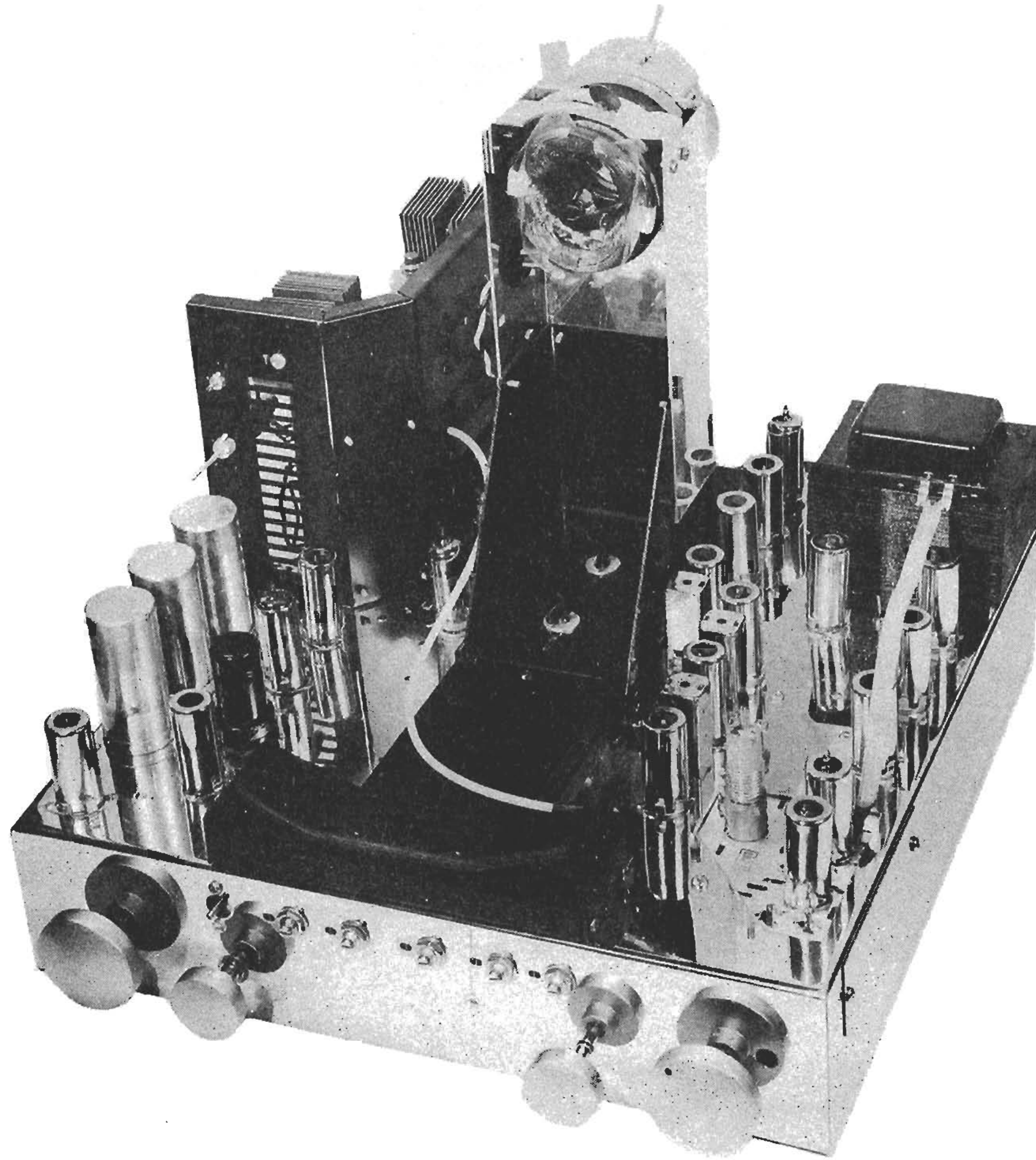




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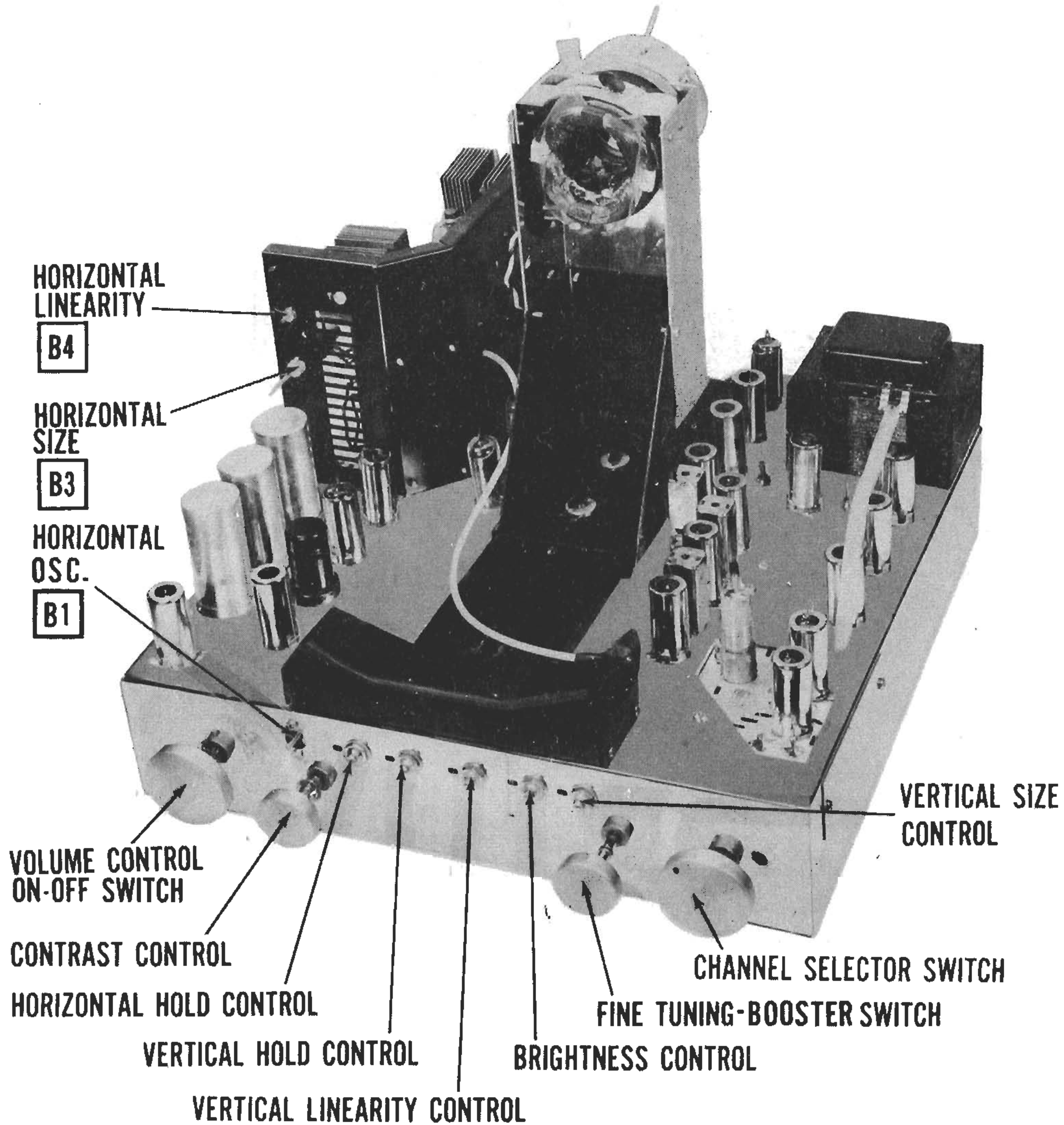
RADIO CRAFTSMEN
MODEL RC-100A

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

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Date 12/50 Set No. 117—Folder No. 11



**RADIO CRAFTSMEN
MODEL RC-100A**

TRADE NAME Radio Craftsmen, Model RC-100A
MANUFACTURER The Radio Craftsmen Inc., 1617 S. Michigan Ave., Chicago 16, Illinois
TYPE SET Television Receiver
TUBES Twenty Seven

POWER SUPPLY 110-120 Volts AC-60 Cycle
TUNING RANGE—Channels 2 thru 13

RATING 1.7 Amp. at 117 Volts AC

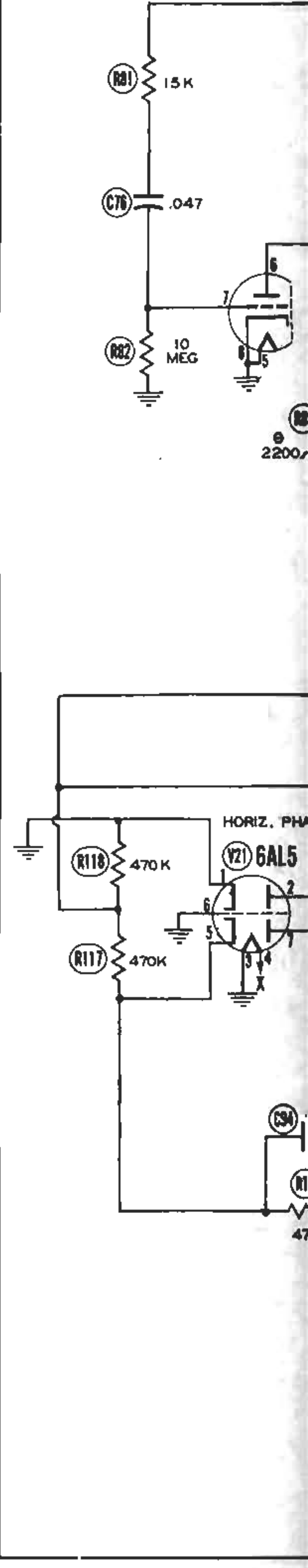
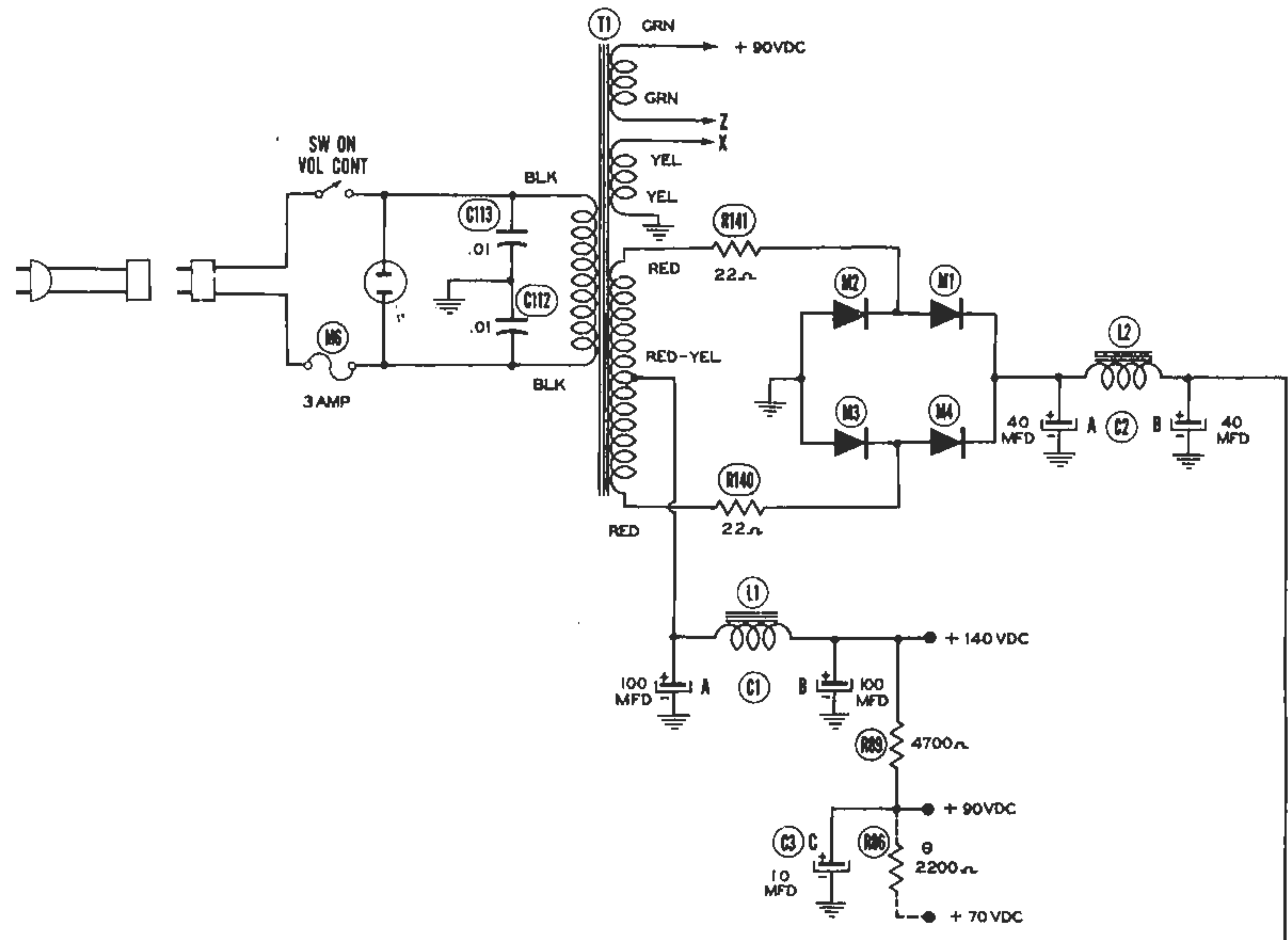
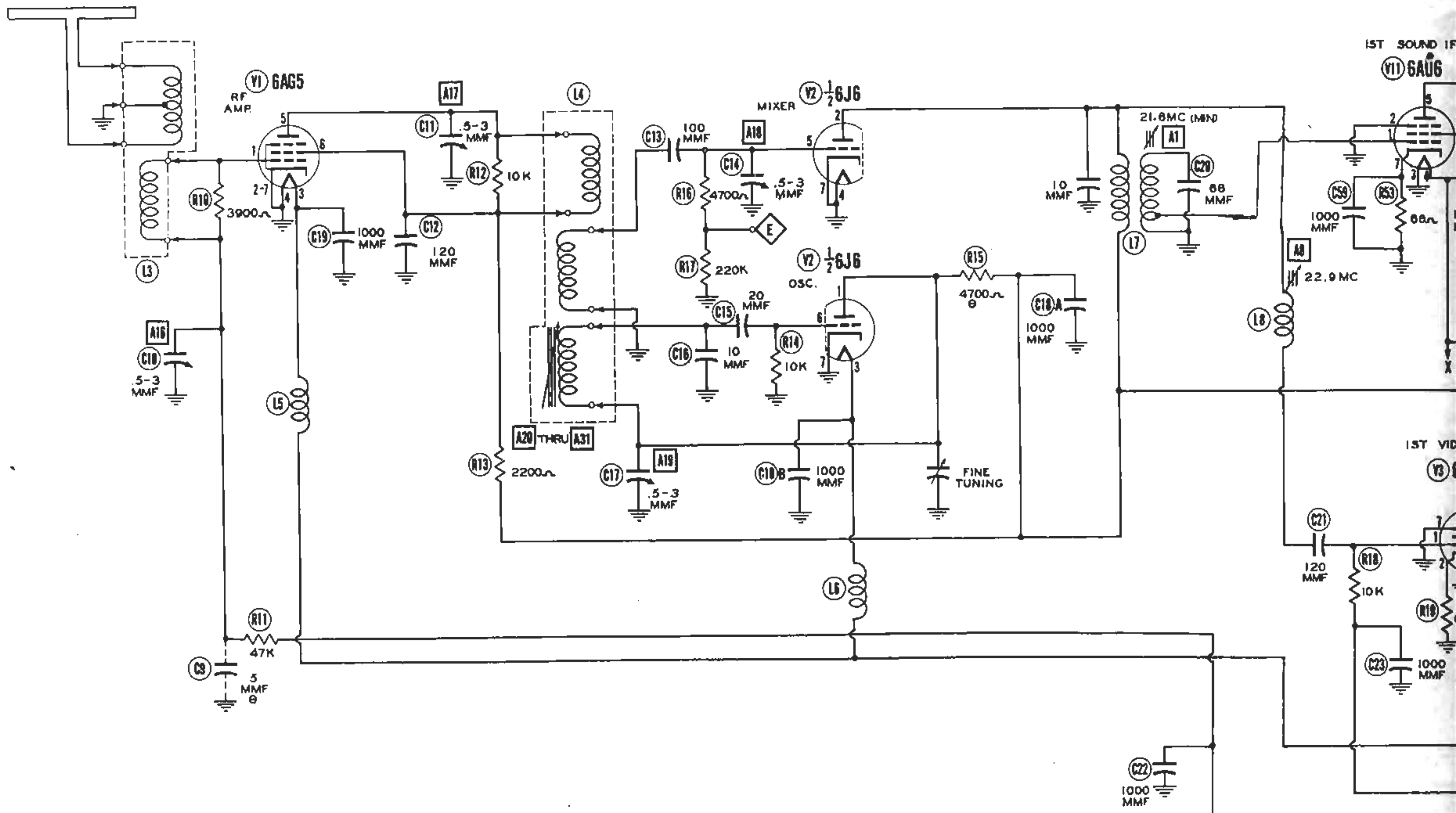
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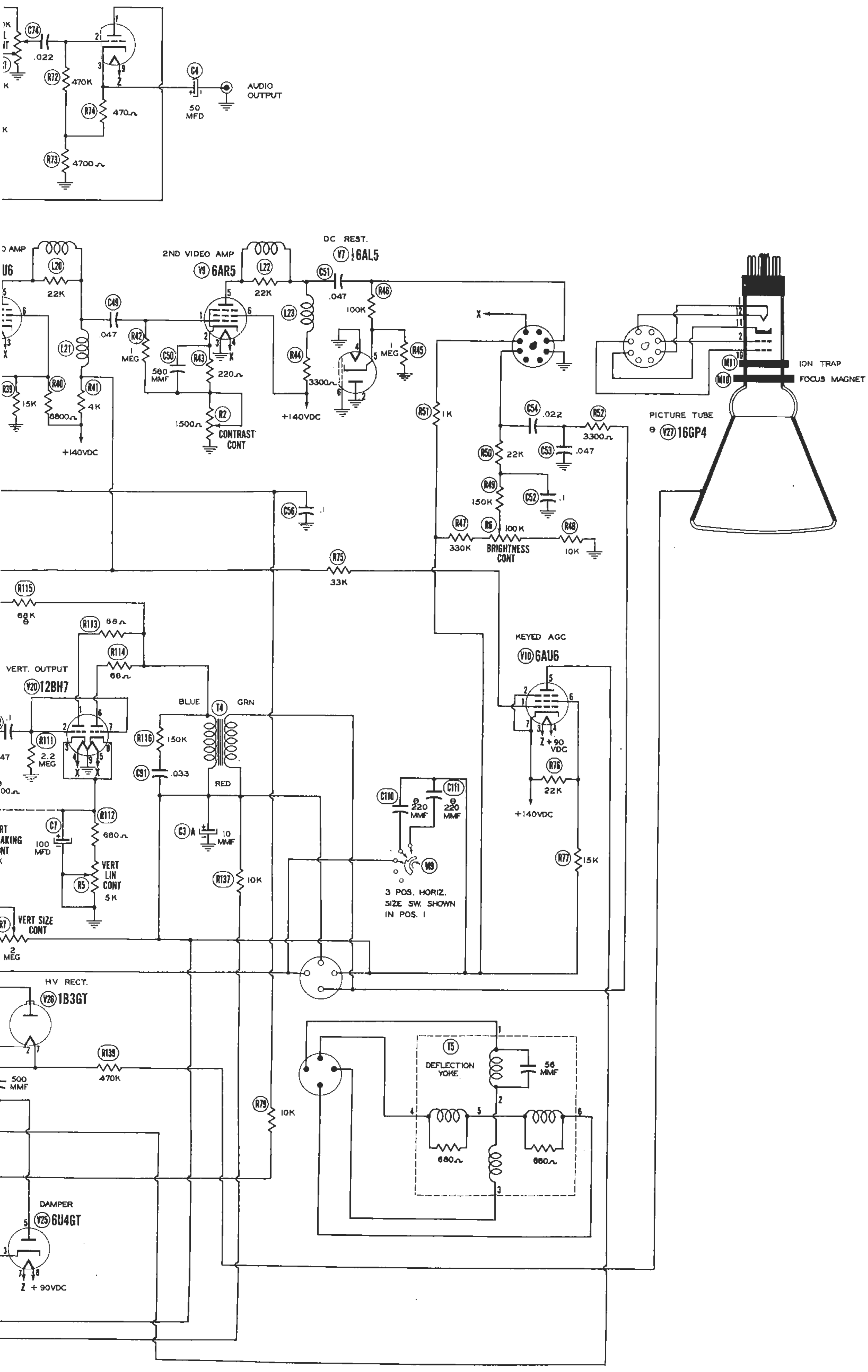
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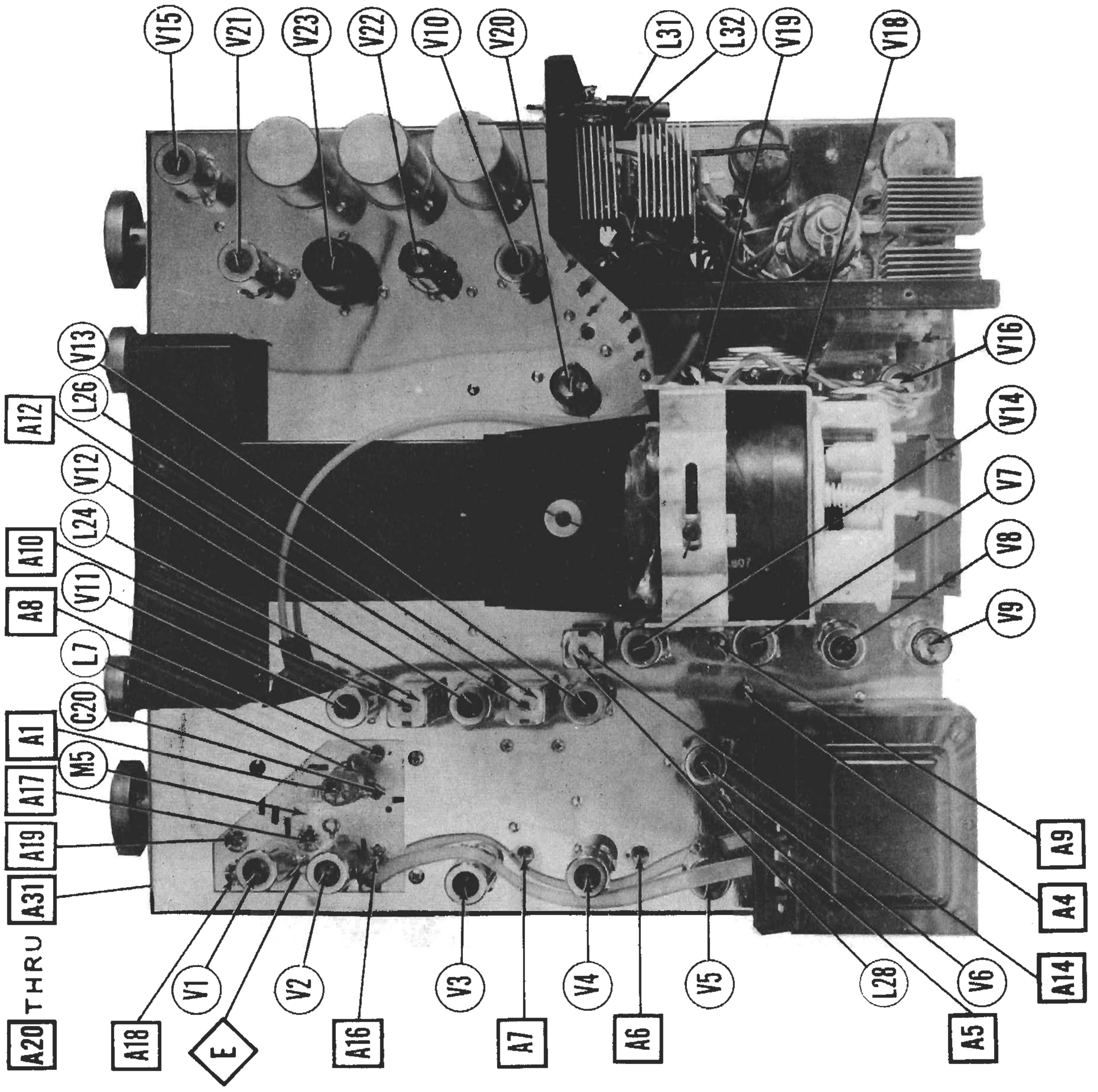


A PHOTOFAC STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1950

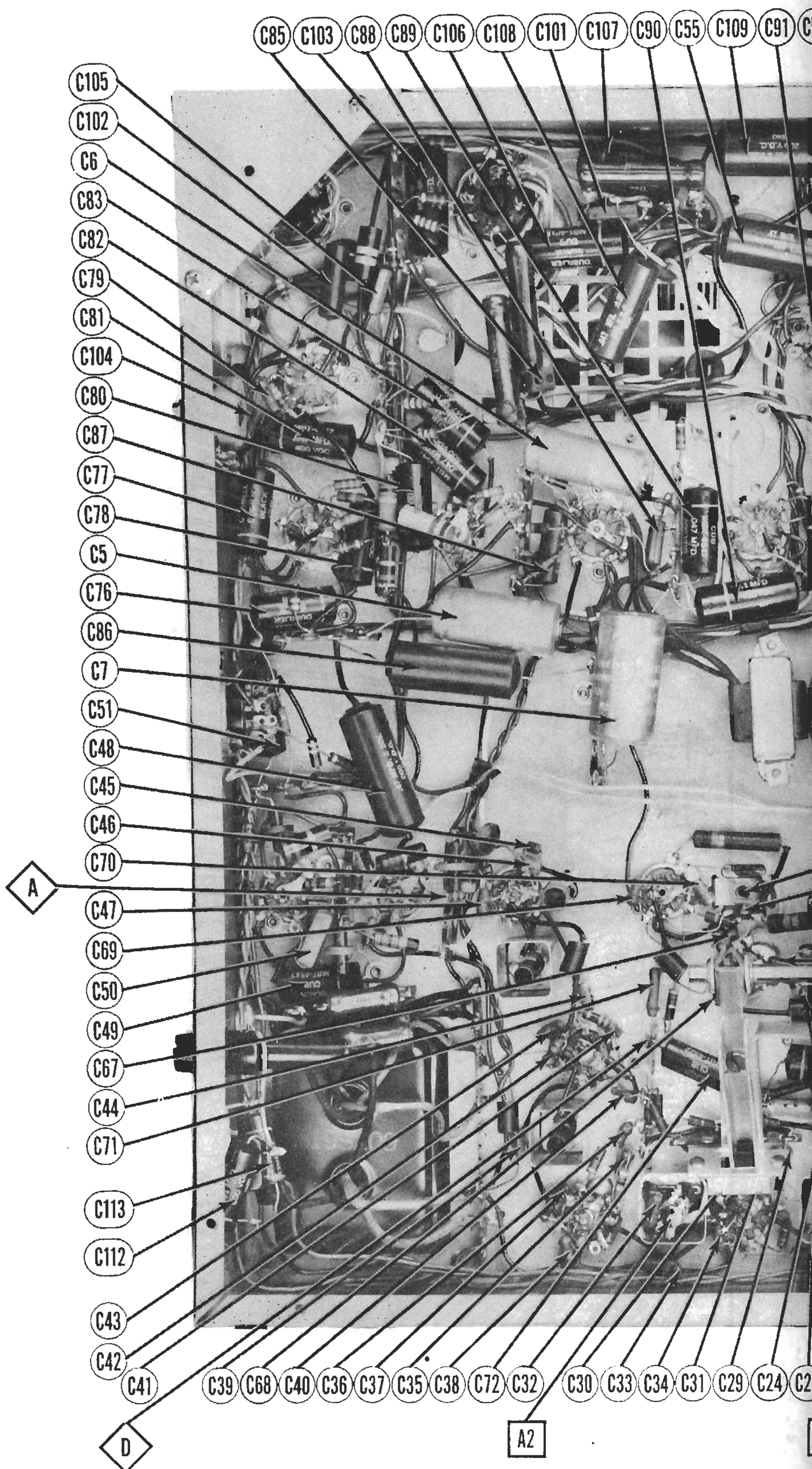
SEE PARTS LIST FOR ALTERNATE
VALUE OR APPLICATION

DOTTED IN PARTS ARE NOT USED IN ALL
MODELS. WHEN DOTTED IN PARTS ARE
USED POINTS MARKED X ARE BROKEN.

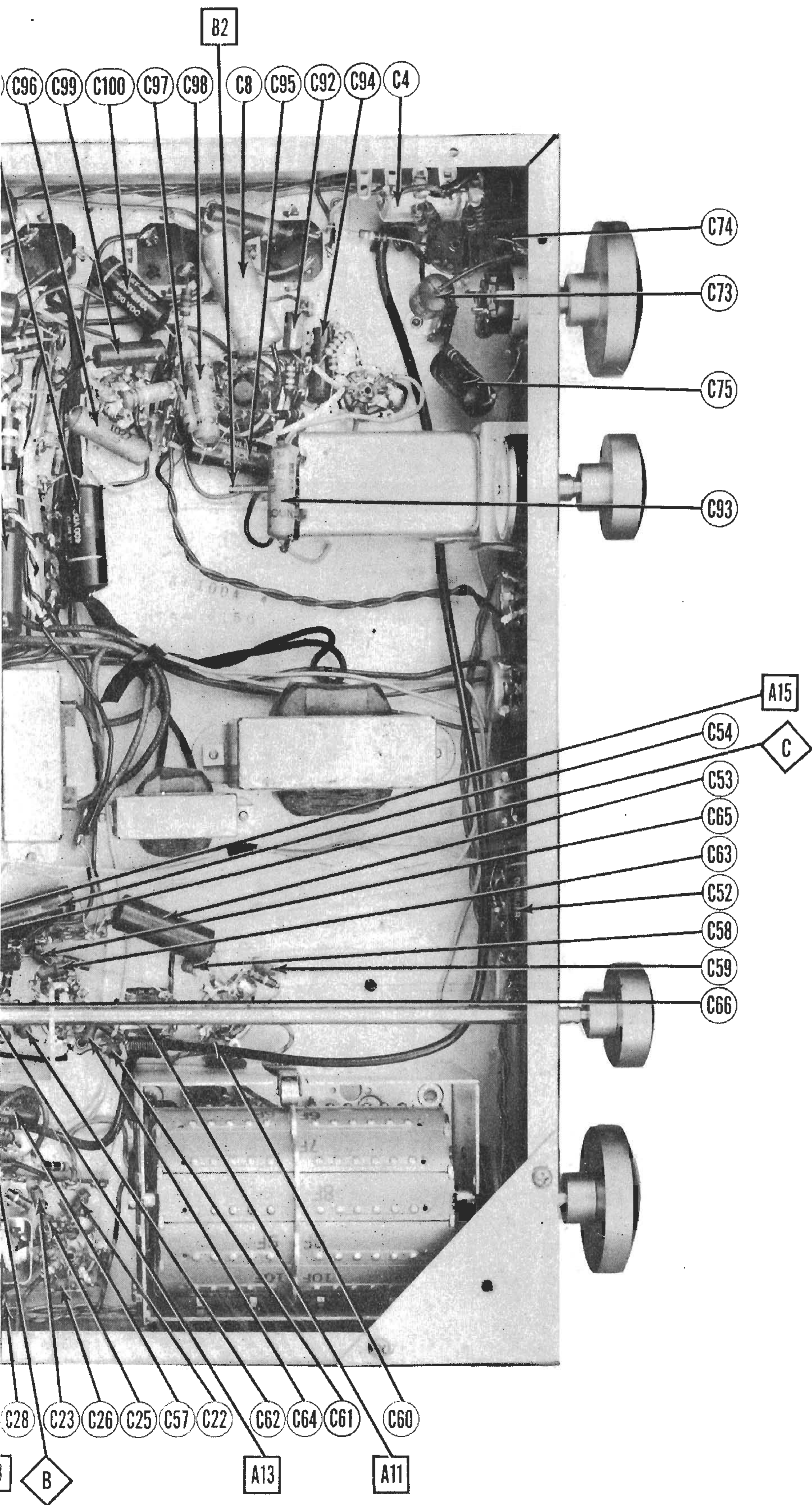




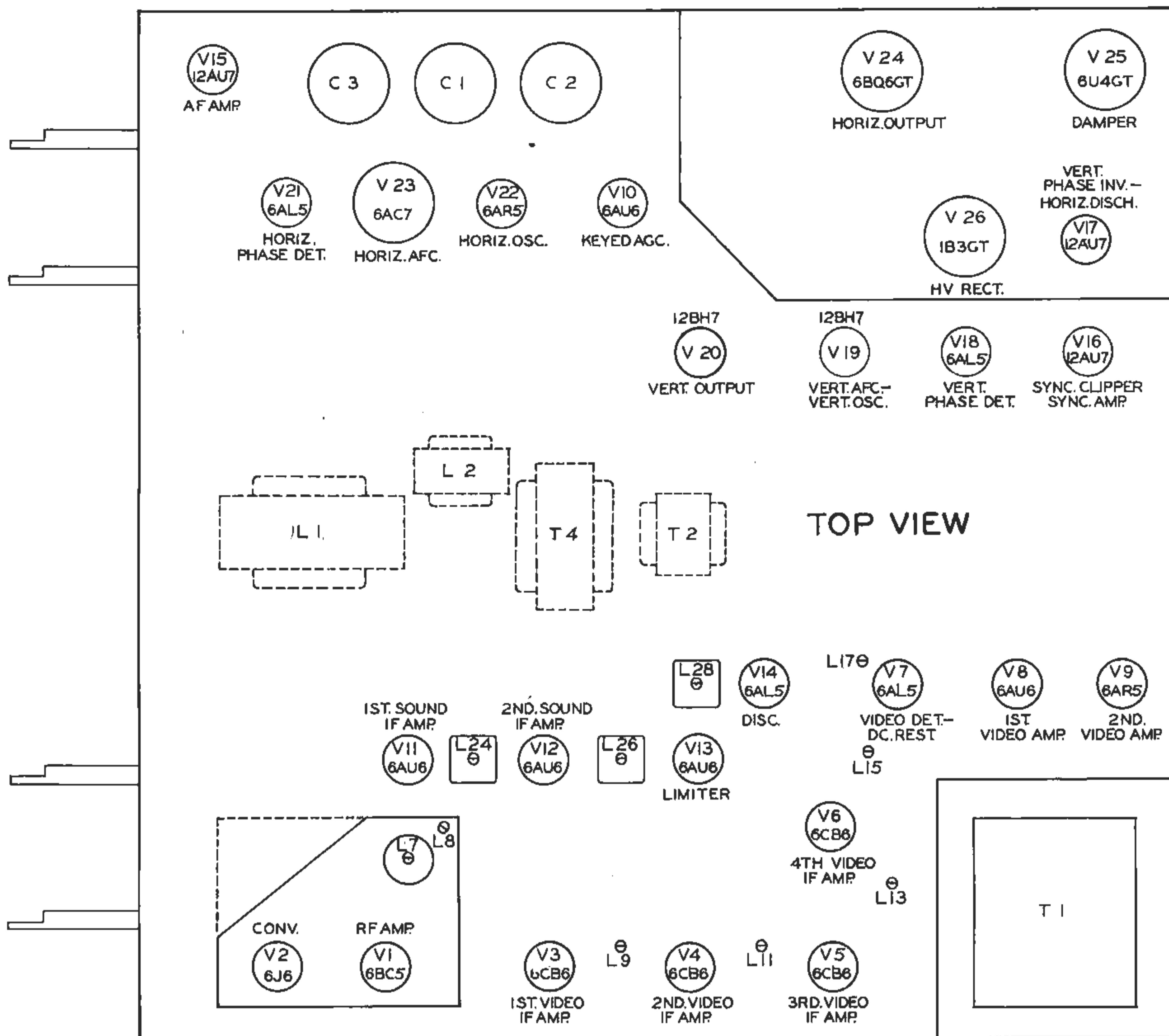
CHASSIS TOP VIEW



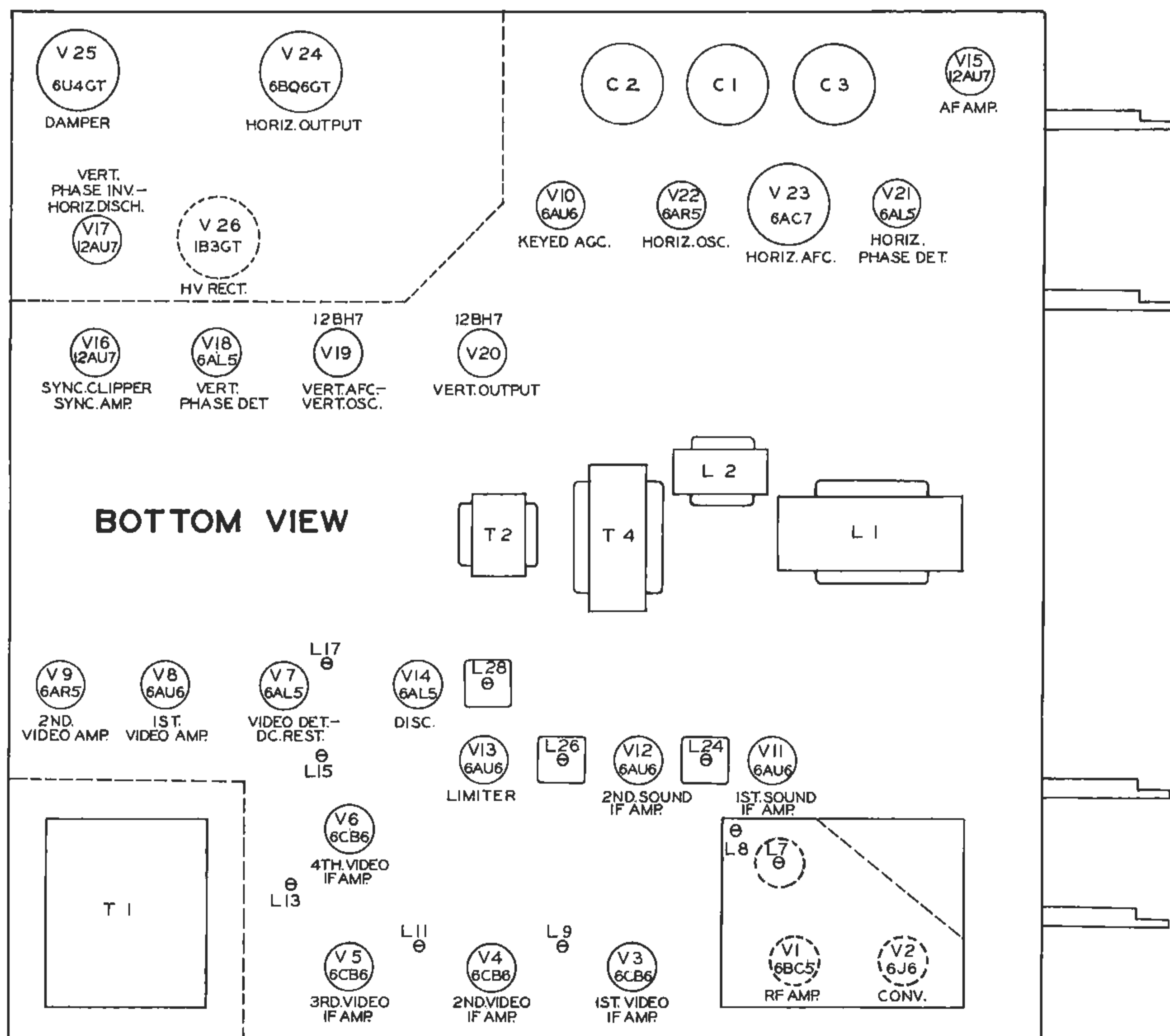
CHASSIS BOTTOM VIEW-CAPACITOR



AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If receiver is to be aligned with picture tube removed, the high voltage lead should be securely taped and dressed away from the chassis.

VIDEO IF ALIGNMENT

Remove the converter tube (V2) from its socket and replace with a 6J6 with pin 1 removed to prevent erroneous indications. Connect the negative lead of a 3 volt battery to the junction of R78, R138 and C55. Connect the positive terminal to chassis.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1. Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.6MC (Unmod)	Any	DC Probe thru 22K Ω to Point A. Common to chassis.	A1, A2	Adjust for MINIMUM deflection.
2. Direct	"	20.1MC	"	"	A3	"
3. Direct	"	23.9MC	"	"	A4	Adjust for maximum deflection. Attenuate signal generator to maintain a maximum 2 volt reading.
4. Direct	"	25.6MC	"	"	A5	"
5. Direct	"	23MC	"	"	A6	"
6. Direct	"	25.5MC	"	"	A7	"
7. Direct	"	22.7MC	"	"	A8	"
8. Direct	"	4.5MC	"	"	A9	Adjust for MINIMUM deflection.

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
9. Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	24MC (10MC SWP)	21.6MC 26.1MC	Any	Vert. Amp. to Point A. Low side to chassis.		Check for response curve similar to figure 1. The 26.1MC marker should be at 50% of response. If necessary, slightly retouch A4 thru A8 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
10. Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.6MC (Unmod.)	Any	DC Probe thru 10K Ω to Point B. Common to chassis.	A10, A11, A12, A13	Adjust for maximum deflection.
11. Direct	"	"	"	DC Probe thru 10K Ω to Point C. Common to chassis.	A14	"
12. Direct	"	"	"	DC Probe to Point D. Common to chassis.	A15	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

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10. Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.6MC (450KC SWP)	21.6MC	Any	Vert. Amp. thru 22K Ω to Point B. Low side to chassis.	A10, A11, A12, A13	Adjust for maximum amplitude and symmetry as per figure 2.
11. Direct	"	"	"	"	Vert. Amp. to Point D. Low side to chassis.	A14, A15	Adjust A15 to place 21.6MC at center of diagonal line as per figure 3. Adjust A14 for maximum amplitude and straightness of diagonal line. Continue with step 13.

RF ALIGNMENT

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
13. Two 150 Ω carbon res.	Across antenna terminals with 150 Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. Amp. to Point E. Low side to chassis.	A16, A17, A18	Adjust for response curve similar to figure 4 with markers above 70%.
14. "	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check all channels for response similar to figure 4. If markers fall below 70% on any channel, make slightly adjustment of A16, A17 and A18 with selector switch set for that channel. Recheck all channels to see that they have not been seriously effected.
		201MC (10MC SWP)	199.25MC 203.75MC	11			
		195MC (10MC SWP)	193.25MC 197.75MC	10			
		189MC (10MC SWP)	187.25MC 191.75MC	9			
		183MC (10MC SWP)	181.25MC 185.75MC	8			
		177MC (10MC SWP)	175.25MC 179.75MC	7			
		85MC (10MC SWP)	83.25MC 87.75MC	6			
		79MC (10MC SWP)	77.25MC 81.75MC	5			
		69MC (10MC SWP)	67.25MC 71.75MC	4			
		83MC (10MC SWP)	81.25MC 85.75MC	3			
		57MC (10MC SWP)	55.25MC 59.75MC	2			

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace original 6J8 in its socket.

Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency for a majority of the channels, it may be possible to correct them in one step using A19. It should be noted that this is an all channel oscillator circuit adjustment, and should not be adjusted for any individual channel. If adjustment of A19 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the individual channel oscillator adjustment for each channel that is off frequency. The individual channel oscillator adjustments are reached through a hole just to the right of the channel switch shaft.

The signal 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	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
15. Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	215.75MC (Unmod.)	13	DC Probe to Point D. Common to chassis.	A20	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
		209.75MC	12		A21	
		203.75MC	11		A22	
		197.75MC	10		A23	
		191.75MC	9		A24	
		185.75MC	8		A25	
		179.75MC	7		A26	
		87.75MC	6		A27	
		81.75MC	5		A28	
		71.75MC	4		A29	
		65.75MC	3		A30	
		59.75MC	2		A31	

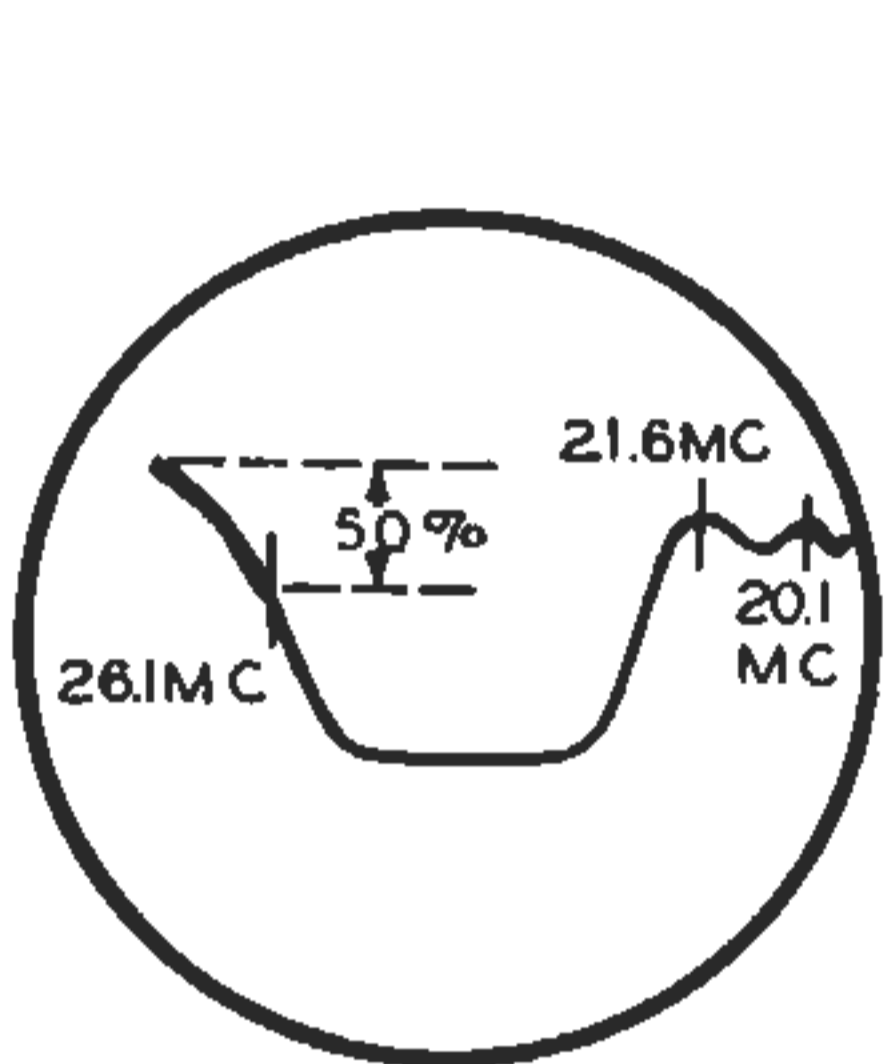


FIG. 1

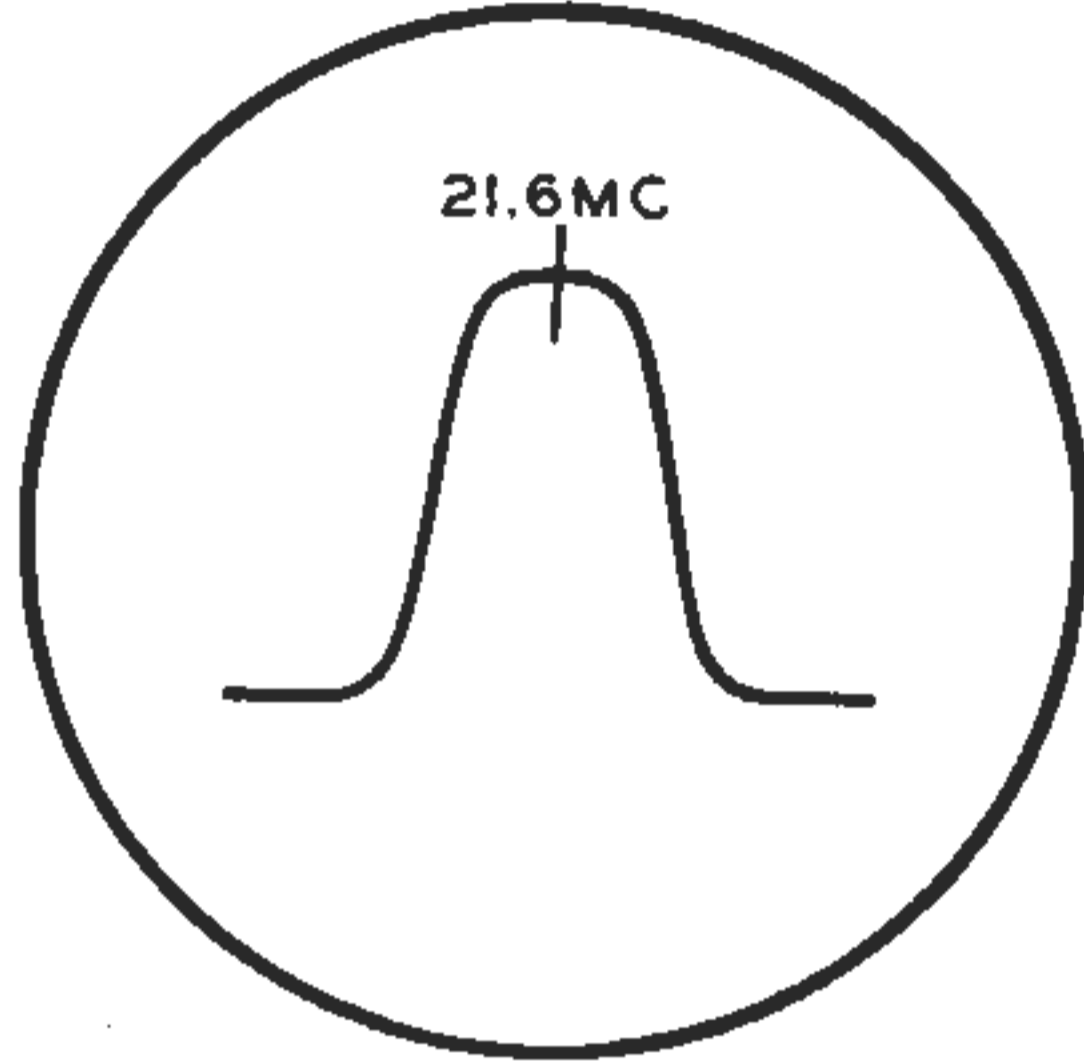


FIG. 2

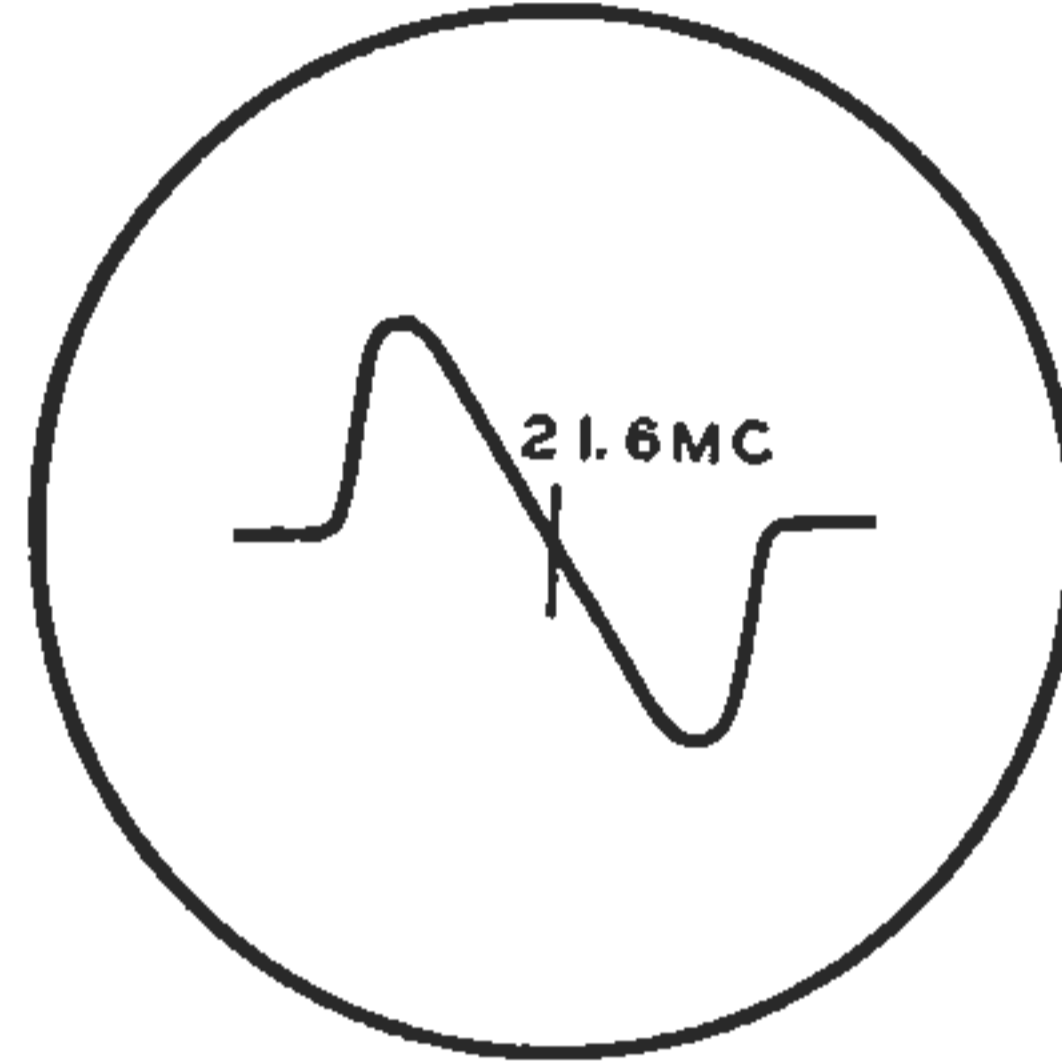


FIG. 3

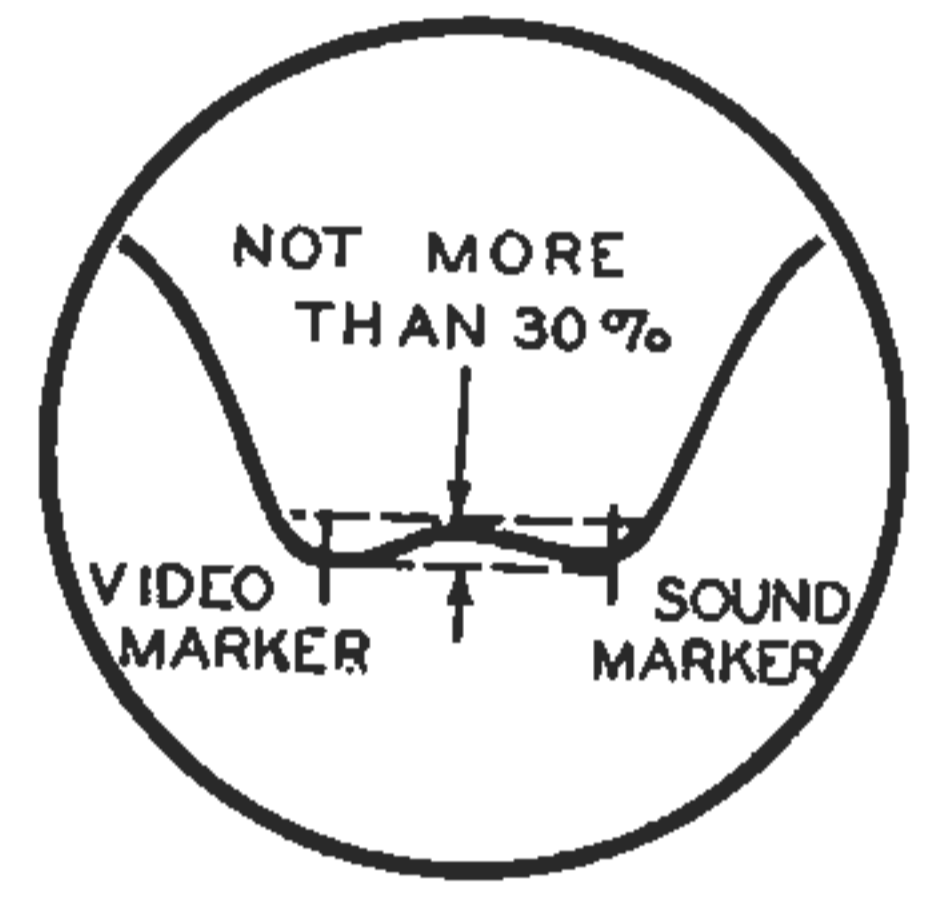


FIG. 4

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

RESISTANCE READINGS

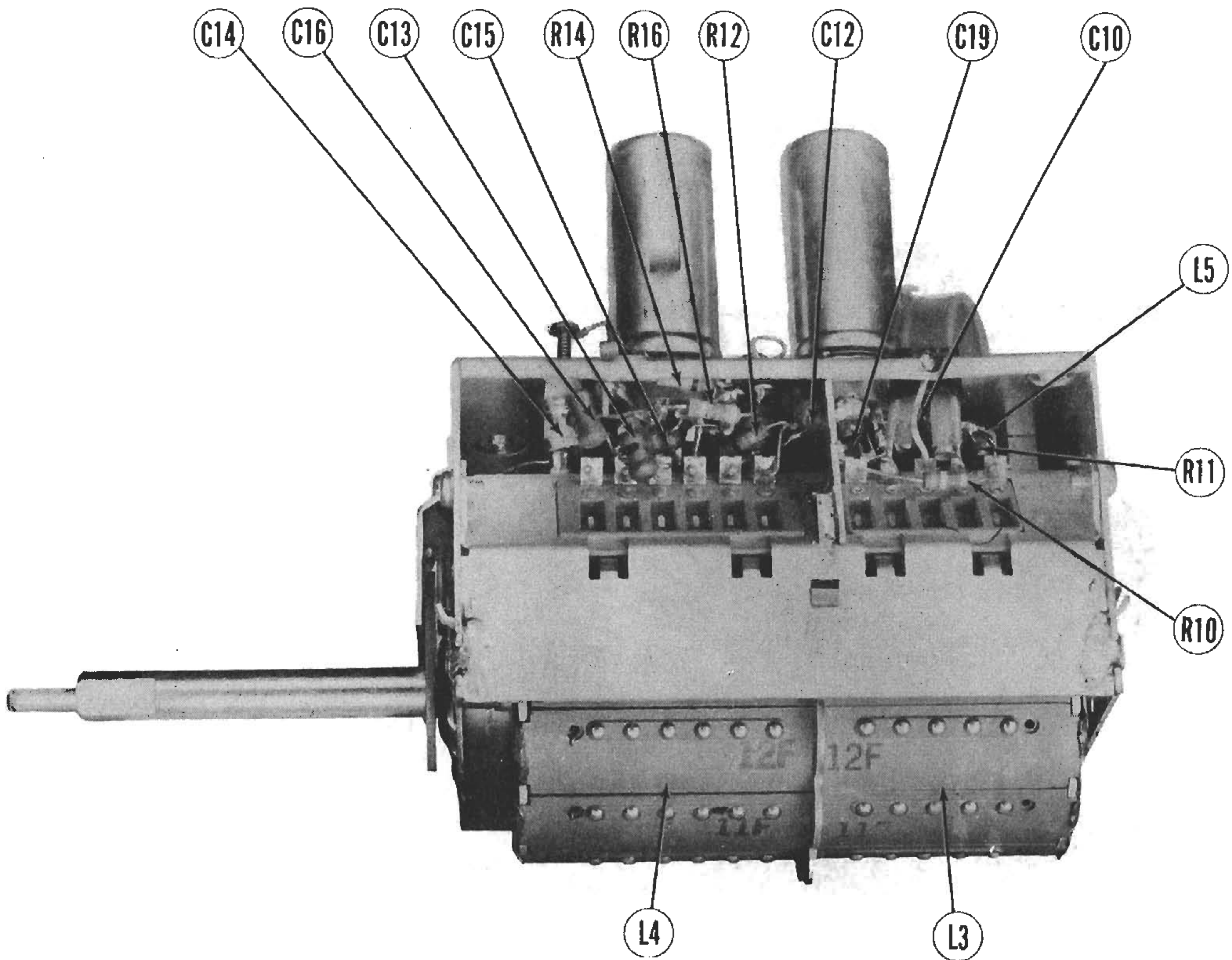
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	- .4VDC	0V.	6.3VAC	0V.	100VDC	100VDC	0V.		
V 2	6J6	75VDC	130VDC	6.3VAC	0V.	-1.5VDC	\$-2.4VDC	0V.		
V 3	6CB6	- .5VDC	1VDC	0V.	6.3VAC	110VDC	110VDC	0V.		
V 4	6CB6	- .3VDC	1VDC	6.3VAC	0V.	110VDC	110VDC	0V.		
V 5	6CB6	- .3VDC	.6VDC	6.3VAC	0V.	110VDC	120VDC	0V.		
V 6	6CB6	0V.	.2.3VDC	6.3VAC	0V.	95VDC	120VDC	0V.		
V 7	6AL5	0V.	0V.	6.3VAC	0V.	1.1VDC	0V.	-3.2VDC		
V 8	6AU6	-1.4VDC	0V.	6.3VAC	0V.	125VDC	80VDC	0V.		
V 9	6AR5	2.5VDC	35VDC	0V.	6.3VAC	85VDC	140VDC	85VDC		
V 10	6AU6	120VDC	140VDC	6.3VAC	6.3VAC	250VDC	140VDC	140VDC		
V 11	6AU6	0V.	0V.	0V.	6.3VAC	120VDC	120VDC	1VDC		
V 12	6AU6	0V.	0V.	0V.	6.3VAC	125VDC	125VDC	1VDC		
V 13	6AU6	- .4VDC	0V.	0V.	6.3VAC	60VDC	60VDC	0V.		
V 14	6AL5	.2VDC	- .7VDC	6.3VAC	0V.	0V.	0V.	- .7VDC		
V 15	12AU7	100VDC	2.5VDC	20VDC	6.3VAC	45VDC	45VDC	9VDC	6.3VAC	
V 16	12AU7	65VDC	- .6VDC	0V.	0V.	17VDC	17VDC	-2.7VDC	0V.	6.3VAC
V 17	12AU7	130VDC	0V.	6.6VDC	0V.	170VDC	170VDC	-33VDC	0V.	6.3VAC
V 18	6AL5	2.6VDC	-2.6VDC	6.3VAC	0V.	0V.	0V.	- .3VDC		
V 19	12BH7	5.6VDC	- .3VDC	.4VDC	0V.	120VDC	120VDC	-9.2VDC	0V.	6.3VAC
V 20	12BH7	440VDC	0V.	32VDC	6.3VAC	6.3VAC	440VDC	0V.	32VDC	0V.
V 21	6AL5	0V.	-6.2VDC	0V.	6.3VAC	2VDC	0V.	-6.2VDC		
V 22	6AR5	-15VDC	.4VDC	0V.	6.3VAC	240VDC	140VDC	0V.		
V 23	6AC7	0V.	0V.	1.4VDC	0V.	1.4VDC	80VDC	6.3VAC	270VDC	
V 24	6BQ6GT	535VDC	6.3VAC	0V.	110VDC	-27VDC	0V.	0V.	.5VDC	TOP CAP
V 25	6U4GT	0V.	0V.	540VDC	0V.	320VDC	0V.	6.3VAC	60V.	
V 26	1B3GT		* DO NOT MEASURE.	PIN 10	PIN 11					
V 27	16GP4	0V.	-1.3VDC	320VDC	75VDC	6.3VAC	4VDC	1.1 Meg.	190K Ω	270K Ω

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	140K Ω	0 Ω	.1 Ω	0 Ω	†2.4K Ω	†2.4K Ω	0 Ω		
V 2	6J6	†4.9K Ω	†220 Ω	.1 Ω	0 Ω	225K Ω	10K Ω	0 Ω		
V 3	6CB6	110K Ω	68 Ω	0 Ω	.1 Ω	†1.6K Ω	†1.6K Ω	0 Ω		
V 4	6CB6	110K Ω	68 Ω	.1 Ω	0 Ω	†1.4K Ω	†1.4K Ω	0 Ω		
V 5	6CB6	105K Ω	68 Ω	.1 Ω	0 Ω	†4.6K Ω	†1.3K Ω	0 Ω		
V 6	6CB6	.1 Ω	270 Ω	.1 Ω	0 Ω	†5.8K Ω	†1.1K Ω	0 Ω		
V 7	6AL5	.1 Ω	0 Ω	.1 Ω	0 Ω	1 Meg.	0 Ω	4000 Ω		
V 8	6AU6	4000 Ω	0 Ω	.1 Ω	0 Ω	†4K Ω	†5.5K Ω	0 Ω		
V 9	6AR5	1 Meg.	1.7K Ω	0 Ω	.1 Ω	†3.3K Ω	†0 Ω	†3.3K Ω		
V 10	6AU6	†37K Ω	†0 Ω	6.2 Ω	6.0 Ω	80K Ω	†15K Ω	†0 Ω		
V 11	6AU6	0 Ω	0 Ω	0 Ω	.1 Ω	†1.2K Ω	†1.2K Ω	68 Ω		
V 12	6AU6	100K Ω	0 Ω	0 Ω	.1 Ω	†1000 Ω	†1000 Ω	68 Ω		
V 13	6AU6	150K Ω	0 Ω	0 Ω	.1 Ω	†6K Ω	†6K Ω	0 Ω		
V 14	6AL5	200K Ω	100K Ω	.1 Ω	0 Ω	0 Ω	0 Ω	100K Ω		
V 15	12AU7	†10K Ω	475K Ω	5.2K Ω	6.0 Ω	6.0 Ω	†230K Ω	1 Meg.	20K Ω	6.2 Ω
V 16	12AU7	6.8K Ω	1 Meg.	0 Ω	0 Ω	0 Ω	6.35K Ω	10 Meg.	0 Ω	.1 Ω
V 17	12AU7	†3.3K Ω	220K Ω	2.2K Ω	0 Ω	0 Ω	†230K Ω	220K Ω	0 Ω	.1 Ω
V 18	6AL5	1.5 Meg.	1.2 Meg.	.1 Ω	0 Ω	70K Ω	0 Ω	70K Ω		
V 19	12BH7	#1.2 Meg.	70K Ω	2000 Ω	0 Ω	0 Ω	#1 Meg.	2.4 Meg.	0 Ω	.1 Ω
V 20	12BH7	†1.6 Meg.	2.2 Meg.	5.7K Ω	.1 Ω	.1 Ω	#2 Meg.	2.6 Meg.	5.7K Ω	0 Ω
V 21	6AL5	0 Ω	470K Ω	680 Ω	.1 Ω	.1 Ω	†11K Ω	2.2 Meg.	680 Ω	0 Ω
V 22	6AR5	22K Ω	70K Ω	0 Ω	.1 Ω	940K Ω	0 Ω	470K Ω		
V 23	6AC7	0 Ω	16 Ω	0 Ω	.1 Ω	#5K Ω	†0 Ω	Inf.		
V 24	6BQ6GT	†32 Ω	0 Ω	470 Ω	1.4 Meg.	480 Ω	†12K Ω	.1 Ω	#22K Ω	TOP CAP
V 25	6U4GT	7.5K Ω	Inf.	Inf.	#15K Ω	470K Ω	Inf.	0 Ω	3.5 Ω	†115 Ω
V 26	1B3GT	Inf.	Inf.	Inf.	Inf.	#13 Ω	Inf.	†.2 Ω	†0 Ω	TOP CAP
V 27	16GP4	0 Ω	1.1 Meg.	PIN 10 #1000 Ω	PIN 11 190K Ω	PIN 12 .1 Ω	Inf.	Inf.	Inf.	†515 Ω

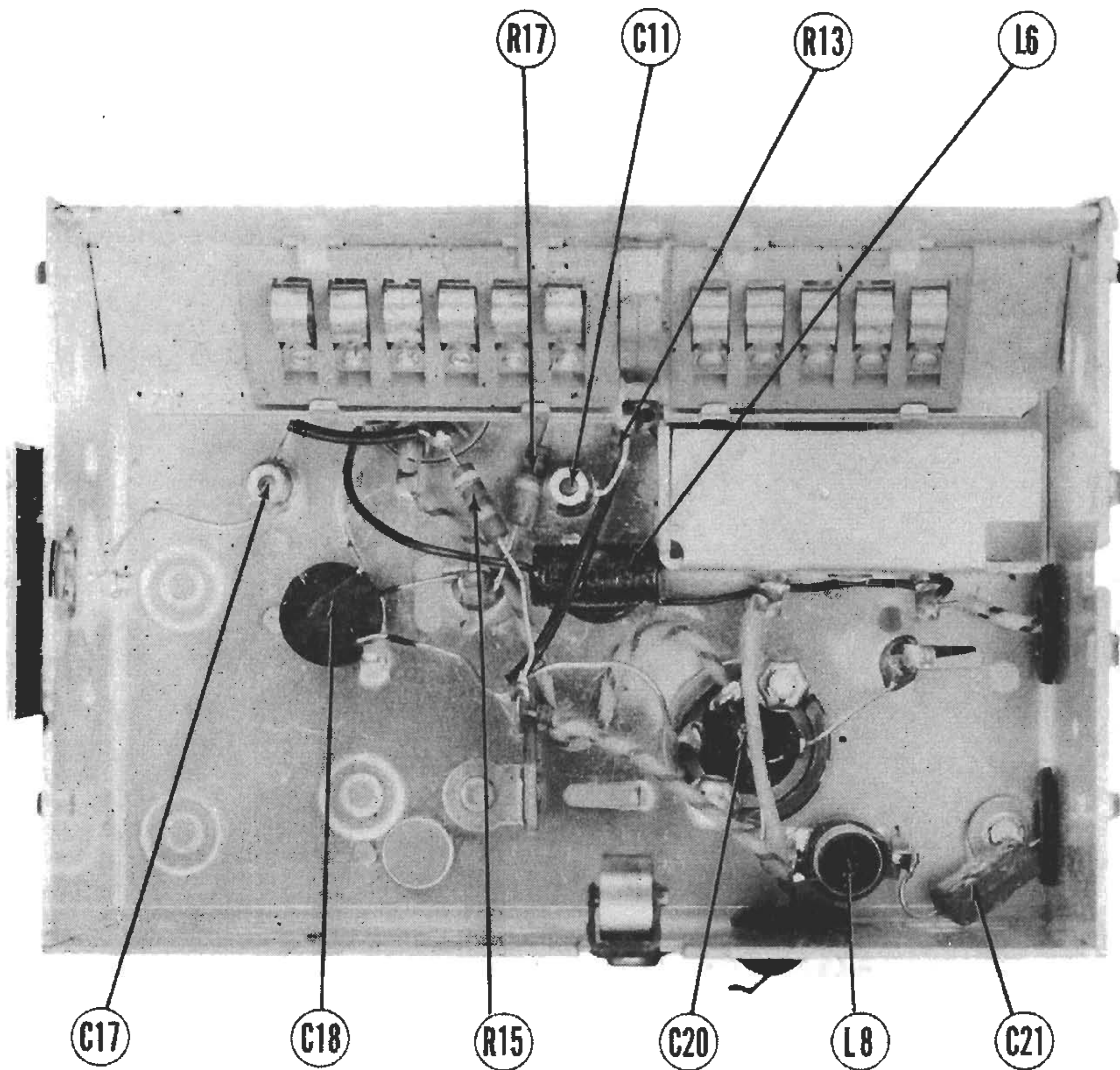
§ TAKEN WITH VACUUM TUBE VOLTMETER.
 ♦ MEASURED FROM 90VDC LINE.
 * DO NOT MEASURE.

† MEASURED FROM 140VDC LINE.
 ‡ MEASURED FROM PIN 3 OF V25.
 ♦ MEASURED FROM 90VDC LINE.
 # MEASURED FROM JUNCTION OF L2 & C2B.

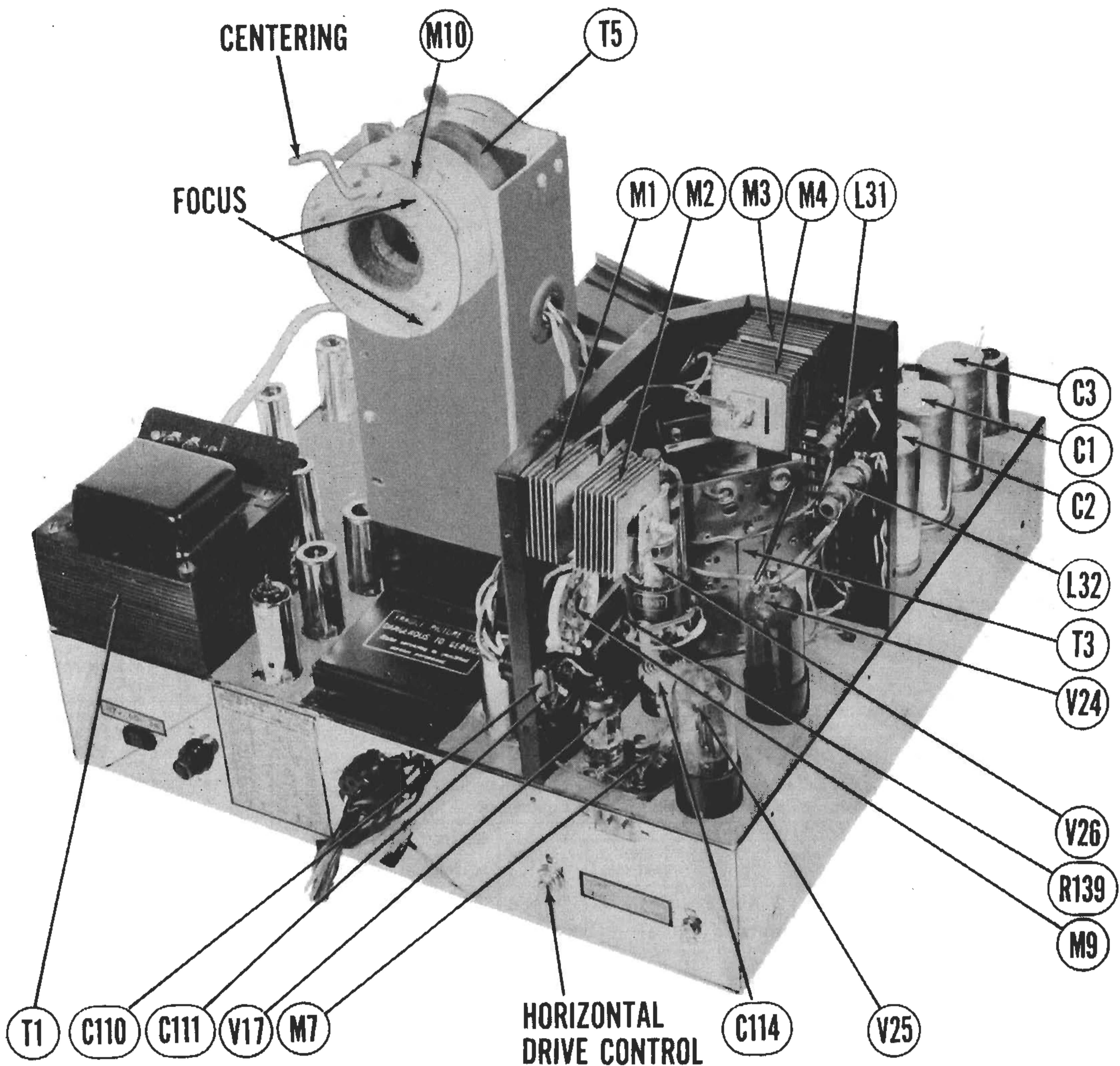
1. DC Voltage measurements are at 20,000 ohms per volt, AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.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



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ALIGNMENT

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

Turn the horizontal hold control to the mid-position of its range and adjust the horizontal frequency slug (B1) until picture synchronizes horizontally.

If the horizontal blanking bar appears in the picture, or if ripples occur in the raster adjust the horizontal phasing slug (B2) until the unstable condition is removed.

HORIZONTAL LINEARITY ADJUSTMENT

Turn the horizontal drive control clockwise as far as possible without crowding the right side of the picture.

Adjust horizontal size slug (B3) until the picture fills the mask horizontally.

Adjust the horizontal linearity slug (B4) until picture is symmetrical from left to right. A slight readjustment of the horizontal drive control may be necessary for optimum results.

FOCUS ADJUSTMENT

There are two focus adjustment screws on rear of the Focus magnet. Adjust either focus screw (B5) for sharpest trace lines. Do not unscrew either screw so that it extends more than 3/8 inch beyond the rear of the focus magnet.

TUBES (SYLVANIA or Equivalent)

Table with columns: ITEM No., USE, REPLACEMENT DATA (Radio Craftsmen PART No., STANDARD REPLACEMENT, RMA BASE TYPE), NOTES. Rows include V1-V27A.

Table with columns: ITEM No., RATING (CAP., VOLT), REPLACEMENT DATA (Radio Craftsmen PART No., AEROVOX PART No., CENTRAL LAB PART No.). Rows include C56-C114.

CAPACITORS

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

Table with columns: ITEM No., RATING (CAP., VOLT), REPLACEMENT DATA (Radio Craftsmen PART No., AEROVOX PART No., CENTRAL LAB PART No., CORNELL-DUBILIER PART No., ERIE PART No., SPRAGUE PART No.), IDENTIFICATION CODES AND INSTALLATION NOTES. Rows include C1A-C55.

* Not used in all models.
† Some models use .22MFD in this application

Table with columns: ITEM No., RATING (RESISTANCE, WATTS), REPLACEMENT DATA (Radio Craft. PART No., IRC PART No., CLARCO PART No.). Rows include R1A-R9.

* File slot in shaft to duplicate original.
Note 1. - Not used in all Models.

Table with columns: ITEM No., RATING (RESISTANCE, WATTS), REPLACEMENT DATA (RADIO CRAFTSMEN PART No., IRC PART No.). Rows include R10-R20.

D DESCRIPTIONS

RES (CONT.)

PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES	
PTE4P1			4TM-P1	AGC Filter	
PTE4S5			4TM-S47	AGC Filter	
IW5D1	GP2L-001		29C21	1st S. IF Decoup.	
IW5D1	GP2L-001		29C21	1st S. IF Cath.	
IW5D1	GP2L-001		29C21	1st S. IF Fil.	
5W5Q5	GPIK-47		19C25	2nd S. IF Grid	
IW5D1	GP2L-001		29C21	2nd S. IF Decoup.	
IW5D1	GP2L-001		29C21	2nd S. IF Cath.	
IW5D1	GP2L-001		29C21	2nd S. IF Fil.	
IW5D1	GP2L-001		29C21	RF Bypass	
5W5Q25	GPIK-22		19C23	Limiter Grid Filter	
IW5D1	GP2L-001		29C21	Limiter Screen	
IW5D1	GP2L-001		29C21	Limiter Fil.	
IW5D1	GP2L-001		29C21	FM Disc. Fil.	
5W5T1	GPIK-100		19C11	RF Bypass	
IW5D15	GP2L-0015		19C20	De-emphasis	
PTE4S2			4TM-S22	Audio Coupling	
PTE4S5			4TM-S47	Audio Coupling	
PTE4S2			4TM-S22	Audio Coupling	
PTE4S5			4TM-S47	Tone Comp.	
PTE4S5			4TM-S47	Sync. Coupling	
PTE4S5			4TM-S47	Sync. Coupling	
PTE4S5			4TM-S47	Vert. Sync. Coup.	
IW5D15	GP2L-0015		19C20	Voltage Divider	
PTE4S5			4TM-S47	Vert. Sync. Coupling	
PTE4S5			4TM-S47	Vert. Sync. Coupling	
PTE4S5			4TM-S47	Vert. Sync. Coupling	
PTE4S5			4TM-S47	Vert. Sync. Coupling	
PTE4P1			4TM-P1	Vert. Feedback *	
IW5D1	GP2L-001		1FM-21	Integrator Net *	
GT4P25			4TM-P22	Vert. AFC Plate Dec.	
PTE4S1	811-01		4TM-S1	AFC Filter	
IW5D1	GP2L-001		1FM-21	Vert. Osc. Grid	
PTE4S5			4TM-S47	Vert. Discharge	
PTE4P1			4TM-P1	Vert. Sweep Coup.	
PTE6S3			6TM-S3	Fixed Trimmer	
5W5T1	GPIK-100		1FM-31	Hor. Sync. Coup.	
PTE4S1			4TM-S1	Fixed Trimmer	
PTE6D5	GP2M-0047		6TM-D47	AFC Filter	
PTE4S5			4TM-S47	AFC Filter	
PTE6D5	811-005		6TM-D5	Hor. Osc. Grid Cap.	
5W5T5	GP2K-470		19C15	Phase Shifter	
PTE4S1	811-01		4TM-S1	Phase Shifter	
PTE6D5	GP2M-0047		6TM-D47	Hor. AFC Coupling	
PTE4S5			4TM-S47	Hor. AFC Screen	
5W5T5	GP2K-470		1FM-35	Differentiator Net	
PTE4S1	811-01		4TM-S1	Differentiator Net	
PTE4P1			4TM-P1	Hor. Disch. Plate Dec.	
IW5D2			MS-22	Hor. Discharge	
IW5D1	GP2L-001		1FM-21	Hor. Sweep Coupling	
PTE4P1			4TM-P1	Hor. Output Screen	
PTE6S3			6TM-S3	Damper Filter	
PTE6S5			6TM-S47	Damper Filter	
GT2P5			2TM-P47	Hor. Sweep Coupling	
				Fixed Trimmer *	
				Fixed Trimmer *	
PTE6S1	811-01		6TM-S1	Line Filter	
PTE6S1	811-01		6TM-S1	Line Filter	
				H. V. Filter	

RESISTORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	Radio Craftsmen PART No.	IRC PART No.	
R21	1000Ω		23Z003	BTS-1000	AGC Network
R22	10KΩ		23Z004		2nd Video IF Amp. Grid
R23	68Ω		23Z061		2nd Video IF Amp. Cathode
R24	1000Ω		23Z003	BTS-1000	2nd Video IF Amp. Decoupling
R25	150Ω 20%		23Z012	BTS-150	Decoupling
R26	1000Ω		23Z003	BTS-1000	AGC Network
R27	4700Ω		23Z043	BTS-4700	3rd Video IF Amp. Grid
R28	68Ω		23Z061		3rd Video IF Amp. Cathode
R29	3300Ω		23Z033	BTS-3300	3rd Video IF Amp. Plate
R30	1000Ω		23Z003	BTS-1000	3rd Video IF Amp. Decoupling
R31	150Ω 20%		23Z012	BTS-150	Decoupling
R32	330Ω 20%		23Z032	BTS-330	4th Video IF Amp. Cathode - See Note 3
R33	2200Ω		23Z023	BTS-2200	4th Video IF Amp. Cathode - See Note 3
R34	4700Ω		23Z043	BTS-4700	4th Video IF Amp. Plate
R35	1000Ω		23Z003	BTS-1000	4th Video IF Amp. Decoupling
R36	150Ω 20%		23Z012	BTS-150	Decoupling
R37	150Ω 20%		23Z012	BTS-150	Decoupling
R38	4000Ω		23X071	BTS-3900	Video Det. Diode Load
R39	15KΩ		23Z114	BTA-15K	Voltage Divider
R40	6800Ω 20%		23Z063	BTS-6800	1st Video Amp. Screen
R41	4000Ω		23X071	BTS-3900	1st Video Amp. Plate
R42	1 Meg.		23Z006	BTS-1 Meg.	2nd Video Amp. Grid
R43	220Ω		23Z022	BTS-220	2nd Video Amp. Cathode
R44	3300Ω		23Z233	BTB-3300	2nd Video Amp. Plate
R45	1 Meg.		23Z006	BTS-1 Meg.	DC Restorer Load
R46	100KΩ		23Z005	BTS-100K	Picture Tube Grid
R47	330KΩ		23Z035	BTS-330K	Voltage Divider
R48	10KΩ		23Z004	BTS-10K	Voltage Divider
R49	150KΩ		23Z015	BTS-150K	Voltage Divider
R50	22KΩ		23Z024	BTS-22K	Voltage Divider
R51	1000Ω		23Z003	BTS-1000	Acc. Anode Load
R52	3300Ω		23Z033	BTS-3300	Centering Network
R53	68Ω		23Z061		1st Sound IF Amp. Cathode
R54	1000Ω		23Z003	BTS-1000	1st Sound IF Decoupling
R55	100KΩ 20%		23Z005	BTS-100K	2nd Sound IF Amp. Grid
R56	68Ω		23Z061		2nd Sound IF Amp. Cathode
R57	1000Ω		23Z003	BTS-1000	2nd Sound IF Amp. Decoupling
R58	220Ω		23Z022	BTS-220	Decoupling
R59	150KΩ		23Z015		Limiter Grid
R60	10KΩ				Voltage Divider - See Note 4
R61	10KΩ				Limiter Decoupling - See Note 4
R62	100KΩ 20%		23Z005	BTS-100K	Disc. Diode Load
R63	100KΩ 20%		23Z005	BTS-100K	Disc. Diode Load
R64	47KΩ		23Z044	BTS-47K	Deemphasis
R65	1 Meg. 20%		23Z006	BTS-1 Meg.	AF Amp. Grid
R66	10KΩ		23Z004	BTS-10K	AF Amp. Grid
R67	10KΩ		23Z004	BTS-10K	AF Amp. Cathode
R68	220KΩ		23Z025	BTS-220K	AF Amp. Plate
R69	10KΩ		23Z104	BTB-10K	AF Amp. Plate Decoupling
R70	47KΩ 20%		23Z044	BTS-47K	Tone Compensation
R71	15KΩ		23Z014	BTS-15K	Tone Compensation
R72	470KΩ		23Z045	BTS-470K	AF Amp. Grid
R73	4700Ω		23Z043	BTS-4700	AF Amp. Grid
R74	470Ω		23Z042	BTS-470	AF Amp. Cathode
R75	33KΩ		23Z034	BTS-33K	AGC Keying Grid
R76	22KΩ		23Z124	BTA-22K	Voltage Divider
R77	15KΩ		23Z014	BTS-15K	AGC Keying Screen
R78	68KΩ		23Z064	BTS-68K	AGC Network - See Note 5
R79	10KΩ		23Z004	BTS-10K	AGC Network
R80	4700Ω		23Z043	BTS-4700	AGC Network
R81	15KΩ 5%		23Z014	BTS-15K-5%	Isolation
R82	10 Meg. 20%		23Z007	BTS-10 Meg.	Sync. Clipper Grid
R83	33KΩ 20%		23Z034	BTS-33K	Sync. Clipper Plate
R84	10KΩ		23Z104	BTA-10K	Sync. Clipper Plate - See Note 6
R85	2200Ω		23Z023	BTS-2200	Voltage Divider - See Note 7
R86	2200Ω		23Z023	BTS-2200	Filter - See Note 4
R87	1 Meg.		23Z006	BTS-1 Meg.	Sync. Amp. Grid
R88	6800Ω		23Z063	BTS-6800	Sync. Amp. Plate
R89	4700Ω		23Z143	BTA-4700	Filter
R90	100KΩ		23Z005	BTS-100K	Integrator
R91	220KΩ		23Z025	BTS-220K	Vert. Phase Inv. Grid
R92	3300Ω 5%		23Z033	BTS-3300-5%	Vert. Phase Inv. Cathode
R93	3300Ω 5%		23Z033	BTS-3300-5%	Vert. Phase Inv. Plate
R94	470KΩ		23Z045	BTS-470K	Integrator
R95	470KΩ		23Z045	BTS-470K	Integrator
R96	22KΩ		23Z024	BTS-22K	Differentiator
R97	22KΩ		23Z024	BTS-22K	Differentiator
R98	1.5 Meg.		23Z016	BTS-1.5 Meg.	Differentiator
R99	1.5 Meg. 20%		23Z016	BTS-1.5 Meg.	Differentiator
R100	10 Meg. 20%		23Z007	BTS-10 Meg.	Integrator
R101	10KΩ		23Z004	BTS-10K	Phase Det. Load
R102	250KΩ			BTA-220K	Phase Det. Load - See Note 8
R103	10KΩ		23Z004	BTS-10K	Vert AFC Cath.
R104	1 Meg.		23Z006	BTS-1 Meg.	Vert AFC Plate
R105	470KΩ		23Z045	BTS-470K	Vert AFC Plate Decoupling
R106	2.2 Meg.		23Z026	BTS-2.2 Meg.	Voltage Divider - See Note 4
R107	1.5 Meg. 20%		23Z016	BTS-1.5 Meg.	Voltage Divider
R108	10 Meg. 20%		23Z007	BTS-10 Meg.	Vert. AFC Grid
R109	1 Meg.		23Z006	BTS-1 Meg.	Vert. Oscillator Plate
R110	3300Ω		23Z033	BTS-3300	Vert. Peaking - See Note 9
R111	2.2 Meg.		23Z026	BTS-2.2 Meg.	Vert. Output Grid
R112	680Ω 5%		23Z162	BTA-680-5%	Vert. Output Cathode
R113	68Ω		23Z061		Parasitic Suppressor
R114	68Ω		23Z061		Parasitic Suppressor
R115	68KΩ		23Z064	BTS-68K	Feedback Network - See Note 2
R116	150KΩ		23Z015	BTA-150K	Damping
R117	470KΩ		23Z045	BTS-470K	Horiz. Phase Det. Load
R118	470KΩ		23Z045	BTS-470K	Horiz. Phase Det. Load
R119	470KΩ		23Z045	BTS-470K	Horiz. AFC Filter Network
R120	470Ω		23Z042		Parasitic Suppressor
R121	10Ω		23Z001	BW- $\frac{1}{2}$ -10	Horiz. AFC Cathode
R122	470Ω		23Z042	BTS-470	Horiz. AFC Cathode
R123	15KΩ		23Z014	BTS-15K	Horiz. AFC Screen
R124	27KΩ 20%		23Z072	BTS-27K	Voltage Divider
R125	4.7 Meg.		23Z046	BTS-4.7 Meg.	Voltage Divider - See Note 4

CONTROLS

STAT No.	CENTRAL LAB PART No.	INSTALLATION NOTES
	BT-67-S	Volume Control - Tapped @ 150KΩ
	Not Req.	Attach to R1A per instructions
	Not Req.	Attach to R1A per instructions
	VK-130	Contrast Control - Wirewound
	AN-31	Horiz. Hold Control
	AK-1	Attach to R3A per instructions
	AN-69	Vert. Hold Control
	AK-1	Attach to R4A per instructions
	AN-10	Vert. Linearity Control
	AK-1	Attach to R5A per instructions
	B-40*	Brightness Control
	Not Req.	Attach to R6A per instructions
	B-75 *	Vert. Size Control
	Not Req.	Attach to R7A per instructions
	AN-26	Horiz. Drive Control
	AK-1	Attach to R8A per instructions
		Vert. Peaking Control - Wirewound
		See Note 1

RESISTORS

IDENTIFICATION CODES	
ALL RESISTORS ARE $\pm 10\%$ UNLESS OTHERWISE STATED	
RF Amp. Grid Coil Shunt	
AGC Network	
RF Amp. Plate Coil Shunt	
RF Amp. Decoupling	
Oscillator Grid	
Oscillator Plate - See Note 2	
Converter Grid	
Converter Grid	
1st Video IF Amp. Grid	
1st Video IF Amp. Cathode	
1st Video IF Amp. Decoupling	

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	Radio Craftsmen PART No.	IRC PART No.		
R126	22KΩ	2	23Z224	BTB-22K	Horiz. AFC Plate	
R127	22KΩ	1	23Z124	BTA-22K	Horiz. Osc. Grid	
R128	5000Ω	10	23X608	1-3/4A-5000	Horiz. Osc. Plate - Wirewound	
R129	6800Ω 20%	1/2	23Z063	BTS-6800	Differentiator	
R130	220KΩ		23Z025	BTS-220K	Horiz. Discharge Grid	
R131	220KΩ		23Z225	BTB-220K	Horiz. Discharge Plate	
R132	10KΩ 20%		23Z004	BTS-10K	Horiz. Discharge Plate Decoupling	
R133	1500Ω 20%		2	23Z045	BTS-1500	Horiz. Peaking - See Note 7
R134	470KΩ				BTS-470K	Horiz. Output Grid
R135	330Ω		23Z032	1-3/4A-15K	Parasitic Suppressor	
R136	15KΩ		5		1-3/4A-10K	Horiz. Output Screen- Wirewound - See Note 10
R137	10KΩ				23X609	Filter - Wirewound
R138	10KΩ				23Z104	BTA-10K
R139	470KΩ		1		23Z045	H. V. Filter
R140	22Ω	4	23Z421	Surge Limiter - Wirewound		
R141	22Ω	4	23Z421	Surge Limiter - Wirewound		
R142	1 Meg.	1/2	23Z006	BTS-1 Meg.	Horiz. Discharge Plate - See Note 4	

- Note 2. - Some Models use a 47KΩ resistor in this application.
 Note 3. - Some Models use a 220Ω Resistor in this application.
 Note 4. - Not Used in all Models.
 Note 5. - Some Models use a 47KΩ and a 33KΩ resistor in series to obtain required resistance and wattage.
 Note 6. - Some Models use a 15KΩ 1 Watt resistor in this application.
 Note 7. - Some Models use a 3300Ω resistor in this application.
 Note 8. - Some Models use a 220KΩ 1 Watt resistor in this application.
 Note 9. - Some Models use a 4700Ω resistor in this application.
 Note 10. - Some Models use a 22KΩ 5 Watt resistor in this application.
 Note 11. - Some Models use a 22KΩ 1 Watt resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	RADIO CRAFTSMEN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 1.7 A	300VCT .170ADC	6.3VAC @ 1.8A	6.3VAC @ 9.3A	19S209			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		Radio Craftsmen PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.					
T2	240Ω	1350Ω	19S601	A-8111 ①	A-3000 ①	TBO-1	Vert. Block. Osc. Trans Hor. Output Trans.
T3	485Ω Tap @	11Ω Tap @ .5Ω	19X010				
T	80Ω	7.5Ω					Vert. Output Trans. Horiz. Deflection Coil Vert. Deflection Coil
T4	1100Ω	13Ω	19S009	A-8112	A-3036	TSO-5 ①	
T5A B	9Ω 53Ω		5X807	DY-7	MD-70F		

① Drill One New Mtg. Hole

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 μ)	Radio Craftsmen PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.170ADC	95Ω	5 Henries	19S403	C-2325	C-2991	R-7150 ①	① Drill New Mtg. Holes
L2	.014ADC	21.5Ω	.4 Henries	19S404				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	RADIO CRAFTSMEN PART No.	MEISSNER PART No.	
		L3	Ant. Coil	0Ω	0Ω	
L4	RF, Mixer Grid & Osc. Coils	0Ω				Part of Tuner Part #25A040
L5	Fil. Choke	0Ω		5X406		
L6	Fil. Choke	0Ω		5X406		
L7	Conv. Trans.	1.8Ω	0Ω	5X009		
L8	1st Video IF	.3Ω		5X008		
L9	2nd Video IF	.1Ω		5A010		With Trap
L10	Fil. Choke	0Ω		5X406		
L11	3rd Video IF	.1Ω		5A011		With Trap
L12	Fil. Choke	0Ω		5X406		
L13	4th Video IF	.1Ω		5A012		
L14	Fil. Choke	0Ω		5X406		
L15	5th Video IF	.1Ω		5A012		
L16	Fil. Choke	0Ω		5X406		
L17	Sound Trap	1.5Ω		5A407		
L18	Peaking	4.3Ω		5X404	19-1921 *	120 Microhenries, Wound on 22KΩ resistor, Blue dot
L19	Peaking	6.5Ω		5X405	19-1922	250 Microhenries, Green dot
L20	Peaking	4.3Ω		5X404	19-1921 *	120 Microhenries, Wound on 22KΩ resistor, Blue dot
L21	Peaking	3.7Ω		5X403	19-1920	93 Microhenries, Red dot
L22	Peaking	4.3Ω		5X404	19-1921 *	120 Microhenries, Wound on 22KΩ resistor, Blue dot
L23	Peaking	3.7Ω		5X403	19-1920	93 Microhenries, Red dot
L24	1st Sound IF	.2Ω	.2Ω	5X006		
L25	Fil. Choke	0Ω		5X406		
L26	2nd Sound IF	.2Ω	.2Ω	5X006		
L27	Fil. Choke	0Ω		5X406		
L28	Disc. Trans.	.2Ω	.3Ω	5X007		
L29	Fil. Choke	0Ω		5X406		
L30	Horiz. Sync. Disc. Trans.	50Ω	50Ω	5X805		
L31	Horiz. Lin.	32Ω		5A809		
L32	Horiz. Size	.2Ω	35Ω	5A810		

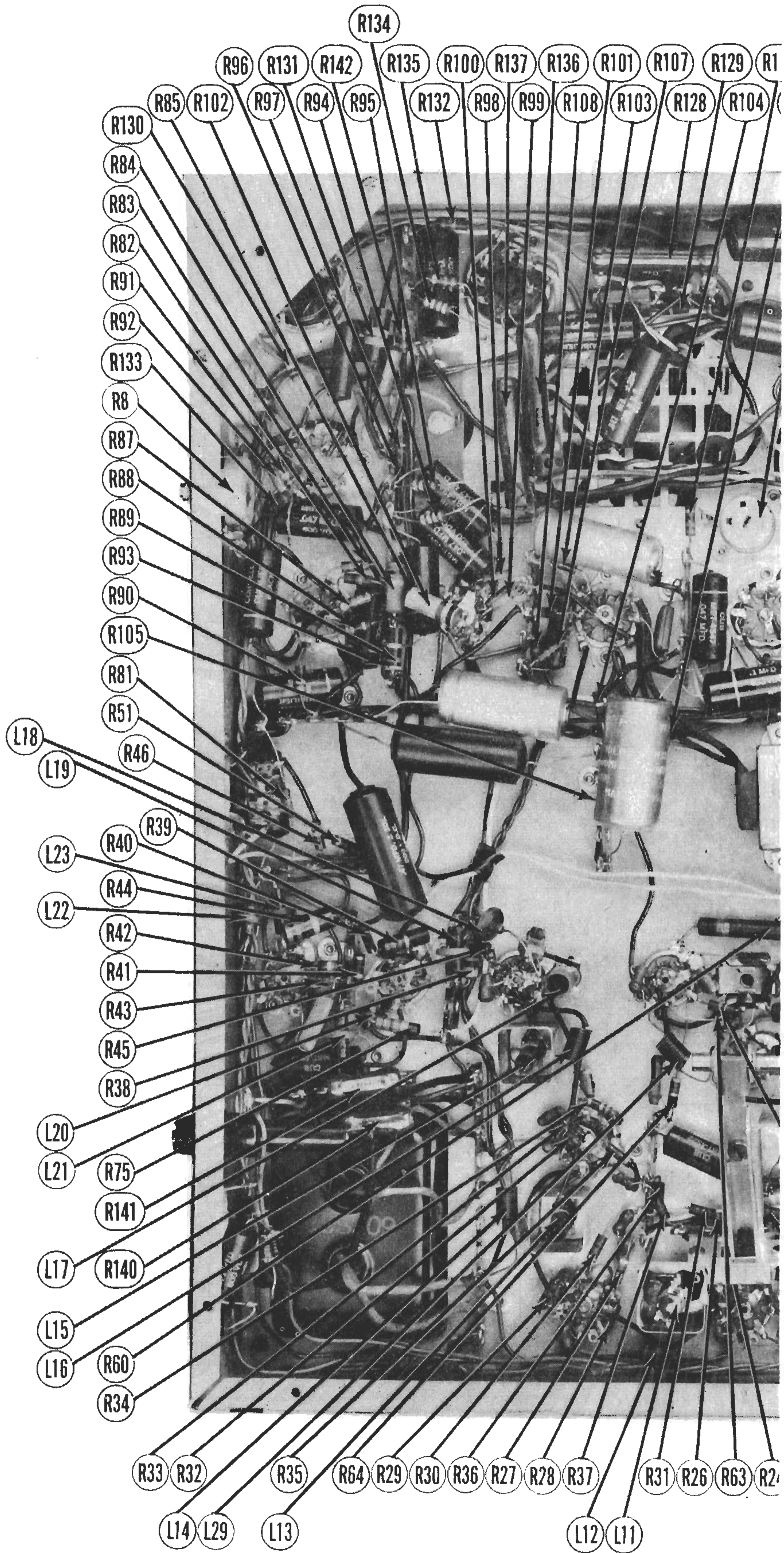
* Parallel with 22KΩ resistor.

SELENIUM RECTIFIER

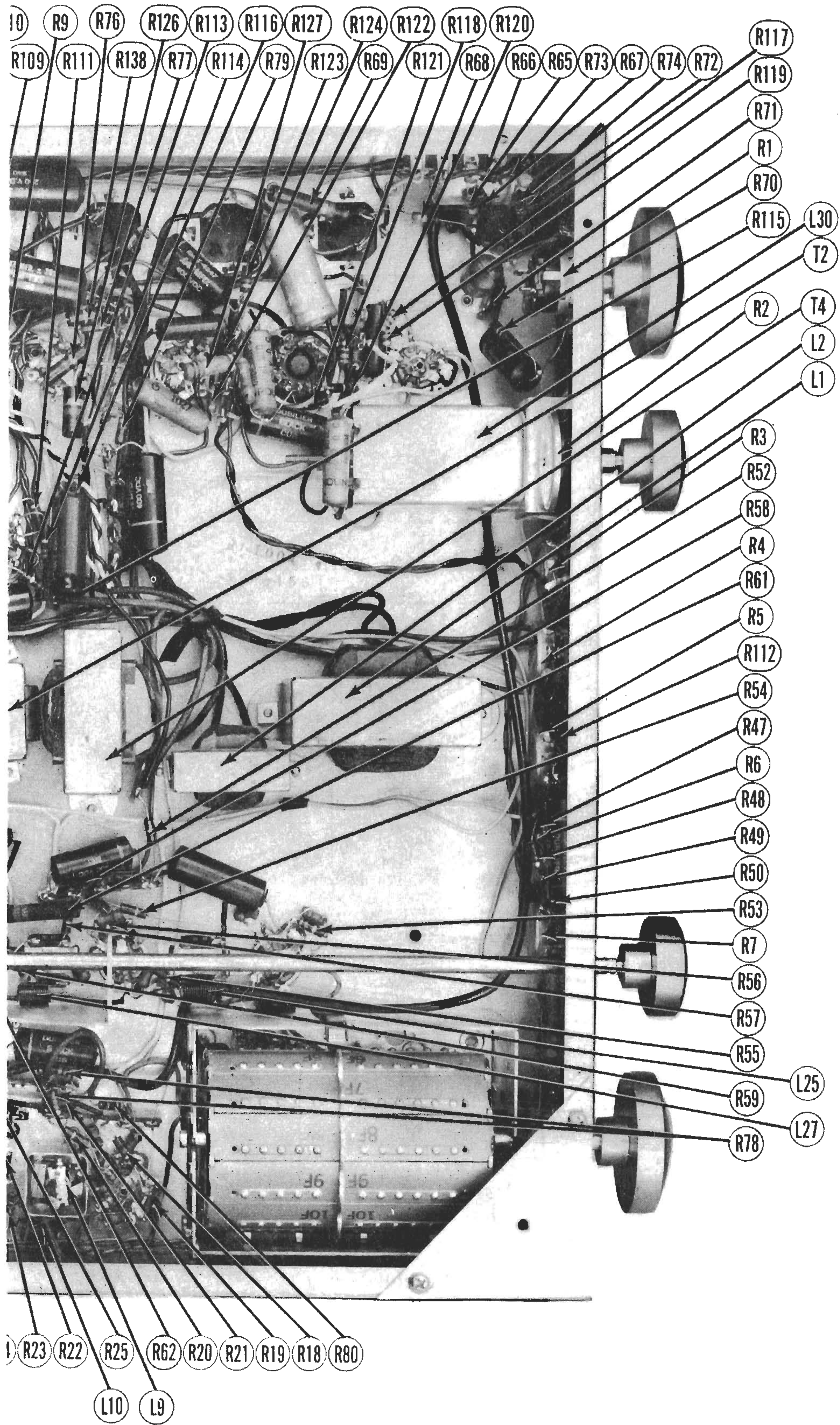
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	Radio Craftsmen PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.170ADC	31X003	NF-5		
M2	.170ADC	31X003	NF-5		
M3	.170ADC	31X003	NF-5		
M4	.170ADC	31X003	NF-5		

MISCELLANEOUS

ITEM No.	PART NAME	RADIO CRAFTSMEN PART No.	NOTES
M5	RF Tuner	25A040	
M6	Fuse	34X003	3A 250V Type AGC
M7	Fuse	34X001	.25A 250V Type AGC
M8	Switch		Video Booster
M9	Switch		Horiz. Size - Not used in all Models
M10	Focus Magnet		
M11	Ion Trap		



CHASSIS BOTTOM VIEW-RESISTOR



R AND INDUCTOR IDENTIFICATION