

CABINET-REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

The Horizontal Hold is equipped with a stop which limits rotation to approximately 270° with the knob on the shaft. To adjust, remove the knob and adjust by turning the shaft until the picture is synchronized to the

point where it is virtually impossible to disrupt horizontal synchronization when switching from channel to channel. Install the knob with its pointer centered between the stops.

## DISASSEMBLY INSTRUCTIONS

### CHASSIS AND PICTURE TUBE ASSEMBLY REMOVAL

1. Remove 8 wood screws holding rear cover.
2. Disconnect antenna leads and remove 3 knobs at side of cabinet.
3. Remove rear cover.
4. Remove 4 chassis bolts.
5. Remove 5 screws holding cabinet front panel to cabinet.
6. Disconnect all leads from tuner.
7. Slide chassis and picture tube out front.

8. To remove tuner, remove 2 screws holding tuner mounting bracket to cabinet.

### PICTURE TUBE REMOVAL

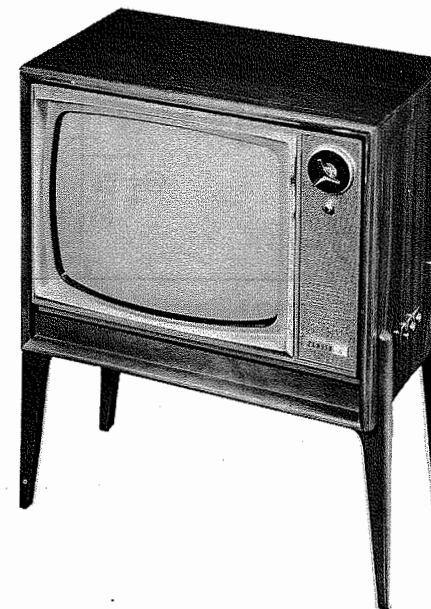
1. Remove rear cover.
2. Remove picture tube socket, hi voltage lead, speaker leads, and pilot lamp lead.
3. Lower tuner bracket down by removing 2 screws.
4. Remove 5 screws in front panel (inside cabinet) and pull panel and picture tube assembly out front.

SET 547  
FOLDER 2

PHOTOFACT® Folder



ZENITH CHASSIS 16G20,  
16G20Q, 16G20U



MODEL G2120W

TRADE NAME	ZENITH	MODELS	TV Chassis	Remote Control	VHF Tuner	UHF Tuner
		G2101C, F; G2102L, R, W	16G20		175-202	
		G2120F, M, R, W	16G20		175-176	
		G2213G	16G20Q	S-52223	175-142 or 175-302	
		G2101CU, FU; G2102LU, RU, WU	16G20U		175-201	175-8
		G2120EU, MU, RU, WU	16G20U		175-175	175-8
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Avenue, Chicago 39, Illinois					
TYPE SET	Television Receiver (16G20Q Chassis with Remote Control)					
TUBES	TV: VHF - Sixteen, UHF - Seventeen; Remote Control Receiver: Six					
POWER SUPPLY	110-120 Volts AC, 60 Cycle					
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)					

## SERVICING IN THE FIELD

### SAFETY GLASS

The safety glass is an integral part of the picture tube.

### FUSE

A 5 Amp. (Line) fuse, 7/10 Amp. (LV Supply) fuse, and a fuse wire are used for receiver protection. For fuse location, see "Tube Placement Chart". For fuse wire location, see M3 in Photo, "Chassis - Bottom View".

### TUNER OSCILLATOR ADJUSTMENTS

To touchup VHF Oscillator, remove Channel Selector knob, Fine Tuning knob, and Trim plate. Trim plate is removed by turning slightly counterclockwise.

### AGC CONTROL

The AGC may be varied by means of an AGC Control. (See "Tube Placement Chart" for location.)

### FOCUS

The focus may be varied by means of a Focus Control. See "Tube Placement Chart" for location.)

### HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The Horizontal Frequency Slug is used for the Horizontal Hold. (For location, see "Tube Placement Chart".)

### SYNC STABILITY

Sync stability may be varied by means of a Fringe Lock Control. (For location, see "Tube Placement Chart".)

### WIDTH

The width may be varied by adjusting a metallic sleeve, located between the yoke and the picture tube neck, in or out of the yoke.

### BUZZ ADJUSTMENT

To eliminate intercarrier buzz, adjust the Buzz Control for MINIMUM buzz and maximum sound. (For location, see "Tube Placement Chart".)

### CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

## HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

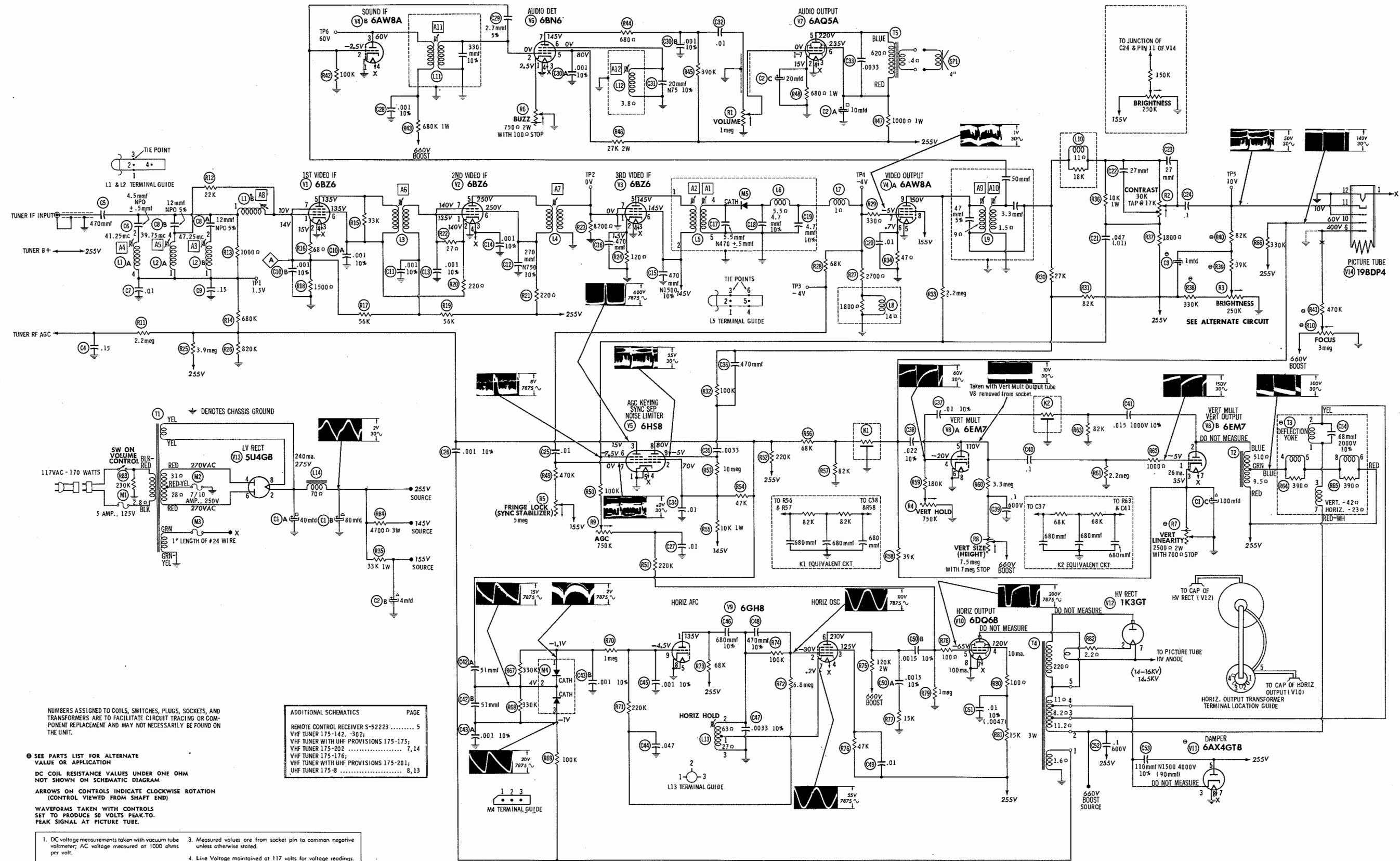
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of KA953



the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1961 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

SET 547  
FOLDER 2



ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

FOLDER 2

ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

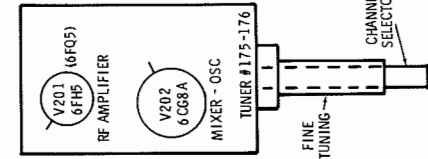
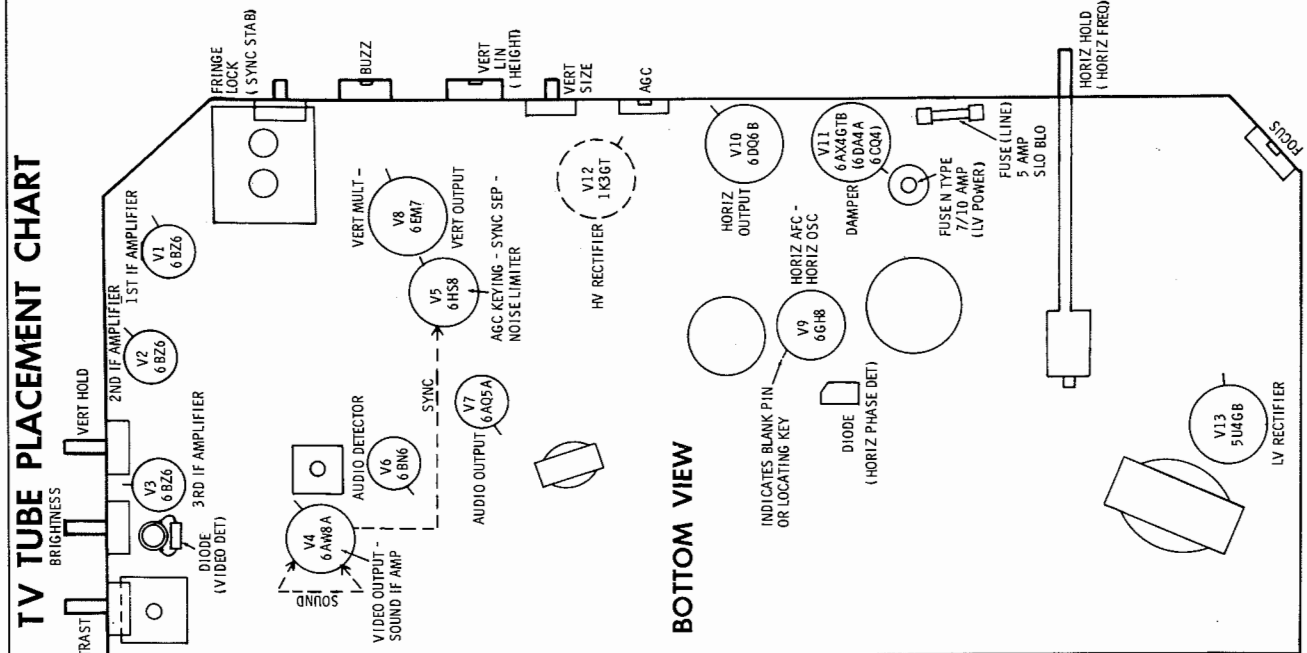
# TV TUBE PLACEMENT CHART

# TV RESISTANCE MEASUREMENTS

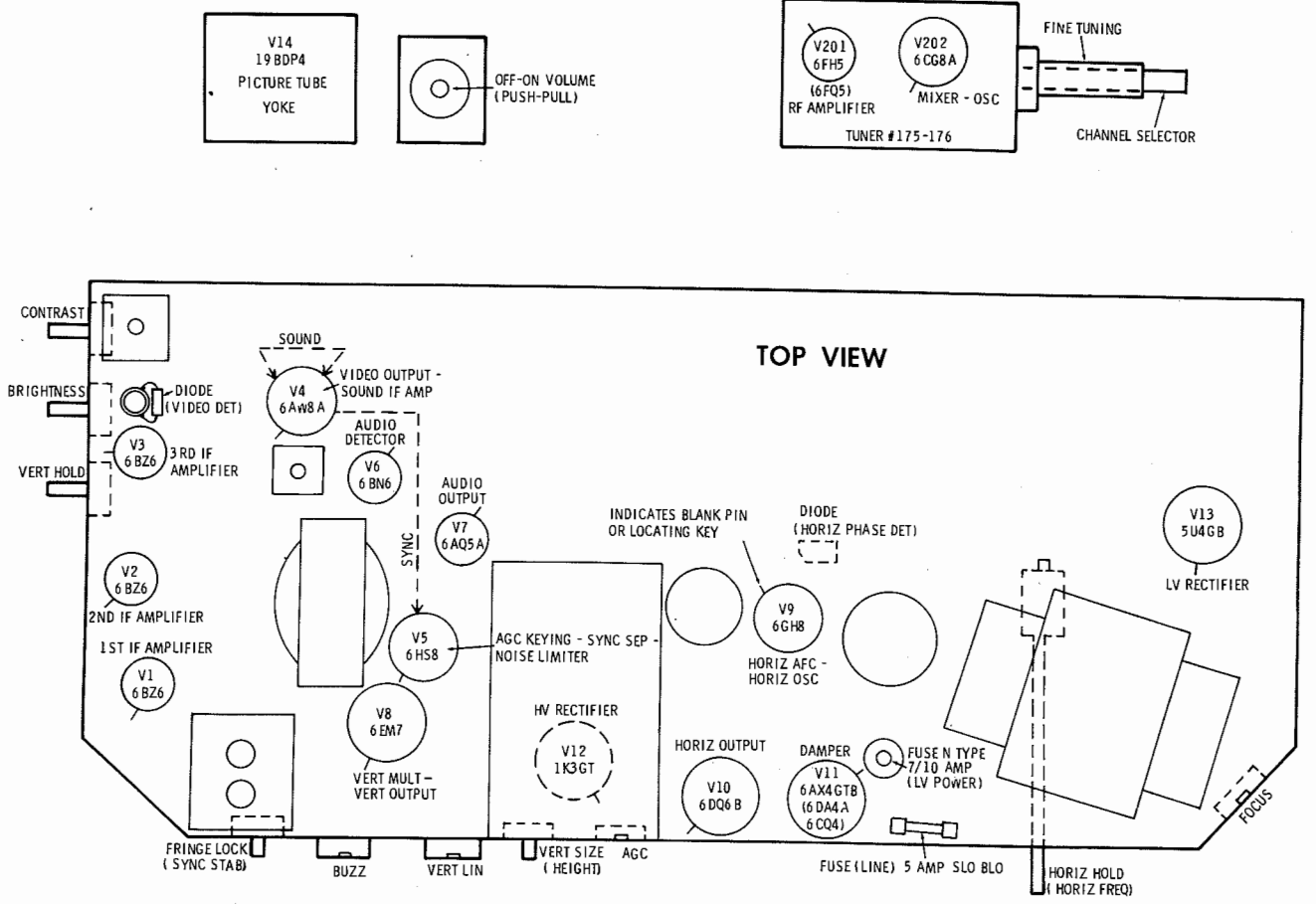
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	1.5 meg	1600 $\Omega$	FIL	FIL	220 $\Omega$	220 $\Omega$	1500 $\Omega$		
V2	6BZ6	40K	INF	FIL	FIL	1290 $\Omega$	1290 $\Omega$	27 $\Omega$		
V3	6BZ6	.1 $\Omega$	120 $\Omega$	FIL	FIL	14700 $\Omega$	14700 $\Omega$	0 $\Omega$		
V4	6AW8A	0 $\Omega$	100K	+680K	FIL	47 $\Omega$	3000 $\Omega$	133K	19000 $\Omega$	
V5	6HS8	0 $\Omega$	115K	800K	FIL	FIL	1 meg	140K	110 meg	
V6	6BN6	400 $\Omega$	.1 $\Omega$	FIL	FIL	127K	3.8 $\Omega$	1390K		
V7	6AQ5A	NC	680 $\Omega$	FIL	FIL	11700 $\Omega$	1000 $\Omega$	0 $\Omega$		
V8	6EM7	2.2 meg	1590 $\Omega$	FIL	FIL	400K	6.5 meg	FIL		
V9	6GH8	168K	100K	147K	FIL	FIL	120K	27 $\Omega$	1.4 meg	
V10	6DQ6B	NC	FIL	NC	115K	750K	TP	FIL	0 $\Omega$	TOP CAP + 11 $\Omega$
V11	6AX4GTB	TP	TP	2.8 meg	NC	170 $\Omega$	TP	FIL		
V12	1K3GT	PINS 1 THRU 8	INFINITE	RESISTANCE						
V13	5U4GB	NC	150K	TP	31 $\Omega$	NC	28 $\Omega$	TP	150K	
V14	19BDP4	FIL	0 $\Omega$	Pin 6 1.5 meg	Pin 10 170K	Pin 11 140K	Pin 12 FIL			
V201	6FH5	0 $\Omega$	3 meg	FIL	FIL	15900 $\Omega$	0 $\Omega$	0 $\Omega$		
V202	6CG8A	4700 $\Omega$	19400 $\Omega$	0 $\Omega$	FIL	FIL	14700 $\Omega$	14700 $\Omega$	0 $\Omega$	222K
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.  
 THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.  
 MEASURED FROM PIN 2 OF V13.  
 MEASURED FROM PIN 3 OF V11.  
 MEASURED FROM PIN 2 OF V2.

NC NO CONNECTION  
 TP TIE POINT



# TV TUBE PLACEMENT CHART



# TUBE FAILURE CHECK CHART

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

**POWER SUPPLY FAILURE**  
 No raster, no sound Fuse (Line), Fuse (LV Power), V13, Fuse Wire (Fil.)

**SWEEP FAILURE**  
 No raster, has sound V9, V10, V11, V12, V14  
 No vertical deflection V8  
 Poor vert. linearity or foldover V8  
 Poor horiz. linearity or foldover V9, V10, V11  
 Narrow picture V9, V10, V11, V13  
 Vert. off freq. V8  
 Horiz. off freq. Diode (Horiz. Phase Det.), V9

**LOSS OF PICTURE OR SOUND**  
 No pic, no sound, has raster V1, V2, V3, Diode (Video Det.), V4  
 No pic, no sound, has snow V201, V202, V1  
 No pic, has sound, has raster V4, V14  
 Has pic, no sound V4, V6, V7  
 Overloaded picture V5

**SYNC FAILURE**  
 No vert. sync V5  
 No horiz. sync V5  
 No vert. or horiz. sync V5

ZENITH CHASSIS 16G20,  
 16G20Q, 16G20U

FOLDER 2

TV ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.  
Allow a 20 minute warm-up period for the receiver and test equipment.  
Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295  
WALSCO #2526, 2543, 2544, 2545

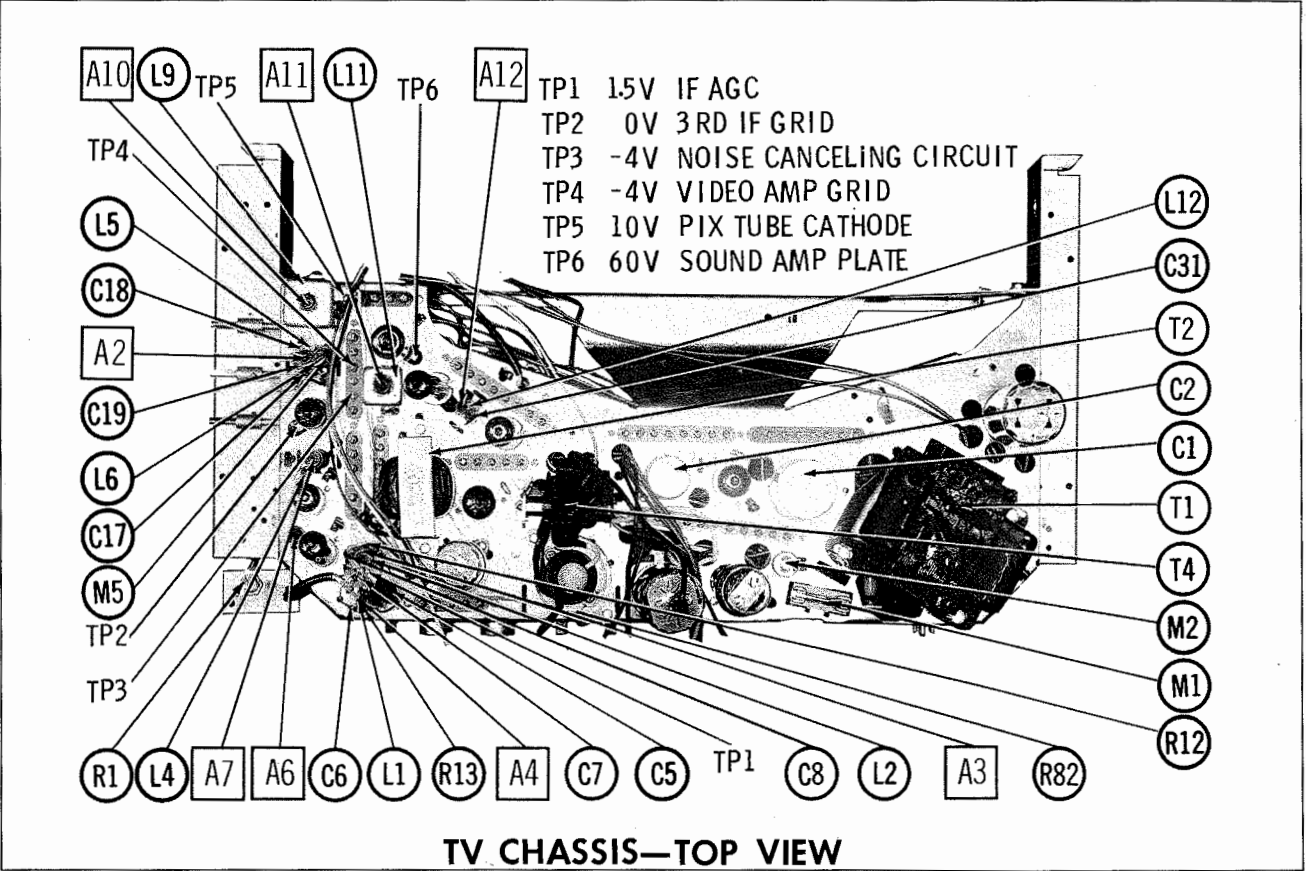
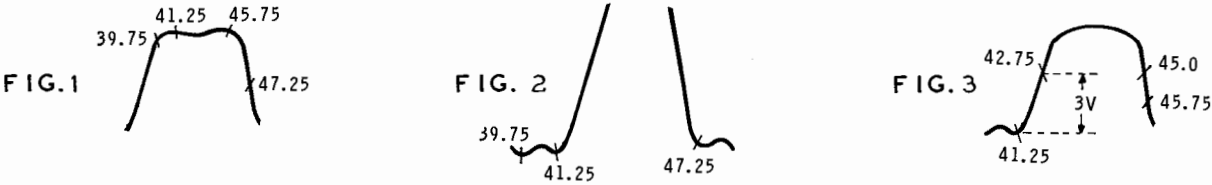
VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.  
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

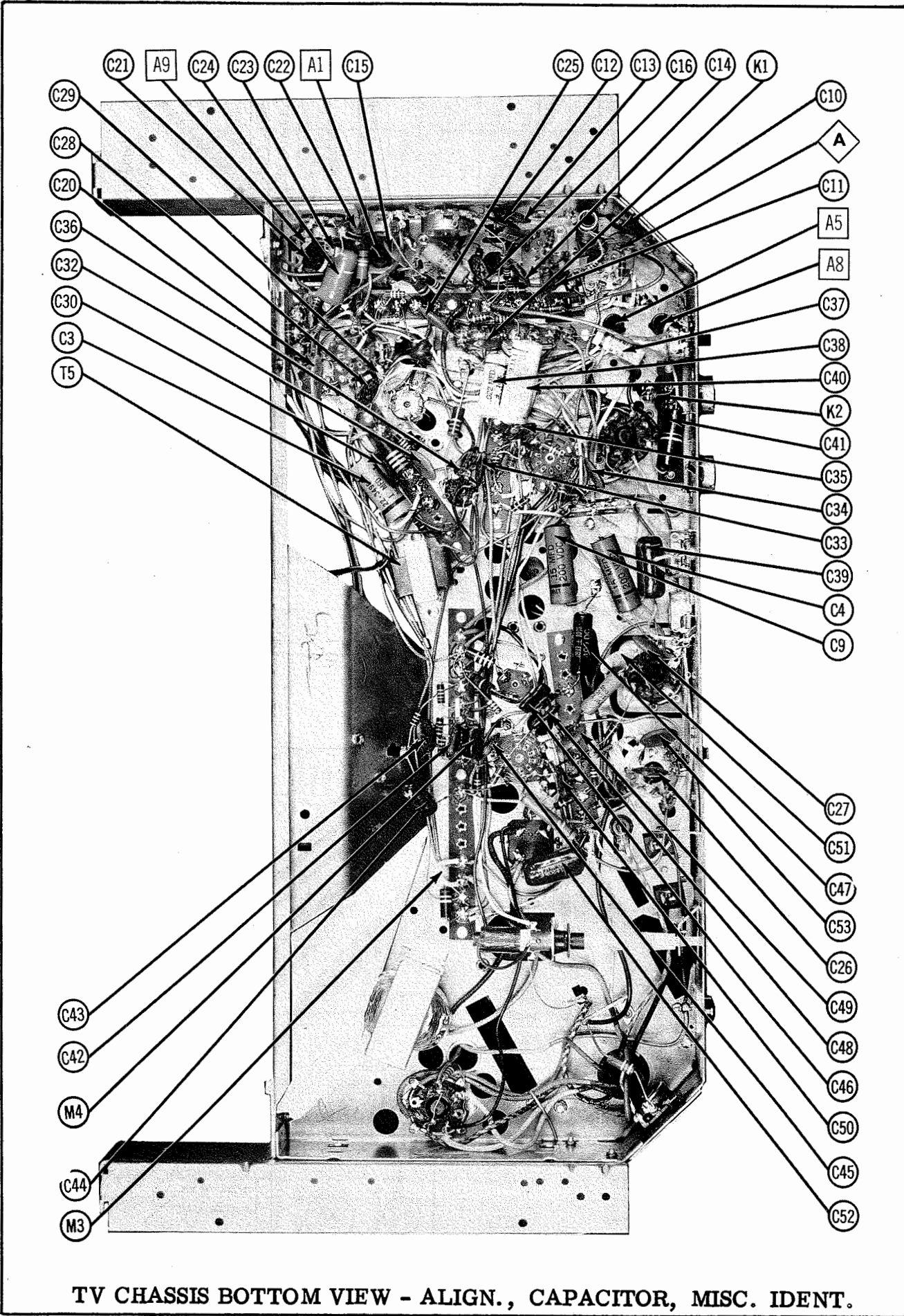
	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	High side thru 470mmf capacitor to TP-2. Low side to chassis.	44.0MC (10MC Swp.)	39.75MC 41.25MC 45.75MC	Between two channels	Vert. Amp. thru 10K to point TP-4. Low side to chassis. (Across Video Detector load.)	A1, A2	Set sweep output to produce 3 volts peak to peak on scope. Adjust A1 and A2 alternately for maximum gain and symmetry with the 45.75MC marker positioned as shown in Fig. 1. The 39.75MC marker can fall within $\pm .5$ MC of the specified frequency. If the desired response cannot be obtained, see that the cores are entering their respective windings from opposite ends.
2.	High side to ungrounded tube shield floating over Mixer-Osc. (V202). Low side to chassis.	"	39.75MC 41.25MC 47.25MC	"	"	A3, A4, A5	Connect a clip lead from point TP-3 to chassis. Connect a clip lead from TP-1 to point A. Use high scope gain and adjust A3 thru A5 for MINIMUM amplitudes at markers as shown in Fig. 2. A3 controls 47.25MC, A4 controls 41.25MC and A5 controls 39.75MC.
3.	"	"	41.25MC 42.75MC 45.0MC 45.75MC	"	"	A6, A7, A8, & Mixer Plate Coil	Disconnect the clip lead from point A and connect to chassis. Adjust for maximum gain and symmetry of response similar to Fig. 3 with markers as shown. A6 affects the low frequency side and A7 affects the high frequency side.

SOUND IF ALIGNMENT

Connect an adjustable attenuator between the antenna and the receiver terminals.  
Tune in a TV station and adjust the attenuator until the signal is below the limiting level of the Audio Detector as evidenced by a hiss similar to super-regeneration in the sound. Adjust A9, A10, A11 and A12 for maximum sound and best quality. Adjust the Buzz control for MINIMUM buzz. If the hiss disappears during alignment, further reduce the signal until the hiss returns.



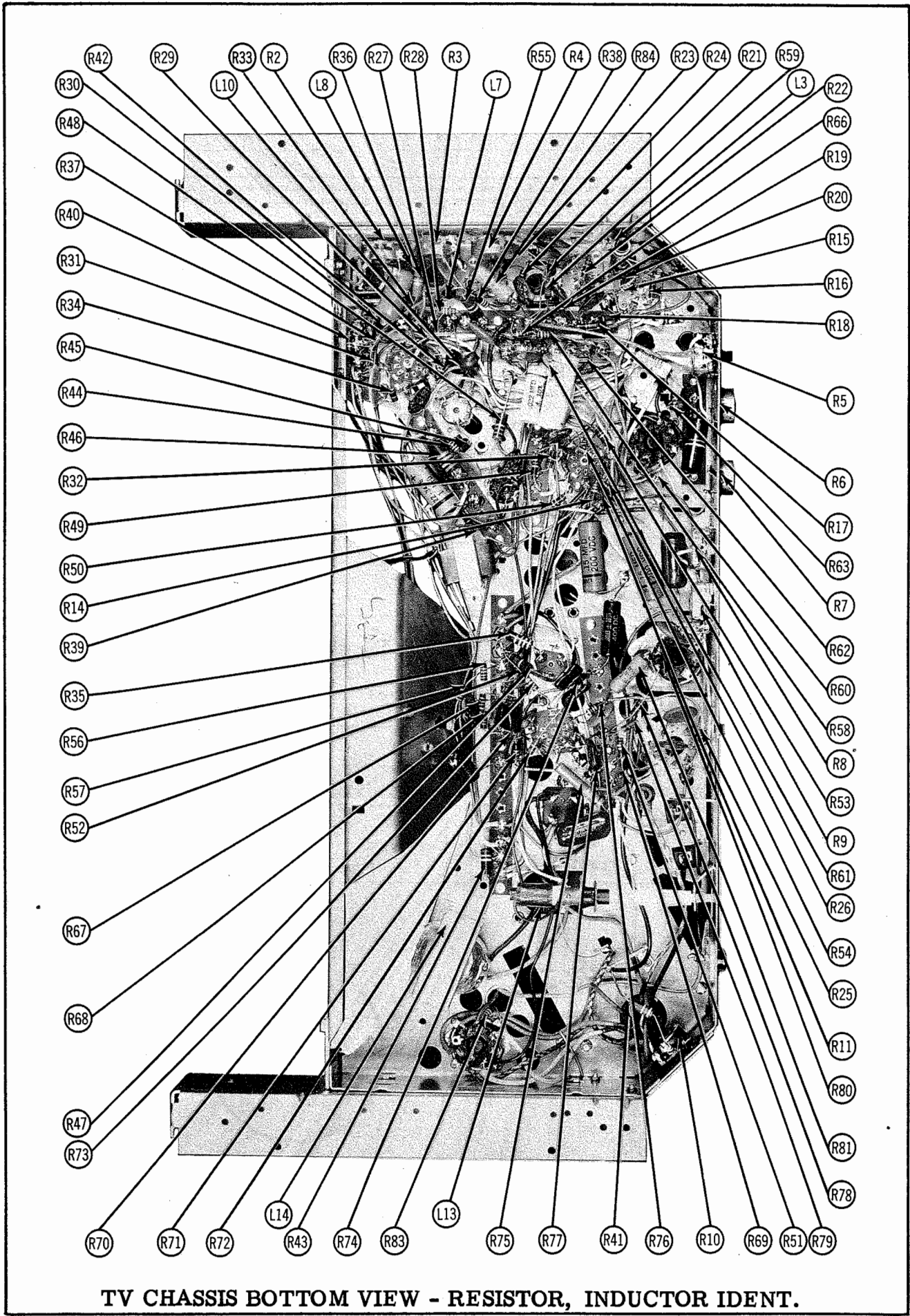
TV CHASSIS—TOP VIEW



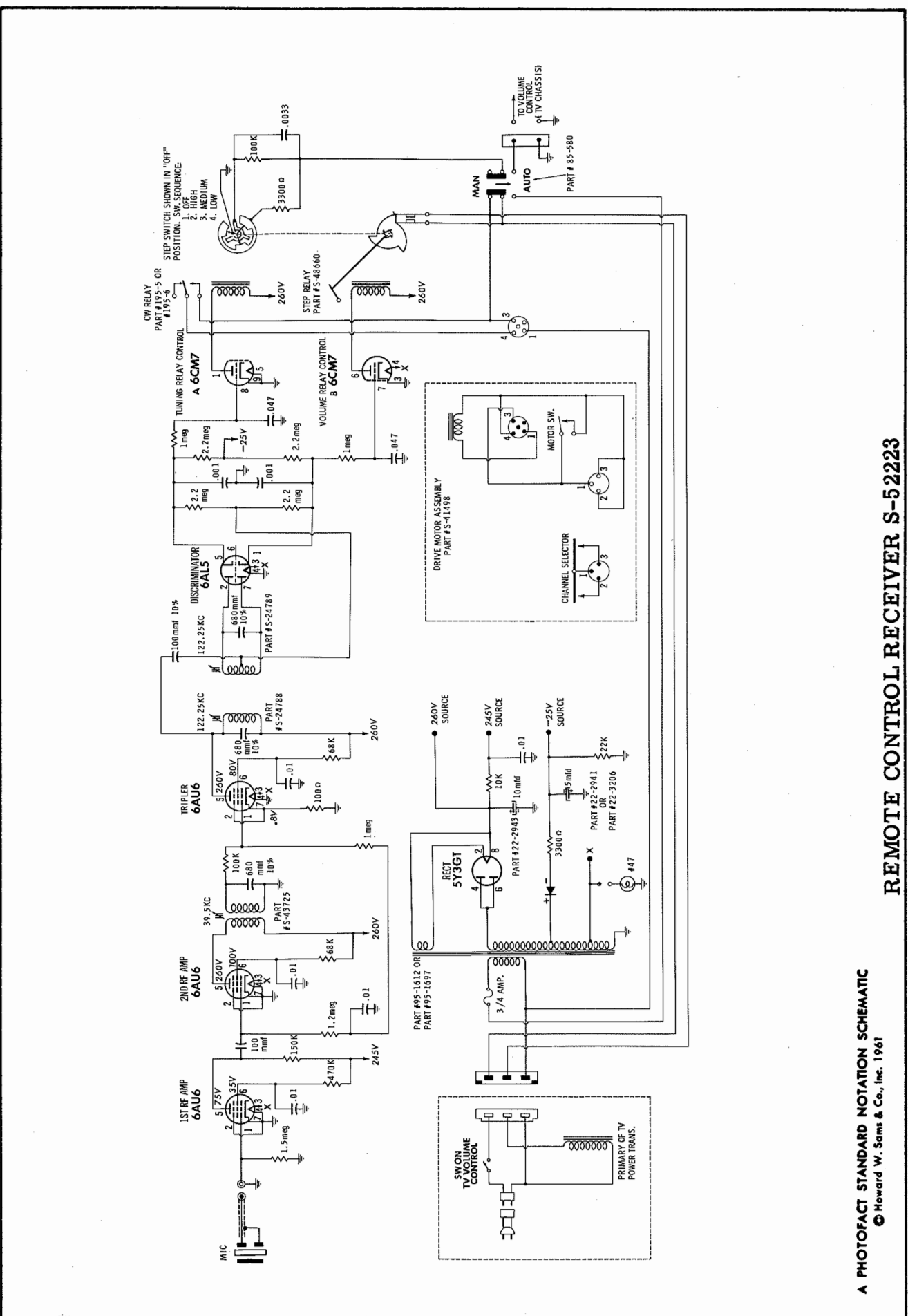
TV CHASSIS BOTTOM VIEW - ALIGN., CAPACITOR, MISC. IDENT.

ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

FOLDER 2



TV CHASSIS BOTTOM VIEW - RESISTOR, INDUCTOR IDENT.



ZENITH CHASSIS 16G20,  
16G20Q, 16G20U  
REMOTE CONTROL RECEIVER S-52223

PHOTOFACT STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

VHF TUNER ALIGNMENT INSTRUCTIONS  
175-175, -176

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.  
Allow a 20 minute warm-up period for the receiver and test equipment.  
Suggested Alignment Tools: A201 thru A212 ..... GENERAL CEMENT #5009, 8195, 8274, 8275, 8728, 8987  
WALSCO #2531  
A213, A214, A215 ..... GENERAL CEMENT #5000, 5003, 8276, 8290  
WALSCO #2512, 2525

VHF OSCILLATOR ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.  
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.  
Use only enough sweep generator output to provide a usable pattern on scope.  
Use 10MC sweep unless otherwise noted.  
Connect variable bias to IF AGC line. Adjust bias to obtain response curve which shows no indication of overloading.  
Set the Fine Tuning to the center of its range.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC	211. 25MC 215. 75MC	13	Vert. Amp. thru 47K across Video Det. load.	A201	Adjust to place sound marker in trap notch as in Fig. 201. Video marker should fall at 50%.
		207MC	205. 25MC 209. 75MC	12		A202	
		201MC	199. 25MC 203. 75MC	11		A203	
		195MC	193. 25MC 197. 75MC	10		A204	
		189MC	187. 25MC 191. 75MC	9		A205	
		183MC	181. 25MC 185. 75MC	8		A206	
		177MC	175. 25MC 179. 75MC	7		A207	
		85MC	83. 25MC 87. 75MC	6		A208	
		79MC	77. 25MC 81. 75MC	5		A209	
		69MC	67. 25MC 71. 75MC	4		A210	
		63MC	61. 25MC 65. 75MC	3		A211	
		57MC	55. 25MC 59. 75MC	2		A212	

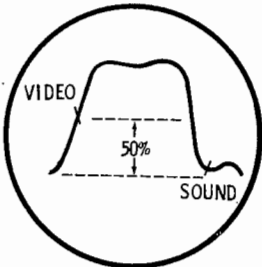


FIG. 201

VHF RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.  
The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.  
Use only enough sweep generator output to provide a usable pattern on scope.  
Use 10MC sweep unless otherwise noted.  
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.  
Connect the negative lead of a 4.5 volt bias supply to point ⬢. Positive to chassis.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
2. Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC	193. 25MC 197. 75MC	10	Vert. Amp. thru 10K to point ⬢. Low side to chassis.	A213, A214, A215	Adjust A213 and A214 for maximum amplitude and symmetry with markers as shown in Fig. 202. Increase bias for MINIMUM amplitude of response curve. Without changing the bias adjust A215 to obtain MINIMUM response on the scope. Restore bias.
		213MC	211. 25MC 215. 75MC	13		A216	
		207MC	205. 25MC 209. 75MC	12		A217	
		201MC	199. 25MC 203. 75MC	11		A218	
		195MC	193. 25MC 197. 75MC	10		A219	
		189MC	187. 25MC 191. 75MC	9		A220	
		183MC	181. 25MC 185. 75MC	8		A221	
		177MC	175. 25MC 179. 75MC	7		A222	
		85MC	83. 25MC 87. 75MC	6		A223	
		79MC	77. 25MC 81. 75MC	5		A224	
		69MC	67. 25MC 71. 75MC	4		A225	
		63MC	61. 25MC 65. 75MC	3		A226	
		57MC	55. 25MC 59. 75MC	2		A227	

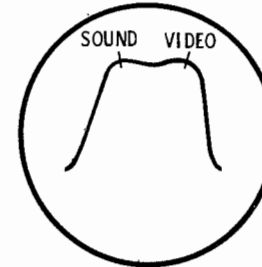


FIG. 202

VHF TUNER ALIGNMENT INSTRUCTIONS  
175-201, -202

PRE-ALIGNMENT INSTRUCTIONS

Allow a 20 minute warm-up period for the receiver and test equipment.

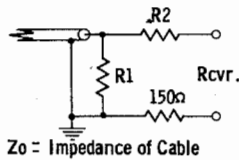
VHF OSCILLATOR ALIGNMENT

Set the Fine Tuning to the center of its range by turning the Fine Tuning shaft until the small index hole in the drive cam is directly over the small hole just below the channel 13 oscillator adjustment screw. Starting with the highest channel operating in the area, adjust the appropriate oscillator adjustment screw for best picture and sound for each channel available.

VHF RF AND MIXER ALIGNMENT

Connect the negative lead of a 2 volt bias supply to point ⬢. Positive to chassis.  
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.  
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.  
Use only enough sweep generator output to provide a usable pattern on scope.  
Use 10MC sweep unless otherwise noted.  
Coils not containing adjustable cores are adjusted by expanding or compressing coil turns.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Fig. 201	Across antenna terminals thru matching network (Fig. 201).	213MC	211. 25MC 215. 75MC	13	Vert. amp. thru 10K to point ⬢. Low side to chassis.	A201	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown.
2. "	"	207MC	205. 25MC 209. 75MC	12	"	A202	"
3. "	"	201MC	199. 25MC 203. 75MC	11	"	A203	"
4. "	"	195MC	193. 25MC 197. 75MC	10	"	A204	"
5. "	"	189MC	187. 25MC 191. 75MC	9	"	A205	"
6. "	"	183MC	181. 25MC 185. 75MC	8	"	A206	"
7. "	"	177MC	175. 25MC 179. 75MC	7	"	A207	"
8. "	"	85MC	83. 25MC 87. 75MC	6	"	A208, A209	Adjust for maximum gain and symmetry of response similar to Fig. 202 with markers as shown. Adjust first coil for proper marker position and second coil for maximum gain and symmetry.
9. "	"	79MC	77. 25MC 81. 75MC	5	"	A210, A211	"
10. "	"	69MC	67. 25MC 71. 75MC	4	"	A212, A213	"
11. "	"	63MC	61. 25MC 65. 75MC	3	"	A214, A215	"
12. "	"	57MC	55. 25MC 59. 75MC	2	"	A216, A217	"



Zo	R1	R2
50Ω	56Ω	120Ω
75Ω	82Ω	110Ω

FIG. 201

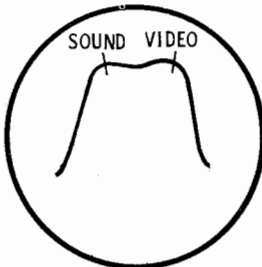


FIG. 202

ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

FOLDER 2

# VHF TUNER ALIGNMENT INSTRUCTIONS

175-142, -302

## PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.

Allow a 20 minute warm-up period for the receiver and test equipment.

Suggested Alignment Tools: A201, A202, A203 .... GENERAL CEMENT #5000, 5003, 5066, 8276, 8290, 9087, 9089

WALSCO #2512, 2525, 2528

A204 thru A215 .... GENERAL CEMENT #8282, 8606, 8606L, 9091

WALSCO #2526, 2541, 2542, 2543, 2544

## VHF RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

The generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

Use only enough sweep generator output to provide a usable pattern on scope.

Use 10MC sweep unless otherwise noted.

Connect the negative lead of a 4.5 volt bias supply to point  $\nabla$ . Positive to chassis.

SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1. Across antenna terminals with 120 $\Omega$ in each lead.	195MC	193.25MC 187.75MC	10	Vert. Amp. thru 10K to point $\nabla$ . Low side to chassis.	A201, A202, A203	Adjust A201 and A202 for maximum amplitude and symmetry with markers as shown in Fig. 201. Increase bias for MINIMUM amplitude of response curve. Without changing the bias adjust A203 to obtain MINIMUM response on the scope.
2. "	213MC	211.25MC 215.75MC	13		A204	Adjust for maximum amplitude of response similar to Fig. 201. Adjust by expanding or compressing coil turns.
	207MC	205.25MC 209.75MC	12		A205	
	201MC	199.25MC 203.75MC	11		A206	
	195MC	193.25MC 197.75MC	10		A207	
	189MC	187.25MC 191.75MC	9		A208	
	183MC	181.25MC 185.75MC	8		A209	
	177MC	175.25MC 179.75MC	7		A210	
	85MC	83.25MC 87.75MC	6		A211	
	79MC	77.25MC 81.75MC	5		A212	
	69MC	67.25MC 71.75MC	4		A213	
	63MC	61.25MC 65.75MC	3		A214	
	57MC	55.25MC 59.75MC	2		A215	

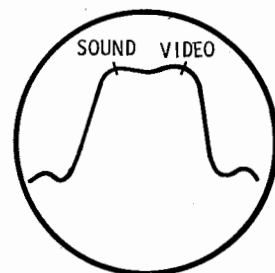
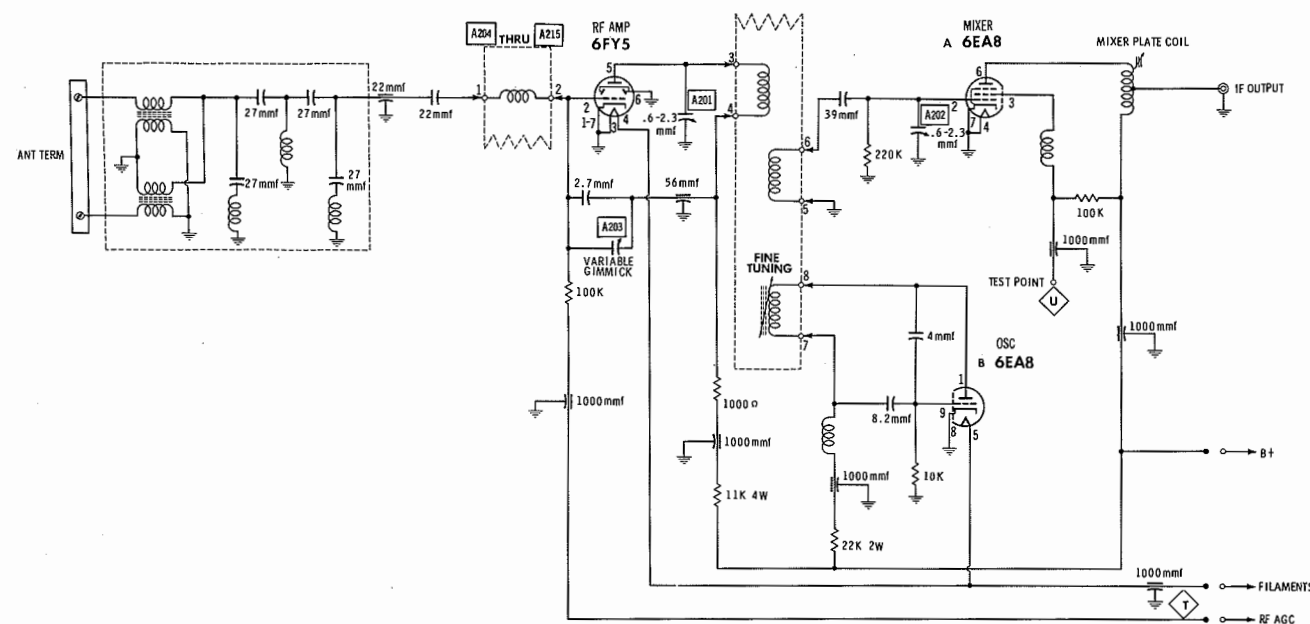


FIG. 201

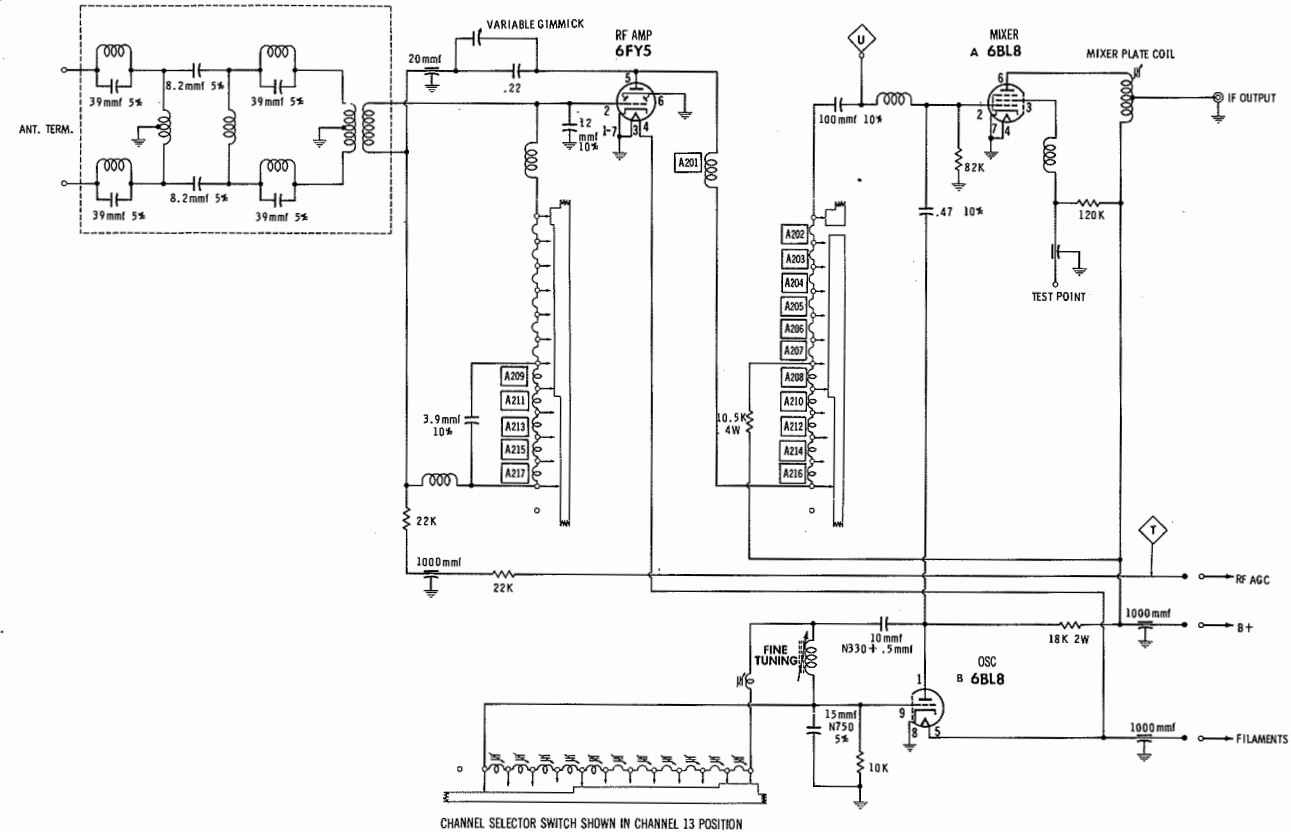
## VHF OSCILLATOR ALIGNMENT

This portion of the tuner has been properly aligned at the factory and is very stable. Alignment of this portion should not be attempted in the field.



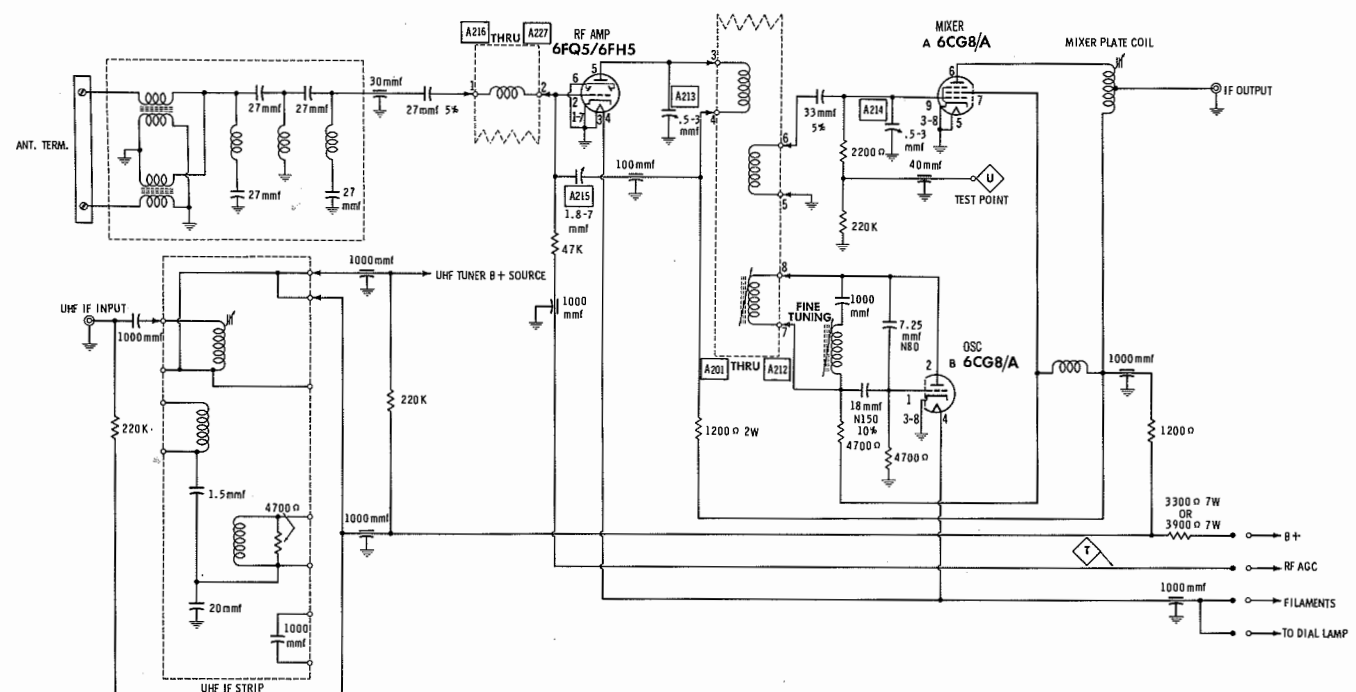
A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

VHF TUNER 175-142, -302



A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

VHF TUNER 175-202

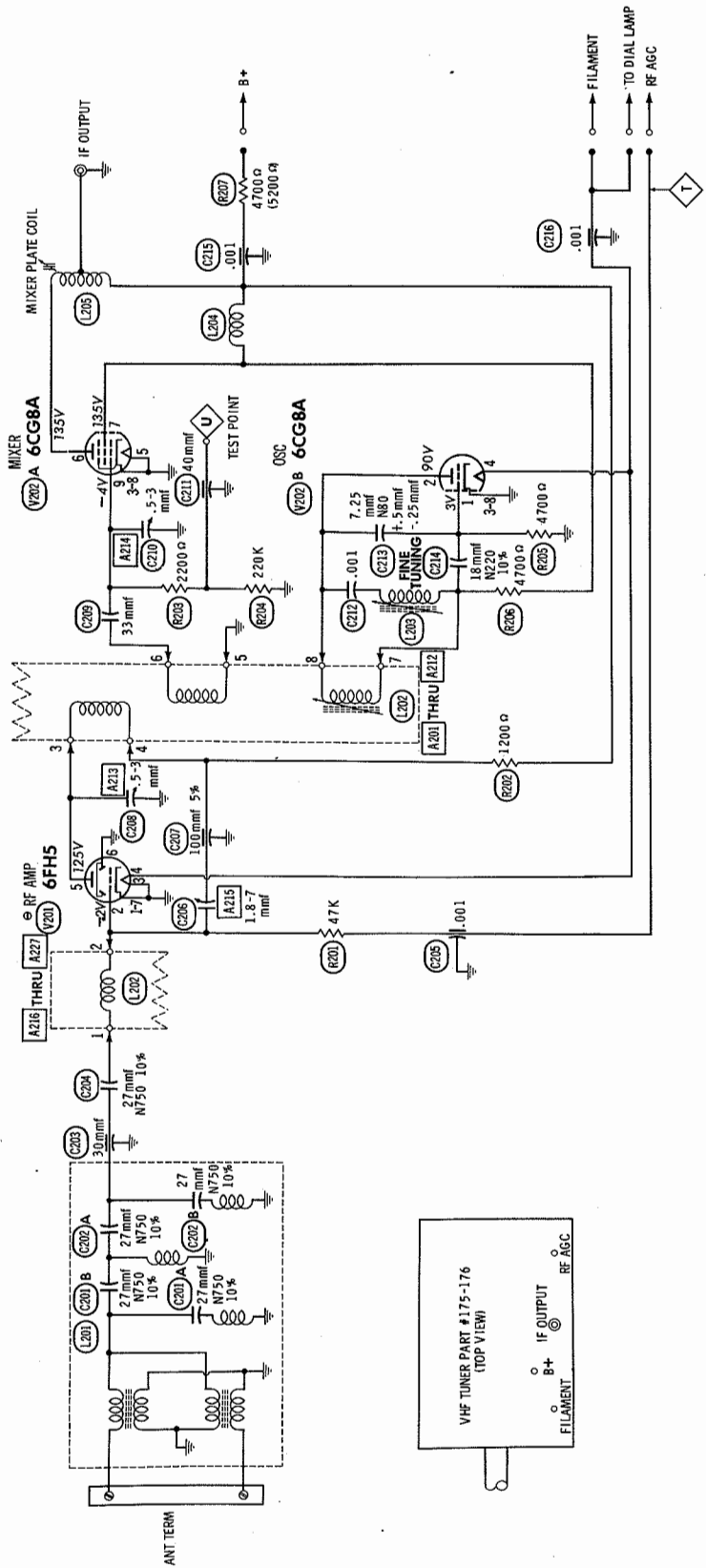


A PHOTOFAC STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

VHF TUNER WITH UHF PROVISIONS 175-175

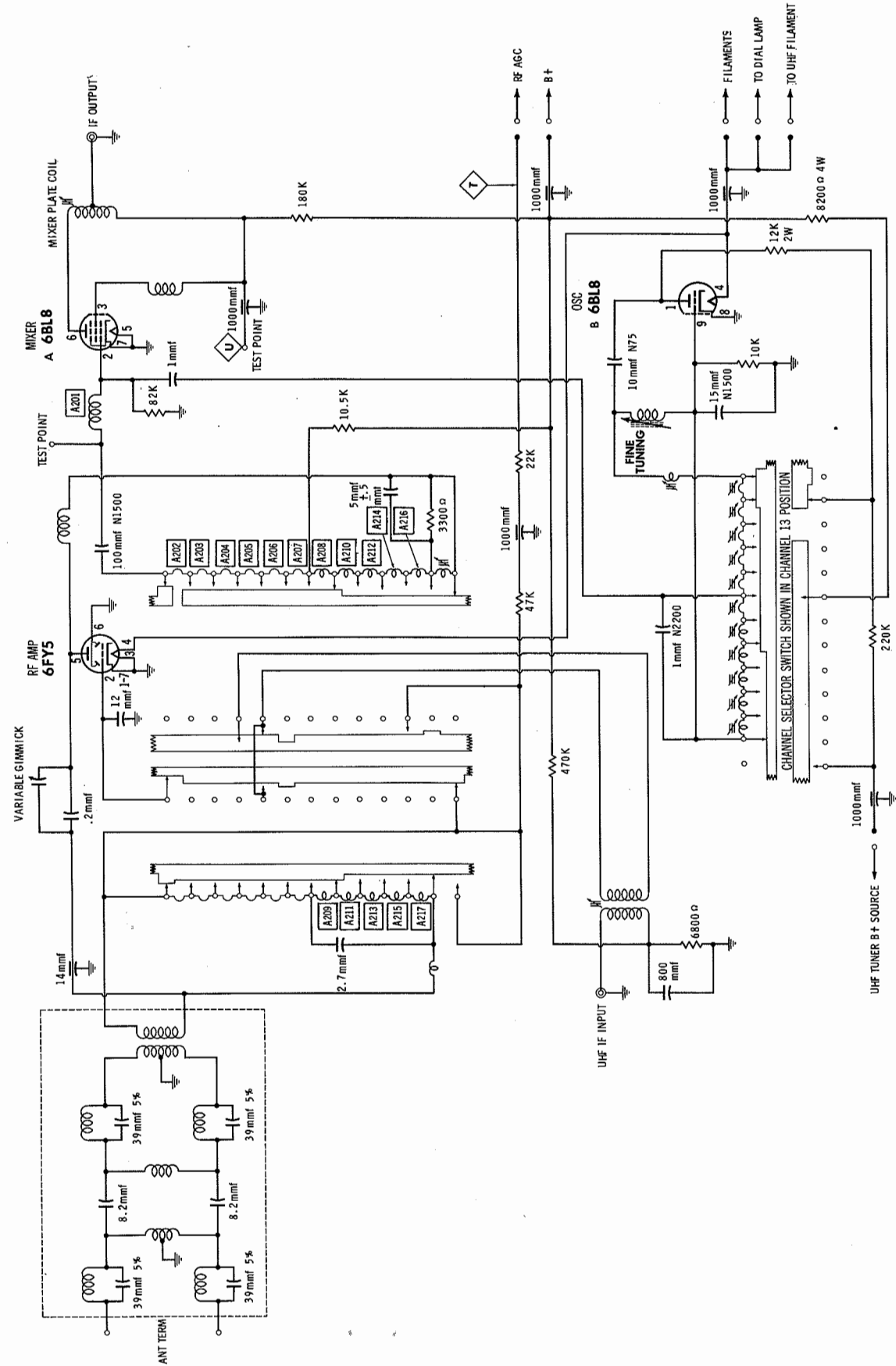
ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

FOLDER 2



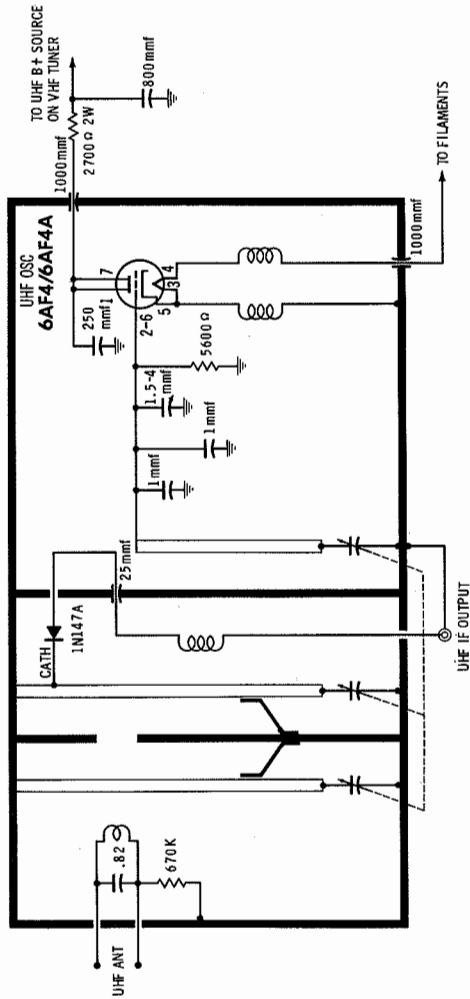
A PHOTOFACT STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

VHF TUNER 175-176



A PHOTOFACT STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

VHF TUNER WITH UHF PROVISIONS 175-201



A PHOTOFACT STANDARD NOTATION SCHEMATIC  
© Howard W. Sams & Co., Inc. 1961

UHF TUNER 175-201

ZENITH CHASSIS 16G20,  
16G20Q, 16G20U

VHF TUNER PARTS LIST AND DESCRIPTIONS

175-176

TUBES

GENERAL ELECTRIC			RAYTHEON			SYLVANIA		
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V201	RF Amplifier	6FH5 (6FQ5) *	V202	Mixer - Osc.	6CG8A			

\* Alternate

FIXED CAPACITORS

ITEM No.	RATING	REMARKS	REPLACEMENT DATA					
			AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENDO PART No.	MALLORY PART No.	SPRAGUE PART No.
C201A	27 N750 10%	#22-3111	N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
B	27 N750 10%		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C202A	27 N750 10%		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
B	27 N750 10%		N750-DI 25	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C203	30 7 1/2%	#22-3191	EF-001	TCN-27	C10Q27U	CCTN-270	CN7-427	10TCU-Q27
C204	27 N750 5%		EF-001	MFT-1000		CCF-102		
C205	.001		EF-001	829-7				
C206	1.8-7		EF-001	MFT-100				
C207	100 5%	#22-3112	NPO-SI 33	829-3	C10Q33C	CV-1	CT565	10TCC-Q33
C208	.5-3			829-3		CCCTO-330	CNO-433	
C209	33			829-3		CV-1	CT565	
C210	.5-3							
C211	40	#22-3460	BPD-001	DD-102	BYA10DI	CCD-102	B-210	5HK-D10
C212	.001							
C213	7.25 N80 +.5mmf -.25mmf							
C214	18 N220 10%		EF-001	MFT-1000				10TCR-Q18
C215	.001	#22-3025	EF-001	MFT-1000		CCF-102	CT280A	
C216	.001		EF-001	MFT-1000		CCF-102	CT280A	

# Zenith Part Number

\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R201	47K				R205	4700Ω			
R202	1200Ω				R206	4700Ω			
R203	2200Ω				R207	4700Ω 7W	PWT-4700	7G-4700	(5200Ω) *
R204	220K								

\* Alternate

COILS (RF-IF)

ITEM No.	USE	ZENITH PART No.	NOTES	ITEM No.	USE	ZENITH PART No.	NOTES
L201	Ant. Ass'y	S-51973		L202H	Ant. RF, Mixer & Osc.	174-29	Channel 9
L202A	Ant., RF, Mixer & Osc.	174-22	Channel 2	J	"	174-30	Channel 10
B	"	174-23	Channel 3	K	"	174-31	Channel 11
C	"	174-24	Channel 4	L	"	174-32	Channel 12
D	"	174-25	Channel 5	M	"	174-33	Channel 13
E	"	174-26	Channel 6				
F	"	174-27	Channel 7	L203	Fine Tuning	S-47481	
G	"	174-28	Channel 8	L204	RF Choke	20-758	
				L205	Mixer Plate	S-47370	

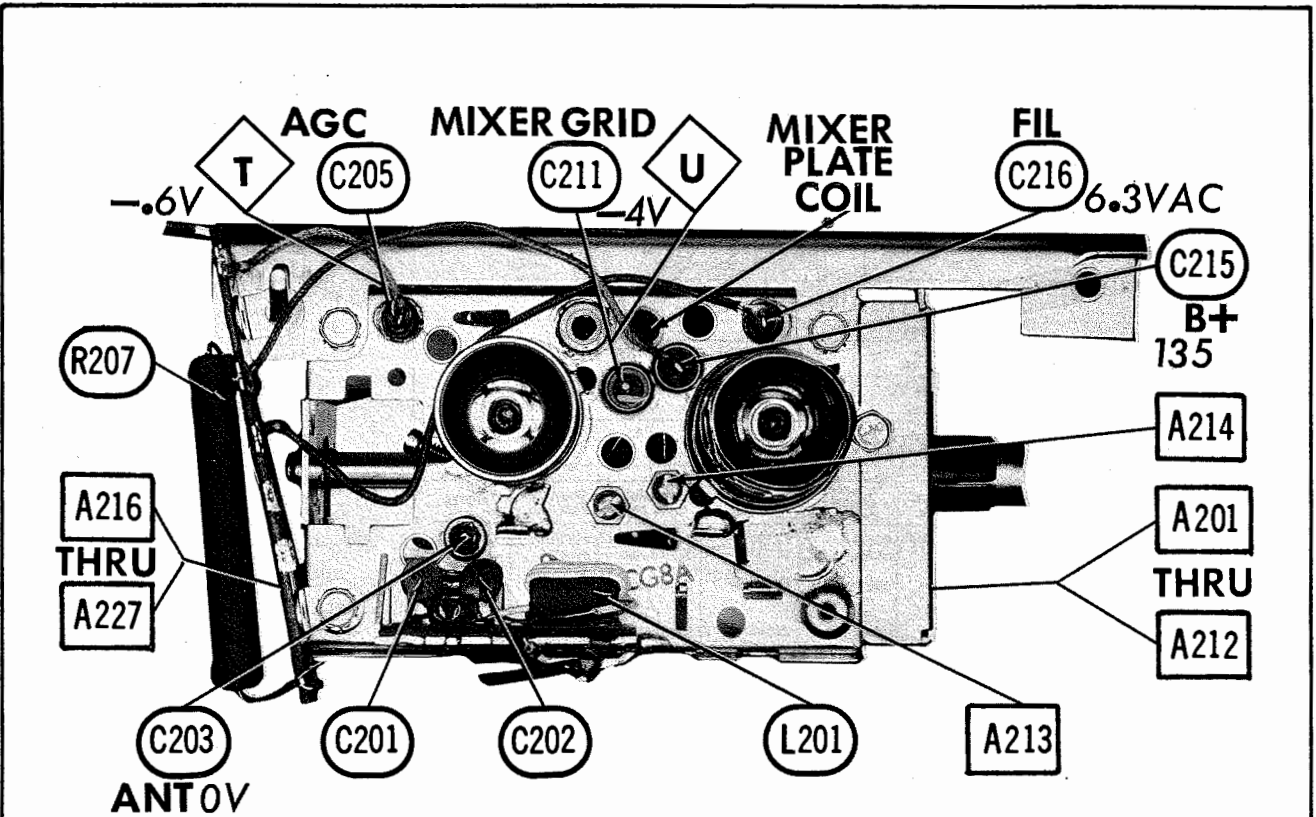
CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

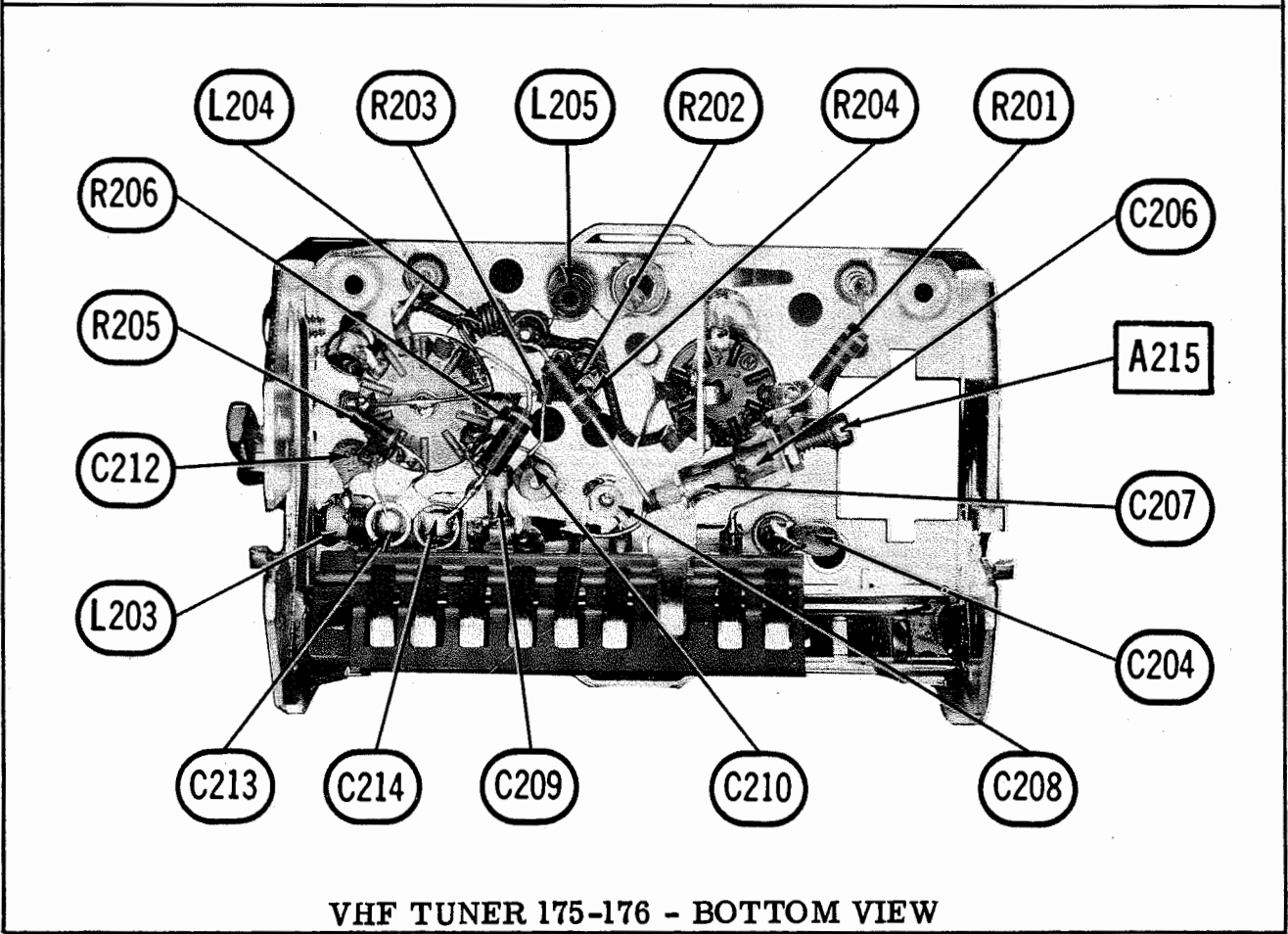
DESCRIPTION	PART NO.	MODEL NO.	G2101C	G2101CU	G2101F	G2101FU	G2102L	G2102LU	G2102R	G2102RU	G2102W	G2102WU	G2102E	G2102EU	G2102M	G2102MU	G2102R	G2102RU	G2102W	G2102WU	G2103G
Safety Glass	192-293		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-VHF Channel Selector	46-2183		X	X																	
Knob-	46-2735				X	X															
Knob-	46-2723						X	X	X	X	X	X									
Knob-	46-2510												X	X	X	X	X	X	X	X	X
Knob-UHF Channel Selector	S-47079		X	X			X	X	X	X	X	X									
Knob-UHF Channel Indicator	S-43927		X	X			X	X	X	X	X	X									
Knob-VHF Fine Tuning	S-52253		X	X	X	X															
Knob-	S-52264						X	X	X	X	X	X									
Knob-	S-49930												X	X	X	X	X	X	X	X	X
Knob-	S-50096																				X
Knob-Volume	S-45716		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-Vertical Hold	S-51171		X	X																	
Knob-Brightness, Contrast	S-49990				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Knob-																					
Knob-Horizontal Hold	S-46215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

CABINETS

MODEL NO.	PART NO.
G2101C	14-3620
G2101CU	14-3621
G2101F	14-3622
G2101FU	14-3623
G2102L	14-3618
G2102LU	14-3619
G2102R	14-3616
G2102RU	14-3617
G2102W	14-3610
G2102WU	14-3611
G2102E	14-3659
G2102EU	14-3660
G2102M	14-3667
G2102MU	14-3662
G2102R	14-3657
G2102RU	14-3658
G2102W	14-3655
G2102WU	14-3656
G2103G	14-3624



VHF TUNER 175-176 - TOP VIEW



VHF TUNER 175-176 - BOTTOM VIEW

ZENITH CHASSIS 16G20, 16G20Q, 16G20U

FOLDER 2

TUBES					
GENERAL ELECTRIC			RAYTHEON		SYLVANIA
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st IF Amplifier	6BZ6	V7	Audio Output	6AQ5A
V2	2nd IF Amplifier	6BZ6	V8	Vert. Mult. -	
V3	3rd IF Amplifier	6BZ6		Vert. Output	
V4	Video Output -		V9	Horiz. AFC - Horiz. Osc.	6EH6
	Sound IF Amp.	6AW8A		Horiz. Output	6DQ6B
V5	AGC Keying - Sync Sep. -		V10	Damper	6AX4GTB (6DA4A, 6CQ4)
	Noise Limiter	6HS8	V11	HV Rectifier	1K3GT
V6	Audio Detector	6BN6	V12		
			V13	LV Rectifier	5U4GB

\* Alternate

PICTURE TUBE					
REPLACEMENT DATA					
ITEM No.	ZENITH PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.
V14	19BDP4		19BDP4 ①		19BDP4 ②
					① Aluminized ② Silver Screen "85"

ELECTROLYTIC CAPACITORS								
ITEM No.	RATING		REPLACEMENT DATA					
	CAP.	VOLT.	ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.
CLA	400	400	22-3123	AFHS3-121-50	B0715	FP229.8	TMD-2550	TVL-2711
B	80	400			BR8045	TC78	TD-40-450	TVA-1712
C	100	50						
C2A	400	400	22-2744	AFHS3-180	C0910	FP368.68	TMT-3459	TVL-3655
B	4	350						
C	20	25						
C3	350	350	22-3496	PRSI700	BR145	TC595	TD-2-450	TVA-1700

Note 1. May not be used in some versions.

FIXED CAPACITORS									
ITEM No.	RATING		REMARKS	REPLACEMENT DATA					
				AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ELMENCOPART No.	MALLORY PART No.	SPRAGUE PART No.
C4	.15	200V		P288N-15	DD-471	CUB2P15	2DP-3-154	GEM-2015	2TM-P15
C5	470			DI-470		BYA10T47	CCD-471	B-347	10TS-T47
C6	4.5	NPO ±.5mmf		NPO-DI 5.0		C10V47C	CCD-471	CNO-547	10TCC-V50
C7	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C8A	12	NPO 5%			TCZ-12	C10Q12C	CCD-120	CNO-412	10TCC-Q12
B	12	NPO 5%			TCZ-12	C10Q12C	CCD-120	CNO-412	10TCC-Q12
C9	.15	200V		P288N-15	DD-102	CUB2P15	2DP-3-154	GEM-2015	2TM-P15
C10A	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
B	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C11	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C12	270	N750 10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C13	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C14	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C15	470	N1500 10%	#22-3363						
C16	470			DI-470	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C17	5.5	N470 ±.5mmf	#22-3221						
C18	4.7	10%		NPO-SI 4.7	TCZ-4R7	C10V47C	CCD-471	CNO-547	10TCC-V47
C19	4.7	10%		NPO-SI 4.7	TCZ-4R7	C10V47C	CCD-471	CNO-547	10TCC-V47
C20	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C21	.047	400V	(.01) †	P488N-047	DD-503	CUB4847	4DP-3-473	GEM-4147	4TM-S47
C22	27			SI 27	D6-270	L10Q27	CCD-270	GP427	10TS-Q27
C23	27			SI 27	D6-270	L10Q27	CCD-270	GP427	10TS-Q27
C24	.1	400V		P488N-1	DD-103	CUB4P1	4DP-3-104	GEM-401	4TM-P10
C25	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C26	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C27	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C28	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C29	2.7	5%	#22-3405						
C30A	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
B	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C31	20	N75 10%	#22-3139						
C32	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C33	.0033			BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C34	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C35	.0033			BPD-0033	DD-332	BYA10D33	CCD-332	B-233	5HK-D33
C36	470			DI-470	DD-471	BYA10T47	CCD-471	B-347	10TS-T47
C37	.01	400V 10%		V84C4S1-10%		PM4S1	4DP-1-103	GEM-1811	4TM-S10
C38	.022	400V 10%		V84C4S2-10%		PM4S2	4DP-2-223	GEM-1812	4TM-S22
C39	.1	600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C40	.1	400V		P488N-1	DF-104	CUB4P10	4DP-3-104	GEM-401	4TM-P10
C41	.015	1000V 10%		P1084CM-D15		DPMS16S15	16DP-4-153		10TM-S15
C42A	51			DI-50	DD-510	L10Q51	CCD-500	GP450	10TS-Q50
B	51			DI-50	DD-510	L10Q51	CCD-500	GP450	10TS-Q50
C43A	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
B	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C44	.047	200V		P288N-047	DD-503	CUB2S47	4DP-3-473	GEM-4147	4TM-S47
C45	.001	10%		DI-1000	DD-102	5R5DI	CCD-102	GP210	10TS-D10
C46	680			1469-00068		5R5T68	CM-192-681K	MS-349	6TM-D33
C47	.0033	400V 10%		V84C4D33-10%		PM6D33	6DP-1-332	GEM-16233	6TM-D33
C48	.070	10%		1469-00047		5R5T47	CM-192-471K	MS-347	6TM-D33
C49	.01			BPD-01	DD-103	BYA10S1	CCD-103	B-110	5HK-S10
C50A	.0015	10%		DI-1500	DD-152	BYA10D15	CCD-152	GP215	10TS-D15
B	.0015	10%		DI-1500	DD-152	BYA10D15	CCD-152	GP215	10TS-D15
C51	.01	10%	(.0047) †	DI-10000					
C52	.1	600V		P688N-1	DF-104	CUB6P1	6DP-4-104	GEM-601	6TM-P10
C53	110	4000V N1500 10%	(90) †						
C54	68	2000V 10%							

# Zenith Part Number † Alternate Value  
\* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS							
REPLACEMENT DATA							
ITEM No.	RATING	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	63-4661	APL-697	C47S-1meg-S	BLU-137 *	PP16L	Volume
B	Shaft		AK-33	RS-3/16	Not Req.	DS-37	
C	Switch		Not Req.	Not Req.	Not Req.	Not Req.	
R2A	30K	63-4493			B20-121X	SK9	Push-Pull Off-On Contrast
B	17K Tap						

## PARTS LIST AND DESCRIPTIONS

CONTROLS (cont)									
ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES	
	RESIST-ANCE	WATTS	ZENITH PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	CTS-IRC PART No.	MALLORY PART No.		
R3A	250K	1/2	63-4452	AB-50	A47-250K-S	BL1-130	U46	Brightness	
B	Shaft			AK-33	RS-3/16	SK9	DS-37		
R4A	750K	1/2	63-4491	AB-56	A47-750K-S	BL1-136	U54	Vert. Hold	
B	Shaft			AK-33	RS-3/16	SK9	DS-37		
R5	5meg	1/2	63-4050	TT-87	B47-5meg-S	HLC-5	PTA56L	Fringe Lock (Sync Stab.)	
R6	750Ω	2(WW)	63-3284	WN-751	39-800	112-650	F1750	Buzz	
R7	100Ω Stop			**		**	**		
R8	2500Ω	2(WW)	63-4815 ①	WN-202	39-3000-700	112-2500-700	FL-2.5K	Vert. Linearity	
R9	7.5meg	1/2	63-4647	TT-90	B47-7.5meg-S	HLC-6	SU-69	Vert. Size (Height)	
B	7meg Stop								
R9A	750K	1/2	63-3282	AB-66	A47-750K-S	BL1-136	PTA754L	AGC	
B	Shaft			AK-1	FKS-1/4	TM4	Not Req.		
R10	3meg	1/2	63-4455 ②	TT-84	B47-3meg-S	HLC-3	SU-59	Focus	

① Some versions may use Part #63-4446 with same replacements as above.  
② Not used in some versions.  
\* Factory assembled Part #PPQ11-137 (SK8).  
\*\* Use 100Ω 2W Resistor in series with terminal.  
† Use 680Ω 2W Resistor in series with terminal.  
‡ Use 470K Resistor in series with right hand terminal, viewed shaft end terminals down.

## RESISTORS

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

ITEM No.	RATING	REPLACEMENT DATA			ITEM No.	RATING	REPLACEMENT DATA		
		IRC PART No.	WORKMAN TV PART No.	REMARKS			IRC PART No.	WORKMAN TV PART No.	REMARKS
R11	2.2meg				R48	680Ω 1W			
R12	22K				R49	470K			
R13	1000Ω				R50	100K			
R14	680K				R51	220K			
R15	33K				R52	220K			
R16	68Ω				R53	10meg			
R17	56K				R54	47K			
R18	1500Ω				R55	10K 1W			
R19	56K				R56	68K			
R20	220Ω				R57	82K			
R21	220Ω				R58	39K			
R22	27Ω				R59	180K			
R23	8200Ω				R60	3.3meg			
R24	120Ω				R61	2.2meg			
R25	3.9meg				R62	1000Ω			
R26	820K				R63	82K			
R27	2700Ω				R64	390Ω			
R28	68K				R65	390Ω			
R29	330Ω				R66	330K			
R30	27K				R67	330K			
R31	82K				R68	330K			
R32	100K				R69	100K			
R33	2.2meg				R70	1meg			
R34	47Ω				R71	220K			
R35	33K 1W				R72	6.8meg			
R36	10K 1W				R73	68K			
R37	1800Ω				R74	100K			
R38	330K				R75	120K 2W			
R39	39K			Note 1	R76	47K			
R40	82K			Note 2	R77	15K			
R41	470K			Note 1	R78	100Ω			
R42	100K				R79	1meg			
R43	680K 1W				R80	100Ω			
R44	680Ω				R81	15K 3W	PW3-15K	3G-15K	
R45	390K				R82	2.2Ω			
R46	27K 2W				R83	230K			
R47	1000Ω 1W				R84	4700Ω 3W	PW3-4700	3G-4700Ω	