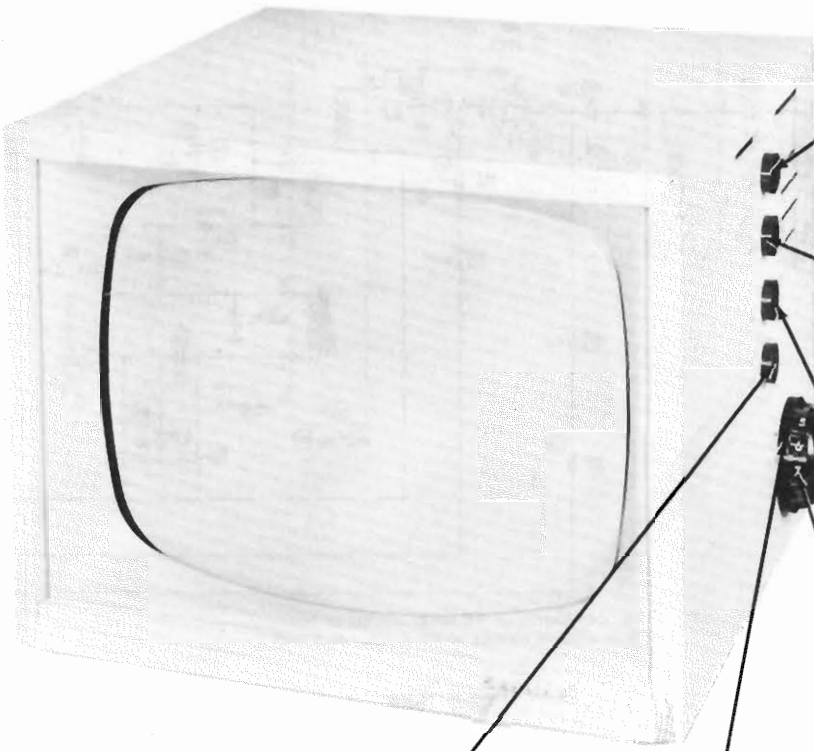


EW-RESISTOR IDENTIFICATION



VERT.  
HOLD  
CONTROL

HORIZ.  
HOLD  
CONTROL

ON-OFF  
SWITCH  
VOLUME  
CONTROL

CHANNEL  
SELECTOR

CONTRAST  
CONTROL

FINE  
TUNING

SENTINEL MODELS 1U-1001B,  
1U-1011B, 1U-1017B, 1U-1034B

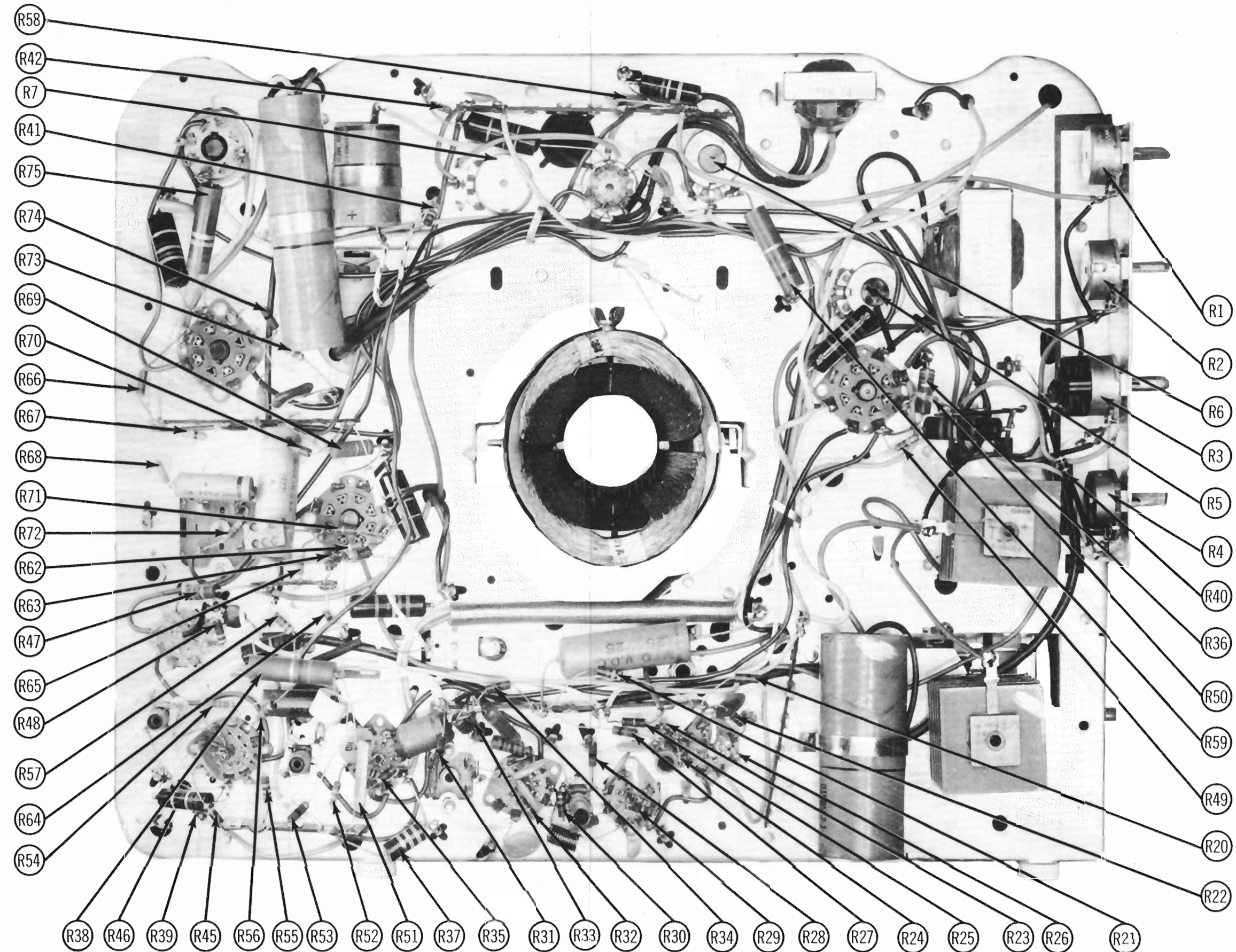
SENTINEL MODEL 1U-1001B	
TRADE NAME	Sentinel Models 1U-1001B, 1U-1011B, 1U-1017B, 1U-1034B
MANUFACTURER	Sentinel Radio Corp., 2100 W. Dempster, Evanston, Illinois
TYPE SET	Television Receiver
TUBES	Fifteen
POWER SUPPLY	110-120 Volts AC-60 Cycle
TUNING RANGE	Channels 2 thru 13, Video IF 26.4MC, Sound IF 21.9MC (Intercarrier)
RATING	1.24 Amp. @ 117 Volts AC
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CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TRADE NAME  
MANUFACTURER  
TYPE SET  
TUBES

POWER SUPPLY  
TUNING RANGE

Alignment

Disassembly

Horizontal

Parts List

Photograph

Cabinet

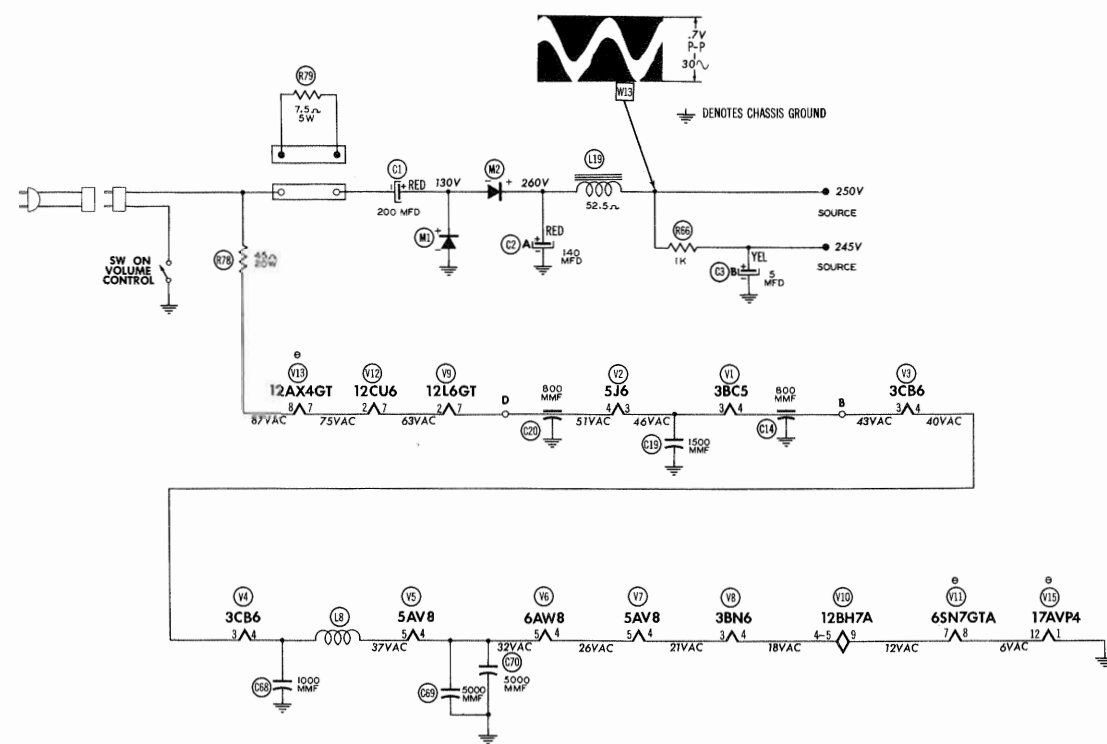
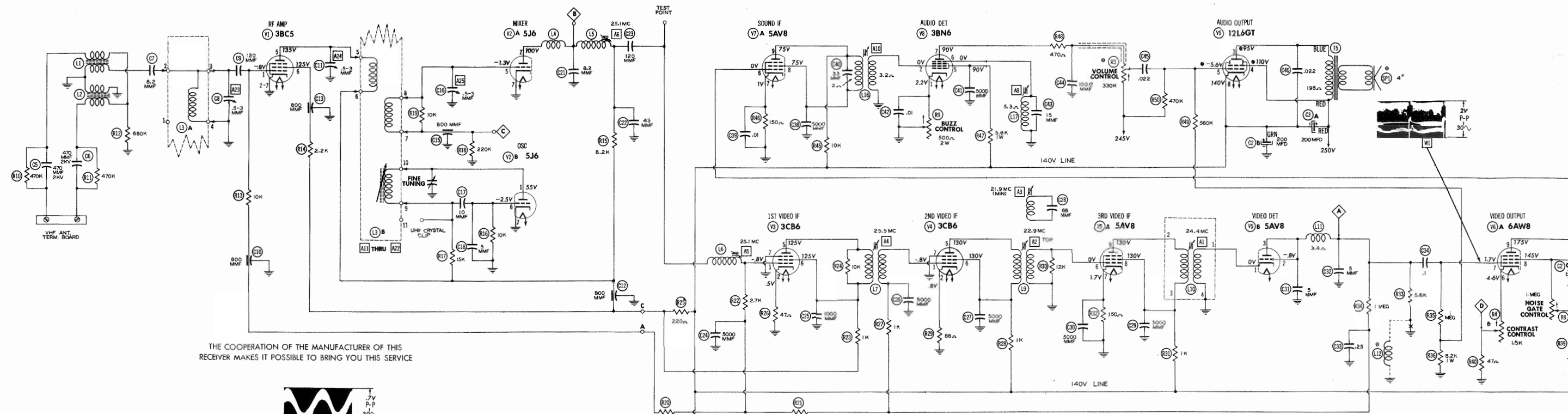
Capacitors

Chassis

Chassis

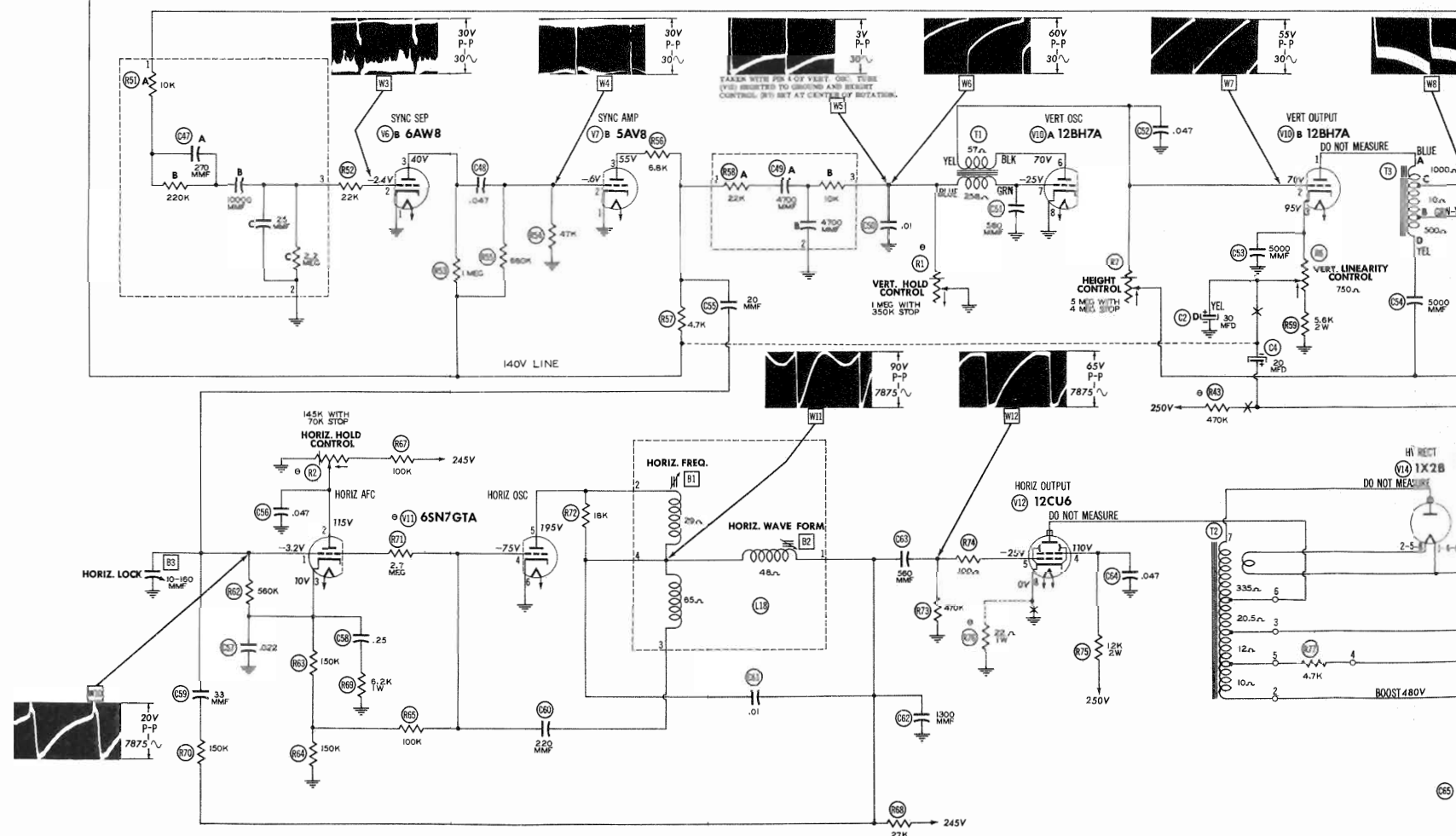
RF Transformer

"The listing of any case a recommendation as to the quality of parts have been confirmed by the manufacturer." "Reproduction or use"



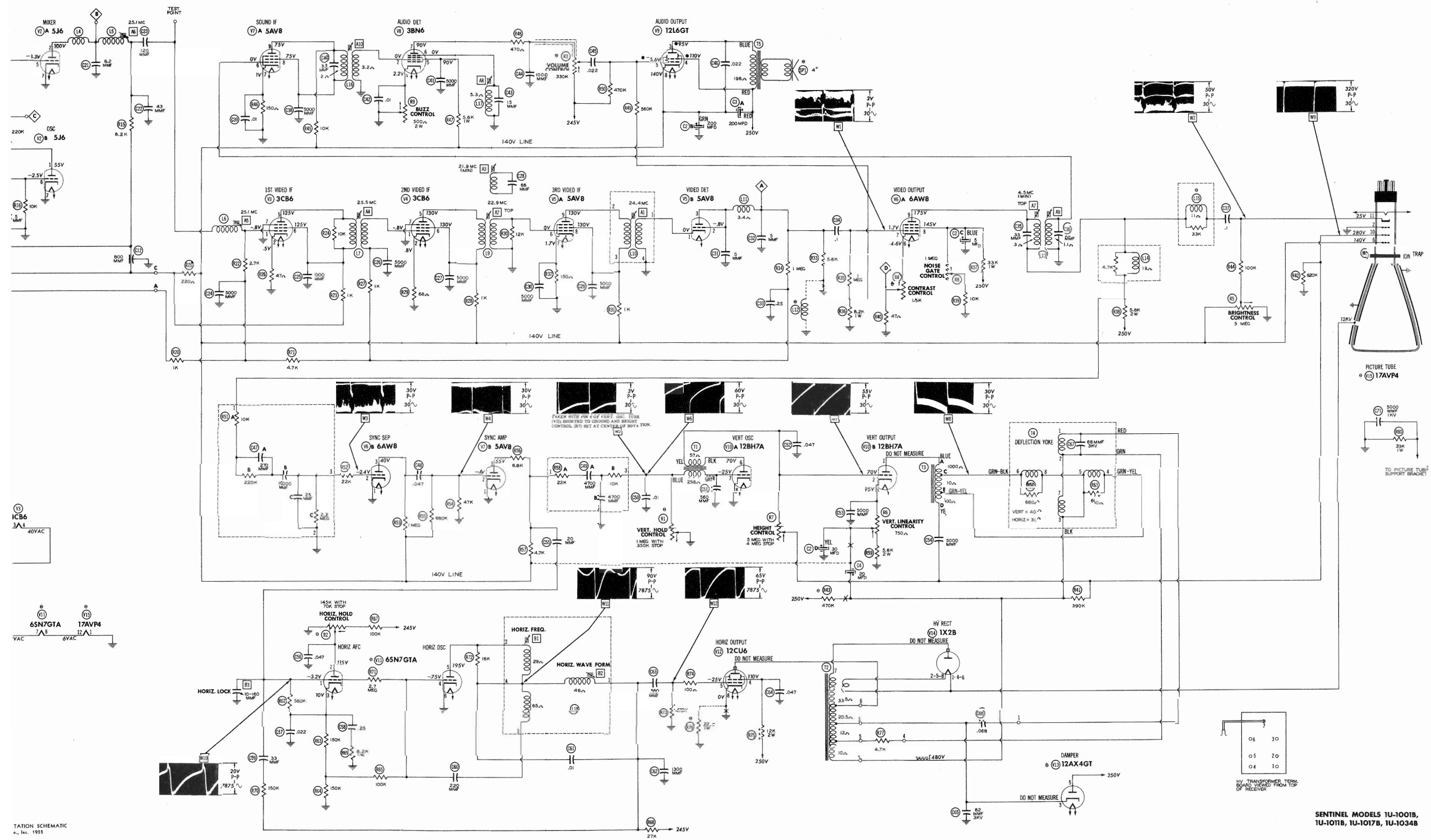
- MEASURED FROM 140V LINE.
- SEE PARTS LIST FOR ALTERNATE VALUES OR APPLICATION.
- DC CIRCUIT RESISTANCE VALUES SHOWN UNLESS OTHERWISE NOTED.
- AC VOLTAGE MEASURED AT 1,000 OHMS PER VOLT.
- 1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
- 2. Measured values are from socket pin to common negative unless otherwise noted.
- 3. Line voltage maintained at 117 volts for voltage readings.
- 4. Pin numbers are counted in a clockwise direction on bottom of socket.
- 5. All controls set for normal operation; no signal applied.

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

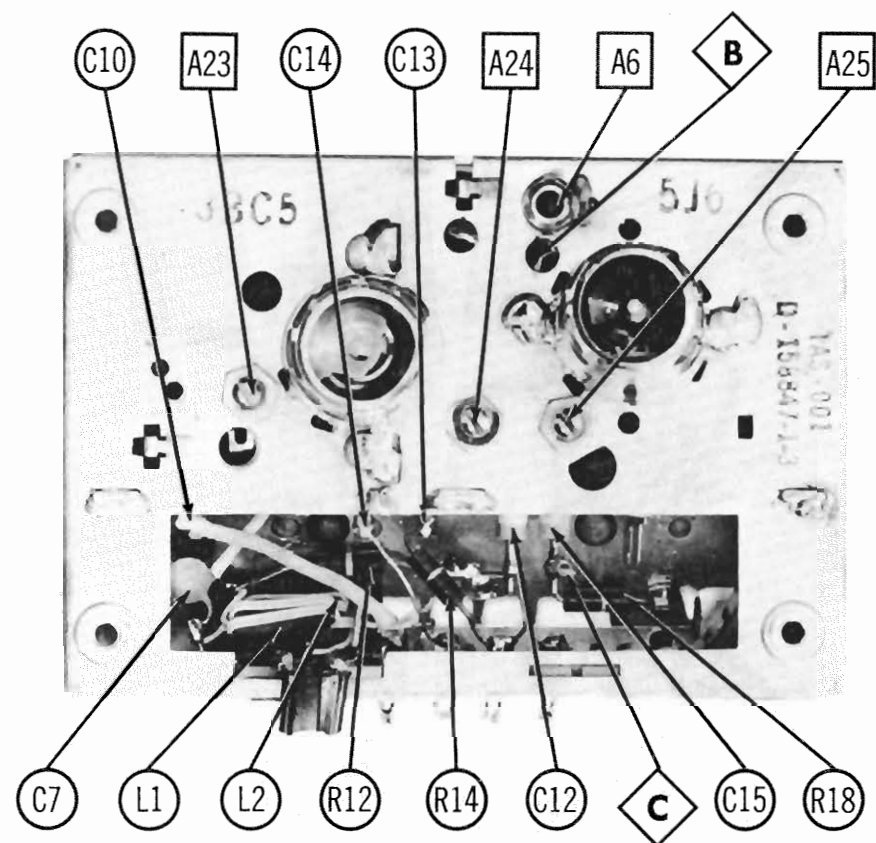




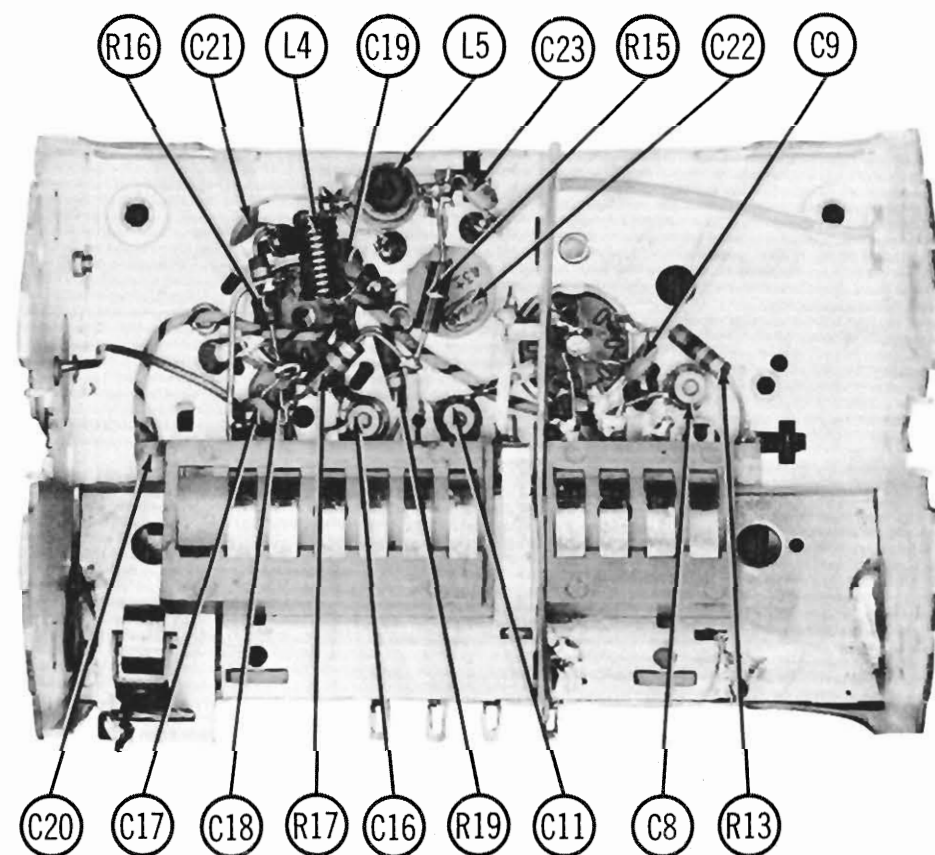
SENTINEL MODELS 1U-1001B,  
1U-1011B, 1U-1017B, 1U-1034B



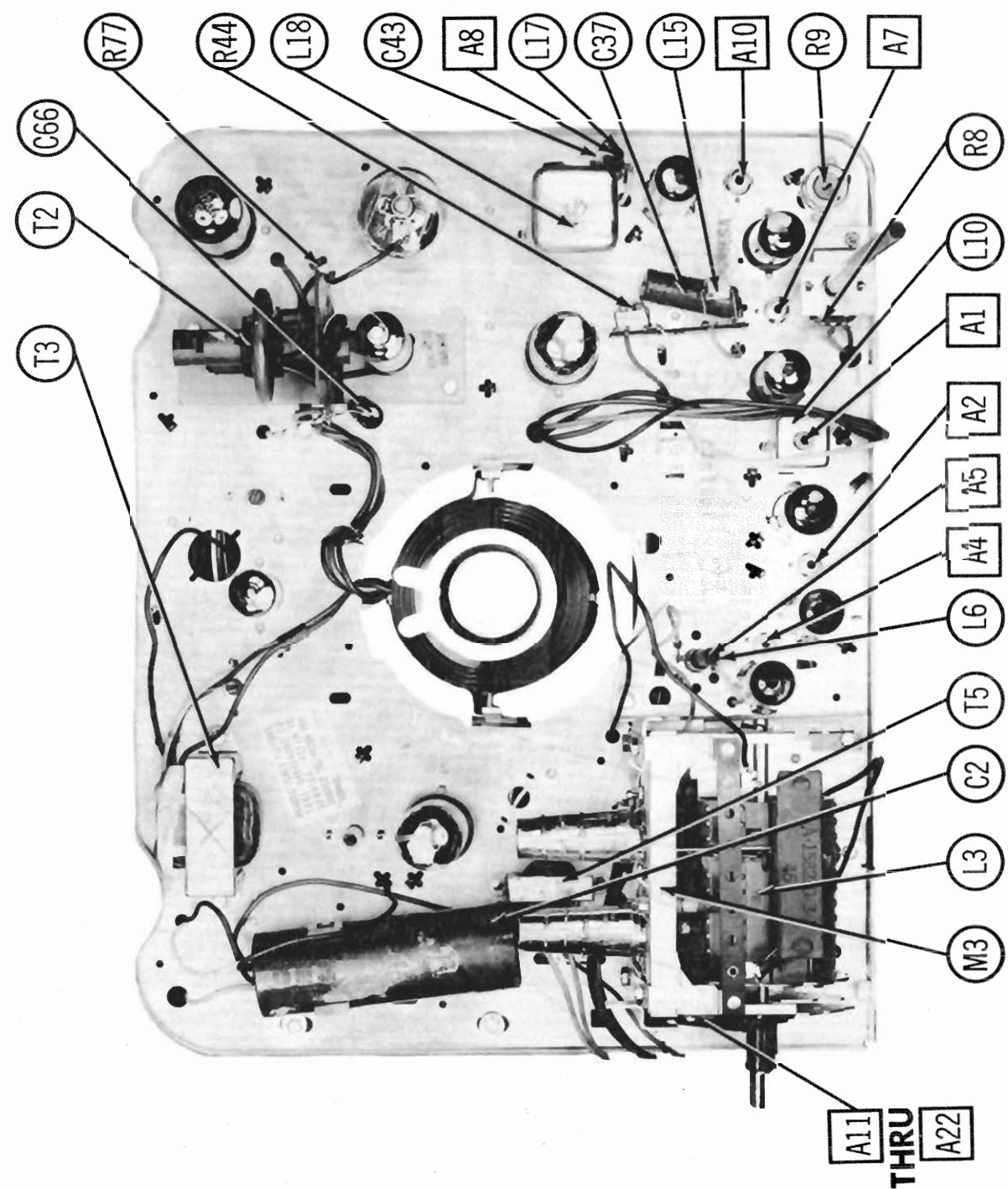
SENTINEL MODELS 1U-1001B,  
1U-1011B, 1U-1017B, 1U-1034B



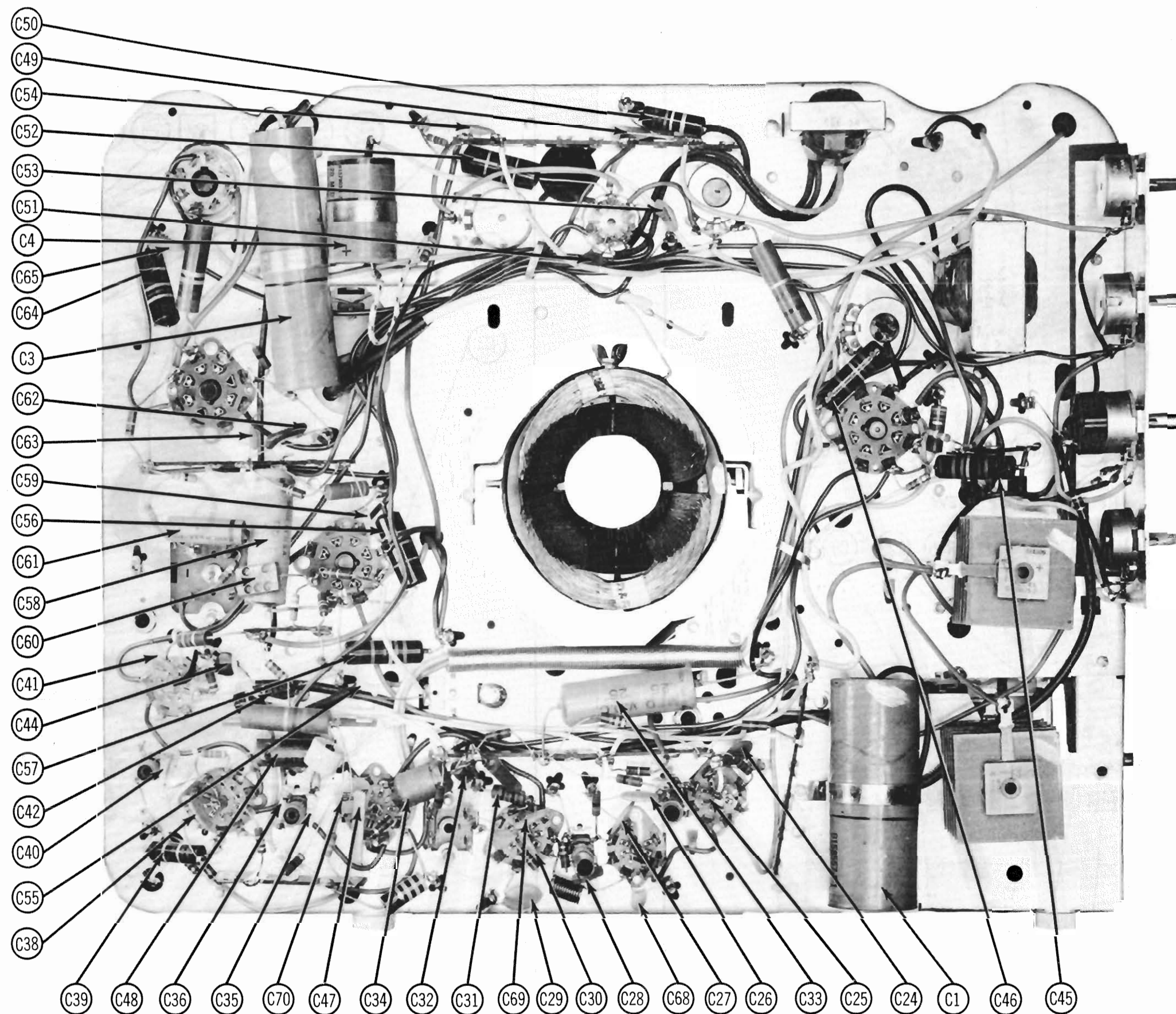
RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



SENTINEL MODELS 1U-1001B,  
1U-1011B, 1U-1017B, 1U-1034B  
MAIN PDI SCHEMATIC



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

SENTINEL MODELS 1U-1001B,  
1U-1011B, 1U-1017B, 1U-1034B

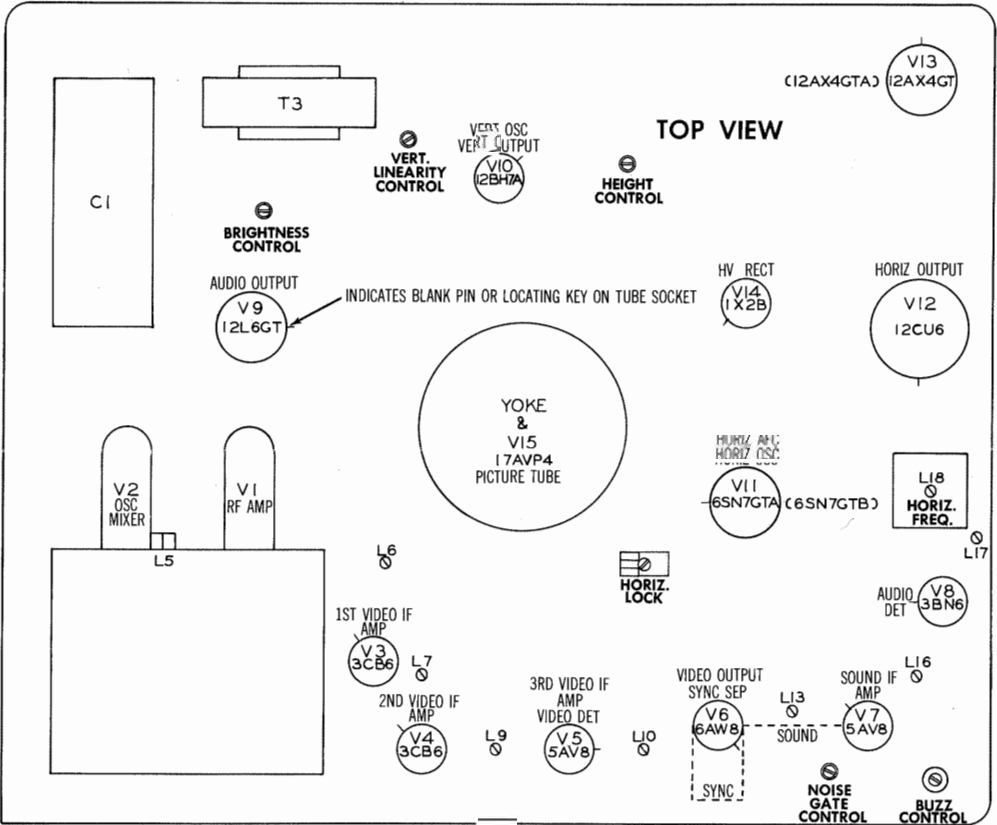


RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	3BC5	1Meg	0Ω	12Ω	11Ω	220Ω	2.4KΩ	0Ω		
V 2	5J6	15KΩ	8.4KΩ	12Ω	14Ω	220KΩ	10KΩ	0Ω		
V 3	3CB6	1Meg	47Ω	11Ω	10Ω	1.2KΩ	1.2KΩ	0Ω		
V 4	3CB6	1Meg	68Ω	10Ω	9Ω	1KΩ	1KΩ	0Ω		
V 5	5AV8	.5Ω	5.6KΩ	5.6KΩ	8Ω	9Ω	.3Ω	150Ω	1KΩ	1KΩ
V 6	6AW8	0Ω	2.2Meg	1Meg	7Ω	8Ω	300Ω	1Meg	33KΩ	5.6KΩ
V 7	5AV8	0Ω	47KΩ	11.5KΩ	6Ω	7Ω	1.1Ω	150Ω	10KΩ	10KΩ
V 8	3BN6	250Ω	3.2Ω	6Ω	5Ω	5.6KΩ	5.3Ω	330KΩ		
V 9	12L6GT	NC	17Ω	1250Ω	153Ω	280KΩ	TP	14Ω	130KΩ	
V 10	12BH7A	1KΩ	2Meg	6.5KΩ	5Ω	5Ω	2Meg	700KΩ	0Ω	3Ω
V 11	6SN7GTA	750KΩ	190KΩ	300KΩ	250KΩ	128KΩ	0Ω	3Ω	2Ω	
V 12	12CU6	NC	20Ω	TP	12KΩ	470KΩ	TP	17Ω	0Ω	TOP CAP 20, 5Ω
V 13	12AX4GT	NC	NC	1Meg	NC	153Ω	NC	20Ω	22Ω	
V 14	1X2B		PINS	1-8	HAVE	INF	RESISTANCE			TOP CAP 355Ω
V 15	17AVP4	0Ω	0Ω	PIN 6 130KΩ	PIN 10 390KΩ	PIN 11 350KΩ	PIN 12 2Ω			

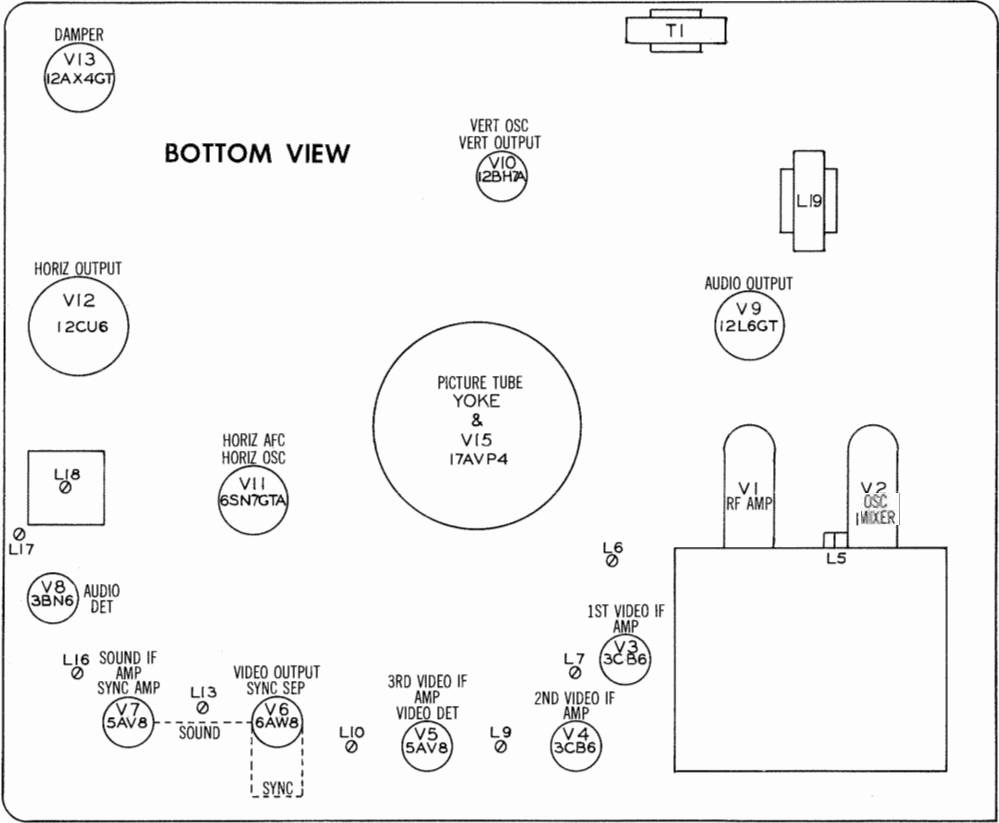
MEASURED FROM 140 V LINE.  
MEASURED FROM OUTPUT OF M2.  
MEASURED FROM PIN 3 OF V13.  
NC-NO CONNECTION.  
TP-TIE POINT.

TUBE PLACEMENT CHART



SENTINEL MODELS TU-1001B,  
TU-1011B, TU-1017B, TU-1034B

BOTTOM VIEW



TUBE PLACEMENT CHART

TUBE FAILURE CHECK CHART

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

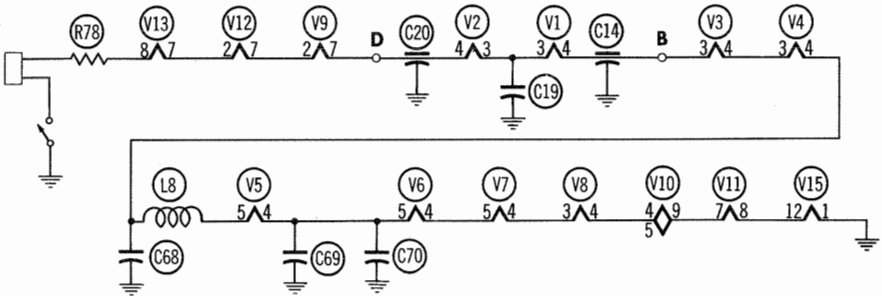
**POWER SUPPLY FAILURE**  
No raster, no sound - Selenium Rectifiers (M1 & M2)

**LOSS OF PICTURE OR SOUND**  
No pic, no sound, has raster - V2, V3, V4, V5, V9  
No pic, no sound, has snow - V1, V2, V3  
No pic, has sound, has raster - V6, V15  
Has pic, no sound - V7, V8, V9

**SYNC FAILURE**  
No vert. sync - V7, V10  
No horiz. sync - V7, V11  
No vert. or horiz. sync - V6, V7

**SWEEP FAILURE**  
No raster, has sound - V11, V12, V13, V14, V15  
No vertical deflection - V10  
Poor vert. linearity or foldover - V10  
Poor horiz. linearity or foldover - V11, V12, V13  
Narrow picture - V11, V12, V13, V14, V15, M1, M2  
Vert. off freq. - V7, V10  
Horiz. off freq. - V7, V11

Note: Since this receiver employs tubes used in a series-parallel filament network, an open filament in any tube in series may cause the set to be inoperative. (See circuit below).






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.


VIDEO IF ALIGNMENT

Attenuate the generator output to maintain approximately 2 volts on VTVM unless another value is specified.  
Connect the negative lead of a 3 volt battery to the tuner AGC (white) lead.  
Connect positive lead to chassis.  
Set the channel switch between any two channels. This will disable the local oscillator and reduce the possibility of erroneous indications.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. .01MFD	High side to point  . Low side to chassis.	24.4MC (Unmod)	Between any two channels	DC probe to point  . Common to chassis.	A1	Adjust for maximum deflection.
2. "	"	22.9MC	"	"	A2	Adjust for maximum deflection. If two peaks occur, use the peak nearest clip end of coil.
3. "	"	21.9MC	"	"	A3	Adjust for MINIMUM deflection. Use enough generator output to produce .5 volts deflection at MINIMUM reading. Use the null obtained with the core farthest from clip end of coil. Repeat steps 2 and 3.
4. "	"	25.5MC	"	"	A4	Adjust for maximum deflection.
5. "	"	25.1MC	"	"	A5	Adjust for maximum deflection. Use peak nearest clip end of coil.
6. "	High side to point  . Low side to chassis.	"	"	"	A6	Shunt L6 with 100Ω resistor in series with .001MFD capacitor. Adjust A6 for maximum deflection. Remove 100Ω resistor and .001MFD capacitor from L6.

OVERALL VIDEO IF RESPONSE CHECK

Leave bias connected as under "Video IF Alignment". Use only enough sweep generator output for useable pattern on scope.  
Set contrast control for minimum contrast.  
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7. Direct	High side to an ungrounded tube shield (floating over converter tube. Low side to chassis.	24MC (10MC Swp)	21.9MC 22.9MC 25.1MC 25.5MC 26.4MC	Between any two channels	Vert. Amp. thru 10KΩ to point  . Low side to chassis.		Check for response curve similar to Fig. 1. SLIGHTLY retouch A1 thru A6 to obtain desired response. If desired response cannot be obtained with slight retouching of A1 thru A6, steps 1 thru 6 should be repeated.

4.5MC TRAP ALIGNMENT

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8. .01MFD	High side to pin 11 (cathode) of picture tube. Low side to chassis.	4.5MC (Unmod)	Between any two channels	Connect VTVM. across secondary of sound output transformer	A7	Adjust for MINIMUM deflection.

SOUND IF ALIGNMENT USING ON THE AIR SIGNAL



Turn the set on and tune in a strong TV signal. Turn the buzz control (R9) 90° from maximum clockwise position. Adjust A8 for maximum volume. Reduce the signal strength. (Remove the antenna from antenna terminals and stray feed the signal by placing antenna near antenna terminals.) Adjust A9 and A10 for maximum volume. Adjust R9 for minimum noise. Reconnect antenna and readjust A8 for maximum volume. If necessary, reduce volume so peak may be heard.

ALTERNATE SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR, AM SIGNAL GENERATOR AND OSCILLOSCOPE

Set volume control at a low volume level.  
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9. .01MFD	High side to pin 7 (grid) of 6AW8 (V6A). Low side to chassis.	4.5MC (400%Mod) (50KC Swp)	4.5MC	Between any two channels	Across secondary of sound output transformer	A8	Set buzz control (R9) 90 degrees from maximum clockwise rotation. Adjust A8 for maximum 400% indication on scope.
10. "	"	"	"	"	"	A10, A9	Attenuate generator output so that signal is below the limiting level of the 3BN6 as evidenced by background bias and noise. Adjust A10 and A9 for maximum 400% response on scope.
11. "	"	"	4.5MC (400%Mod)	"	"	R9	Use a high generator output and adjust R9 for MINIMUM 400% indication on scope.
12. "	"	"	4.5MC	"	"	A8	With volume control at low level retouch A8 for maximum 400% indication on scope.

ALIGNMENT INSTRUCTIONS (cont)

OSCILLATOR ALIGNMENT											
Connect bias as under "Video IF Alignment". The channel oscillator adjustment screws are reached through a hole just above the channel switch shaft. The correct adjustment screws are accessible through this hole as the channel switch is turned to each channel. 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 50Ω. Set the fine tuning control to the mid-position of its range.											
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS				
Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 10KΩ to point  . Low side to chassis.	A11	Adjust to place sound marker in trap notch as in Fig. 2. Video marker should be at 50%.				
		207MC (10MC Swp)	205.25MC 209.75MC	12		A12					
		201MC (10MC Swp)	199.25MC 203.75MC	11		A13					
		195MC (10MC Swp)	193.25MC 197.75MC	10		A14					
		189MC (10MC Swp)	187.25MC 191.75MC	9		A15					
		183MC (10MC Swp)	181.25MC 185.75MC	8		A16					
		177MC (10MC Swp)	175.25MC 179.75MC	7		A17					
		85MC (10MC Swp)	83.25MC 87.75MC	6		A18					
		79MC (10MC Swp)	77.25MC 81.75MC	5		A19					
		69MC (10MC Swp)	67.25MC 71.75MC	4		A20					
		63MC (10MC Swp)	61.25MC 65.75MC	3		A21					
		57MC (10MC Swp)	55.25MC 59.75MC	2		A22					
		RF AND MIXER ALIGNMENT									
		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. The sweep generator output lead should be terminated with its characteristic impedance, usually, 50Ω.									
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS				
Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to point  . Low side to chassis.	A23, A24, A25	Adjust for response similar to Fig. 3.				
"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 3. If markers fall below 70% on any channel, make compromise adjustment of A23, A24 and A25 with channel switch set to that channel. Then recheck all other channels to see that they have not been seriously affected.				
		201MC (10MC Swp)	199.25MC 203.75MC	11							
		195MC (10MC Swp)	193.25MC 197.75MC	10							
		189MC (10MC Swp)	187.25MC 191.75MC	9							
		183MC (10MC Swp)	181.25MC 185.75MC	8							
		177MC (10MC Swp)	175.25MC 179.75MC	7							
		85MC (10MC Swp)	83.25MC 87.75MC	6							
		79MC (10MC Swp)	77.25MC 81.75MC	5							
		69MC (10MC Swp)	67.25MC 71.75MC	4							
		63MC (10MC Swp)	61.25MC 65.75MC	3							
		57MC (10MC Swp)	55.25MC 59.75MC	2							

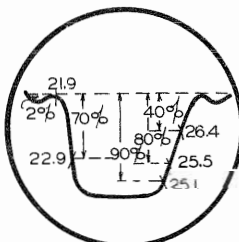


FIG. 1

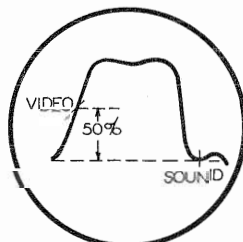


FIG. 2

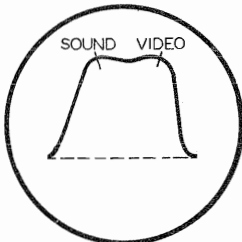


FIG. 3

SENTINEL MODELS TU-1001B,  
TU-1011B, TU-1017B, TU-1034B



SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removal of the channel selector and fine tuning knobs. The adjustments are accessible, one at a time, thru the small hole in the cabinet just above the channel selector shaft.

PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove 4 wood screws holding wood strip at the bottom of the safety glass. Remove wood strip and safety glass. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

For picture tube removal it is necessary to remove chassis. (See disassembly instructions).

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

SPECIAL ADJUSTMENTS - NOISE GATE CONTROL ADJUSTMENTS

Tune in a strong TV signal.

Turn the noise gate control (R8)(located on top of chassis) fully counter clockwise, then clockwise until picture begins to tear at top. Turn R8 counter clockwise just past the point of unstable sync.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator it is necessary to remove the rear cover and supply power to the set. Adjustment is located on top of the chassis. Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (B1) until picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, it is necessary to remove rear cover and supply power to the set. Adjust the buzz control (R9) for maximum volume and minimum buzz.

CENTERING

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

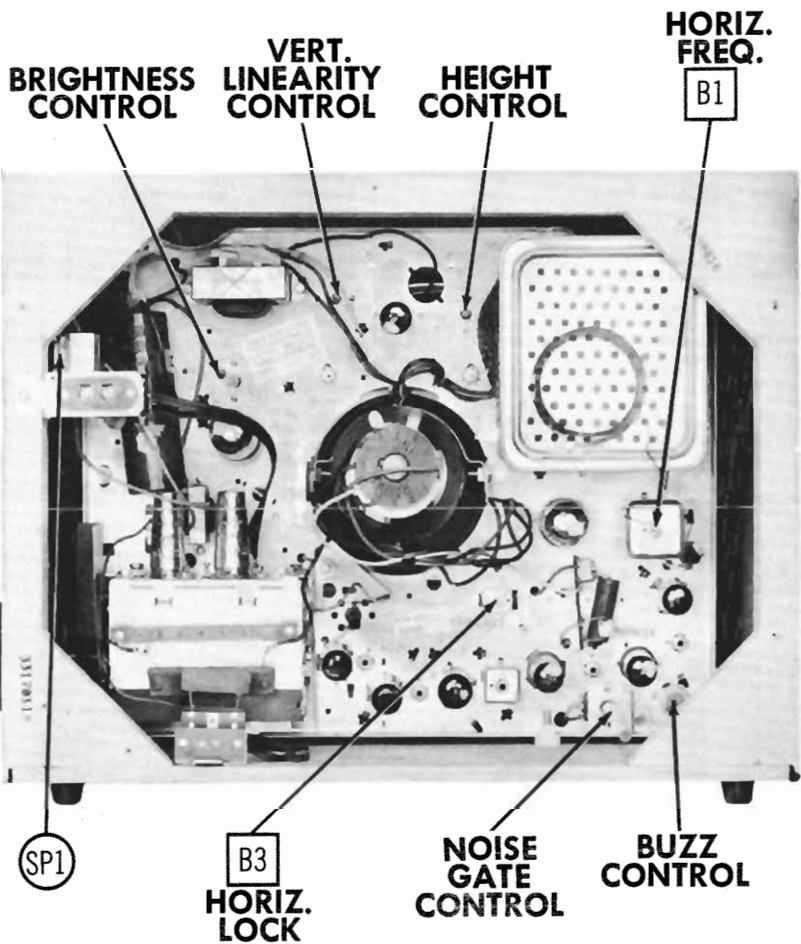
DISASSEMBLY INSTRUCTIONS

CABINET REMOVAL (TABLE MODELS)

1. Remove 6 push-on type control knobs from side panel of cabinet.
2. Remove 5 wood screws. Remove rear cover.
3. Remove 1 wood screw. Remove antenna terminal bracket.
4. Disconnect speaker leads.
5. Place cabinet face down on a soft surface.
6. Remove only the 6 cabinet mounting screws located under and on the outer edges of the cabinet base.
7. Remove 2 wood screws from the lower rear corner supports braces.
8. Return cabinet to its normal upright position.
9. Lift cabinet straight up and off.
10. Remove 2 speaker nuts. Remove speaker.

CHASSIS REMOVAL (CONSOLE MODELS)

1. Perform steps 1, 2, 3 and 4 as above.
2. Remove chassis mounting board screws under guide rails, and one screw under center support bridge.
3. Slide chassis (with mounting board) out of cabinet.



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern. Set contrast control for normal contrast.

1. Set the horizontal hold control to its mid-range position and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
2. Connect the vertical amplifier of an oscilloscope thru 10MMF to lug 4 of L18. Connect the low side to chassis. Adjust the horizontal waveform slug (B2) until waveform similar to Fig. 4 is obtained. While making this adjustment keep the picture in sync with the horizontal hold and if necessary, B1 and the horizontal lock trimmer (B3).
3. Turn the horizontal hold control fully clockwise and remove scope from L18. Turn B1 counter clockwise until the picture just loses sync, then turn B1 clockwise until picture is just ready to pull-in.
4. Turn the horizontal hold control fully counter clockwise. Picture should remain in sync. Momentarily remove the signal by switching off channel and back again. If more than seven bars are present adjust B3 slightly counter clockwise until 3 or 4 bars appear when switching off channel and back again. If less than 3 bars are present when switching off channel and back again, adjust B3 slightly clockwise and check by switching off channel and back again.

Repeat steps 3 and 4 until the effective pull-in range of the horizontal hold control is from 60 to 120 degrees.

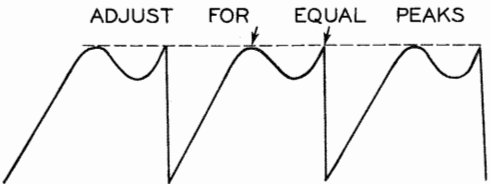


FIG. 4

SENTINEL MODELS 1U-1001B, 1U-1011B, 1U-1017B, 1U-1034B

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL	VERTICAL				
<p><u>LOSS OF SWEEP</u></p> <p>Follow procedure outlined under "Loss of High Voltage".</p> <p><u>INSUFFICIENT SWEEP</u></p> <p>Check by substitution V12 and V13. Check M1 and M2. Check C62, C63, T2, T4A, R75, R79 and other associated components.</p> <p><u>DRIVE LINES</u></p> <p>Check by substitution V12 and V13. Check R68, R75, R79, C62, C63, T2, T4A and other associated components.</p> <p><u>COMPRESSED LEFT SIDE</u></p> <p>Check by substitution V12 and V13. Check horizontal output and damper stages for component failure or change of value.</p> <p><u>FOLDS</u></p> <p>Follow procedure outlined under "Drive Lines".</p> <p><u>PIE CRUST EFFECT</u></p> <p>Check by substitution V11, V12 and V13. Check C57 and C58 for open. Check L18, R69, R67, R2 and other associated components.</p> <p><u>XMAS TREE EFFECT</u></p> <p>Check by substitution V11, V12 and V13. Check T2 and T4 for internal arcing. Check L18, C59, C60, C61, R72, R68 and other associated components.</p>	<p><u>LOSS OF SWEEP</u></p> <p>Substitute V10. Check waveform W7.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T3, T4B, C53, R59, R6 and other associated components.</td><td>Check T1, C51, C52, R7, R1 and other associated components.</td></tr> </table> <p><u>INSUFFICIENT SWEEP</u></p> <p>Substitute V10. Check height and vertical linearity controls for proper operation and other associated components.</p> <p><u>COMPRESSED AT BOTTOM</u></p> <p>Substitute V10. Check T1, C52, R7, R41 and other associated components.</p> <p><u>COMPRESSED AT TOP</u></p> <p>Substitute V10. Check C53, R59, R6, T3 and other associated components.</p> <p><u>FOLDS</u></p> <p>Substitute V10. Check T1, T3, T4B, C52, R59 and other associated components.</p>	If Satisfactory	If Unsatisfactory	Check T3, T4B, C53, R59, R6 and other associated components.	Check T1, C51, C52, R7, R1 and other associated components.
If Satisfactory	If Unsatisfactory				
Check T3, T4B, C53, R59, R6 and other associated components.	Check T1, C51, C52, R7, R1 and other associated components.				

SYNC

<p><u>LOSS OF VERTICAL AND HORIZONTAL SYNC</u></p> <p>Check by substitution V6 and V7. Check C47, C48, R53, R56, R57 and other associated components.</p> <p><u>LOSS OF VERTICAL SYNC-HORIZONTAL SYNC SATISFACTORY</u></p> <p>Substitute V10. Check vertical integrator network. Check T1, C50, C51, R1 and other associated components.</p>	<p><u>LOSS OF HORIZONTAL SYNC-VERTICAL SYNC SATISFACTORY</u></p> <p>Substitute V11. Check C55, C57, C58, R69, R67, L18 and other associated components.</p> <p><u>HORIZONTAL BENDING</u></p> <p>Check by substitution V6, V7 and V11. Check components associated with V11.</p>
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VIDEO

<p><u>LOSS OF VIDEO</u></p> <p>Substitute V6. Check C34, C37, C2C, R37, R38 and other associated components.</p> <p><u>SOUND BARS (4.5 MC BEAT)</u></p> <p>Adjust tuner fine tuning for best sound and picture. Check adjustment A7. Check video IF alignment.</p> <p><u>POOR CONTRAST</u></p> <p>Substitute V6. Check contrast control. Check C34, C37, R37, R38, R40, L14, L15 and other associated components.</p>	<p><u>NEGATIVE PICTURE</u></p> <p>Substitute V6. Check picture tube. Check C34, C37, L15 and other associated components.</p> <p><u>SMEAR</u></p> <p>Substitute V6. Check L11, L12, L14, L15, C34, C37 and other associated components.</p> <p><u>WIDE BLACK BAR ACROSS PICTURE</u></p> <p>Check by substitution V1, V3, V4, V5 and V6 for heater to cathode leakage.</p>
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AUDIO

<p><u>WEAK OR NO SOUND</u></p> <p>Check by substitution V7, V8 and V9. Check stage V9 using audio signal generator. Apply audio signal across C44.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check audio detector and audio IF stages for component failure or change of value.</td><td>Check C44, C45, C46, R48, R49, R50, T5 speaker and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check audio detector and audio IF stages for component failure or change of value.	Check C44, C45, C46, R48, R49, R50, T5 speaker and other associated components.	<p><u>BUZZ</u></p> <p>Adjust tuner fine tuning for best sound and picture. Check adjustments R9 and A8 for minimum buzz. If still unsatisfactory, check audio IF alignment.</p> <p><u>DISTORTED</u></p> <p>Follow procedure outlined under "Weak or no Sound".</p>
If Satisfactory	If Unsatisfactory				
Check audio detector and audio IF stages for component failure or change of value.	Check C44, C45, C46, R48, R49, R50, T5 speaker and other associated components.				

POWER

<p><u>DEAD SET</u></p> <p>If filaments fail to light, check all tubes. These tubes are connected in series. Check AC interlock assembly. Check switch on volume control and R78. If filaments light, check M1, M2, R79 and C1. Check B+ filter and decoupling network.</p>	<p><u>SMALL AND/OR DIM PICTURE</u></p> <p>Check M1, M2, R79 and C1. Check B+ filter and decoupling network.</p>
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TROUBLE SHOOTING AIDS (cont)

HIGH VOLTAGE

<p><u>LOSS OF HIGH VOLTAGE</u></p> <p>Check by substitution V11, V12, V13 and V14. Check waveform W12.</p> <table> <tr> <td>If Satisfactory</td><td>If Unsatisfactory</td></tr> <tr> <td>Check T2, T4A, C64, C65, C66, R75 and other associated components.</td><td>Check L18, C56, C60, C61, C62, C63, R67, R68, R72 and other associated components.</td></tr> </table>	If Satisfactory	If Unsatisfactory	Check T2, T4A, C64, C65, C66, R75 and other associated components.	Check L18, C56, C60, C61, C62, C63, R67, R68, R72 and other associated components.	<p><u>INSUFFICIENT HIGH VOLTAGE</u></p> <p>Check by substitution V12 and V13. Check M1 and M2. Check R75, R79, C62, C63 and other associated components.</p> <p><u>BLOOMING</u></p> <p>Check by substitutin V12, V13 and V14. Check M1 and M2. Check R75, R78, R79, C62, C63, C66 and other associated components.</p>
If Satisfactory	If Unsatisfactory				
Check T2, T4A, C64, C65, C66, R75 and other associated components.	Check L18, C56, C60, C61, C62, C63, R67, R68, R72 and other associated components.				

GENERAL

<p><u>RASTER, SOUND, NO PICTURE</u></p> <p>Follow procedure outlined under "Loss of Video".</p> <p><u>RASTER, PICTURE, NO SOUND</u></p> <p>Follow procedure outlined under "Weak or no Sound".</p> <p><u>RASTER, NO SOUND, NO PICTURE</u></p> <p>Check by substitution V1, V2, V3, V4, V5, V6 and V9. Check video IF components for failure or change of value.</p>	<p><u>NO RASTER, NO SOUND</u></p> <p>Follow procedure outlined under "Dead Set".</p> <p><u>KEYSTONE EFFECT</u></p> <p>Check T4 and its associated components.</p> <p><u>INTERMITTENT STREAKS</u></p> <p>Check high voltage section for corona discharge and arcing.</p>
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Symptoms shown are assumed and are not indicative of the quality and workmanship of this equipment.

SENTINEL MODELS 1U-1001B, 1U-1011B, 1U-1017B, 1U-1034B

PARTS LIST AND DESCRIPTIONS (Continued)  
COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SENTINEL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L15	Series Peak- ing Coil	11Ω		B158223-1-1	19-4201▲	TV-184▲	6154▲	210 Microhenries; Wound on 33KΩ resistor. Note 1
L16	2nd Sound IF	2Ω	3.2Ω	B158354-1-2				
L17	Quadrature Coil	5.3Ω		B158351-1-2	20-1005	TV-151	1480	
L18	Horiz. Osc.	29Ω	65Ω	C158225-1-2	20-1402	TV-162	6183	Waveform Winding=48Ω

Note 1. Alternate Part #B158630-1-1.  
Note 2. Not used in some versions.  
\* Defune trap winding.  
■ Parallel with 4.7KΩ resistor.  
▲ Parallel with 27KΩ resistor.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 °C)	SENTINEL PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L19	.200ADC	52.5Ω	1.28HY	B155529-1-2	C5040	C-2994	C-2327	26C41	C-21X ①

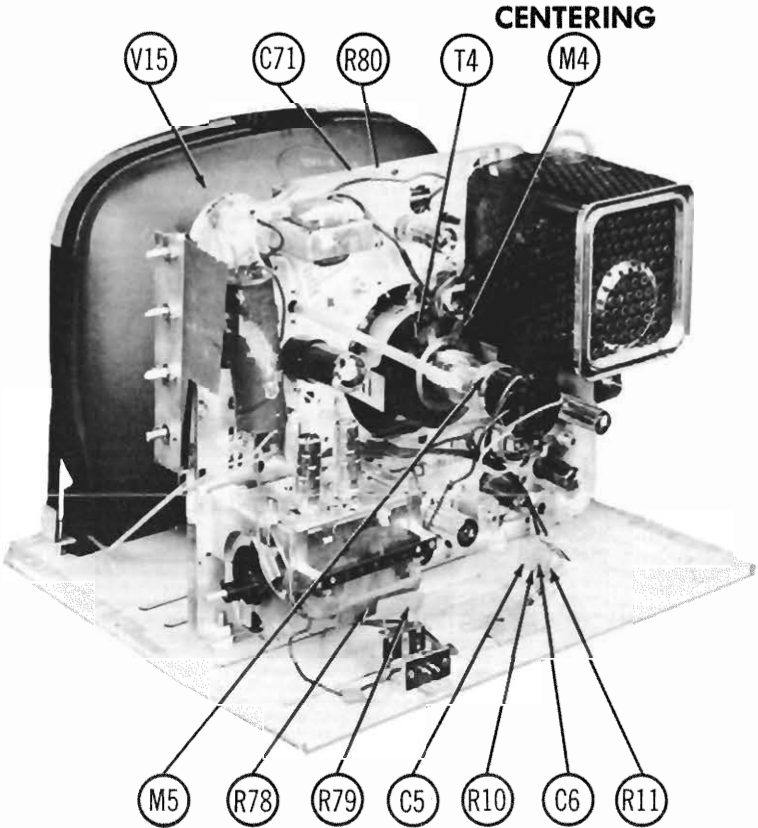
① Drill one new mounting hole.

SELENIUM RECTIFIER

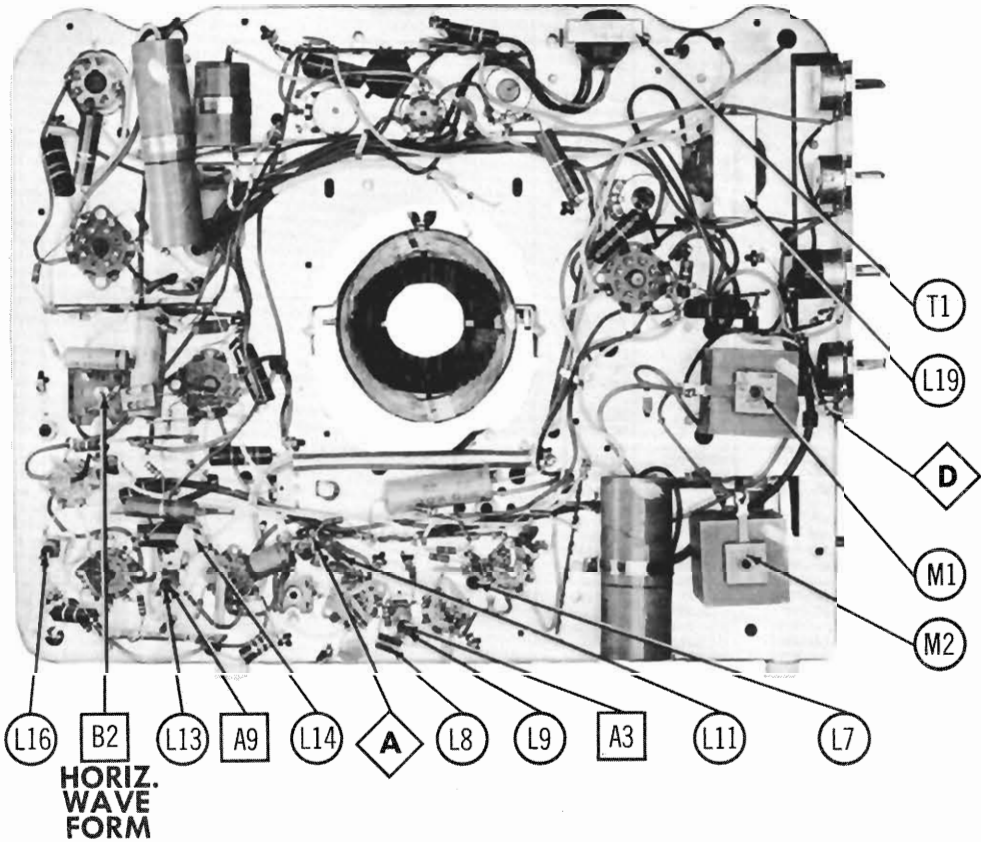
ITEM No.	RATING	REPLACEMENT DATA						NOTES
	CURRENT	SENTINEL PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	RADIO RECEPTOR PART No.	SARKES TARZIAN PART No.	
M1	.200 ADC	C155575-2-1	1090A	MR-300	6S-300	6Q4	300	
M2	.200 ADC	C155575-2-1	1090A	MR-300	6S-300	6Q4	300	

MISCELLANEOUS

ITEM No.	PART NAME	SENTINEL PART No.	NOTES
M3	Tuner	B158847-1-3	VHF-Models IU-1001B, IU-1011B, IU-1017B
M4	Tuner	20E1061	VHF-Model IU-1034B
M5	Centering Device		Part of deflection yoke rear cover (T4)
B3	Ion Trap	B153109-2-3	
	Trimmer Cap.	A157870-1-1	
	Knob	37E95	Horiz. Lock (10-160MMF)
	Knob	37E95-2	Channel Selector-Model IU-1001B
	Knob	37E94	Channel Selector-Models IU-1011B, IU-1017B, IU-1034B
	Knob	37E93	Fine Tuning
	Safety Glass	9E50-4	Horiz. Hold, Vert. Hold, Contrast, & On-Off-Volume
	Safety Glass	9E50-6	Models IU-1011B, IU-1017B
	Safety Glass	9E50-8	Model IU-1001B
	Mask	36E101-4	Model IU-1034B
	Mask	36E102-3	Model IU-1001B
	Mask	36E96	Models IU-1011B, IU-1017B
			Model IU-1034B



CHASSIS REAR VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

SET 299 FOLDER 8

SENTINEL MODELS IU-1001B,  
IU-1011B, IU-1017B, IU-1034B



TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETM A BASE TYPE	NOTES
		SENTINEL PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	3BC5	3BC5	7BD	
V2	Mixer-Osc.	516	516	7BF	
V3	1st Video IF Amp.	3CB6	3CB6	7CM	
V4	2nd Video IF Amp.	3CB6	3CB6	7CM	
V5	3rd Video IF Amp.	3CB6	3CB6	7CM	
V6	Video Det.	5AV8	5AV8	9DZ	
V6	Video Output	5AV8	5AV8	9DX	
V7	Sync Sep.	6AW8	6AW8	9DX	
V7	Sound IF Amp. -	5AV8	5AV8	9DZ	
V8	Audio Det.	3BN6	3BN6	7DF	
V9	Audio Output	12L6GT	12L6GT	7AC	
V10	Vert. Osc. -	12BH7A	12BH7A	9A	
V11	Horiz. AFC-	6SN7GTA	6SN7GTA	8ED	6SN7GTB used as an alternate.
V12	Horiz. Osc.	12CU6	12CU6	6AM	
V13	Horiz. Output	12AX4GT	12AX4GT	4CG	12AX4GTA used as an alternate.
V13	Damper	12AX4GT	12AX4GT	4CG	
V14	HV Rect.	1X2B	1X2B	9Y	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA					RETM A BASE TYPE	NOTES
	SENTINEL PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.		
V15	17AVP4	17AVP4	17AVP4	17AVP4	17AVP4	12L	① Aluminized
	21ATP4	21ATP4	21ATP4	21ATP4	21ATP4	12L	② Silver Screen
	24DP4A ①	24DP4A ①	24DP4A ①	24DP4A ②	24DP4A ①	12L	
				24DP4A ②	24DP4A ①	12L	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	SENTINEL PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C1	200	200		WS342	TD-200-200	D-100	
C2A	140	350			CDB-1008	Q-163	
B	200	200				T-110	
C	5	300					
D	30	150					
C3A	20	150	B157836-1-3	WD345	TDL-205	D-088	
B	5	150					
C4	20	450	B157903-1-2	TC75	TD-20-450	FM-4520	

FIXED CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	SENTINEL PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	
C5	470	2000	B156201-1-1	DD30-471	3KV-471	DC30347	
C6	470	2000	B156201-1-1	DD30-471	3KV-471	DC30347	
C7	5	2	13L8C8R2D		NPOA-8R2		
C8	5-3		31A-056-1	829-3	3115-01-0R5	CT565A	
C9	120		13L8V121K	DD-121	811-121	UC-5312	
C10	800		SA-1050				
C11	5-3		31A-056-1	829-3	3115-01-0R5	CT565A	
C12	800		SA-1050				
C13	800		SA-1050				
C14	800		SA-1050				
C15	800		SA-1050				
C16	5-3		31A-056-1	829-3	3115-01-0R5	CT565A	
C17	10		13L8U100A	TCN-10	N750K-100	NT-541	
C18	5		13L8U100A				
C19	1500		SA-1051	DD-152	801-0015	DC-5215	
C20	800		SA-1050				
C21	8.2		13L8C8R2D		NPOA-8R2		
C22	43		13L16C430J	TCZ-43	NPOL-430		
C23	120		13L8V121K	DD-121	811-121	UC-5312	
C24	5000		23E4004-15	DD-502	801-005	DC-525	
C25	1000		23E4004-5	DD-102	801-001	DC-521	
C26	5000		23E4004-15	DD-502	811-005	DC-525	
C27	5000		23E4004-15	DD-502	811-005	DC-525	
C28	68	500	C137499-33	D6-681	801-680		
C29	5000		23E4004-15	DD-502	811-005	DC-525	
C30	5000		23E4004-15	DD-502	811-005	DC-525	
C31	5		D137727-103	D6-050	GPIK-050	ZT-555	
C32	5		D137727-103	D6-050	GPIK-050	ZT-555	
C33	.25	25	A157810-1-1			PT4025	
C34	.1	150	A157906-1-1	DF-104		PT401	
C35	.33		D137727-126				
C36	.68		D137727-133				
C37	.1	400	23E3416	DF-104		PT401	
C38	5000		23E4004-15	DD-502	811-005	DC-525	
C39	.01	400	23E3410	D6-103	GP3-333-103	PT411	
C40	.33		D137727-126				
C41	5000		23E4004-15	DD-502	811-005	DC-525	
C42	.01	400	23E3410	D6-103	GP3-333-103	PT411	
C43	.15		D137727-43				
C44	1000		23E4004-5	DD-102	801-001	DC-521	
C45	.022	200	23E3412	DF-203	817-02	PT4122	
C46	.022	200	23E3412	DF-203	817-02	PT4122	
C47A	270		†A157813-1-3	†PC-263	GP2K-271	UC-5327	
C48	10000		†A157813-1-3	†PC-263	811-01	DC-511	
C49A	4700		†A157812-1-2	†PC-106	GPIK-250	UC-5425	
C50	.01	400	23E3424	D6-103	811-0047	DC-525	
C51	560		C144675-32	DD-561	811-561	UC-5356	
C52	.047	400	23E3414	DF-503		PT4147	
C53	5000		23E4004-15	DD-502	811-005	DC-525	
C54	5000		23E4004-15	DD-502	811-005	DC-525	
C55	20		B137727-61				

PARTS LIST AND DESCRIPTIONS  
CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	CAP.	VOLT.	SENTINEL PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	
C56	.047	400	23E3414	DF-503		PT4147	
C57	.022	200	23E3412	DF-203	817-02	PT4122	
C58	.25	25	A157810-1-1			PT4025	
C59	.33		D137727-126				
C60	220	500	C137498-22-1	D6-221	811-221	PT411	
C61	.01	400	23E3424	D6-103	GP3-333-103		
C62	1500		C144675-33-1				
C63	560		C144675-32-1				
C64	.047	400	23E3414	DD-561	811-561	UC-5356	
C65	.82	3000	C158215-32-1	DF-503		PT4147	
C66	.068	200	23E3415	DD30-820			
C67	.68	3000	C158216-3	DD-30-680	3KV-680	DC30468	
C68	1000		23E4004-5	DD-102	801-001	DC-521	
C69	5000		23E4004-15	DD-502	811-005	DC-525	
C70	5000		23E4004-15	DD-502	811-005	DC-525	
C71	5000	1000					

† Items C47A, C47B, C47C, R51A, R51B, R51C are combined in one unit.  
• Items C49A, C49B, R58A, R58B are combined in one unit.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST- ANCE	WATTS	SENTINEL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R1A	1Meg	1/2	B157805-1-4	Q11-136*	A47-750K-S*	AB-66*		Vertical Hold, Fixed Minimum 350KΩ Attach to R1A.
B	Shaft		Not Req.	Not Req.	FS-3	AK-3		Vertical Hold, See Note #1
R1	145KΩ		B157802-1-4	Q11-125†	A47-75K-S†	B-35†		Horizontal Hold Stop at 70KΩ
R2A	145KΩ		Not Req.	Not Req.	FS-3	Not Req.		Attach to R2A.
R2	145KΩ		28E128					Horizontal Hold See Note #1
R3A	330KΩ		B157803-1-3	Q13-132	A47-500K-Z	AB-60	TA334A	Volume
B	Shaft		Not Req.	Not Req.	FS-3	AK-3	Not Req.	Attach to R3A.
C	Switch		Not Req.	Not Req.	SWE-12	KB-1	US-26	Attach to R3A.
R3	330KΩ		28E129					Volume See Note #1
R4A	1500Ω		B157804-1-3	Q17-109	A47-1500-S	AB-515	U-5	Contrast
B	Shaft		Not Req.	Not Req.	FS-3	AK-3	Not Req.	Attach to R5A.
R4	1500Ω		28E130					Contrast See Note #1
R5A	5Meg		B157801-1-3	Q17-141	A47-5Meg-S		TA56R	Brightness
B	Shaft		Not Req.	Not Req.	FKS-1/4		Not Req.	Attach to R5A.
R6A	750Ω		B157800-1-3	Q11-105	A47-750-S	AB-5	TAP750L	Vertical Linearity
B	Shaft		Not Req.	TQ	RN-3	AK-19	Not Req.	Attach to R6A.
R7A	5Meg		B157806-1-3	Q11-141*	A47-4Meg-S*	AB-86*	TAP355L*	Height, Stop at 4Meg
B	Shaft		Not Req.	TQ	RN-3	AK-19	Not Req.	Attach to R7A.
R8	1Meg		B159037-1-1					Noise Gate, Left Hand Terminal Open
R9	500Ω	2	A157955-2-1		39-500			Buzz (Wire Wound)

• Connect a 330KΩ resistor in series with the left hand terminal of the control and the lead connecting to the same terminal of the original control (control viewed from shaft end, terminals down.)  
† Connect a 68KΩ resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control (control viewed from shaft end, terminals down.)  
• Connect a 1Meg resistor in series with the right hand terminal of the control and the lead connecting to the same terminal of the original control (control viewed from shaft end, terminals down.)  
Note 1. Used in model IU-1034B only.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SENTINEL PART No.	IRC PART No.	
R10	470KΩ		27E474M-1	BTS-470K	
R11	470KΩ		27E474M-1	BTS-470K	
R12	680KΩ		27E684K-1		
R13	10KΩ		27E103K-1	BTS-10K	
R14	2200Ω		27E222K-1	BTS-2200	
R15	8200Ω		27E822K-1		
R16	10KΩ		27E103K-1	BTS-10K	
R17	15KΩ		27E153K-1		
R18	220KΩ		27E224K-1		
R19	10KΩ		27E103K-1	BTS-10K	
R20	1000Ω		27E102K-1	BTS-1000	
R21	4700Ω		27E472K-1		
R22	2700Ω	5%	27E272K-1		
R23	1000Ω		27E102K-1	BTS-1000	
R24	10KΩ		27E103K-1		
R25	220Ω		27E221K-1		
R26	47Ω		27E470K-1	BTS-47	
R27	1000Ω		27E102K-1	BTS-1000	
R28	1000Ω		27E102K-1	BTS-1000	
R29	68Ω		27E680K-1	BTS-68	
R30	12KΩ		27E123K-1		
R31	1000Ω		27E102K-1	BTS-1000	
R32	150Ω		27E151K-1	BTS-150	
R33	5600Ω		27E562K-1		
R34	1Meg		27E105M-1	BTS-1Meg	
R35	1Meg		27E105M-1		
R36	8200Ω	1	27E822K-1	BTA-8200	
R37	33KΩ	1	27E333K-1		
R38	5600Ω	2	A156911-2-2		
R39	10KΩ		27E103K-1	BTS-10K	
R40	47Ω		27E470K-1	BTS-47	
R41	390KΩ		27E394K-1		
R42	820KΩ		27E824K-1		
R43	470KΩ			BTS-470K	Note 1
R44	100KΩ		27E104K-1	BTS-100K	
R45	10KΩ		27E103K-1	BTS-10K	
R46	150Ω		27E151K-1	BTS-150	

† Items C47A, C47B, C47C, R51A, R51B, R51C are combined in one unit.  
• Items C49A, C49C, C49B, R58A, R58B are combined in one unit.  
Note 1. Not used in some versions.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA							
		SENTINEL PART No.	Holldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Vert. Osc. Trans.	B155255-3-1	B6702	A-3006	V405	A-8125	26A03	A-97X	
T2	Hz. Output Trans.	20195	FB418*	RVG-37*	1X13*	A-8263*	FLY-15*	D-46*	
R3	Vert. Output Trans.	20E97		A-2824					
T4A	Yoke Horiz. (20MI)	AD158426-1-2	DF607①	MDF-92	235D1①	DY-16A①	Y-16①	Y-41①	
B	Vert. (40MH)		②	②	②	②	②	②	