



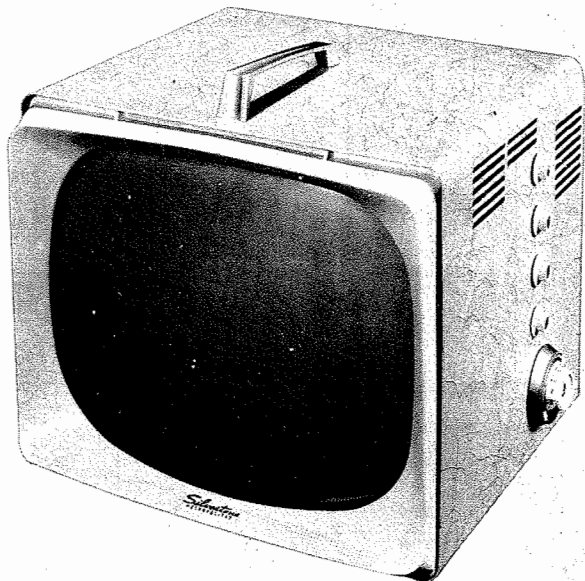
DISASSEMBLY INSTRUCTIONS

CHASSIS DISASSEMBLY

- 1. Remove 6 side push-on type control knobs.
- 2. Remove 1 metal screw and release 3 clips holding rear cover. Remove rear cover.
- 3. Remove 2 metal screws holding AC interlock bracket to cabinet.
- 4. Remove picture tube socket, high voltage lead, yoke plug, 2 speaker leads and ground lead from chassis to picture tube strap.
- 5. Remove 2 chassis bolts from the top and 2 from the bottom.
- 6. Remove the chassis.

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS
Care should be exercised when connecting test equipment or physically contacting the chassis.



MODEL 8100BE (CH. 528.50180)

| TRADE NAME | Silvertone | MODEL | CHASSIS | MODEL | CHASSIS |
|--------------|---|------------------------------|-----------|-------------------------------------|-----------|
| | | 8100BE, 8100GR | 528.50180 | 8110, 8112, 8150, 8152 | 528.50221 |
| | | 8100BE, 8100GR | 528.50181 | 8111, 8113, 8151, 8153 | 528.50230 |
| | | 8100BE, 8100GR | 528.50182 | 8111, 8113, 8151, 8153 | 528.50240 |
| | | 8102AAQ, 8102ACL, 8102AQ, | | 8146, 9100, 9100EB, 9100FG, 9101, | |
| | | 8102CL, 8102YL, 8106 | 528.50200 | 9101EB, 9101FG, 9102AQ, 9102BL, | |
| | | 8102AAQ, 8102ACL, 8102AQ, | | 9102CL, 9102GY, 9110, 9150 | 528.50240 |
| | | 8102CL, 8102YL, 8106 | 528.50201 | 8147, 9103AQ, 9103BL, | |
| | | 8102AAQ, 8102ACL, 8102AQ, | | 9103CL, 9103GY | 528.50250 |
| | | 8102CL, 8102YL, 8106 | 528.50202 | 9111, 9151 | 528.50270 |
| | | 8110, 8112, 8150, 8152 | 528.50220 | | |
| MANUFACTURER | Sears, Roebuck & Co., 925 S. Homan Avenue, Chicago, Illinois | | | | |
| TYPE SET | Television Receiver | | | | |
| TUBES | Fourteen | | | | |
| 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 | 145 Watts, 1.36 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. One slug for HIGH band adjustment is located at 5 o'clock, and should be adjusted first. The LOW band adjustment is located at 9 o'clock. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

Remove 3 metal screws from the bottom front of cabinet holding the picture tube mask. Pull out at bottom and remove.

SPECIAL ADJUSTMENTS

A. Focus
Focus may be varied by connecting the picture tube focus lead (blue) to any of 4 terminals with different voltages. (For location, see Cabinet Rear View.)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

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.)

FUSE DEVICE

A Circuit Breaker is used for LV power supply protection and may be reset by depressing the reset button. (For location, see tube placement chart.)

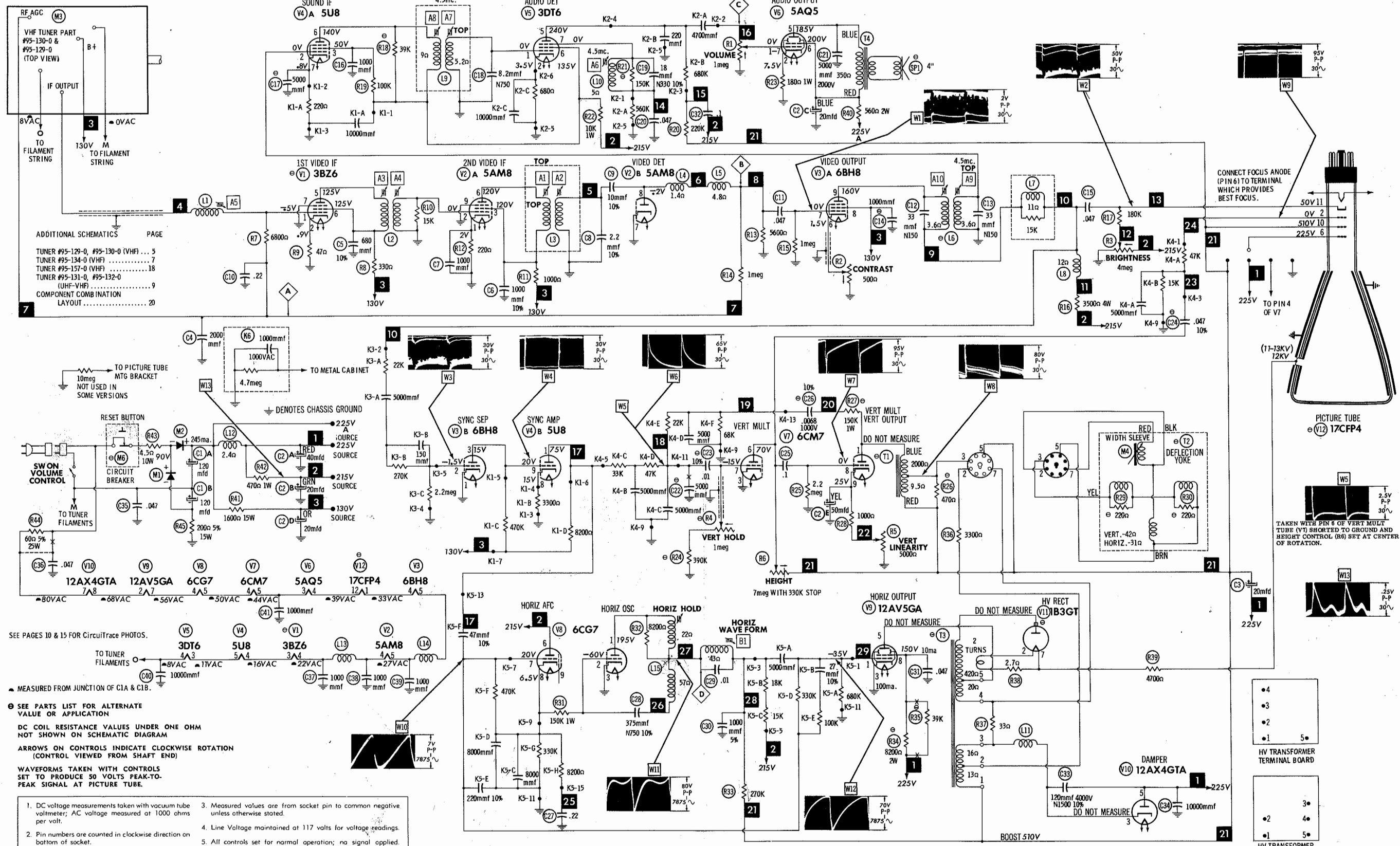
CENTERING

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

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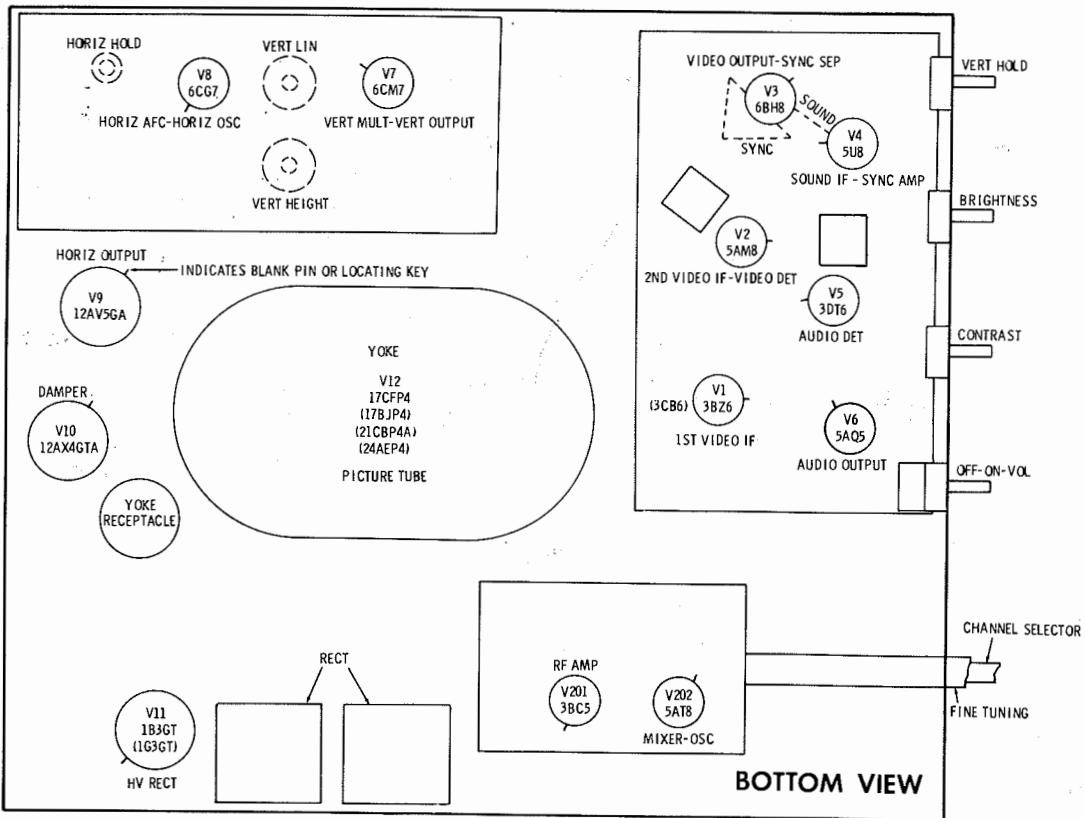
SILVERTONE CHASSIS 528.50180, 181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270

FOLDER 2

RESISTANCE MEASUREMENTS

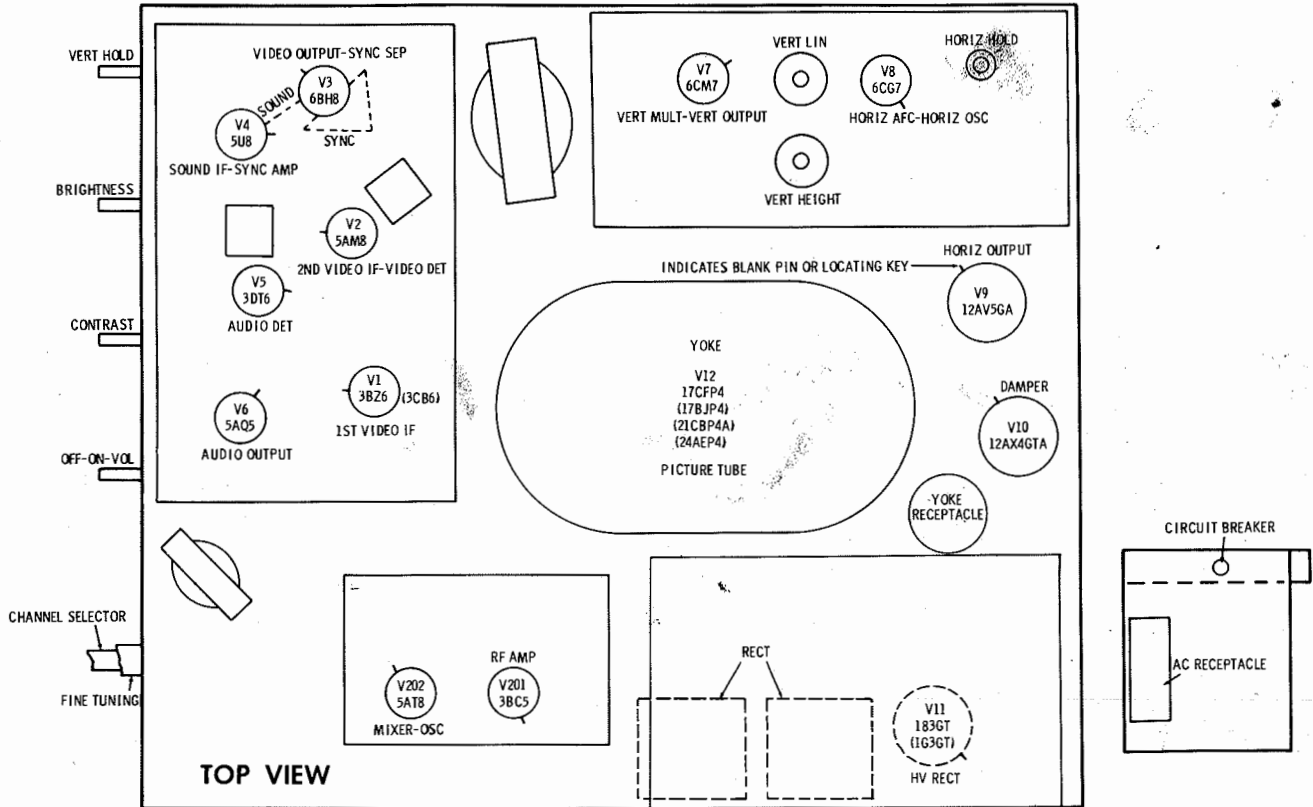
| ITEM | TUBE | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|------|----------|--------|--------|----------------|----------------|-----------------|---------------|--------|--------|------------------|
| V1 | 6BZ6 | 1meg | 47Ω | 5Ω | 6.5Ω | †1900Ω | †1900Ω | 0Ω | | |
| V2 | 5AM8 | 220Ω | .1Ω | †2600Ω | 6.5Ω | 7.5Ω | †2600Ω | 0Ω | 5600Ω | 0Ω |
| V3 | 6BH8 | 0Ω | 2.2meg | †470K | 9Ω | 7.5Ω | •80Ω | 1meg | †1600Ω | †4000Ω |
| V4 | 5U8 | †9800Ω | 3.6Ω | †110K | 5Ω | 3.5Ω | †10K | 220Ω | 3300Ω | †470K |
| V5 | 3DT6 | 5.2Ω | 680Ω | 3.5Ω | 2.5Ω | †900K | †10K | 560K | | |
| V6 | 5AQ5 | 0Ω | 180Ω | 11Ω | 10Ω | †910Ω | †560Ω | 0Ω | | |
| V7 | 6CM7 | †2000Ω | NC | 0Ω | 12Ω | 11Ω | •3.5meg | •570K | 2.2meg | •1900Ω |
| V8 | 6CG7 | †32K | 400K | 0Ω | 13Ω | 12Ω | †470Ω | 500K | 300K | NC |
| V9 | 12AV5GA | 400K | 16Ω | 0Ω | NC | †53Ω | NC | 13Ω | †6800Ω | |
| V10 | 12AX4GTA | TP | NC | †180K | NC | †2.4Ω | NC | 18Ω | 16Ω | |
| V11 | 1B3GT | | PINS | 1 THRU 8 | HAVE | INFINITE | RESISTANCE | | | TOP CAP †473Ω |
| V12 | 17CFP4 | 9Ω | 62K | Pin 6 †2.4Ω | Pin 10 †29Ω | Pin 11 •200K | Pin 12 10Ω | | | |
| V201 | 3BC5 | 1meg | 0Ω | 0Ω | 1.5Ω | †1600Ω | †1600Ω | 0Ω | | |
| V202 | 5AT8 | 15K | †7600Ω | 0Ω | 1.5Ω | 2.5Ω | †3800Ω | †2000Ω | 0Ω | 235K |

THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
MEASURED FROM JUNCTION OF C1A AND C1B.
† MEASURED FROM 225V SOURCE.
• MEASURED FROM PIN 3 OF V10.
NC NO CONNECTION.
TP TIE POINT.



TUBE PLACEMENT CHART

TUBE PLACEMENT CHART

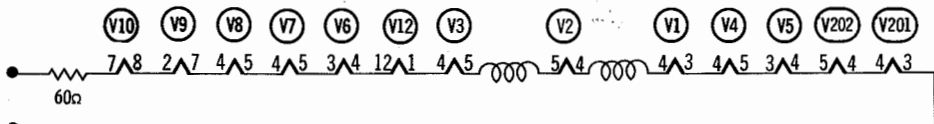


TUBE FAILURE CHECK CHART

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 Rectifiers (M1, M2) | LOSS OF PICTURE OR SOUND No pic, no sound, has raster V1, V2, V3 No pic, no sound, has snow V201, V202 No pic, has sound, has raster V3, V12 Has pic, no sound V4, V5, V8 |
| SWEEP FAILURE No raster, has sound V8, V9, V10, V11, V12 No vertical deflection V7 Poor vert. linearity or foldover V7 Poor horiz. linearity or foldover V8, V9, V10 Narrow picture M1, M2, V8, V9, V10 Vert. off freq. V7 Horiz. off freq. V8 | SYNC FAILURE No vert. sync V3, V4 No horiz. sync V3, V4 No vert. or horiz. sync V3, V4 |

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 528, 50180, 181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270

FOLDER 2

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

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

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 a usable pattern on scope.

| DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---------------|---|---------------------------|-------------------------------|-----------------------------|---|------------------|--|
| 1. .001mfd | High side to pin 2 (grid) of 5AM8 (V2). Low side to chassis. | 44.0MC (10MC Swp) | 44.0MC | Any non-interfering channel | Vert. Amp. thru 10K to point \diamond . Low side to chassis. (Across Video Det. load) | A1 | Preset A2 fully counterclockwise. Adjust for maximum gain at marker as in Fig. 1. |
| 2. " | " | 44.25MC (10MC Swp) | 43.2MC 45.3MC | " | " | A2 | Adjust for maximum gain and symmetry of response similar to Fig. 2 with markers as shown. |
| 3. " | High side to pin 1 (grid) of 3BZ6 (V1). Low side to chassis. | 44.1MC (10MC Swp) | 44.0MC | " | " | A3 | Preset A4 fully counterclockwise. Adjust A3 for maximum gain at marker as in Fig. 1. |
| 4. " | " | 44.25MC (10MC Swp) | 43.6MC 45.0MC | " | " | A4 | Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown. |
| 5. Direct | High side to ungrounded tube shield floating over Mixer-Osc. tube (V202). | 44.0MC (10MC Swp) | 44.0MC | " | " | Mixer Plate Coll | Detune A5. Adjust sweep generator output until signal level is about 1 volt above noise on scope. Adjust Mixer Plate Coll for maximum gain at 44.0MC. |
| 6. " | " | 44.25MC (10MC Swp) | 42.75MC 43.6MC 45.0MC 45.75MC | " | " | A5 | Adjust for maximum gain and symmetry of response similar to Fig. 4 with markers as shown. If necessary retouch Mixer Plate Coll to correct 45.75MC region of response and A5 affects 42.75MC region. |

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. | 4.5MC (15KC Swp 400v Mod) | Any non-interfering channel | AC probe to point \diamond . Common to chassis. | A6, A7 | Adjust A6 and A7 for maximum deflection. (A6 may have two peaks, use the greatest.) |
| 8. " | " | " | " | " | A8, A7, A9 | Adjust in that order for maximum deflection. (Use low generator output so that meter reading does not exceed 4.5 volts RMS.) |

4.5MC TRAP ALIGNMENT

4.5MC beat interference in the picture may be eliminated by misadjusting the Fine Tuning until the beat pattern is visible in the picture and adjust A10 for MINIMUM 4.5MC beat pattern in the picture.

TUNER ALIGNMENT INSTRUCTIONS LOCATED ON PAGE 6.

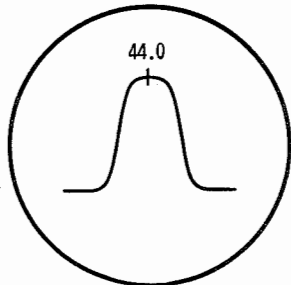


FIG. 1

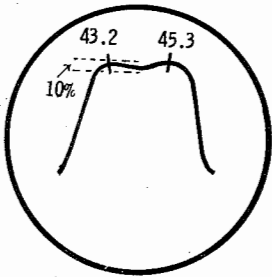


FIG. 2

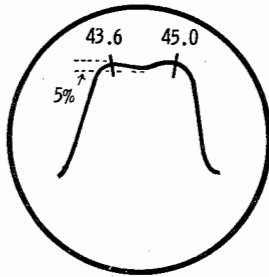


FIG. 3

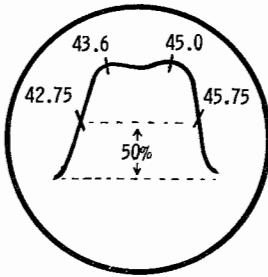
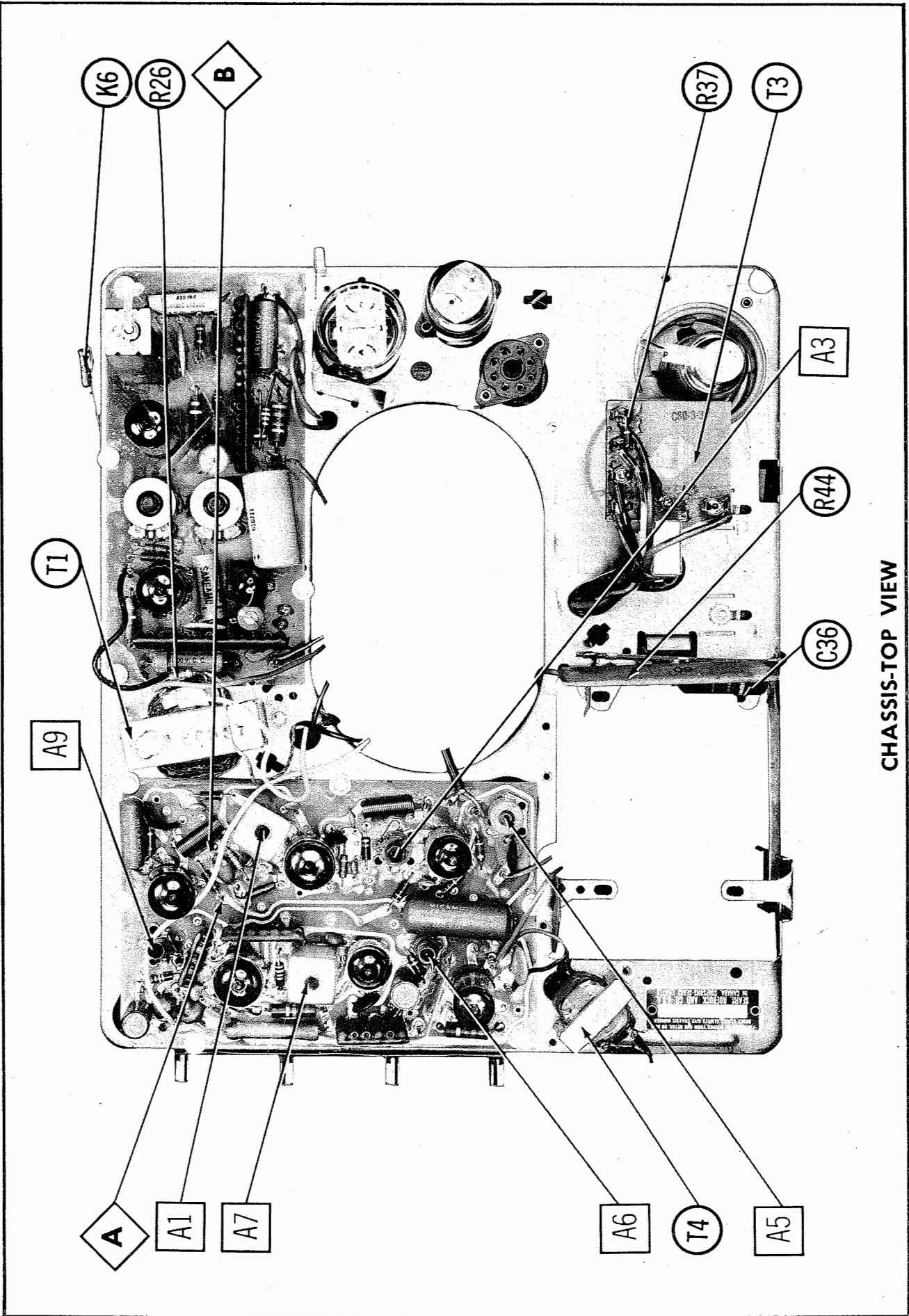


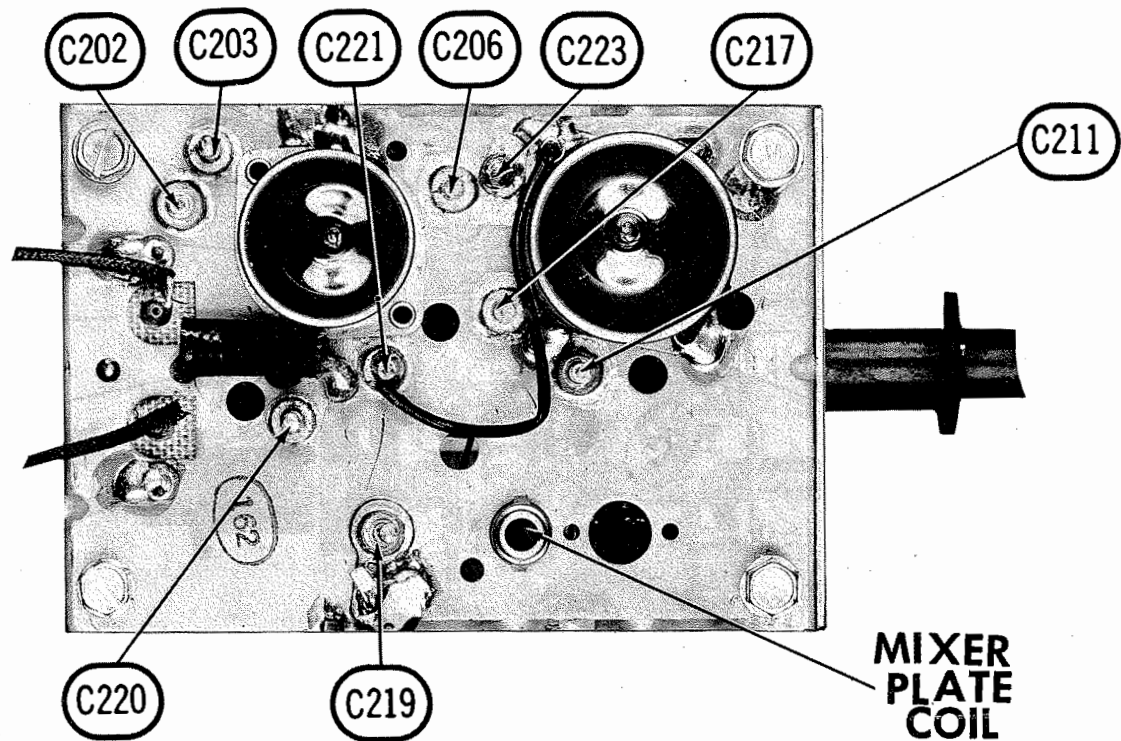
FIG. 4



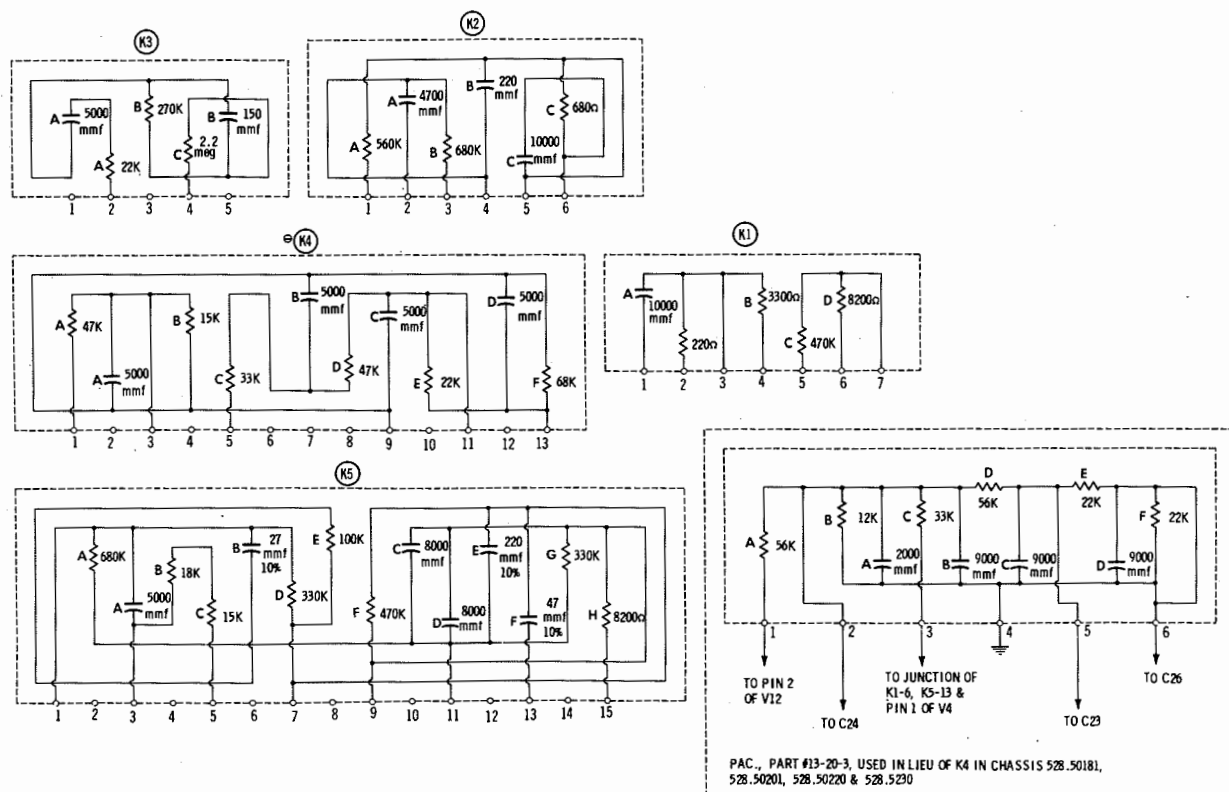
SILVERTONE CHASSIS 528,50180, 181, 182, 200,
201, 202, 220, 221, 230, 231, 240, 250, 270

MEWA POL-SISSVHC

FOLDER 2

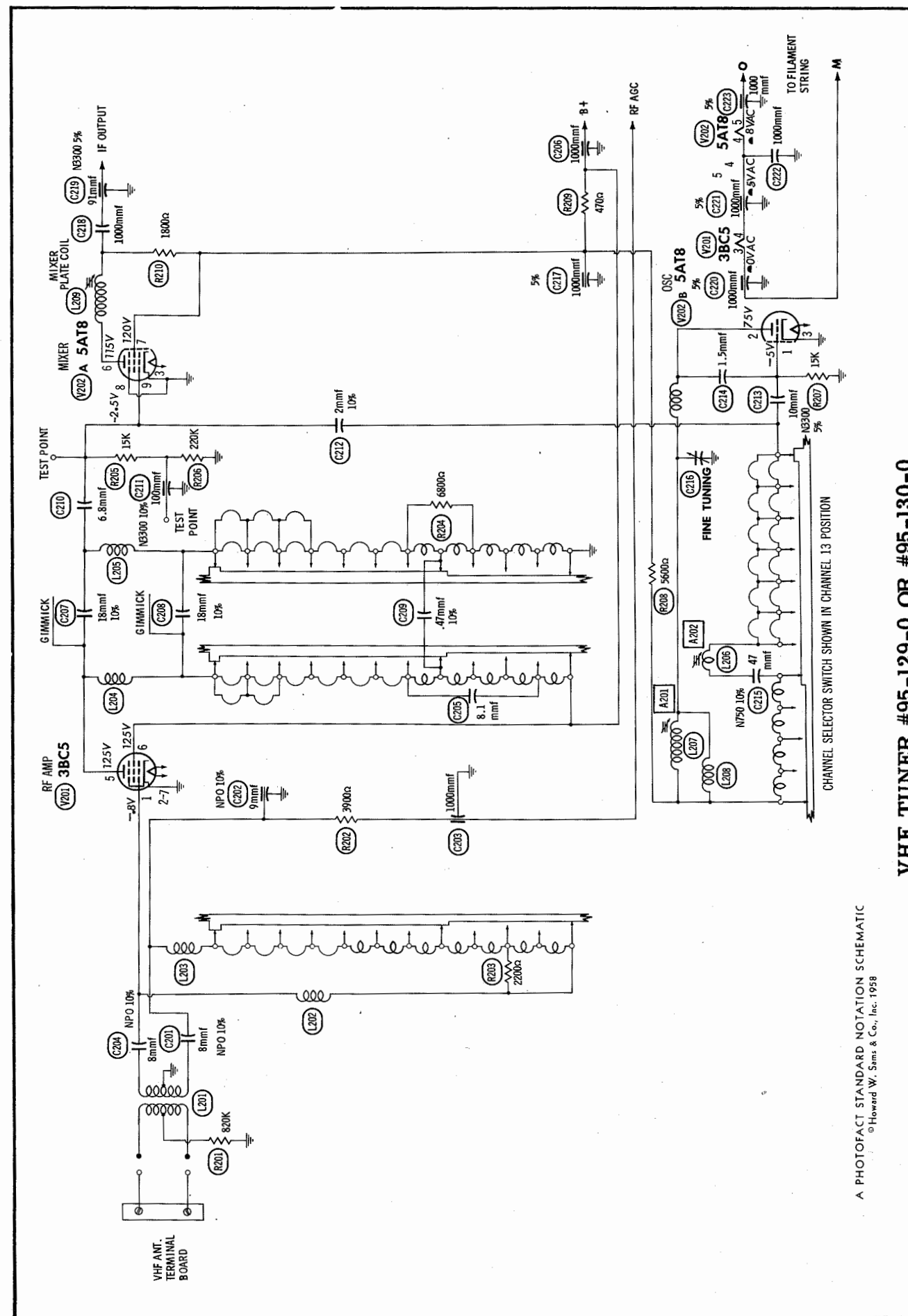


TUNER #95-130-0 - TOP VIEW



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

COMPONENT COMBINATION LAYOUT



A PHOTOFAC STANDARD NOTATION SCHEMATIC
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SILVERTONE CHASSIS 528.50180, 181, 182, 200,
201, 202, 220, 221, 230, 231, 240, 250, 270

0-130T-56# OR 0-62T-56# RENUN. FHA

TUNER PARTS LIST AND DESCRIPTIONS 95-130-0

TUBES (GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES |
|----------|------------|------|-------|
| V201 | RF Amp. | 3BC5 | |
| V202 | Mixer-Osc. | 5AT8 | |

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 | Silvertone PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C201 | 8 | | 182-809 | | | CTA6V8C | | 503C-D1 | NPO 10% |
| C202 | 9 | | 260-909 | | | CTA6V9C | | | NPO 10% |
| C203 | 1000 | | 2033-23 | EF-001 | MFT-1000 | | | | |
| C204 | 8 | | 182-809 | | | CTA6V8C | | | NPO 10% |
| C205 | 8.1 | | | | | | | | |
| C206 | 1000 | | 2033-23 | EF-001 | MFT-1000 | | | 503C-D1 | |
| C207 | .18 | | 2101-188 | | | | | | 10% |
| C208 | .18 | | 2101-188 | | | | | | 10% |
| C209 | .47 | | 2101-478 | | | | | | 10% |
| C210 | 6.8 | | 228-689 | NPO-DI 6.8 | DTZ-6R8 | C10V68C | ZT-5568 | 5TCCB-V68 | N3300 10% |
| C211 | 100 | | 252-101 | | | | | | 10% |
| C212 | 2 | | 2101-209 | | | | | | N3300 5% |
| C213 | 10 | | 185-100 | | | | | | |
| C214 | 1.5 | | 171-159 | NPO-SI 1.5 | TCZ-1R5 | CTA6V15C | ZT-5515 | 5TCCB-V15 | |
| C215 | 47 | | 233-470 | N750-DI 47 | DTZ-47 | C10Q47U | NT-5447 | 5TCU-Q47 | N750 10% |
| C216 | | | 2282-506 | | | | | | |
| C217 | 1000 | | 244-1 | | | | | | 5% |
| C218 | 1000 | | 2033-23 | BPD-001 | DD-102 | BYA6D1 | DC521 | 5HK-D1 | N3300 5% |
| C219 | 91 | | 253-910 | | | | | | 5% |
| C220 | 1000 | | 244-1 | | | | | | 5% |
| C221 | 1000 | | 244-1 | | | | | | 5% |
| C222 | 1000 | | 2033-23 | BPD-001 | DD-102 | BYA6D1 | DC521 | 5HK-D1 | |
| C223 | 1000 | | 244-1 | | | | | | 5% |

RESISTORS

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

| ITEM No. | RATING | | Silvertone PART No. | NOTES |
|----------|--------|------|---------------------|-------|
| | OHMS | WATT | | |
| R201 | 820K | | 108-824 | |
| R202 | 3900Ω | | 108-392 | |
| R203 | 2200Ω | | 108-222 | |
| R204 | 6800Ω | | 108-682 | |
| R205 | 15K | | 108-153 | |
| ITEM No. | RATING | | Silvertone PART No. | NOTES |
| | OHMS | WATT | | |
| R206 | 220K | | 111-224 | |
| R207 | 15K | | 108-153 | |
| R208 | 5600Ω | | 108-562 | |
| R209 | 470Ω | | 111-471 | |
| R210 | 1800Ω | | 108-182 | |

COILS (RF-IF)

| ITEM No. | USE | Silvertone PART No. | NOTES |
|----------|------------------|---------------------|------------|
| L201 | Ant. Trans. | 2286-1 | |
| L202 | Ant. Coil | 310-9 | Channel 13 |
| L203 | RF Choke | 310-9 | |
| L204 | RF Coil | 300-14 | Channel 13 |
| L205 | Mixer Grid Coil | 301-6 | Channel 13 |
| ITEM No. | USE | Silvertone PART No. | NOTES |
| L206 | Osc. Coil | 5381-14 | Channel 6 |
| L207 | Osc. Coil | 5381-13 | Channel 13 |
| L208 | Osc. Coil | 310-7 | Channel 13 |
| L209 | Mixer Plate Coil | 2110-8 | |

TUNER ALIGNMENT INSTRUCTIONS

VHF OSCILLATOR ALIGNMENT

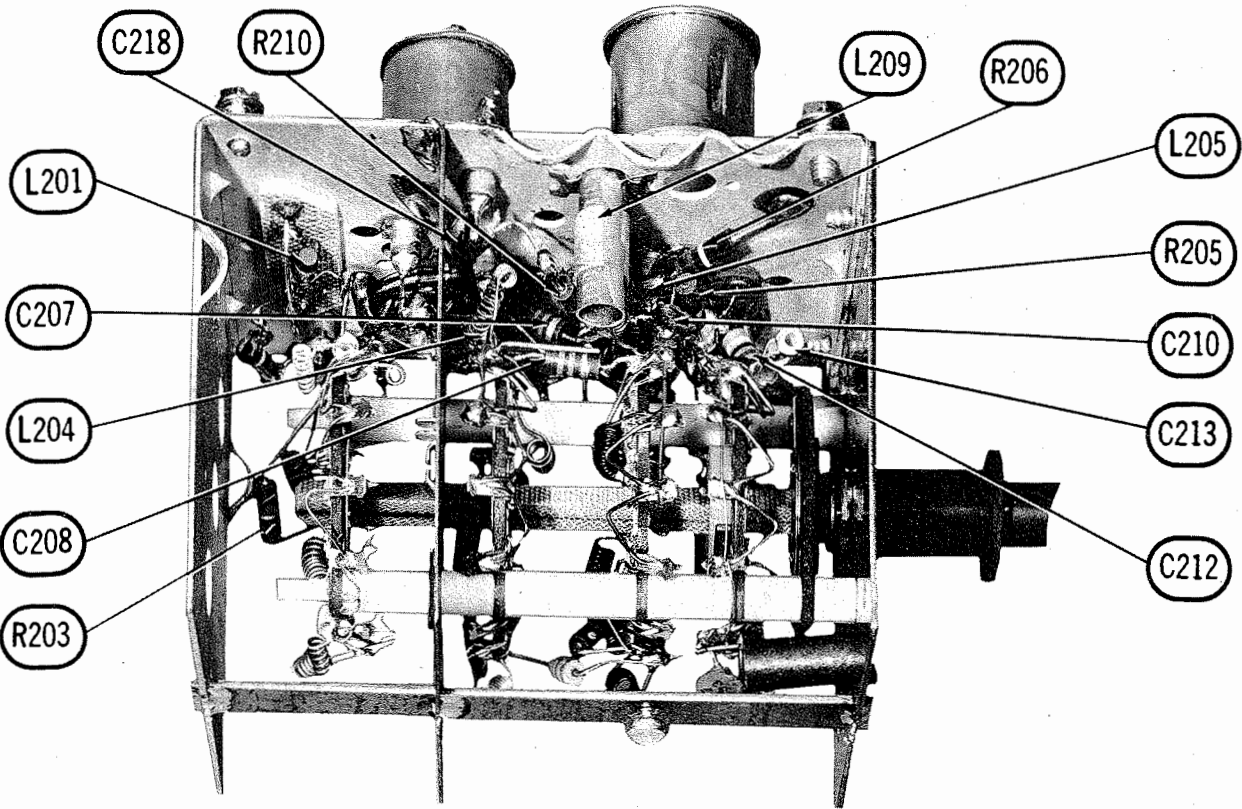
Set the Fine Tuning to the center of its range (flat of Fine Tuning shaft parallel with top of tuner). Set the Channel Selector to the highest high band channel (13-7) operating in the area. Adjust the high band oscillator adjustment slug (A201 located at 5 o'clock) for best picture and sound. Switch Channel Selector to the highest low band channel (6 - 2) operating in the area and adjust the low band oscillator adjustment (A202 located at 9 o'clock) for best picture and sound. Recheck high band adjustment.

VHF RF AND MIXER ALIGNMENT

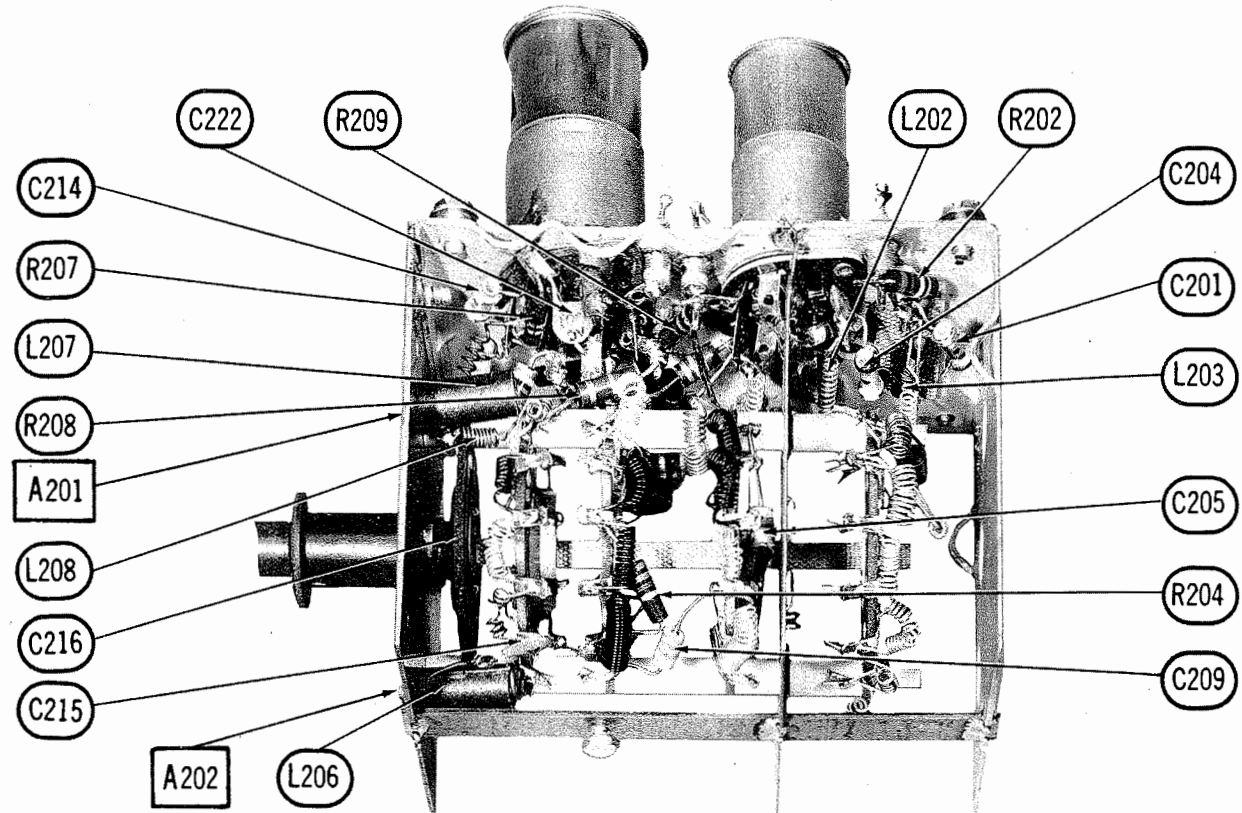
This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF TUNER 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.



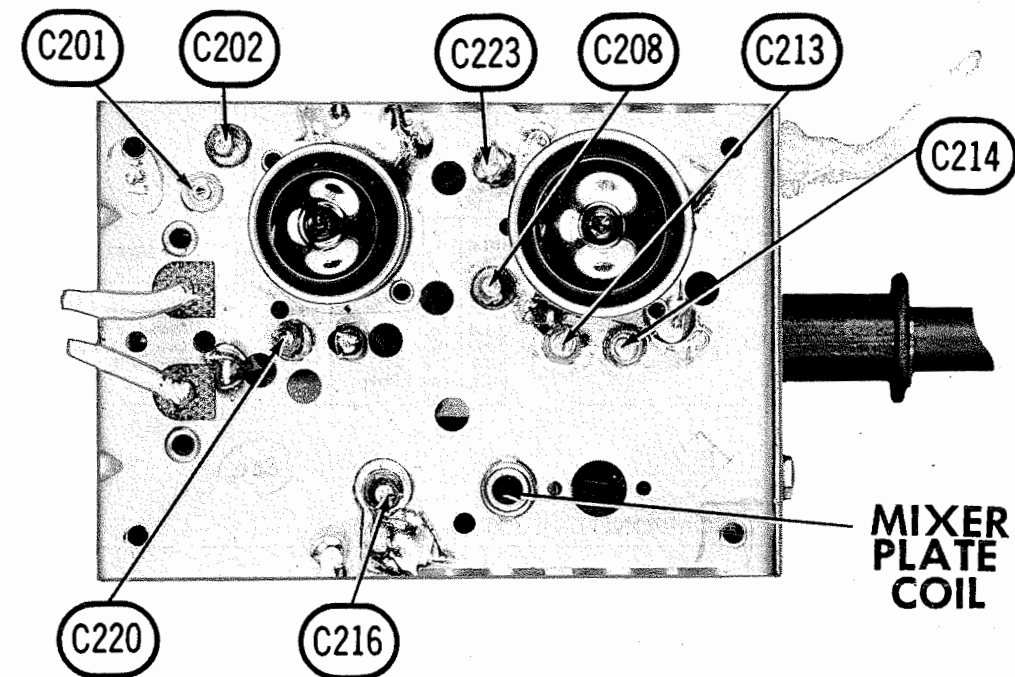
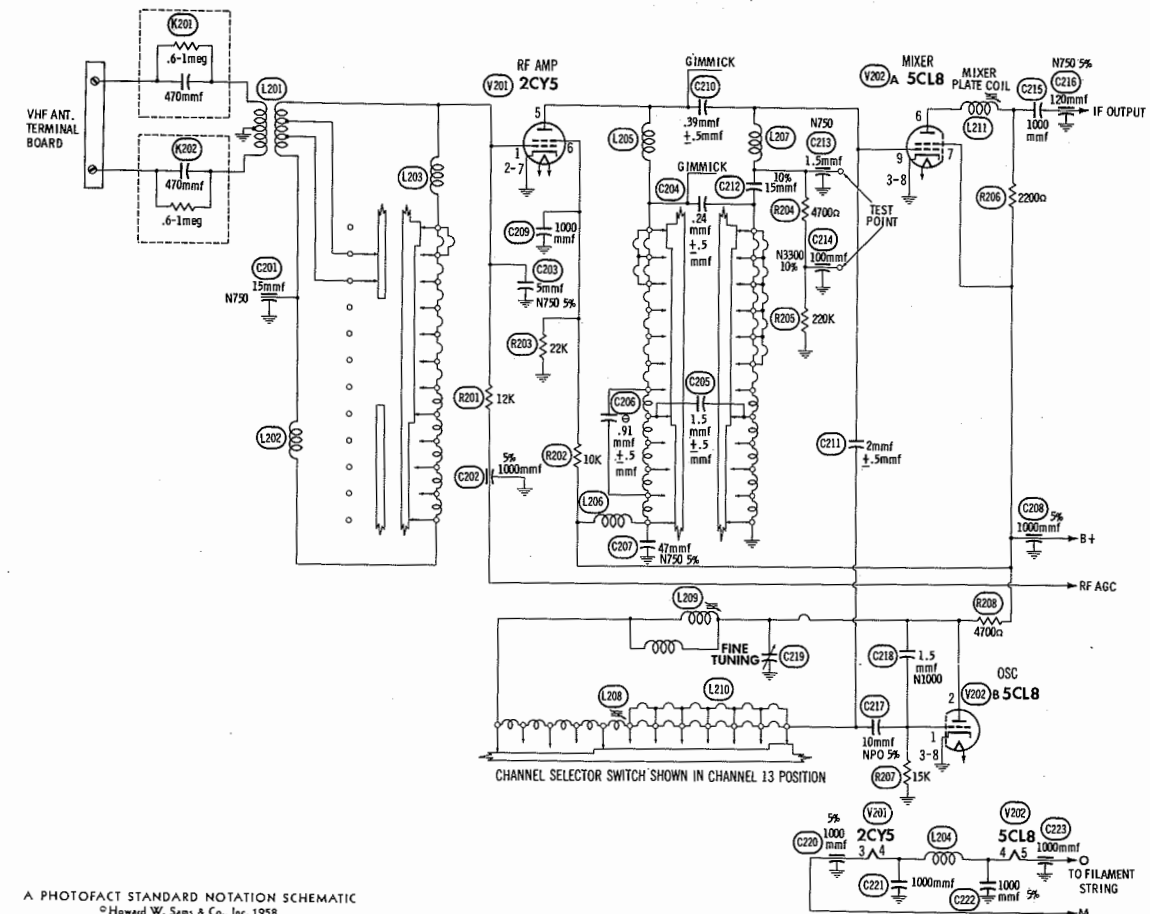
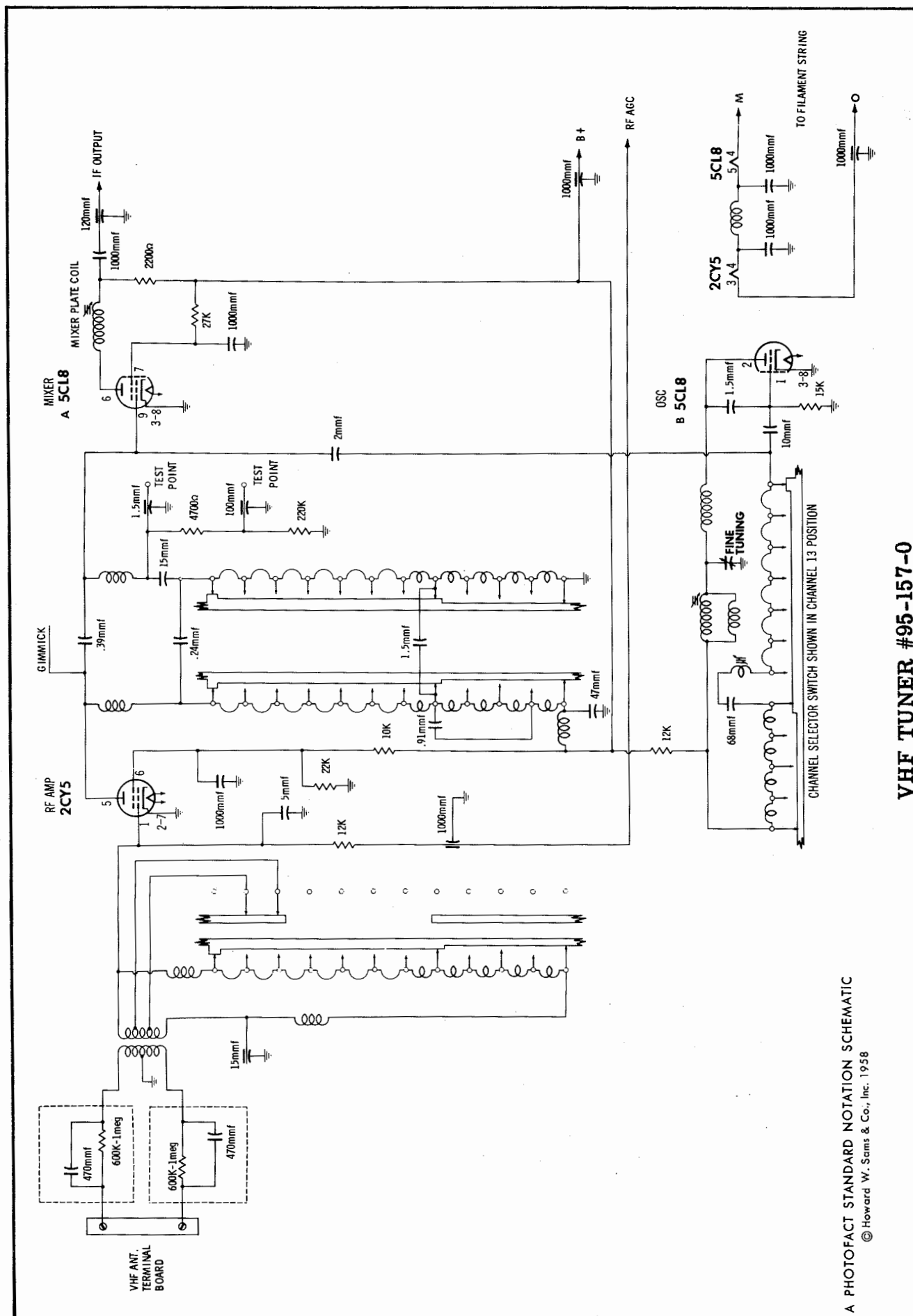
TUNER #95-130-0 - LEFT SIDE



TUNER #95-130-0 - RIGHT SIDE

SILVERTONE CHASSIS 528.50180, 181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270

FOLDER 2



SILVERTONE CHASSIS 528.50180, 181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270

FOLDER 2

TUNER PARTS LIST AND DESCRIPTIONS 95-134-0

TUBES (GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES | ITEM No. | USE | TYPE | NOTES |
|----------|--------------|------|-------|----------|------------|------|-------|
| 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 | Silvertone PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| C201 | 15 | | 258-150 | | | | | | N750 |
| C202 | 1000 | | 244-1 | | | | | | N750 5% ±.5mmf |
| C203 | 5 | | 225-509 | | | | | | ±.5mmf |
| C204 | .24 | | 2101-248 | | | | | | ±.5mmf ① |
| C205 | 1.5 | | 2101-159 | NPO-SI 1.5 | TCZ-1R5 | CTA6V15C | ZT-5515 | 5TCCB-V15 | |
| C206 | .91 | | | | | | | | |
| C207 | 47 | | 233-470 | | DTN-47 | | | | |
| C208 | 1000 | | 244-1 | | | | | | |
| C209 | 1000 | | 2033-23 | BPD-001 | DD-102 | BYA6D1 | DC521 | 5HK-D1 | |
| C210 | .39 | | 2101-398 | | | | | | ±.5mmf |
| C211 | 2 | | 2101-109 | NPO-SI 2 | | | | | ±.5mmf |
| C212 | 15 | | 222-150 | NPO-DI 15 | DD-150 | L10Q15 | | 5TCC-Q1 | 10% |
| C213 | 1.5 | | 259-159 | | | | | | N750 |
| C214 | 100 | | 252-101 | | | | | | N3300 10% |
| C215 | 1000 | | 2033-23 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | |
| C216 | 120 | | 246-121 | | | | | | |
| C217 | 10 | | 163-100 | | TCZ-10 | | | | NPO 5% |
| C218 | 1.5 | | 173-159 | | | | | | N1000 |
| C219 | | | 2262-506 | | | | | | |
| C220 | 1000 | | 244-1 | | | | | | |
| C221 | 1000 | | 2033-23 | BPD-001 | DD-102 | BYA6D1 | DC521 | 5HK-D1 | |
| C222 | 1000 | | 2033-23 | BPD-001 | DD-102 | BYA6D1 | DC521 | 5HK-D1 | |
| C223 | 1000 | | 244-1 | | | | | | |

① Not used in some versions.

RESISTORS

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

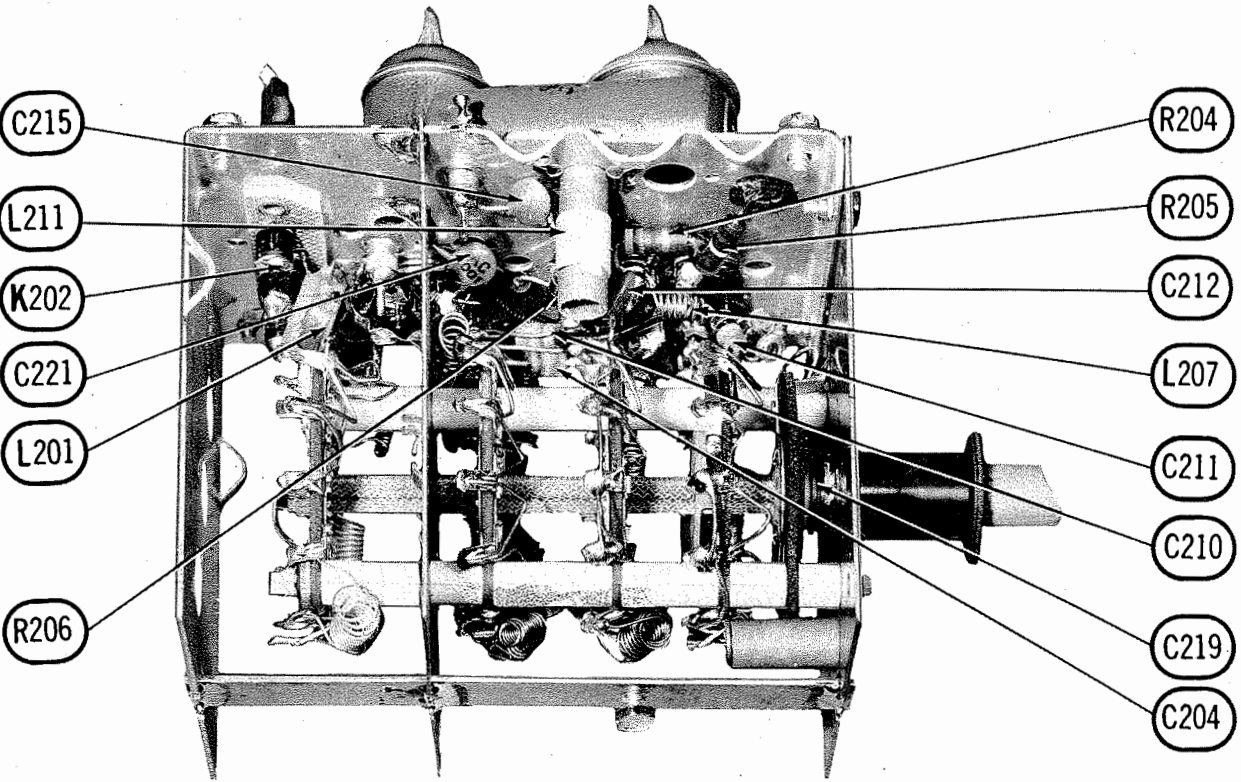
| ITEM No. | RATING | | Silvertone PART No. | NOTES | ITEM No. | RATING | | Silvertone PART No. | NOTES |
|----------|--------|------|---------------------|-------|----------|--------|------|---------------------|-------|
| | OHMS | WATT | | | | OHMS | WATT | | |
| R201 | 12K | | 106-123 | | R205 | 220K | | 111-224 | |
| R202 | 10K | | 106-103 | | R206 | 2200Ω | | 106-222 | |
| R203 | 22K | | 106-223 | | R207 | 15K | | 106-153 | |
| R204 | 4700Ω | | 106-472 | | R208 | 4700Ω | | 106-472 | |

COILS (RF-IF)

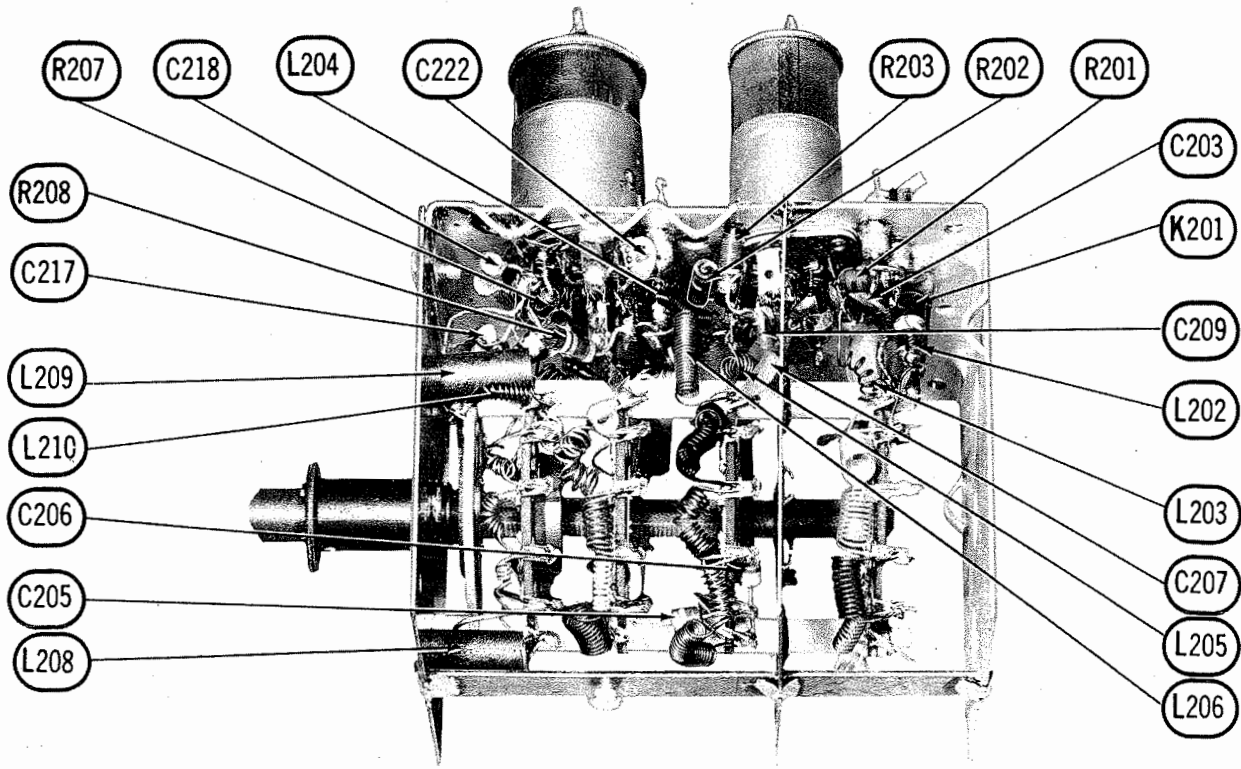
| ITEM No. | USE | Silvertone PART No. | NOTES | ITEM No. | USE | Silvertone PART No. | NOTES |
|----------|-------------|---------------------|------------|----------|------------------|---------------------|------------------|
| L201 | Ant. Trans. | 2309-5 | | L207 | Mixer Grid Coil | 312-7 | Channel 13 |
| L202 | RF Choke | 310-5 | | L208 | Osc. Coil | 5381-14 | Channel 6 |
| L203 | Ant. Coil | 310-5 | Channel 13 | L209 | Osc. Coil | 5381-13 | Channel 13, Adj. |
| L204 | Fl. Choke | 314-10 | | L210 | Osc. Coil | 310-8 | Channel 13 |
| L205 | RF Coil | 313-7 | Channel 13 | L211 | Mixer Plate Coil | 2110-9 | |
| L206 | RF Choke | 301-25 | | | | | |

COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | Silvertone PART No. | REPLACEMENT DATA |
|----------|---------------|-----------------|---------------------|------------------|
| K201 | Ant. Coupling | 470mmf, .6-1meg | 330-1 | |
| K202 | Ant. Coupling | 470mmf, .6-1meg | 330-1 | |



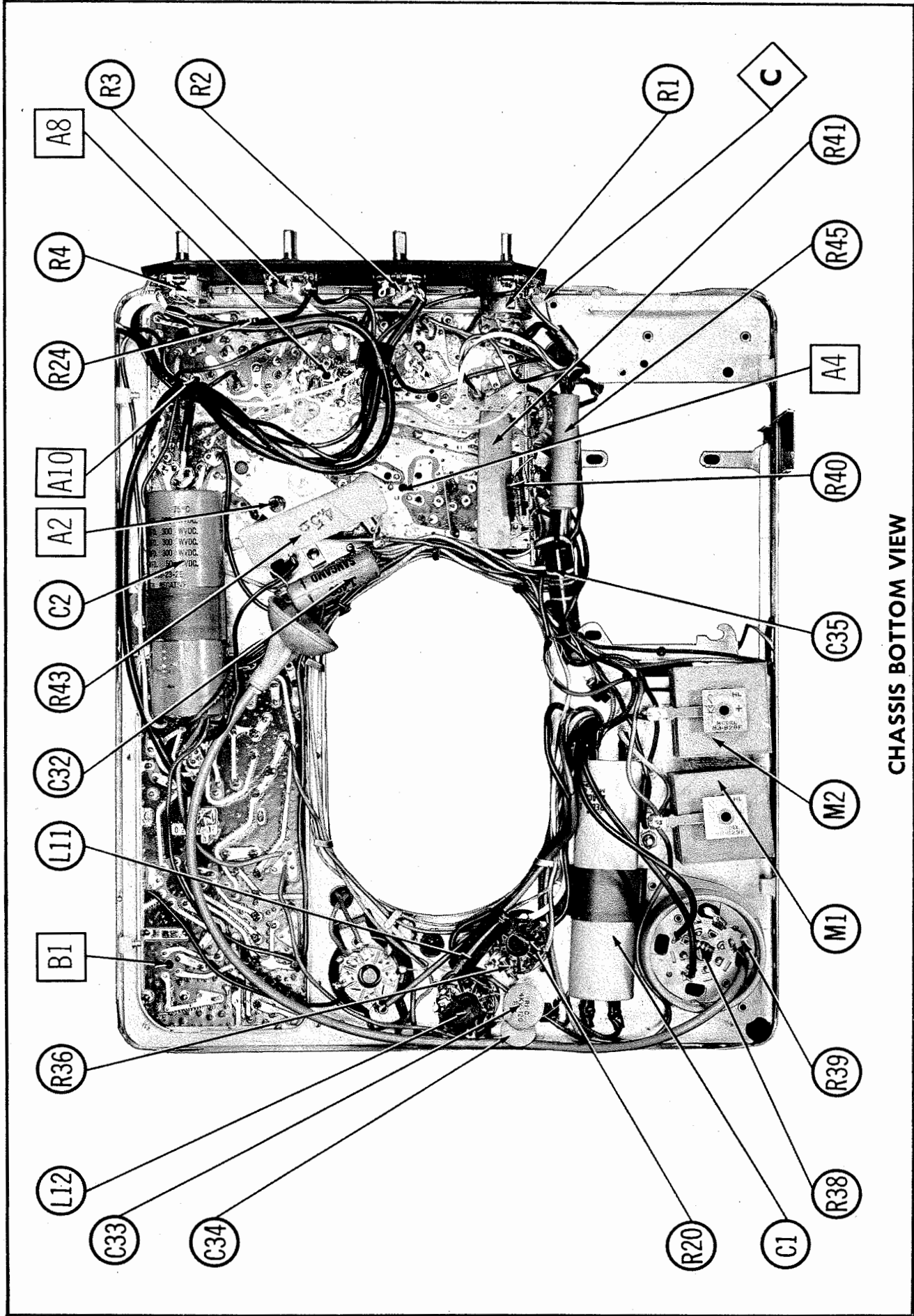
TUNER #95-134-0 - LEFT SIDE



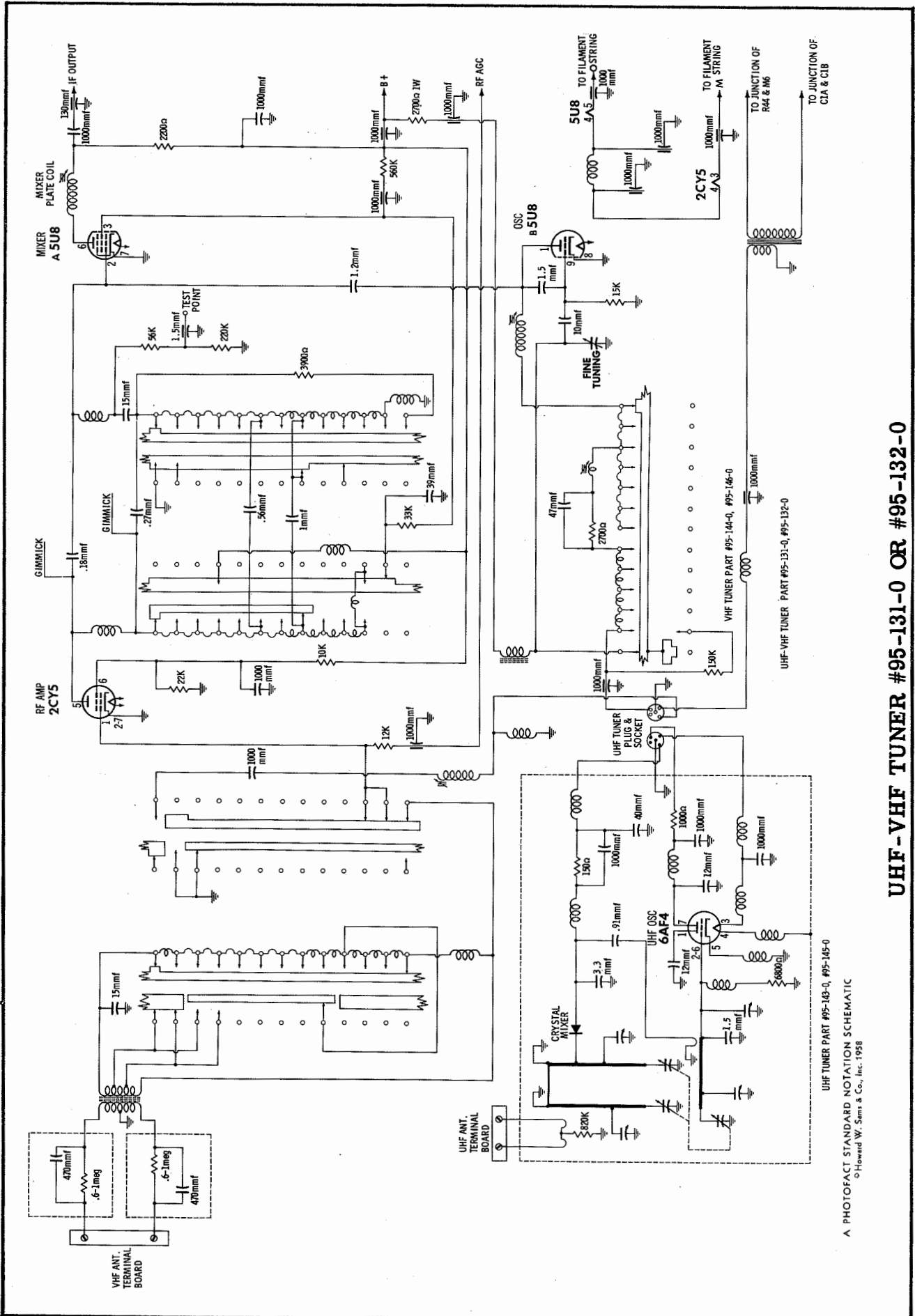
TUNER #95-134-0 - RIGHT SIDE

SILVERTONE CHASSIS 528.50180, 181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270

FOLDER 2

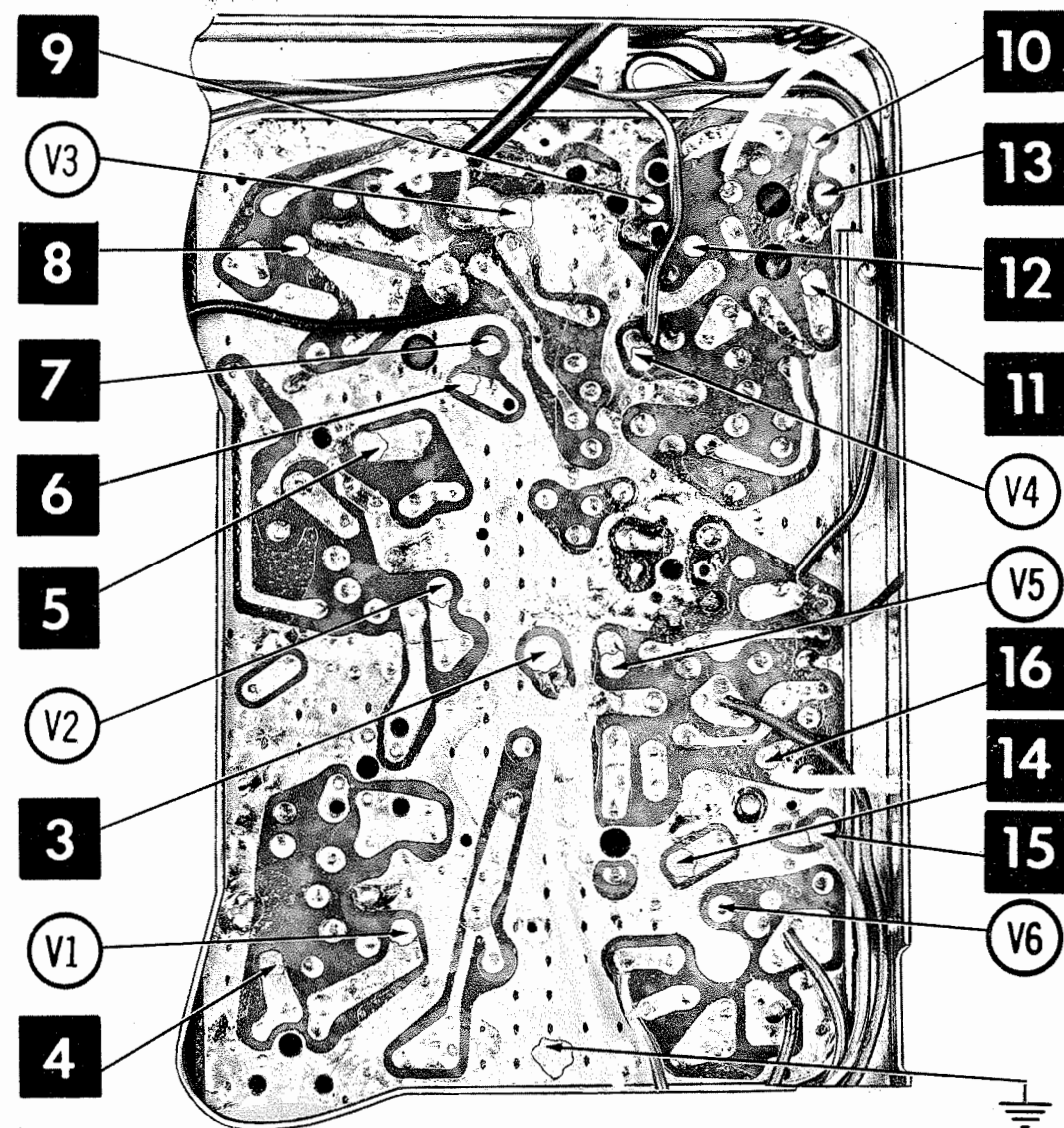


CHASSIS BOTTOM VIEW



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

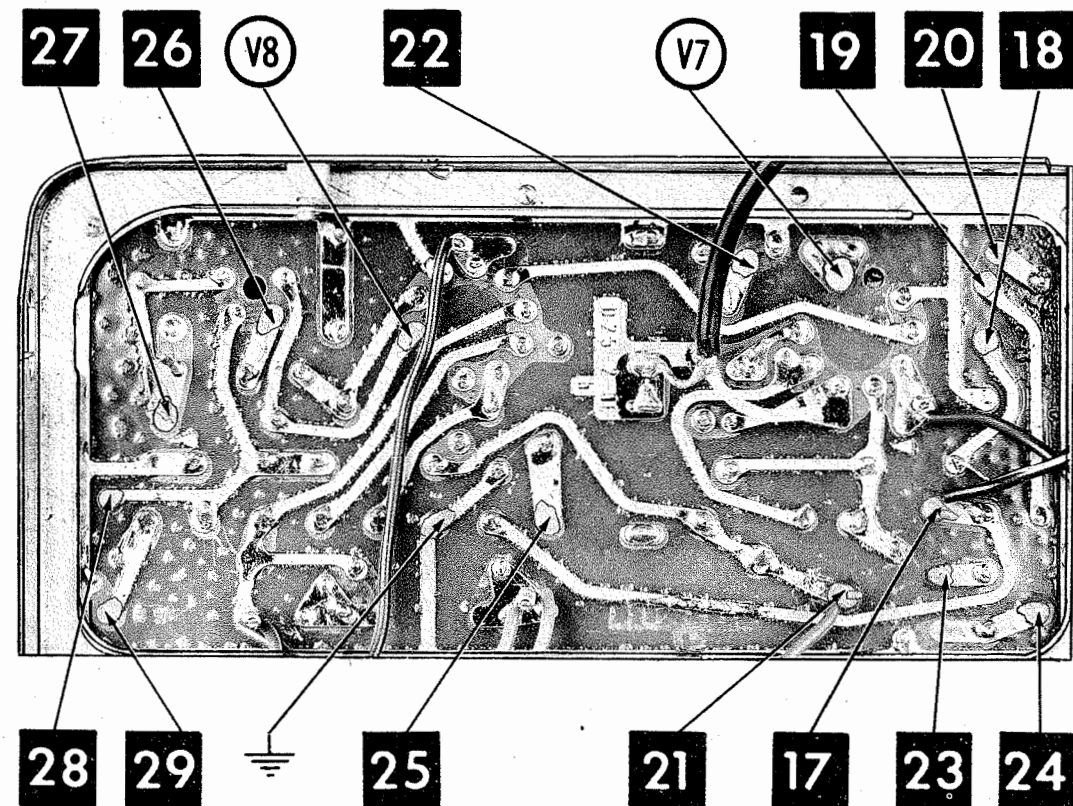
SILVERTONE CHASSIS 528.50180, 181, 182, 200,
201, 202, 220, 221, 230, 231, 240, 250, 270
0-232-96# OR 0-131-96# TUNER FHF-FHU



A Howard W. Sams CIRCUITRACE* Photo
*TRADE MARK

VIDEO IF, SYNC & SOUND PRINTED BOARD

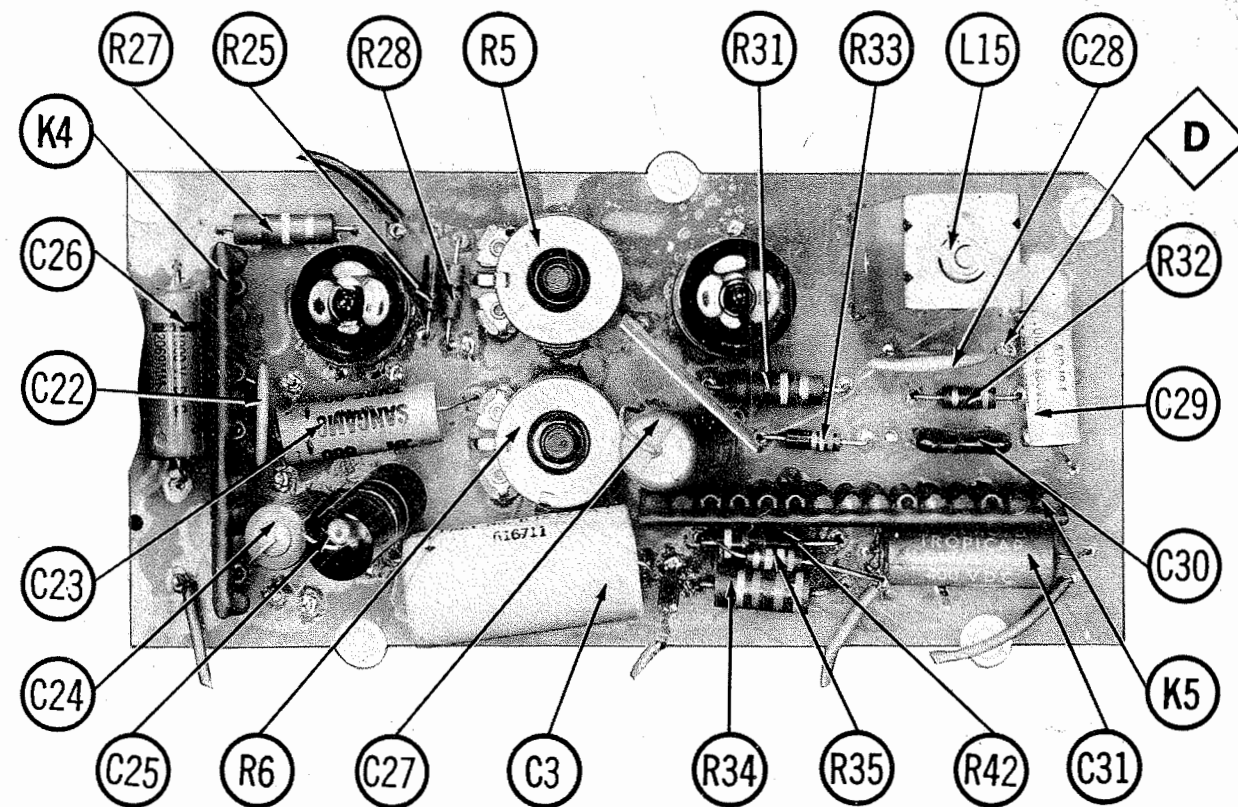
ARROWS INDICATING TUBE LOCATIONS ARE
POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



A Howard W. Sams CIRCUITRACE* Photo
*TRADE MARK

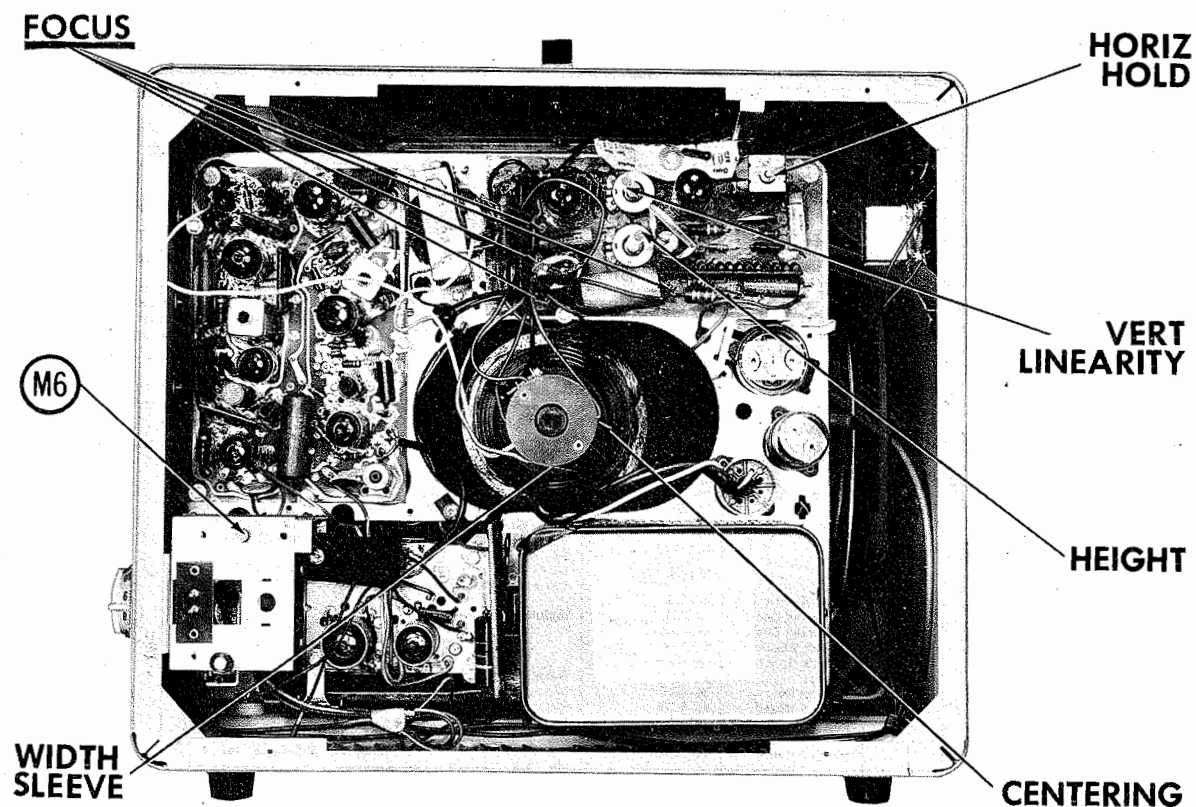
HORIZ & VERT PRINTED BOARD

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



HORIZ & VERT PRINTED BOARD

SILVERTONE CHASSIS 528.50180, 181, 182, 200,
201, 202, 220, 221, 230, 231, 240, 250, 270



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station and adjust the Horizontal Hold until the picture synchronizes horizontally. If the picture cannot be synced with the Horizontal Hold, turn the Waveform slug (B1) several turns out of the coil form from its original position. Readjust the Horizontal Hold until the picture synchronizes horizontally.

Connect the Vertical Amplifier of a scope thru a low capacity probe to point ①. Connect low side to chassis. Retouch the Horizontal

Hold to synchronize the picture.

Adjust the Waveform slug (B1) for a waveform similar to Fig. 5 with the sharp peak approximately 10% higher than the broad peak. Keep the picture in sync during this adjustment with the Horizontal Hold. Remove scope connection and retouch Horizontal Hold if necessary to synchronize picture horizontally.

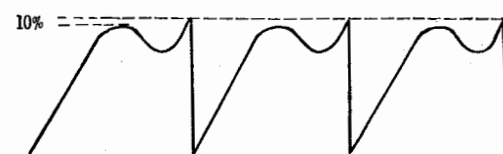
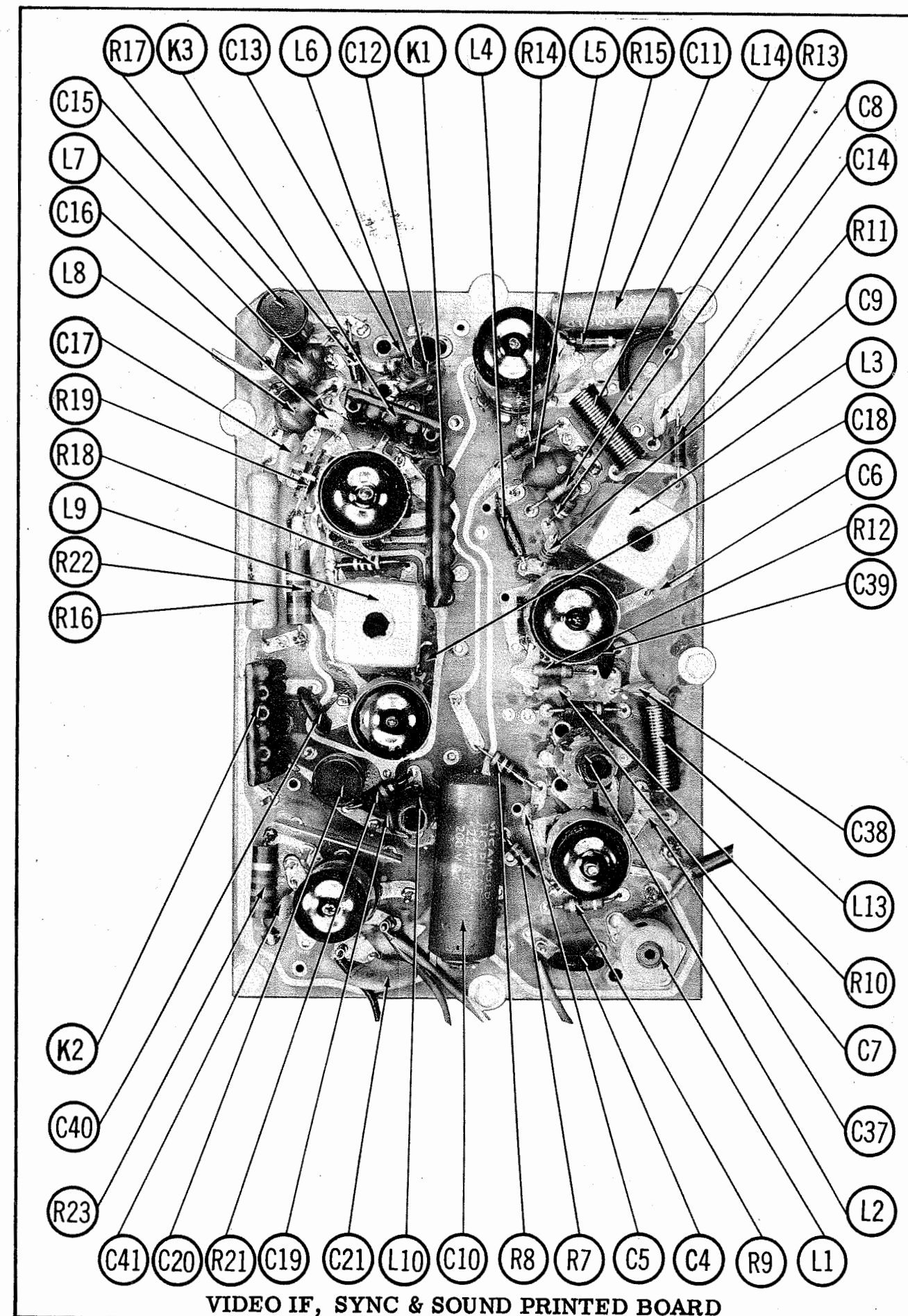


FIG. 5



VIDEO IF, SYNC & SOUND PRINTED BOARD

SILVERTONE CHASSIS 528.50180, 181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270

TUBES (GENERAL ELECTRIC, SYLVANIA)

| ITEM No. | USE | TYPE | NOTES | ITEM No. | USE | TYPE | NOTES |
|----------|---------------------------------|------|--------|----------|---------------------------|----------|--------|
| V1 | 1st. Video IF Amp. | 3BZ6 | 3CB6 * | V7 | Vert. Mult. -Vert. Output | 6CM7 | |
| V2 | 2nd. Video IF Amp. - Video Det. | 5AM8 | | V8 | Horiz. AFC-Horiz. Osc. | 6CG7 | |
| V3 | Video Output-Sync Sep. | 6BH8 | | V9 | Horiz. Output | 12AV5GA | |
| V4 | Sound IF Amp. -Sync Amp. | 5U8 | | V10 | Damper | 12AX4GTA | |
| V5 | Audio Det. | 3DT6 | | V11 | HV Rect. | 1B3GT | 1G3GT* |
| V6 | Audio Output | 5AQ5 | | | | | |

* Alternate.

PICTURE TUBE

| ITEM No. | Silvertone PART No. | GENERAL ELECTRIC PART No. | RCA PART No. | SYLVANIA PART No. | NOTES |
|----------|---------------------------------------|---------------------------|------------------------------------|---|---|
| V12 | 17CFP4 17BJP4 21CBP4A 24AEP4 | | 17BJP4 ① 21CBP4-A ① 24AEP4 ① | 17CFP4 ② 17BJP4 ② 21CBP4A ② 24AEP4 ② | ① "Silverama" ③ ② "Silver Screen 85" |

ELECTROLYTIC CAPACITORS

| RATING | | | REPLACEMENT DATA | | | | | | |
|----------|------|-------|---------------------|------------------|---------------------------|------------------|------------------------|--------------------|------------------|
| ITEM No. | CAP. | VOLT. | Silvertone PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | PYRAMID PART No. | SANGAMO PART No. | SPRAGUE PART No. |
| C1A | 120 | 150 | 18-50-5 | PR2-050 | | TC495 | | MT-15150 | R2528 * |
| B | 120 | 150 | | | | TC495 | | MT-15150 | |
| C2A | 40 | 300 | 18-23-2 | PR5-500 | | WV404 | | | R2325 * |
| B | 20 | 300 | | | | | | | |
| C | 20 | 300 | | | | | | | |
| D | 20 | 300 | | | | | | | |
| E | 50 | 50 | | | | | | | |
| C3 | 20 | 300 | 18-57-5 | NP-PRS300V 20 | BR4035 BR4035 | TC78 TC78 | TD-40-350 TD-40-350 | MT-4540 MT-4540 | R2449 * |

† Connect negative leads together.

* Non-catalog item.

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. | Silvertone PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | | SPRAGUE PART No. |
| C4 | 2000 | | 15-20217 | BPD-002 | DD-202 | BYA10D2 | DC522 | 5HK-D2 | |
| C5 | 880 | | 15-68111 | | MD-881 | | | | 10% |
| C6 | 1000 | | 15-10211 | | | | | | 10% |
| C7 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | 10% |
| C8 | 2.2 | | 20-5-0 | NFO-SI 2.2 | TCZ-2R2 | CTA6V22C | | 5TCCB-Q2 | 10% |
| C9 | 10 | | 20-14-0 | NFO-SI 10 | TCZ-10 | | ZT-541 | 5TCC-Q2 | 10% |
| C10 | .22 | 200 | 16-22428 | P288N-22 | | CUB2P22 | GEM-2022 | 2TM-P22 | |
| C11 | .047 | 200 | 16-47328 | P288N-047 | DF-503 | CUB2S47 | GEM-4147 | 2TM-S47 | |
| C12 | 33 | | | | | | | | N150 |
| C13 | 33 | | | | | | | | N150 |
| C14 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | ① |
| C15 | .047 | 400 | 20-44-1 | P488N-047 | DF-503 | BC8S47J | ACE8147 | 4SE-S47 | |
| C16 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | |
| C17 | 5000 | | 15-50217 | BPD-005 | DD-502 | BYA10D5 | | 5HK-D5 | ① |
| C18 | 8.2 | | 20-118-0 | | | C10V48U | | | N750 |
| C19 | 18 | | | | | | | | N330 10% |
| C20 | .047 | 200 | 16-47328 | P288N-047 | DF-503 | BC2S47J | ACE8147 | 2SE-S47 | |
| C21 | 5000 | 2000 | 20-79-0 | | DD30-502 | HVC20D5 | | 20HK-D5 | |
| C22 | 5000 | | 20-29-0 | BPD-005 | DD-502 | BYA10D5 | DC525 | 5HK-D5 | |
| C23 | .01 | 600 | 18-10357 | | | | GEM-1011 | | 10% ② |
| C24 | .047 | 400 | 18-47347 | | | | | | 10% ③ |
| C25 | .1 | 400 | 18-10448 | P488N-1 | DF-104 | CUB4P1 | GEM-401 | 4TM-P1 | |
| C26 | .0068 | 1000 | 18-88267 | | | | GEM-16268 | | |
| C27 | .22 | 200 | 16-22428 | P288N-22 | | CUB4P22 | GEM-2022 | 2TM-P22 | 10% ④ |
| C28 | 375 | | 20-107-0 | | | | | | N750 10% |
| C29 | .01 | 600 | 20-19-1 | P688N-01 | D6-103 | CUB6S1 | GEM-611 | 6TM-S1 | |
| C30 | 1000 | | 20-9-2 | 1469-001 | | MR5D1 | MCB251 | MS-31 | 5% |
| C31 | .047 | 400 | 20-54-1 | P488N-047 | DF-503 | CUB4S47 | GEM-4147 | 4TM-S47 | |
| C32 | .1 | 400 | 18-10448 | P488N-1 | DF-104 | CUB4P1 | GEM-411 | 4TM-P1 | |
| C33 | 120 | 4000 | 15-12146 | | | | | | N1500 10% |
| C34 | 10000 | | 15-10317 | BPD-01 | DD-103 | BYA10S1 | DC511 | 5HK-S1 | |
| C35 | .047 | 600 | 20-647-1 | P688N-047 | DF-503 | CUB6S47 | GEM-6147 | 6TM-S47 | |
| C36 | .047 | 600 | 20-647-1 | P688N-047 | DF-503 | CUB6S47 | GEM-6147 | 6TM-S47 | |
| C37 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | |
| C38 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | |
| C39 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | |
| C40 | 10000 | | 15-10317 | BPD-01 | DD-103 | BYA10S1 | DC511 | 5HK-S1 | |
| C41 | 1000 | | 15-10217 | BPD-001 | DD-102 | BYA10D1 | DC521 | 5HK-D1 | |

① Ch. 528.50182, 220, 221, 231, 240, 250 and 270 use 10000mmf in this application (Part #15-10317).

② Ch. 528.50240, 250, 270 use .0068mfd 10% 600V in this application (Part #15-88267).

③ Ch. 528.50181, 182, 201, 202, 220, 221, 230, 231 use .068mfd 400V in this application (Part #16-88347).

④ Ch. 528.50240, 250, 270 use .056mfd 400V 10% in this application (Part #16-58347).

⑤ Ch. 528.50181, 182, 201, 202, 220, 221, 230, 231, 240, 250, 270 use .01mfd 1000V in this application (Part #16-10367).

CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | INSTALLATION NOTES |
|----------|-----------------|-------|------------------------|-----------------------|-----------------------|-----------------|---------------------|-------------------------------------|
| | RESIST- ANCE | WATTS | Silvertone PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | IRC PART No. | MALLORY PART No. | |
| RIA | 1meg | ½ | 24-304-0 | B-70 | A47-1meg-Z | Q13-137 | TA16A | Volume |
| B | Shaft | | | Not Req. | K8S-3 | Not Req. | Not Req. | |
| C | Switch | | | KB-1or KR-1* | SWE-12 | 76-1 | US-26 | Contrast |
| R2A | 500Ω | ½ | 24-78-1 | B-4 | A47-500-S | Q11-103 | TA52L | |
| B | Shaft | | | Not Req. | K8S-3 | Not Req. | Not Req. | Brightness |
| R3A | 4meg | ½ | 24-264-1 | B-86 | A47-4meg-S | Q11-137 | TA16L | |
| B | Shaft | | | Not Req. | K8S-3 | Not Req. | Not Req. | Vert. Hold, Note 1 |
| R4A | 1meg | ½ | 24-108-1 | B-69 | A47-1meg-S | Q11-137 | TA16L | |
| B | Shaft | | | Not Req. | K8S-3 | Not Req. | Not Req. | Vert. Lin. Height with 330K stop |
| R5 | 5000Ω | ½ | 24-267-1 | | | | | |
| R6 | 7meg | ½ | 24-266-1 | | | | | |

* Use KR-1 with CRL "red label" controls and KB-1 with "blue label" controls.

Note 1. Alternate Part #24-113-1.

PARTS LIST AND DESCRIPTIONS

RESISTORS

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

| ITEM No. | RATING | Silvertone PART No. | NOTES |
|----------|--------|---------------------|--------|
| OHMS | WATT | | |
| R7 | 6800Ω | 60-68201 | |
| R8 | 330Ω | 60-33102 | |
| R9 | 47Ω | 60-47001 | |
| R10 | 15K | 60-15301 | |
| R11 | 1000Ω | 60-10201 | |
| R12 | 220Ω | 60-2201 | |
| R13 | 5800Ω | 60-58201 | |
| R14 | 1meg | 60-10502 | |
| R15 | 1meg | 60-10502 | |
| R16 | 3500Ω | 61-112 | |
| R17 | 180K | 60-18401 | |
| R18 | 39K | 60-39301 | Note 1 |
| R19 | 100K | 60-10401 | |
| R20 | 220K | 60-22401 | |
| R21 | 150K | 60-15401 | Note 2 |
| R22 | 10K | 60-1011 | |
| R23 | 180Ω | 60-1811 | |
| R24 | 390K | 60-39401 | Note 3 |
| R25 | 2.2meg | 60-22502 | |
| R26 | 470Ω | 60-47112 | Note 4 |

Note 1. Some versions may use 33K (Part #60-33301) or 47K (Part #60-47301) in this application.

Note 2. Ch. 528.50181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250 and 270 use 100K in this application.

(Part #60-10401).

Note 3. Some versions may use 580K (Part #60-58401), or 680K (Part #60-68401) in this application.

Note 4. Not used in some versions.

Note 5. Ch. 528.50181, 182, 201, 202, 220, 221, 230, 231, 240, 250 and 270 use 100K, 1W in this application.

(Part #60-10411).

Note 6. Value may vary slightly. Replace with original value.

Note 7. Some versions may use a single 6800Ω 2W to replace R34 and R35 (Part #60-68221).

COILS (RF-IF)

| ITEM No. | USE | Silvertone PART No. | Meissner PART No. | Merit PART No. | Miller PART No. | Rom PART No. | NOTES |
|----------|---------------------|---------------------|-------------------|----------------|-----------------|--------------|--|
| L1 | 1st. Video IF | 10-14-3 | | | | | |
| L2 | 2nd. Video IF | 10-15-3 | | | | | |
| L3 | 3rd. Video IF | 10-77-2 | | | | | |
| L4 | Resonant Choke | 10-65-1 | | | | | |
| L5 | Series Peaking Coil | 10-64-1 | | | | | |
| L6A | 4.5MC Trap | 10-120-1 | | | | | |
| B | 1st. Sound IF | | | | | | |
| L7 | Series Peaking Coil | 10-66-1 | 19-3250 * | TV-198 * | 6130 * | VP-6 * | 12 Microhenries 60 Microhenries Note 1 |
| L8 | Shunt Peaking Coil | 10-88-1 | 19-3250 | TV-198 | 6130 | VP-6 | 270 Microhenries, wound on 15K resistor |
| L9 | 2nd. Sound IF | 10-100-2 | | | | | 269 Microhenries |
| L10 | Quadrature Coil | 10-12-5 | | | | | |
| L11 | RF Choke | 10-138-1 | 19-1002 | SW-630 | 4606 | | 2.6 Microhenries |
| L12 | RF Choke | 10-128-1 | 19-3250 | TV-198 | 6130 | VP-6 | 270 Microhenries |
| L13 | Flt. Choke | 10-122-1 | 19-1002 | BC-563 | 4606 | | 2 Microhenries |
| L14 | Flt. Choke | 10-122-1 | 19-1002 | BC-563 | 4606 | | 2 Microhenries |

* Parallel with 15K resistor.

Note 1. Part #10-146-1 used in Ch. 528.50181, 182, 200, 201, 202, 220, 221, 230, 231, 240, 250, 270.

TRANSFORMER (HORIZ. OSC.)

| ITEM No. | DC RES. | | REPLACEMENT DATA | | | | | | NOTES |
|----------|---------|------|---------------------|-------------------|----------------|-----------------|--------------|---------------------|----------------|
| | | | Silvertone PART No. | Meissner PART No. | Merit PART No. | Miller PART No. | Rom PART No. | Thordarson PART No. | |
| | PRI. | SEC. | | | | | | | |
| LJ5 | 79Ω * | 43Ω | 10-13-5 | | | | | | * Tapped @ 57Ω |

TRANSFORMERS (SWEEP CIRCUITS)

| ITEM No. | USE | Silvertone PART No. | Holldorson PART No. | Merit PART No. | Rom PART No. | Stancor PART No. | Thordarson PART No. | Triod PART No. | NOTES |
|----------|------------------------------------|---------------------|---------------------|----------------|--------------|------------------|---------------------|----------------|-------|
| T1 | Vert. Output | B80-1-2F | Z1807 ① | A-2824 ① | V315 ① | VO-101 ② | 26978 | A-119X ② | |
| T2A | Alt. Vert. Output | 80-1-2 | DF-607 | MDR-92 | Y90F19/43 | DY-16A | Y-16 | Y-41 & NW234 ① | |
| B | Yoke-Horiz. (20MH) | D80-5-4A | ④⑤⑥ | ④⑤⑥ | ④⑤⑥ | ④⑤⑥ | ④⑤⑥ | | |
| | (90°)-Vert. (46MH) | 80-5-4 | | | | | | | |
| | Alt. Yoke | 80-2-4 | | | | | | | |
| M5 | Rear Cover & Centering Device | 83-936 | | | | | | | |
| | Alt. Rear Cover & Centering Device | 83-1034 | | | | | | YC-1 | |
| | Yoke Clamp | 22-2-3 | | | | | | | |
| | Alt. Yoke Clamp | 22-115-3 | | | | | | | |
| T3 | Horiz. Output | 80-3-3F | | | | | | | |
| | Alt. Horiz. Output | 80-3-3 | | | | | | CL-1 | |

① Cut and tape blanking lead.

② Drill new mounting hole(s).

③ Includes yoke plug, rear cover and centering device.

④ Use original rear cover and centering device, and width sleeve.

⑤ Use original yoke damping network, if necessary.

⑥ Connect yoke terminal #3 to yoke plug pin #7, yoke terminal #7 to yoke plug pin #2, jumper yoke terminals #1 and #6, and connect to yoke plug pin #5, yoke terminal #4 to yoke plug pin #3.

TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE | | REPLACEMENT DATA | | | | | | NOTES | |
|----------|-----------|------|---------------------|---------------------|----------------|--------------|------------------|---------------------|-------|----------------------------|
| | | | Silvertone PART No. | Holldorson PART No. | Merit PART No. | Rom PART No. | Stancor PART No. | Thordorson PART No. | | Triod PART No. |
| | PRI. | SEC. | | | | | | | | |
| T4 | 8200Ω | 3-4Ω | 80-21-1 | Z1110 | A-3026 | | A-3877 ① | 24948 | S-6X | ① Drill new mounting hole. |

SPEAKER

| ITEM No. | TYPE | | | REPLACEMENT DATA | | NOTES |
|----------|------|-------|------------|---------------------|---------------|---|
| | | | | Silvertone PART No. | QUAM PART No. | |
| | SIZE | FIELD | V. C. IMP. | | | |
| SP1 | 4" | PM | 3-4Ω | 33-288-4 ① | 4A07 | ① Used in Models 8100BE, 8100GR, 9100EB, FG, 9101EB, FG, 9110, 9111 |
| | 4" | PM | 3-4Ω | 33-324-4 ② | | ② Used in Models 8102AQ, CL, YL, 8106 |
| | 4" | PM | 3-4Ω | 33-367-4 ③ | | ③ Used in Models 9102AQ, BL, CL, GY, 9103AQ, BL, CL, GY |
| | 5" | PM | 3-4Ω | 33-258-4 ④ | | ④ Used in Models 9150, 9151 |

COMPONENT COMBINATIONS

| ITEM No. | USE | DESCRIPTION | Silvertone PART No. | REPLACEMENT DATA |
|----------|----------------------|--|---------------------|------------------|
| K1 | Audio & Sync Circuit | 10000mmf, 220Ω, 3300Ω, 8200Ω, 470K | 13-21-5 | |
| K2 | Audio Circuit | 220mmf, 4700mmf, 10000mmf, 680Ω, 560K, 680K | 13-22-5 | |
| K3 | Sync Sep. Coupling | 150mmf, 5000mmf, 22K, 270K, 2.2meg | 13-9-5 | |
| K4 | Vertical Circuit | 5000mmf, 5000mmf, 5000mmf, 5000mmf, 15K, 22K, 33K, 47K, 47K, 68K | 13-17-5 ① | |
| K5 | Horizontal Circuit | 27mmf 10%, 47mmf 10%, 220mmf 10%, 5000mmf, 8000mmf, 8000mmf, 8200Ω, 15K, 18K, 100K, 330K, 330K, 470K, 680K | 13-18-5 | |
| K6 | Cabinet Isolation | 1000mmf, 1000VAC, 4.7meg | 13-17-3 | |