)

ITEM No.		USE	REPLACEMENT DATA					NOTES	
			Silvertone PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.		Ram PART No.
L1A	B	1st Video IF	10-25-3						
L2A		41. 25MC Trap							
B		2nd Video IF	10-21-3						
L3		47. 25MC Trap							
L4		3rd Video IF	10-22-3						
L5		RF Choke	10-151-1						
L6		4th Video IF	10-24-3						
L7		Resonant Choke	10-65-1						
L8A	B	Series Peaking Coll	10-64-1			TV-193	6110		12uh 60uh
L9		Sumc Take-off Coll	10-152-1						
B		4. 5MC Trap							
L10		Series Peaking Coll	10-66-1	19-3250 *	19-3250 *	TV-198 *	6130 *	VP-6 *	270uh ①
L11		Shunt Peaking Coll	10-86-1	19-3250	19-3250	TV-198	6130	VP-6	269uh ②
L12		2nd Sound IF	10-23-3						
L13		Quadrature Coll	10-17-5						
L14		RF Choke	10-155-1	19-1002	19-1002	BC-563	4606		2. 6uh
L15		FL. Choke	10-122-1	19-1002	19-1002	BC-563	4606		2. 3uh
L16		Line Choke	10-149-1	19-3036	19-3036	TV-180	6176	VP-1	40uh
L17		Line Choke	10-149-1	19-3036	19-3036	TV-180	6176	VP-1	40uh
		Line Choke	10-149-1	19-3036	19-3036	TV-180	6176	VP-1	40uh