PHOTOFACT* Folder

*TRADE MARK

ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)

ZENITH MODEL R2671E

TRADE NAME	ZENITH MODELS	CHASSIS
	R2671E, R2671R, R2975R, R2976E, R2979E	22R21
	R2671EU, R2671RU, R2975RU, R2976EU, R2979EU	22R21U
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Ill.	
TYPE SET	Television Receiver	
TUBES	Twenty-two	
POWER SUPPLY	110-120 Volts AC - 60 Cycles	RATING 2.58 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)	

INDEX

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1955 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 4-55 SET 274 FOLDER 18

ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 6 push-on type control knobs from under front control door.
2. Remove 8 wood screws. Remove fine tuning knob. Remove rear cover.
3. Disconnect picture tube socket, HV lead, deflection yoke socket, 2 speaker leads, tuner B±, volume control plug and tuner shield lead.
4. Remove 1 metal screw from picture tube mounting ground lead.
5. Remove 4 chassis bolts. Remove chassis.

TUNER REMOVAL

1. Remove channel selector knob.
2. Remove 2 metal screws from rear of cabinet. (Holding tuner to cabinet.)
3. Lower rear of tuner and pull out.

VOLUME CONTROL ASSEMBLY REMOVAL

1. Remove on/off-volume control knob.
2. Remove 1 metal screw from lead clamp. (Inside cabinet.)
3. Remove 1 control nut. (Outside cabinet.) Remove control.

SPEAKER REMOVAL

1. Remove 6 speaker nuts from 2 speakers. Remove 2 speakers.

PHOTO
*TRADE MARK

TRADE NAME

MANUFACTURER
TYPE SET
TUBES
POWER SUPPLY
TUNING RANGE

"The listing of any available
case a recommendation, wo
as to the quality and suitab
parts have been compiled fr
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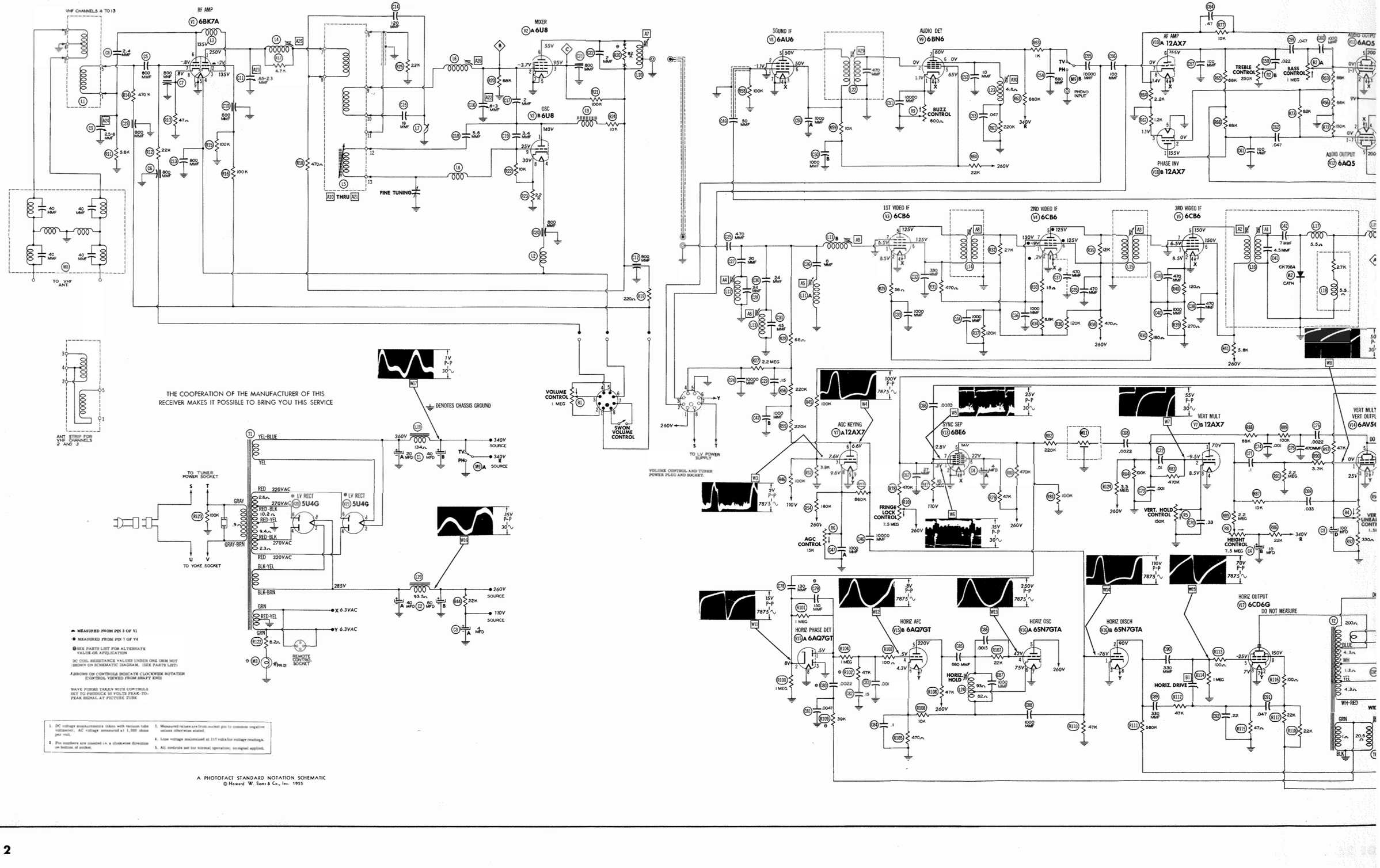

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

● MEASURED FROM PIN 3 OF V1

● MEASURED FROM PIN 7 OF V4

SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM. (SEE PARTS LIST)

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

WAVE FORMS 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 1,000 ohms per volt.
2. Pin numbers are counted in a 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.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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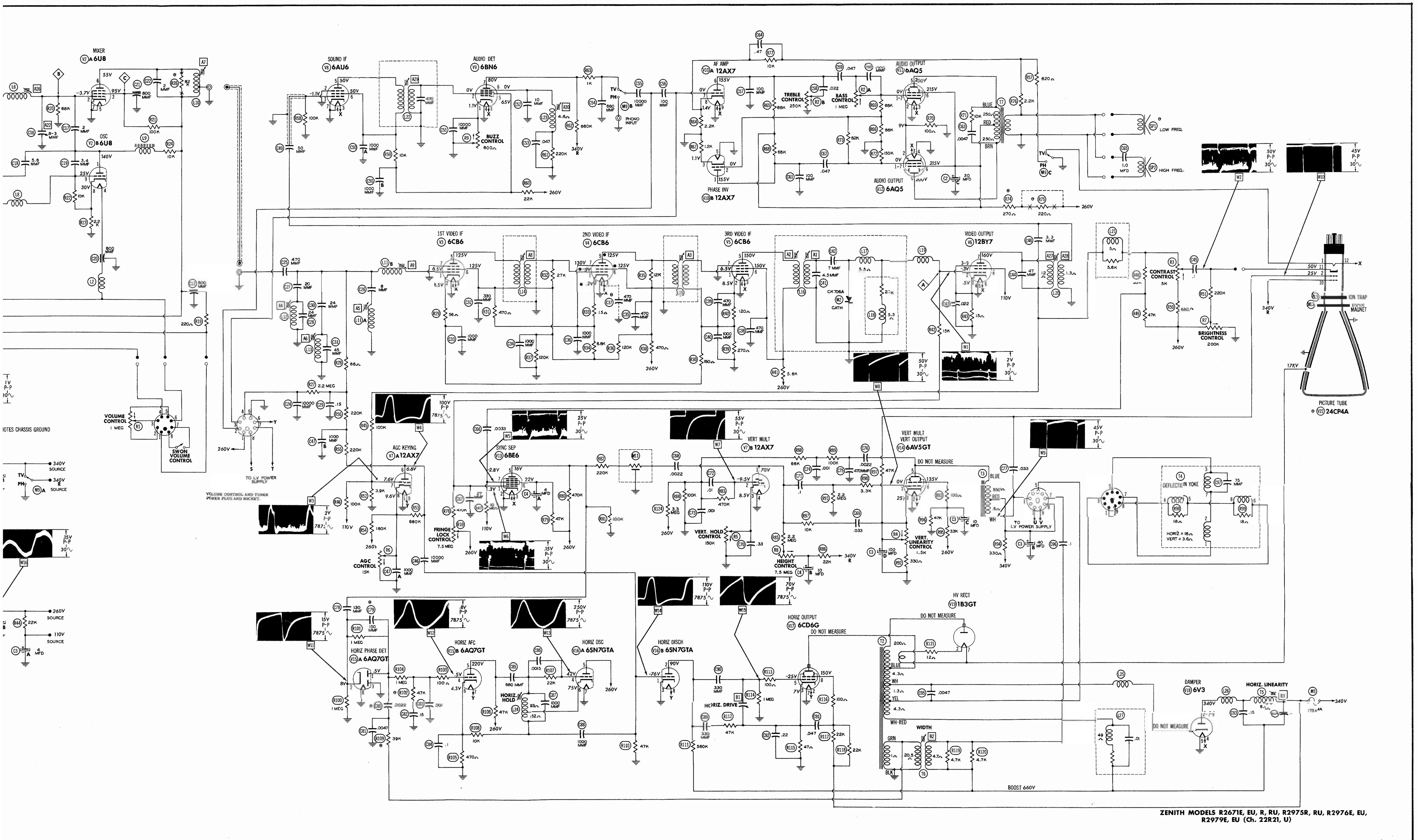
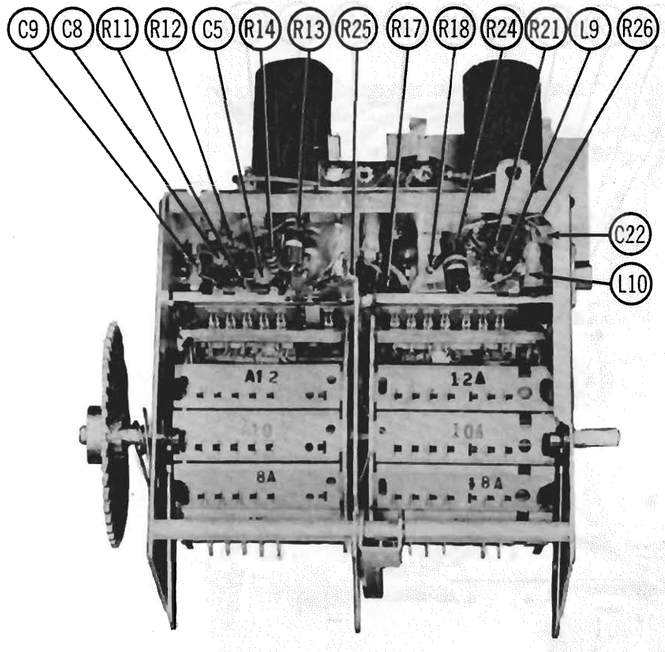
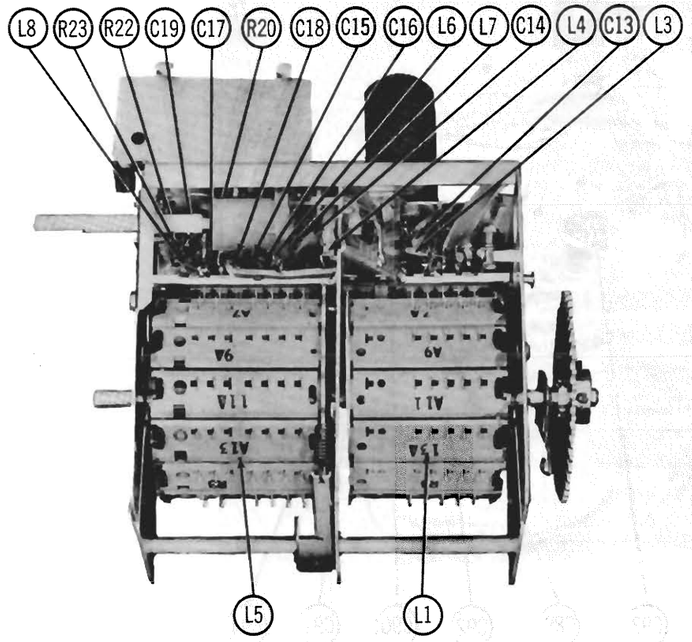

MIXER V2A 6U8
OSC V2B 6U8
SOUND IF V8 6AU6
AUDIO DET V9 6BN6
AF AMP V10A 12AX7
PHASE INV V10B 12AX7
AUDIO OUTPUT V11 6AQ5
AUDIO OUTPUT V12 6AQ5
BUZZ CONTROL
TREBLE CONTROL
BASS CONTROL
PHONO INPUT
LOW FREQ.
HIGH FREQ.
1ST VIDEO IF V3 6CB6
2ND VIDEO IF V4 6CB6
3RD VIDEO IF V5 6CB6
VIDEO OUTPUT V6 12BY7
CONTRAST CONTROL
BRIGHTNESS CONTROL
PICTURE TUBE V22 24CP4A
ION TRAP
FOCUS MAGNET
VOLUME CONTROL
SW ON VOLUME CONTROL
TO L.V. POWER SUPPLY
VOLUME CONTROL AND TUNER POWER PLUG AND SOCKET
AGC KEYING V7A 12AX7
AGC CONTROL
SYNC SEP V13 6BE6
FRINGE LOCK CONTROL
VERT MULT V7B 12AX7
VERT. HOLD CONTROL
HEIGHT CONTROL
VERT MULT VERT OUTPUT V14 6AV5GT
VERT. LINEARITY CONTROL
DO NOT MEASURE
DEFLECTION YOKE
HORIZ PHASE DET V15A 6AQ7GT
HORIZ AFC V15B 6AQ7GT
HORIZ OSC V16A 6SN7GTA
HORIZ. HOLD
HORIZ DISCH V16B 6SN7GTA
HORIZ OUTPUT V17 6CD6G
HORIZ. DRIVE
HV RECT V19 1B3GT
WIDTH
BOOST 660V
DAMPER V18 6V3
HORIZ. LINEARITY

ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)

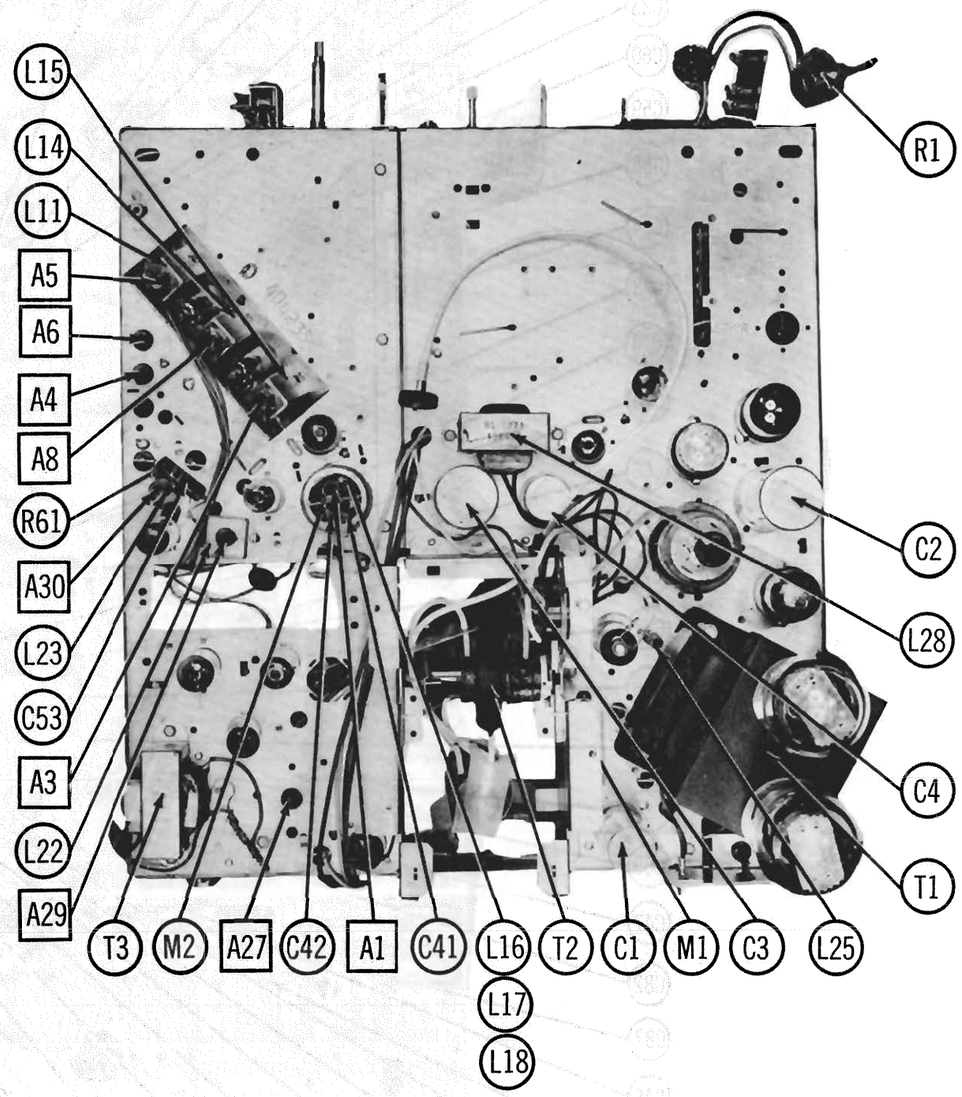
ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CHASSIS TOP VIEW

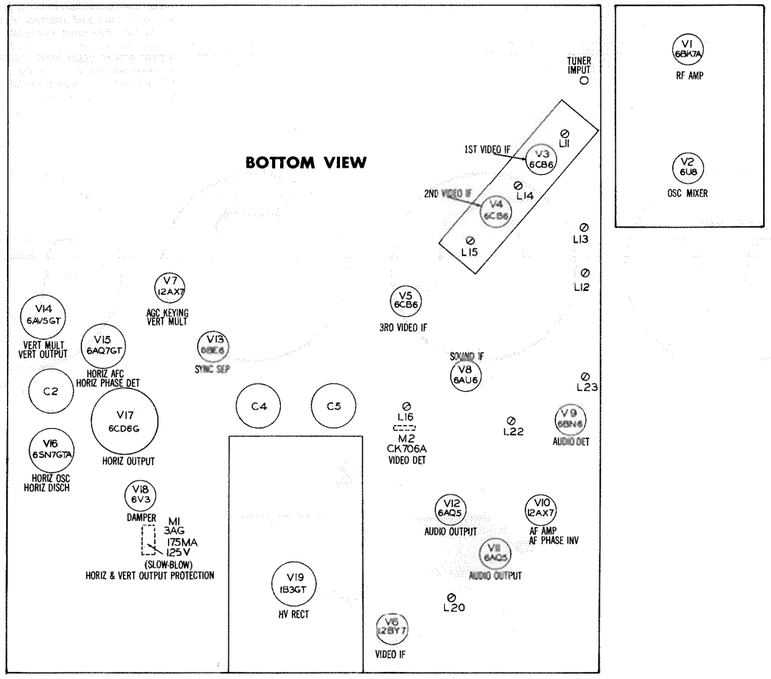
ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

RESISTANCE MEASUREMENTS

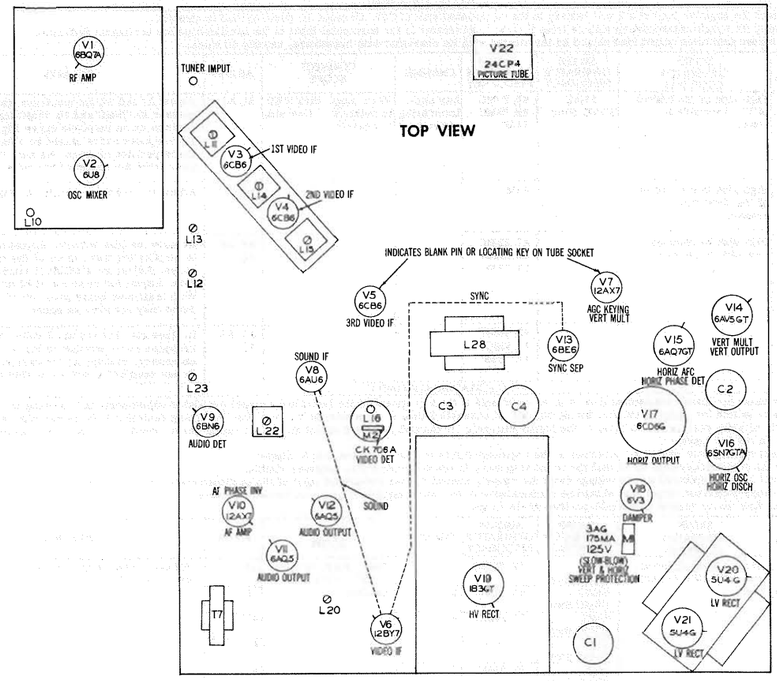
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BK7A	†800Ω	†50KΩ	INF	.1Ω	0Ω	INF	3.5Meg	47Ω	0Ω
V 2	6U8	†10.3KΩ	68KΩ	†100KΩ	.1Ω	0Ω	†320Ω	0Ω	2.2KΩ	12.2KΩ
V 3	6CB6	1.2Meg	500Ω	.1Ω	0Ω	■500Ω	■500Ω	0Ω		
V 4	6CB6	■7KΩ	■15Ω	.1Ω	0Ω	†500Ω	†500Ω	70KΩ		
V 5	6CB6	270Ω	400Ω	.1Ω	0Ω	†5.6KΩ	†5.6KΩ	0Ω		
V 6	12BY7	15Ω	2.7KΩ	15Ω	0Ω	0Ω	.1Ω	†5.5KΩ	†22KΩ	15Ω
V 7	12AX7	▲3.5Meg	600KΩ	85KΩ	0Ω	0Ω	†700KΩ	3.9KΩ	6.5KΩ	.1Ω
V 8	6AU6	100KΩ	0Ω	.1Ω	0Ω	†32KΩ	†32KΩ	0Ω		
V 9	6BN6	160Ω	.3Ω	.1Ω	0Ω	†22KΩ	220KΩ	▲680KΩ		
V 10	12AX7	†70KΩ	60KΩ	1.2KΩ	0Ω	0Ω	†70KΩ	100KΩ	1.8KΩ	.1Ω
V 11	6AQ5	130KΩ	100Ω	.1Ω	0Ω	†900Ω	†600Ω	130KΩ		
V 12	6AQ5	80KΩ	100Ω	.1Ω	0Ω	†900Ω	†600Ω	80KΩ		
V 13	6BE6	18KΩ	0Ω	.1Ω	0Ω	†90KΩ	†47KΩ	10Meg		
V 14	6AV5GT	2.2Meg	0Ω	900Ω	2.2Meg	▲800Ω	†25KΩ	.1Ω	†25KΩ	
V 15	6AQ7GT	2Meg	1Meg	0Ω	3Meg	†47KΩ	470Ω	.1Ω	0Ω	
V 16	6SN7GTA	47KΩ	▲560KΩ	0Ω	32KΩ	†100Ω	10.5KΩ	0Ω	.1Ω	
V 17	6CD6G	▲11KΩ	.1Ω	47Ω	INF	1Meg	1Ω	0Ω	▲11KΩ	Top Cap ◓5.5Ω
V 18	6V3	◓7.5Ω	▲150Ω	INF	.1Ω	0Ω	INF	▲150Ω	▲150Ω	◓150Ω Top Cap 220KΩ
V 19	1B3GT	PINS 1 - 8 HAVE INFINITE RESISTANCE								Top Cap ◓205Ω
V 20	5U4G	INF	20KΩ	INF	10Ω	INF	9Ω	INF	20KΩ	
V 21	5U4G	INF	50KΩ	INF	13Ω	INF	12Ω	INF	50KΩ	
V 22	24CP4A	0Ω	48KΩ	Pin 10 ▲135Ω	Pin 11 †220KΩ	Pin 12 .1Ω				

† MEASURED FROM PIN 8 OF V20.
■ MEASURED FROM PIN 7 OF V4.
▲ MEASURED FROM PIN 2 OF V21.
◓ MEASURED FROM TOP CAP OF V18.



TUBE PLACEMENT CHART

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 - **V20, V21**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V2, V3, V4, V5, V6, V20**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V6, V7, V22**
Has pic, no sound - **V8, V9, V10, V11, V12**
Overloaded picture - **V7**

SYNC FAILURE
No vert. sync - **V7, V13, V14**
No horiz. sync - **V13, V15, V16**
No vert. or horiz. sync - **V13**

SWEEP FAILURE
No raster, has sound - **V16, V17, V18, V19, V21, V22, Fuse (M1)**
No vertical deflection - **V7, V14**
Poor vert. linearity or foldover - **V7, V14**
Poor horiz. linearity or foldover - **V16, V17, V18**
Narrow picture - **V16, V17, V18, V19, V20, V21**
Vert. off freq. - **V7, V13, V14**
Horiz. off freq. - **V13, V15, V16**

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Picture tube may be removed from chassis for easier slug adjustment.

VIDEO IF ALIGNMENT

Connect the negative lead of a 2 volt battery to the ungrounded side of C29. Connect the positive lead to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1	470MFD	High side to pin 1 (grid) of V5. Low side to chassis.	44MC (10MC Swp)	45.75MC 39.75MC 44MC	Any non-interfering channel.	Vert. amp. thru 10KΩ to point (A). Low side to chassis.	A1, A2	Adjust A1 and A2 for maximum gain. Place marker 45.75MC and 39.75MC for correct position as on response curve Fig. 1. If the response curve cannot be obtained, check position of slugs. Be sure they are away from the center of the coils.
2	"	High side to pin 1 (grid) of V4. Low side to chassis.	"	44MC	"	"	A3	Adjust for response similar to Fig. 2
3	"	High side to point (B). Low side to chassis.	"	47.25MC 41.25MC 39.75MC	"	"	A4, A5, A6	Remove the bias battery. Adjust scope gain to amplify the trap region of the response curve. Adjust for MINIMUM marker amplitude. Adjust for response similar to Fig. 3. With maximum scope gain, top of response curve may not show on scope.
4	"	"	"	42.75MC 45.0MC 45.75MC	"	"	A7, A8, A9	Replace bias battery at -2 volts. Adjust for response curve similar to Fig. 4. If necessary, retouch A3 for desired response. Do not readjust A1 and A2 in this step.

OSCILLATOR ALIGNMENT

The master oscillator adjustment (L8) is to be made only if the adjustment of the individual channel oscillator adjustments fail to bring the channels within the range of the fine tuning control. If channels 2 thru 6 fall within the range of the fine tuning control but the higher channels do not, slightly readjust L8 to bring in the higher channels. If channels 2 thru 6 do not fall within tuning range, readjust the bulls-eye adjustment on rear of tuner.
Connect the negative lead of a 1 volt bias to the ungrounded side of C29. Positive lead to chassis.
Turn the oscilloscope gain up so that the sound trap notch in the response curve becomes visible.
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.
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
5.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	57MC (10MC Swp)	59.75MC	2	Vert. Amp. to point (A). Low side to chassis.	A10	Adjust to place sound marker in notch as in Fig. 5.
			63MC (10MC Swp)	65.75MC	3		A11	
			69MC (10MC Swp)	71.75MC	4		A12	
			79MC (10MC Swp)	81.75MC	5		A13	
			85MC (10MC Swp)	87.75MC	6		A14	
			177MC (10MC Swp)	179.75MC	7		A15	
			183MC (10MC Swp)	185.75MC	8		A16	
			189MC (10MC Swp)	191.75MC	9		A17	
			195MC (10MC Swp)	197.75MC	10		A18	
			201MC (10MC Swp)	203.75MC	11		A19	
			207MC (10MC Swp)	209.75MC	12		A20	
			213MC (10MC Swp)	215.75MC	13		A21	

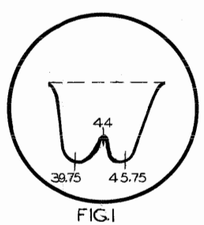


FIG. 1

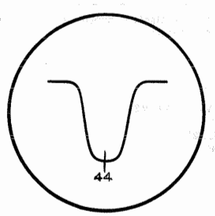


FIG. 2

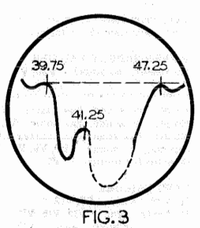


FIG. 3

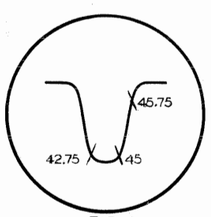


FIG. 4

ALIGNMENT INSTRUCTIONS (cont)

RF AND MIXER ALIGNMENT

Leave the bias battery connected as under "Oscillator 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 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	63MC (10MC Swp)	61.25MC 65.75MC	3	Vert. amp. thru 10KΩ to point (A). Low side to chassis.	A22, A23 A24	Adjust for response similar to Fig. 6.
7	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"	A25, A26	Adjust for symmetry of response curve similar to Fig. 7.

SOUND IF ALIGNMENT

Connect an attenuator (Zenith part no. S-17203 or equivalent) in series with the receiver antenna.
Tune in a tone modulated TV signal and adjust the attenuator until the signal falls below the limiting level of the (6BN6) audio detector, as evidenced by a hiss similar to superregeneration.
Adjust the sound take-off transformer (A27) and (A28), the sound IF coil (A29) and the quadrature coil (A30) for maximum sound of best quality.
Adjust the buzz control (R9) for minimum intercarrier buzz. If the intercarrier buzz cannot be eliminated with the buzz control, check the AGC delay setting.
If during the sound IF alignment the signal rises above the limiting level (hiss disappears), increase the attenuation until the hiss returns.

UHF TUNER ALIGNMENT

Alignment of the UHF tuner should not be attempted unless proper test equipment is available.
Switch receiver to UHF position.
Leave bias supply connected as under "Video IF Alignment" and adjust for -2 volts.
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
8.	Fig. 9	Across UHF antenna terminals thru matching network (Fig. 9).	713MC (10MC Swp)	711.25MC	54	Vert. Amp. thru 10KΩ to point (A) Low side to chassis.	A31	Tuner rocker arm should be in the horizontal position. If necessary, loosen the set screw and adjust tuner shaft so that rocker arm is horizontal with indicator set to channel 54. Do not adjust A31 unless oscillator calibration is off more than 3 channels. If necessary, adjust A31 for response similar to Fig. 8 with video marker at 50%. The image (weaker response) will appear also. The response toward the counter clockwise position of A31 is the correct response.
9.	"	"	"	"	"	"	A32, A33	Adjust for maximum amplitude and symmetry of response similar to Fig. 8.
10.	"	"	473MC (10MC Swp)	471.25MC	14	"		Check for response similar to Fig. 8. If oscillator is off more than 3 channels adjust the oscillator travel adjustment (osc., mixer and ant. travel adjustments are the 3 round thump screws on top of the tuner) to scale. Care must be used in making these adjustments so as not to move the rocker arm out of its bearing. Set the mixer and antenna travel adjustments for maximum response on scope.
11.	"	"	887MC (10MC Swp)	885.25MC	83		A34, A35, A36	Adjust A34 to place video marker at 50% on response curve as in Fig. 8. Adjust A35 and A36 for maximum amplitude and symmetrical response.

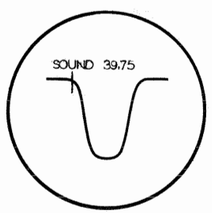


FIG. 5

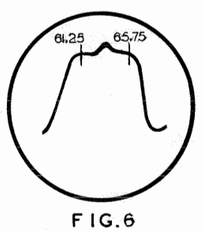


FIG. 6

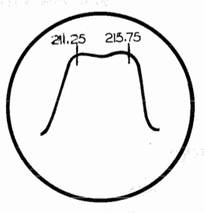


FIG. 7

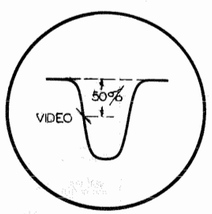


FIG. 8

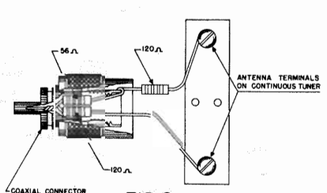


FIG. 9

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

For touch-up adjustment of the VHF tuner oscillator circuit, it is necessary to remove rear cover and supply power to set. Adjustments are made thru the hole marked "Bull's Eye Adjustment" and are accessible one at a time as the selector switch is turned to each channel. (Fine tuning control must be set to the center of its range before making adjustments.) Use Zenith alignment wrench part no. 68-21 for adjustment.

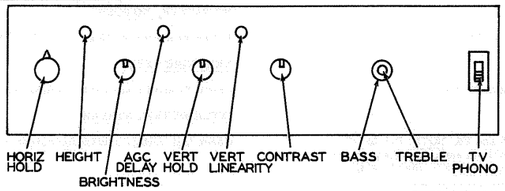
PICTURE TUBE SAFETY GLASS CLEANING

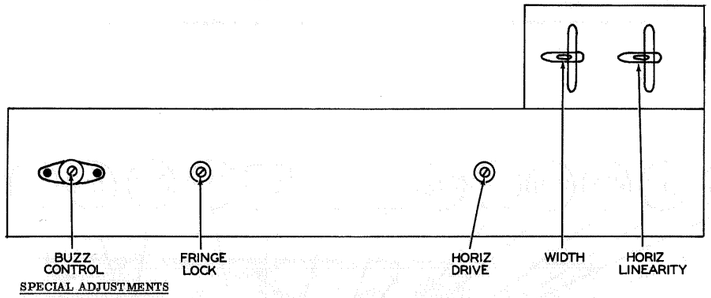
To clean safety glass, remove channel selector and on-off switch-volume control. Remove 1 wood screw from each escutcheon. Let safety glass fall forward slightly and lift out of slot at the bottom. Use extreme caution when removing safety glass.

PICTURE TUBE REMOVAL

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

SERVICE ADJUSTMENT LOCATION





SPECIAL ADJUSTMENTS

AGC DELAY ADJUSTMENT

Turn the set on and tune in a TV signal and observe the picture. Starting from the full clockwise position, turn the AGC delay control counter clockwise slowly until picture distorts and buzz is heard in the sound, then turn control clockwise for clearest picture and best sound.

FRINGE LOCK ADJUSTMENT

Turn the fringe lock control to 1/4 turn from full clockwise position. Adjust the vertical and horizontal hold for picture synchronization and check stability by switching off channel and back again.

SLIGHTLY retouch the fringe lock control adjustment, if necessary, for maximum stability while testing as above.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from the front panel service control. Adjust the horizontal hold control (L24) until picture synchronizes horizontally. If results cannot be obtained, see horizontal sweep circuit adjustments on page 11.

SOUND IF DETECTOR BUZZ ADJUSTMENT

Adjust the buzz control located on the rear apron of the chassis for maximum volume and minimum buzz. If results are unsatisfactory, see alignment instructions on pages 6 & 7.

FUSES

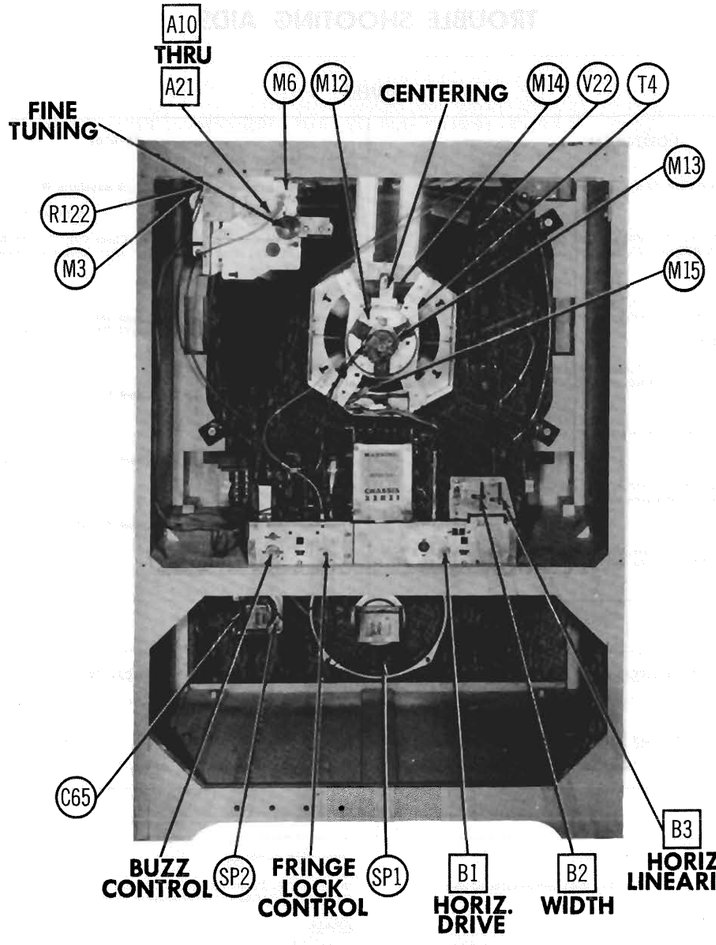
One fuse is used for Horiz. Sweep Circuit protection. (For location see Tube Placement Chart.)

CENTERING

Centering is accomplished mechanically by means of a centering lever on the P. M. Focusing assembly. Adjust the centering lever from side to side and up and down until the picture is properly centered.

ANTI-PIN CUSHION ADJUSTMENT

Reduce the picture size so that the sides of the raster are visible and position the magnets so that all sides are straight lines and the corners are at right angles. Two magnets are used.



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on a TV station, preferably a test pattern.

Adjust horizontal hold (L24) located on front of chassis until picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B1) for greatest width.

Adjust the width slug (B2) for a picture slightly wider than necessary to fill the picture mask horizontally.

Adjust the horizontal linearity slug (B3) for a picture that is symmetrical from left to right.

AGC DELAY CONTROL ADJUSTMENT

Connect the vertical amplifier of an oscilloscope through 10KΩ to point A . Select the strongest signal being received and adjust the delay control for 2 volts peak output.

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Follow procedure outlined under "Loss of High Voltage".

INSUFFICIENT SWEEP

Check by substitution V16, V17, V18, V20 and V21. Check adjustments B1, B2 and B3. Check R117, R118, R111, C90, T2, T4A and other associated components.

DRIVE LINES

Check by substitution V16, V17 and V18. Check adjustments B1 and B3. Check R115, R117, R116, C90, T2, T4A and other associated components.

COMPRESSED LEFT SIDE

Check by substitution V17 and V18. Check horizontal output and damper stages for component failure or change of value.

FOLDS

Follow procedure outlined under "Drive Lines".

PIE CRUST EFFECT

Check by substitution V15, V16, V17 and V18. Check C83 for open. Check L24, C87, C85 and other associated components.

XMAS TREE EFFECT

Check by substitution V15, V16, V17 and V18. Check T2 and T4 for internal arcing. Check L24, C87, C82, C81, C84, R105, R106 and other associated components.

VERTICAL

LOSS OF SWEEP

Check by substitution V7 and V14. Check waveform W8.

If Satisfactory	If Unsatisfactory
Check T3, T4B, C3B, C3C, C3D, R95, R94, R92 and other associated components.	Check C71, C70, R85, R86, R8 and other associated components.

INSUFFICIENT SWEEP

Check by substitution V7 and V14. Check vertical size and vertical linearity controls for proper operation. Check T3, T4B, R85 and other associated components.

COMPRESSED AT BOTTOM

Check by substitution V7 and V14. Check R85, R86, R8, C4B, C71 and other associated components.

COMPRESSED AT TOP

Check by substitution V7 and V14. Check R4, R92, C3D, C71 and other associated components.

FOLDS

Check by substitution V7 and V14. Check R87, R92, C69, C71 and other associated components.

SYNC

LOSS OF VERTICAL AND HORIZONTAL SYNC

Substitute V13. Check R78, R79, R80, C4A, C67, C66 and other associated components.

LOSS OF VERTICAL SYNC-HORIZONTAL SYNC SATISFACTORY

Substitute V7. Check M11, C68, C70, C72, R5 and other associated components.

LOSS OF HORIZONTAL SYNC-VERTICAL SYNC SATISFACTORY

Check by substitution V15 and V16. Check C78, C79, C85, C87, R106, R105 and other associated components.

HORIZONTAL BENDING

Check by substitution V13, V15 and V16. Check horizontal AFC network.

VIDEO

LOSS OF VIDEO

Substitute V6. Check C43, C45, L21, R50, R44 and other associated components.

SOUND BARS (4.5MC BEAT)

Adjust tuner fine tuning for best sound and picture. Check adjustment A27. Check video IF alignment.

POOR CONTRAST

Substitute V6. Check contrast control. Check C44, C45, R43, L19, L21 and other associated components.

NEGATIVE PICTURE

Substitute V6. Check picture tube. Check video crystal detector network. Check L19, L21, C45 and other associated components.

SMEAR

Substitute V6. Check video crystal detector network. Check L19, L21, C45 and other associated components.

WIDE BLACK BAR ACROSS PICTURE

Check by substitution V1, V3, V4, V5 and V6 for heater to cathode leakage.

AUDIO

WEAK OR NO SOUND

Check by substitution V8, V9, V10, V11 and V12. Check V10, V11 and V12 using audio signal generator. Apply audio signal across R1.

If Satisfactory	If Unsatisfactory
Check audio detector and audio IF stages for component failure or change of value.	Check C55, C56, C57, C63, C62, C59, R68, R65, R74, R75, T7, speaker and other associated components.

BUZZ

Adjust tuner fine tuning for best sound and picture. Check adjustments A30 and R9. If still unsatisfactory, check audio IF alignment.

DISTORTED

Follow procedure outlined under "Weak or No Sound".

POWER

DEAD SET

If filaments fail to light, check AC interlock assembly. Check switch on volume control and T1. If filaments light, check by substitution V20 and V21. Check B+ filter and decoupling network.

SMALL AND/OR DIM PICTURE

Check by substitution V20 and V21. Check B+ filter and decoupling network.

TROUBLE SHOOTING AIDS (cont)

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check by substitution V15, V16, V17, V18 and V19. Check M1 fuse. Check waveform W15.

If Satisfactory	If Unsatisfactory
Check T2, T4A, T5, T6, C94, C93, C95, C91, C92, R117, R118, R115 and other associated components.	Check C84, C85, C86, C90, C87, L24, R111, R108, R105 and other associated components.

INSUFFICIENT HIGH VOLTAGE

Check by substitution V16, V17, V18, V20 and V21. Check C90, R117, R118, R115 and other associated components.

BLOOMING

Check by substitution V17, V18, V19, V20 and V21. Check C96, C90, R117, R118 and other associated components.

GENERAL

RASTER, SOUND, NO PICTURE

Follow procedure outlined under "Loss of Video".

RASTER, PICTURE, NO SOUND

Follow procedure outlined under "Weak or No Sound".

RASTER, NO SOUND, NO PICTURE

Check by substitution V1, V2, V3, V4, V5 and V6. NOTE: Due to interconnection between V3, V4 and V5, trouble in any one of these stages is likely to change voltage readings and gain in the other IF stages.

NO RASTER, NO SOUND

Follow procedure outlined under "Dead Set".

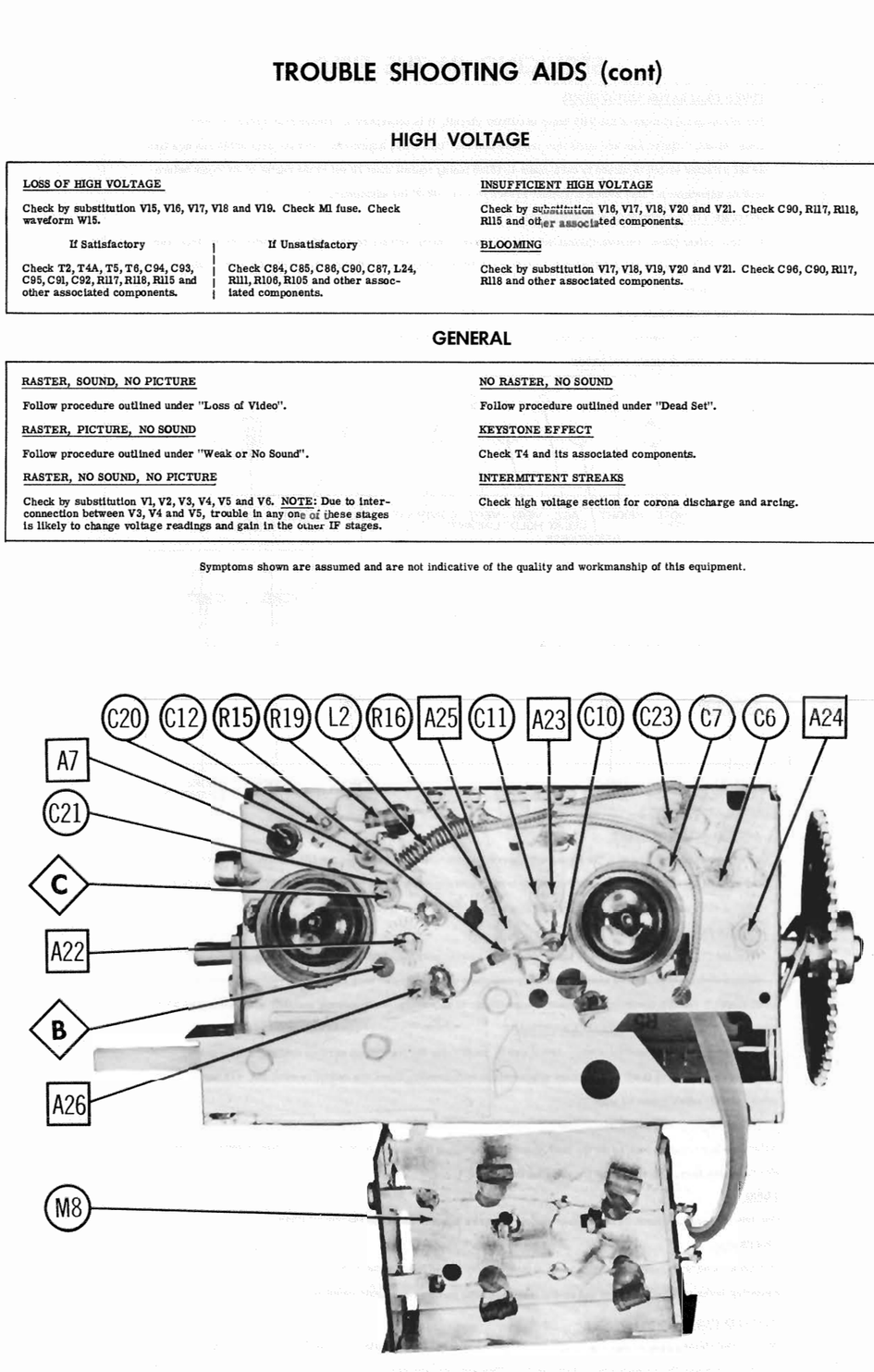
KEYSTONE EFFECT

Check T4 and its associated components.

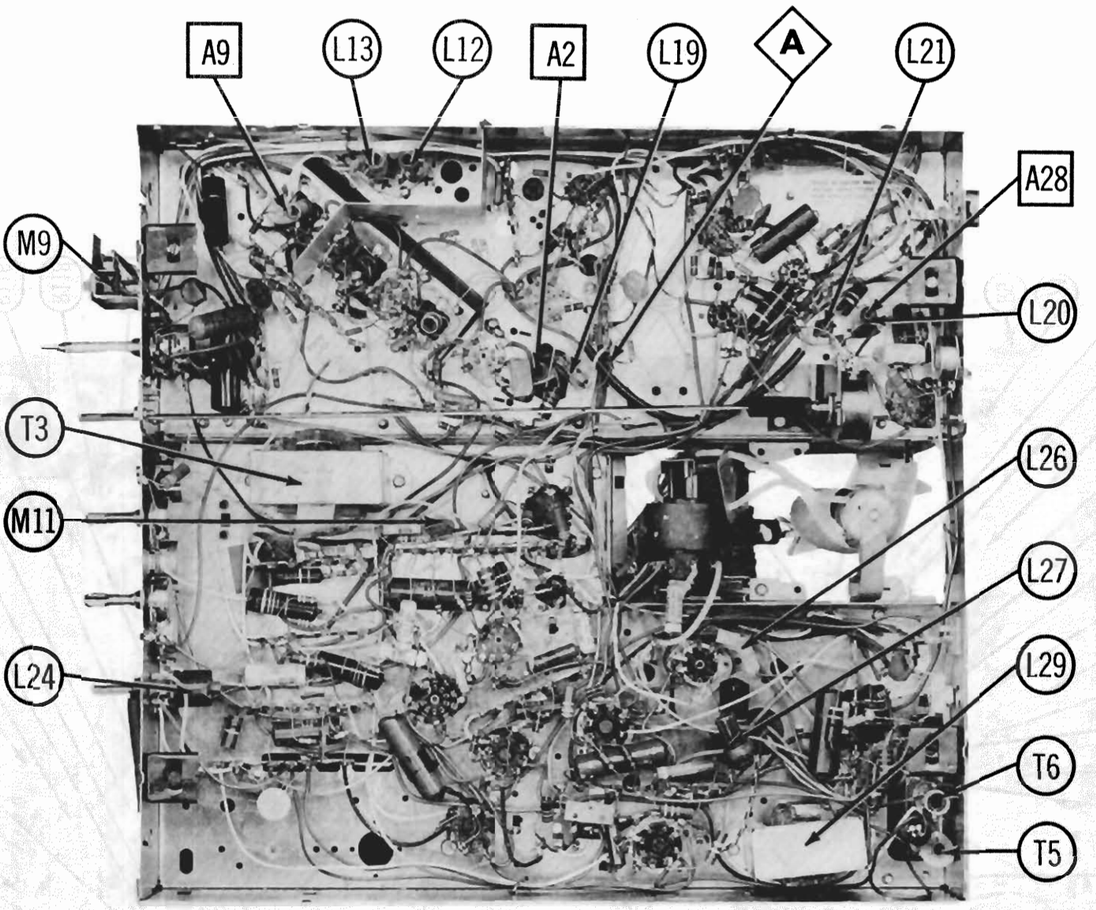
INTERMITTENT STREAKS

Check high voltage section for corona discharge and arcing.

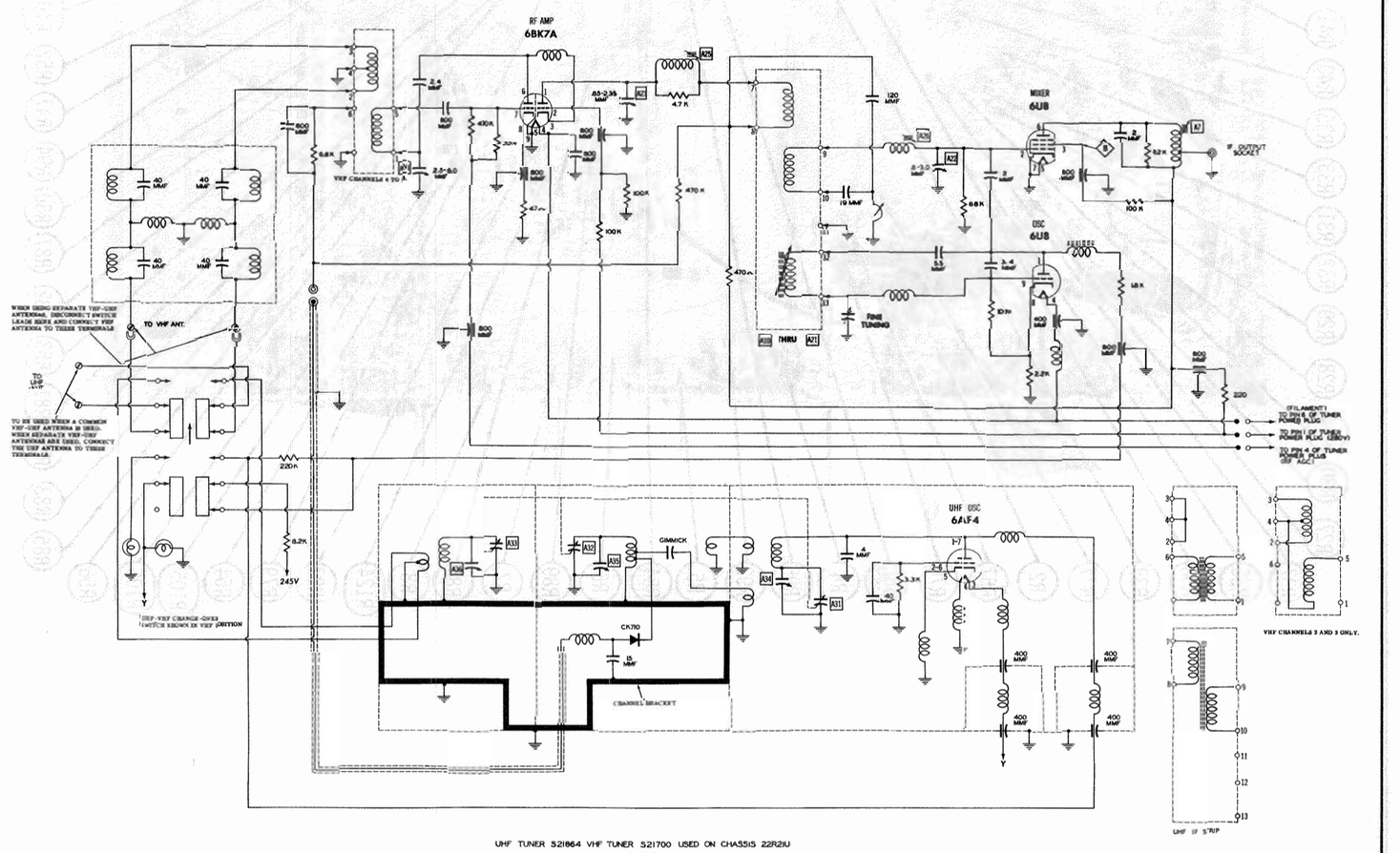
Symptoms shown are assumed and are not indicative of the quality and workmanship of this equipment.



RF TUNER TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



UHF TUNER 521864 VHF TUNER 521700 USED ON CHASSIS 22R21U

ALTERNATE TUNER SCHEMATIC

ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)

CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS (Continued)

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ZENITH PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B	175MA 125V	136-30	83-1883	313.175 (3AG-175MA S/B)	357001	MDL 175/ 1000	4405

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		ZENITH PART No.	SYLVANIA PART No.		
M2	CK70GA	103-1	1N60 or 1N132		Video Det.

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	Pilot Light	100-66	Chassis 22R21 - Type PR12
M4	Pilot Light	100-67	Chassis 22R21U - UHF Position of Turret
M5	Pilot Light	100-67	Chassis 22R21U - All Positions of Turret
M6A	Tuner	S-21735	Chassis 22R21-VHF-UHF (For UHF Provision use UHF Strips)
B	Tuner	S-21700	Chassis 22R21U - VHF
M7	Tuner	S-21864	Chassis 22R21U - UHF
M8	Trap		VHF Ant. Input Filter
M9	Switch	S-21831	TV-Phono
M10	Switch	85-546	VHF-UHF - Chassis 22R21U
M11	Integrator	87-1	Vertical
M12	Focus Magnet	S-20344	Includes Centering Device
M13	Ion Trap	S-17461	
M14	Correction Magnet	S-20360	
M15	Correction Magnet	S-20360	
B1	Trimmer Cap.	22-2398	Horiz. Drive
	Cabinet	14-1757E	Models R2671E, EU
	Cabinet	14-1757R	Models R2671R, RU
	Cabinet	14-1758R	Models R2975R, RU
	Cabinet	14-1759E	Models R2976E, EU
	Cabinet	14-1765E	Models R2979E, EU
	Knob Assembly	S-21883	VHF Channel Selector - All Models
	Knob	S-22024	Tuning (UHF) - All UHF Models
	Knob	S-22048	Dial (UHF) - All UHF Models
	Knob	46-1118	Horizontal Hold - All Models
	Knob	46-1182	Vert. Hold & Brightness - All Models
	Knob	46-1199	Contrast - All Models
	Knob	46-1335	On-Off-Volume - Models R2671E, R, EU, RU; R2975R, RU; R2976E, EU; R2979E, EU
	Knob	46-1355	Fine Tuning - Models R2671E, R, EU, RU; R2975R, RU; R2976E, EU; R2979E, EU
	Knob	46-1018	Tone - Bass - All Models
	Knob	46-1055	Tone - Treble - Models R2671E, R, EU, RU; R2975R, RU; R2976E, EU; R2979E, EU
	Safety Glass	192-192	Models R2671E, R, EU, RU
	Safety Glass	192-194	Models R2975R, RU; R2976E, EU; R2979E, EU;
	Mask	196-254	Models R2671E, R, EU, RU
	Mask	196-255	Models R2975R, RU; R2976E, EU; R2979E, EU;

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETMA BASE TYPE	NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6BK7A	6BK7A	9AJ	
V2	Mixer-Osc.	6U8	6U8	9AE	
V3	1st Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd Video IF Amp.	6CB6	6CB6	7CM	
V6	Video Output	12BY7	12BY7	9BF	
V7	AGC Keying - Vert. Mult.	12AX7	12AX7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Audio Det.	6BN6	6BN6	7DF	
V10	AF Amp-AF Phase Inverter	12AX7	12AX7	9A	
V11	Audio Output	6AQ5	6AQ5	7BZ	
V12	Audio Output	6AQ5	6AQ5	7BZ	
V13	Sync Sep.	6BE6	6BE6	7CH	
V14	Vert. Mult. - Vert. Output	6AV5GT	6AV5GT	8CK	
V15	Horiz. AFC - Horiz. Phase Det.	6AQ7GT	6AQ7GT	8CK	
V16	Horiz. Osc. - Horiz. Discharge	6SN7GTA	6SN7GTA	8BD	
V17	Horiz. Output	6CD6G	6CD6G	5BT	
V18	Damper	6V3	6V3	9BD	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	5U4GA used as an alternate.
V21	LV Rectifier	5U4G	5U4G	5T	5U4GA used as an alternate.

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA					RETMA BASE TYPE	NOTES
	ZENITH PART No.	CBS-HYTRON PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.		
V22	24CP4A	24CP4A	24CP4A	24CP4A	24CP4A	12N	
				24CP4		12N	
	27EP4	27EP4	27EP4	27EP4		12D	
				27GP4		12D	

CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT	ZENITH PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C1A	▲20	450	22-2566			FP146	TM-40-450	S-270	
B	■40	450				TC75	TD-20-450	MT-4520	
C2A	■40	400	22-2437			FP377	TM-4111	Q-065	
B	▲80	400				TC77			
C	▲30	400							
C3A	▲4	350	22-2479			FP454.6			
B	■40	400							
C	▲10	475							
D	100	50							
C4A	▲4	350	22-2605			FP171	TM-3096	S-310	
B	■10	475				TC60		MT-4504	
C5	800		22-2331	DD-801	801-001	DC-521			
C6	800		22-2577						
C7	800		22-2577						
C8	2.4		22-2596						
C9	2.5-6		22-2221						
C10	800		22-2577						
C11	.85-2.3		22-2453	829-3	3115-01-0R5	CT565A			
C12	800		22-2577						
C13	800		22-2331	DD-801	801-001	DC-521			
C14	120		22-2391	D6-121	811-121	UC-5312			
C15	19		22-2406						
C16	.6-3		22-2504	829-3	3115-01-0R5	CT565A			
C17	2		22-2434						
C18	5.6		22-2499						
C19	3.4		22-2592						
C20	800		22-2577						
C21	800		22-2577						
C22	2		22-2585						
C23	800		22-2577						
C24	1000		22-3	DD-103	811-01	DC-511			
C25	470		22-2214	D6-471	GP2K-471	UC-5347		K-1347	
C26	8		22-2481						
C27	20		22-2593	TCZ-20	NP0K-200	ZT-542			
C28	24		22-2515	TCZ-24	NP0L-240			KR-1424	
C29	.15	200	22-2147			PT4015	IMP2P-15	3302015	
C30	24		22-2515	TCZ-24	NP0L-240			KR-1424	
C31	45		22-2600						
C32	330		22-2309	D6-331	GP2K-331	UC-5333		K-1333	
C33	1000		22-7	DD-102	801-001	DC-521		K-1210	
C34	1000		22-7	DD-102	801-001	DC-521		K-1210	
C35	470		22-2302	D6-471	GP2K-471	UC-5347		K-1347	
C36	1000		22-7	DD-102	801-001	DC-521		K-1210	
C37	470			D6-471	GP2K-471	UC-5347		K-1347	Note 1
C38	470	500	22-2524	D6-471	GP2K-471	UC-5347		K-1347	
C39	470		22-2214	D6-471	GP2K-471	UC-5347		K-1347	
C40	1000		22-2112	D6-102	GP2L-102	UC-521		K-1210	
C41	4.5		22-2522						
C42	7		22-2375						
C43	.022	200	22-2071	DF-203	817-02	PT4122	IMP4-S22	3304122	
C44	47		22-2467	TCZ-47	NP0K-470	ZT-5447		KR-1447	
C45	.1	200	22-1777	DF-104		PT401	IMP2-P1	330201	
C46	10000		22-3	DD-103	811-01	DC-511	IMP6-S1	330611	
C47A	1000		22-2545	DD2-102	812-001	DCD-521			
B	1000								
C48	3.3		22-2343	TCZ-3.3	NP0A-3R3	ZT-5533			
C49	50		22-2460	D6-500	GP1K-500	UC-545		K-1450	
C50A	1000		22-2553	DD2-102	812-001	DCD-521			
B	1000								
C51	10000		22-3	DD-103	811-01	DC-511			

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	ZENITH PART No.	CENTRALAB PART No.	ERIE PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	
C52	10		22-2378	TCZ-10	NP0K-100	ZT-541		KR-1410	
C53	.047	200	22-1738	DF-503		PT4147	IMP2-S47	3302147	
C54	680		22-2320	D6-681	GP2K-681	UC-5368		K-1368	
C55	10000		22-3	DD-103	811-01	DC-511	IMP6-S1	330611	
C56	100		22-5	D6-101	801-101	UC-531		K-1310	
C57	100		22-5	D6-101	801-101	UC-531		K-1310	
C58	.022	600	22-1813	DF-303	817-02	PT6122	IMP6-S22	3306122	
C59	.047	600	22-1844	DF-503		PT6147	IMP6-S47	3306147	
C60	1000			DD-102	801-001	DC-521		K-1210	
C61	100		22-5	D6-101	801-101	UC-531		K-1310	
C62	.047	600	22-1844	DF-503		PT6147	IMP6-S47	3306147	
C63	.0047	1600	22-2564	DD16-502	IR5KV-472	PT16247	CT16-D5	2116-005	
C64	.47	200	22-2146			PT4047	IMP2-P47	3302047	
C65	1.0	120	22-2469			PT41			
C66	.0033	400	22-2631	D6-332	GP2-333-332	PT6233	IMP6-D33	3306233	
C67	27		22-2396	TCZ-27	NP0K-270			K-1427	
C68	.0022	600	22-1803	D6-222	GP2-333-222	PT6222	IMP6-D22	3306222	
C69	.033	600	22-2235			PT6133	IMP6-S3	330613	
C70	.33	200	22-2159					3306033	
C71	.1	600	22-2061	DF-104		PT601	IMP6-P1	330601	
C72	.01	200	22-2565						
C73	.001	600	22-2128			MCB255		KR-1210	
C74	.001	600	22-2128			MCB255		KR-1210	
C75	470	2000	22-2563	DD30-471	3KV-471	MCL347			
C76	.0022	600	22-1614					CR-1222	
C77	.033	600	22-1901			PT6133	IMP6-S3	330613	
C78	130	500	22-2162					KR-1313	
C79	150	500				MCB236		KR-1315	Note 2
C80	.0022	200		D6-222	GP2-333-222	PT6222	IMP6-D22	3306222	Note 3
C81	.0047	200	22-1842	D6-472	GP2-333-472	PT6247	IMP6-D47	3306247	
C82	.15	200	22-2166			PT4015	IMP2-P15	3302015	
C83	.001	200	22-1839	D6-102	GP2L-102	PT621	IMP6-D1	330621	
C84	.1	200	22-1777	DF-104		PT401	IMP2-P1	330401	
C85	680	500	22-2125					KR-1368	
C86	.0015	400	22-1785	D6-152	GP2L-152	PT6215	IMP6-D15	3306215	
C87	1000	500	22-2163			MCB255		KR-1210	
C88	1000		22-2598	DD-102	801-001	DC-521		K-1210	
C89	330		22-2309	D6-331	GP2L-331	UC-5333		K-1333	
C90	330		22-2309	D6-331	GP2L-331	UC-5333		K-1333	
C91	.047	400	22-1775	DF-503		PT4147	IMP4-S47	3304147	
C92	.22	200	22-2167			PT4022	IMP2-P22	3302022	
C93	.15	400	22-2341			PT4015	IMP4-P15	3304015	
C94	.1	400	22-2340	DF-104		PT401	IMP4-P1	330401	
C95	.0047	600	22-1849	D6-472	GP2-333-472	PT6247	IMP6-D47	3306247	
C96	.1	600	22-1841	DF-104		PT601	IMP6-P1	330601	
C97	75	2000							

Note 1. Not used in some versions.
Note 2. Some versions use 120MMF in this application (part #22-2505).
Note 3. Some versions use .001MFD in this application (part #22-1839).

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1Meg	½	63-3229	Q13-137	A47-1Meg-Z	B-70-S	U-53	Volume
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R1A
C	Switch		Not Req.	76-1	SWE-12	KB-5 ♦	US-26	Attach to R1A
R2A	1Meg	½	63-3224	*QJ-625		F1-53	UF16L	Bass - Panel
B	250KΩ	½				R2-35	UR254A	Treble - Rear
C	Spring					RS-1	Not Req.	Attach to R2A
R3A	5000Ω	4	63-3201			A10-5000	M5MPK	Contrast (Wire wound)
B	Shaft		Not Req.			FS-2	Not Req.	Not Req.	Attach to R3A
R4A	1500Ω	2	63-2812	WK-1500		A43-1500	VK-130	R1500L	Vert. Linearity
B	Shaft		Not Req.	Not Req.		FKS-1/4	Not Req.	Not Req.	Attach to R4A
R5A	150KΩ	½	63-3203	Q11-129		A47-150K-S	AB-46	U-43	Vert. Hold
B	Shaft		Not Req.	Not Req.		KSS-3	AK-4	Not Req.	Attach to R5A
R6A	15KΩ	½	63-2976	Q11-119		A47-15K-S	AB-20	U-26	AGC
B	Shaft		Not Req.	RQ		FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	200KΩ	½	63-2837	Q11-129		A47-200K-S	AB-46	U-43	Brightness
B	Shaft		Not Req.	Not Req.		KSS-3	AK-4	Not Req.	Attach to R7A
R8A	7.5Meg	½	63-2919	Q11-142		A47-7.5Meg-S	AB-98	U-82	Height
B	Shaft		Not Req.	RQ		FKS-1/4	AK-1	Not Req.	Attach to R8A
R9	600Ω	1	63-3167			39-600		Buzz (Wire wound)
R10A	7.5Meg	½	63-2919	Q11-142		A47-7.5Meg-S	AB-98	U-82	Fringe Lock
B	Shaft		Not Req.	RQ		FKS-1/4	AK-1	Not Req.	Attach to R10A

♦ Switch cover shield.
† Universal replacement (Mallory exact duplicate part no. UE-1567)
* CONCENTRIKIT EQUIVALENT: KIT K-2, BASE ELEMENTS & SHAFTS: B17-137 & P1-126 (PANEL) B13-130 & R7-208 (REAR)

RESISTORS

ITEM No.	RATING OHMS	RATING WATT	ZENITH PART No.	IRC PART No.	NOTES
R11	56KΩ 5%	½		BTS-56K 5%	
R12	22KΩ	½	63-1841	BTS-22K	
R13	47Ω	1		BTA-47	
R14	470KΩ	½	63-1897	BTS-470K	
R15	100KΩ	½	63-1869	BTS-100K	
R16	100KΩ	½	63-1869	BTS-100K	
R17	4700Ω	½	63-1813	BTS-4700	
R18	470Ω	½	63-1772	BTS-470	
R19	220Ω	½	63-1758	BTS-220	
R20	68KΩ	½	63-1862	BTS-68K	
R21	100KΩ	½	63-1869	BTS-100K	
R22	10KΩ	½	63-1828	BTS-10K	
R23	2200Ω	½	63-1800	BTS-2200	
R24	10KΩ	2	63-3170	BTB-10K	
R25	22KΩ	½	63-1842	BTS-22K	
R26	82KΩ	½		BTS-82K	Note 1
R27	2.2Meg	½	63-1926	BTS-2.2Meg	
R28	68Ω	½	63-1737	BTS-68	
R29	56Ω	½	63-1733	BTS-56	
R30	180Ω	½	63-1754	BTS-180	
R31	470Ω	½	63-1772	BTS-470	
R32	27KΩ	½	63-1845	BTS-27K	
R33	15Ω	½	63-1708	BTS-15Ω	
R34	6800Ω	½	63-1852	BTS-6800	
R35	12KΩ	½	63-1831	BTS-12K	
R36	120KΩ	½	63-1873	BTS-120K	
R37	120KΩ	½	63-1873	BTS-120K	
R38	470Ω	½	63-1772	BTS-470	
R39	270Ω 5%	½	63-1760	BTS-270 5%	
R40	120Ω	½	63-1747	BTS-120	
R41	5600Ω	2	63-3223	BTB-5600	
R42	15KΩ	½	63-1834	BTS-15K	
R43	15Ω	½	63-1708	BTS-15	
R44	22KΩ	2	63-1566	BTB-22K	
R45	100KΩ	½	63-1869	BTS-100K	
R46	100KΩ	½	63-1869	BTS-100K	
R47	10Meg	½	63-1953	BTS-10Meg	
R48	33KΩ	½	63-1848	BTS-33K	

RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	ZENITH PART No.	IRC PART No.	NOTES
R49	47KΩ	½	63-1855	BTS-47K	
R50	680Ω	1	63-2290	BTA-680	
R51	220KΩ	½	63-1884	BTS-220K	
R52	3900Ω	½	63-1810	BTS-3900	
R53	680KΩ	½	63-1904	BTS-680K	
R54	180KΩ	1	63-2313	BTA-180K	
R55	220KΩ	½	63-1884	BTS-220K	
R56	220KΩ	½	63-1884	BTS-220K	
R57	820Ω	½	63-1762	BTS-820	
R58	100KΩ	½	63-1870	BTS-100K	
R59	10KΩ	½	63-1827	BTS-10K	
R60	22KΩ	2	63-2141	BTB-22K	
R61	220KΩ	½	63-1883	BTS-220K	
R62	680KΩ	½	63-1904	BTS-680K	
R63	1000Ω	½	63-1786	BTS-1000	
R64	2200Ω	½	63-1799	BTS-2200	
R65	68KΩ	½	63-1863	BTS-68K	
R66	68KΩ	½	63-1862	BTS-68K	
R67	1200Ω	½	63-1789	BTS-1200	
R68	68KΩ	½	63-1863	BTS-68K	
R69	68KΩ	½	63-1862	BTS-68K	
R70	100Ω	2	63-1973		
R71	10KΩ	½	63-1828	BTS-10K	
R72	150KΩ	½	63-1877	BTS-150K	
R73	82KΩ	½	63-1866	BTS-82K	
R74	270Ω	2	63-3256		Note 2 & 5
R75	220Ω	2			Note 1 & 5
R76	2200Ω	½	63-1799	BTS-2200	
R77	10KΩ	½		BTS-10K	
R78	470KΩ	½	63-1897	BTS-470K	
R79	47KΩ	2	63-1157	BTB-47K	
R80	470KΩ	½	63-1897	BTS-470K	
R81	100KΩ	½	63-1869	BTS-100K	
R82	220KΩ	½	63-1883	BTS-220K	
R83	470KΩ	½	63-1897	BTS-470K	
R84	100KΩ	½	63-1869	BTS-100K	
R85	2.2Meg	½	63-1926	BTS-2.2Meg	
R86	22KΩ	½	63-1842	BTS-22K	
R87	10KΩ	½	63-1827	BTS-10K	
R88	68KΩ	½	63-1862	BTS-68K	
R89	100KΩ	½		BTS-100K	
R90	3300Ω	½	63-1806	BTS-3300	
R91	2.2Meg	½	63-1926	BTS-2.2Meg	
R92	330Ω	1	63-2286	BTA-330	
R93	100Ω	½	63-1744	BTS-100	
R94	330Ω	1	63-2286	BTA-330	
R95	33KΩ	½	63-957	BTS-33K	
R96	47KΩ	1	63-1194	BTA-47K	
R97	47KΩ	½	63-1856	BTS-47K	
R98	18Ω	½	63-1712	BTS-18	
R99	18Ω	½	63-1712	BTS-18	
R100	1Meg	½	63-1911	BTS-1Meg	
R101	1Meg	½	63-1911	BTS-1Meg	
R102	47KΩ	½		BTS-47K	Note 3
R103	100Ω	½	63-1744	BTS-100	
R104	1Meg	½	63-1911	BTS-1Meg	
R105	470Ω	½	63-1771	BTS-470	
R106	47KΩ	1	63-1194	BTA-47K	
R107	22KΩ	½	63-1842	BTS-22K	
R108	10KΩ	2	63-2145	BTB-10K	
R109	39KΩ	1		BTA-39K	Note 4
R110	47KΩ	½	63-1856	BTS-47K	
R111	560KΩ	1	63-2370	BTA-560K	
R112	47KΩ	½	63-1856	BTS-47K	
R113	100Ω	½	63-1744	BTS-100	
R114	1Meg	½	63-1912	BTS-1Meg	
R115	47Ω	2			
R116	100Ω	½	63-1744	BTS-100	
R117	22KΩ	2	63-1566	BTB-22K	
R118	22KΩ	2	63-1566	BTB-22K	
R119	4700Ω	2	63-966	BTB-4700	
R120	4700Ω	2	63-966	BTB-4700	
R121	12Ω	1	63-3214		
R122	8.5Ω	½	63-2916		
R123	106Ω	½	63-1870	BTS-100K	
R124	3.3Meg	½		BTS-3.3Meg	

Note 1: Not used in some versions.
Note 2: Some versions may use a 470Ω 2 watt resistor in this application.
Note 3: Some versions may use a 27KΩ resistor in this application.
Note 4: Some versions may use a 22KΩ resistor in this application.
Note 5: When replacing use original clamp or double original wattage rating.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	ZENITH PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	RCA TYPE No.	Halldorson PART No.	Thordarson PART No.
T1	117VAC @ 2.58A	668VCT .190ADC Tap ②	554VCT .210ADC	5VAC @ 6A	12.6VCT @ 6A	95-1401						

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	ZENITH PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Horiz Output Trans.	S-21317 ①							
T3	Vert. Output Trans.	95-1384		A-3081 ②				26S55 ②	A-110X
T4A	Yoke-Horiz. (13MH)	95-1388							
B	Vert. (2.2MH)								
T5	Horiz. Linearity (1.5-2MH)	S-19342		MWC-2③	207R1③④	201R13A③	WC-7③	WC-16③④	WC-12③⑤
T6	Width - (4-20MH) (.53-2.4MH)	S-18748							

① Includes tertiary winding and terminal assembly part no. S-21348; winding and terminal assembly part no. S-21345.
② Use 50 to 1 turns ratio.
③ Drill new mounting hole or use original slider.
④ Do not use tap.
⑤ Connect to coded blue and green terminals.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	ZENITH PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.	NOTES
T7	8.8KΩ CT	5Ω	95-1398	A-3824	A-2904 ①	S-53X	Z1011	22S88 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS SIZE	RATINGS FIELD	RATINGS V. C. IMP.	ZENITH PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	10"	PM	5Ω	49-754 ①			① Low frequency speaker.
SP2	3½"	PM	11.8Ω	49-777 ②		3A15T	② High frequency speaker.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ZENITH PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1A	Ant. Coil	0Ω		S-21712				Channel 2
B	Ant. Coil	0Ω		S-21713				Channel 3
C	Ant. Coil	0Ω		S-21714				Channel 4
D	Ant. Coil	0Ω		S-21715				Channel 5
E	Ant. Coil	0Ω		S-21716				Channel 6
F	Ant. Coil	0Ω		S-19847				Channel 7
G	Ant. Coil	0Ω		S-19848				Channel 8
H	Ant. Coil	0Ω		S-19849				Channel 9
I	Ant. Coil	0Ω		S-19850				Channel 10
J	Ant. Coil	0Ω		S-19851				Channel 11
K	Ant. Coil	0Ω		S-19852				Channel 12
L	Ant. Coil	0Ω		S-19853				Channel 13
L2	Fil. Choke	0Ω		20-391				
L3	Neut. Coil	0Ω		20-431				
L4	RF Coil	0Ω		20-537				
L5A	RF, Mixer Grid & Osc. Coils	0Ω		S-21702				Channel 2
B	RF, Mixer Grid & Osc. Coils	0Ω		S-21703				Channel 3
C	RF, Mixer Grid & Osc. Coils	0Ω		S-19864				Channel 4
D	RF, Mixer Grid & Osc. Coils	0Ω		S-19865				Channel 5
E	RF, Mixer Grid & Osc. Coils	0Ω		S-19866				Channel 6
F	RF, Mixer Grid & Osc. Coils	0Ω		S-19867				Channel 7
G	RF, Mixer Grid & Osc. Coils	0Ω		S-19868				Channel 8
H	RF, Mixer Grid & Osc. Coils	0Ω		S-19869				Channel 9
I	RF, Mixer Grid & Osc. Coils	0Ω		S-19870				Channel 10
J	RF, Mixer Grid & Osc. Coils	0Ω		S-19871				Channel 11
K	RF, Mixer Grid & Osc. Coils	0Ω		S-19872				Channel 12
L	RF, Mixer Grid & Osc. Coils	0Ω		S-19873				Channel 13
L6	Mixer Grid Coil	0Ω		20-538				
L7	Mixer Grid Coil	0Ω		126-764				
L8	Osc. Trimmer Coil	0Ω		20-541				
L9	IF Coil	.4Ω		S-18859				
L10	Conv. Plate	.3Ω		S-20902				Tapped at .1Ω
L11	1st Video IF	0Ω		S-21019			6232	Includes 41.25MC trap
L12	47.25MC trap	0Ω		S-21718	17-4502*		6226	
L13	39.75MC trap	0Ω		S-21719	17-4501*		6226	
L14	2nd Video IF	0Ω	0Ω	S-17907			6232■	
L15	3rd Video IF	0Ω	0Ω	S-19952			6233■	
L16	4th Video IF	.2Ω		S-20623				Complete assembly no. S-21686
L17	Series Peaking Coil	5.5Ω		S-17912	19-3160	TV-184	4644	145 Microhenries
L18	Shunt Peaking Coil	5.5Ω		S-21562	19-3160▲	TV-184▲	4644▲	160 Microhenries; Wound on 2.7KΩ resistor in series
L19	Series Peaking Coil	.9Ω		S-21888	19-1004		4610	6.7 Microhenries
L20	4.5MC trap	12.5Ω	1.3Ω	S-21492	19-3125♦		6153♦	
L21	Series Peaking Coil	5Ω		S-21563				136 Microhenries; Wound on 5.6KΩ resistor
L22	Sound IF	.3Ω	.3Ω	S-20219	16-3445			
L23	Quadrature Coil	4.6Ω		S-19020	20-1004▲	TV-151▲	1470▲	
L24	Horiz. Osc.	155Ω		S-19743	19-1577			Tapped at 62Ω
L25	RF Choke	0Ω		20-528				
L26	RF Choke	1.1Ω		S-21752	19-1005		4612	11 Microhenries
L27	Ant. Ringing Coil	49Ω		S-21012	19-3160†	TV-184†	6180†	136 Microhenries; Wound on .01 cap.

* Use trap winding only.
■ Detune trap.
▲ Series with a 2.7KΩ resistor.
♦ Parallel with 5.6KΩ resistor.
▲ Drill mounting hole.
† Parallel with .01 cap.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D.C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ~)	ZENITH PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.
L28	.190ADC	134Ω	2.8HY	95-1271	C-2327			C5040	26C41
L29	.210ADC	93.5Ω	3.1HY	95-1334	C-2325①		C-21X	C5030 ①	26C44

① Drill one new mounting hole.

ZENITH MODELS R2671E, EU, R, RU, R2975R, RU, R2976E, EU, R2979E, EU (Ch. 22R21, U)