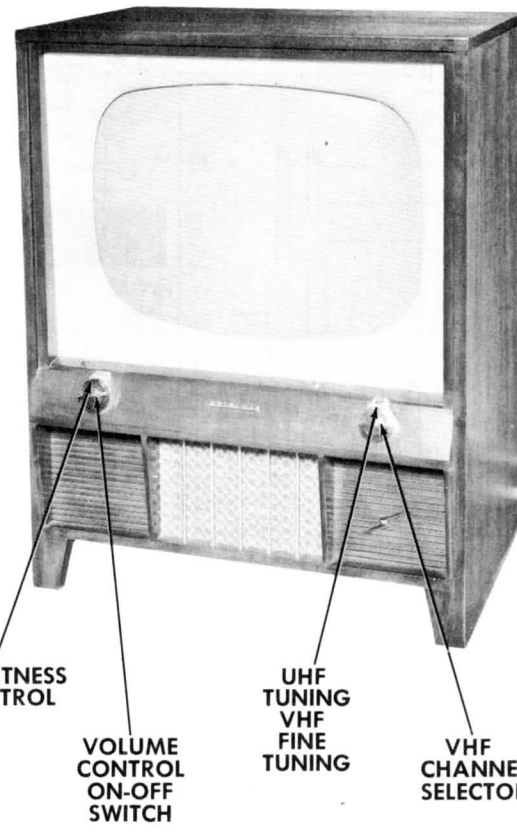
PHOTOFACT* Folder
*TRADE MARK

SYLVANIA MODELS 331, U, 336M, U (Ch. 1-513-1, -2, -3, -4)



SYLVANIA MODEL 336M

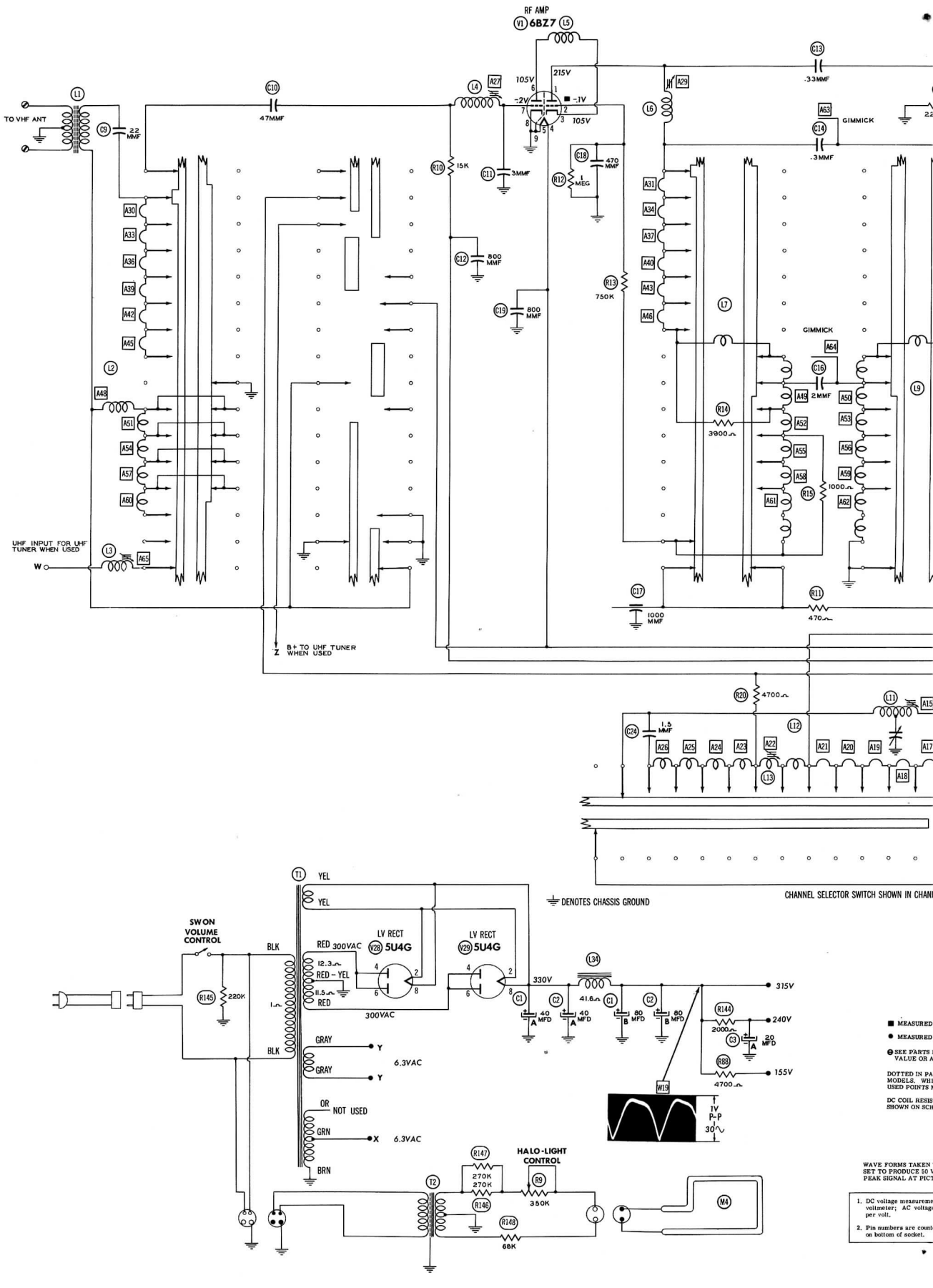
TRADE NAME	Sylvania Models 331, 336 Series (Ch. 1-513-1, -3) 331 "U", 336 "U" Series (Ch. 1-513-2, -4)
MANUFACTURER	Sylvania Electric Products, Inc., Radio & Television Div., 254 Rand St., Buffalo, N. Y.
TYPE SET	Television Receiver
TUBES	Thirty
POWER SUPPLY	110-120 Volts AC-60 cycle RATING 2.72 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC, (Intercarrier)

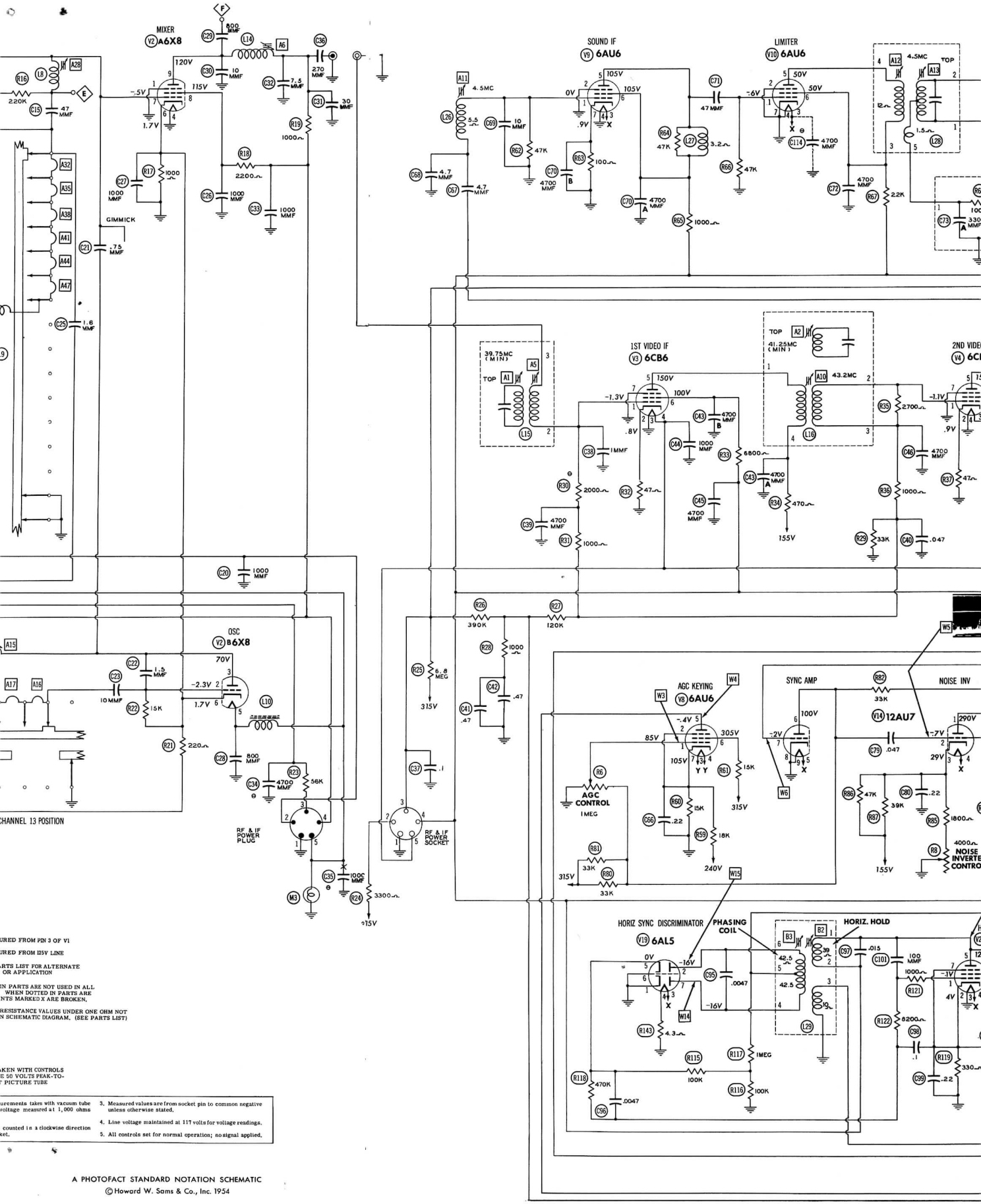
INDEX

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

DATE 8-54 SET 248 FOLDER 9

SYLVANIA MODELS 331, U, 336M, U (Ch. 1-513-1, -2, -3, -4)


RF AMP
V1 6BZ7
L5
L1
TO VHF ANT
C9 2.2 MMF
C10 47MMF
L4
A27
105V
215V
-.2V
-.1V
105V
C11 3MMF
R10 15K
C12 800 MMF
C18 470 MMF
R12 1 MEG
C19 800 MMF
R13 750K
C13 .33MMF
A29
L6
A63
GIMMICK
C14 .3MMF
A30
A33
A36
A39
A42
A45
A31
A34
A37
A40
A43
A46
L7
GIMMICK
A64
C16 2 MMF
L9
L2
A48
A51
A54
A57
A60
A49
A50
A52
A53
A55
A56
A58
A59
A61
A62
R14 3900Ω
R15 1000Ω
UHF INPUT FOR UHF TUNER WHEN USED
W
L3
A65
C17 1000 MMF
R11 470Ω
B+ TO UHF TUNER WHEN USED
R20 4700Ω
L11
A15
C24 1.5 MMF
L12
A26
A25
A24
A23
A22
A21
A20
A19
A17
L13
A18
CHANNEL SELECTOR SWITCH SHOWN IN CHANN
T1
YEL
YEL
DENOTES CHASSIS GROUND
SW ON VOLUME CONTROL
BLK
RED 300VAC
12.3Ω
RED - YEL
11.5Ω
RED
300VAC
LV RECT V28 5U4G
LV RECT V29 5U4G
L34
330V
41.6Ω
315V
C1 40 MFD
C2 40 MFD
C1 80 MFD
C2 80 MFD
R144 2000Ω
240V
C3 20 MFD
R88 4700Ω
155V
R145 220K
BLK
GRAY
Y
GRAY
Y
6.3VAC
OR
NOT USED
GRN
X
6.3VAC
BRN
W19
1V P-P
30Ω
R147 270K
270K
HALO-LIGHT CONTROL
R9 350K
T2
R146
R148 68K
M4
■ MEASURED
● MEASURED
SEE PARTS
VALUE OR A
DOTTED IN PA
MODELS, WHI
USED POINTS
DC COIL RESIS
SHOWN ON SCH
WAVE FORMS TAKEN
SET TO PRODUCE 50
PEAK SIGNAL AT PICT
1. DC voltage measureme
voltmeter; AC voltag
per volt.
2. Pin numbers are count
on bottom of socket.



URED FROM PIN 3 OF V1

URED FROM 125V LINE

RTS LIST FOR ALTERNATE OR APPLICATION

N PARTS ARE NOT USED IN ALL WHEN DOTTED IN PARTS ARE NTS MARKED X ARE BROKEN.

RESISTANCE VALUES UNDER ONE OHM NOT N SCHEMATIC DIAGRAM. (SEE PARTS LIST)

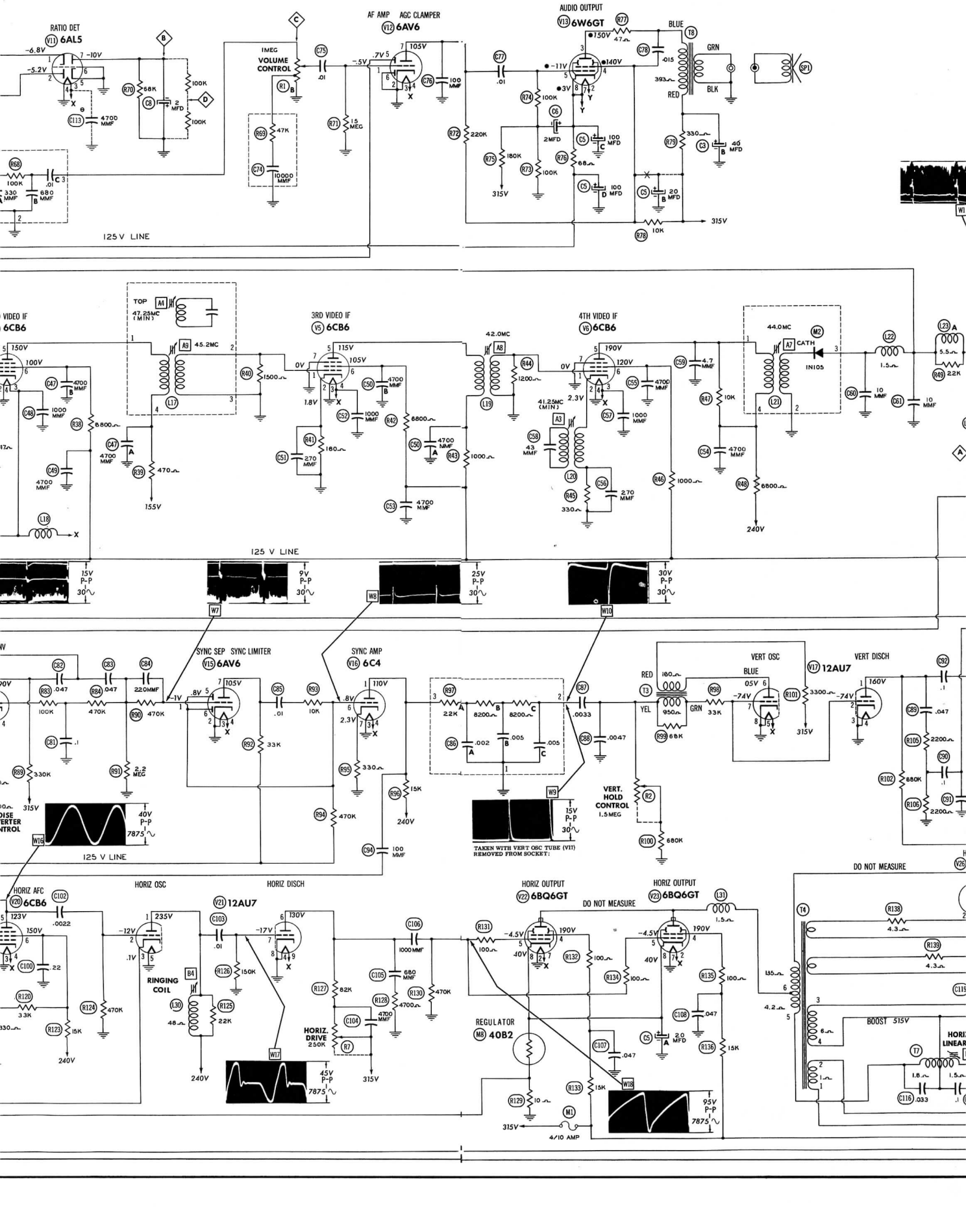
KEN WITH CONTROLS E 50 VOLTS PEAK-TO- PICTURE TUBE

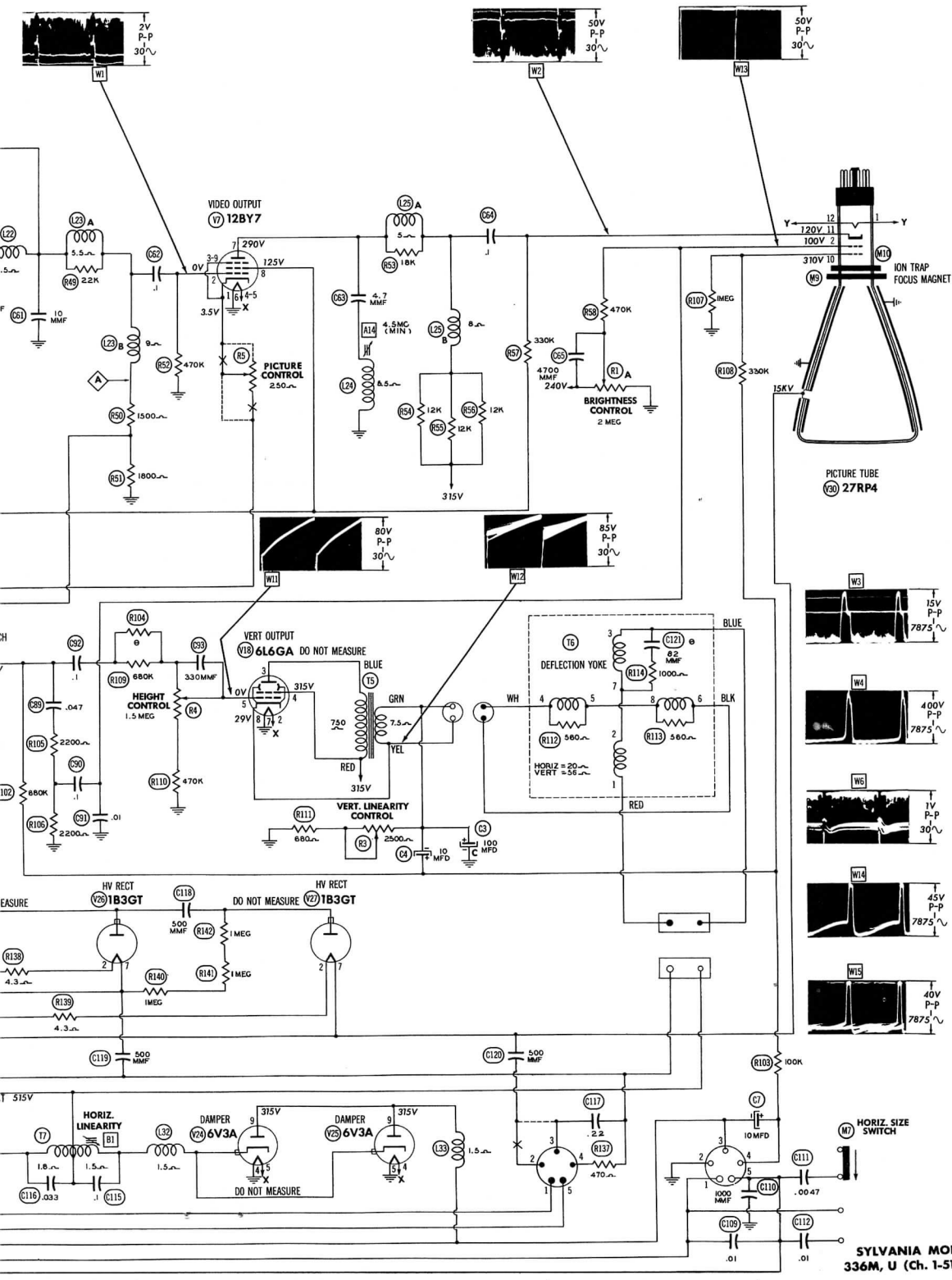
urements taken with vacuum tube voltage measured at 1,000 ohms

counted in a clockwise direction ket.

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.

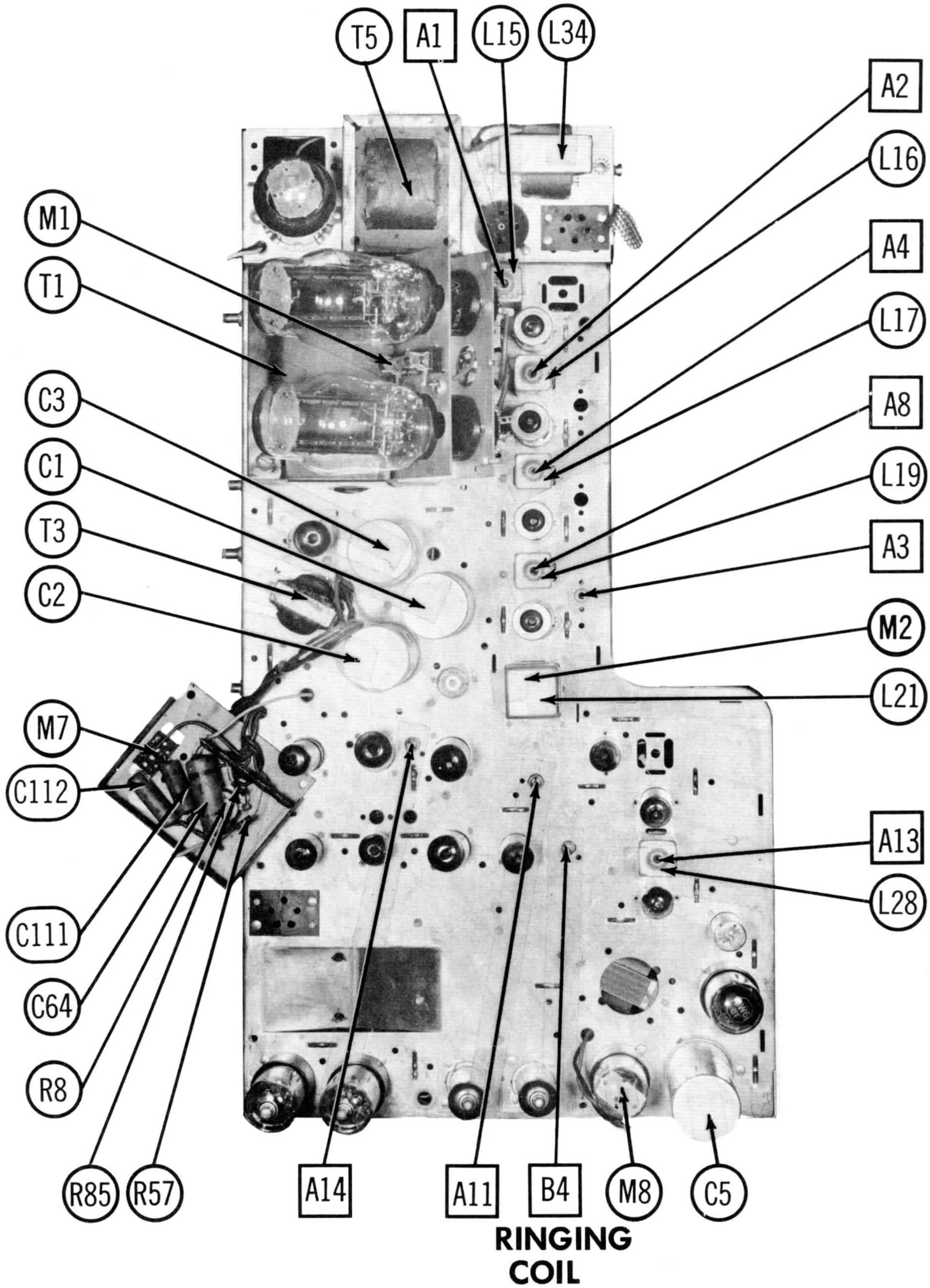
A PHOTOFACT STANDARD NOTATION SCHEMATIC


RATIO DET
V11 6AL5
AF AMP AGC CLAMPER
V12 6AV6
AUDIO OUTPUT
V13 6W6GT
IMEG
VOLUME CONTROL
BLUE
GRN
BLK
RED
125 V LINE
TOP
47.25MC (MIN)
45.2MC
3RD VIDEO IF
V5 6CB6
42.0MC
4TH VIDEO IF
V6 6CB6
41.25MC (MIN)
44.0MC
CATH
IN105
240V
315V
155V
15V P-P
9V P-P
25V P-P
30V P-P
SYNC SEP SYNC LIMITER
V15 6AV6
SYNC AMP
V16 6C4
VERT OSC
V17 12AU7
VERT DISCH
VERT. HOLD CONTROL 1.5MEG
TAKEN WITH VERT OSC TUBE (V17) REMOVED FROM SOCKET
40V P-P
HORIZ AFC
V20 6CB6
HORIZ OSC
HORIZ DISCH
V21 12AU7
RINGING COIL
HORIZ. DRIVE 250K
HORIZ OUTPUT
V22 6BQ6GT
HORIZ OUTPUT
V23 6BQ6GT
DO NOT MEASURE
REGULATOR
M8 40B2
4/10 AMP
45V P-P
95V P-P
BOOST 515V

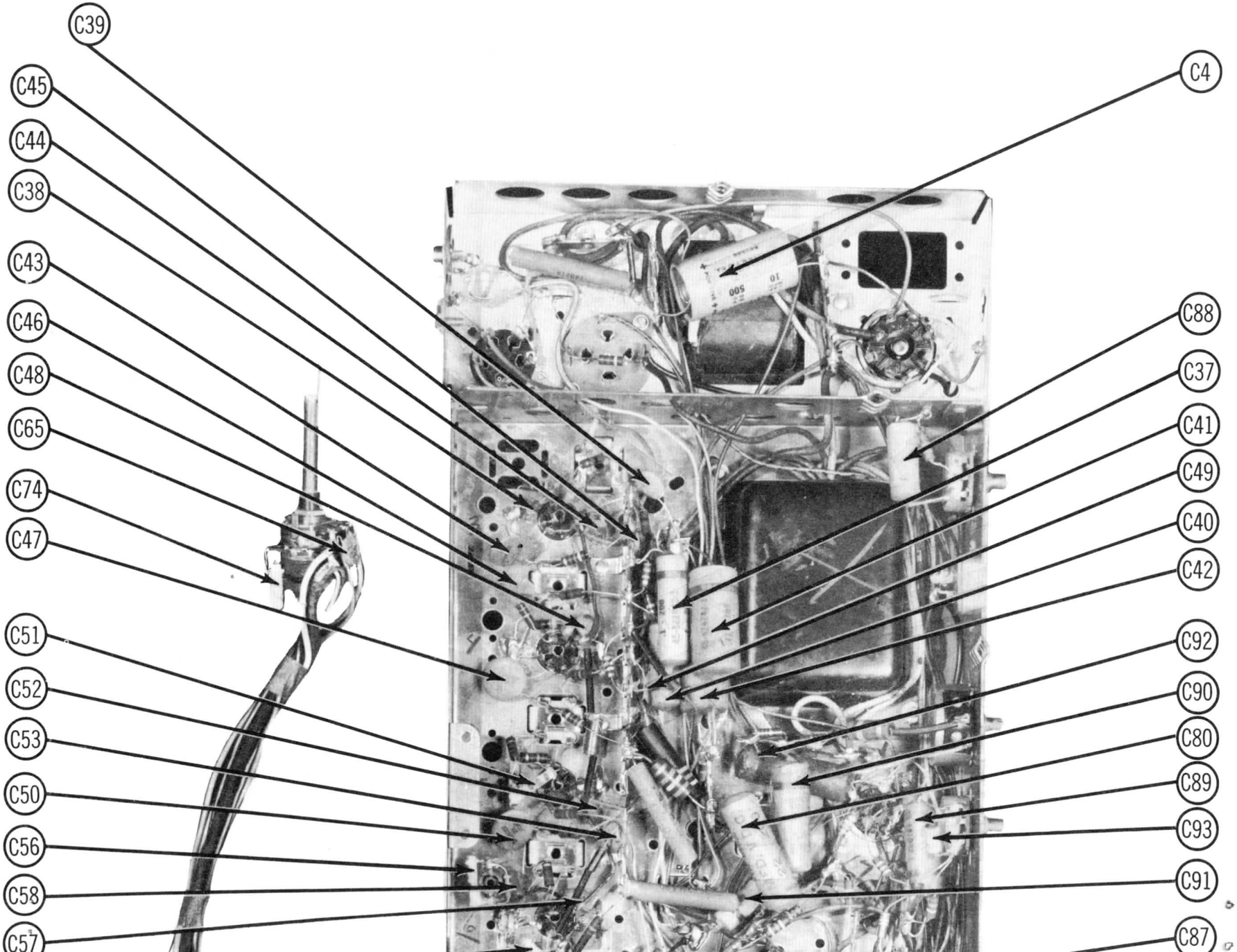


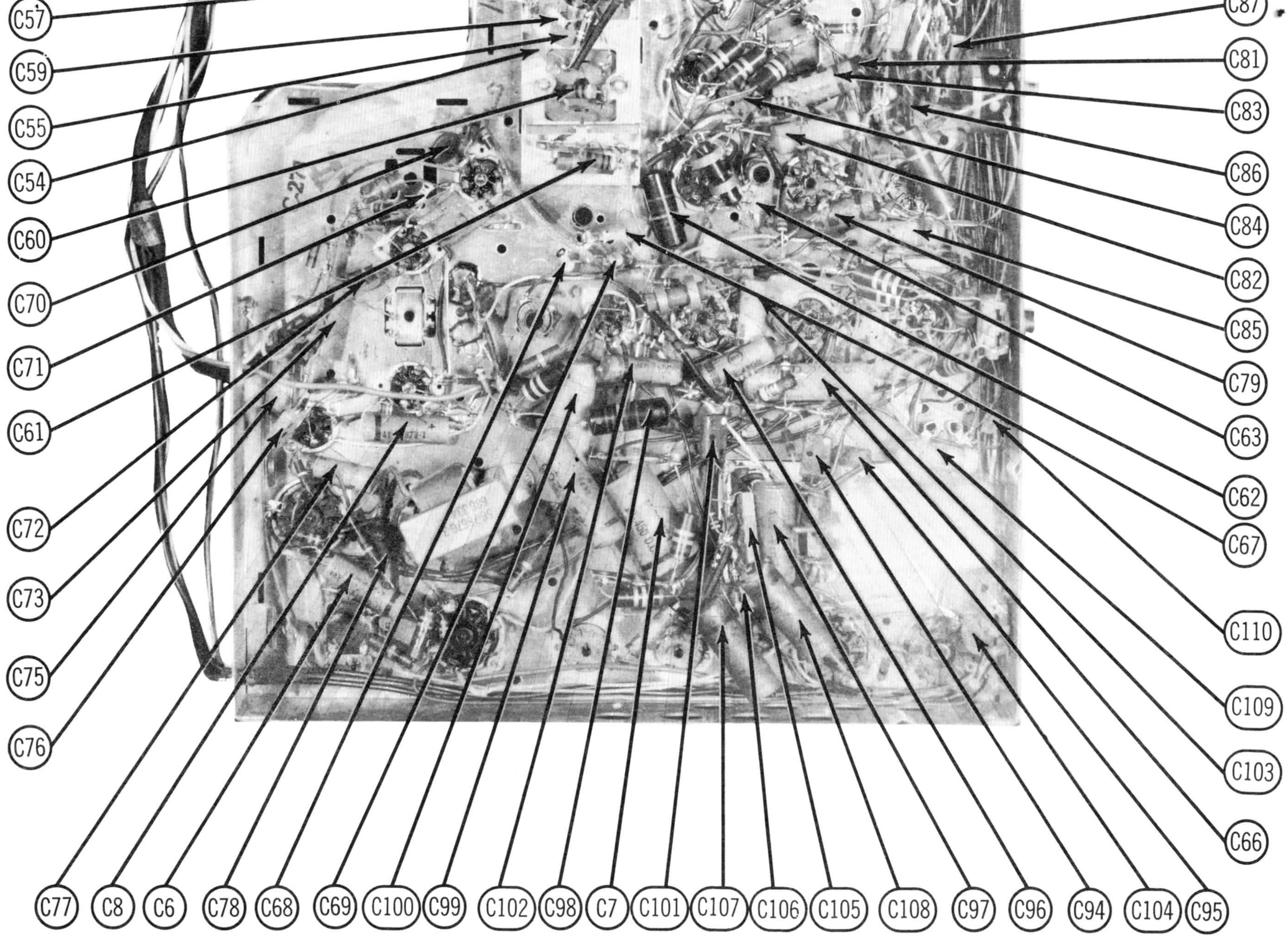
SYLVANIA MODELS 331, U, 336M, U (Ch. 1-513-1, -2, -3, -4)

SYLVANIA MODELS 331, U, 336M, U (Ch. 1-513-1, -2, -3, -4)

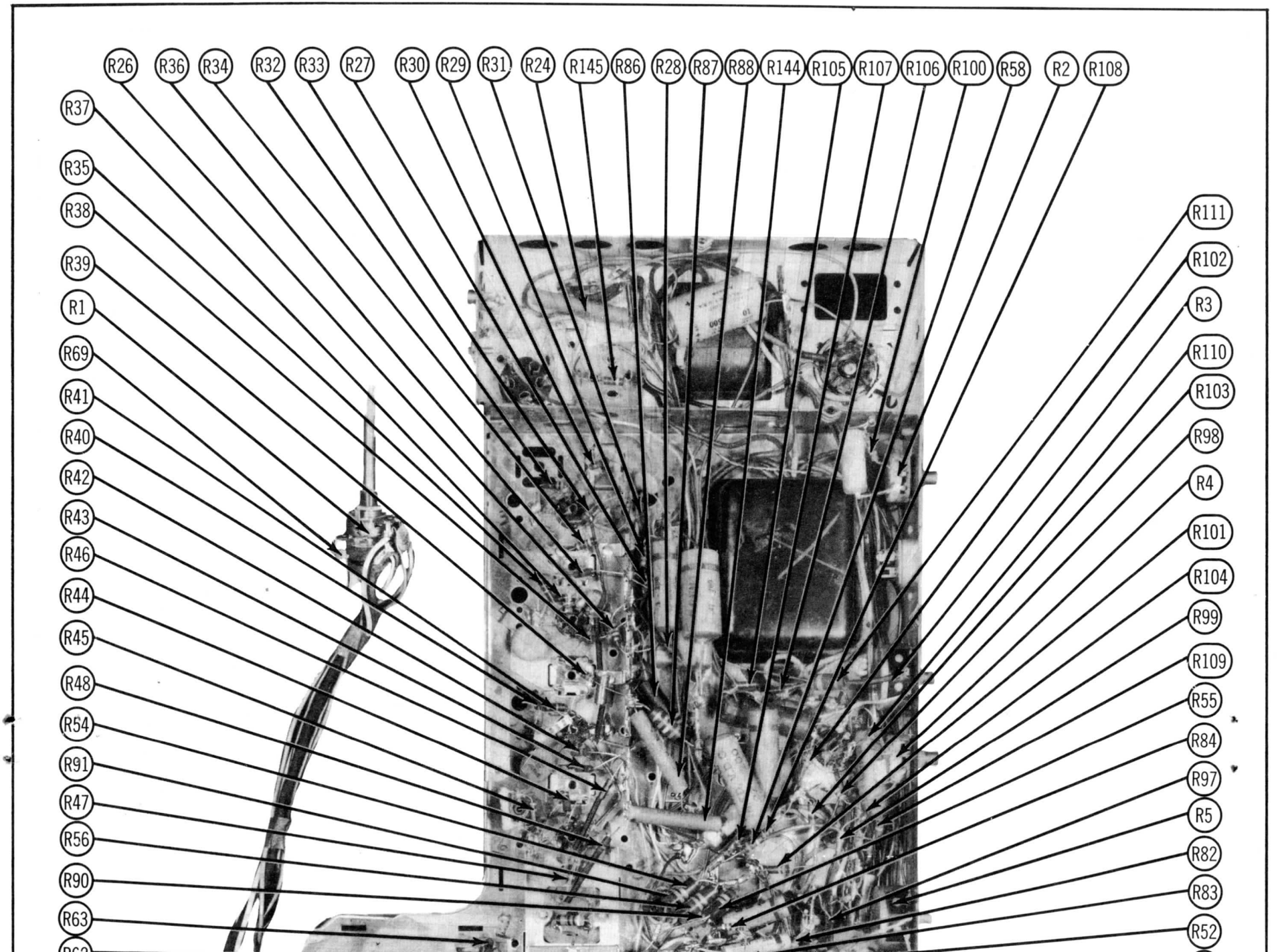


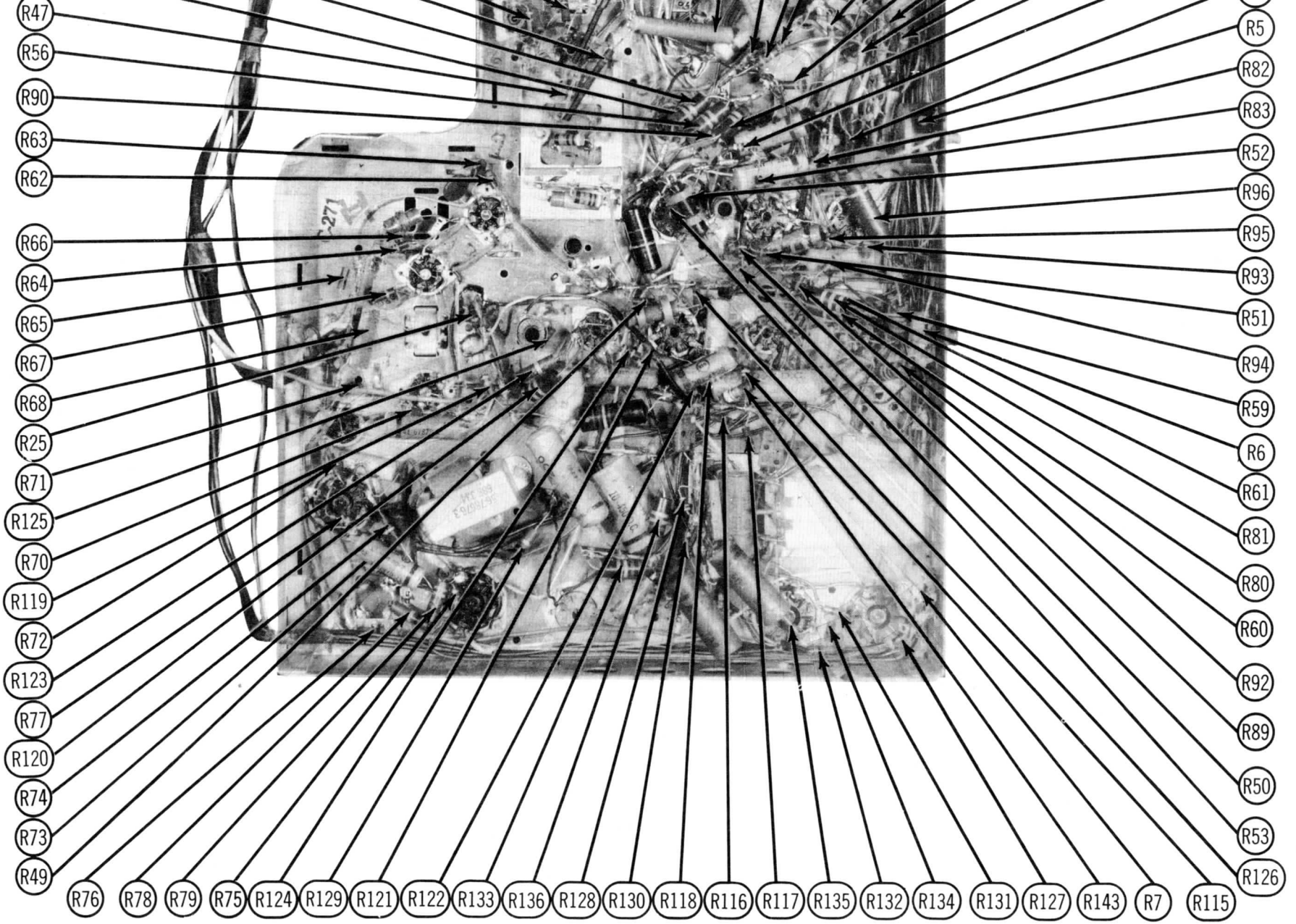
CHASSIS TOP VIEW


C39
C45
C44
C38
C43
C46
C48
C65
C74
C47
C51
C52
C53
C50
C56
C58
C57
C4
C88
C37
C41
C49
C40
C42
C92
C90
C80
C89
C93
C91
C87

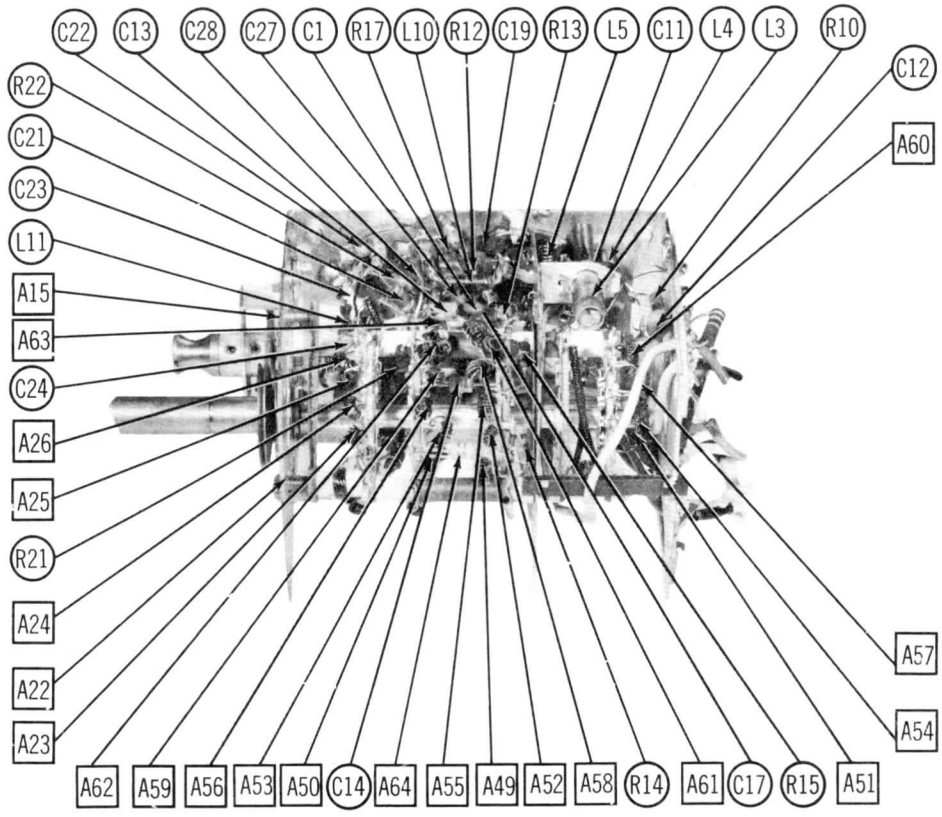


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

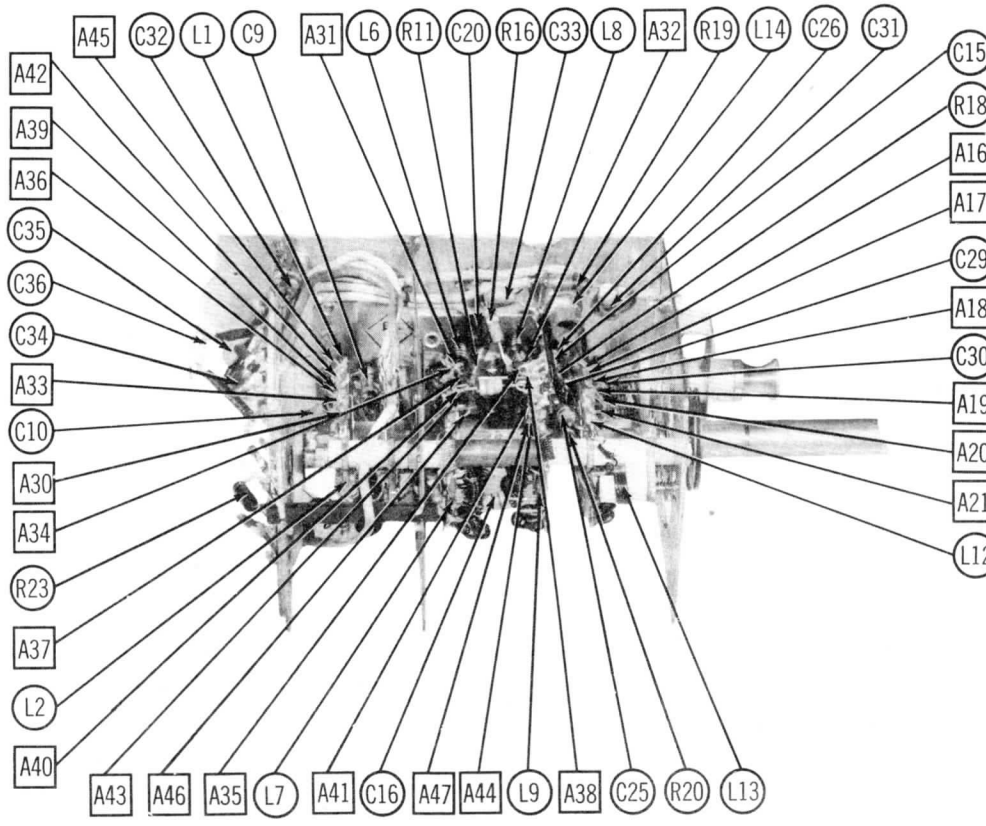

R26
R36
R34
R32
R33
R27
R30
R29
R31
R24
R145
R86
R28
R87
R88
R144
R105
R107
R106
R100
R58
R2
R108
R37
R35
R38
R39
R1
R69
R41
R40
R42
R43
R46
R44
R45
R48
R54
R91
R47
R56
R90
R63
R111
R102
R3
R110
R103
R98
R4
R101
R104
R99
R109
R55
R84
R97
R5
R82
R83
R52



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



VHF TUNER-RIGHT SIDE



VHF TUNER-LEFT SIDE

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube (V21) to disable the high voltage.
Connect the deflection yoke and secure the shorting bar on the high voltage cage in a forward position. Connect the tuner chassis to the main chassis.
Be sure the VHF tuner cover is in place.
Allow a 15 minute warm-up period for receiver and test equipment.

VIDEO IF ALIGNMENT

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
1.	Direct	High side to an ungrounded tube shield floating over converter tube (V2). Low side to chassis.	Not used	39.75MC (Unmod)	Any unused high band channel	Use VTVM. DC probe to point Ⓐ. Common to chassis.	A1	Connect the negative lead of a 3 volt bias supply to the ungrounded side of C40. Connect positive lead to chassis. Attenuate generator output to maintain 1 to 2 volts on VTVM. Adjust for MINIMUM deflection.
2.	"	"	"	41.25MC	"	"	A2, A3	"
3.	"	"	"	47.25MC	"	"	A4	"
4.	"	High side coupled loosely to point Ⓔ. Low side to chassis. (Lower converter tube shield to normal position)	43.25MC (10MC Swp)	42.1MC 45.75MC	"	Vert. Amp. thru detector (Fig.1) to pin 5 (plate) of 6CB6 (V3). Low side to chassis.	A5, A6	Remove 3 volt bias supply. Disconnect primary of L16 from pin 5 of V3 and connect a 330Ω resistor from pin 5 of V3 to the B+ end of L16. Alternately adjust A5 and A6 until response similar to Fig.2 is obtained. Remove 330Ω resistor and restore connection to primary of L16.
5.	Direct	High side to an ungrounded tube shield floating over converter tube (V2). Low side to chassis.	Not used	44.0MC	"	Use VTVM. DC probe to point Ⓐ. Common to chassis.	A7	Reconnect 3 volt bias supply as in step 1 and attenuate generator output to maintain 1 to 2 volts on VTVM. Adjust for maximum deflection.
6.	"	"	"	42.0MC	"	"	A8	"
7.	"	"	"	45.2MC	"	"	A9	"
8.	"	"	"	43.2MC	"	"	A10	Adjust for maximum deflection. Repeat steps 1 thru 3.
9.	"	"	43.25MC (10MC Swp)	41.25MC 42.1MC 45.0MC 45.75MC 47.25MC	"	Vert. Amp. thru 33KΩ to point Ⓐ. Low side to chassis.		Use high scope gain and low sweep generator output. Check for response curve similar to Fig. 3. If necessary SLIGHTLY retouch A7 thru A10 to obtain desired response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from point Ⓑ to chassis. The junction of these two resistors is alignment point Ⓓ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001MFD	High side to point Ⓐ. Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe to point Ⓑ. Common to chassis.	A11, A12	Adjust for maximum deflection.
11.	"	"	"	"	DC probe to point Ⓒ. Common to point Ⓓ.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.001MFD	High side to point Ⓐ. Low side to chassis.	4.5MC (450KC Swp)	4.5MC	Any non-interfering channel	Vert. Amp. to point Ⓑ. Low side to chassis.	A11, A12	Disconnect stabilizing capacitor C8. Adjust for curve of maximum amplitude and symmetry similar to Fig. 4.
11.	"	"	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A13	Reconnect stabilizing capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 5. SLIGHTLY retouch A12 for maximum amplitude and straightness of crossover lines.

ALTERNATE SOUND IF ALIGNMENT

If a 4.5MC signal of crystal accuracy is not available the sound IF strip may be aligned by tuning in a strong TV station. Connect the VTVM and adjust A11, A12 and A13 as outlined in steps 10 and 11 under "Sound IF alignment using AM signal generator and VTVM."

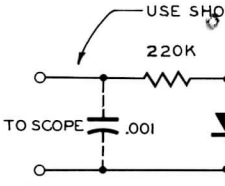
4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
12.	.001MFD	High side to pin 2 (grid) of 12BY7. Low side to chassis.	4.5MC (Unmod)	Any	DC probe thru detector (Fig.1) to pin 11 (cathode) of picture tube. Common to chassis.	A14	Short pin 1 (grid) of 6CB6 (V6) to chassis. Adjust A14 for MINIMUM deflection.

VHF TUNER ALIGNMENT

Connect the negative lead of a 3 volt bias supply to terminal #8 on tuner terminal strip. Connect the positive lead to tuner chassis. Disconnect the primary winding of L16 from Pin 5 (plate) of 6CB6 (V3) and connect a 330Ω resistor from pin 5 of V3 to the B+ end of L15.
Remove the second video IF amplifier tube (V4) from its socket.
During alignment the use of two marker generators is required. Generator # 1 (IF) is coupled loosely (a turn or two around probe input lead) to the input of detector, probe (See Fig. 6).
Marker generator # 2 (RF) is coupled loosely (a turn or two around high side lead of sweep generator) across sweep generator at the VHF antenna terminals. If the sweep generator has a built-in marker generator, it should be used for marker generator # 2.
Since it is necessary during tuner alignment to switch the scope vertical input between the IF detector circuit (Fig. 7) which is connected to pin 5 of V3, and the RF detector circuit (Fig. 6) which is connected to alignment point Ⓕ on the tuner, it is recommended that a single pole double throw switch be mounted as closely as possible to the scope input terminals so the vertical input terminals may be easily switched between the RF and IF detector circuits. All connecting leads should be shielded and kept as short as possible.
Set the fine tuning control so the plates are approximately half meshed.
Use maximum scope gain and only enough sweep generator output to provide useable indication on scope.
Use non-metallic alignment tools to adjust coil increments.
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.

ALIGNMENT



NOT NECESSARY
SHEILDED LEAD IS USED

FIG. 1

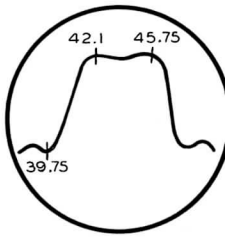


FIG. 2

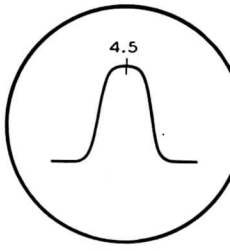


FIG. 4

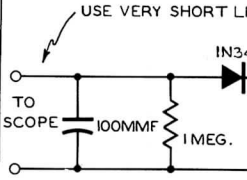


FIG. 6

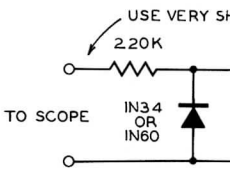
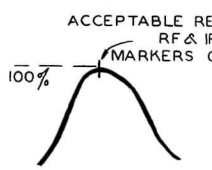


FIG. 7



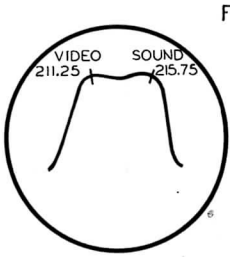


FIG. 9

ALIGNMENT INSTRUCTIONS

BEFORE ATTEMPTING ALIGNMENT

not remove the horizontal oscillator tube (V21) to disable the high

a forward position. Connect the tuner chassis to the main chassis.

NT

input of the oscilloscope for horizontal deflection.

ONNECT SCOPE	ADJUST	REMARKS
VM. be to point Common to .	A1	Connect the negative lead of a 3 volt bias supply to the ungrounded side of C40. Connect positive lead to chassis. Attenuate generator output to maintain 1 to 2 volts on VTVM. Adjust for MINIMUM deflection.
"	A2, A3	"
"	A4	"
Amp. thru r (Fig.1) to late) of V3). Low chassis.	A5, A6	Remove 3 volt bias supply. Disconnect primary of L16 from pin 5 of V3 and connect a 330Ω resistor from pin 5 of V3 to the B+ end of L16. Alternately adjust A5 and A6 until response similar to Fig.2 is obtained. Remove 330Ω resistor and restore connection to primary of L16.
VM. be to point Common sis.	A7	Reconnect 3 volt bias supply as in step 1 and attenuate generator output to maintain 1 to 2 volts on VTVM. Adjust for maximum deflection.
"	A8	"
"	A9	"
"	A10	Adjust for maximum deflection. Repeat steps 1 thru 3.
mp. thru point Ⓐ . e to chassis.		Use high scope gain and low sweep generator output. Check for response curve similar to Fig. 3. If necessary SLIGHTLY retouch A7 thru A10 to obtain desired response.

AL GENERATOR AND VTVM

junction of these two resistors is alignment point Ⓓ as shown

	ADJUST	REMARKS
	A11, A12	Adjust for maximum deflection.
	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

GENERATOR AND OSCILLOSCOPE

vtooth voltage in scope for horizontal deflection.

ONNECT SCOPE	ADJUST	REMARKS
Amp. to point Low side to .	A11, A12	Disconnect stabilizing capacitor C8. Adjust for curve of maximum amplitude and symmetry similar to Fig. 4.
Amp. to point . Low side sis.	A13	Reconnect stabilizing capacitor C8. Adjust so that 4.5MC occurs at center of crossover lines as in Fig. 5. SLIGHTLY retouch A12 for maximum amplitude and straightness of crossover lines.

GNMENT

gned by tuning in a strong TV station. Connect the VTVM using AM signal generator and VTVM."

ENT

	ADJUST	REMARKS
	A14	Short pin 1 (grid) of 6CB6 (V6) to chassis. Adjust A14 for MINIMUM deflection.

NMENT

rip. Connect the positive lead to tuner chassis. Disconnect stor from pin 5 of V3 to the B+ end of L15.

is coupled loosely (a turn or two around probe input lead)

of sweep generator) across sweep generator at the VHF antenna d for marker generator # 2.

een the IF detector circuit (Fig. 7) which is connected to pin 5 on the tuner, it is recommended that a single pole double vertical input terminals may be easily switched between the ort as possible.

e indication on scope.

input of the oscilloscope for horizontal deflection.
ance, usually 50 ohms.

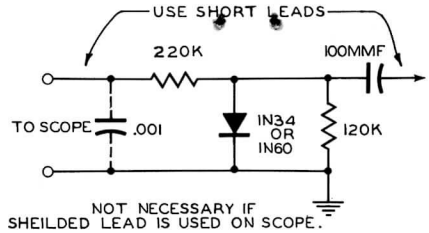


FIG. 1

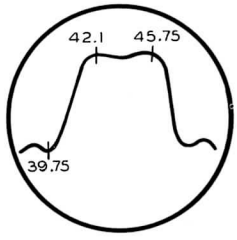


FIG. 2

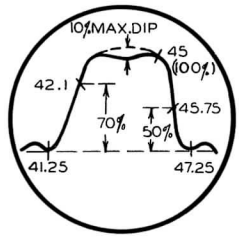


FIG. 3

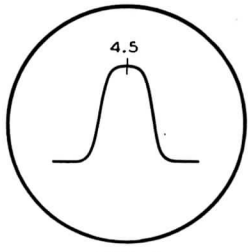


FIG. 4

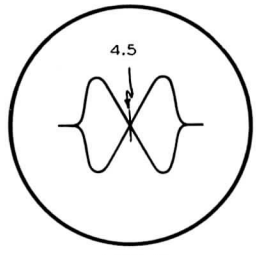


FIG. 5

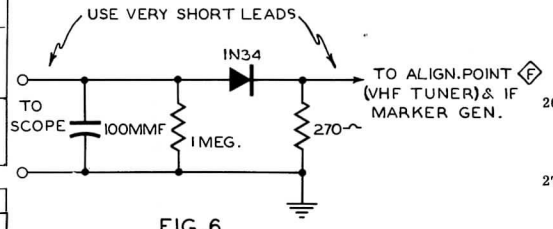


FIG. 6

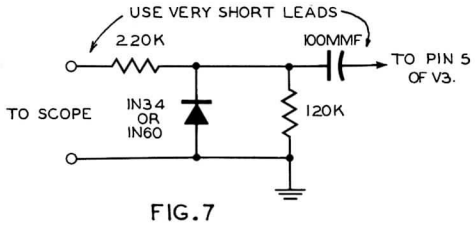


FIG. 7

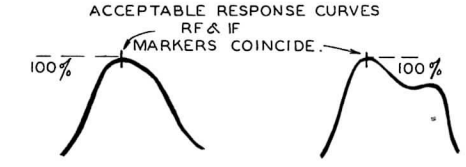


FIG. 8

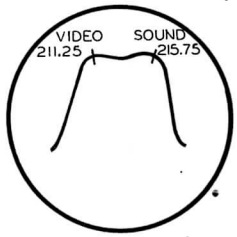


FIG. 9

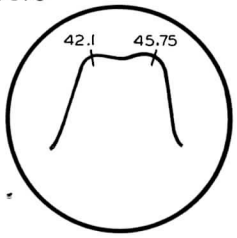


FIG. 10

Since channels 2 to 5 and 7 to 12 are aligned by expanding or c disturbed.

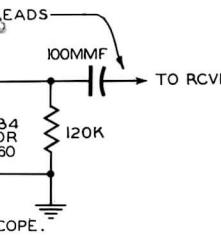
	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY
13.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC (RF Marke 45.75MC IF Marker
14.	"	"	207MC (10MC Swp)	205.25MC 45.75MC
15.	"	"	201MC (10MC Swp)	199.25MC 45.75MC
16.	"	"	195MC (10MC Swp)	193.25MC 45.75MC
17.	"	"	189MC (10MC Swp)	187.25MC 45.75MC
18.	"	"	183MC (10MC Swp)	181.25MC 45.75MC
19.	"	"	177MC (10MC Swp)	175.25MC 45.75MC
20.	"	"	85MC (10MC Swp)	83.25MC 45.75MC
21.	"	"	79MC (10MC Swp)	77.25MC 45.75MC
22.	"	"	69MC (10MC Swp)	67.25MC 45.75MC
23.	"	"	63MC (10MC Swp)	61.25MC 45.75MC
24.	"	"	57MC (10MC Swp)	55.25MC 45.75MC

Care must be exercised so that preceeding aligned coil increm

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY
25.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC
26.	"	"	"	45.75MC 42.1MC
27.	"	"	"	211.25MC 215.75MC
28.	"	"	207MC (10MC Swp)	205.25MC 209.75MC
29.	"	"	201MC (10MC Swp)	199.25MC 203.75MC
30.	"	"	195MC (10MC Swp)	193.25MC 197.75MC
31.	"	"	189MC (10MC Swp)	187.25MC 191.75MC
32.	"	"	183MC (10MC Swp)	181.25MC 185.75MC
33.	"	"	177MC (10MC Swp)	175.25MC 179.75MC
34.	"	"	85MC (10MC Swp)	83.25MC 87.75MC
35.	"	"	79MC (10MC Swp)	77.25MC 81.75MC
36.	"	"	69MC (10MC Swp)	67.25MC 71.75MC
37.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	63MC (10MC Swp)	61.25MC 65.75MC
38.	"	"	57MC (10MC Swp)	55.25MC 59.75MC

39. Recheck all channels for flat-topped response. If necessary, band width on any channel is insufficient after foregoing adjus C14 and C16.
Remove 330Ω resistor from pin 5 of V3 to B+. Restore connec

NSTRUCTIONS



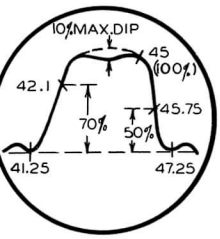


FIG. 3

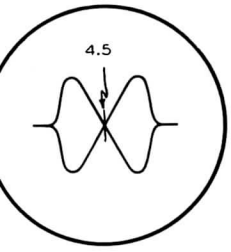
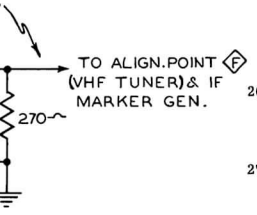
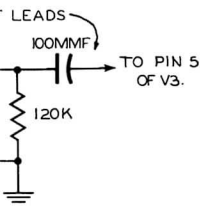
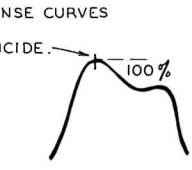


FIG. 5







.8

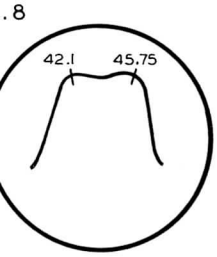


FIG. 10

VHF TUNER OSCILLATOR ALIGNMENT

Since channels 2 to 5 and 7 to 12 are aligned by expanding or compressing coil increments, the preceeding aligned increments must not be disturbed.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC (RF Marker 45.75MC IF Marker)	13	Vert. Amp. thru detector (Fig.6) to IF marker generator and alignment point (F). Low side to chassis.	A15	Adjust so that RF and IF markers coincide as in Fig. 8.
14.	"	"	207MC (10MC Swp)	205.25MC 45.75MC	12	"	A16	Expand or compress coil until markers coincide as in Fig.8. Curves may not be symmetrical until RF alignment is complete.
15.	"	"	201MC (10MC Swp)	199.25MC 45.75MC	11	"	A17	"
16.	"	"	195MC (10MC Swp)	193.25MC 45.75MC	10	"	A18	"
17.	"	"	189MC (10MC Swp)	187.25MC 45.75MC	9	"	A19	"
18.	"	"	183MC (10MC Swp)	181.25MC 45.75MC	8		A20	"
19.	"	"	177MC (10MC Swp)	175.25MC 45.75MC	7		A21	"
20.	"	"	85MC (10MC Swp)	83.25MC 45.75MC	6	"	A22	Adjust so that RF and IF markers coincide as in Fig. 8.
21.	"	"	79MC (10MC Swp)	77.25MC 45.75MC	5	"	A23	Compress or expand coils until markers coincide as in Fig. 8.
22.	"	"	69MC (10MC Swp)	67.25MC 45.75MC	4	"	A24	"
23.	"	"	63MC (10MC Swp)	61.25MC 45.75MC	3	"	A25	"
24.	"	"	57MC (10MC Swp)	55.25MC 45.75MC	2	"	A26	"

VHF TUNER RF ALIGNMENT

Care must be exercised so that preceeding aligned coil increments are not disturbed.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
25.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru detector (Fig.6) to IF marker generator and alignment point (F). Low side to chassis.	A27, A28 A29	Adjust for response curve similar to Fig.9. Adjust A27 for maximum mid-band amplitude regardless of skirt contour. Adjust A29 for symmetrical skirt contour. Adjust A28 for flat topped response. Video carrier must be at 100%. Sound carrier may be as low as 70%.
26.	"	"	"	45.75MC 42.1MC	"	Vert. Amp. thru detector (Fig.7) to pin 5 of V3. Low side to chassis.	A5, A6	Adjust for response curve similar to Fig.10.
27.	"	"	"	211.25MC 215.75MC	13	Vert. Amp. thru detector (Fig.6) to IF marker generator and alignment point (F). Low side to chassis.		If necessary, SLIGHTLY retouch A28 for flat-topped response similar to Fig. 11. There must not be more than 5% dip in response curve.
28.	"	"	207MC (10MC Swp)	205.25MC 209.75MC	12	"	A30, A31 A32	Compress or expand coils for channel 12 to obtain response similar to Fig. 12. A30 affects mid-band amplitude, A31 affects skirt contour and A32 affects flat topping or response curve.
29.	"	"	201MC (10MC Swp)	199.25MC 203.75MC	11	"	A33, A34, A35	Compress or expand coils for response similar to Fig. 12. Video and sound markers must remain on top of curve.
30.	"	"	195MC (10MC Swp)	193.25MC 197.75MC	10	"	A36, A37 A38	"
31.	"	"	189MC (10MC Swp)	187.25MC 191.75MC	9	"	A39, A40, A41	"
32.	"	"	183MC (10MC Swp)	181.25MC 185.75MC	8	"	A42, A43 A44	"
33.	"	"	177MC (10MC Swp)	175.25MC 179.75MC	7	"	A45, A46 A47	"
34.	"	"	85MC (10MC Swp)	83.25MC 87.75MC	6	"	A48, A49 A50	"
35.	"	"	79MC (10MC Swp)	77.25MC 81.75MC	5	"	A51, A52 A53	"
36.	"	"	69MC (10MC Swp)	67.25MC 71.75MC	4	"	A54, A55 A56	"
37.	Two 120Ω Carbon Resistors	Across VHF antenna terminals with 120Ω in each lead.	63MC (10MC Swp)	61.25MC 65.75MC	3	Vert. Amp. thru detector (Fig.6) to IF marker generator and alignment point (F). Low side to chassis.	A57, A58 A59	Compress or expand coils for response similar to Fig.12. Video and sound markers must remain on top of curve.
38.	"	"	57MC (10MC Swp)	55.25MC 59.75MC	2	"	A60, A61 A62	"

39. Recheck all channels for flat-topped response. If necessary, retouch A28 thru A62 in order given. A dip of 30% is permissible for all channels. If band width on any channel is insufficient after foregoing adjustments adjust "gimmicks" A63 and A64 by bending wires away from or toward capacitors C14 and C16.
Remove 330Ω resistor from pin 5 of V3 to B+. Restore connection to L16. Replace V4 in its socket. Remove test equipment.

ALIGNMENT INSTRUCTIONS (cont)

UHF TUNER ALIGNMENT

Switch VHF tuner to UHF position.

UHF OSCILLATOR ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
40.	Two 120Ω Carbon Resistors	Across UHF antenna terminals with 120Ω in each lead.	900MC (Unmod)	See remarks	DC probe to point Ⓐ. Common to chassis.	A66	Set UHF variable capacitor plates to MINIMUM capacity. Adjust A66 for maximum deflection.
41.	"	"	470MC (Unmod)	14	"		If low frequency coverage is incorrect remove tuner cover and adjust oscillator plates on tuning gang for maximum deflection. Replace tuner cover and repeat step 40.

UHF OUTPUT CIRCUIT ALIGNMENT

Disconnect the primary winding of L16 from pin 5 (plate) of 6CB6 (V3) and connect a 330Ω resistor from pin 5 of V3 to the B+ end of L16.
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
42.	3.3KΩ Carbon Resistor	High side thru 3.3KΩ to point Ⓖ. Low side to chassis.	43.25MC (10MC Swp)	42.1MC 45.75MC	Any	Vert. Amp. thru detector (Fig. 1) across 330Ω resistor connected to pin 5 of V3.	A65,A67	If the sweep generator does not have built-in markers, loosely couple a marker generator to the high side of the sweep generator near the 3.3KΩ resistor. Adjust for response similar to Fig.13. A65 positions the 45.75MC marker and A67 positions the 42.1MC marker.

ALTERNATE ON THE AIR UHF OUTPUT CIRCUIT ALIGNMENT

Restore the set to normal operating condition. If the UHF tuner tracking is normal picture quality may be improved by tuning in a UHF station test pattern and adjusting A65 and A67 for best vertical wedge resolution and best sound.

UHF PRE SELECTOR 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
43.	Fig. 14	Thru matching pad (Fig.14) to UHF. antenna terminals.	900MC (10MC Swp)	42.1MC 45.75MC (See remarks)	See Remarks	Vert. Amp. thru detector (Fig.1) across 330Ω resistor connected to pin 5 of V3.	A68,A69	Remove UHF tuner cover and turn UHF channel selector until tuning capacitor plates are fully open. Replace UHF tuner cover. Couple the marker generator to pin 2 (cathode) of 6CB6 (V3). Adjust A68 and A69 in order given for response similar to Fig. 13.

44. Simultaneously turn sweep generator and UHF tuner thru the UHF band. If response curve at lower end of band is not within the limits shown in Fig. 13, remove UHF tuner cover and adjust mixer and antenna segments on variable tuning capacitor plates for best over all response. Replace tuner cover and recheck entire UHF band.
Disconnect test equipment. Remove 330Ω resistor from pin 5 of V3 and restore connection of L16 to pin 5 of V3.

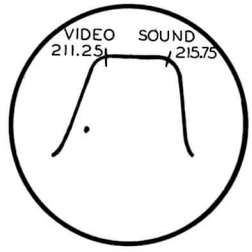


FIG.11

ACCEPTABLE RESPONSE CURVES

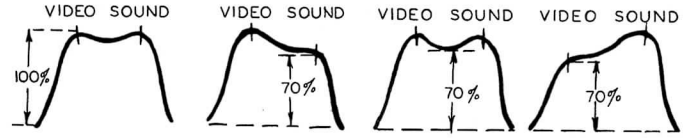


FIG.12

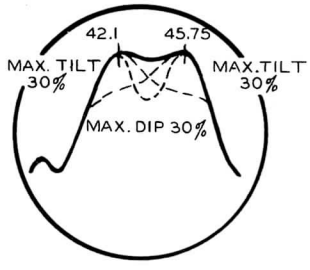


FIG.13

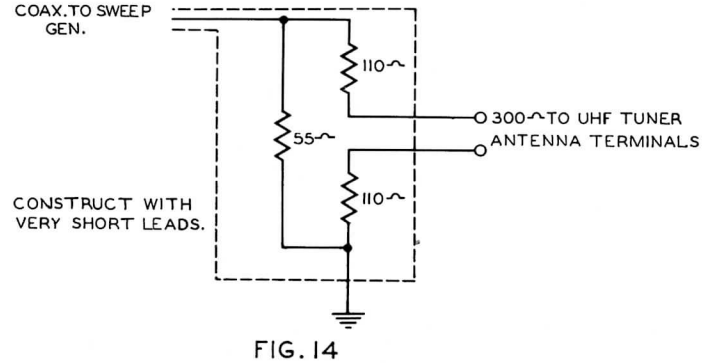
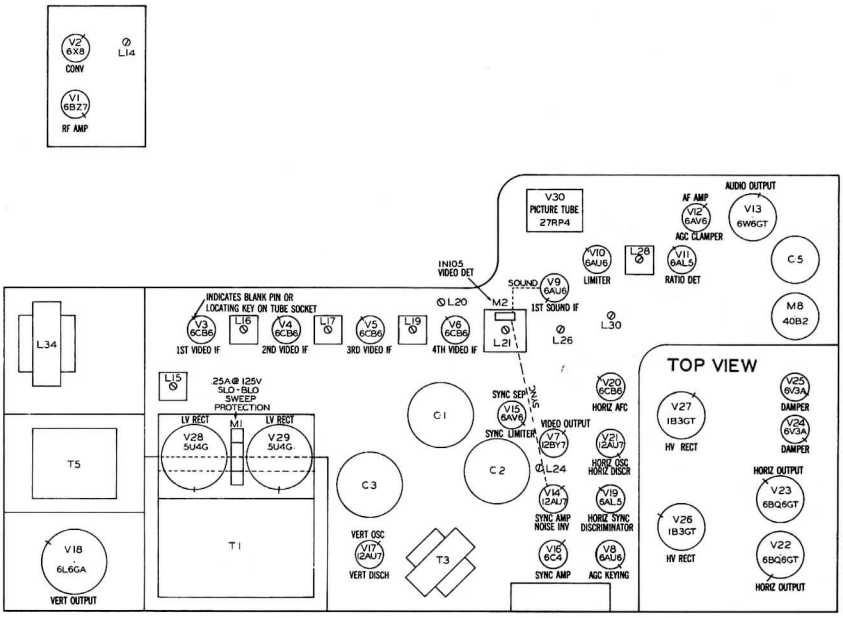


FIG. 14

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 - **V28, V29**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster -**V2, V3, V4, V5, V6, V13**
No pic, no sound, has snow - **V1, V2, V3**
No pic, has sound, has raster - **V7, V30**
Has pic, no sound - **V9, V10, V11, V12, V13**
Overloaded picture - **V8, V12**

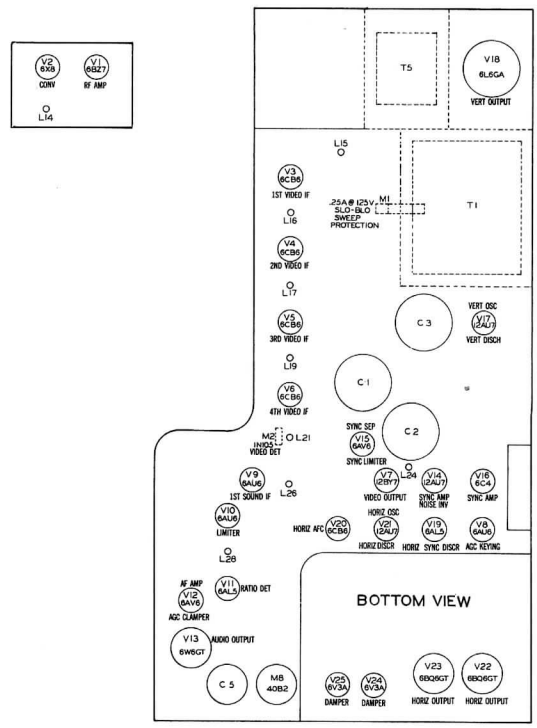
SYNC FAILURE
No vert. sync - **V16, V17**
No horiz. sync - **V16, V19, V20, V21**
No vert. or horiz. sync - **V14, V15, V16**

SWEEP FAILURE
No raster, has sound - **V20, V21, V22, V23, V24, V25, V26, V27, V30, Fuse (M1)**
No vertical deflection - **V17, V18**
Poor vert. linearity or foldover -**V17, V18**
Poor horiz. linearity or foldover - **V21, V22, V23, V24, V25**
Narrow picture - **V21, V22, V23, V24, V25, V26, V27, V28, V29**
Vert. off freq. - **V16, V17**
Horiz. off freq. - **V16, V19, V20, V21**

RESISTANCE MEASUREMENTS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BZ7	†3.8KΩ	430KΩ	INF	.1Ω	0Ω	INF	615KΩ	0Ω	0Ω
V 2	6X8	0Ω	15KΩ	▲4.7KΩ	0Ω	.1Ω	220Ω	220KΩ	▲2.2KΩ	▲1KΩ
V 3	6CB6	36KΩ	47Ω	0Ω	.1Ω	†5.2KΩ	▲6.8KΩ	0Ω		
V 4	6CB6	34KΩ	47Ω	.1Ω	0Ω	†5.2KΩ	▲6.8KΩ	0Ω		
V 5	6CB6	.1Ω	180Ω	0Ω	.1Ω	▲1KΩ	▲6.8KΩ	0Ω		
V 6	6CB6	.1Ω	330Ω	.1Ω	0Ω	†8.8KΩ	▲1KΩ	0Ω		
V 7	12BY7	250Ω	470KΩ	250Ω	.1Ω	.1Ω	0Ω	†4KΩ	▲0Ω	250Ω
V 8	6AU6	†130KΩ	11KΩ	▲68Ω	▲68Ω	150KΩ	†15KΩ	11KΩ		
V 9	6AU6	47KΩ	0Ω	.1Ω	0Ω	▲1KΩ	▲1KΩ	100Ω		
V 10	6AU6	47KΩ	0Ω	.1Ω	0Ω	▲22KΩ	▲22KΩ	0Ω		
V 11	6AL5	INF	INF	.1Ω	0Ω	0Ω	0Ω	68KΩ		
V 12	6AV6	15Meg	0Ω	0Ω	.1Ω	540KΩ	0Ω	†230KΩ		
V 13	6W6GT	INF	▲68Ω	†810Ω	†10KΩ	160KΩ	†660Ω	▲68Ω	INF	
V 14	12AU7	†330KΩ	2.8Meg	5KΩ	.1Ω	.1Ω	†17KΩ	▲1.8KΩ	0Ω	0Ω
V 15	6AV6	2.7Meg	0Ω	0Ω	.1Ω	▲470KΩ	▲470KΩ	▲33KΩ		
V 16	6C4	†17KΩ	INF	0Ω	.1Ω	†17KΩ	▲470KΩ	330Ω		
V 17	12AU7	▲780KΩ	1.3Meg	0Ω	0Ω	0Ω	†3.5KΩ	1.3Meg	0Ω	.1Ω
V 18	6L6GA	INF	.1 Ω	†790Ω	†41Ω	1Meg	1.2KΩ	0Ω	1.2KΩ	
V 19	6AL5	0Ω	1.1Meg *	.1Ω	.3Ω	200KΩ	0Ω	1.1Meg		
V 20	6CB6	680KΩ	330Ω	0Ω	.1Ω	▲40Ω	†12KΩ	330Ω		
V 21	12AU7	†2.1KΩ	470KΩ	10Ω	0Ω	0Ω	†120KΩ	150KΩ	0Ω	.1Ω
V 22	6BQ6GT	INF	0Ω	†120KΩ	†15.1KΩ	470KΩ	INF	.1Ω	60Ω	TOP CAP ▲11Ω
V 23	6BQ6GT	†15KΩ	.1Ω	470KΩ	†15.1KΩ	470KΩ	†15KΩ	0Ω	60Ω	TOP CAP ▲11Ω
V 24	6V3	INF	†50Ω	INF	0Ω	.1Ω	INF	†50Ω	INF	†50Ω TOP CAP 800KΩ
V 25	6V3	INF	†50Ω	INF	.1Ω	0Ω	INF	†50Ω	INF	†50Ω TOP CAP 800KΩ
V 26	1B3GT		PINS	1 - 8	HAVE	INF	RESISTANCE			TOP CAP ▲145Ω
V 27	1B3GT		PINS	1 - 8	HAVE	INF	RESISTANCE			TOP CAP INF
V 28	5U4G	INF	12KΩ	INF	12Ω	INF	12Ω	INF	12KΩ	
V 29	5U4G	INF	12KΩ	INF	11.5Ω	INF	11.5Ω	INF	12KΩ	
V 30	27RP4	▲68Ω	†650KΩ	PIN 10 ▲430KΩ	PIN 11 ▲330KΩ	PIN 12 ▲68Ω				

† MEASURED FROM PIN 8 OF V29
▲ MEASURED FROM 125V LINE
▲ MEASURED FROM TOP CAP OF V25



TUBE PLACEMENT CHART

SET 248 FOLDER 9

SYLVANIA MODELS 331, U, 336M, U (Ch. 1-513-1, -2, -3, -4)

TROUBLE SHOOTING AIDS

SWEEP

HORIZONTAL

LOSS OF SWEEP

Follow procedure outlined under "Loss of High Voltage".

INSUFFICIENT SWEEP

Adjust R7, M7 and B1. Check by substitution V22, V23, V24, V25, V28 and V29. Check Peak to Peak Voltage of W18. Check C109, C111, C112, C5A, C105, R128 and other associated components.

DRIVE LINES

Adjust R7, M7 and B1. Substitutie V22 and V23. Check T4, C106, R136, R133 and other associated components.

COMPRESSED LEFT SIDE

Check by substitution V22, V23, V24 and V25. Check components associated with the horizontal output and damper stages, especially T4 and T6A for failure or change of value.

FOLDS

Follow procedure outlined under "Drive Lines".

PIE CRUST EFFECT

Check by substitution V20, V21, V22 and V23. Check C101, C97, C99, R119, R123 and other associated components.

XMAS TREE EFFECT

Check by substitution V20, V21, V22, V23, V24 and V25. Check L29, C102, C103, T4 and T6 for internal arcing.

VERTICAL

LOSS OF SWEEP

Check by substitution V17 and V18. Check waveform W11.

If Satisfactory	If Unsatisfactory
Check T5, T6B and other associated components.	Check T3, R102, R110, R4 and other associated components.

INSUFFICIENT SWEEP

Check height and vertical linearity controls for proper adjustment. Follow procedure outlined under "Loss of Sweep".

COMPRESSED AT BOTTOM

Check by substitution V17 and V18. Check T5, T6B, R3, R4, R110, C92 and other associated components.

COMPRESSED AT TOP

Check by substitution V17 and V18. Check R3, C3B, C4 and other associated components.

FOLDS

Check by substitution V17 and V18. Check components associated with V17 and V18 for failure or change of value.

SYNC

LOSS OF VERTICAL AND HORIZONTAL SYNC

Check by substitution V14 , V15 and V16. Check C83, C85, R96, R80, R81, R82 R92 and other associated components.

LOSS OF VERTICAL SYNC-HORIZONTAL SYNC SATISFACTORY

Substitute V17. Check waveform W9.

If Satisfactory	If Unsatisfactory
Check T3, R99, R2, R100, C88 and other associated components.	Check vertical integrator network and other associated components. Check video IF alignment for overloading.

LOSS HORIZONTAL SYNC-VERTICAL SYNC SATISFACTORY

Check by substitution V19, V20 and V21. Check waveform W15.

If Satisfactory	If Unsatisfactory
Check L29, R122, R121, R123, C101, C100 and other associated components.	Check C94, C95, C96, R118, R115, R116 and other associated components.

HORIZONTAL BENDING

Check by substitution V14, V15, V16, V19 and V20. Check horizontal AFC network for component failure or change of value.

VIDEO

LOSS OF VIDEO

Substitute V7. Check components associated with V7. Check picture tube.

SOUND BARS (4.5MC BEAT)

Adjust tuner fine tuning for best picture and sound. Check adjustment A14. Check video IF alignment.

POOR CONTRAST

Substitute V7. Check video detector crystal network. Check picture tube and other associated components.

NEGATIVE PICTURE

Substitute V7. Check video detector crystal network. Check picture tube. Check AGC network for proper operation.

SMEAR

Substitute V7. Check L22, L23A, L23B, L25A and L25B, R49, R53, and other associated components.

WIDE BLACK BAR ACROSS PICTURE

Check by substitution V1, V3, V4, V5, V6 and V7 for heater to cathode leakage.

AUDIO

WEAK OR NO SOUND

Check by substitution V9, V10, V11, V12 and V13. Check stages V12 and V13 using audio signal generator. Apply audio signal across R1B.

If Satisfactory	If Unsatisfactory
Check components associated with V9, V10 and V11. Check audio IF alignment.	Check C75, C77, C78, R78, R72, T8, speaker and other associated components.

BUZZ

Adjust tuner fine tuning for best picture and sound. Adjust A13 for minimum buzz. Check C8 and audio IF alignment.

DISTORTED

Follow procedure outlined under "Weak or No Sound".

TROUBLE SHOOTING AIDS (cont)

POWER

DEAD SET

If filaments fail to light, check AC interlock assembly. Check switch on volume control and T1. If filament light, substitute V28 and V29, Check B+ filter decoupling network.

SMALL AND/OR DIM PICTURE

Substitute V28 and V29. Check B+ filter decoupling network.

HIGH VOLTAGE

LOSS OF HIGH VOLTAGE

Check by substitution V21, V22, V23, V24, V25, V26, V27 and M8. Check waveform W18. Check M1.

If Satisfactory	If Unsatisfactory
Check T4, T6A, C117, C7, C115, C116, R133, R136, and other associated components.	Check L30, R127, C105, C106, C103, R126 and other associated components.

INSUFFICIENT HIGH VOLTAGE

Check by substitution V21, V22, V23, V24, V25, V28 and V29. Check horizontal output and damper stages for component failure or change of value. Check B+ power supply.

BLOOMING

Check by substitution V22, V23, V26, V27, V28 and V29. Check T4, T6A 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, V6 and V7. Check video and video IF components.

NO RASTER – SOUND – HIGH VOLTAGE

Check R103, and R108 for open. If open, sound and high voltage will be satisfactory. Video waveform will be present at pin 11 of V30.

NO RASTER – NO SOUND

Follow procedure outlined under "Dead Set".

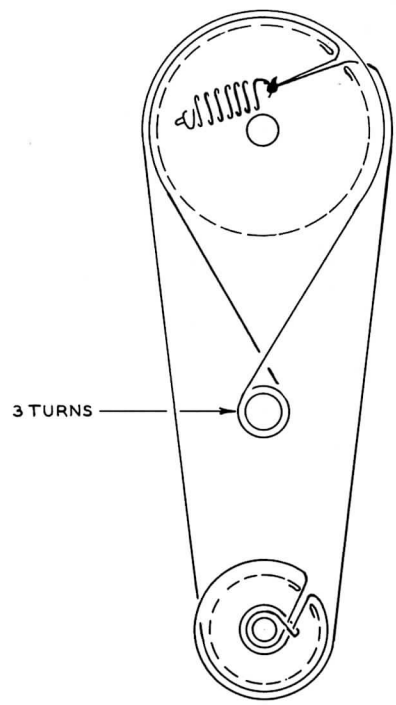
KEYSTONE EFFECT

Check T6 deflection yoke and it s 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.



UHF DRIVE CORD STRINGING

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustments of the VHF tuner oscillator circuit may be accomplished by removing the channel selector and fine tuning knobs.

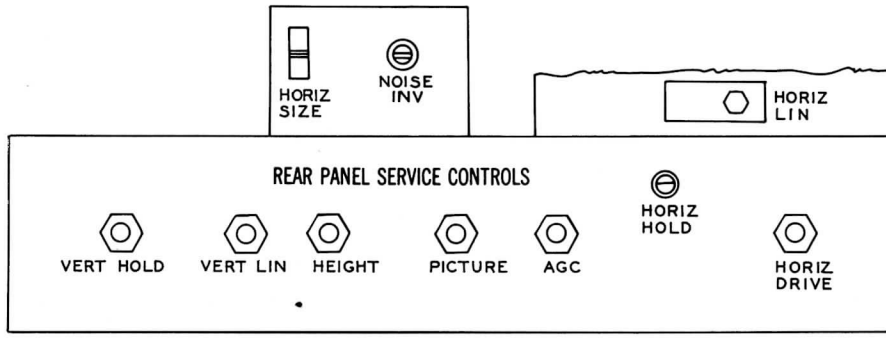
PICTURE TUBE SAFETY GLASS CLEANING

To clean safety glass remove four (4) wood screws holding wood strip at the top of 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



SPECIAL ADJUSTMENTS

AGC CONTROL ADJUSTMENT AND NOISE INVERTER CONTROL ADJUSTMENT

See Horizontal Sweep Circuit adjustment on page 13.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal oscillator circuit can be made from rear panel of the chassis. Adjust the horizontal hold slug (L29) until picture synchronizes horizontally. If results cannot be obtained by the above adjustment see horizontal sweep circuit adjustment on page 13

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, adjust the ratio detector secondary (L28) located on top of chassis. (See tube placement chart).

FUSES

One fuse is used for horizontal sweep circuit protection.(For location see tube placement chart.)

CENTERING

Centering is accomplished mechanically by means of a centering lever on the PM 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.

DISASSEMBLY INSTRUCTIONS

MAIN CHASSIS

1. Remove 5 push-on type control knobs from front panel.
2. Disconnect built-in antenna.
3. Remove 10 wood screws. Remove rear cover.
4. Disconnect speaker, HaloLight * plug, two tuner plugs, horizontal and vertical yoke plugs, CRT socket and HV lead. (Remove screw from HV lead support).
5. Remove one nut. Remove off/on volume and brightness control.
6. Remove 4 chassis bolts. Remove chassis.

REMOVAL OF TUNER (Separate from main chassis)

1. Remove tuner plugs from main chassis.
2. Remove ground clamp from CRT support rod.
3. Remove 2 wood screws. Remove antenna bracket.
4. Remove channel selector pilot light from bracket.
5. Remove 3 screws. Remove tuner from cabinet.

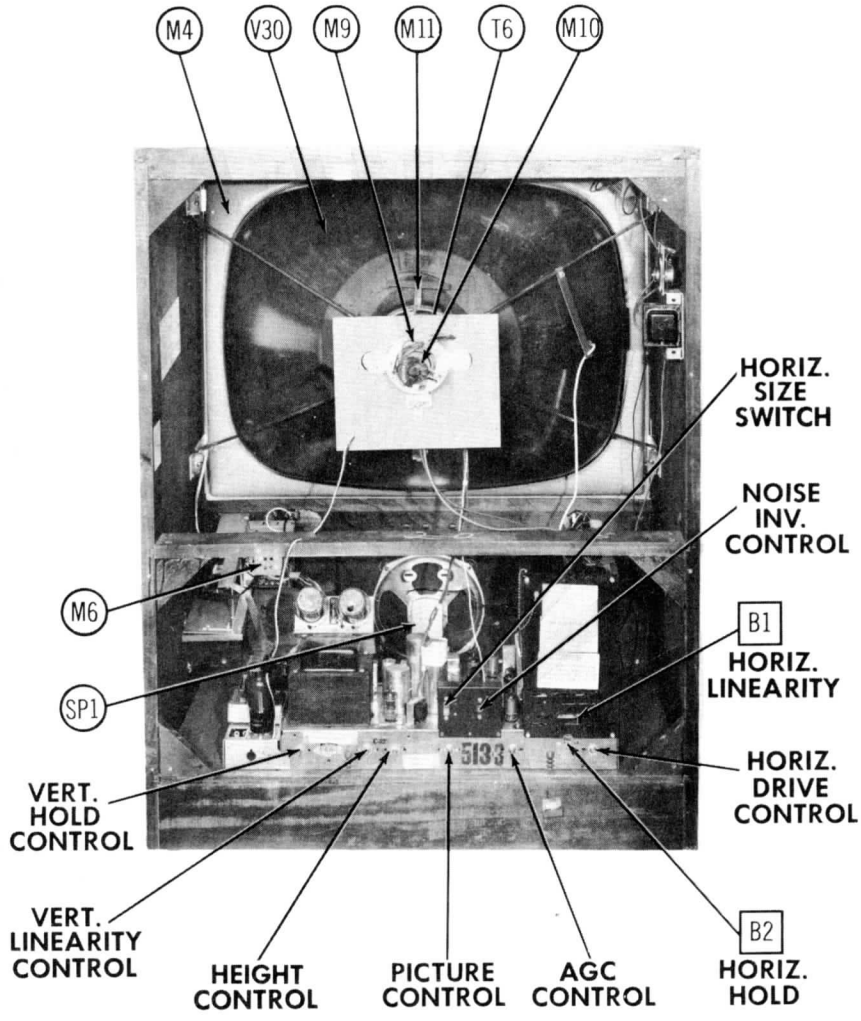
SPEAKER

1. Remove 4 speaker nuts. Remove speaker (not necessary for chassis removal).

HALOLIGHT* CONTROL UNIT

1. Disconnect HaloLight * plug from control unit.
2. Remove power plug from main chassis.
3. Remove 2 wood screws. Remove HaloLight* control unit.

* Sylvania Trademark



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in the strongest TV station available. Adjust the contrast and brightness controls for a normal picture.

HORIZONTAL HOLD ADJUSTMENT

1. Adjust the horizontal linearity slug (B1) for a picture that is symmetrical from left to right.
2. Adjust the horizontal drive control clockwise as far as possible without the presence of vertical white lines or compression near the center of the raster.
3. Remove the horizontal discriminator tube (6AL5), V19, from its socket and adjust the horizontal hold slug (B2) until the picture drifts slowly back and forth with the blanking bar vertical.
4. Replace V19 in its socket.
5. Switch off channel and back again. The picture should fall into synchronization.

HORIZONTAL PHASE ADJUSTMENT

1. Turn the ringing coil slug (B4) fully counter clockwise and short out the peaking resistor R128.
2. Repeat steps 3, 4 and 5 of "Horizontal Hold Adjustment".
3. Adjust the phasing coil slug (B3) until the blanking bars on each side of the picture are equal. Set the contrast control for minimum contrast and readjust the brightness control, then move the picture to the left and to the right with the centering lever so that the blanking bars are visible.
4. Repeat steps 3 and 4 of "Horizontal Hold Adjustment".
5. Repeat step 3.
6. Remove short from across R128 and repeat step 2 of "Horizontal Hold Adjustment".
7. Adjust the ringing coil slug (B4) for equal blanking on both edges of the picture.
8. Repeat steps 3, 4 and 5 of "Horizontal Hold Adjustment".

AGC CONTROL ADJUSTMENT

Whenever the receiver is connected to a different antenna installation the AGC control (rear panel) should be readjusted as follows:

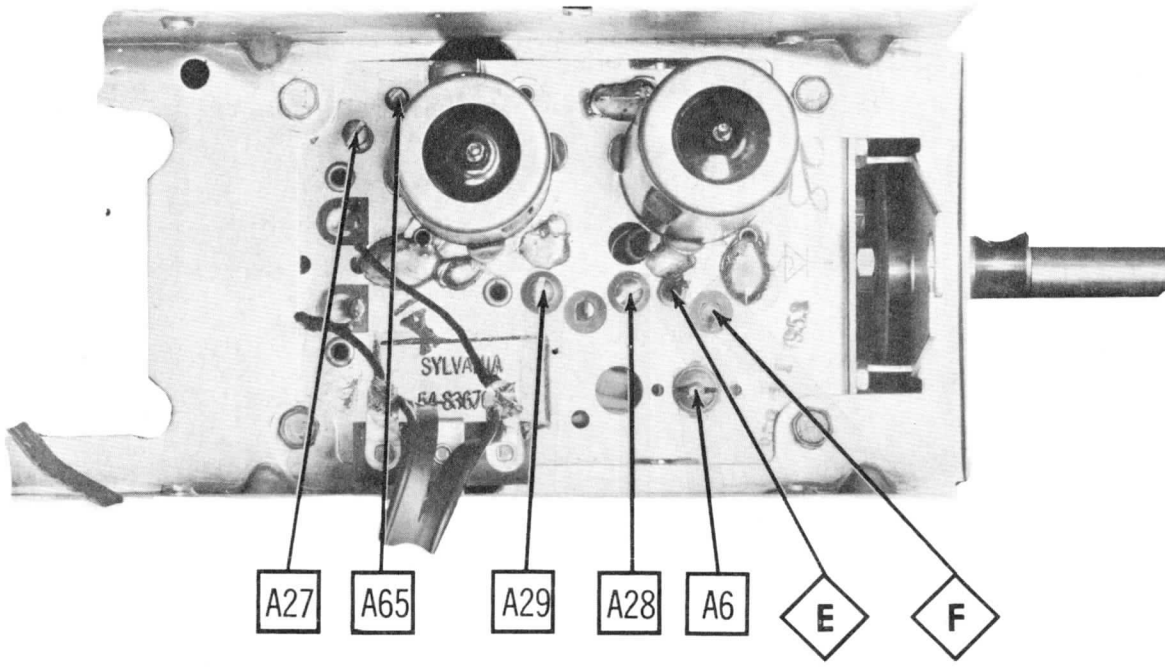
1. Turn the noise inverter control (R8) and the brightness control fully clockwise. Set the contrast control to approximately 7/8 of its maximum contrast position.
2. Tune in the strongest TV station available.
3. Turn the AGC control maximim clockwise, entirely blacking out the picture.
4. Back-off the AGC control for a picture with slightly more than normal contrast.

Reduce the contrast control for proper contrast.
NOTE: The AGC control should not be used a contrast control.

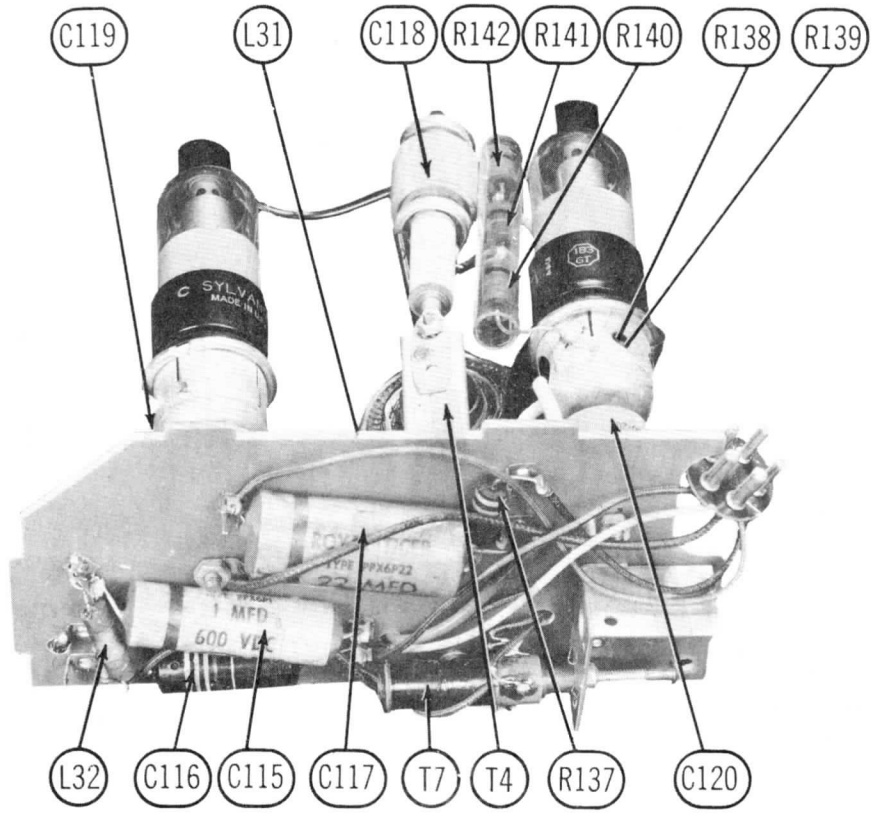
NOISE INVERTER CONTROL ADJUSTMENT

The noise inverter control (R8) is preset to its maximum clockwise position at the factory. If readjustment of R8 becomes necessary in the field due to interference or weak signal area proceed as follows:

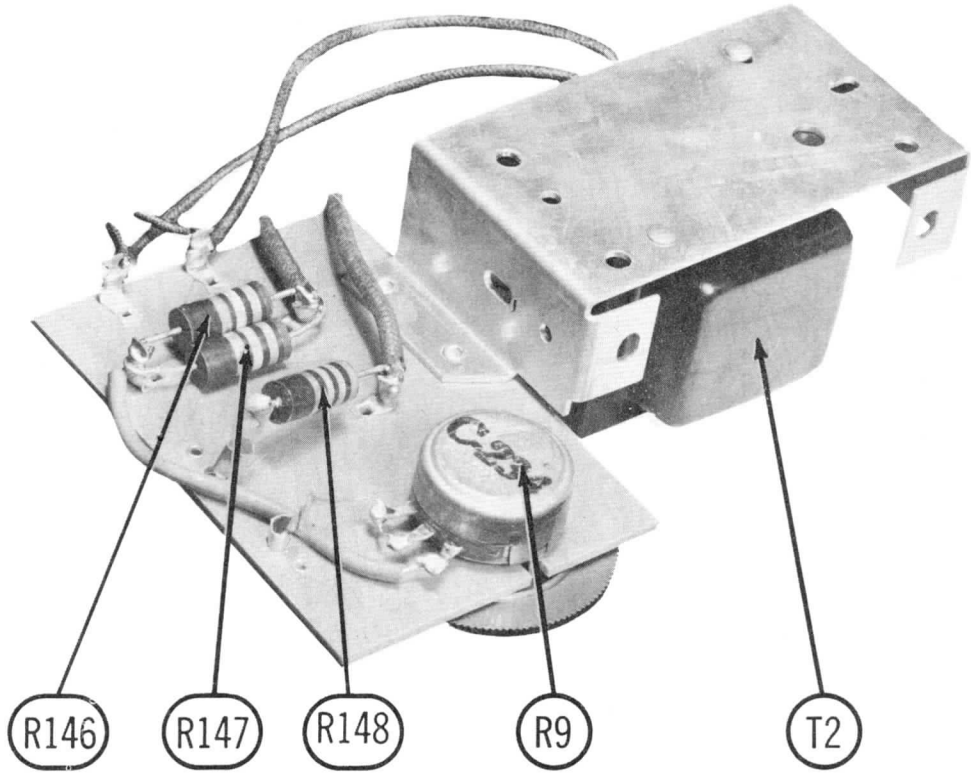
1. Check adjustment of AGC control as outlined above.
2. Tune in a weak station and turn R8 counter clockwise until picture bends.
3. Turn R8 clockwise just beyond point where picture bends.
4. Tune in all other available stations and check operation of R8. If necessary, turn R8 slightly more clockwise if "bending" of picture exists.



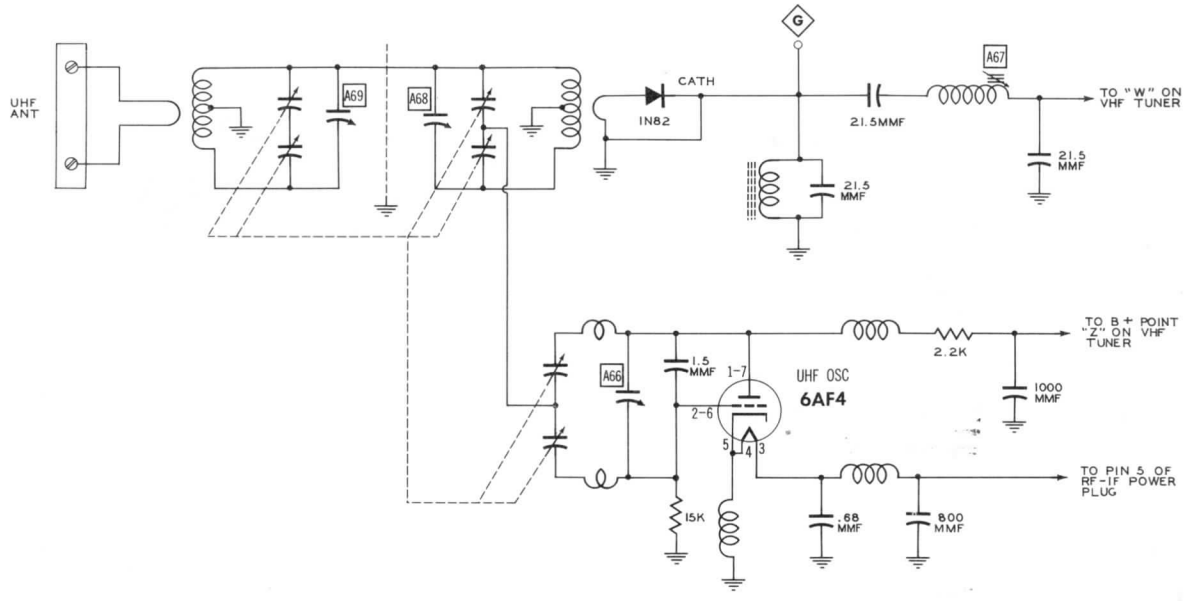
VHF TUNER-TOP VIEW



HIGH VOLTAGE CHASSIS



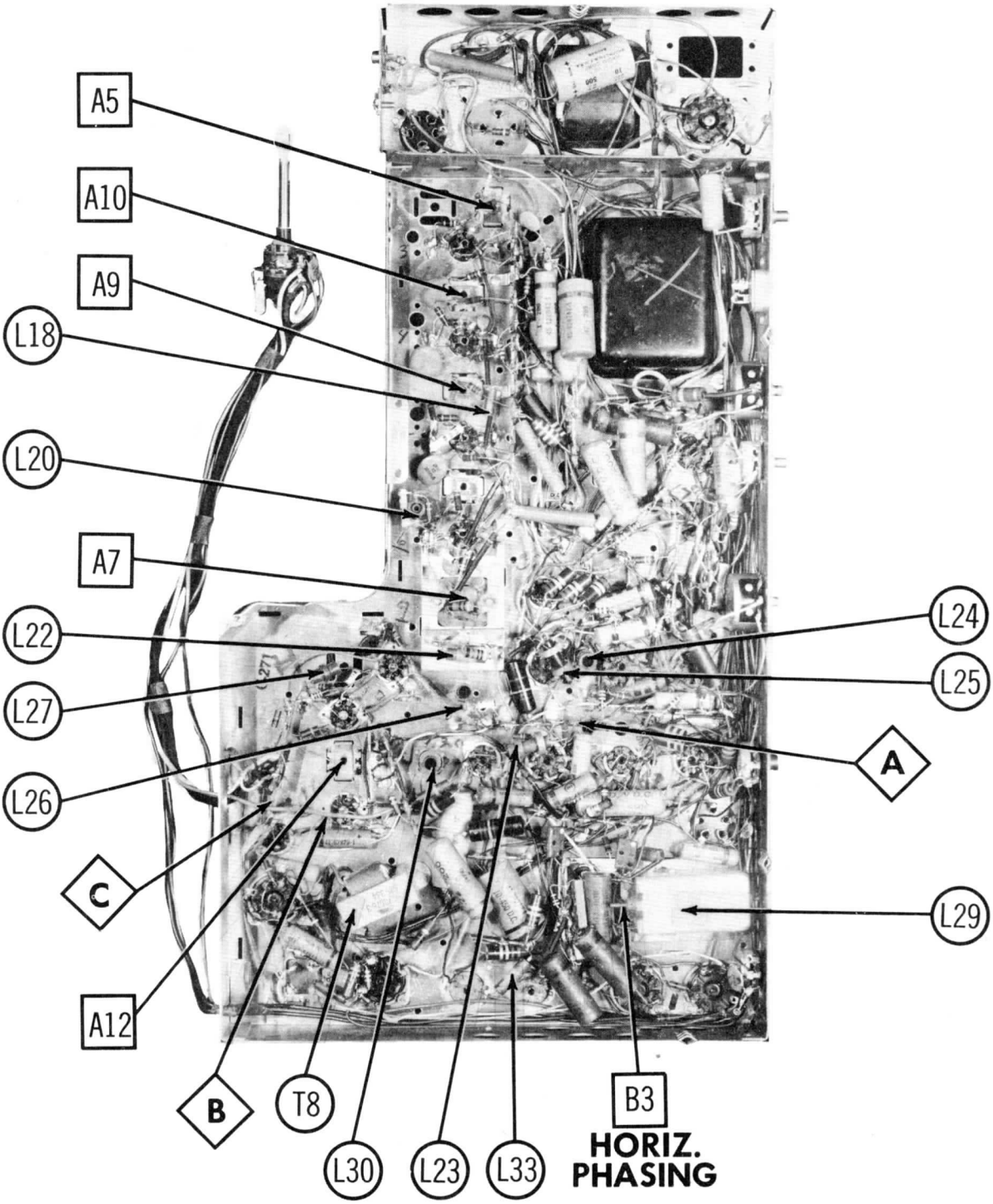
HALOLIGHT CONTROL UNIT



A PHOTOFACT STANDARD NOTATION SCHEMATIC

UHF TUNER USED IN SOME MODELS

UHF TUNER SCHEMATIC



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA, GENERAL ELECTRIC, WESTINGHOUSE)

ITEM No.	USE	REPLACEMENT DATA		RETMA BASE TYPE	NOTES
		SYLVANIA PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6BZ7	6BZ7	9AJ	
V2	Converter	6X8	6X8	9AK	
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	4th. Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Output	12BY7	12BY7	9BF	
V8	AGC Keying	6AU6	6AU6	7BK	
V9	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Ratio Detector	6AL5	6AL5	6BT	
V12	AF Amplifier-AGC Clamper	6AV6	6AV6	7BT	
V13	Audio Output	6W6GT	6W6GT	7S	
V14	Sync Amplifier Noise Inverter	12AU7	12AU7	9A	
V15	Sync Separator-Sync Limiter	6AV6	6AV6	7BT	
V16	Sync Amplifier	6C4	6C4	6BG	
V17	Vert. Oscillator-Vert. Discharge	12AU7	12AU7	9A	
V18	Vert. Output	6L6GA	6L6GA	7S	
V19	Horiz. Sync-Discriminator	6AL5	6AL5	6BT	
V20	Horiz. AFC	6CB6	6CB6	7CM	
V21	Horiz. Oscillator-Horiz. Discharge	12AU7	12AU7	9A	
V22	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V23	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V24	Damper	6V3A	6V3A	9BD	
V25	Damper	6V3A	6V3A	9BD	
V26	HV Rectifier	1B3GT	1B3GT	3C	
V27	HV Rectifier	1B3GT	1B3GT	3C	
V28	LV Rectifier	5U4G	5U4G	5T	
V29	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA					RETMA BASE TYPE	NOTES
	SYLVANIA PART No.	CBS-HYTRON PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	WESTINGHOUSE PART No.		
V30	27RP4	27RP4	27RP4	27RP4 27EP4		12N 12N	

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	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C1A	▲40	400	161-2004	AFH2-64		C035		FP377	TVL-2675	
B	▲80	400								
C2A	▲40	400	161-2004	AFH2-64		C035		FP377	TVL-2675	
B	▲80	400								
C3A	■20	400	161-3018	AFH4-80		D053		FP437	TVL-4740	
B	▲40	400								
C	▲100	50								
C4	10	500	161-1010	PRS500/10		BR1250		TC82	R1222	
C5A	20	200	161-4010						TVL-4604	
B	▲20	350								
C	▲100	200								
D	■100	200								
C6	2	50	161-1001	PRS150/4		BBR2-50T		TC302	TVA-1301	
C7	10	450	161-1013	PRS450/10		BR1045		TC72	TVA-1705	
C8	2	50	161-1001	PRS150/4		BBR2-50T		TC302	TVA-1301	
C9	22			SI22NP0	TCZ-22	TZ14	NP0K-220		5TCC-Q2	
C10	47			SI47	D6-470	TP29	GP1K-470	UC-5447	5GA-Q47	
C11	3			SI3NP0	TCZ-3	TZ06	NP0K-030	ZT-5533	5TCCB-V33	
C12	800			BPD-0008	DD-801	K069	801-001	DC-521	5HK-D1	
C13	.33									
C14	.3									
C15	47			SI47	D6-470	TP29	GP1K-470	UC-5447	5GA-T47	
C16	2			SI2.2NP0	TCZ-2.2	TZ05	NP0K-2R2		5TCCB-V22	
C17	1000			EF-001	MFT-1000				503C-D1	
C18	470			BPD-00047	D6-471	K060	801-471	UC-5347	5GA-T47	
C19	800			BPD-0008	DD-801	K069	801-001	DC-521	5HK-D1	
C20	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C21	.75									
C22	1.5									
C23	10			SI10NP0	TCZ-10	TZ09	NP0K-100	ZT-541	5TCC-Q1	
C24	1.5									
C25	1.6									
C26	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C27	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C28	800			BPD-0008	DD-801	K069	801-001	DC-521	5HK-D1	
C29	800			BPD-0008	DD-801	K069	801-001	DC-521	5HK-D1	
C30	10			SI10NP0	TCZ-10	TZ09	NP0K-100	ZT-541	5TCC-Q1	
C31	30									
C32	7.5									
C33	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C34	4700			BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	Note 1
C35	1000			BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	Note 2
C36	270		166-0270N	SI270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27	
C37	.1	200	160-0201	P288-1	DF-104	CUB2P1		PT401	2TM-P1	
C38	1		166-0001P	SI1NP0	TCZ-1	TZ03	NP0K-010		5TCCB-V1	
C39	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C40	.047	200	160-0214?	P288-047	DF-503	CUB2S47		PT4147	2TM-S47	
C41	.47	200	160-0204?	P288-47		CUB2P47		PT4047	2TM-P47	
C42	.47	200	160-0204?	P288-47		CUB2P47		PT4047	2TM-P47	
C43A	4700		168-0011D	BPD-2X0047	DD2-502	DK079	811-0047	DC-525	5HK-2D47	
B	4700						811-0047	DC-525		
C44	1000		166-1000D	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C45	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	

PARTS LIST AND DESC

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	SYLVANIA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C46	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C47A	4700		168-001lD	BPD-2X0047	DD2-502	DK079	811-0047	DC-525	5HK-2D47	
B	4700						811-0047	DC-525		
C48	1000		166-1000D	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C49	4700		166-4700D	BPD-0047	DD-502	K079	811-005	DC-525	5HK-D47	
C50A	4700		168-001lD	BPD-2X0047	DD2-502	DK079	811-005	DC-525	5HK-2D47	
B	4700						811-005	DC-525		
C51	270		166-0270N	SI270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27	
C52	1000		166-1000D	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C53	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C54	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C55	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C56	270		166-0270N	SI270	D6-271	TP41	GP2K-271	UC-5327	5GA-T27	
C57	1000		166-1000D	BPD-001	DD-102	K069	801-001	DC-521	5HK-D1	
C58	43		166-0043P		TCZ-43	TZ21	NP0K-430			
C59	4.7		168-0008N	SI4.7NP0	TCZ-4.7	TZ07	NP0K-050	ZT-555	5TCCB-V47	
C60	10		166-0010P	SI10NP0	TCZ-10	TZ09	NP0K-100	ZT-541	5TCC-Q1	
C61	10		166-0010P	SI10NP0	TCZ-10	TZ09	NP0K-100	ZT-541	5TCC-Q1	
C62	.1	200	160-0601	P288-1	DF-104	CUB2P1		PT401	2TM-P1	
C63	4.7		168-0008N	SI4.7NP0	TCZ-4.7	TZ07	NP0K-050	ZT-555	5TCCB-V47	
C64	.1	400	160-0601	P488-1	DF-104	CUB4P1		PT401	4TM-P1	
C65	4700		160-06247	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C66	.22	200	160-06022	P288-22		CUB2P22		PT4022	2TM-P22	
C67	4.7		168-0008N	SI4.7NP0	TCZ-4.7	TZ07	NP0K-050	ZT-555	5TCCB-V47	
C68	4.7		168-0008N	SI4.7NP0	TCZ-4.7	TZ07	NP0K-050	ZT-555	5TCCB-V47	
C69	10		166-0010P	SI10NP0	TCZ-10	TZ09	NP0K-100	ZT-541	5TCC-Q1	
C70A	4700		168-001lD	BPD-2X0047	DD2-502	DK079	811-005	DC-525	5HK-2D47	
B	4700						811-005	DC-525		
C71	47		166-0047N	SI47	D6-470	TP29	GP1K-470	UC-5447	5GA-Q47	
C72	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	
C73A	330				D6-331	TP43	GP2K-331	UC-5333		
B	680		*190-0013	*PA-183	D6-681	TP50	GP2K-681	UC-5368	*101C6	
C	.01				DD-103	K082	811-01	DC-511		
C74	10000		†190-0006	†PA-184	DD-103	K082	811-01	DC-511	5HK-S1	
C75	.01	200	160-0201	P488-01	D6-103	CUB4S1	GP2-333-103	PT411	4TM-S1	
C76	100	500	163-0100	1468-0001	D6-101	5W5T1	GP1K-101	MC235	1FM-31	
C77	.01	600	160-0611	P688-01	D6-103	CUB6S1	GP2-333-103	PT611	6TM-S1	
C78	.015	600	160-06115	P688-015		CUB6S15		TP411	6TM-S15	
C79	.047	400	160-06147	P488-047	DF-503	CUB4S47		PT4147	4TM-S47	
C80	.22	200	160-06022	P288-22		CUB2P22		PT4022	2TM-P22	
C81	.1	200	160-0601	P288-1	DF-104	CUB2P1		PT401	2TM-P1	
C82	.047	200	160-06147	P288-047	DF-503	CUB2S47		PT4147	2TM-S47	
C83	.047	400	160-06147	P488-047	DF-503	CUB4S47		PT4147	4TM-S47	
C84	220	500	163-0220	1469-00025		22R5T22		MCB240		
C85	.01	400	160-0611	P488-01	D6-103	CUB4S1	GP2-333-103	PT411	4TM-S1	
C86A	.002							PT622		
B	.005		♦190-0007	♦PA-110	♦PC-100	♦1l5TM1	♦1405-01	PT625	♦V-1	
C	.005							PT625		
C87	.0033	600	162-06233	P688-0033	D6-332	CUB6D33	GP2-333-332	PT6233	6TM-D33	
C88	.0047	400	160-06247	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C89	.047	600	160-06147	P688-047	DF-503	CUB6S47		PT6147	6TM-S47	
C90	.1	400	160-0601	P488-1	DF-104	CUB4P1		PT401	4TM-P1	
C91	.01	600	160-0611	P688-01	D6-103	CUB6S1	GP2-333-103	PT611	6TM-S1	
C92	.1	400	160-0601	P488-1	DF-104	CUB4P1		PT401	4TM-P1	
C93	330		166-0330	SI330	D6-331	TP43	GP2K-331	UC-5333	5GA-T33	
C94	100	500	163-0100	1469-0001		22R5T1		MCB235	MS-31	
C95	.0047	400	160-06247	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C96	.0047	400	160-06247	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C97	.015	400	169-0010	P688-015		CUB6S15		TP400	6TM-S15	
C98	.1	200	160-0601	P288-1	DF-104	CUB2P1		PT401	2TM-P1	
C99	.22	200	160-06022	P288-22		CUB2P22		PT4022	2TM-P22	
C100	.22	400	160-06022	P488-22		CUB4P22		PT4022	4TM-P22	
C101	100	500	163-0100	1469-0001		22R5T1		MCB235	MS-31	
C102	.0022	400	162-0422S	P688-0022	D6-222	CUB6D22	GP2-333-222	PT6222	6TM-D22	
C103	.01	600	160-0611	P688-01	D6-103	CUB6S1	GP2-333-103	PT611	6TM-S1	
C104	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D5	
C105	680	500	163-0680	1479-0007		5R5T68			MS-37	
C106	1000		166-1000P	SI1000	D6-102	TP52	GP2L-102	UC-521	5HK-D1	
C107	.047	600	160-06147	P688-047	DF-503	CUB6S47		PT6147	6TM-S47	
C108	.047	600	160-06147	P688-047	DF-503	CUB6S47		PT6147	6TM-S47	
C109	.01	600	160-0611	P688-01	D6-103	CUB6S1	GP2-333-103	PT611	6TM-S1	
C110	1000		166-1000D	BPD-001	DD-103	K069	801-001	DC-521	5HK-D1	
C111	.0047	600	160-06247	P688-0047	D6-472	CUB6D47	GP2-333-472	PT6247	6TM-D47	
C112	.01	600	160-0611	P688-01	D6-103	CUB6S1	GP2-333-103	PT611	6TM-S1	
C113	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	Note 2
C114	4700		166-4700D	BPD-0047	DD-502	K079	811-0047	DC-525	5HK-D47	Note 2
C115	.1	600	160-0601	P688-1		CUB6P1		PT601	6TM-P1	
C116	.033	600	160-06133	P688-033		PM6S33		PT6133		
C117	.22	600	160-06022	684-25		CUB6P25		PT6025	6TM-P25	
C118	500	20000	169-0015	HV20C	TV3-502	MMU-20T3	413	HV20035A	20DK-T5	
C119	500	20000	169-0015	HV20C	TV3-502	MMU-20T3	413	HV20035A	20DK-T5	
C120	500	30000	169-0016		TV8-503	MMU-30T5			30DK-T5	
C121	82	2000								Note 3

Note 1. Some models use .22MFD in this application (part #160-02022).
Note 2. Not used in all models.
Note 3. Some models use 56MMF in this application (part #174-0056).
* Items C73A, C73B, C73C, R68 are combined in one unit.
† Items C74 and R69 are combined in one unit.
♦ Items C86A, C86B, C86C, R97A, R97B, R97C are combined in one unit.

CONTROLS

ITEM No.	RATING RESIST-ANCE	RATING WATTS	SYLVANIA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	2 Meg	1/2	157-0023	* QJ-483	RTV-428		UF26L	Brightness- Panel
B	1 Meg	1/2					UR16-T25 †	Volume tapped at 150KΩ-rear
C	Switch						US-27	Attach to R1B
R2A	1.5 Meg	1/2	153-0014	Q11-138	A47-2 Meg-S	AB-75	U-155	Vert. Hold
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R2A
R3	2500Ω	2	153-3012	WK2500R				Vert. Linearity wire wound
R4A	1.5 Meg	1/2	153-0014	Q11-138	A47-2 Meg-S	AB-75	U-155	Height
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R4A
R5A	250Ω	2	153-3007	WK-250	A43-300	VK-123	R250L	Picture wire wound
B	Shaft		Not Req.	Not Req.	FKS-1/4	Not Req.	Not Req.	Attach to R5A

CONTROLS (c

ITEM No.	RATING RESIST-ANCE	RATING WATTS	REPLACEMENT SYLVANIA PART No.	IRC PART No.	CLAROSTA PART No.
R5A	1 Meg	1/2	153-0009	Q11-137	A47-1Meg-
B	Shaft		Not Req.	RQ	FKS-1/4
R7A	250KΩ	1/2	153-0007	Q11-130	A47-250K-
B	Shaft		Not Req.	RQ	FKS-1/4
R8	4000Ω	1	159-0008		39-4000
R9A	350KΩ	1/2	153-0019	Q11-133	A47-500K-
B	Shaft		Not Req.	Not Req.	FS-3

* CONCENTRIKIT EQUIVALENT KIT - K-2 BASE ELEMENTS & B13-137X & R2-216 (Rear) & SW
† Universal replacement (Mallory exact duplicate Part No. UE185

RESISTO

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SYLVANIA PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R10	15KΩ	1/2		BTS-15K	
R11	470Ω	1/2		BTS-470	
R12	1 Meg	1/2		BTS-1 Meg	
R13	750KΩ	1/2		BTS-750K	
R14	3900Ω	1/2		BTS-3900	
R15	1000Ω	1/2		BTS-1000	
R16	220KΩ	1/2		BTS-220K	
R17	1000Ω	1/2		BTS-1000	
R18	2200Ω	1/2		BTS-2200	
R19	1000Ω	1/2		BTS-1000	
R20	4700Ω	1/2		BTS-4700	
R21	220Ω	1/2		BTS-220	
R22	15KΩ	1/2		BTS-15K	
R23	56KΩ	1/2		BTS-56K	
R24	3300Ω	5	187-0012		
R25	6.8 Meg 5%	1/2	181-0685	BTS-6.8Meg 5%	
R26	390KΩ 5%	1/2	181-0394	BTS-390K 5%	
R27	120KΩ 5%	1/2	181-0124	BTS-120K 5%	
R28	1000Ω 5%	1/2		BTS-1000 5%	
R29	33KΩ 5%	1/2	181-0333	BTS-33K 5%	
R30	2000Ω 5%	1/2		BTS-2000 5%	Note 1
R31	1000Ω	1/2	181-0102	BTS-1000	
R32	47Ω 5%	1/2	181-04705	BTS-47 5%	
R33	6800Ω	1/2	181-0682	BTS-6800	
R34	470Ω	1/2	181-0471	BTS-470	
R35	2700Ω	1/2	181-0272	BTS-2700	
R36	1000Ω	1/2	181-0102	BTS-1000	
R37	47Ω 5%	1/2	181-04705	BTS-47 5%	
R38	6800Ω	1/2	181-0682	BTS-6800	
R39	470Ω	1/2	181-0471	BTS-470	
R40	1500Ω	1/2	181-0152	BTS-1500	
R41	180Ω	1/2	181-0181	BTS-180	
R42	6800Ω	1/2	181-0682	BTS-6800	
R43	1000Ω	1/2	181-0102	BTS-1000	
R44	1200Ω	1/2	181-0122	BTS-1200	
R45	330Ω	1/2	181-0331	BTS-330	
R46	1000Ω	1/2	181-0102	BTS-1000	
R47	10KΩ	1/2	181-0103	BTS-10K	
R48	6800Ω	1/2	181-0682	BTS-6800	
R49	22KΩ	1/2	181-0223	BTS-22K	
R50	1500Ω	1/2	181-0152	BTS-1500	
R51	1800Ω	1/2	181-0182	BTS-1800	
R52	470KΩ	1/2	181-0474	BTS-470K	
R53	18KΩ	1/2	181-0183	BTS-18K	
R54	12KΩ	2	183-0123		
R55	12KΩ	2	183-0123		
R56	12KΩ	2	183-0123		
R57	330KΩ	1/2	181-0334	BTS-330K	
R58	470KΩ	1/2	181-0474	BTS-470K	
R59	18KΩ	2	183-0183	BTB-18K	
R60	15KΩ	2	181-0153	BTB-15K	
R61	15KΩ	1/2	181-0153	BTS-15K	
R62	47KΩ	1/2	181-0474	BTS-47K	
R63	100Ω	1/2	181-0101	BTS-100	
R64	47KΩ	1/2	181-0474	BTS-47K	
R65	1000Ω	1/2	181-0102	BTS-1000	
R66	47KΩ	1/2	181-0474	BTS-47K	
R67	22KΩ	1/2	181-0223	BTS-22K	
R68	100KΩ	1/2	* 190-0013	BTS-100K	
R69	47KΩ	1/2	† 190-0006	BTS-47K	
R70	68KΩ	1/2	181-0683	BTS-68K	
R71	15 Meg	1/2	181-0156	BTS-15 Meg	
R72	220KΩ	1/2	181-0224	BTS-220K	
R73	100KΩ	1/2	181-01045	BTS-100K	
R74	100KΩ	1/2	181-01045	BTS-100K	
R75	180K 5%	1/2	181001845	BTS-180K 5%	
R76	68Ω	1	182-0680		
R77	47Ω	1/2	181-0470	BTS-47	
R78	10KΩ	1	182-0103	BTA-10K	
R79	330Ω	1	182-0331	BTA-330	

■ This is a voltage sensitive resistor (Glob
* Items R68, C73A, C73B, C73C are combi
† Items R69, C74 are combined in one unit.
♦ Items R97A, R97B, R97C , C86A, C86B,
Note 1. Some models may use a 2200Ω resi

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS (cont)

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	SYLVANIA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	MALLORY PART No.	
R5A	1 Meg	1/2	153-0009	Q11-137	A47-1Meg-S	AB-69	SU-54	AGC
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R6A
R7A	250KΩ	1/2	153-0007	Q11-130	A47-250K-S	AB-50	SU-46	Horiz. Drive
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Not Req.	Attach to R7A
R8	4000Ω	1	159-0008		39-4000			Noise inverter- wire wound
R9A	350KΩ	1/2	153-0019	Q11-133	A47-500K-S	B-59	U-50	HaloLight ADJ
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Not Req.	Attach to R9A

* CONCENTRIKIT EQUIVALENT KIT - K-2 BASE ELEMENTS & SHAFTS B11-139 & P1-126 (Panel) B13-137X & R2-216 (Rear) & SWITCH 76-2.

† Universal replacement (Mallory exact duplicate Part No. UE1855S)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
R10	15KΩ	1/2		BTS-15K	
R11	470Ω	1/2		BTS-470	
R12	1 Meg	1/2		BTS-1 Meg	
R13	750KΩ	1/2		BTS-750K	
R14	3900Ω	1/2		BTS-3900	
R15	1000Ω	1/2		BTS-1000	
R16	220KΩ	1/2		BTS-220K	
R17	1000Ω	1/2		BTS-1000	
R18	2200Ω	1/2		BTS-2200	
R19	1000Ω	1/2		BTS-1000	
R20	4700Ω	1/2		BTS-4700	
R21	220Ω	1/2		BTS-220	
R22	15KΩ	1/2		BTS-15K	
R23	56KΩ	1/2		BTS-56K	
R24	3300Ω	5	187-0012		
R25	6.8 Meg 5%	1/2	181-0685	BTS-6.8Meg 5%	
R26	390KΩ 5%	1/2	181-0394	BTS-390K 5%	
R27	120KΩ 5%	1/2	181-0124	BTS-120K 5%	
R28	1000Ω 5%	1/2		BTS-1000 5%	
R29	33KΩ 5%	1/2	181-0333	BTS-33K 5%	
R30	2000Ω 5%	1/2		BTS-2000 5%	Note 1
R31	1000Ω	1/2	181-0102	BTS-1000	
R32	47Ω 5%	1/2	181-04705	BTS-47 5%	
R33	6800Ω	1/2	181-0682	BTS-6800	
R34	470Ω	1/2	181-0471	BTS-470	
R35	2700Ω	1/2	181-0272	BTS-2700	
R36	1000Ω	1/2	181-0102	BTS-1000	
R37	47Ω 5%	1/2	181-04705	BTS-47 5%	
R38	6800Ω	1/2	181-0682	BTS-6800	
R39	470Ω	1/2	181-0471	BTS-470	
R40	1500Ω	1/2	181-0152	BTS-1500	
R41	180Ω	1/2	181-0181	BTS-180	
R42	6800Ω	1/2	181-0682	BTS-6800	
R43	1000Ω	1/2	181-0102	BTS-1000	
R44	1200Ω	1/2	181-0122	BTS-1200	
R45	330Ω	1/2	181-0331	BTS-330	
R46	1000Ω	1/2	181-0102	BTS-1000	
R47	10KΩ	1/2	181-0103	BTS-10K	
R48	6800Ω	1/2	181-0682	BTS-6800	
R49	22KΩ	1/2	181-9223	BTS-22K	
R50	1500Ω	1/2	181-0152	BTS-1500	
R51	1800Ω	1/2	181-0182	BTS-1800	
R52	470KΩ	1/2	181-0474	BTS-470K	
R53	18KΩ	1/2	181-0183	BTS-18K	
R54	12KΩ	2	183-0123		
R55	12KΩ	2	183-0123		
R56	12KΩ	2	183-0123		
R57	330KΩ	1/2	181-0334	BTS-330K	
R58	470KΩ	1/2	181-0474	BTS-470K	
R59	18KΩ	2	183-0183	BTB-18K	
R60	15KΩ	2	181-0153	BTB-15K	
R61	15KΩ	1/2	181-0153	BTS-15K	
R62	47KΩ	1/2	181-0474	BTS-47K	
R63	100Ω	1/2	181-0101	BTS-100	
R64	47KΩ	1/2	181-0474	BTS-47K	
R65	1000Ω	1/2	181-0102	BTS-1000	
R66	47KΩ	1/2	181-0474	BTS-47K	
R67	22KΩ	1/2	181-0223	BTS-22K	
R68	100KΩ	1/2	* 190-0013	BTS-100K	
R69	47KΩ	1/2	† 190-0006	BTS-47K	
R70	68KΩ	1/2	181-0683	BTS-68K	
R71	15 Meg	1/2	181-0156	BTS-15 Meg	
R72	220KΩ	1/2	181-0224	BTS-220K	
R73	100KΩ	1/2	181-01045	BTS-100K	
R74	100KΩ	1/2	181-01045	BTS-100K	
R75	180K 5%	1/2	181001845	BTS-180K 5%	
R76	68Ω	1	182-0680		
R77	47Ω	1/2	181-0470	BTS-47	
R78	10KΩ	1	182-0103	BTA-10K	
R79	330Ω	1	182-0331	BTA-330	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
R80	33KΩ	2	183-0333	BTB-33K	
R81	33KΩ	2	183-0333	BTB-33K	
R82	33KΩ	1/2	181-0333	BTS-33K	
R83	100KΩ ■	1/2	181-0104	BTS-100K	
R84	470KΩ	1/2	181-0474	BTS-470K	
R85	1800Ω	1/2	181-0182	BTS-1800	
R86	47KΩ	2	183-0473	BTB-47K	
R87	39KΩ	2	183-0393	BTB-39K	
R88	4700Ω	5	187-0017		
R89	330KΩ	1/2	181-0334	BTS-330K	
R90	470KΩ	1/2	181-0474	BTS-470K	
R91	2.2 Meg	1/2	181-0225	BTS-2.2 Meg	
R92	33KΩ	1/2	181-0333	BTS-33K	
R93	10KΩ	1/2	181-0103	BTS-10K	
R94	470KΩ	1/2	181-0474	BTS-470K	
R95	330Ω	1/2	181-0331	BTS-330	
R96	15KΩ	2	183-0153	BTB-15K	
R97A	22KΩ	1/2		BTS-22K	
B	8200Ω	1/2	♦ 190-0007	BTS-8200	
C	8200Ω	1/2		BTS-8200	
R98	33KΩ	1/2	181-0333	BTS-33K	
R99	68KΩ	1/2		BTS-68K	
R100	680KΩ	1/2	181-0684	BTS-680K	
R101	3300Ω	1/2	181-0332	BTS-3300	
R102	680KΩ	1/2	181-0684	BTS-680K	
R103	100KΩ	1/2	181-0104	BTS-100K	
R104	■		189-0030		
R105	2200Ω 5%	1/2	181-02225	BTS-2200 5%	
R106	2200Ω 5%	1/2	181-02225	BTS-2200 5%	
R107	1 Meg	1/2	181-0105	BTS-1 Meg	
R108	330KΩ	1/2	181-0334	BTS-330K	
R109	680KΩ	1/2	181-0684	BTS-680K	
R110	470KΩ	1/2	181-0474	BTS-470K	
R111	680Ω	2	183-0681	BTB-680	
R112	560Ω	1/2		BTS-560	
R113	560Ω	1/2		BTS-560	
R114	1000Ω	1/2		BTS-1000	
R115	100KΩ	1/2	181-0104	BTS-100K	
R116	100KΩ	1/2	181-0104	BTS-100K	
R117	1 Meg	1/2	181-0105	BTS-1 Meg	
R118	470KΩ	1/2	181-0474	BTS-470K	
R119	330Ω	1/2	181-0331	BTS-330	
R120	33KΩ	2	183-0333	BTB-33K	
R121	1000Ω	1/2	181-0102	BTS-1000	
R122	8200Ω	1/2	181-0822	BTS-8200	
R123	15KΩ	1	182-0153	BTA-15K	
R124	470KΩ	1/2	181-0474	BTS-470K	
R125	22KΩ	1/2	181-0223	BTS-22K	
R126	150KΩ	1/2	181-0154	BTS-150K	
R127	82KΩ	1/2	181-0823	BTS-82K	
R128	4700Ω	1/2	181-0472	BTS-4700	
R129	10Ω	1	182-0100		
R130	470KΩ	1/2	181-0474	BTS-470K	
R131	100Ω	1/2	181-0101	BTS-100	
R132	100Ω	1/2	181-0101	BTS-100	
R133	15KΩ	2	181-0153	BTB-15K	
R134	100Ω	1/2	181-0101	BTS-100	
R135	100Ω	1/2	181-0101	BTS-100	
R136	15KΩ	2	181-0153	BTB-15K	
R137	470Ω	2	183-0471	BTB-470	
R138	4.3Ω	1/2	189-0007		
R139	4.3Ω	1/2	189-0007		
R140	1 Meg	2		BTB-1 Meg	
R141	1 Meg	2		BTB-1 Meg	
R142	1 Meg	2		BTB-1 Meg	
R143	4.3Ω	1/2	189-0007		
R144	2000Ω	5	187-0005	1 3/4A-2000	
R145	220KΩ	1/2	181-0224	BTS-220K	
R146	270KΩ	2	189-0031	BTB-270K	
R147	270KΩ	2	189-0031	BTB-270K	
R148	68KΩ	2	189-0032	BTB-68K	

■ This is a voltage sensitive resistor (Globar type).

* Items R68, C73A, C73B, C73C are combined in one unit.

† Items R69, C74 are combined in one unit.

♦ Items R97A, R97B, R97C , C86A, C86B, C86C are combined in one unit.

Note 1. Some models may use a 2200Ω resistor in this application.

ITEM No.	RATING		
	PRI.	SEC. 1	SEC. 2
T1	117VAC @2.72A	620VCT .330ADC	5VAC @6A
	SEC. 3	SEC. 4	SEC. 5
	6.3VAC @2.2A	6.3VAC @12.8A	

① Use low taps only on high voltage
② Parallel and phase 5 volt windings
③ Parallel and phase 6.3 volt @ 7A
④ Use original shell.

ITEM No.	RATING		
	PRI.	SEC. 1	SEC. 2
T2	117VAC @.1A	1600VAC	

① Ignore Filament windings.
② Mount differently.

ITEM No.	USE
T3	Vert. Osc. Trans.
T4	Horiz. Output Trans.
T5	Vert. Output Trans.
T6A	Yoke (90°) Horiz. (13MH)
B	Vert. (47MH)
T7	Horiz. Lin. Coil(.6-4.3MH, tapped)

① Drill one new mounting hole.
② Drill new mounting holes.
③ Includes capacitor C120, and res
④ Use original yoke network
⑤ Enlarge mounting hole.

ITEM No.	IMPEDANCE		SYLVANIA PART No.
	PRI.	SEC.	
T8	4.7KΩ	3.4Ω	143.0023

ITEM No.	RATINGS			
	SIZE	FIELD	V. C. IMP.	
SP1	8"	PM	3.4Ω	5

ITEM No.	USE	DC RES.	
		PRI.	SEC
L1	Ant. Trans.	0ΩCT	0ΩCT
L2	Ant. Coils	0Ω	
L3	UHF Input Coil	0Ω	
L4	Ant. Coil	0Ω	
L5	Neutr. Coil	0Ω	
L6	RF Coil	0Ω	
L7	RF Coils	0Ω	
L8	Mixer Grid Coil	0Ω	
L9	Mixer Grid Coils	0Ω	
L10	Fil. Choke	0Ω	
L11	Osc. Plate Coil	0ΩCT	
L12	Osc. Coils	0Ω	
L13	Osc. Coil	0Ω	
L14	Conv. Plate	.1Ω	
L15	1st Video IF	.1Ω	
L16	2nd Video IF	.1Ω	.1Ω
L17	3rd Video IF	.1Ω	.1Ω
L18	Fil. Choke	0Ω	
L19	4th Video IF	.1Ω	.1Ω
L20	Cathode Trap	0Ω	0Ω
L21	5th Video IF	.1Ω	.1Ω
L22	Series Peaking Coil	1.5Ω	
L23A	Series Peaking Coil	5.5Ω	
B	Shunt Peaking Coil	9Ω	
L24	4.5 MC Trap	5.5Ω	
L25A	Series Peaking Coil	5Ω	
B	Shunt Peaking Coil	8Ω	
L26	Sound IF	5.5Ω	
L27	RF Choke	3.2Ω	

MALLORY PART No.	SPRAGUE PART No.	NOTES
DC-525	5HK-D47	
DC-525	5HK-2D47	
DC-525		
DC-521	5HK-D1	
DC-525	5HK-D47	
DC-525	5HK-2D47	
DC-525		
UC-5327	5GA-T27	
DC-521	5HK-D1	
DC-525	5HK-D47	
DC-525	5HK-D47	
DC-525	5HK-D47	
UC-5327	5GA-T27	
DC-521	5HK-D1	
ZT-555	5TCCB-V47	
ZT-541	5TCC-Q1	
ZT-541	5TCC-Q1	
PT401	2TM-P1	
ZT-555	5TCCB-V47	
PT401	4TM-P1	
DC-525	5HK-D47	
PT4022	2TM-P22	
ZT-555	5TCCB-V47	
ZT-555	5TCCB-V47	
ZT-541	5TCC-Q1	
DC-525	5HK-2D47	
DC-525		
UC-5447	5GA-Q47	
DC-525	5HK-D47	
UC-5333		
UC-5368	*101C6	
DC-511		
DC-511	5HK-S1	
PT411	4TM-S1	
MC235	1FM-31	
PT611	6TM-S1	
TP411	6TM-S15	
PT4147	4TM-S47	
PT4022	2TM-P22	
PT401	2TM-P1	
PT4147	2TM-S47	
PT4147	4TM-S47	
MCB240		
PT411	4TM-S1	
PT622		
PT625	♦V-1	
PT625		
PT6233	6TM-D33	
PT6247	6TM-D47	
PT6147	6TM-S47	
PT401	4TM-P1	
PT611	6TM-S1	
PT401	4TM-P1	
UC-5333	5GA-T33	
MCB235	MS-31	
PT6247	6TM-D47	
PT6247	6TM-D47	
PP400	6TM-S15	
PT401	2TM-P1	
PT4022	2TM-P22	
PT4022	4TM-P22	
MCB235	MS-31	
PT6222	6TM-D22	
PT611	6TM-S1	
DC-525	5HK-D5	
	MS-37	
DC-521	5HK-D1	
PT6147	6TM-S47	
PT6147	6TM-S47	
PT611	6TM-S1	
DC-521	5HK-D1	
PT6247	6TM-D47	
PT611	6TM-S1	
DC-525	5HK-D47	Note 2
DC-525	5HK-D47	Note 2
PT601	6TM-P1	
PT6133		
PT6025	6TM-P25	
MV20035A	20DK- T5	
MV20035A	20DK-T5	
	30DK-T5	
		Note 3

INSTALLATION NOTES
Brightness- Panel
Volume tapped at 150KΩ-rear
Attach to R1B
Vert. Hold
Attach to R2A
Vert. Linearity wire wound
Height
Attach to R4A
Picture wire wound
Attach to R5A

PTIONS (Continued)

t)

CENTRALAB PART No.	MALLORY PART No.	INSTALLATION NOTES
B-69	SU-54	AGC
K-1	Not Req.	Attach to R6A
B-50	SU-46	Horiz. Drive
K-1	Not Req.	Attach to R7A
		Noise inverter- wire wound
-59	U-50	HaloLight ADJ
ot Req.	Not Req.	Attach to R9A

FTS B11-139 & P1-126 (Panel)
H 76-2.

S

	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	SYLVANIA PART No.	IRC PART No.	
	33KΩ	2	183-0333	BTB-33K	
	33K Ω	2	183-0333	BTB-33K	
	33KΩ	1/2	181-0333	BTS-33K	
	100KΩ	1/2	181-0104	BTS-100K	
	470KΩ	1/2	181-0474	BTS-470K	
	1800Ω	1/2	181-0182	BTS-1800	
	47KΩ	2	183-0473	BTB-47K	
	39KΩ	2	183-0393	BTB-39K	
	4700Ω	5	187-0017		
	330KΩ	1/2	181-0334	BTS-330K	
	470KΩ	1/2	181-0474	BTS-470K	
	2. 2 Meg	1/2	181-0225	BTS-2. 2 Meg	
	33KΩ	1/2	181-0333	BTS-33K	
	10KΩ	1/2	181-0103	BTS-10K	
	470KΩ	1/2	181-0474	BTS-470K	
	330Ω	1/2	181-0331	BTS-330	
	15KΩ	2	183-0153	BTB-15K	
A	22KΩ	1/2	♦ 190-0007	BTS-22K	
B	8200Ω	1/2		BTS-8200	
C	8200Ω	1/2		BTS-8200	
	33KΩ	1/2	181-0333	BTS-33K	
	68KΩ	1/2		BTS-68K	
	680KΩ	1/2	181-0684	BTS-680K	
	3300Ω	1/2	181-0332	BTS-3300	
	680KΩ	1/2	181-0684	BTS-680K	
	100KΩ	1/2	181-0104	BTS-100K	
	■		189-0030		
	2200Ω 5%	1/2	181-02225	BTS-2200 5%	
	2200Ω 5%	1/2	181-02225	BTS-2200 5%	
	1 Meg	1/2	181-0105	BTS-1 Meg	
	330KΩ	1/2	181-0334	BTS-330K	
	680KΩ	1/2	181-0684	BTS-680K	
	470KΩ	1/2	181-0474	BTS-470K	
	680Ω	2	183-0681	BTB-680	
	560Ω	1/2		BTS-560	
	560Ω	1/2		BTS-560	
	1000Ω	1/2		BTS-1000	
	100KΩ	1/2	181-0104	BTS-100K	
	100KΩ	1/2	181-0104	BTS-100K	
	1 Meg	1/2	181-0105	BTS-1 Meg	
	470KΩ	1/2	181-0474	BTS-470K	
	330Ω	1/2	181-0331	BTS-330	
	33KΩ	2	183-0333	BTB-33K	
	1000Ω	1/2	181-0102	BTS-1000	
	8200Ω	1/2	181-0822	BTS-8200	
	15KΩ	1	182-0153	BTA-15K	
	470KΩ	1/2	181-0474	BTS-470K	
	22KΩ	1/2	181-0223	BTS-22K	
	150KΩ	1/2	181-0154	BTS-150K	
	82KΩ	1/2	181-0823	BTS-82K	
	4700Ω	1/2	181- 0472	BTS-4700	
	10Ω	1	182-0100		
	470KΩ	1/2	181-0474	BTS-470K	
	100Ω	1/2	181-0101	BTS-100	
	100Ω	1/2	181-0101	BTS-100	
	15KΩ	2	181-0153	BTB-15K	
	100Ω	1/2	181-0101	BTS-100	
	100Ω	1/2	181-0101	BTS-100	
	15KΩ	2	181-0153	BTB-15K	
	470Ω	2	183-0471	BTB-470	
	4. 3Ω	1/2	189-0007		
	4. 3Ω	1/2	189-0007		
	1 Meg	2		BTB-1 Meg	
	1 Meg	2		BTB-1 Meg	
	1 Meg	2		BTB-1 Meg	
	4. 3Ω	1/2	189-0007		
	2000Ω	5	187-0005	1 3/4A-2000	
	220KΩ	1/2	181-022 4	BTS-220K	
	270KΩ	2	189-0031	BTB-270K	
	270KΩ	2	189-0031	BTB-270K	
	68KΩ	2	189-0032	BTB-68K	

type).
d in one unit.

86C are combined in one unit.
or in this application.

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	SYLVANIA PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	RCA TYPE No.	Halldorson PART No.	Thordarson PART No.
T1	117VAC @2.72A	620VCT .330ADC	5VAC @6A	141-0037		P-3053① ②③ ④				
	SEC. 3	SEC. 4	SEC. 5							
	6.3VAC @2.2A	6.3VAC @12.8A								

① Use low taps only on high voltage secondary.
② Parallel and phase 5 volt windings for Sec. 2.
③ Parallel and phase 6.3 volt @ 7A windings for Sec. 4.
④ Use original shell.

TRANSFORMER (HALO LIGHT)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	SYLVANIA PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	RCA TYPE No.	Halldorson PART No.	Thordarson PART No.
T2	117VAC @.1A	1600VAC		141-0037		P-3170 ① ②				

① Ignore Filament windings.
② Mount differently.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA						
		SYLVANIA PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	RCA TYPE No.	Halldorson PART No.	Thordarson PART No.
T3	Vert. Osc. Trans.	242-0002	A-8125	A-3003	A-97X	209T1 ①	B6702	24A87 ①
T4	Horiz. Output Trans.	241-0012						
T5	Vert. Output Trans.	241-0009	A-8142 ②	A-3038	A-108X		Z1802	26S53
T6A	Yoke (90°) Horiz. (13MH)	100-0011 ③		MDF-90④	Y-50-1	219D1 ④		Y-14
B	Vert. (47MH)							
T7	Horiz. Lin. Coil(.6-4.3MH, tapped)	133-0003	WC-6	MWC-5⑤		209R1		WC-17

① Drill one new mounting hole.
② Drill new mounting holes.
③ Includes capacitor C120, and resistors R112, R113, R114
④ Use original yoke network
⑤ Enlarge mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	SYLVANIA PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.	
T8	4.7KΩ	3.4Ω	143.0023	A-3849	A-3019	S-5Z	Z1102	26S49	

SPEAKER

ITEM No.	RATINGS			REPLACEMENT DATA			NOTES
	SIZE	FIELD	V. C. IMP.	SYLVANIA PART No.	JENSEN PART No.	QUAM PART No.	
SP1	8"	PM	3.4Ω	539-0803	ST-115 Mod. P8-V	82 8A21	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SYLVANIA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Trans.	0ΩCT	0ΩCT					
L2	Ant. Coils	0Ω						
L3	UHF Input Coil	0Ω						
L4	Ant. Coil	0Ω						Channel 13
L5	Neutr. Coil	0Ω						
L6	RF Coil	0Ω						
L7	RF Coils	0Ω						
L8	Mixer Grid Coil	0Ω						Channel 13
L9	Mixer Grid Coils	0Ω						
L10	Fil. Choke	0Ω						
L11	Osc. Plate Coil	0ΩCT						Channel 13
L12	Osc. Coils	0Ω						Channel 6
L13	Osc. Coil	0Ω						
L14	Conv. Plate	.1Ω						
L15	1st Video IF	.1Ω		119-0002	17-4531 *		6232 ■	Includes trap
L16	2nd Video IF	.1Ω	.1Ω	119-0003	17-4531 ▲		6232	Includes trap
L17	3rd Video IF	.1Ω	.1Ω	119-0004			6233	Includes trap
L18	Fil. Choke	0Ω		147-0014	19-3001	TV-189	4604	
L19	4th Video IF	.1Ω	.1Ω	119-0005	17-4531 ♦		6234	
L20	Cathode Trap	0Ω	0Ω	118-0011	20-1045		6219	
L21	5th Video IF	.1Ω	.1Ω	126-0001			6234 ▲	Includes 1N105 crystal detector
L22	Series Peaking Coil	1.5Ω		118-0010	19-1005		4612	9. 6 Microhenries
L23A	Series Peaking Coil	5.5Ω		† 131-2006	19-3160	TV-184	4644	160 Microhenries
B	Shunt Peaking Coil	9Ω			19-3300		6155	330 Microhenries
L24	4.5 MC Trap	5.5Ω		130-0001	20-1005	TV-151	1470	
L25A	Series Peaking Coil	5Ω		† 131-2007	19-3125	TV-184	6153	135 Microhenries
B	Shunt Peaking Coil	8Ω			19-3250	TV-185	6181	250 Microhenries
L26	Sound IF	5.5Ω		130-0001	17-3400	TV-151	1469	
L27	RF Choke	3.2Ω		146-0012	19-3093	TV-181	6177	86 Microhenries

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	DC RES.		REPLACEMENT DATA				NOTES
		PRI.	SEC.	SYLVANIA PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L28	Ratio Det.	12Ω	1.5ΩCT	128-0008	17-3497	TV-115	6205	Tertiary winding= .95Ω
L29	Horiz. Discrim.	39Ω	85ΩCT	128-0009	20-1400 ▲	TV-160 ▲	6194 ▲	Cathode winding= 10Ω
L30	Ringing Coil	48Ω		146-0005	19-1575	TV-163	6210	
L31	RF Choke	1.5Ω		118-0010	19-1005		4612	9.6 Microhenries
L32	RF Choke	1.5Ω		118-0010	19-1005		4612	9.6 Microhenries
L33	RF Choke	1.5Ω		118-0010	19-1005		4612	9.6 Microhenries

† Both peaking coils wound on same form.
* Drill mounting holes and use secondary and trap windings.
■ Use secondary and trap windings.
▲ Drill mounting holes.
♦ Detune trap windings and drill mounting holes.
▬ Use adaptor plate and add IN105 crystal detector externally.

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	SYLVANIA PART No.	Stancor PART No.	Merit PART No.	Triad PART No.	Halldorson PART No.	Thordarson PART No.
L34	.330ADC	41.6Ω	1.26 Hy.	155-0008	C-2326 ①			C5037 ①	

① Drill one new mounting hole.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			SYLVANIA PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG S/B	4/10 A 125V	191-0016	487-0008	313.400 (3AG S/B 4/10A)	351011	MDL4/10	4406

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		SYLVANIA PART No.	SYLVANIA PART No.	FEDERAL PART No.	
M2	1N105	1N105	1N105		Video Detector

MISCELLANEOUS

ITEM No.	PART NAME	SYLVANIA PART No.	NOTES
M3	Dial Light	611-0047	#47 Bayonet
M4	Tube	611-2702	Cold cathode HaloLight *
M5	Tuner	323-0021	UHF Chassis 1-513-2 & 1-513-4
M6	Tuner	323-0039	VHF
M7	Switch	573-0005	Horiz. Size
M8	Regulator Tube	40B2	Horiz. Output
M9	Focus Magnet	400-0018	Includes centering device
M10	Ion Trap	400-0017	
M11	Correction Magnet	400-0019	3 used
	Knob	743-0027	Channel Selector & VHF dial 331 Series
	Knob	743-0026	Channel Selector & VHF dial 336 Series
	Knob	740-0029	Fine tuning
	Knob	744-0021	HaloLight * control
	Knob	744-0023	Brightness
	Knob	744-0022	Volume
	UHF Dial	722-0027	1-513-2, 1-513-4 Chassis
	UHF Dial	722-0028	Dummy 1-513-1, 1-513-3 chassis
	Escutcheon	714-0028	Knob
	Escutcheon	714-0029	Knob & prism assembly
	Safety Glass	710-0010	

* Sylvania Trademark