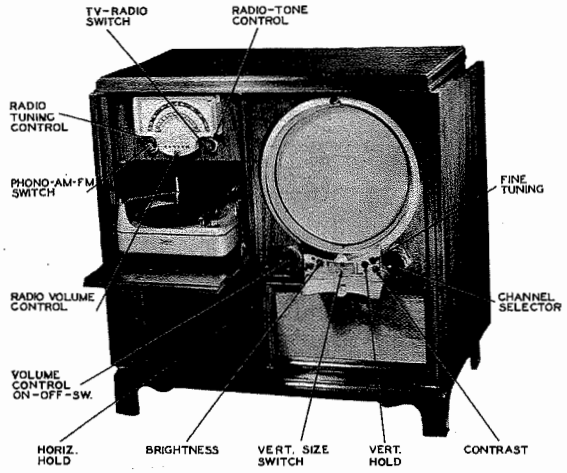
PHOTOFACT* Folder

*TRADE MARK

ZENITH MODELS G2322, G2340,R, G2346R, G2353E, G2441,R, G2442E,R, G2448R, G2957,R, G2958R, G3059R, G3062



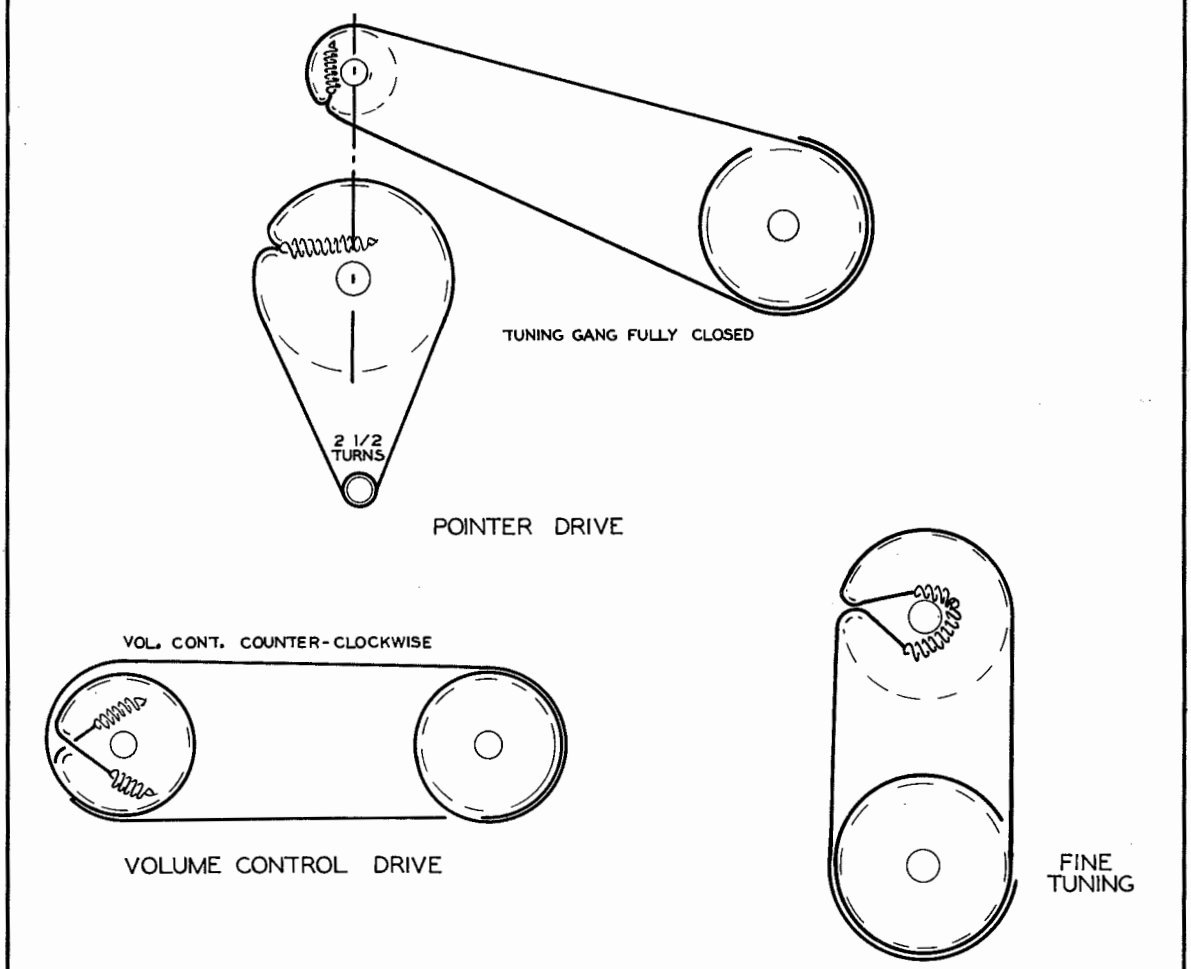
ZENITH MODEL G3059R

TRADE NAME	Zenith	MODEL	TV CHASSIS	RADIO CHASSIS
		G2322, G2340, G2340R G2346R, G2353E	23G22	None
		G2441	24G24	None
		G2441R, G2442E, G2442R, G2448R	24G22/24	None
		G2957, G2957R, G2958R	23G23	6G20
		G3059R, G3062	24G23/25	6G20
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago 39, Illinois			
TYPE SET	TV-AM-FM-Phono Combination Receiver (Some Models "TV" Only)			
TUBES	Twenty Three or Twenty Four ("TV" Only Receivers) Twenty Nine or Thirty (Combination Receivers)			
POWER SUPPLY	110-120 Volts AC-60 Cycles			
RATINGS	2.1 Amp. at 117 Volts AC (TV Operation) 1.2 Amp. at 117 Volts AC (Radio Operation)			
TUNING RANGES	TV--Channels 2 thru 13, FM--88-108MC, AM--540-1620KC			

INDEX

ZENITH MODELS G2322, G2340,R, G2346R, G2353E, G2441,R, G2442E,R, G2448R, G2957,R, G2958R, G3059R, G3062

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



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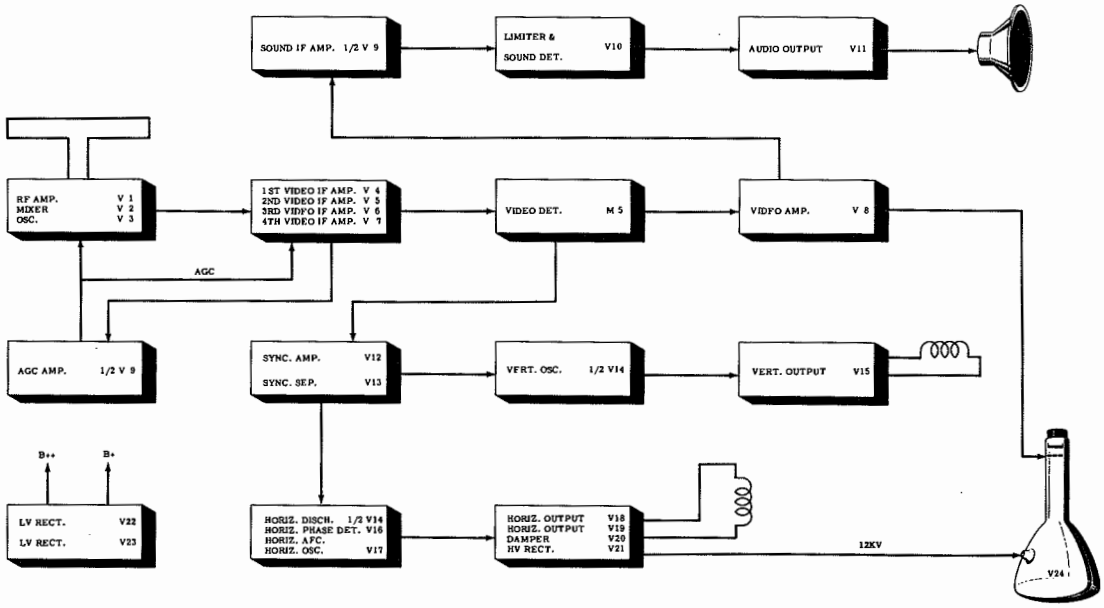

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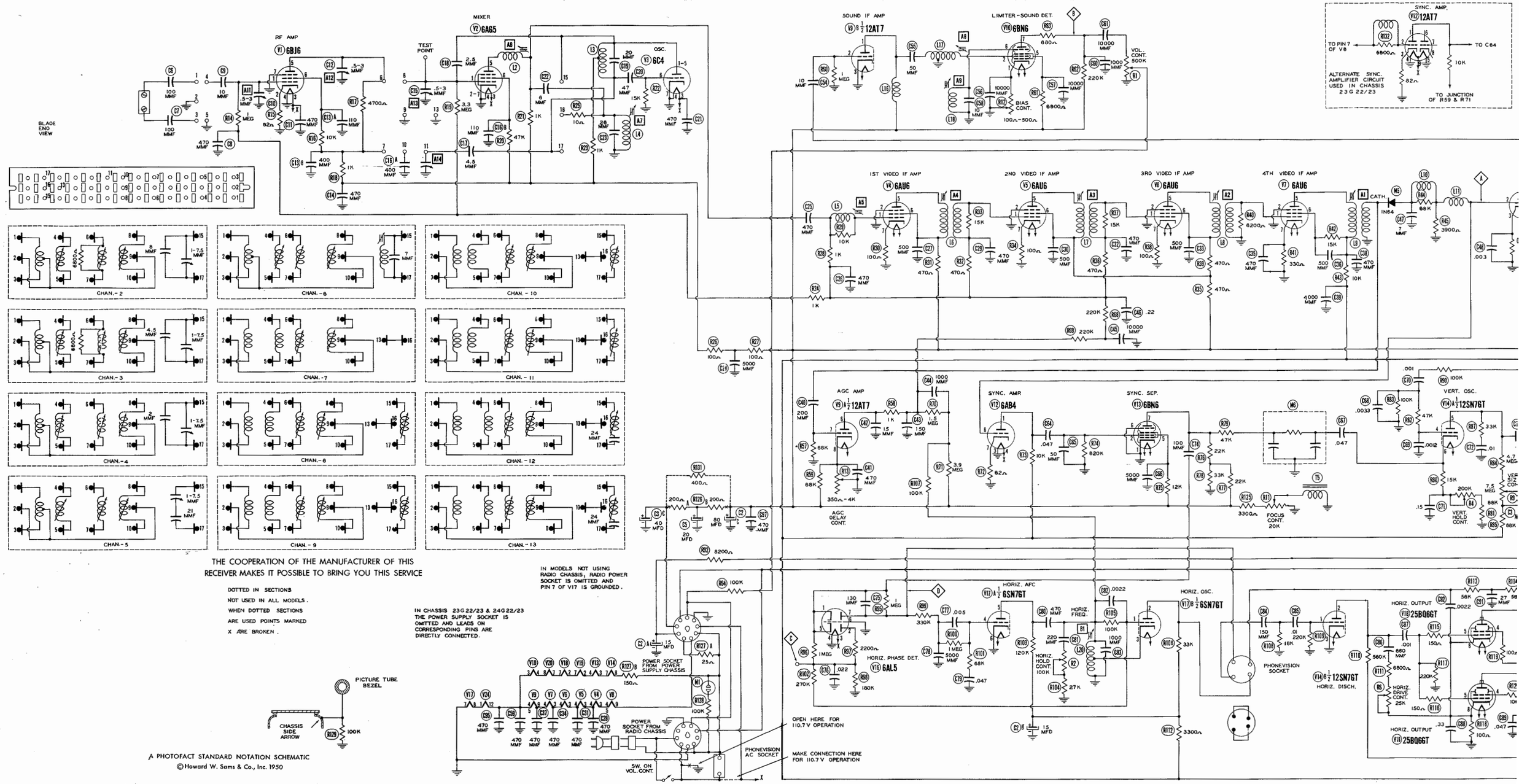


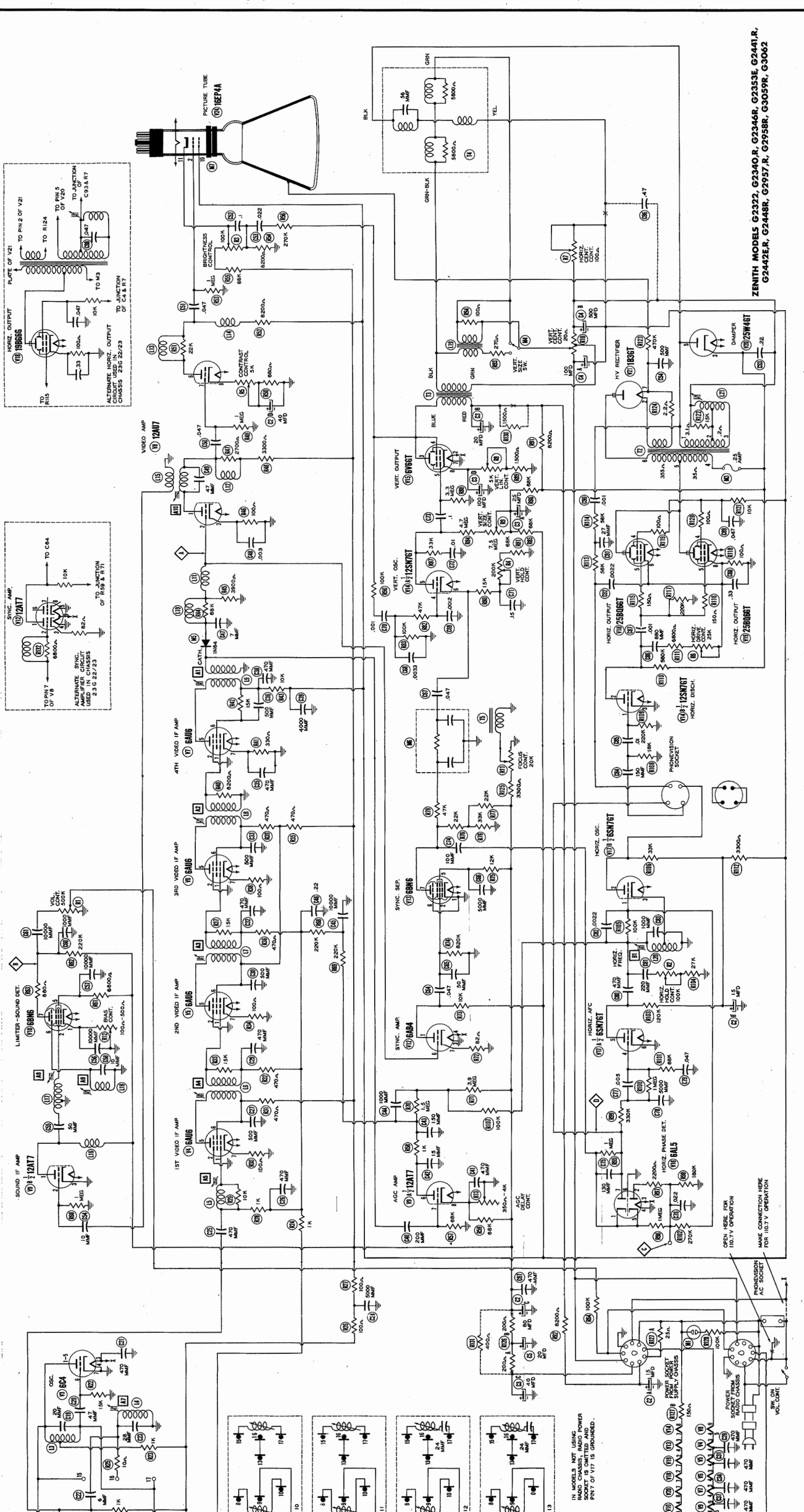
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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

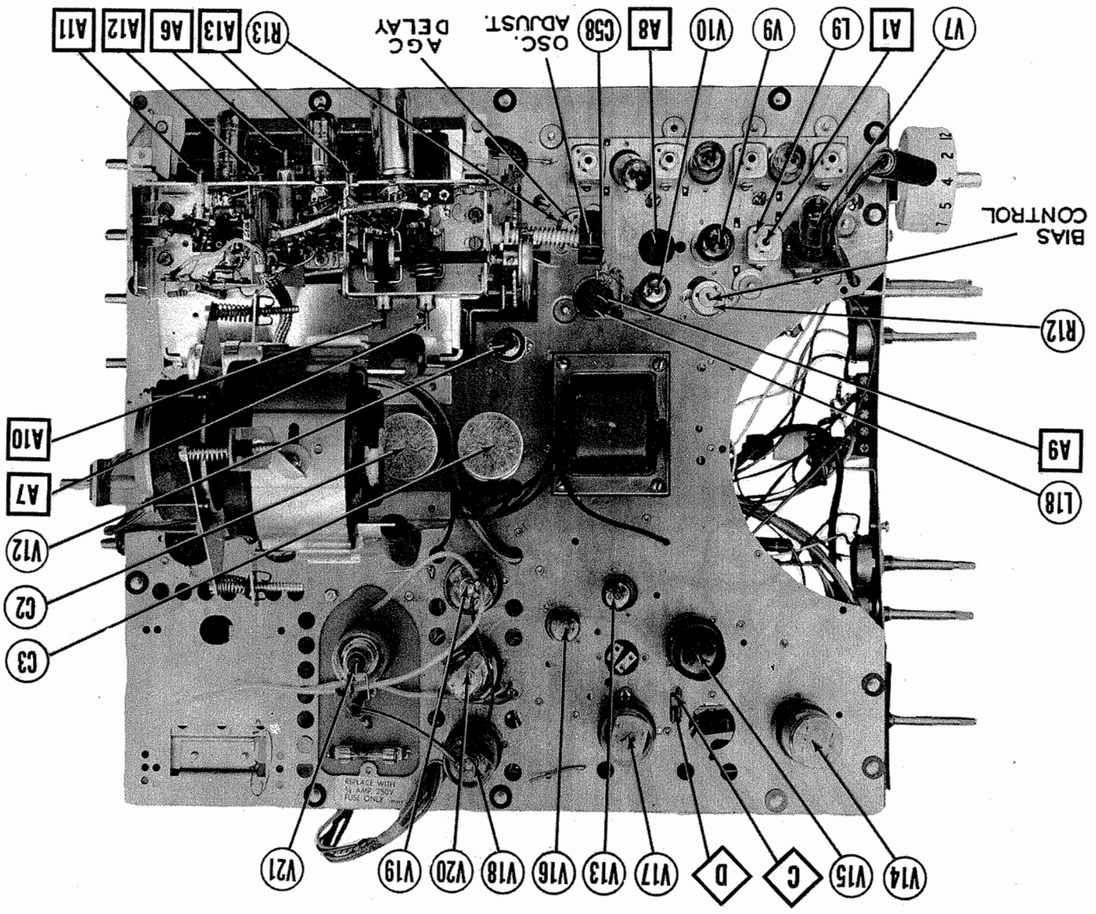
IN MODELS NOT USING RADIO CHASSIS, RADIO POWER SOCKET IS OMITTED AND PIN 7 OF V17 IS GROUNDED.

IN CHASSIS 23G22/23 & 24G22/23 THE POWER SUPPLY SOCKET IS OMITTED AND LEADS ON CORRESPONDING PINS ARE DIRECTLY CONNECTED.

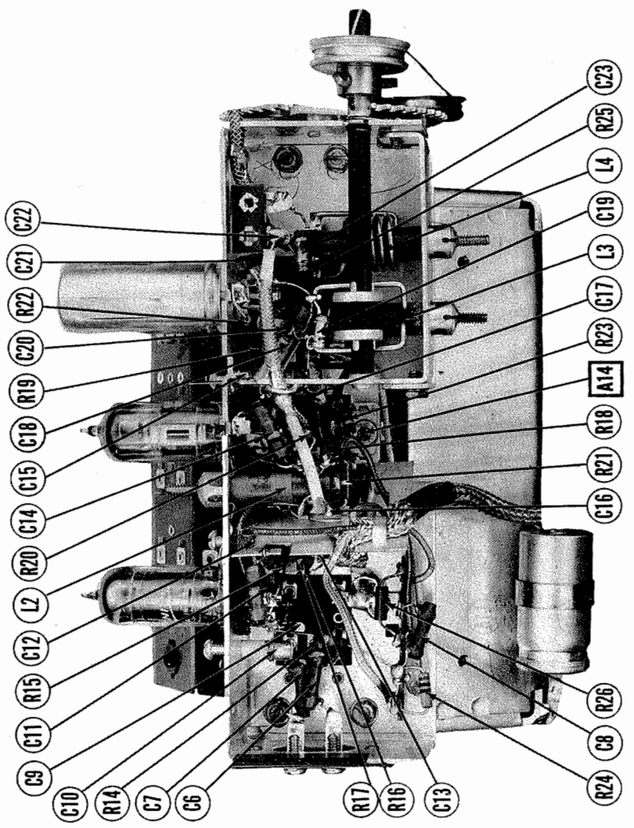
ZENITH MODELS G2322, G2340,R, G2346R, G2353E, G2441,R, G2442E,R, G2448R, G2957,R, G2958R, G3059R, G3062



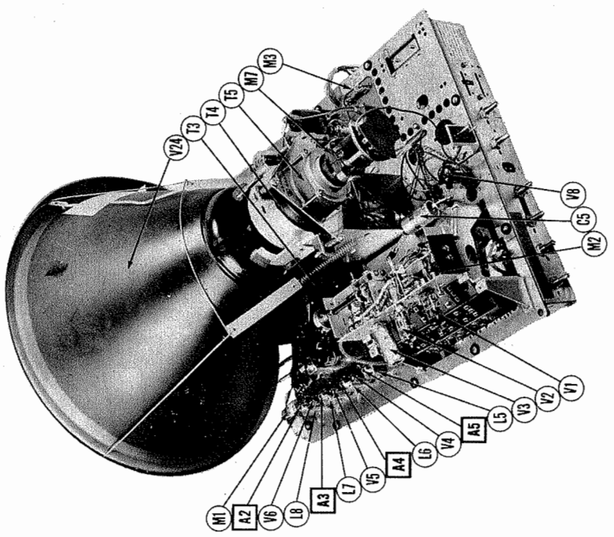
CHASSIS TOP VIEW

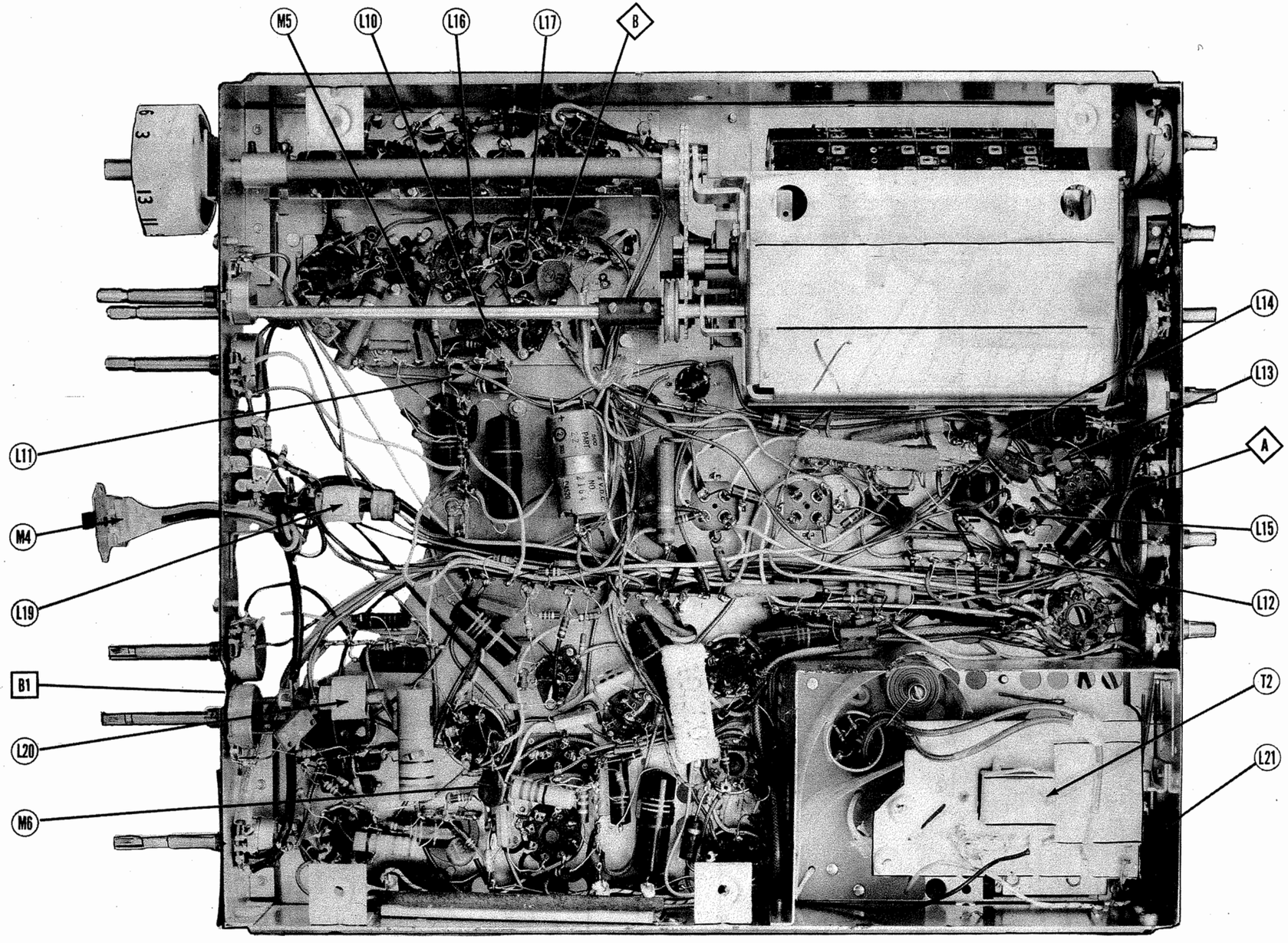


RF TUNER



CHASSIS–TOP VIEW





CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

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	6BJ6	-.5VDC	.7VDC	6.3VAC	0V.	130VDC	85VDC	0V.		
V 2	6AG5	-1.2VDC	0V.	6.3VAC	0V.	135VDC	100VDC	0V.		
V 3	6C4	115VDC	0V.	6.3VAC	0V.	115VDC	§-4.8VDC	0V.		
V 4	6AU6	-2VDC	0V.	40VAC	34VAC	135VDC	135VDC	1.2VDC		
V 5	6AU6	.1VDC	0V.	34VAC	28VAC	135VDC	135VDC	1.2VDC		
V 6	6AU6	.1VDC	0V.	28VAC	22VAC	125VDC	125VDC	1.2VDC		
V 7	6AU6	0V.	0V.	22VAC	16VAC	248VDC	210VDC	3.2VDC		
V 8	12AU7	110VDC	-.5VDC	1VDC	40.5VAC	40.5VAC	330VDC	0V.	18VDC	48VAC
V 9	12AT7	140VDC	-1.7VDC	0V.	10VAC	10VAC	-1.2VDC	-.1VDC	4.4VDC	16VAC
V 10	6BN6	2.6VDC	0V.	10VAC	16.5VAC	85VDC	0V.	75VDC		
V 11	6AG7	0V.	0V.	0V.	0V.	3.6VDC	170VDC	6.3VAC	270VDC	
V 12	6AB4	230VDC	0V.	0V.	6.3VAC	0V.	-.6VDC	.8VDC		
V 13	6BN6	0V.	-1VDC	92VAC	85VAC	65VDC	0V.	80VDC		
V 14	12SN7GT	-20VDC	60VDC	0V.	0V.	125VDC 60VDC	5VDC	92VAC	105VAC	
V 15	6V6GT	0V.	6VAC	380VDC	380VDC	0V.	80VDC	0V.	28VDC 42VDC	
V 16	6AL5	-.3VDC	-4.5VDC	6VAC	0V.	-.3VDC	0V.	-2VDC		
V 17	6SN7GT	-16VDC	225VDC	.3VDC	-.5VDC	150VDC	0V.	0V.	5.4VAC	
V 18	25BQ6GT	0V.	62VAC	105VDC	105VDC	4VDC	4VDC	40VAC	12VDC	TOP CAP *
V 19	25BQ6GT	0V.	85VAC	105VDC	105VDC	4 VDC	4VDC	62VAC	12VDC	TOP CAP *
V 20	25W4GT	0V.	500VDC	500VDC	350VDC	350VDC	60VDC	40VAC	16VAC	
V 21	1B3GT	* DO NOT MEASURE.								
V 22	5U4G	0V.	440VDC	0V.	385VAC	0V.	385VAC	0V.	440VDC	
V 23	25Z6GT	0V.	70VAC	185VAC	185VDC	185VAC	0V.	46VAC	185VDC	
V 24	16EP4A	5.4VAC	0V.	PIN 10 360VDC	PIN 11 85VDC	PIN 12 11VAC				

* DO NOT MEASURE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.

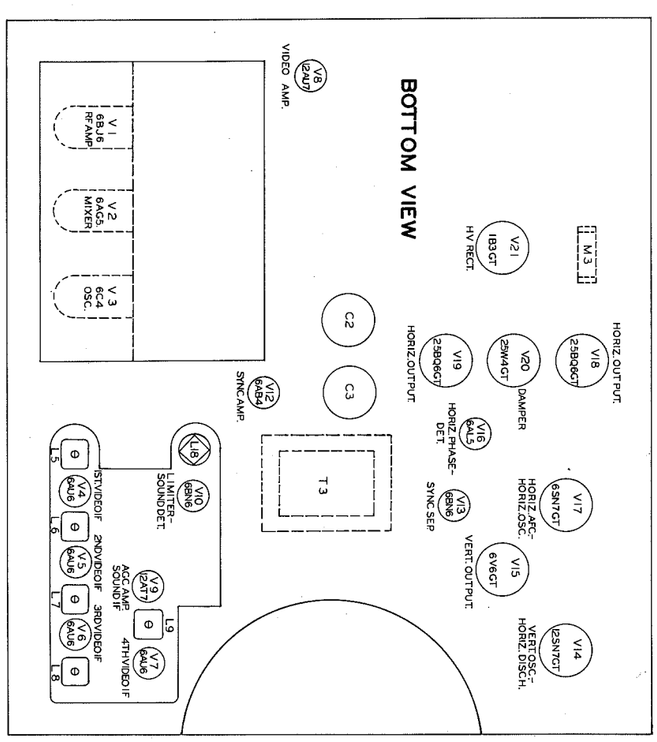
RESISTANCE READINGS

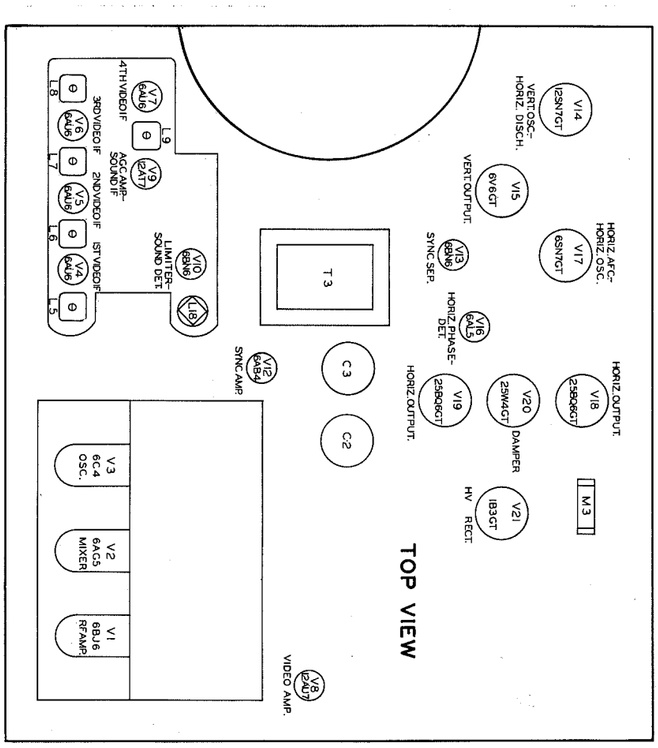
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BJ6	3 Meg.	82Ω	.1Ω	0Ω	#2KΩ	#12KΩ	0Ω		
V 2	6AG5	5.3Meg.	0Ω	.1Ω	0Ω	#1.6KΩ	#47KΩ	0Ω		
V 3	6C4	#1.6KΩ	Inf.	.1Ω	0Ω	#1.6KΩ	15KΩ	0Ω		
V 4	6AU6	2 Meg.	0Ω	61Ω	60Ω	#870Ω	#870Ω	100Ω		
V 5	6AU6	1.9 Meg.	0Ω	60Ω	58Ω	#870Ω	#870Ω	100Ω		
V 6	6AU6	1.9 Meg.	0Ω	58Ω	57Ω	#1.3K Ω	#1.3KΩ	100Ω		
V 7	6AU6	.2Ω	0Ω	57Ω	55Ω	†10KΩ	†25KΩ	330Ω		
V 8	12AU7	#3.7KΩ	3.9KΩ	100Ω	61Ω	61Ω	†8.2KΩ	1 Meg.	5.7K	63Ω
V 9	12AT7	#400Ω	1 Meg.	0Ω	54Ω	54Ω	1.6 Meg.	68KΩ	4KΩ 350Ω	55Ω
V 10	6BN6	100Ω	6Ω	54Ω	52Ω	#7.2KΩ	5Ω	#220KΩ		
V 11	6AG7	Inf.	0Ω	0Ω	100KΩ	82Ω	†15KΩ	.1Ω	†4KΩ	
V 12	6AB4	†10KΩ	0Ω	0Ω	.2Ω	Inf.	3.9KΩ	82Ω		
V 13	6BN6	0Ω	820KΩ	30Ω	32Ω	#12.4KΩ	0Ω	#44KΩ		
V 14	12SN7GT	220KΩ	†575KΩ	0Ω	147KΩ	†4.7Meg. †12 Meg.	285KΩ	30Ω	25Ω	
V 15	6V6GT	0Ω	.2Ω	†8.2KΩ	†8.2KΩ	3.3 Meg.	#85KΩ	0Ω	6.5KΩ 1.5KΩ	
V 16	6AL5	1 Meg.	120KΩ	.2Ω	0Ω	1 Meg.	0Ω	2 Meg.		
V 17	6SN7GT	86KΩ	†36KΩ	100Ω	3 Meg.	†125KΩ	0Ω	0Ω	2Ω	
V 18	25BQ6GT	Inf.	40Ω	†10KΩ	†10KΩ	220KΩ	220KΩ	46Ω	100Ω	TOP CAP †15KΩ
V 19	25BQ6GT	Inf.	32Ω	†10KΩ	†10KΩ	220KΩ	220KΩ	40Ω	100Ω	TOP CAP †15KΩ
V 20	25W4GT	Inf.	†14KΩ	†14KΩ	†140Ω	†130Ω	†52KΩ	46Ω	52Ω	
V 21	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP †15KΩ
V 22	5U4G	Inf.	50KΩ	InfΩ	26Ω	Inf.	17Ω	Inf.	50KΩ	
V 23	25Z6GT	Inf.	65Ω	12.5Ω	11KΩ	5.5Ω	Inf.	63Ω	11KΩ	
V 24	16EP4A	2Ω	1 Meg.	PIN 10 †130Ω	PIN 11 44KΩ	PIN 12 54Ω				

† MEASURED FROM PIN 2 OF V22.
# MEASURED FROM PIN 8 OF V23.

1. DC Voltage measurements are ot 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 stoted.
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.

TUBE PLACEMENT CHART





ZENITH MODELS G2322, G2340R, G2346R, G2353E, G2441R, G2442E,R, G2448R, G2957,R, G2958R, G3059R, G3062

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use an isolation transformer to protect the test equipment.
The end of the high voltage lead should be securely taped and dressed away from the chassis. Do not remove the horizontal oscillator tube.
Do not connect the ground lead of any test equipment to the wrap around chassis, connect all leads to the top plate.
Turn the function selector switch to TV (counter-clockwise).

VIDEO IF ALIGNMENT

Turn the channel selector switch to channel 3.
Remove the local oscillator tube (V3) to prevent erroneous indications.
Connect the negative lead of a 3 volt battery to the junction of R68 and C46, connect the positive lead to top chassis.
Attenuate the sweep generator to maintain 3 volt peak to peak indication on the oscilloscope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.01MFD	High side to pin 5 (plate) of 6AU6 (V6). Low side to top chassis.	44MC (10MC SWP)	43.5MC 45MC	3	Vert. Amp. to Point (A). Low side to chassis.	A1	Adjust for symmetrical response curve similar to figure 1.
2.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V5). Low side to top chassis.	"	"	"	"	A2, A3	Adjust A2 at 45MC and A3 at 43.5MC for a symmetrical response curve similar to figure 2. When A2 and A3 are properly adjusted, rocking A5 will cause the response curve to tilt as shown by the dotted lines in figure 3.
3.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to top chassis.	"	"	"	"	A4, A5, A6	Adjust A4 at 45MC and A5 and A6 at 43.5MC for a symmetrical response similar to figure 4. If necessary slightly retouch A2 and A3 for proper response.
4.	Direct	"	"	47.25MC (maximum output).	"	"	A7	Adjust for MINIMUM marker indication at the 47.25MC point on response curve.

SOUND IF ALIGNMENT

The limiter-detector input coil (A8) must be adjusted with the signal input below the limiting level of the tube. The limiting level can be found by decreasing the output of the signal generator until a sharp drop in response amplitude is noted, below this point the tube is not limiting. If necessary attenuate the signal generator while adjusting A8 to keep the input signal below the limiting level.
The quadrature coil (A9) and the bias control (R12) may be adjusted above the limiting level if desired. It should be noted that the negative leg of the "S" curve is approximately twice as long as the positive leg, and that adjustment of A8 causes the positive leg to broaden.
Proper adjustment of A8 is indicated by maximum amplitude of the "S" curve with the positive leg at its narrowest point.
The quadrature coil (A9) should not be adjusted unless it is definitely known to be out of alignment. The proper point for the 4.5MC marker placement is found by reducing the oscilloscope horizontal gain until a single vertical line is observed. The break in the vertical line is the point where the marker should be set by adjustment of A9.
If not oscilloscope is available the sound IF system may be aligned using a TV station as follows:
a) Connect a variable attenuator pad between the antenna and the set and adjust it until the signal falls below the detector limiting level, as indicated by a background hiss similar to superregeneration.
b) Adjust A8, A9 and R12 for maximum audio with minimum buzz.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.01MFD	High side to pin 2 (Grid) of 12AU7 (V8). Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A8, A9, R12	READ CAREFULLY INSTRUCTIONS ABOVE. Adjust for response curve similar to Fig. 5.

OSCILLATOR ALIGNMENT

Connect the bias battery as outlined under video IF alignment.
Replace the local oscillator tube (V3).
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.
The overall oscillator circuit adjustment (A10) should not be adjusted unless the oscillator can not be adjusted to the proper frequency with the strip oscillator adjustment for each channel except 7. Channels 7 has no strip oscillator adjustment.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	177MC (10MC SWP)	175.25MC 179.75MC	7	Vert. Amp. to Point (A). Low side to chassis.	A10	Adjust to place sound marker as shown in figure 6. The video marker should be at 50%.
7.	"	"	183MC (10MC SWP)	181.25MC 185.75MC	8	"		Check to see that the sound marker can be properly placed with the strip oscillator adjustment.
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			207MC (10MC SWP)	205.25MC 209.75MC	12			
			213MC (10MC SWP)	211.25MC 215.75MC	13			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

RF ALIGNMENT

The RF and mixer adjustments are pre-set at the factory and are very stable. Alignment of these circuits should not be attempted unless they are definitely known to be out of alignment.
Connect the bias battery as outlined under video IF alignment.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
If the response curve seems to be tilted approximately the same amount on all channels, check the video IF alignment before attempting RF alignment.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	69MC (10MC SWP)	67.25MC 71.75MC	4	Vert. Amp. to Point (A). Low side to chassis.	A11, A12, A13	Adjust for maximum amplitude and symmetry as per figure 7.
9.	"	"	177MC (10MC SWP)	175.25MC 179.75MC	7	"	A14	Adjust for maximum amplitude with proper bandpass as per figure 7. The converter plate coil (A6) will have to be adjusted after the cover is removed, and again retuned after the cover is replaced.

TV ALIGNMENT INSTRUCTIONS (CONT.)

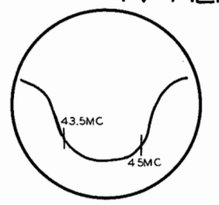


FIG.1

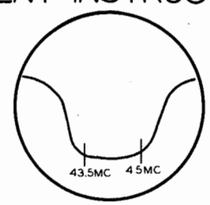


FIG.2

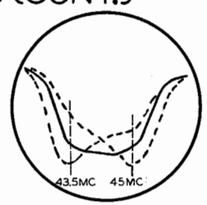


FIG.3

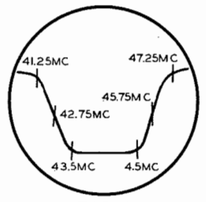


FIG.4

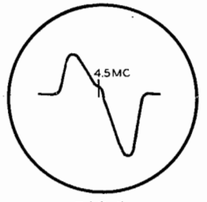


FIG.5

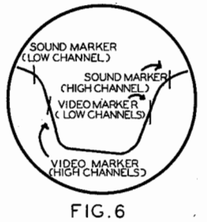


FIG.6

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Turn the function selector switch ro "RADIO" (clockwise).
To set pointer turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial.
Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and chassis.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
10.	.05MFD	High side to pin 2 (Grid) of 12AT7 (V26). Low side to chassis.	455KC (400 % Mod.)	BC (center)	Tuning gang fully closed	Across voice coil	A15, A16, A17, A18	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
11.		Loop	1600KC	"	1600KC	"	A19	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
12.		Loop	1400KC	"	Tune for max. output	"	A20, A21	"

FM IF ALIGNMENT

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

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
13.	.05MFD	High side to pin 1 (Grid) of 12BA6 (V27). Low side to chassis.	10.7MC (450KC Sweep)	FM (CW)	Tuning gang fully open	Vert. Amp. thru 2 Meg. to point (D). Low side to chassis.	A22, A23, A24	Adjust for maximum amplitude and symmetry as per figure 7.
14.	.05MFD	High side to pin 2 (Grid) of 12AT7 (V26). Low side to chassis.	"	"	"	"	A25, A26	"
15.	.05MFD	"	"	"	"	Vert. Amp. to point (E). Low side to chassis.	A27, A28	Adjust A27 so 10.7MC occurs at center of crossover lines as per figure 8. Adjust A28 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
16.	270Ω carbon res.	High side thru 270Ω to "FM" antenna terminal. Low side to chassis. (Remove line antenna)	98MC (Unmod.)	FM	Set pointer to 90 on AM dial scale.	DC Probe thru 2 Meg. to Point (D). Common to chassis.	A29, A30	Adjust for maximum deflection.

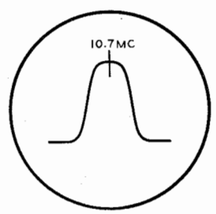


FIG. 7

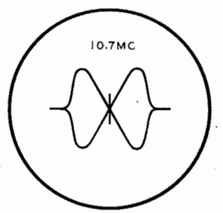
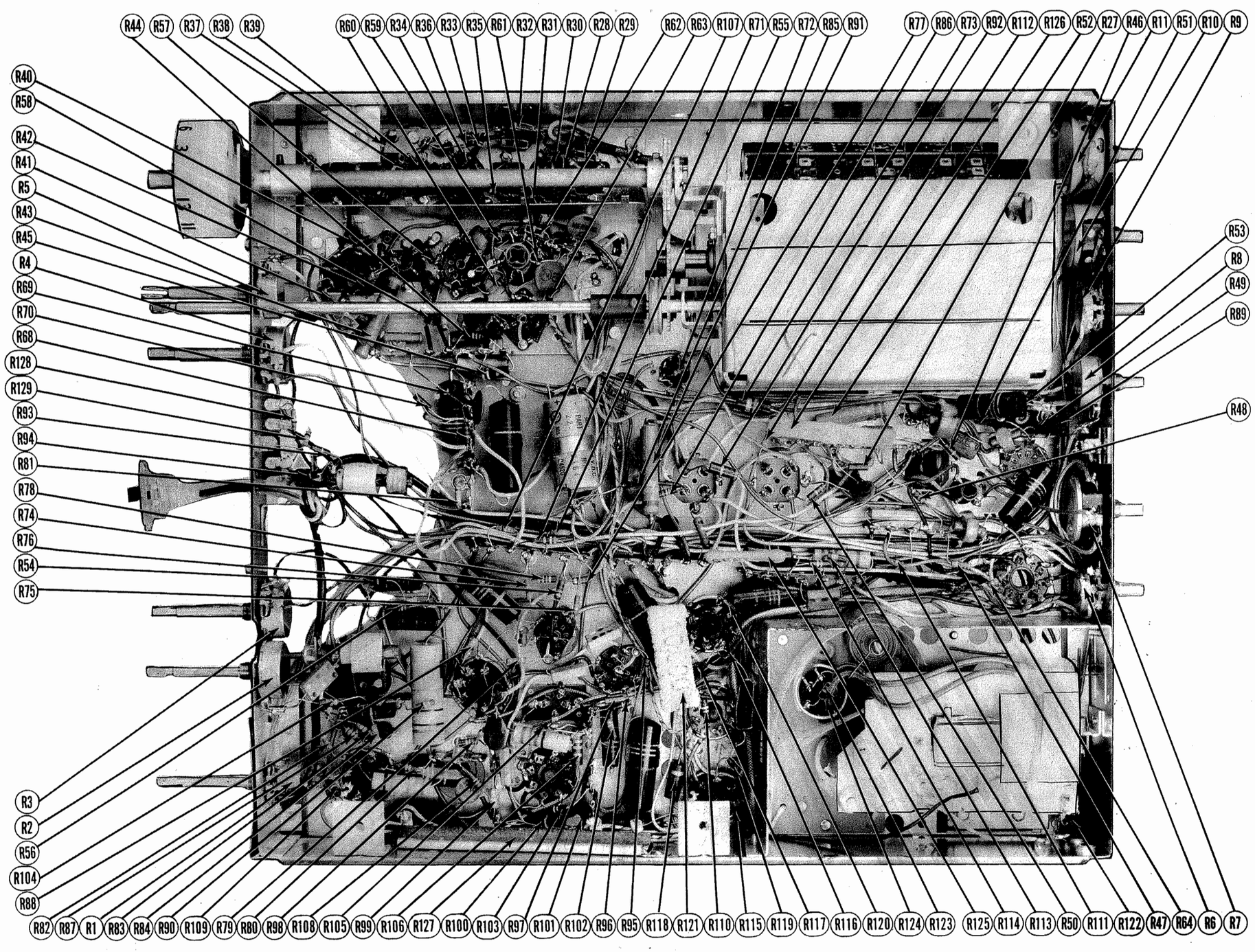
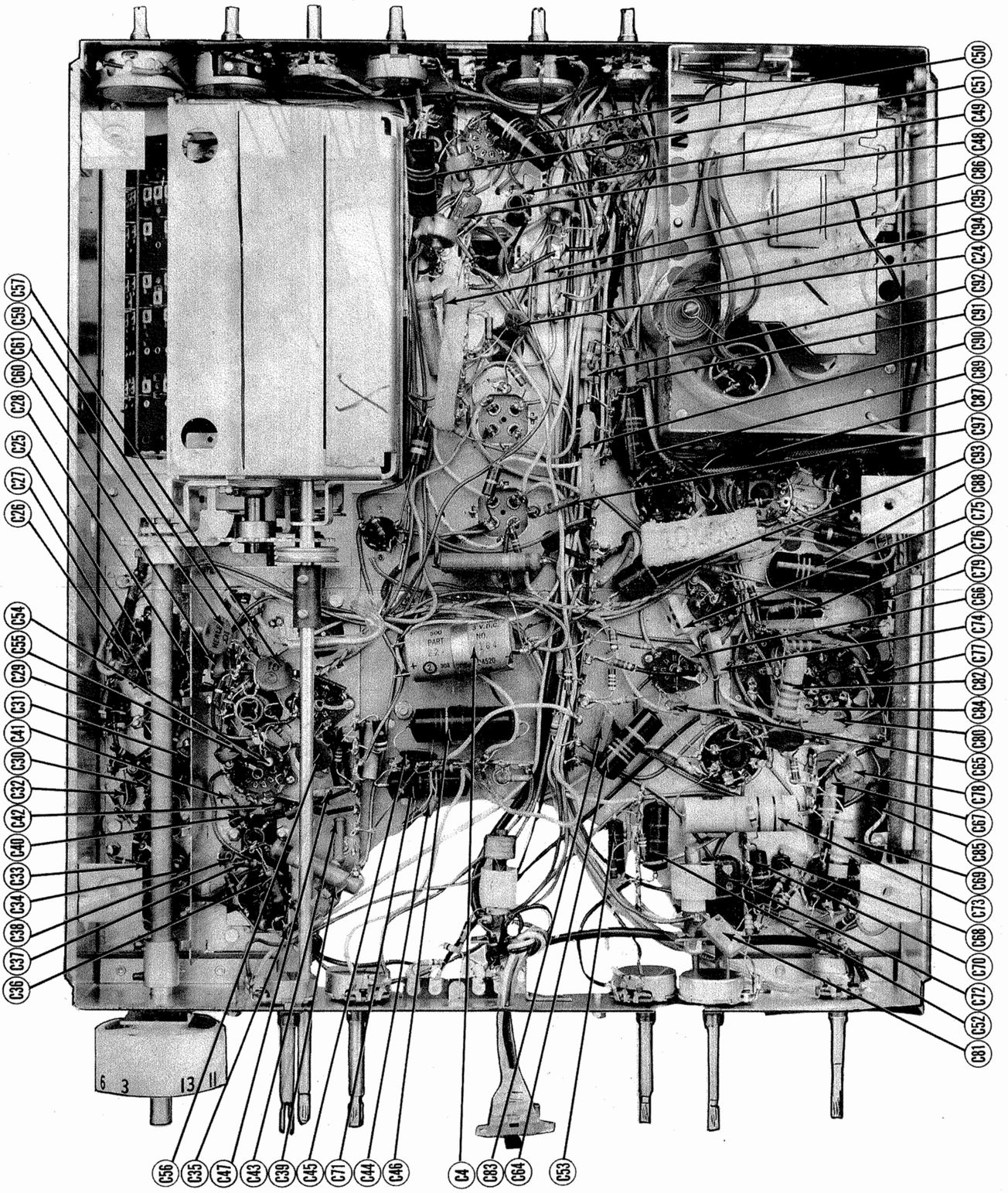


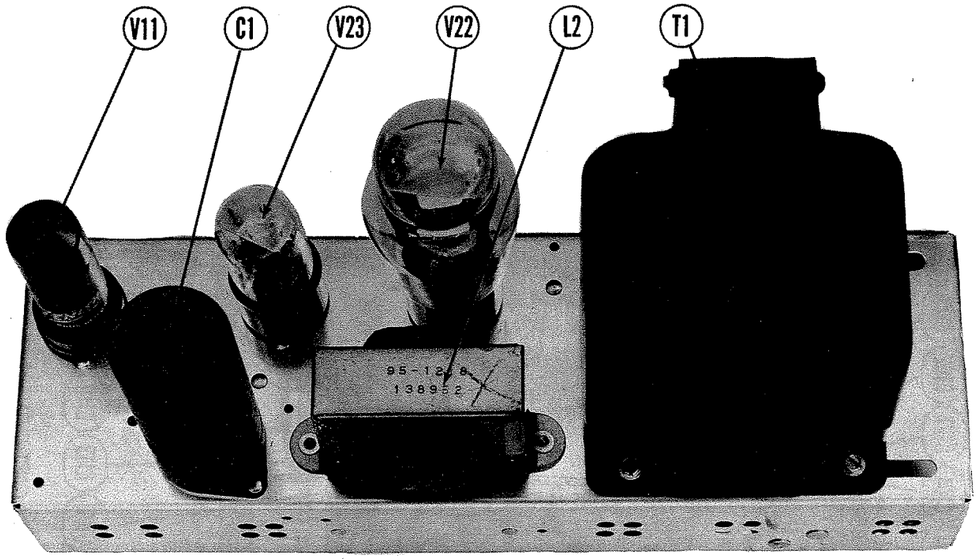
FIG. 8



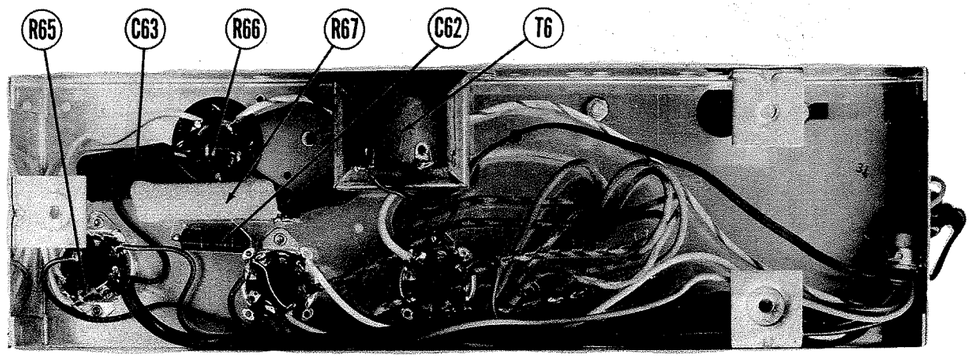
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



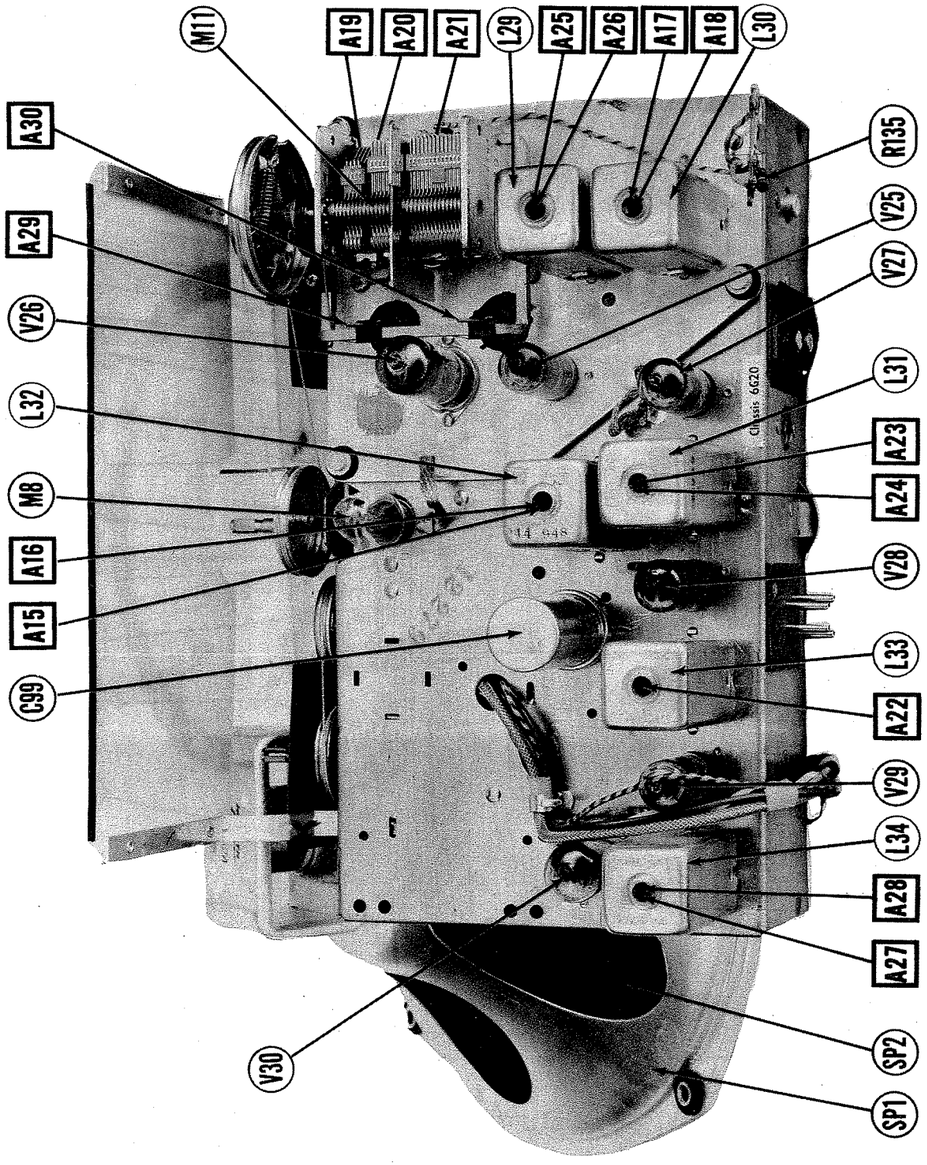
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



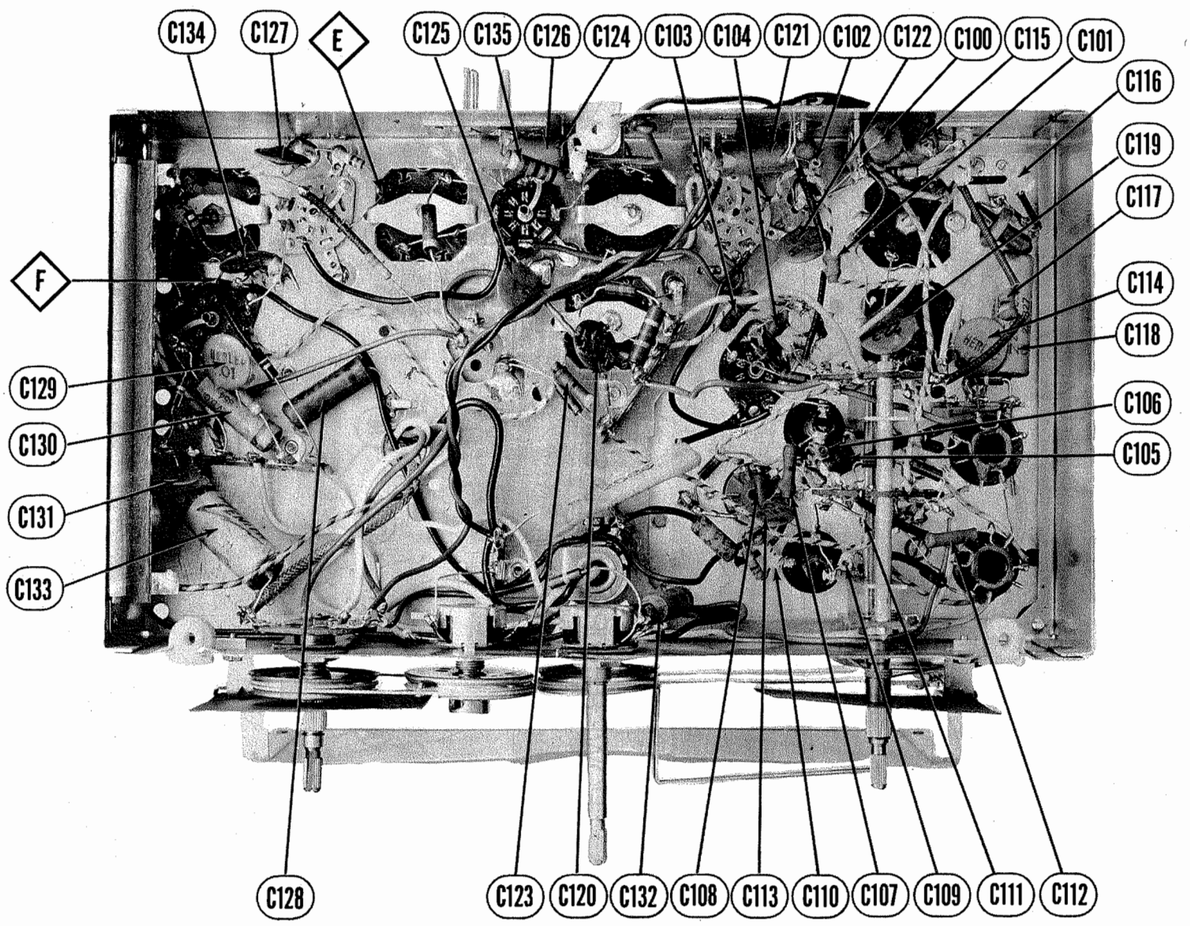
POWER SUPPLY CHASSIS-TOP VIEW



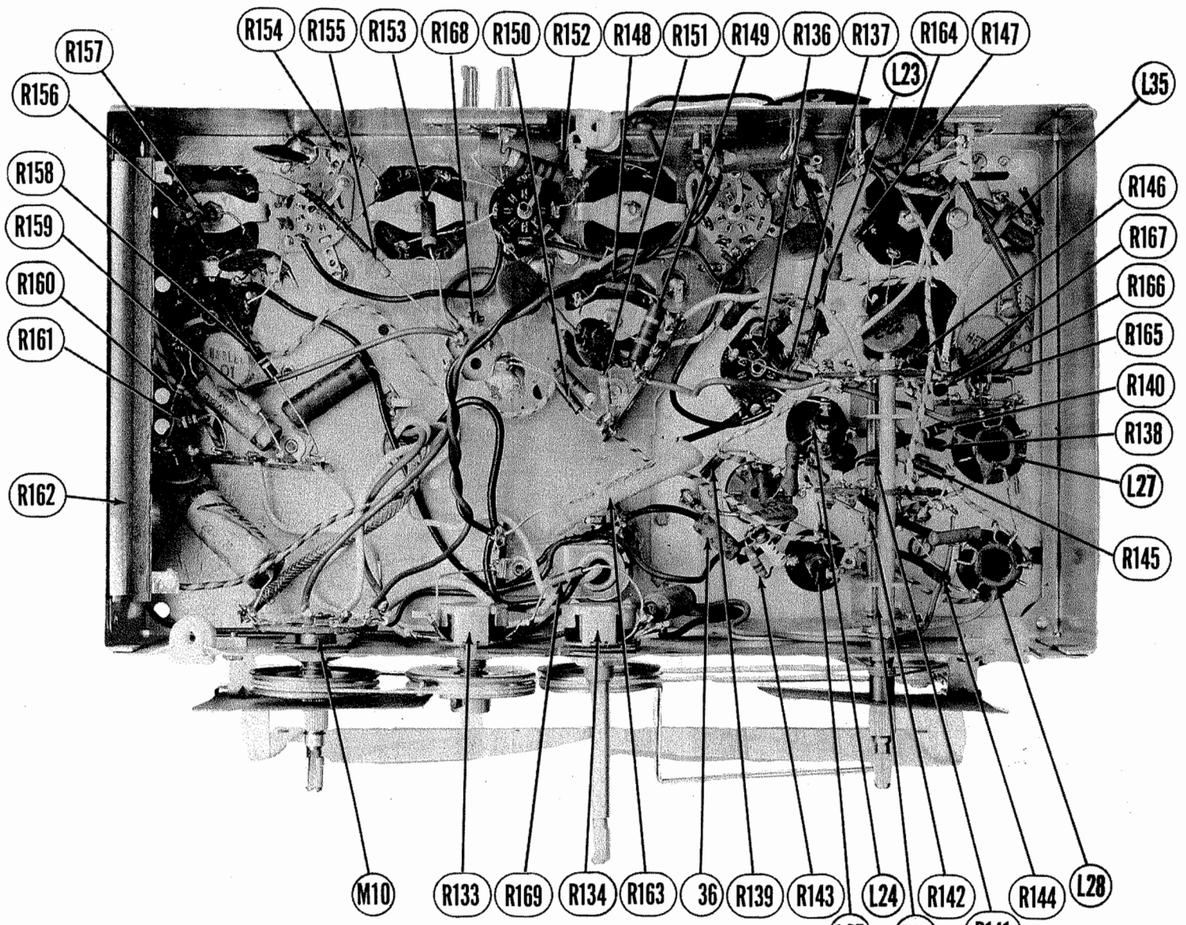
POWER SUPPLY CHASSIS-BOTTOM VIEW



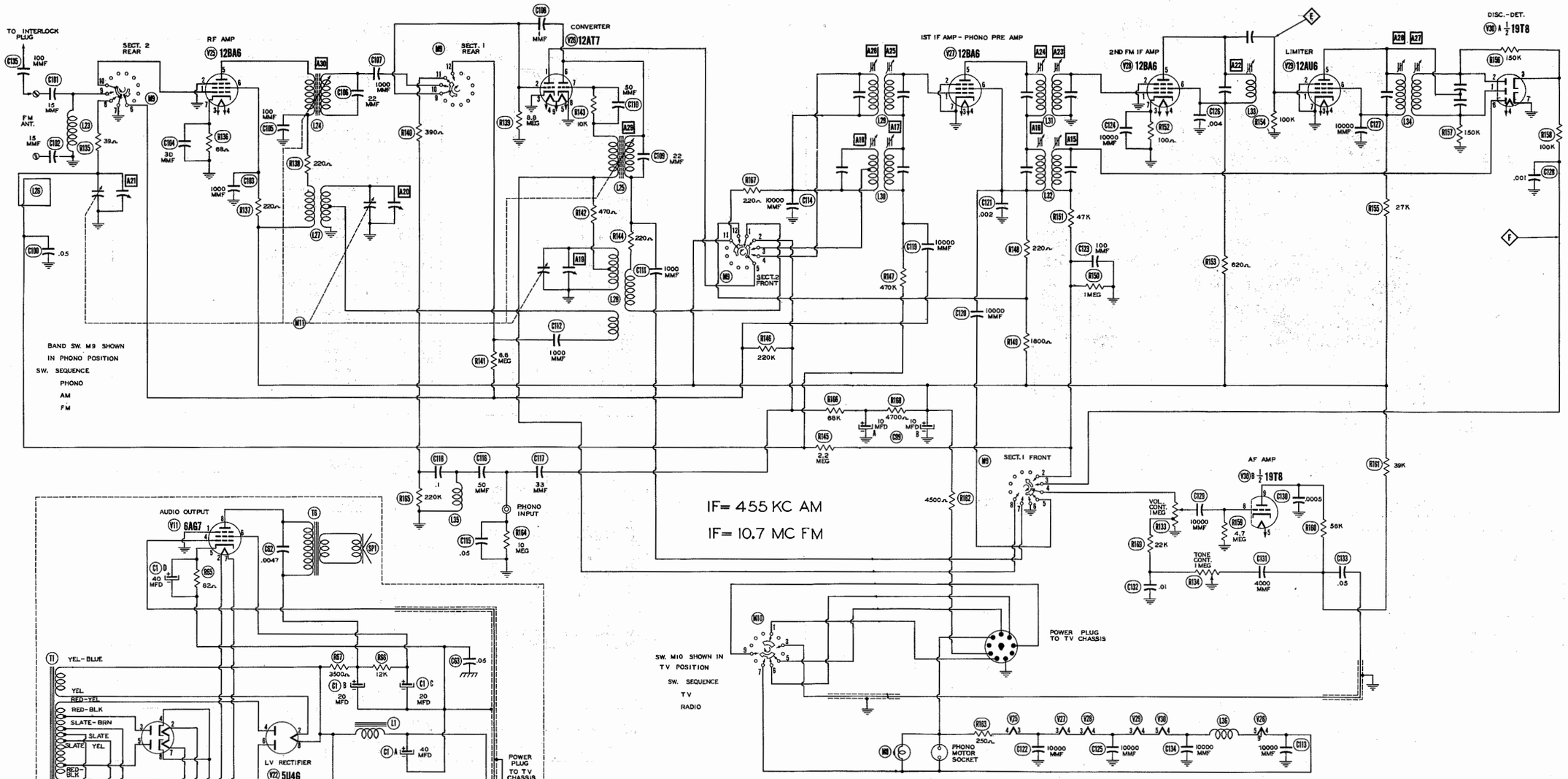
RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION



RADIO CHASSIS-BOTTOM VIEW-RESISTOR IDENTIFICATION



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
†	V25	12BA6	0V.	0V.	65VAC	75VAC	130VDC	130VDC	1VDC		
▲	V25	12BA6	-.3VDC	0V.	65VAC	75VAC	130VDC	130VDC	1VDC		
†	V26	12AT7	125VDC	-1.6VDC	0V.	0V.	12VAC	115VDC	8-3.7VDC	0V.	6VAC
▲	V26	12AT7	125VDC	-2VDC	0V.	0V.	12VAC	115VDC	8-4VDC	0V.	6VAC
†	V27	12BA6	-.8VDC	0V.	65VAC	55VAC	115VDC	115VDC	0V.		
▲	V27	12BA6	-.8VDC	0V.	65VAC	55VAC	115VDC	115VDC	0V.		
†	V28	12BA6	0V.	0V.	55VAC	40VAC	120VDC	120VDC	1.8VDC		
▲	V28	12BA6	0V.	0V.	55VAC	40VAC	120VDC	120VDC	1.8VDC		
†	V29	12AU6	-.6VDC	0V.	40VAC	31VAC	80VDC	80VDC	0V.		
†	V30	19T8	-1.5VDC	-13VDC	4.2VDC	15VAC	31VAC	-.8VDC	0V.	-.6VDC	75VDC
▲	V30	19T8	-1.5VDC	-13VDC	9.9VDC	15VAC	51VAC	-.8VDC	0V.	-.6VDC	75VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

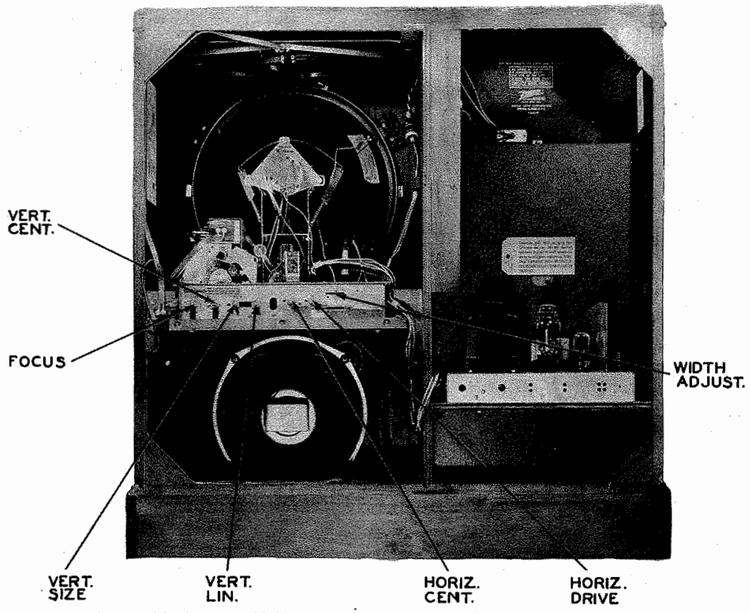
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
†	V25	12BA6	0Ω	0Ω	54Ω	60Ω	‡4.7KΩ	‡4.7KΩ	5Ω		
▲	V25	12BA6	2.2 Meg.	0Ω	54Ω	60Ω	‡4.7KΩ	‡4.7KΩ	5Ω		
†	V26	12AT7	18KΩ	6.8 Meg.	0Ω	0Ω	12Ω	‡6KΩ	10KΩ	0Ω	5Ω
▲	V26	12AT7	18KΩ	4 Meg.	0Ω	0Ω	12Ω	‡6KΩ	10KΩ	0Ω	5Ω
†	V27	12BA6	3.5 Meg.	0Ω	54Ω	47Ω	‡8KΩ	‡8KΩ	0Ω		
▲	V27	12BA6	2.5 Meg.	0Ω	54Ω	47Ω	‡8KΩ	‡8KΩ	0Ω		
†	V28	12BA6	.5Ω	0Ω	47Ω	40Ω	‡5.3KΩ	‡5.3KΩ	100Ω		
▲	V28	12BA6	.5Ω	0Ω	47Ω	40Ω	‡5.3KΩ	‡5.3KΩ	100Ω		
†	V29	12AU6	100KΩ	0Ω	40Ω	31Ω	‡32KΩ	‡32KΩ	0Ω		
†	V30	19T8	150KΩ	150KΩ	300KΩ	15Ω	31Ω	1 Meg.	0Ω	4.7 Meg.	‡100KΩ
▲	V30	19T8	150KΩ	150KΩ	300KΩ	15Ω	31Ω	500KΩ	0Ω	4.7 Meg.	‡100KΩ

† TAKEN IN "FM" POSITION.
▲ TAKEN IN "AM" POSITION.

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

ZENITH MODELS G2322, G2340,R, G2346R, G2353E, G2441,R, G2442E,R, G2448R, G2957,R, G2958R, G3059R, G3062

RADIO SCHEMATIC



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

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.

Connect the DC Probe of a VTVM to Point C , connect the positive lead to Point D .

Adjust the horizontal frequency slug (B1) until the meter reads zero between positive and negative swings. The voltage should swing positive and negative an equal amount as the hold control is turned to either extreme.

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

Adjust the width lever until the picture is of desired width.

AGC DELAY ADJUSTMENTS

Turn the set on and tune in a TV station.

Connect the vertical amplifier of an oscilloscope to point A . Connect the low side to chassis.

Adjust the AGC delay control R13 for 3.5 volt peak to peak signal indication on the oscilloscope.

DISASSEMBLY INSTRUCTIONS

TV CHASSIS

1. Remove seven push-on type TV control knobs from front of cabinet.
2. Remove two screws holding picture control switch. Free switch from front of cabinet.
3. Remove four screws holding rear cover. Remove cover.
4. Disconnect radio-phono plug and power plug at chassis. Remove ground wire from TV chassis near power plug.
5. Disconnect built-in antenna at chassis screw connection.
6. Disconnect speaker leads at speaker connections.
7. Remove four 5/16" hex nuts holding speaker. Remove speaker.
8. Remove four 3/8" hex head bolts holding TV chassis. Remove chassis.

POWER UNIT

9. Free connecting cable. Remove three 3/8" hex head bolts holding power chassis. Remove chassis.

RADIO CHASSIS

10. Remove five push-on type radio control knobs from front of cabinet.
11. Remove two screws holding rear cover. Remove cover. Disconnect loop and external antenna connections.
12. Disconnect phono input and power plugs from rear of chassis.
13. Remove three 1/4" hex head bolts holding chassis. Remove chassis.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	
R135	39Ω	½			Parasitic Supp.
R136	68Ω	½			RF Cathode
R137	220Ω	½			RF Screen Decoupling
R138	220Ω	½			RF Plate Decoupling
R139	6.8 Meg.	½		BTS-6.8 Meg.	Conv. Grid
R140	390Ω	½			Parasitic Supp.
R141	6.8 Meg.	½		BTS-6.8 Meg.	AVC Network
R142	470Ω	½			Parasitic Supp.
R143	10KΩ	½		BTS-10K	Osc. Grid
R144	220Ω	½			Osc. Plate Decoupling
R145	2.2 Meg.	½		BTS-2.2 Meg.	AVC Network
R146	220KΩ	½		BTS-220K	Tone Compensation
R147	470KΩ	½		BTS-470K	AVC Network
R148	220Ω	½			1st IF Decoupling
R149	1800Ω	1		BTA-1800	Decoupling
R150	1 Meg.	½		BTS-1 Meg.	Diode Load
R151	47KΩ	½		BTS-47K	Diode Filter
R152	100Ω	½			2nd FM IF Cathode
R153	820Ω	½		BW-½-820	2nd FM IF Decoupling-Wire Wound
R154	100KΩ	½		BTS-100K	Limiter Grid
R155	27KΩ	½		BTS-27K	Limiter Decoupling
R156	150KΩ	½		BTS-150K	Disc. Diode Load
R157	150KΩ	½		BTS-150K	Disc. Diode Load
R158	100KΩ	½		BTS-100K	De-emphasis
R159	4.7 Meg.	½		BTS-4.7 Meg.	AF Amp. Grid
R160	56KΩ	½		BTS-56K	AF Amp. Plate
R161	39KΩ	½		BTS-39K	AF Amp. Plate
R162	4500Ω	20		DG-4500	Filter-Wire Wound
R163	250Ω	10		AB-250	Filament Dropping-Wire Wound
R164	10 Meg.	½		BTS-10 Meg.	Phono Isolation
R165	220KΩ	½		BTS-220K	Phono Osc. Grid
R166	68KΩ	½		BTS-68K	Phono Osc. Plate
R167	220Ω	½			Conv. Plate Decoupling
R168	4700Ω	½		BTS-4700	Filter
R169	22KΩ	½		BTS-22K	Tone Compensation

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	ZENITH PART No.	MEISSNER PART No.	
L23	FM Ant.	.2Ω				
L24	FM RF Trans.	.1Ω	.1Ω			
L25	FM Osc.	0Ω	0Ω			
L26	Loop Ant.	1.6Ω		S16395-360		
L27	AM RF Trans.	3.1Ω	12.5Ω			
L28	AM Osc.	1.2Ω	10Ω			
L29	1st FM IF	.5Ω	.5Ω	95-1201		
L30	1st AM IF	5.5Ω	19Ω	95-1200		
L31	2nd FM IF	.5Ω	.5Ω	95-1150		
L32	2nd AM IF	18Ω	18Ω		16-6678	
L33	3rd FM IF	.5Ω		95-1152		
L34	Disc. Trans.	.5Ω	.5Ω	95-1153		
L35	Phono Osc.	2.1Ω				
L36	Fil. Choke	3Ω				

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ZENITH PART No.		
M8	Bayonet	117			100-97		Type 10 watts, 110-125V

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M9	Switch		Phono-AM-FM
M10	Switch		TV-Radio
M11	Tuning Cap.		

TV PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ZENITH PART No.		NOTES
M1	Bayonet						Type NE-51 Neon Lamp

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M2	RF Tuner		
M3	Fuse	136-16	.25A 250V
M4	Switch	85-476	Vert. size
M5	Crystal	103-1	Video Det. 1N64
M6	Integrator Assembly	87-1	
M7	Ion Trap	S15728	
	Wrench	68-12	Oscillator Adjusting
	Knob	46-771	Vert. hold, Horiz. hold, Contrast, Brightness, Fine tuning
	Knob	46-846	Ch. Sel.
	Knob	46-847	Volume
	Knob	46-848	Ant. Tuning

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA ZENITH PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V25	RF Amp.	12BA6	12BA6	7BK	
V26	Converter	12AT7	12AT7	9A	
V27	1st IF Amp.-Phono Pre.-Amp.	12BA6	12BA6	7BK	
V28	2nd FM IF Amp.	12BA6	12BA6	7BK	
V29	Limiter	12AU6	12AU6	7BK	
V30	Disc.-Det.-AF Amp.	19T8	19T8	9E	

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 CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C99A	10	450	22-2142F	AF22J			TVL-207	■ Decoupling
B	10	450						▲ Decoupling
C100	.05	200		P288-05			TM-15	AVC Filter
C101	15			GP15K	D6-150	GP1K-15	MS-415	Ant. Coupling
C102	15			GP15K	D6-150	GP1K-15	MS-415	Ant. Coupling
C103	1000			GP1000M	D6-102	GP2L-001	1FM-21	RF Screen Bypass
C104	30			GP30M	D6-330	GP1K-33	MS-43	RF Cath. Bypass
C105	100			GP100M	D6-101	GP1K-100	1FM-31	RF Plate Decoupling
C106	22			GP22K	D6-220	GP1K-22		Fixed Trimmer
C107	1000			GP1000M	D6-102	GP2L-001	1FM-21	RF Coupling
C108	1				D2-1			Osc. Coupling
C109	22			CN22JN080		N080-331-22		Fixed Trimmer
C110	50			GP50K	D6-500	GP1K-50	1FM-45	Osc. Grid Cap.
C111	1000			GP1000K	D6-102	GP2L-001	1FM-21	Fixed Trimmer
C112	1000			GP1000M	D6-102	GP2L-001	1FM-21	DC Blocking
C113	10000			BPD-10	D6-103	821-01	36C1	Conv. Filament Bypass
C114	10000			BPD-10	D6-103	821-01	36C1	Conv. Plate Decoupling
C115	.05	200		P288-05			TM-15	Phono Isolation
C116	50			GP50K	D6-500	GP1K-50	1FM-45	Osc. Feedback
C117	33			GP33K	D6-330	GP1K-33	MS-43	Osc. Feedback
C118	.1	200		P288-1			TM-1	Osc. Grid Cap.
C119	10000			BPD-10	D6-103	821-01	36C1	Audio Coupling
C120	10000			BPD-10	D6-103	821-01	36C1	Audio Coupling
C121	.002	600		P688-002	D6-202	GP2M-002	TM-26	1st IF Screen Bypass
C122	10000			BPD-10	D6-103	821-01	36C1	1st IF Fil. Bypass
C123	100			GP100M	D6-101	GP1K-100	1FM-31	Diode RF Filter
C124	10000			BPD-10	D6-103	821-01	36C1	2nd IF Cath. Bypass
C125	10000			BPD-10	D6-103	821-01	36C1	2nd IF Fil. Bypass
C126	.004	600		P688-004	D6-472	811-005	TM-24	2nd IF Decoupling
C127	10000			BPD-10	D6-103	821-01	36C1	Limiter Decoupling
C128	.001	200		P688-001	D6-102	GP2L-001	TM-21	De-emphasis
C129	10000			BPD-10	D6-103	821-01	36C1	Audio Coupling
C130	.0005	600		1468-0005	D6-501	GP2K-500	TC-35	AF Amp. Plate Bypass
C131	4000			P688-004			TM-24	Tone Compensation
C132	.01	200		P488-01	D6-103	821-01	TM-11	Tone Compensation
C133	.05	600		P688-05			TM-15	Audio Coupling
C134	10000			BPD-10	D6-103	821-01	36C1	DET-AF Amp. Fil. Bypass
C135	100			GP100M	D6-101	GP1K-100	1FM-31	Ant. Coupling

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R133	1 Meg.	1/2	63-2087	QI3-137X	T-109	BT-72	Volume control tapped at 200KΩ
R134A	1 Meg.	1/2	63-2088	QI1-137	AM-61-S	AN-69	Tone control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R134A per instructions

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA ZENITH PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6BJ6	6BJ6	7CM	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6C4	6C4	6BG	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	4th Video IF	6AU6	6AU6	7BK	
V8	Video Amp.	12AU7	12AU7	9A	
V9	AGC Amp.-Sound IF Amp.	12AT7	12AT7	9A	
V10	Limiter-Sound Det.	6BN6	6BN6	7DF	
V11	Audio Output	6AG7	6AG7	8Y	
V12A	Sync. Amp.	6AB4	6AB4	5CE	
B	Sync. Amp.	12AT7	12AT7	9A	Alternate for chassis 23G22/23 only.
V13	Sync. Sep.	6BN6	6BN6	7DF	
V14	Vert. Osc.-Hor. Disch.	12SN7GT	12SN7GT	8BD	
V15A	Vert. Output	6V6GT	6V6GT	7AC	
B	Vert. Output	6AQ5	6AQ5	7BZ	Used in chassis 23G22/23 only.
V16	Hor. Phase Det.	6AL5	6AL5	6BT	
V17	Hor. AFC-Hor. Osc	6SN7GT	6SN7GT	8BD	
V18A	Hor. Output	25BQ6GT	25BQ6GT	6AM	Used in chassis 24G22/23 and 24G24/25 only.
B	Hor. Output	19BG6G	19BG6G	5BT	Used in chassis 23G22/23 only.
V19	Hor. Output	25BQ6GT	25BQ6GT	6AM	Used in chassis 24G22/23 and 24G24/25 only.
V20	Damper	25W4GT	25W4GT	4CG	
V21	HV Rectifier	1B3GT	1B3GT	3C	
V22	LV Rectifier	5U4G	5U4G	5T	
V23	LV Rectifier	25Z6GT	25Z6GT	7Q	
V24A	Picture Tube	16EP4A	16EP4A	12D	Original tube used in set. Chassis 24G22/23, 24G24/25 only.
B	Picture Tube	16EP4	16EP4	12D	Manufacturers original. Chassis 24G22/23, 24G24/25 only.
C	Picture Tube	12UP4A	12UP4A	12D	Manufacturers original. Chassis 23G22/23 only.
D	Picture Tube	12UP4	12UP4	12D	Manufacturers replacement. Chassis 23G22/23 only.

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 CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	22-2121	AF844J8A			TVL-413	▲ Filter
B	20	450						■ Filter
C	20	450						▲ Output Screen Bypass
D	40	25						Output Cathode Bypass
C2A	15	475	22-2122	AF33X16G8B			TVL-411	▲ Filter
B	15	475						■ Decoupling
C	80	300						▲ Filter
D	40	50						Video Output Cathode Bypass
C3A	25	475	22-2123	AF5X4J8G20B			TVL-412	▲ Decoupling
B	20	450						■ Decoupling
C	40	300						▲ Filter
D	100	50						Vert. Output Cath. Bypass
C4A	100	20	22-2164	PRS25/100			TVA-8	Vert. Cent. Cont. Bypass *
B	500	3		PRS6/500			TVA-27	Hor. Cent. Cont. Bypass *
C5	20	300	22-2171	PRS350/24			TVA-92	Filter *
C6	100		22-5	GP100M	D6-101	GP1K-100		Ant. Coupling
C7	100		22-5	GP100M	D6-101	GP1K-100		Ant. Coupling
C8	470		22-2143	GP470M	D6-471	GP2K-470		AGC Filter
C9	10		22-2130	GP10K	D6-100	GP1K-10		RF Coupling
C10	.5-3		22-2093		829-3			Variable Trimmer
C11	470		22-2143	GP470M	D6-471	GP2K-470		RF Filament Bypass
C12	.5-3		22-2093		829-3			Variable Trimmer
C13A	110		27-138					RF Screen Bypass
B	400							RF Decoupling
C14	470		22-2217	GP470M	D6-471	GP2K-470		RF Bypass
C15	.5-3		22-2093		829-3			Variable Trimmer
C16A	400		27-138					Fixed Padder
B	110							Mixer Screen Bypass
C17	4.5		22-1951	CN4.5DN750		N750K-4.5		Osc. Coupling
C18	2.5		22-1891	CN2.5DN080		N080K-2.5		Osc. Coupling
C19	20		22-2204	CN20JN030		N030K-20		Fixed Trimmer
C20	47		22-1876	GP47K	D6-470	GP1K-47		Osc. Grid Cap.
C21	470		22-2143	GP470M	D6-471	GP2K-470		Osc. Filament Bypass
C22	6		22-2051	SI6DNPO		NPOK-6		IF Coupling
C23	26		22-2155	CN26JN080		N080K-26		Fixed Trimmer
C24	5000		22-4	BPD-5	D6-502	811-005	29C1	RF Bypass
C25	470		22-2217	GP470M	D6-471	GP2K-470	1FM-35	IF Coupling
C26	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	AGC Filter
C27	500		22-2216	GP500M	D6-501	GP2K-500	1FM-35	1st V. IF Decoupling
C28	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	1st V. IF Fil. Bypass
C29	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	AGC Filter
C30	500		22-2216	GP500M	D6-501	GP2K-500	1FM-35	2nd V. IF Decoupling
C31	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	2nd V. IF Fil. Bypass
C32	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	AGC Filter
C33	500		22-2216	GP500M	D6-501	GP2K-500	1FM-35	3rd V. IF Decoupling
C34	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	3rd V. IF Fil. Bypass
C35	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	4th V. IF Cath. Bypass
C36	500		22-2216	GP500M	D6-501	GP2K-500	1FM-35	4th V. IF Screen Bypass
C37	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	4th V. IF Fil. Bypass
C38	470		22-2217	GP470M	D6-471	GP2K-470	1FM-35	4th V. IF Decoupling
C39	4000		22-4	BPD-5	D6-472	811-005	29C1	RF Bypass
C40	200		22-2054	GP200K	D6-201	GP2K-200	1FM-32	IF Coupling
C41	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	AGC Amp. Cathode Bypass
C42	15		22-2134	GP15K	D6-150	GP1K-15	MS-415	AGC Amp. Plate Bypass
C43	150		22-2144	GP150K	D6-151	GP2K-150	1FM-315	AGC Filter
C44	1000		22-1888	GP1000M	D6-102	GP2L-001	1FM-21	AGC Filter
C45	10000		22-3	BPD-10	D6-103	821-01	36C1	AGC Filter
C46	.22	200	22-2167	P488-22			TC-2	AGC Filter
C47	7		22-1874	GP10K	D2-6.8	NPOK-6.8	MS-41	V. Det. Filter
C48	.003	200	22-2157	P688-003	D6-302	GP2M-003	TM-23	V. Amp. Cath. Bypass
C49	47		22-1876	CN47KN080		N080-338-47		Fixed Trimmer
C50	.047	600	22-1844	P688-047			TM-15	Video Coupling
C51	.047	600	22-1844	P688-047			TM-15	Video Coupling
C52	.1	200	22-1777	P288-1			TM-1	Pic. Tube Cath. Bypass
C53	.0022	600	22-1845	P688-0022			TM-22	Vert. Sweep Coupling
C54	10		22-1953	GP10K	D6-100	GP1K-10	MS-41	S. IF Coupling
C55	50		22-1761	GP50K	D6-500	GP1K-50	1FM-45	S. IF Coupling

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C56	10000		22-3	BPD-10	D6-103	821-01	36C1	Sound Det. Cath. Bypass
C57	10000		22-3	BPD-10	D6-103	821-01	36C1	Sound Det. Screen Bypass
C58	10		22-2106	CN10DN150		N150K-10		Fixed Trimmer
C59	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	Sound Det. Filament Bypass
C60	1000		22-2218	GP1000M	D6-102	GP2L-001	1FM-21	Sound Det. Plate Bypass
C61	10000		22-3	BPD-10	D6-103	821-01	36C1	Audio Coupling
C62	.0047	600	22-1782	P688-0047	D6-472	GP2M-0047	TM-25	Output Plate Bypass
C63	.05	400	22-1775	P488-05			TM-15	Line Isolation
C64	.047	600	22-1844	P688-047			TM-15	Sync. Coupling
C65	50		22-1761	GP50M	D6-500	GP1K-50	1FM-45	Sync. Amp. Grid Bypass
C66	5000		22-4	BPD-5	D6-502	811-005	29C1	Sync. Amp. Screen Bypass
C67	.047	600	22-1775	P688-047			TM-15	Vert. Sync. Coupling
C68	.0033	600	22-1780	P688-0033	D6-332	GP2M-0033	TM-23	Voltage Divider
C69	.0012	1000	22-1880					Vert. MV Grid Cap.
C70	.001	600	22-2128	P688-001	D6-102	GP2L-001	TM-21	Vert. MV Feedback
C71	.15	200	22-2166	P288-15			TC-2	Vert. MV Cath. Bypass
C72	.01	600	22-1843	P688-01			TM-11	Vert. Discharge
C73	.1	600	22-1841	P688-1			TM-1	Vert. Sweep Coupling
C74	100	500	22-365	1468-0001	D6-101	GP1K-100	1FM-31	Hor. Sync. Coupling
C75	130	500	22-2162					AFC Filter
C76	.022	200	22-2071	P488-022			TM-12	AFC Filter
C77	.005	200	22-1847	P688-005	D6-502	811-005	TM-25	Hor. Sync. Coupling
C78	5000		22-4	BPD-5	D6-502	811-005	29C1	AFC Filter
C79	.047	200	22-1778	P288-047			TM-15	AFC Filter
C80	470	500	22-1138	1468-0005	D6-471	GP2K-470	1FM-35	Fixed Trimmer
C81	220	500	22-1461	1468-0002	D6-221	GP2K-220	1FM-32	Fixed Trimmer
C82	.0022	400	22-1803	P688-0022	D6-222	GP2M-0022	TM-22	Hor. Osc. Grid Cap.
C83	1000	500	22-2163	1464-001			MS-21	Fixed Trimmer
C84	150	500	22-470	1468-00015	D6-151	GP2K-150	1FM-315	Differentiator Net.
C85	.01	600	22-1846	P688-01	D6-103	821-01	TM-11	Hor. Sweep Coupling
C86	680	500	22-2034		D6-681	GP2K-680	1FM-37	Hor. Discharge
C87	.001	1000	22-1831	P1088-001			TR-21	Hor. Sweep Coupling
C88	.33	200	22-2159	P288-33			TC-5	Hor. Output Cath. Bypass
C89	.047	600	22-1844	P688-047			TM-15	Hor. Output Screen Bypass
C90	.001	600	22-2128	P688-001	D8-102	GP2L-001	TM-21	Hor. Feedback
C91	27	500	22-2160	1469-000025	D6-270	GP1K-27	MS-425	Integrator Net.
C92	.0022	200	22-2161	P888-0022	D6-222	GP2M-0022	TM-22	Integrator Net.
C93	.22	200	22-2145	P488-22			TC-2	Damper Filter
C94	500	15000	22-1832		TV3-502			HV Filter ‡
C95	470		22-2143	GP470M	D6-471	GP2K-470	1FM-35	Pic. Tube Fil. Bypass
C96	.47	200	22-2098	P288-47			TC-5	Hor. Sweep Coupling †
C97	470		22-2217	GP470M	D6-471	GP2K-470	1FM-35	RF Bypass
C98	.047	200	22-1778	P288-047			TM-15	Fixed Trimmer †

* Used only in chassis 24G22, 24G23, 24G24 and 24G25.
† Used only in chassis 23G22 and 23G23.
‡ Chassis 23G22 and 23G23 uses 500MMF 12KV. MFGR'S Part No. 22-2120.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	63-2072	Q13-133	AM-60-Z	BSK-60-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	*	Attach to R1A per instructions
R2A	100KΩ	½	63-2074	Q11-128	AM-49-S	AN-40	Horiz. hold control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R2A per instructions
R3A	100KΩ	½	63-2074	Q11-128	AM-49-S	AN-40	Brightness control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R3A per instructions
R4A	200KΩ	½	63-2107	Q11-130	AM-52-S	AN-50	Vert. hold control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R4A per instructions
R5A	5000Ω	½	63-2073			AN-12	Contrast control
B	Shaft		Not Req.			AK-4	Attach to R5A per instructions
R6A	25KΩ	½	63-1675	Q11-120	M-40-S	AN-26	Horiz. drive control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R6A per instructions
R7	100Ω	3	63-1669	W-100	43-100	V-121	Horiz. centering control-Wire Wound-See Note 1
R8A	5000Ω	½	63-1674	Q11-114	M-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R8A per instructions
R9A	7.5 Meg.	½	63-2110	Q11-143	M-96-S	AN-98	Vert. size control-See Note 2
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R9A per instructions
R10	20Ω	2	63-2098	W-20 x 10	43-20 CT	SVT-901	Vert. centering control-Wire Wound-tapped at 10Ω- See Note 1
R11	20KΩ	4	63-2099				Focus control-Wire Wound-See Note 1
R12	100Ω to 500Ω	1	63-2050				Bias control-Wire Wound
R13	3500Ω to 4000Ω	1	63-1690				AGC delay control-Wire Wound

* Switch is attached at factory.
Note 1. Not used in chassis 23G22 and 23G23.
Note 2. Chassis 24G22 and 24G23 use a 3.5 Meg. control Part No. 63-2036.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R14	1 Meg.	½	63-1912		RF Grid
R15	82Ω	½	63-1740		RF Cathode
R16	10KΩ	½	63-1827	BTS-10K	RF Screen
R17	4700Ω	½	63-1813		RF Plate
R18	1000Ω	½	63-1785	BTS-1000	RF Decoupling
R19	3.3 Meg.	½	63-1933		Mixer Grid
R20	47KΩ	½	63-1855		Mixer Screen
R21	1000Ω	½	63-1785	BTS-1000	Mixer Plate Decoupling
R22	15KΩ 20%	½	63-1835		Osc. Grid
R23	1000Ω	½	63-1785	BTS-1000	Osc. Plate Decoupling
R24	1000Ω	½	63-1785	BTS-1000	AGC Network
R25	10Ω	½			Parasitic Supp. -See Note 3
R26	100Ω 20%	½	63-1744		Decoupling
R27	100Ω 20%	½	63-1744		Decoupling
R28	1000Ω	½	63-1785	BTS-1000	AGC Network
R29	10KΩ	½	63-1827		1st Video IF Coil Shunt
R30	100Ω	½	63-1743		1st Video IF Cathode
R31	470Ω 20%	½	63-1772	BTS-470	1st Video IF Decoupling
R32	470Ω 20%	½	63-1772	BTS-470	AGC Network
R33	15KΩ	½	63-1834		2nd Video IF Coil Shunt
R34	100Ω	½	63-1743		2nd Video IF Cathode
R35	470Ω 20%	½	63-1772	BTS-470	2nd Video IF Decoupling

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES
R36	470Ω 20%	½	63-1772	BTS-470	AGC Network
R37	15KΩ	½	63-1834		3rd Video IF Coil Shunt
R38	100Ω	½	63-1743		3rd Video IF Cathode
R39	470Ω	½	63-1772	BTS-470	3rd Video IF Decoupling
R40	8200Ω	½	63-1824		4th Video IF Coil Shunt
R41	330Ω	½	63-1764		4th Video IF Cathode
R42	15KΩ	½	63-1834		4th Video IF Screen
R43	10KΩ	2	63-1198	BT-2-10K	4th Video IF Decoupling
R44	68KΩ	½	63-1862	BTS-68K	Peaking Coil Shunt
R45	3900Ω 5%	1	63-1809	BTA-3900-5%	Video Det. Load
R46	100Ω	½	63-1743		Video Amp. Cathode
R47	2700Ω	½	63-1803	BTS-2700	Peaking Coil Shunt
R48	3300Ω	½	63-1806	BTS-3300	Video Amp. Plate
R49	1 Meg. 20%	½	63-1912	BTS-1 Meg.	Video Amp. Grid
R50	680Ω	½	63-1778	BTS-680	Video Amp. Cathode
R51	22KΩ	½	63-1841	BTS-22K	Peaking Coil Shunt
R52	8200Ω 5%	2	63-1980	BT-2-8200	Video Amp. Plate
R53	1 Meg. 20%	½	63-1912	BTS-1 Meg.	Picture Tube Grid
R54	8200Ω	½	63-1824	BTS-8200	Voltage Divider
R55	68KΩ	½	63-1862	BTS-68K	Voltage Divider
R58	270KΩ	½	63-1887	BTS-270K	Feedback
R57	88KΩ 20%	½	63-1863	BTS-68K	AGC Amp. Grid
R58	1000Ω 20%	½	63-1788	BTS-1000	AGC Amp. Plate
R59	68KΩ	½	63-1862	BTS-68K	Delayed AGC Network
R60	1 Meg. 20%	½	63-1912	BTS-1 Meg.	Sound IF Grid
R61	6800Ω	½	63-1821		Limiter Screen
R62	220KΩ	½	63-1884		Limiter Plate
R63	680Ω	½	63-1778	BTS-680	Isolation
R64	100KΩ	½	63-1869	BTS-100K	Output Grid
R65	82Ω	½	63-1740	BW-½-82	Output Cathode
R66	12KΩ	1	63-1975	BTA-12K	Filter
R67	3500Ω	10	63-2023	AB-3500	Filter-Wire Wound
R68	220KΩ 20%	½	63-1884	BTS-220K	AGC Network
R69	220KΩ 20%	½	63-1884	BTS-220K	AGC Network
R70	1.5 Meg. 20%	½	63-1919	BTS-1.5 Meg.	AGC Network
R71	3.9 Meg.	½	63-1936	BTS-3.9 Meg.	Voltage Divider
R72	82Ω	½	63-1740		Sync. Amp. Cathode
R73	10KΩ	2	63-1198	BT-2-10K	Sync. Amp. Plate
R74	820KΩ	½	63-1908	BTS-820K	Sync. Sep. Grid
R75	12KΩ	½	63-1831	BTS-12K	Sync. Sep. Screen
R76	22KΩ	½	63-1841	BTS-22K	Sync. Sep. Plate
R77	22KΩ	½	63-1841	BTS-22K	Sync. Sep. Plate
R78	33KΩ	½	63-1848	BTS-33K	Voltage Divider
R79	47KΩ	½	63-1855	BTS-47K	Integrator Network
R80	15KΩ	½	63-1834	BTS-15K	Vert. Osc. Cathode
R81	88KΩ	½	63-1862	BTS-68K	Voltage Divider
R82	47KΩ	½	63-1855	BTS-47K	Vert. Osc. Grid-See Note 4
R83	100KΩ	½	63-1869	BTS-100K	Vert. Osc. Grid-See Note 5
R84	4.7 Meg.	½	63-1939	BTS-4.7 Meg.	Vert. Osc. Plate-See Note 6
R85	68KΩ	½	63-1862	BTS-68K	Voltage Divider
R86	68KΩ	½	63-1862	BTS-68K	Decoupling
R87	33KΩ	½	63-1848	BTS-33K	Vert. Peaking
R88	3.3 Meg.	½	63-1932	BTS-3.3 Meg.	Vert. Output Grid
R89	1500Ω	1	63-1967	BTA-1500	Vert. Output Cathode
R90	100KΩ	½	63-1869	BTS-100K	Feedback
R91	8200Ω	5	63-1483		Decoupling-See Note 7
R92	8200Ω	1	63-1576	BTA-8200	Filter
R93	270Ω	½	63-1761		Picture Control Network
R94	100Ω	½	63-1743		Picture Control Coil Shunt
R95	1 Meg.	½	63-1911	BTS-1 Meg.	Horiz. Phase Det. Load
R96	1 Meg.	½	63-1911	BTS-1 Meg.	Horiz. Phase Det. Load
R97	2200Ω 20%	½	63-1800	BTS-2200	Horiz. Phase Det. Load
R98	180KΩ	½	63-1680	BTS-180K	Horiz. Phase Det. Load
R99	330KΩ	½	63-1890	BTS-330K	Horiz. AFC Filter Network
R100	1 Meg.	½	63-1911	BTS-1 Meg.	Horiz. AFC Filter Network
R101	68KΩ 20%	½	63-1863	BTS-68K	Horiz. AFC Filter Network
R102	270KΩ	½	63-1887	BTS-270K	Feedback Network
R103	120KΩ	½	63-1873	BTS-120K	Horiz. AFC Plate
R104	27KΩ	½	63-1845	BTS-27K	Voltage Divider
R105	100KΩ	½	63-1869	BTS-100K	Horiz. Osc. Grid
R106	33KΩ	1	63-1398	BTA-33K	Horiz. Osc. Plate
R107	100KΩ	½	63-1869	BTS-100K	Voltage Divider
R108	18KΩ	½	63-1838	BTS-18K	Differentiator
R109	220KΩ 20%	½	63-1884	BTS-220K	Horiz. Discharge Grid
R110	560KΩ	½	63-1901	BTS-560K	Horiz. Discharge Plate
R111	6800Ω	½	63-1821	BTS-6800	Horiz. Peaking-See Note 8
R112	3300Ω 20%	½	63-1807	BTS-3300	Decoupling
R113	56KΩ	½	63-1859	BTS-56K	Feedback Network
R114	56KΩ	½	63-1859	BTS-56K	Feedback Network
R115	150Ω 20%	½	63-1751		Parasitic Supp.
R116	150Ω 20%	½	63-1751		Parasitic Supp. -See Note 9
R117	220KΩ 20%	2	63-1884	BTS-220K	Horiz. Output Grid-See Note 10
R118	100Ω	2	63-1973	BW-2-100	Horiz. Output Cathode-See Note 11
R119	100Ω 20%	½	63-1744		Parasitic Supp.-See Note 9
R120	100Ω 20%	½	63-1744		Parasitic Supp.-See Note 9
R121	10KΩ	10	63-1684	AB-10K	Horiz. Output Screen-Wire Wound
R122	15KΩ 20%	1	63-972	BTA-15K	Width Coil Shunt
R123	470KΩ 20%	½	63-1898		HV Filter
R124	2.2Ω 20%	2			HV Rect. Filament-See Note 3
R125	3300Ω	5	63-1535		Series Focus Control-Wire Wound-See Note 9
R126A	200Ω	5	63-2103	AB-200	Filter-Wire Wound
B	200Ω	5		AB-200	Filter-Wire Wound
R127A	25Ω	3	63-2102		Filament Dropping-Wire Wound-See Note 12
B	150Ω	15			Filament Dropping-Wire Wound-See Note 12
R128	100KΩ	½	63-1870	BTS-100K	Series Pilot Lamp
R129	100KΩ	½	63-1870	BTS-100K	Isolation
R130	1500Ω	1	63-1967	BTA-1500	Vert. Output Decoupling-See Note 13
R131	400Ω	5	63-2077	AB-400	Filter-Wire Wound-See Note 13
R132	6800Ω	½	63-1821	BTS-6800	Peaking Coil Shunt-See Note 14

Note 3. Not used in all models.
Note 4. Used in chassis 24G24 and 24G25 only.
Note 5. Chassis 23G22 and 23G23 use 330KΩ resistor in this application.
Note 6. Some models use 3.3 Meg. resistor in this application.
Note 7. Some models use two resistors in parallel to obtain required resistance and wattage.
Note 8. Chassis 23G22, 23G23, 24G22 and 24G23 use 4700Ω resistor in this application.
Note 9. Not used in chassis 23G22 and 23G23.
Note 10. Chassis 23G22 and 23G23 use 470KΩ resistor in this application.
Note 11. Chassis 23G22 and 23G23 use 150Ω resistor in this application.
Note 12. Chassis 23G22 and 23G23 use two section candohm with values of 100Ω and 170Ω.
Note 13. Used in chassis 23G22 and 23G23 only.
Note 14. Used in some chassis 23G22 and 23G23 only.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1A	117VAC ④ 1.45A	760VCT .200ADC Tap③ 350VCT .108ADC	5VAC ④ 3A		95-1232 ①			
B					95-1197 ②			
C					95-1216 ③			

① Used in chassis 24G24, 24G25.
② Used in chassis 23G22, 23G23.
③ Used in chassis 24G22, 24G23.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2A	390Ω Tap. ⑥ 35Ω	3.3Ω Tap ⑥ .2Ω SEC. 2 0Ω	S-16566 ⑤				Hor. Output Trans.
B			S-16204 ⑥				
T3A	660Ω	10Ω	95-1219 ⑤	A-8115 ⑦	A-3035 ④		Hor. Output Trans.
B	590Ω	14Ω	95-1112 ⑥	A-8112	A-3037	TSO-5	Vert. Output Trans.
T4A	17Ω		95-1198 ⑤	DY-1	MD-3		Hor. Deflection Coil
B	65Ω						Vert. Deflection Coil
T4			95-1217 ⑧				Horiz.-Vert. Deflection Coil
T5	1.9KΩ		95-1220 ⑤				Focus Coil

④ Drill new mounting holes.
⑤ Used in chassis 24G22, 24G23, 24G24, 24G25.
⑥ Used in chassis 23G22, 23G23.
⑦ Replace brackets on A-8115 with old shell and mount in original holes or else mount A-8115 vertically, as is, with new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T6	5.9KΩ	3.5Ω	440Ω	.5Ω	95-1167	A-3877	A-2930	RO-9	

SPEAKER

ITEM No.	RATINGS FIELD	RATINGS V. C. IMP.	ZENITH PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1A	PM	3.5Ω	49-624	MOD. P12-S	12A4A	⑧ Replace output transformer to match 6-8Ω voice coil.
B	PM	3.5Ω	49-670		8A31	
C	PM	3.5Ω	49-649		10A31	
	CONE DIA.	V. C. DIA.				
SP2A	11 1/4"	1"				
B	7 7/8"	3/4"				
C	9 3/8"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ↵)	ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1A	.200ADC	100Ω	4.9 Henry	95-1170*** 95-1216 ###	C-1646 ■	C-2996	TR-4200♦	■ Drill new mounting holes. ♦ Drill one new mounting hole.
B								

*** Used in chassis 24G22, 24G23, 24G24, 24G25.
Used in chassis 23G22, 23G23

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	ZENITH PART No.	MEISSNER PART No.	NOTES
L2	Conv. Plate	.2Ω		S-16263		
L3	Osc. Coil	.2Ω		S-16265		
L4	1st Video IF Coupling	.2Ω		S-16501		
L5	1st Video IF	.3Ω		S-16274		
L6	2nd Video IF	.3Ω	.3Ω	S-16275		
L7	3rd Video IF	.3Ω	.3Ω	S-16604		
L8	4th Video IF	.3Ω	.3Ω	S-16605		
L9	5th Video IF	1.7Ω	.4Ω	S-16276		
L10	Peaking	6.1Ω		S-15058		
L11	Peaking	2Ω		S-15128		
L12	Peaking	6.5Ω		S-16356		
L13	Peaking	8Ω		S-16011		
L14	Peaking	14.9Ω		S-16239		
L15	1st Sound IF	1.8Ω	2.5Ω	S-16652		
L16	RF Choke	8Ω		S-16011		
L17	2nd Sound IF	8.8Ω		S-16656		
L18	Quadrature	5Ω		S-16013		
L19	Vert. Size Trans.	75Ω	10.5Ω	S-16571		
L20	Horiz. Osc.	250Ω		S-16186		
L21	Width Coil	5.6Ω		S-16556		
L22	Peaking	14.9Ω		S-16239		Not used on all chassis.