



1688

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs from front panel of cabinet.
2. Remove 5 wood screws. Remove rear cover.
3. Disconnect speaker leads.
4. Lay cabinet face down on a soft surface.
5. Remove 5 cabinet base bolts. Restore cabinet to its normal upright position and lift cabinet from cabinet base.
6. Remove 2 speaker nuts. Remove speaker.



MODEL	CHASSIS
14TT50	"CT"
17TU51, 17TU52	"CU"

OLYMPIC MODELS 14TT50, 17TU51,
17TU52 (Ch. CT, CU)

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

Remove 3 wood screws holding metal molding at top edge of the safety glass. Remove molding and safety glass. Use extreme caution when removing safety glass.

SERVICE ADJUSTMENT LOCATION

See tube placement chart on page 5.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The horizontal oscillator may be adjusted from the rear panel of the chassis. Set the horizontal hold control at the center of its range and adjust the horizontal frequency slug (L13) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate sound IF detector buzz, it is necessary to remove the rear cover and supply power to the chassis. Adjust the buzz control (R8) for maximum volume and minimum buzz.

FUSES

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

CENTERING

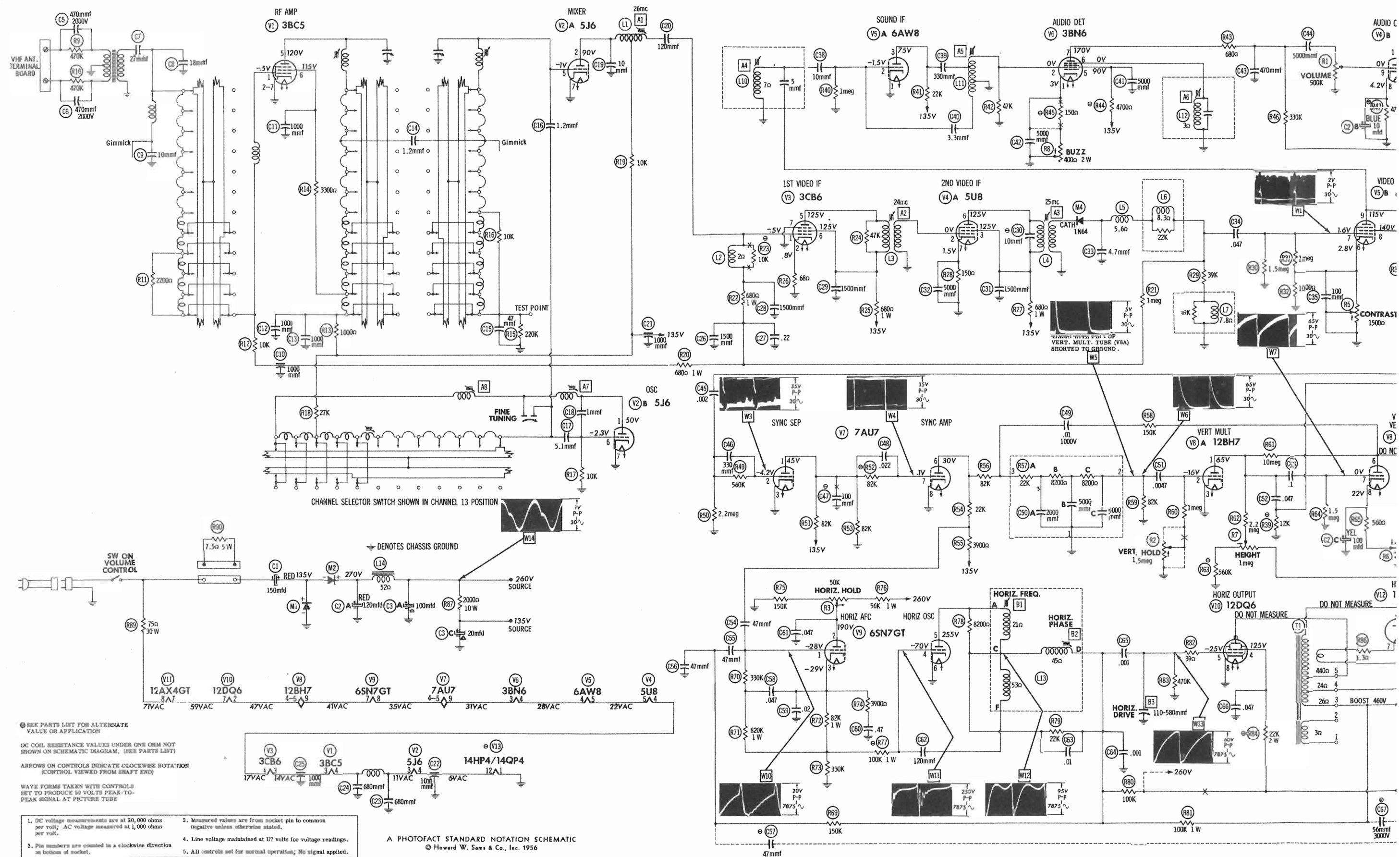
Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube, located flush against the deflection yoke. Rotate the two rings around the neck of the tube until the picture is properly centered.

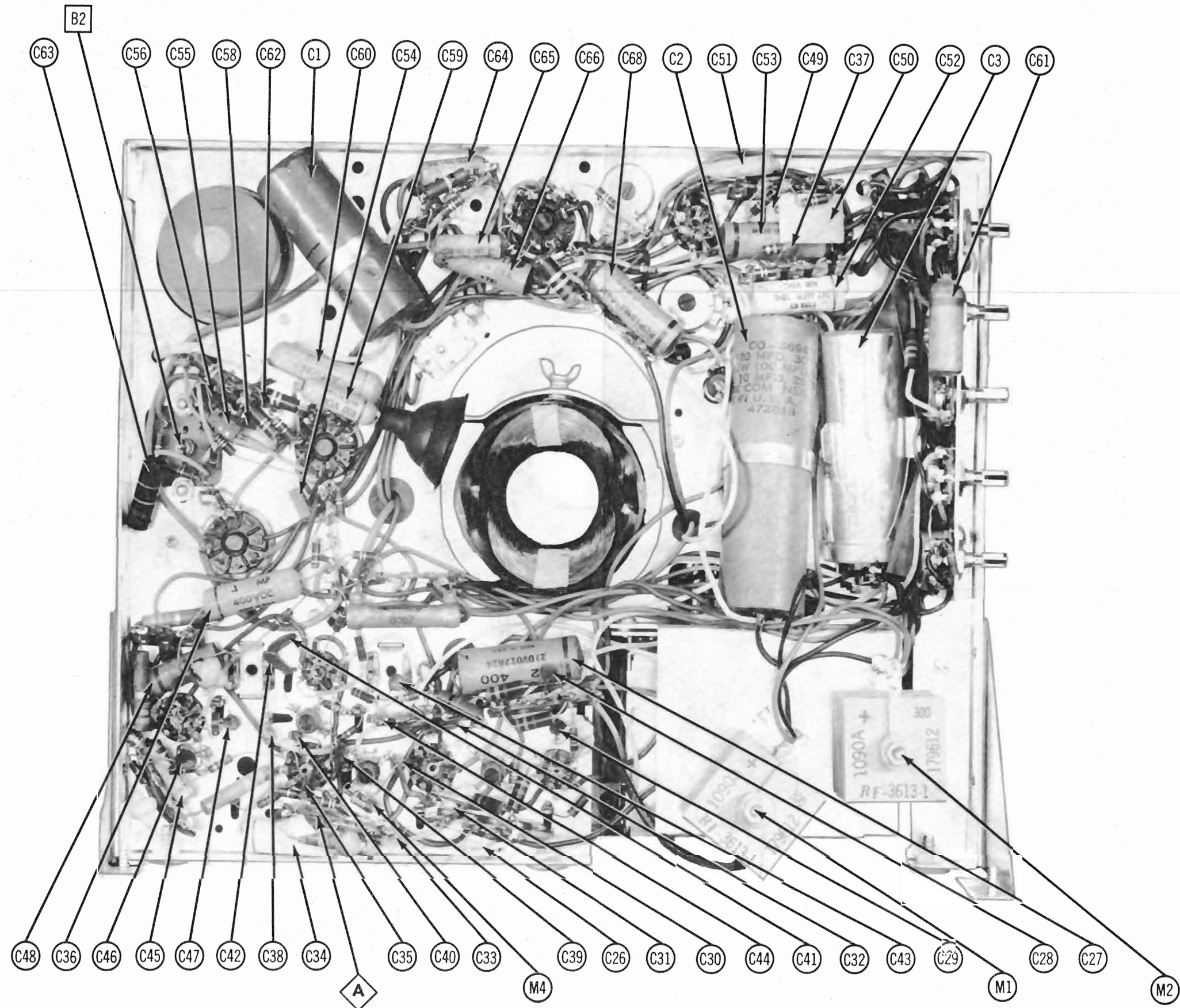
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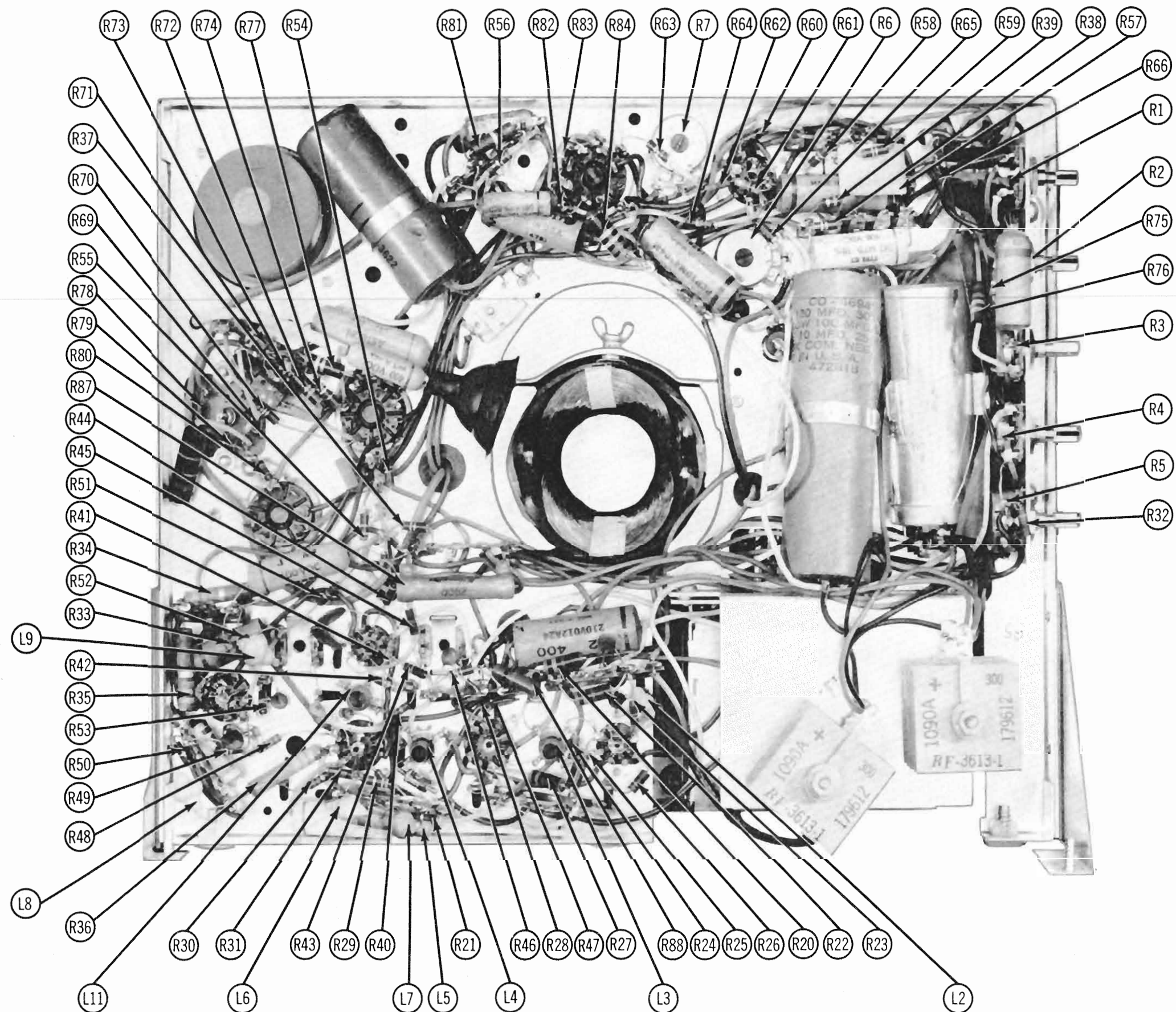
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SET 337 FOLDER 13





CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

OLYMPIC MODELS 14TT50, 17TU51,
17TU52 (Ch. CT, CU)

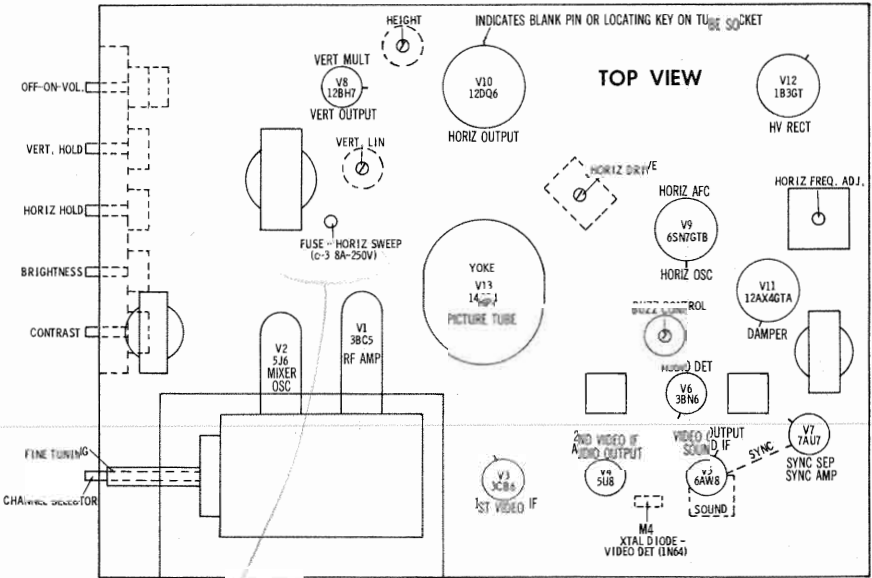
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	3BC5	1Meg	0Ω	3.5Ω	2.5Ω	† 3000Ω	† 6500Ω	0Ω		
V2	5J6	† 30K	† 12K	2.5Ω	1.5Ω	220K	10K	0Ω		
V3	3CB6	1Meg	68Ω	3.5Ω	4Ω	† 2700Ω	† 2700Ω	0Ω		
V4	5U8	† 1800Ω	.1Ω	† 2700Ω	4Ω	5Ω	† 2700Ω	150Ω	470Ω	• 250K
V5	6AW8	0Ω	1Meg	† 24K	7Ω	5Ω	• 120Ω	550K	† 33K	† 6500Ω
V6	3BN6	• 350Ω	2.6Ω	8Ω	7Ω	† 6500Ω	3Ω	† 330K		
V7	7AU7	† 50K	2.7Meg	0Ω	9Ω	9Ω	† 28K	130K	0Ω	8Ω
V8	12BH7	*1.8Meg	• 1.6Meg	0Ω	11Ω	11Ω	*3000Ω	1.5Meg	• 2300Ω	10Ω
V9	6SN7GT	1.5Meg	• † 40K	400K	400K	*70K	0Ω	10Ω	9Ω	
V10	12DQ6	TP	11Ω	NC	† 22K	470K	TP	14Ω	0Ω	TOP CAP *24Ω
V11	12AX4GT	NC	NC	170K	NC	† 50Ω	NC	14Ω	16Ω	
V12	1B3GT		PINS 1 - 8	HAVE	INF	RESISTANCE				TOP CAP *465Ω
V13	14HP4	0Ω	160K	PIN 6 † 2000Ω	PIN 10 *11Ω	PIN 11 • † 370K	PIN 12 1.5Ω			

† MEASURED FROM OUTPUT OF M2.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
* MEASURED FROM PIN 3 OF V11.
TP TIE POINT
NC NO CONNECTION.

Submitted
2/7/58

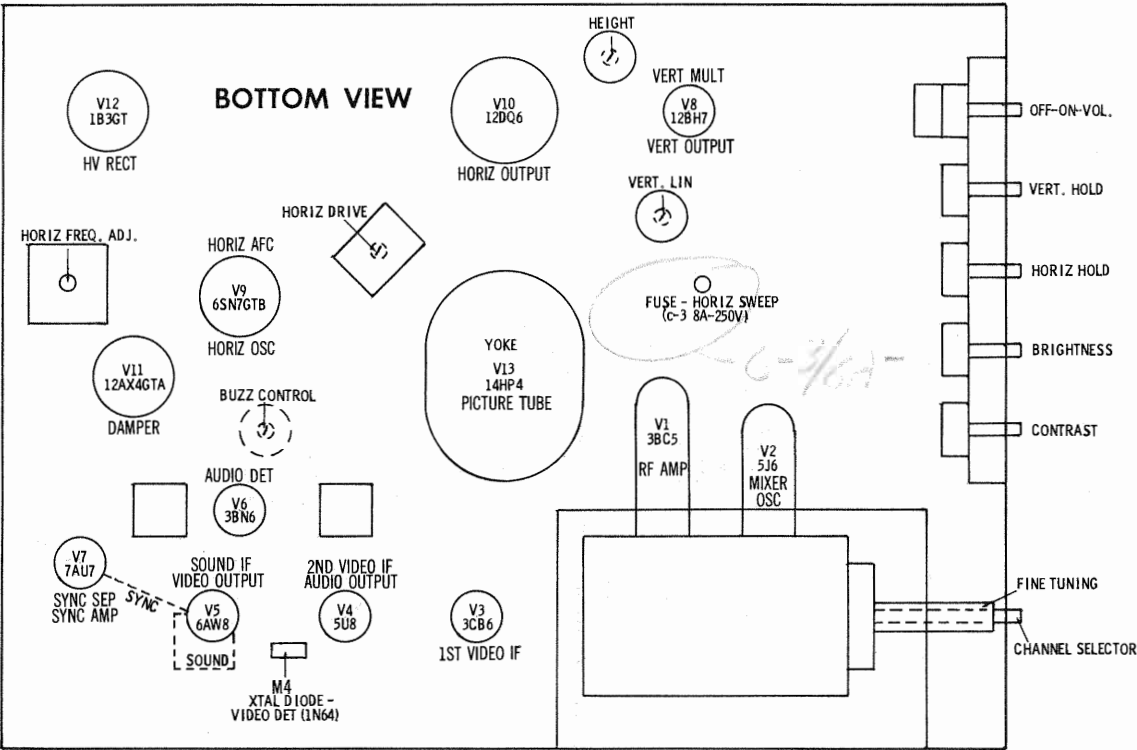
TUBE PLACEMENT CHART



(C-3/6A-250V)
Submitted
2/7/58

OLYMPIC MODELS 14T50, 17T51,
17T52 (Ch. CT, CU)

BOTTOM VIEW



TUBE PLACEMENT CHART

TUBE FAILURE CHECK CHART

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

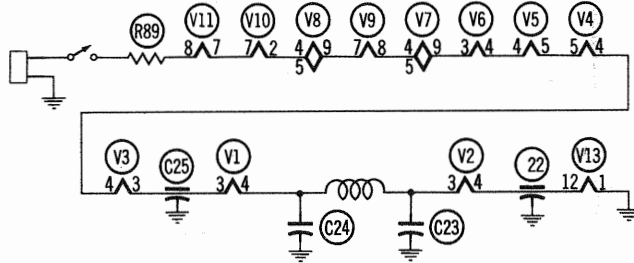
POWER SUPPLY FAILURE
No raster, no sound - Selenium Rectifiers (M1 & M2)

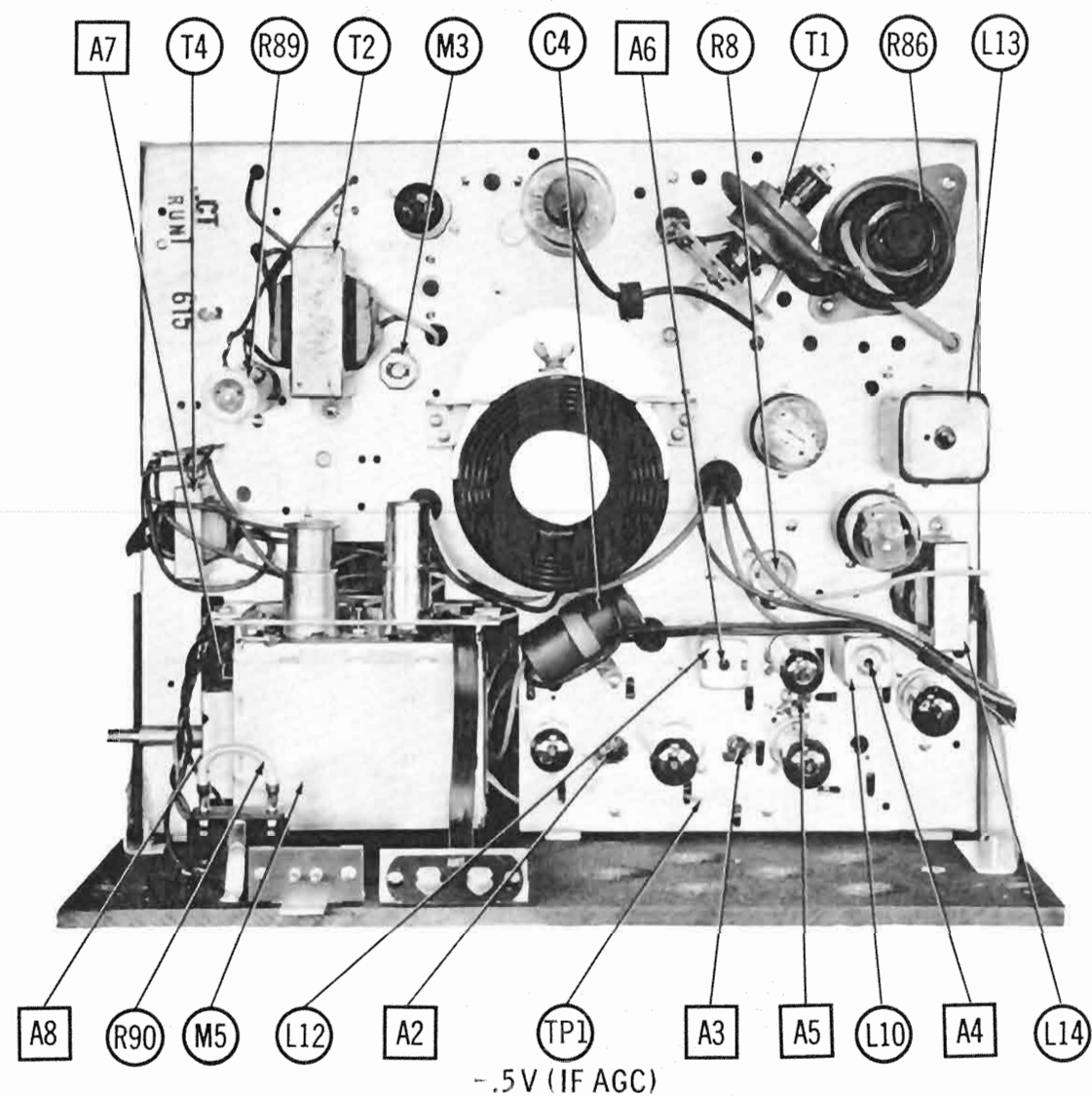
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V2, V3, V4, V5
No pic, no sound, has snow - V1, V2, V3
No pic, has sound, has raster - V5, V13
Has pic, no sound - V4, V5, V6

SYNC FAILURE
No vert. sync - V7, V8
No horiz. sync - V7, V9
No vert. or horiz. sync - V7

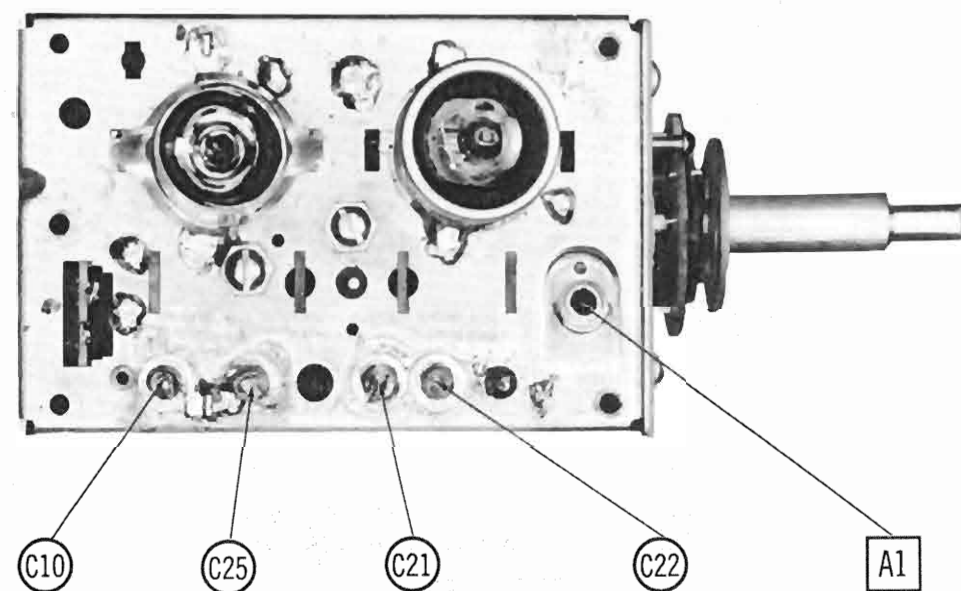
SWEEP FAILURE
No raster, has sound - V9, V10, V11, V12, V13, Fuse (M3)
No vertical deflection - V8
Poor vert. linearity or foldover - V8
Poor horiz. linearity or foldover - V9, V10, V11
Narrow picture - V9, V10, V11, V12, M1, M2
Vsync. off freq. - V7, V8
Hsync. off freq. - V7, V9

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

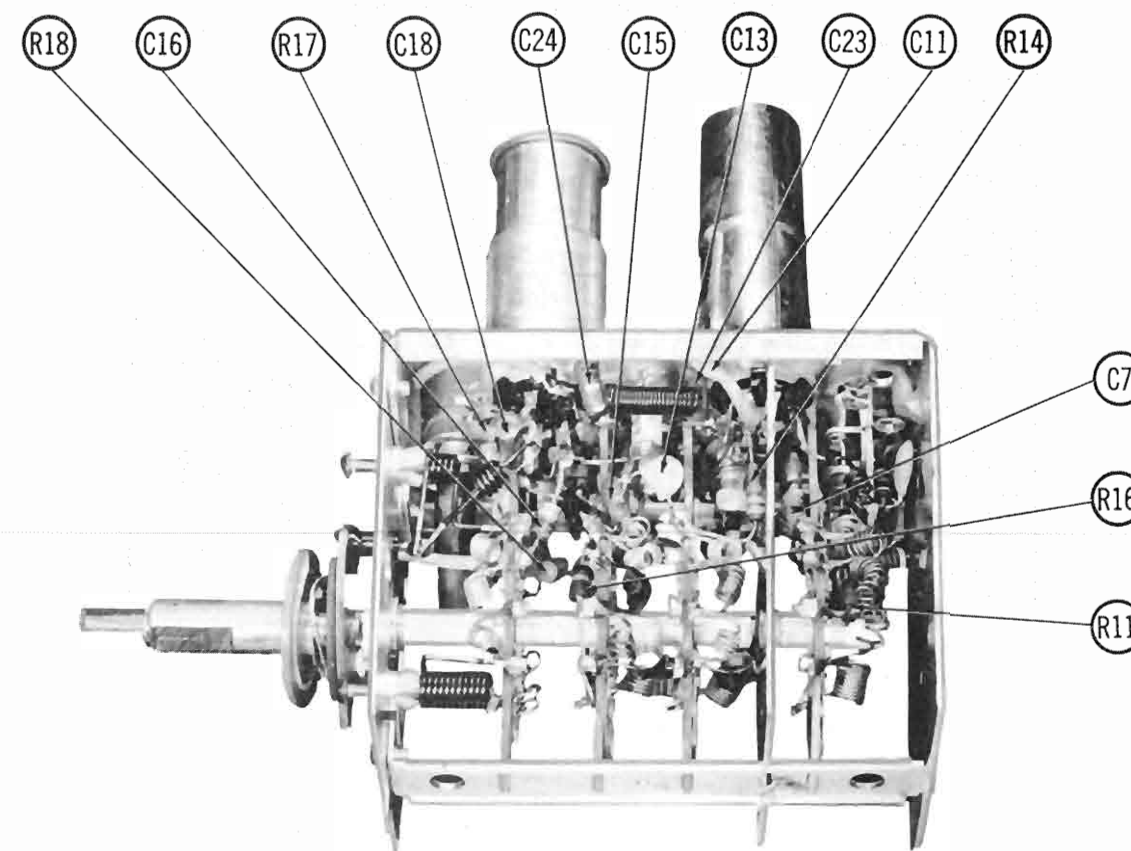




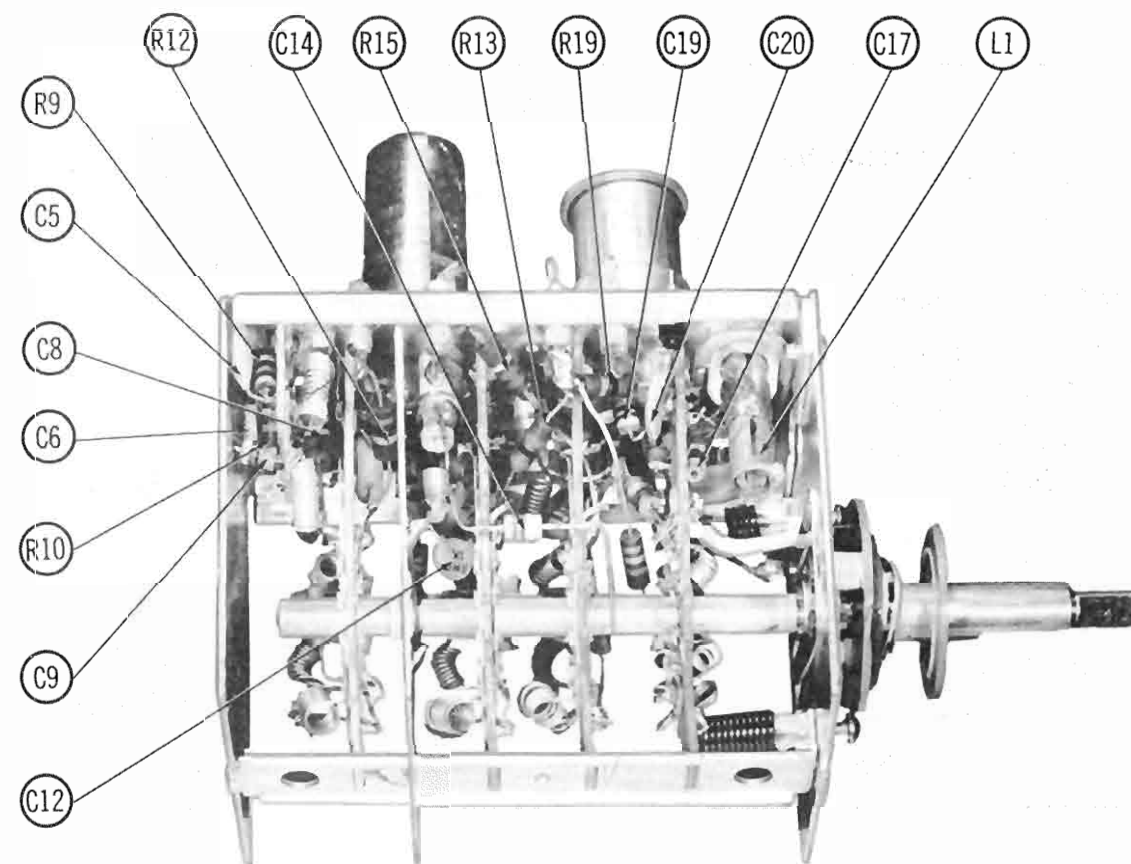
CHASSIS TOP VIEW



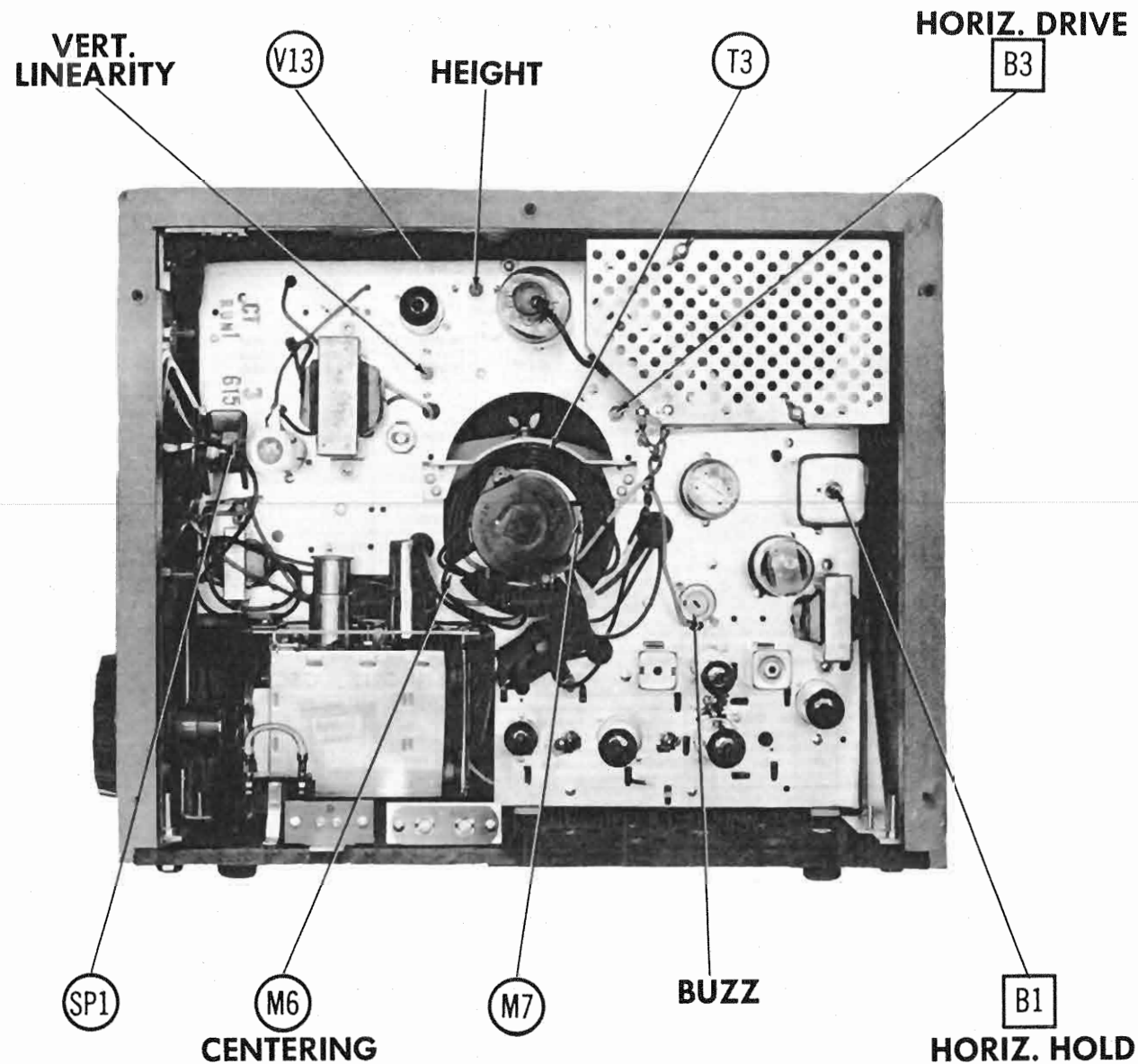
RF TUNER-TOP VIEW



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern. Connect a short jumper across terminals "C" and "D" of L13.

Set the horizontal hold control fully clockwise. Adjust the horizontal frequency slug (B1) until the picture falls into sync.

Remove the jumper from L13. Connect the vertical amplifier of the scope to terminal "C" of L13 thru a 5MMF capacitor.

Adjust the horizontal phase slug (B2) for a waveform similar to Fig. 3 with broad and narrow peaks of equal amplitude.

If necessary, during the adjustment of B2, keep the picture in sync with the horizontal hold control or B1.

Remove the scope and retouch B1 for the following conditions:

1. At full clockwise position of the horizontal hold control a blanking bar or picture jitter should be visible.
2. At full counter clockwise position of the horizontal hold control the picture should be at the point of losing sync.

Adjust the horizontal drive trimmer (B3) clockwise as far as possible without the presence of vertical white lines or compression near the center of the picture.

If neither of these conditions occur, adjust B3 for a picture slightly wider than necessary to fill the picture mask horizontally.

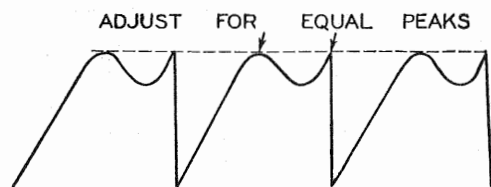


FIG. 3

ALIGNMENT INSTRUCTIONS

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 (V9) to disable the high voltage.

VIDEO IF ALIGNMENT

In step 2 use only enough sweep generator output for usable pattern on scope. 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 being careful not to let it touch the grounded shield. Low side to chassis.	Not used	26MC	Any unused channel	USE VTVM. DC probe to point Δ . Common to chassis.	A1	Adjust for maximum deflection.
2. "	"	"	24MC	"	"	A2	"
3. "	"	"	25MC	"	"	A3	"
4. "	"	24MC (10MC Swp)	23.75MC 26.25MC	"	Vert. Amp. thru 10K Ω to point Δ . Low side to chassis.		Connect the negative lead of a 3 volt battery to the ungrounded side of C27. Connect positive to chassis. Check for response similar to Fig. 1. If necessary retouch A1 and A2. A1 affects the high frequency side of response curve and A2 affects the low frequency side.

SOUND IF ALIGNMENT USING ON THE AIR SIGNAL

Connect the DC probe of the VTVM to pin 2 of the audio detector tube (V8). Common to chassis. Turn the set on and tune in a strong TV station. Adjust A4 and A5 for maximum deflection on VTVM. Disconnect VTVM from the receiver. Set the buzz control (R8) to its mid-range position and adjust the quadrature coil (A6) for maximum volume. Adjust R8 for maximum volume and minimum buzz. Retouch A4 and A5 for maximum volume.

OSCILLATOR ALIGNMENT

Connect the negative lead of a 3 volt battery to the ungrounded side of C27. Positive to chassis. Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms. 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 120 Ω Carbon Resistors	Across antenna terminals with 120 Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 50K to point A. Low side to chassis.	A7	Adjust to place sound marker in trap notch as in Fig. 2. Video marker should fall at 50%.
6. "	"	85MC (10MC Swp)	83.25MC 87.75MC	6	"	A8	"

RF ALIGNMENT

The RF and Mixer portion of this receiver have been properly aligned at the factory and are very stable. Alignment of this portion should not be required in the field.

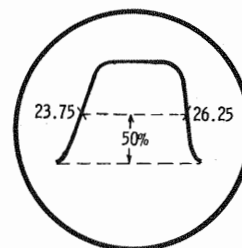


FIG. 1

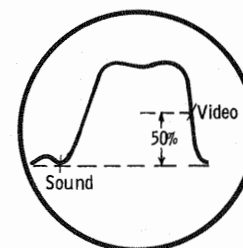


FIG. 2

OLYMPIC MODELS 14T50, 17T51,
17T52 (Ch. CT, CU)

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES	ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	3BC5		V7	Sync Sep.-Sync Amp.	7AU7	
V2	Mixer-Oscillator	5J6		V8	Vert. Mult.-Vert. Output	12BH7	
V3	1st. Video IF Amplifier	3CB6		V9	Horiz. AFC-Horiz. Osc.	6SN7GT	
V4	2nd. Video IF Amplifier-Audio Output	5U8		V10	Horiz. Output	12DQ6	
V5	Video Output-Sound IF Amp.	6AW8		V11	Damper	12AX4GT	
V6	Audio Detector	3BN6		V12	HV Rectifier	1B3GT	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA	NOTES
V13	14HP4 or 14QP4 17AVP4	14QP4 17AVP4A ① 17AVP4A ② 17AVP4 ③ 17AVP4 ④

ELECTROLYTIC CAPACITORS

ITEM No.	RATING	REPLACEMENT DATA	NOTES
C1	150	CO3622	
C2A	120	CO4694	
C2B	10	PR1-100	
C3A	100	PR4-300	
C3B	20	XA004	
C3C	2	TC495	
C3D	4	TD-150-150	
C4	10	S-105	

* Non-catalog item.

FIXED CAPACITORS

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

ITEM No.	RATING	REPLACEMENT DATA	NOTES
C5	470	CO3622	
C6	470	CO4694	
C7	27	PR1-100	
C8	18	PR4-300	
C9	10	XA004	
C10	1000	TC495	
C11	1000	TD-150-150	
C12	1000	S-105	
C13	1000	Q-100	
C14	1.2	MTD-3520	
C15	47	FM-4510	
C16	1.2	TVA-1422	
C17	5.1	R2307 *	
C18	1		
C19	10		
C20	120		
C21	1000		
C22	1000		
C23	680		
C24	680		
C25	1000		
C26	1500		
C27	.22		
C28	1500		
C29	1500		
C30	10		
C31	1500		
C32	5000		
C33	4.7		
C34	.047		
C35	100		
C36	.1		
C37	1500		
C38	10		
C39	330		
C40	3.3		
C41	5000		
C42	5000		
C43	470		
C44	5000		
C45	.002		
C46	330		
C47	100		
C48	.022		
C49	.01		
C50A	2000		
C50B	5000		
C51	.0047		
C52	.047		
C53	.1		
C54	47		
C55	47		
C56	47		
C57	47		
C58	.047		
C59	.02		
C60	.47		
C61	.047		
C62	120		
C63	.01		
C64	.001		
C65	.001		
C66	.047		
C67	56		
C68	.1		
C69	68		

† Items C50A, C50B, C50C, R57A, R57B and R57C are combined in one unit.

Note 1. Some versions may use 6.8MMF unit (part #C04417) in this application.

Note 2. Not used in some versions.

Note 3. Used in CU chassis only.

Note 4. Some CT chassis may use 56MMF unit (part #CCD560K) in this application. CU chassis uses 100MMF unit in this application.

PARTS LIST AND DESCRIPTIONS CONTROLS

ITEM No.	RATING	REPLACEMENT DATA	INSTALLATION NOTES
R1A	500K	PT3615	
R1B	50K	Not Req.	
R1C	Switch	Not Req.	
R2A	1.5Meg	PT3616-1	
R3A	50K	Not Req.	
R3B	50K	Not Req.	
R4A	1.5Meg	PT3616-1	
R5A	1500Ω	Not Req.	
R5B	5000Ω	Not Req.	
R6A	1Meg	Not Req.	
R7A	1Meg	Not Req.	
R8	400Ω	PT3611	

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA	NOTES
R9	470K	BTS-470K	
R10	470K	BTS-470K	
R11	2200Ω	BTS-2200	
R12	10K	BTS-10K	
R13	1000Ω	BTS-1000	
R14	3300Ω	BTS-3300	
R15	220K	BTS-220K	
R16	10K	BTS-10K	
R17	10K	BTS-10K	
R18	27K	BTS-27K	
R19	10K	BTS-10K	
R20	680Ω	BTA-680	
R21	1Meg	BTS-1Meg	
R22	680Ω	BTA-680	
R23	10K	BTS-10K	
R24	47K	BTS-47K	
R25	680Ω	BTA-680	
R26	68Ω	BTS-68	
R27	680Ω	BTA-680	
R28	150Ω	BTS-150	
R29	39K	BTS-39K	
R30	1.5Meg	BTS-1.5Meg	
R31	1Meg	BTS-1Meg	
R32	1000Ω	BTS-1000	
R33	12K	BTS-12K	
R34	3300Ω	BTS-3300	
R35	3300Ω	BTS-3300	
R36	33K	BTS-33K	
R37	150K	BTS-150K	
R38	150K	BTS-150K	
R39	12K	BTS-12K	
R40	1Meg 5%	BTS-1Meg 5%	
R41	22K	BTS-22K	
R42	47K	BTS-47K	
R43	680Ω	BTS-680	
R44	4700Ω	BTS-4700	
R45	150Ω	BTS-150	
R46	330K	BTS-330K	
R47	470Ω	BTS-470	
R48	22K	BTS-22K	
R49	560K	BTS-560K	
R50	2.2Meg	BTS-2.2Meg	

† Items R57A, R57B, R57C, C50A, C50B, C50C are combined in one unit.

Note 1. Not used in some versions.

Note 2. Some versions use an 82K in this application.

Note 3. Some versions use a 3300Ω in this application.

Note 4. Some versions use a 680Ω in this application.

Note 5. Some versions use a 150K in this application.

Note 6. Some versions use a 10K, 2 W in this application, also in chassis CU a 8200Ω, 2 W is used in this application.

Note 7. Some versions use a 1Meg in this application.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA
T1	Horiz. Output Trans.	TR3597-2
T2	Vert. Output Trans.	TR3689
T3A	Yoke (70°) Horiz.	CL3847 ④
T3B	Yoke (90°) Horiz.	CL3600-1 ⑤
T3C	Yoke (41MH)	DF607 ⑥

- ① Drill new mounting hole(s).
- ② Use 18 to 20 turns ratio.
- ③ Connect blue lead to plate (pin 6 of V8). Connect red lead of transformer to yellow lead of yoke. Remove green lead of yoke from ground and connect it to green lead of transformer to junction of capacitor C4 and resistor R66.
- ④ Used in CT chassis only.
- ⑤ Used in CU chassis only.
- ⑥ Connect horizontal yoke damping network across terminals #3 and #7. Use original if necessary.
- ⑦ Remove capacitor from terminals #1 and #2.

* HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5	5	5	5	5	5	5	5
4	4	4	4	4	4	4	6
3	3	3	3	1	3	3	2

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE	REPLACEMENT DATA	NOTES
T4	17K	TR4697	① Drill new mounting holes.

SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA	NOTES
SP1	4"	PM	3-4Ω

COILS (RF-IF)

ITEM No.	USE	DC RES.	REPLACEMENT DATA	NOTES
L1	1st. Video IF	2Ω	CL1535	
L2	RF Choke	.1Ω	CL4413	
L3	2nd. Video IF	.1Ω	CL4413	
L4	3rd. Video IF	.1Ω	CL4413	
L5	Series Peak-ing Coil	5.6Ω	CK4415	
L6	Series Peak-ing Coil	8.3Ω	CL1358	
L7	Shunt Peak-ing Coil	7.8Ω	CL1537	
L8	Series Peak-ing Coil	7.3Ω	CL3403	
L9	Shunt Peak-ing Coil	15Ω	CL3403	
L10	1st. Sound IF	7Ω	CL3614	
L11	2nd. Sound IF	3.4Ω	CL4021	
L12	Quadrature Coil	3Ω	CL3603-1	

* Parallel with 22K resistor.

■ Parallel with 1Meg resistor.

▲ Parallel with 39K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.	REPLACEMENT DATA	NOTES
L13	21Ω	TR2990-1	

* Reverse coil mounting in can.

FILTER CHOKE

ITEM No.	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (1000 μH)	REPLACEMENT DATA	NOTES
L14	.190A	52Ω	.6 HY	CK4047	

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA	NOTES
M1	.190A	RF-3613-1	
M2	.190A	RF-3613-1	

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA	NOTES
M3	"C"	3/8A 250V	FU4345	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA	NOTES
M4	IN64	IN64	Video detector (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M5	Tuner	CL4546	VHF (Pentode) Chassis CT
M6	Tuner	CL4692	VHF (Pentode) Chassis CU
M7	Centering Device	PP2763	
M8	Ion Trap	PP2623	
B3	Trimmer Cap.	CT3526	
	Cabinet	CA4706	Horiz. Drive (110-580MMF)
	Cabinet	CA4707	Model 14TT50
	Cabinet	CA4707-1	Model 17TU51
	Cabinet	CA4708	Model 17TU52
	Knob	KN3669-2	Channel selector - Model 14TT50
	Knob	KN4711	Channel selector - Model 17TU52
	Knob	KN4711-1	Channel selector - Model 17TU51
	Knob	KN4712	Fine tuning - Model 14TT50
	Knob	KN4712-1	Fine tuning - Model 17TU51
	Knob	KN3671-2	Fine tuning - Model 17TU52
	Knob	KN4713	Control (5 used) Model 14TT50
	Mask	KN4713-1	Control (5 used) Model 17TU51
	Mask	PP4717	Model 17TU51
	Mask	PP4717-1	Model 17TU52
	Mask	PP4718	Model 14TT50
	Safety Glass	PP4721	Model 14TT50
	Safety Glass	PP4722	Models 17TU51, 17TU52