

HORIZ.  
VERT.  
HOLD

VOLUME  
CONTROL

BRIGHTNESS  
CONTRAST

CHANNEL  
SELECTOR  
FINE TUNING

ON-OFF  
SW.

TELE-TONE MODELS  
TV-250, TV-254

TELE-TONE MODEL TV-250	
TRADE NAME	Tele-Tone Models TV-250, TV-254
MANUFACTURER	Tele-Tone Radio Corp., 540 W. 58th St., New York, New York
TYPE SET	Television Receiver
TUBES	Seventeen
POWER SUPPLY	110-120 Volts AC-60 Cycle
TUNING RANGE	Channels 2 thru 13
RATING	1.45 Amp. at 117 Volts AC
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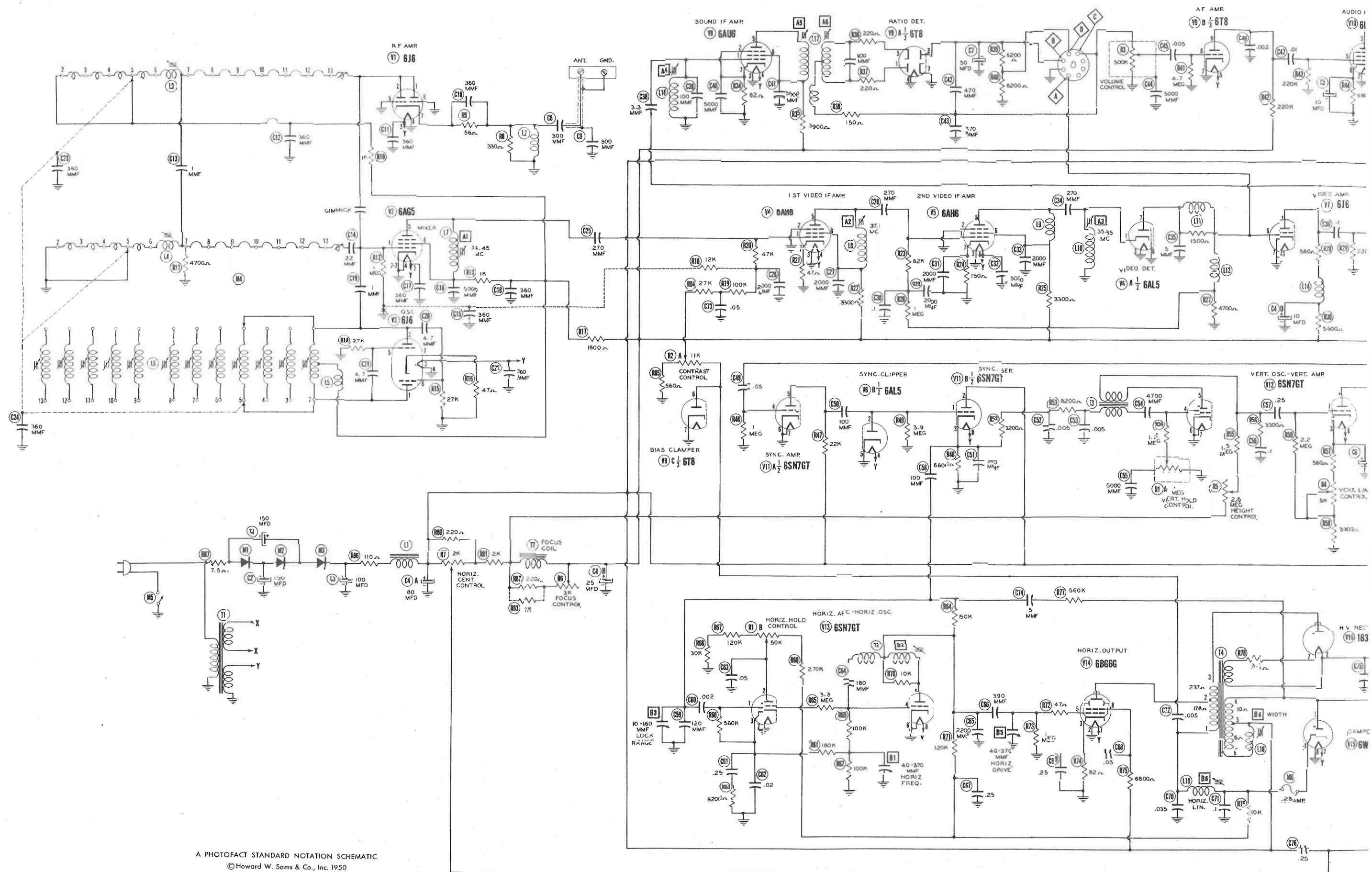
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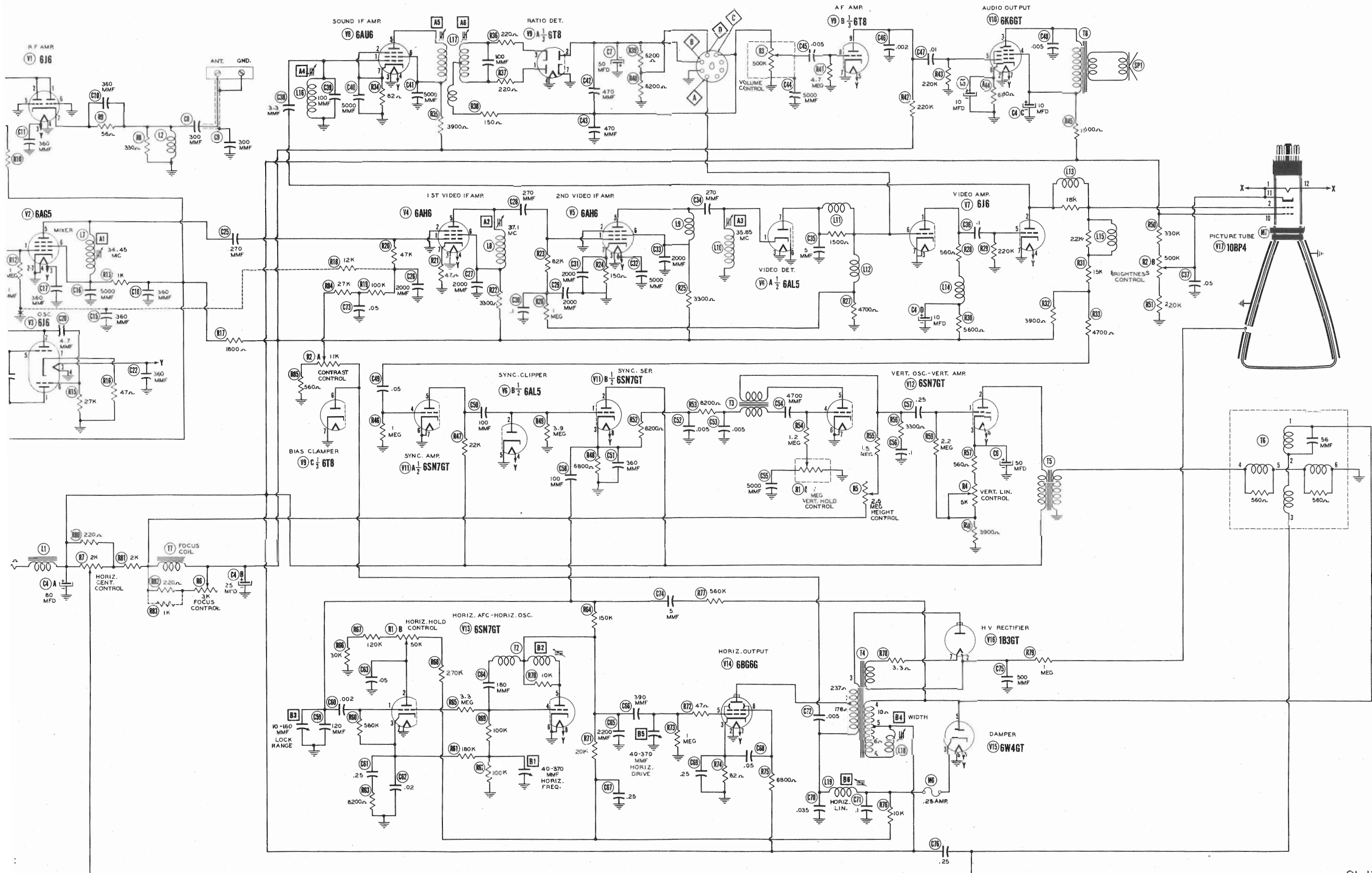
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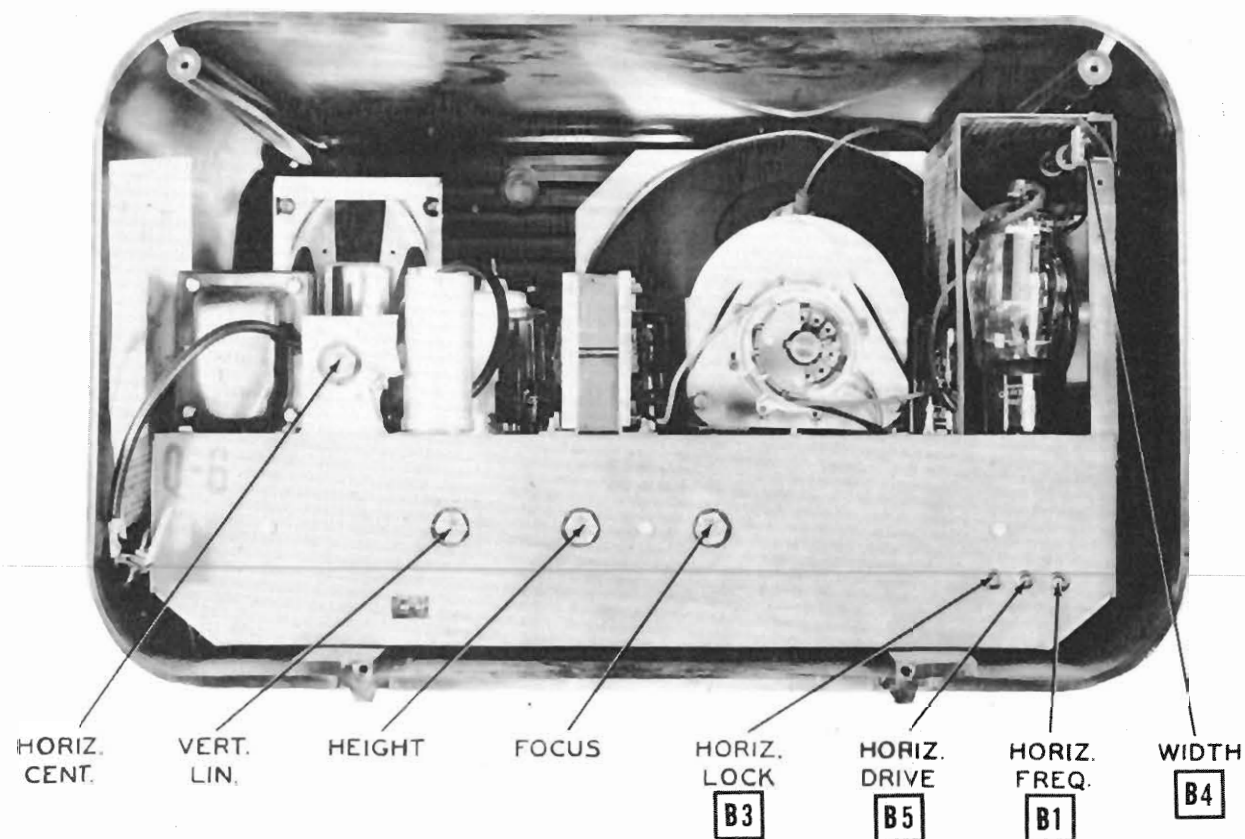
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SET 91

FOLDER 13







CABINET-REAR VIEW

## HORIZONTAL OSCILLATOR AND LINEARITY ADJUSTMENTS

### HORIZONTAL OSCILLATOR ALIGNMENT CHECK:

Tune in test pattern and turn horizontal hold control to extreme counter-clockwise position. Picture should remain in synchronization. Turn channel switch to another channel and then back to the original channel. Normally, the picture should be out of synchronization. Turn the control clockwise and the picture should slowly begin to synchronize and finally lock-in. This should occur when the control is approximately 90° from the extreme counter-clockwise position. The picture should remain in synchronization for another 90° in the clockwise direction of the control. At the extreme clockwise position the picture should again drop out of synchronization and 3½ to 4½ bars should be seen sloping downward to the right. If the receiver fails to hold synchronization during this check with the hold control at the extreme counter-clockwise position or fails to hold synchronization for at least 60° in the clockwise direction from the point when it drops into "sync" it will be necessary to align the horizontal oscillator circuit as follows:

#### (A) HORIZONTAL OSCILLATOR ALIGNMENT:

Turn horizontal hold control to extreme clockwise position. Tune in test pattern and adjust trimmer B1 until picture is out of sync and shows 3½ to 4½ bars sloping downward to the right. If the trimmer has insufficient range, set it to its mid-position (one turn from tight) and adjust slug B2 until bars appear.

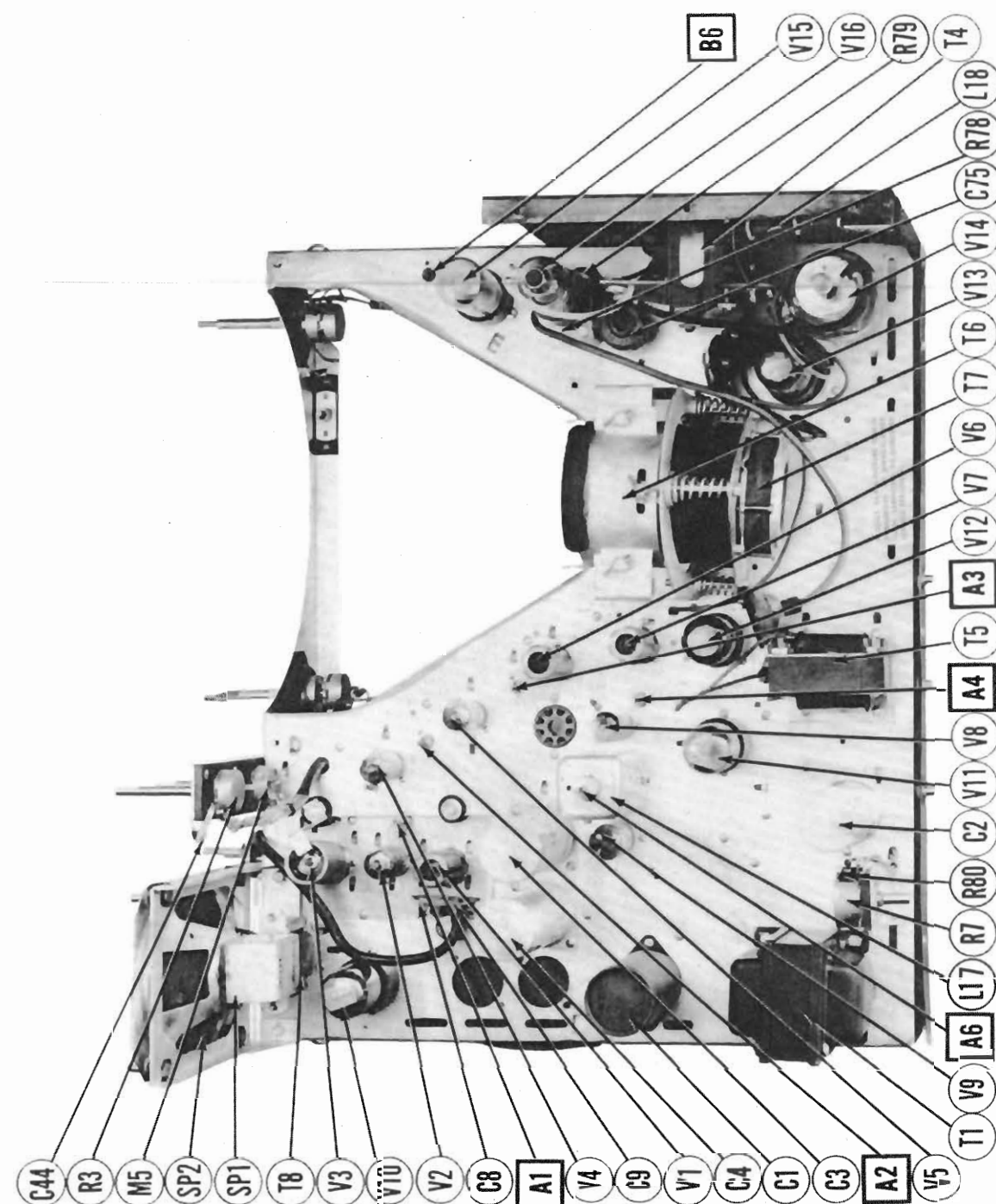
#### (B) HORIZONTAL LOCKING ALIGNMENT:

Turn the horizontal hold control to full counter-clockwise position. Switch to another channel and back to the original again. Slowly turn horizontal hold control clockwise and note the least number of diagonal bars present just before picture syncs. If more than 4½ bars are present just before picture syncs adjust "horizontal lock" trimmer B3 slightly clockwise. If less than 3½ bars are present adjust B3 slightly counter-clockwise and switch channel selector to another channel and back again. Re-count bars present at the "lock-in" point. Repeat this procedure until 3½ to 4½ bars are present.

Repeat steps (A) and (B) until conditions exist as outlined under "Horizontal Oscillator Alignment Check".

#### WIDTH, DRIVE & HORIZONTAL LINEARITY ADJUSTMENTS:

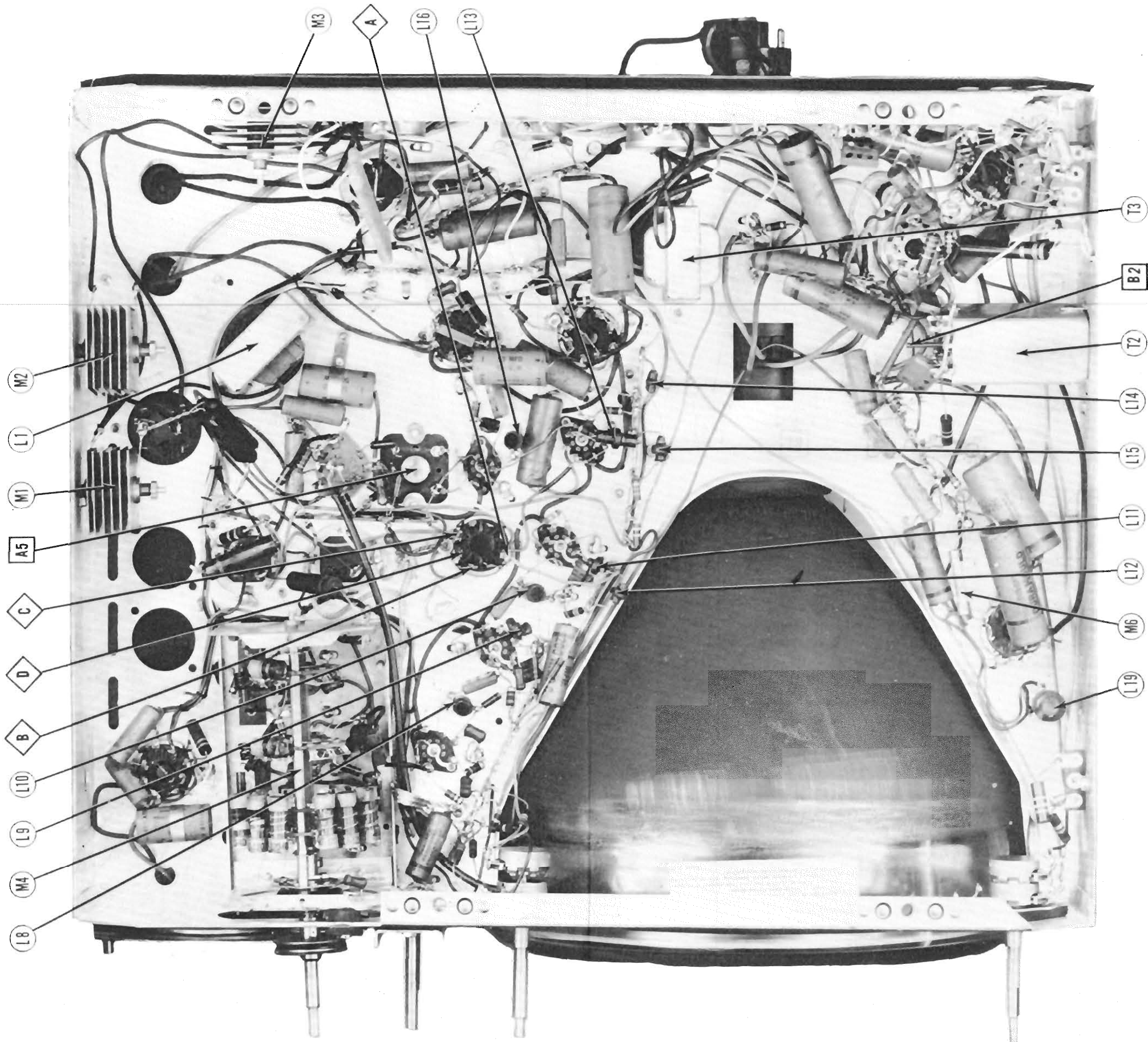
Turn width control B4 to maximum clockwise position. Adjust "horizontal drive" trimmer B5 for maximum brightness and linearity. Adjust horizontal linearity B6 for best linearity in the right half of the picture. Readjust width control until picture fills the mask.



CHASSIS TOP VIEW

TELE-TONE MODELS  
TV-250, TV-254





CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

TELE-TONE MODELS  
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VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	95VDC	95VDC	6.3VAC	0V.	0V.	0V.	0VDC		
V 2	6AG5	-2VDC	0V.	6.3VAC	0V.	10VDC	10VDC	0V.		
V 3	6Z6	95VDC	95VDC	6.3VAC	0V.	8-4.2VDC	8-3.8VDC	-4VDC		
V 4	6AH6	-4VDC	0V.	0V.	6.3VAC	135VDC	135VDC	-4VDC		
V 5	6AH6	0V.	0V.	0V.	6.3VAC	135VDC	135VDC	1.3VDC		
V 6	6AL5	0V.	-7VDC	0V.	6.3VAC	0V.	0V.	-1VDC		
V 7	6Z6	100VDC	65VDC	0V.	6.3VAC	-5VDC	-1VDC	0V.		
V 8	6AT6	0V.	-9VDC	0V.	6.3VAC	115VDC	115VDC	9VDC		
V 9	6T8	-2VDC	-4VDC	0V.	6.3VAC	0V.	0V.	-4VDC		
V 10	6K6GT	0V.	0V.	270VDC	280VDC	0V.	60VDC	19VDC		
V 11	6SN7GT	-7VDC	330VDC	12VDC	12VDC	100VDC	0V.	0V.	6.3VAC	
V 12	6SN7GT	6VDC	330VDC	28VDC	28VDC	100VDC	0V.	0V.	6.3VAC	
V 13	6SN7GT	-1.7VDC	100VDC	-4.8VDC	-42VDC	135VDC	0V.	0V.	6.3VAC	TOP CAP
V 14	6BG6G	0V.	0V.	7.5VDC	0V.	0V.	0V.	6.3VAC	250VDC	
V 15	6W4GT	0V.	0V.	400VDC	0V.	330VDC	0V.	6.3VAC	0V.	
V 16	1B3GT	* DO NOT MEASURE.								
V 17	10BP4	420VDC	65VDC	PIN 10 350VDC	PIN 11 20VDC	PIN 12 420VDC				

8. TAKEN WITH VACUUM TUBE VOLTMETER.

\* DO NOT MEASURE.

• 6.3VAC MEASURED ACROSS FILAMENTS.

NOTE: CONTRAST CONTROL SET AT MAXIMUM FOR THESE MEASUREMENTS.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	15.3KΩ	15.3KΩ	.1Ω	0Ω	0Ω	0Ω	58Ω		
V 2	6AG5	1 Meg.	.1Ω	.1Ω	15.3KΩ	15.3KΩ	0Ω	0Ω		
V 3	6J6	14.3KΩ	14.3KΩ	.1Ω	0Ω	27KΩ	27KΩ	47Ω		
V 4	6AH6	100KΩ	0Ω	0Ω	.1Ω	15.8KΩ	15.8KΩ	47Ω		
V 5	6AH6	1 Meg.	0Ω	0Ω	.1Ω	15.8KΩ	15.8KΩ	150Ω		
V 6	6AL5	0Ω	3.9 Meg.	0Ω	.1Ω	0Ω	0Ω	4.7KΩ		
V 7	6J6	18.6KΩ	122KΩ	0Ω	.1Ω	220KΩ	4.7KΩ	0Ω		
V 8	6AU6	.5Ω	82Ω	0Ω	.1Ω	16.4KΩ	16.4KΩ	82Ω		
V 9	6T8	500KΩ	12.5KΩ	500KΩ	0Ω	.1Ω	11KΩ	0Ω	4.7 Meg.	1220KΩ
V 10	6K6GT	0Ω	0Ω	12.2KΩ	11.7KΩ	220KΩ	1220KΩ	.1Ω	68Ω	
V 11	6SN7GT	3.9 Meg.	114Ω	6.8KΩ	1 Meg.	123KΩ	0Ω	0Ω	.1Ω	
V 12	6SN7GT	2.2 Meg.	185Ω	9.5KΩ	14 Meg.	14 Meg.	0Ω	0Ω	.1Ω	
V 13	6SN7GT	750KΩ	4320KΩ	270KΩ	190KΩ	130KΩ	0Ω	0Ω	.1Ω	TOP CAP #200Ω
V 14	6BG6G	Inf.	0Ω	82Ω	Inf.	1 Meg.	Inf.	.1Ω	17KΩ	
V 15	6W4GT	Inf.	Inf.	470KΩ	Inf.	1145Ω	Inf.	.1Ω	0Ω	TOP CAP #480Ω
V 16	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	
V 17	10BP4	220KΩ	122KΩ	PIN 10 114Ω	PIN 11 220KΩ	PIN 12 220KΩ				

1. MEASURED FROM OUTPUT OF M3.

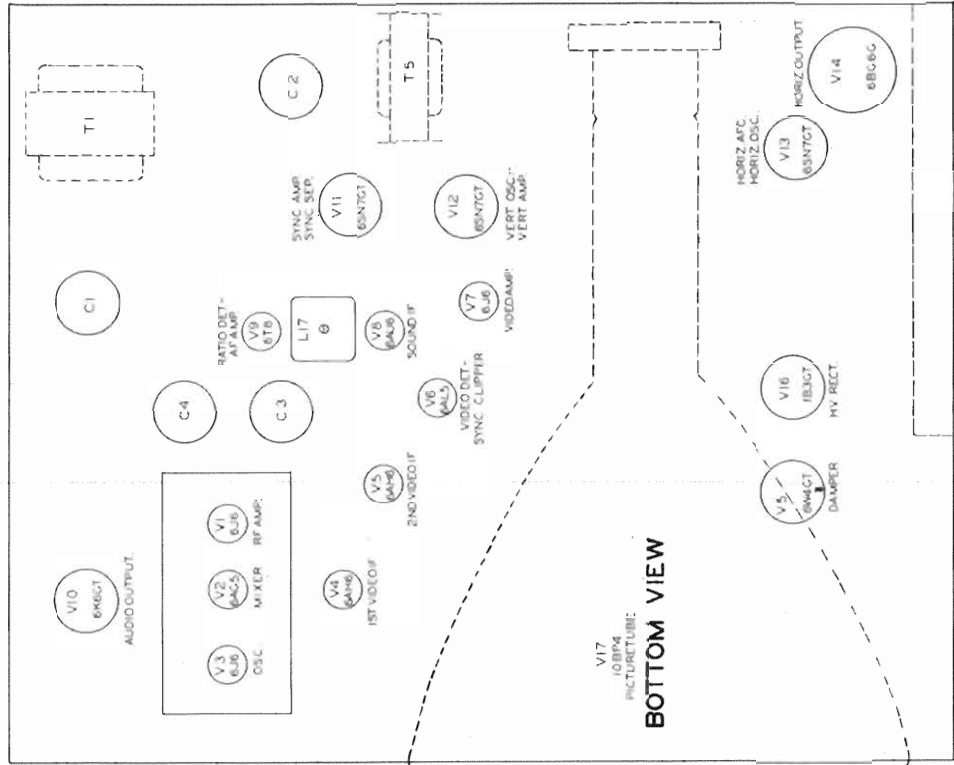
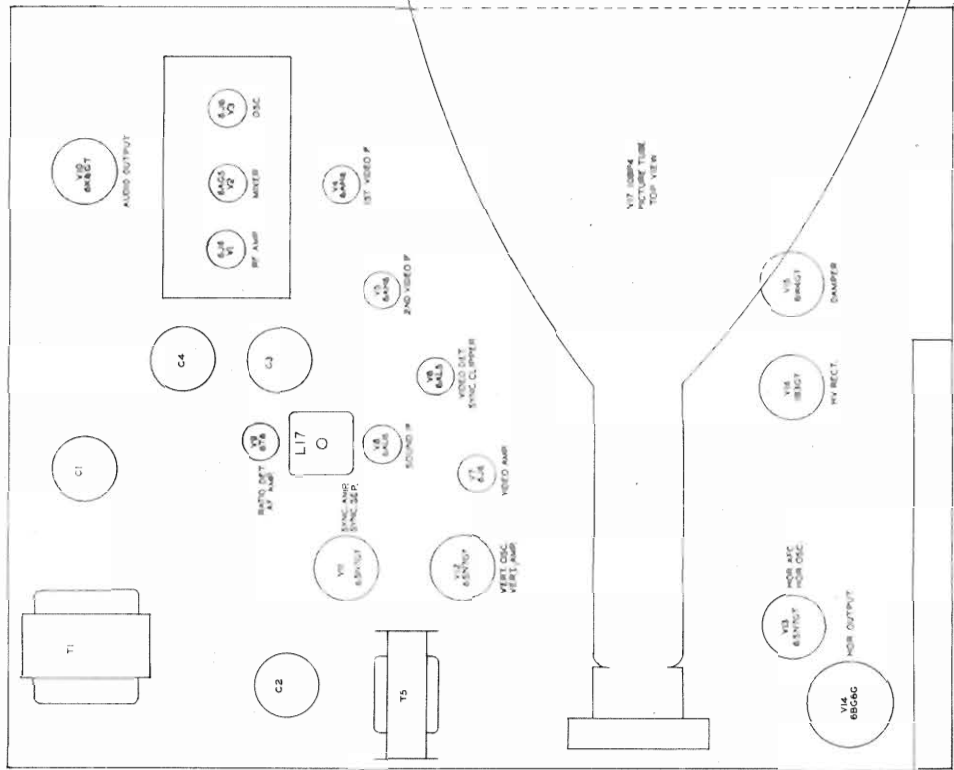
\* MEASURED FROM PIN 3 OF V15.

NOTE: CONTRAST CONTROL SET AT MAXIMUM FOR THESE MEASUREMENTS.

1. DC Voltage measurements are of 20,000 ohms per volt, AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panel controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

TUBE PLACEMENT CHART

TELE-TONE MODELS  
TV-250, TV-254



ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use an isolation transformer to protect the test equipment.

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V13) from its socket.

VIDEO IF ALIGNMENT

Remove the local oscillator tube (V3) to prevent erroneous indications.

Turn the contrast control to slightly less than maximum clockwise.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	34.45MC (Unmod.)	Any	DC Probe to Point A, Common to chassis.	A1	Adjust for maximum deflection.
2.	Direct	"	37.1MC	"	"	A2	"
3.	Direct	"	35.85MC	"	"	A3	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal 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
4.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	34MC (10MC Sweep)	32.8MC 34.45MC 37.0MC 37.3MC	Any	Vert. Amp. to Point A, Low side to chassis.		Check for response curve similar to Fig 1 with markers as shown. If necessary retouch A1, A2, A3, for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	.01MFD	High side to pin 5 (Grid) of 6J6 (V7). Low side to chassis.	4.5MC	Any channel not used locally	DC Probe to Point B, Common to chassis.	A4, A5	Adjust for maximum deflection.
6.	.01MFD	"	"	"	DC Probe to Point C, Common to Point D.	A6	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
5.	.01MFD	High side to pin 5 (Grid) of 6J6 (V7). Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any channel not used locally	Vert. Amp. to Point B, Low side to chassis.	A4, A5	Disconnect stabilizer capacitor C7. Adjust for maximum amplitude and symmetry as per Fig 2.
6.	.01MFD	"	"	"	"	Vert. Amp. to Point C, Low side to chassis.	A6	Reconnect stabilizer cap. C7. Adjust A6 so 4.5MC occurs at center of crossover lines as per Fig 3. SLIGHTLY retouch A5 for max. amplitude & straightness of crossover lines.

OSCILLATOR ALIGNMENT

The RF and mixer section of this receiver are normally very stable and should not require alignment in the field.

Replace the local oscillator tube (V3).

Turn 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
7.	Direct	High side to ungrounded antenna terminal. Low side to grounded terminal.	57MC (10MC Sweep)	55.25MC 59.75MC	2	Vert. Amp. to Point A, Low side to chassis.	A7	Adjust to place the sound marker as shown in Fig 4. The video marker should be between 45% and 60%. If the video marker fails to fall between 45% and 60% on all channels, turn the channel switch to channel 6 and make slight readjustment of the video IF adjustments.
			63MC (10MC SWP)	61.25MC 65.75MC	3		A8	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A9	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A10	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A11	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A12	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A13	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A14	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A15	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A16	
			207MC (10MC SWP)	205.25MC 209.75MC	12		A17	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A18	

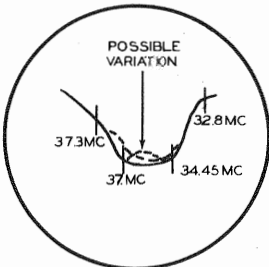


FIG. 1

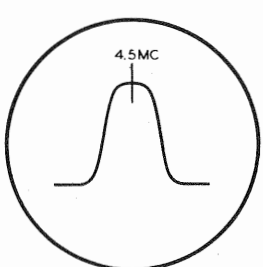


FIG. 2

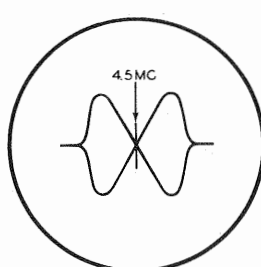


FIG. 3

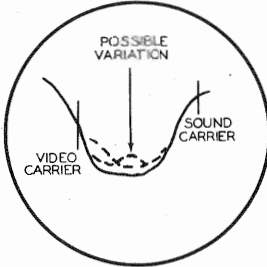
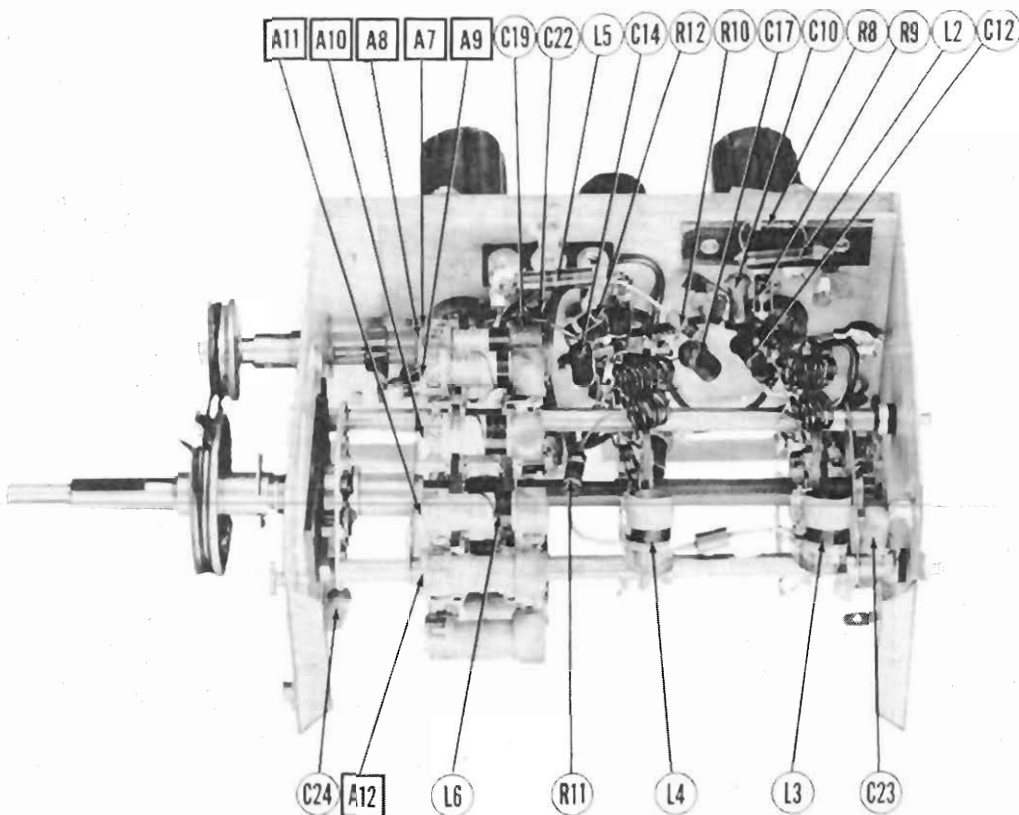
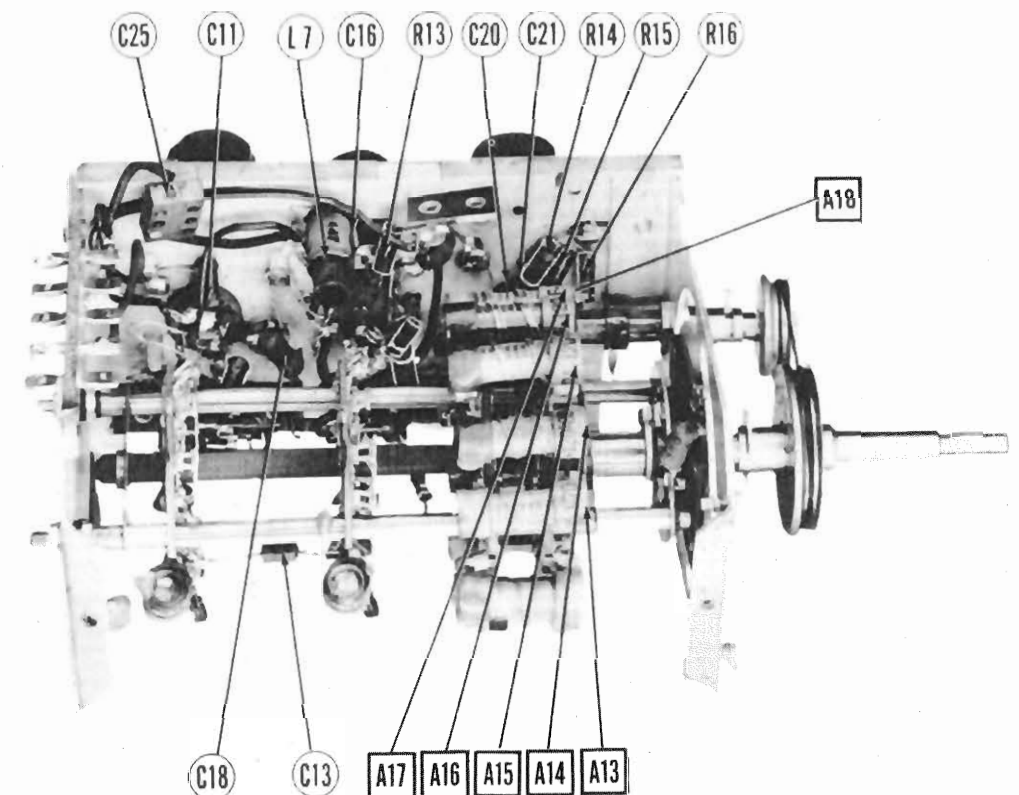


FIG. 4

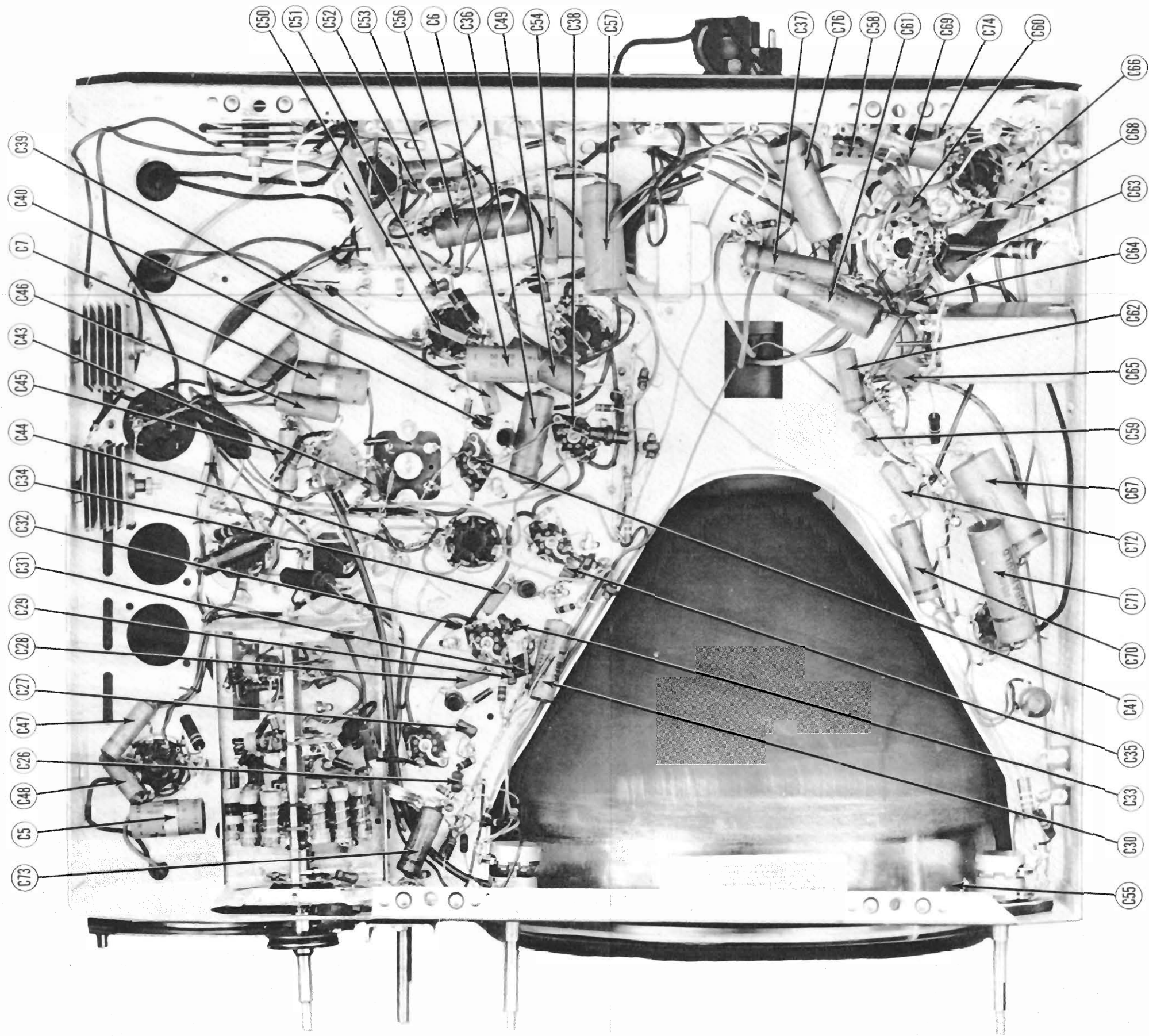


RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

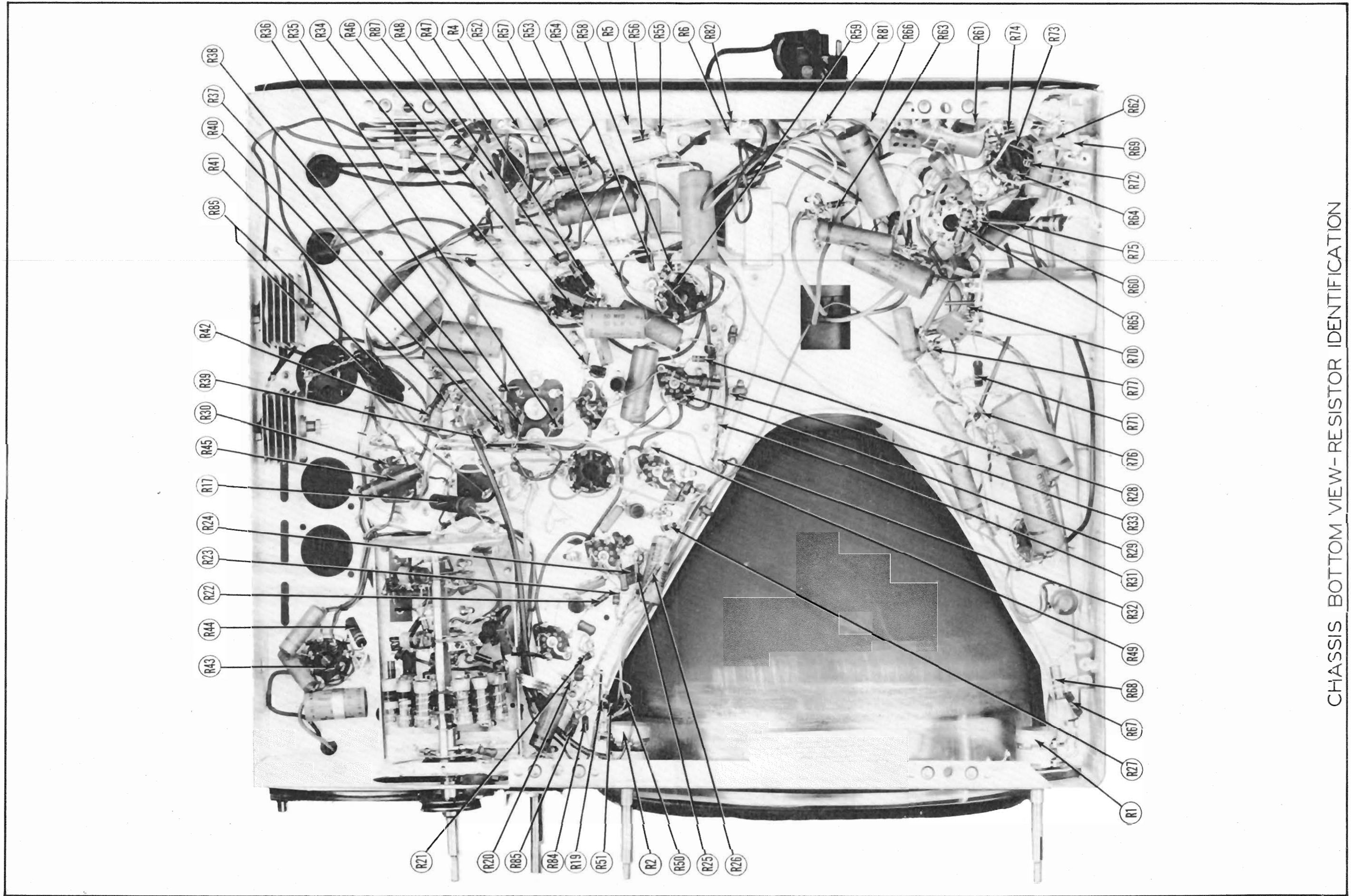




CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

TELE-TONE MODELS  
TV-250, TV-254





CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TELE-TONE MODELS  
TV-250, TV-254

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS		INDUCTANCE (0 CURRENT 1000 $\mu$ h)	REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE		TELE-TONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.200A	37.5 $\Omega$	.9 Henry	TTR-106D	C-2325 ①	C-2974 ①	TR-4200 ①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TELE-TONE PART No.	MEISSNER PART No.	
L2	RF Choke	.6 $\Omega$				
L3	RF End Inductance	0 $\Omega$		TLF-143-D		
L4	RF End Inductance	0 $\Omega$		TLF-143-D		
L5	RF Choke	.6 $\Omega$				
L6A	Osc. Coil	0 $\Omega$		TLF-120-1D		Channel #2
B	Osc. Coil	0 $\Omega$		TLF-120-2D		Channel #3
C	Osc. Coil	0 $\Omega$		TLF-120-3D		Channel #4
D	Osc. Coil	0 $\Omega$		TLF-120-4D		Channel #5
E	Osc. Coil	0 $\Omega$		TLF-120-5D		Channel #6
F	Osc. Coil	0 $\Omega$		TLF-120-6D		Channel #7
G	Osc. Coil	0 $\Omega$		TLF-120-7D		Channel #8
H	Osc. Coil	0 $\Omega$		TLF-120-8D		Channel #9
I	Osc. Coil	0 $\Omega$		TLF-120-9D		Channel #10
J	Osc. Coil	0 $\Omega$		TLF-120-10D		Channel #11
K	Osc. Coil	0 $\Omega$		TLF-120-10D		Channel #12
L	Osc. Coil	0 $\Omega$		TLF-120-10D		Channel #13
L7	1st Video IF	0 $\Omega$				
L8	2nd Video IF	0 $\Omega$				
L9	2nd Video IF Plate Choke	1.9 $\Omega$				
L10	3rd Video IF	0 $\Omega$				
L11	Peaking	5 $\Omega$				120 microhenries. Wound on 1.5K $\Omega$ resistor. Yellow dot.
L12	Peaking	4.3 $\Omega$				100 microhenries. Red dot.
L13	Peaking	5 $\Omega$				145 microhenries. Wound on 18K $\Omega$ resistor. White dot.
L14	Peaking	2 $\Omega$				15 microhenries.
L15	Peaking	6 $\Omega$				180 microhenries. Wound on 22K $\Omega$ resistor. Green dot.
L16	Sound IF	.5 $\Omega$				
L17	Ratio Det.		.5 $\Omega$			
L18	Trans.	4 $\Omega$				
L19	Width Cont.	.2 $\Omega$				
L19	Hor. Linearity	34 $\Omega$				

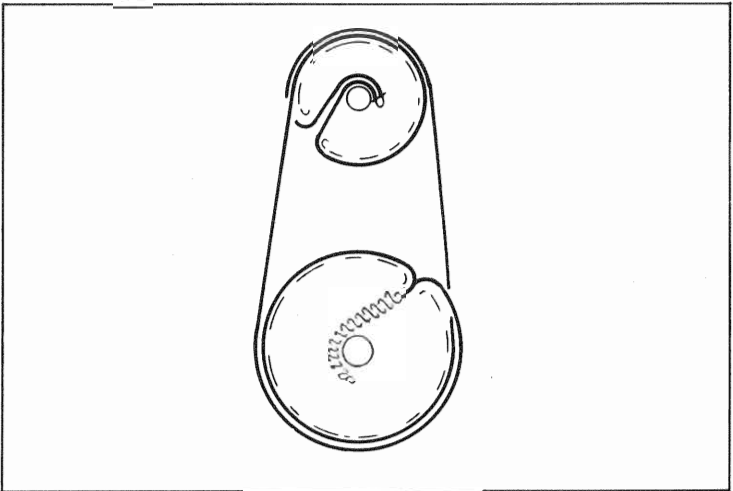
SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA		NOTES
		TELE-TONE PART No.	SYLVANIA PART No.	
M1	.200A		NF-5	
M2	.200A		NF-5	
M3	.200A		NF-5	

MISCELLANEOUS

ITEM No.	PART NAME	TELE-TONE PART No.	NOTES
M4	RF Tuner		
M5	Switch		Power On-Off Type GJV, .25A
M6	Fuse		
M7	Ion Trap		
N7	Trimmer Strip		Locking Range(10-160MMF), Hor. Freq. (40-370MMF), Hor. Drive (40-370MMF)

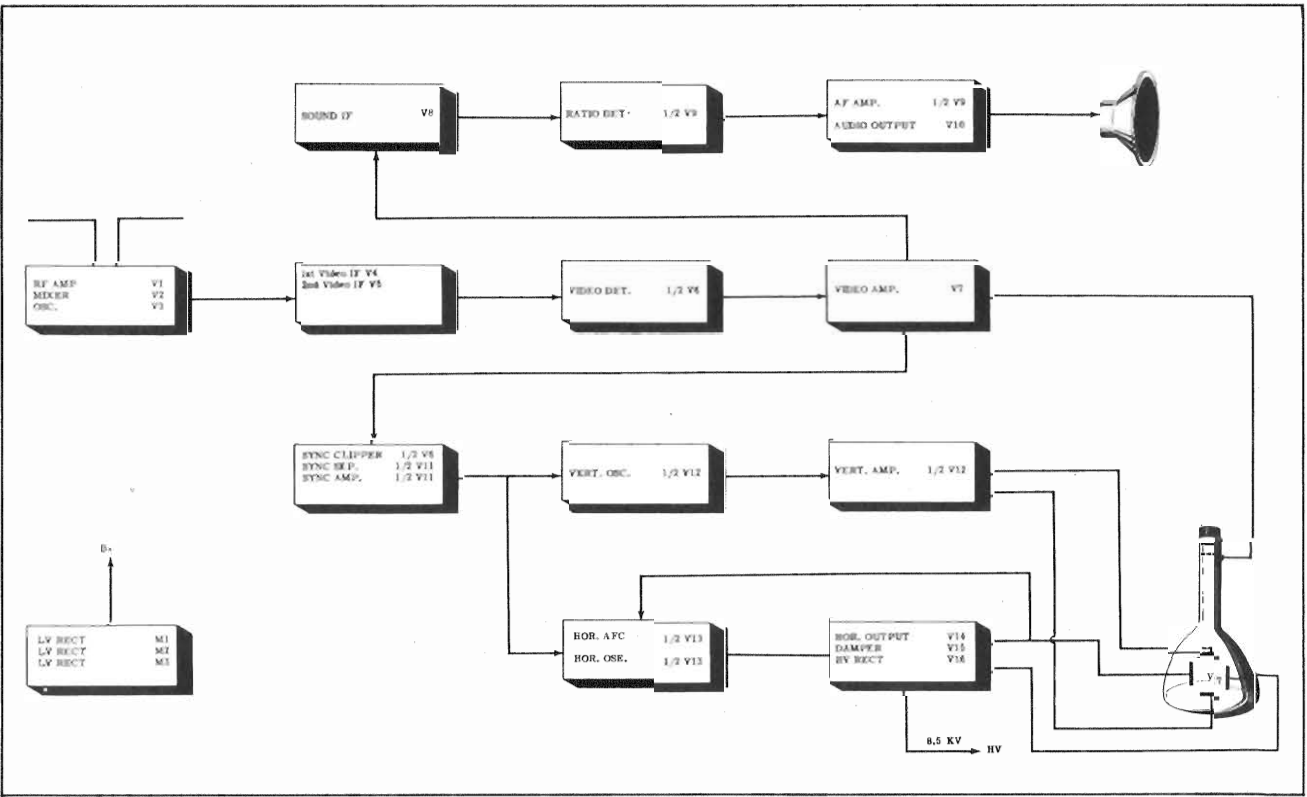
FINE TUNING CORD STRINGING



DISASSEMBLY INSTRUCTIONS

1. Remove five push-on type control knobs.
2. Loosen two 1/4" hex head bolts holding antenna terminal strip to rear cover. Free terminal strip.
3. Remove four 1/4" hex head bolts holding rear cover. Remove cover.
4. Remove four 3/8" hex head bolts holding chassis. Remove chassis.

TELE-TONE MODELS  
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BLOCK DIAGRAM

## PARTS LIST AND DESCRIPTIONS

## CAPACITORS (CONT.)

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		TELE-TONE PART No.	AEROVOX PART No.	ERIE PART No.	SPRAGUE PART No.	
C66	390	500	1468-0004	GP2K-390	1FM-34	Hor. Sweep Coupling
C67	.25	600	684-25		TC-2	Decoupling
C68	.05	600	P688-05		TM-15	Hor. Output Screen Bypass
C69	.25	400	P488-25		TC-2	Hor. Output Cath. Bypass
C70	.035	600	P688-035			Damper Filter
C71	.1	1000	1084-1		PX-11	Damper Filter
C72	.005	600	P688-005	811-005	TM-25	Bias Filter
C73	.05	200	P288-05		TM-15	Hor. Feedback
C74	5	1500				HV Filter
C75	500	10000				Hor. Sweep Coupling
C76	.25	400	P488-25		TC-2	

\* Not used in all models.  
† When either item C42 or C43 are replaced, replace both with capacitors of equal value.  
‡ Some models use 100MFD in this application.  
§ Some models use .01MFD in this application.

## CONTROLS

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		RESIST-ANCE	WATTS	TELE-TONE PART No.	IRC PART No.	
R1A	1 Meg.			B11-137 *		Vert. Hold Control, Front
B	50KΩ			B11-123 *		Horiz. Hold Control, Rear
C	Shaft End			E187 *		Attach per instructions in "Concentrik".
R2A	11.5KΩ			TVC-519D		Contrast Control
B	500KΩ					Brightness Control
R3	500KΩ			TVC-520D	Q13-133	Volume Control
R4A	5000Ω			TVC-503-1D	Q11-114	Vert. linearity control
B	Shaft			Not Req.	RQ	Attach to R4A per instructions
R5A	2.5 Meg.			TVC-504-1D	Q11-239	Height control
B	Shaft			Not Req.	RQ	Attach to R5A per instructions
R6	3000Ω	4		TVC-521D	K38-31	Focus control-Wire Wound
R7	2000Ω	2		TVC-518D	W-2000	Horiz. centering control-Wire Wound

\* Additional parts to be used with "Concentrik".  
† File slot in shaft to duplicate original.

## RESISTORS

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES
		RESISTANCE	WATTS	TELE-TONE PART No.	IRC PART No.	
R8	330010%					RF Cathode
R9	56010%					Parasitic Supp.
R10	1000Ω			BTS-1000		RF Plate Decoupling
R11	4700Ω			BTS-4700		Mixer Coil Shunt
R12	1 Meg.					Mixer Grid
R13	1000Ω			BTS-1000		Mixer Decoupling
R14	27KΩ 10%					Osc. Grid
R15	27KΩ 10%					Osc. Grid
R16	47Ω					Osc. Cathode
R17	1800Ω			BT-2-1800		Voltage Dropping
R18	12KΩ			BTS-12K		Bias Network-See Note 1
R19	100KΩ			BTS-100K		Bias Network-See Note 2
R20	47KΩ					1st Video IF Grid
R21	47Ω 10%					1st Video IF Cathode
R22	3300Ω			BTS-3300		1st Video IF Decoupling
R23	82KΩ 10%					2nd Video IF Grid
R24	150Ω					2nd Video IF Cathode
R25	3300Ω			BTS-3300		2nd Video IF Decoupling
R26	1 Meg.			BTS-1 Meg.		AGC Network
R27	4700Ω 10%			BTS-4700		Video Det. Diode Load
R28	560010%			BTS-560		Video Amp. Plate
R29	220KΩ			BTS-220K		Video Amp. Grid
R30	5600Ω 10%			BTA-5600		Low Pass Filter
R31	15KΩ 5%			BTS-15K-5%		Video Amp. Plate
R32	3900Ω 10%			BTS-3900		Video Amp. Plate
R33	4700Ω					Isolation
R34	82Ω 10%					Sound IF Cathode
R35	3900Ω 10%			BTS-3900		Sound IF Decoupling
R36	220Ω					Balancing
R37	220Ω					Balancing
R38	150Ω					Balancing
R39	6200Ω 5%					Ratio Det. Diode Load
R40	6200Ω 5%					Ratio Det. Diode Load
R41	4.7 Meg.			BTS-4.7 Meg.		AF Grid
R42	220KΩ			BTS-220K		AF Plate
R43	220KΩ			BTS-220K		Output Grid
R44	680Ω			BTA-680		Output Cathode
R45	1500Ω			BW-2-1500		Filter
R46	1 Meg. 5%			BTS-1 Meg. 5%		Sync. Amp. Grid
R47	22KΩ			BT-2-22K		Sync. Amp. Plate
R48	6800Ω			BTS-6800		Sync. Sep. Cathode
R49	3.9 Meg. 10%			BTS-3.9 Meg.		Sync. Sep. Grid
R50	330KΩ 10%			BTS-330K		Voltage Divider
R51	220KΩ			BTS-220K		Voltage Divider
R52	8200Ω 10%			BTS-8200		Integrator
R53	8200Ω 10%					Integrator
R54	1.2 Meg. 5%			BTS-1.2 Meg. 5%		Vert. Osc. Grid
R55	1.5 Meg. 10%			BTS-1.5 Meg.		Vert. Osc. Plate
R56	3300Ω			BTS-3300		Vert. Peaking
R57	560Ω			BTS-560		Vert. Amp. Cathode
R58	3900Ω 10%			BTS-3900		Vert. Amp. Cathode
R59	2.2 Meg.			BTS-2.2 Meg.		Vert. Amp. Grid
R60	560KΩ 10%			BTS-560K		Horiz. AFC Grid
R61	180KΩ 10%			BTS-180K		Horiz. AFC Cathode

## RESISTORS (CONT.)

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES
		RESISTANCE	WATTS	TELE-TONE PART No.	IRC PART No.	
R62	100KΩ 5%				BTA-100K-5%	Horiz. AFC Cathode
R63	120KΩ 10%				BTS-120K	Horiz. AFC Filter Network
R64	150KΩ 5%				BTS-150K-5%	Horiz. AFC Filter Network
R65	3.3 Meg. 5%				BTA-3.3Meg. 5%	Voltage Divider
R66	30KΩ 10%					Voltage Divider-Temp. Comp.
R67	120KΩ 10%				BTA-120K	Voltage Divider
R68	270KΩ 10%				BTA-270K	Voltage Divider
R69	100KΩ 10%					Horiz. Osc. Grid
R70	10KΩ 5%				BTS-10K-5%	Horiz. Osc. Transformer Shunt
R71	120KΩ 10%				BTA-120K	Horiz. Osc. Plate
R72	47Ω					Parasitic Supp.
R73	1 Meg.				BTS-1 Meg.	Horiz. Output Grid
R74	82Ω 10%				BW-1-82	Horiz. Output Cathode
R75	6800Ω 5%				BT-2-6800	Horiz. Output Screen-Wire Wound
R76	10KΩ 5%				BTS-10K-5%	Filter
R77	560KΩ 10%				BTS-560K	Feedback
R78	3.3Ω					HV Rect. Filament
R79	1 Meg.					HV Filter
R80	220Ω				BW-1-220	Horiz. Centering Control Shunt
R81	2000Ω		10		AB-2000	Series Focus Coil-Wire Wound
R82	220Ω				BW-1-220	Focus Coil Shunt-See Note 3
R83	1000Ω				BTA-1000	Focus Coil Shunt-See Note 1
R84	27KΩ				BTS-27K	Bias Network-See Note 4
R85	560Ω				BTS-560	Voltage Divider
R86	55Ω					Filter-Wire Wound-See Note 5 and 6
R87	7.5Ω		10			Sarge Limiter-Wire Wound

Note 1. Not used in all models.  
Note 2. Some models use 82KΩ resistor in this application.  
Note 3. Some models use 1000Ω, 2 watt resistor in this application.  
Note 4. Some models use 22KΩ resistor in this application.  
Note 5. Some models use two resistors in parallel to obtain required resistance and wattage.  
Note 6. Some models use 110Ω, 5 watt resistor in this application.

## TRANSFORMER (FILAMENT)

ITEM No.	RATING	REPLACEMENT DATA				CHICAGO PART No.
		PRI.	SEC. 1	SEC. 2	SEC. 3	
T1	117VAC @ .43A	8.3VAC @ 7.7A	6.3VAC @ .6A			TTR-174D

## TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING	REPLACEMENT DATA				NOTES
		DC RESISTANCE	TELE-TONE PART No.	STANCOR PART No.	MERIT PART No.	
T2	1200 Tap @ 33Ω					
T3	92Ω	1000Ω	TTR-161-D	A-811	A-3000	Hor. Osc. Transformer
T4	415Ω Tap @ 178Ω	SEC. 1 10.6Ω Tap @ .6Ω		A-8117		Vert. Block Osc. Trans.
T5	550Ω	SEC. 2 6Ω				
T6A	14Ω		TTR-153-1D	A-8116	A-3035	Vert. Output Trans.
T6B	63Ω			DY-1		Hor. Deflection Coil
T7	950Ω					Vert. Deflection Coil

## TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING	REPLACEMENT DATA				INSTALLATION NOTES
		IMPEDANCE	DC RES.	TELE-TONE PART No.	STANCOR PART No.	
T8	7.3KΩ	3.5Ω	550Ω		A-8114	RO-13

## SPEAKER

ITEM No.	RATINGS	REPLACEMENT DATA				NOTES
		FIELD RES.	V. C. IMP.	TELE-TONE PART No.	VIKING PART No.	
SP1	PM		3.5Ω	TSP-463D	46J6	46A1 ①
SP2	CONE DIA.		V. C. DIA.			① Remount output transformer.

## TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA			NOTES
		TELE-TONE PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	
V1	RF Amp.	6J6	6J6	7BF	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF	6AH6	6AH6	7BK	
V5	2nd Video IF	6AH6	6AH6	7BK	
V6	Video Det.-Sync. Clipper	6AL5	6AL5	8BT	
V7	Video Amp.	6J6	6J6	7BF	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Det.-AF Amp. Bias Clamper	6T8	6T8	9E	
V10	Audio Output	6K6GT	6K6GT	7S	
V11	Sync. Amp.-Sync. Sep.	6SN7GT	6SN7GT	8BD	
V12	Vert. Osc.-Vert. Amp.	6SN7GT	6SN7GT	8BD	
V13	Hor. AFC-Hor. Osc.	6SN7GT	6SN7GT	8BD	
V14	Hor. Output	6BG6G	6BG6G	5BT	
V15	Damper	6W4GT	6W4GT	4CG	
V16	HV Rectifier	1B3GT	1B3GT	3C	
V17	Picture Tube	10BP4	10BP4	12D	

## CAPACITORS

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

ITEM No.	RATING		REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES	
	CAP.	VOLT.	TELE-TONE PART No.	AEROVOX PART No.	ERIE PART No.	SPRAGUE PART No.		
C1	150	300		AFN30G		TVL-101	Filter	
C2	150	150		AFN30G		TVL-44	Filter	
C3	100	450		AFN20I		TVL-9	Filter	
C4A	80	400		AF16522J		TVL-401	Filter	
B	25	400					Filter	
C	10	400					Output Decoupling	
D	10	400					Low Pass Filter	
C5	10	25		PRS25/10		TVA-5	Output Cathode Bypass	
C6	50	50		PRS50/50		TVA-16	Vert. Amp. Cathode Bypass †	
C7	50	50		PRS50/50		TVA-16	Stabilizing Cap.	
C8	300			GP300M	GP2K-300		Ant. Coupling	
C9	300			GP300M	GP2K-300		Ant. Coupling	
C10	360			GP360M	GP2K-390		RF Cathode Bypass	
C11	360			GP360M	GP2K-390		RF Filament Bypass	
C12	360			GP360M	GP2K-390		RF Plate Decoupling	
C13	1						RF Coupling	
C14	22			GP22M	GP1K-22		RF Coupling	
C15	360			GP360M	GP2K-390		Bias Filter *	
C16	5000			BPD-5	811-005	29C1	Mixer Screen Bypass	
C17	360			GP360M	GP2K-390		Mixer Fil. Bypass	
C18	360			GP360M	GP2K-390		Decoupling	
C19	1						Osc. Coupling	
C20	4.7			CN4, 7DNPO	NPOK-4.7		Osc. Feedback	
C21	4.7			CN4, 7DNPO	NPOK-4.7		Osc. Feedback	
C22	360			GP360M	GP2K-390		Osc. Fil. Bypass	
C23	360			GP360M	GP2K-390		Switch Bypass	
C24	360			GP360M	GP2K-390		IF Coupling	
C25	270	500		1468-00025	GP2K-270	1FM-325	IF Coupling	
C26	2000			GP2000M	GP2M-002	1FM-22	AGC Filter	
C27	2000			GP2000M	GP2M-002	1FM-22	AGC Filter	
C28	270	500		1468-00025	GP2K-270	1FM-325	IF Coupling	
C29	2000			GP2000M	GP2M-002	1FM-22	AGC Filter	
C30	.1	200		P288-1	TM-1		AGC Filter	
C31	2000			GP2000M	GP2M-002	1FM-22	2nd V. IF Cath. Bypass	
C32	5000			BPD-5	811-005	29C1	2nd V. IF Fil. Bypass	
C33	2000			GP2000M	GP2M-002	1FM-22	2nd V. IF Decoupling	
C34	270	500		1468-00025	GP2K-270	1FM-325	IF Coupling	
C35	5	300		1468-000005	NPOK-5	MS-55	V. Diode Filter	
C36	.1	400		P488-1	TM-1		Video Coupling	
C37	.05	400		P488-05	TM-15		Pic. Tube Cath. Decoupling	
C38	3.3						S. IF Coupling	
C39	100	500		1469-0901	NPOK-3.3		Fixed Trimmer	
C40	5000			BPD-5	811-005	MS-31	S. IF Cathode Bypass	
C41	5000			BPD-5	811-005	29C1	S. IF Decoupling	
C42	470			GP470M	GP2K-470	1FM-35	Diode Load Cap. †	
C43	470			GP470M	GP2K-470	1FM-35	Diode Load Cap. †	
C44	5000			BPD-5	811-005	29C1	Vol. Cont. Isolation	
C45	.005	600		P688-005	811-005	TM-25	Audio Coupling ‡	
C46	.002	600		P688-002	GP2M-002	TM-22	De-emphasis	
C47	.01	600		P688-01	821-01	TM-11	Audio Coupling	
C48	.005	600		P688-005	811-005	TM-25	Output Plate Bypass	
C49	.05	600		P688-05		TM-15	Sync. Coupling	
C50	100	500		1468-0901	GP1K-100	1FM-31	Sync. Coupling	
C51	360			GP360M	GP2K-190	1FM-34	Sync. Sep. Cath. Bypass	
C52	.005	600		P688-005	811-005	TM-25	Integrator Net.	
C53	.005	600		P688-005	811-005	TM-25	Integrator Net.	
C54	4700	500		1467-005	GP2M-3047	1FM-25	Vert. Osc. Grid Cap.	
C55	5000			BPD-5	811-005	29C1	Vert. Hold Cont. Isolation	
C56	.1	600		P688-1		TM-1	Vert. Discharge	
C57	.25	600		684-25		YC-2	Vert. Sweep Coupling	
C58	100	500		1468-0901	GP1K-100	1FM-31	Hor. Sync. Coupling	
C59	120	500		1468-0901S	GP2K-120	1FM-31S	Voltage Divider	
C60	.002	600		P688-002	GP2M-002	TM-22	Hor. Sync. Coupling	
C61	.25	400		P488-25		TC-2	AFC Filter	
C62	.02	400		P488-02		TM-12	AFC Filter	
C63	.05	400		P488-05		TM-15	AFC Plate Bypass	
C64	180	500		1468-0002	GP2K-180	1FM-32	Hor. Osc. Grid Cap.	
C65	220	500		GP2M-0022			Hor. Discharge	