

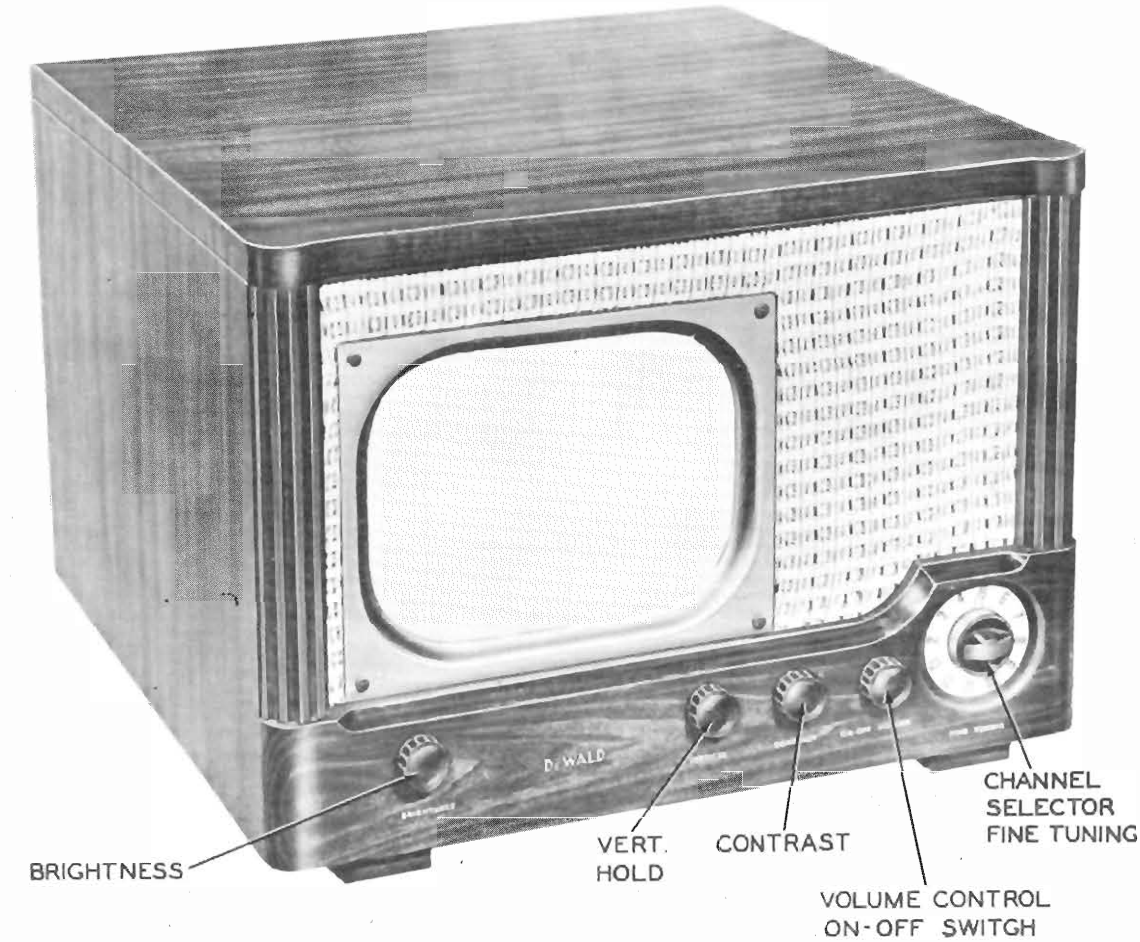
PARTS LIST AND DESCRIPTIONS

TUBES				
ITEM No.	USE	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	
V301	RF Amp.	6J6	7BF	
V302	Mixer	6J6	7BF	
V303	Oscillator	6J6	7BF	

CAPACITORS			
ITEM No.	RATING CAP. [VOLT]	IDENTIFICATION	
C301	8	Fixed Trimmer	
C302	8	Fixed Trimmer	
C303	1500	Bias Filter	
C304	300	RF Coupling	
C305	300	RF Coupling	
C306	1.5	Neutralizing	
C307	1.5	Neutralizing	
C308	500	Filament Bypass	
C309	500	RF Bypass	
C310	1500	Mixer Grid Filter	
C311	4.7	Osc. Feedback	
C312	4.7	Osc. Feedback	
C313	500	Filament Bypass	
C314	1500	Mixer Decoupling	
C315	68	Fixed Trimmer	
C316	300	IF Coupling	

RESISTORS			
ITEM No.	RATING RESISTANCE [WATTS]	IDENTIFICATION	
R301	150Ω	RF Grid	
R302	150Ω	RF Grid	
R303	1000Ω	Bias Filter	
R304	10KΩ	RF Coil Shunt	
R305	1000Ω	RF Plate	
R306	1000Ω	RF Plate	
R307	5600Ω	Mixer Coil Shunt	
R308	1 Meg	Mixer Grid	
R309	1000Ω	Osc. Plate	
R310	1000Ω	Osc. Plate	
R311	100KΩ	Osc. Grid	
R312	100KΩ	Osc. Grid	
R313	47Ω	Osc. Cathode	
R314	1000Ω	Mixer Decoup.	

COILS			
ITEM No.	USE	DC RES.	
L301	Interference Trap	PRI.	SEC.
L302	Interference Trap	0Ω	
L303	Ant. Input	0Ω	
L304	RF Low Band	0Ω	
L305	RF High	0Ω	
L306	Mixer Low	0Ω	
L307	Mixer High	0Ω	
L308	Osc. Low	0Ω	
L309	Osc. High	0Ω	
L310	IF Trans.	0.2Ω	0Ω



DEWALD MODEL CT-102			
TRADE NAME	Dewald, Models CT-102, CT-103, CT-104, DT-160, DT-161		
MANUFACTURER	Dewald Radio Mfg. Co., 35-15 37th Ave., Long Island City, N. Y.		
TYPE SET	Television Receiver		
TUBES	Twenty Two		
POWER SUPPLY	110 - 120 Volts AC - 60 Cycle	RATING	2.1 Amp. at 117 Volts AC
TUNING RANGE—	Channels 2 thru 13		
INDEX			
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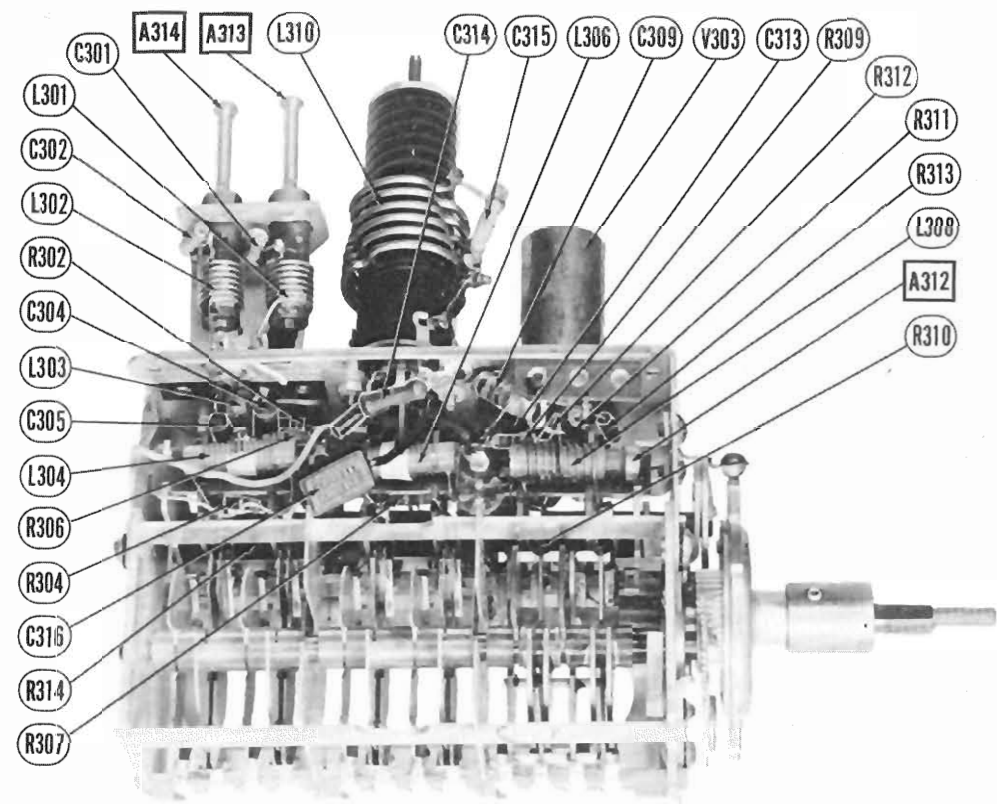
HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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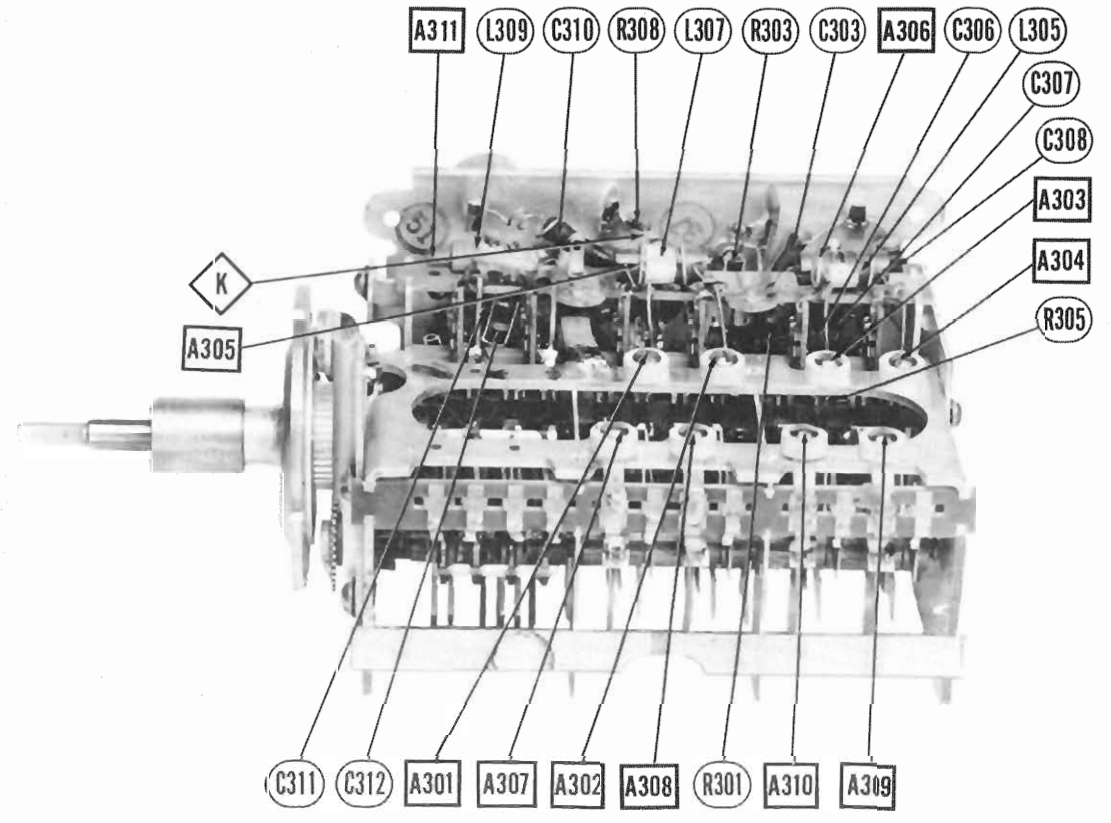
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DATE 1-50 SET 82 FOLDER 5

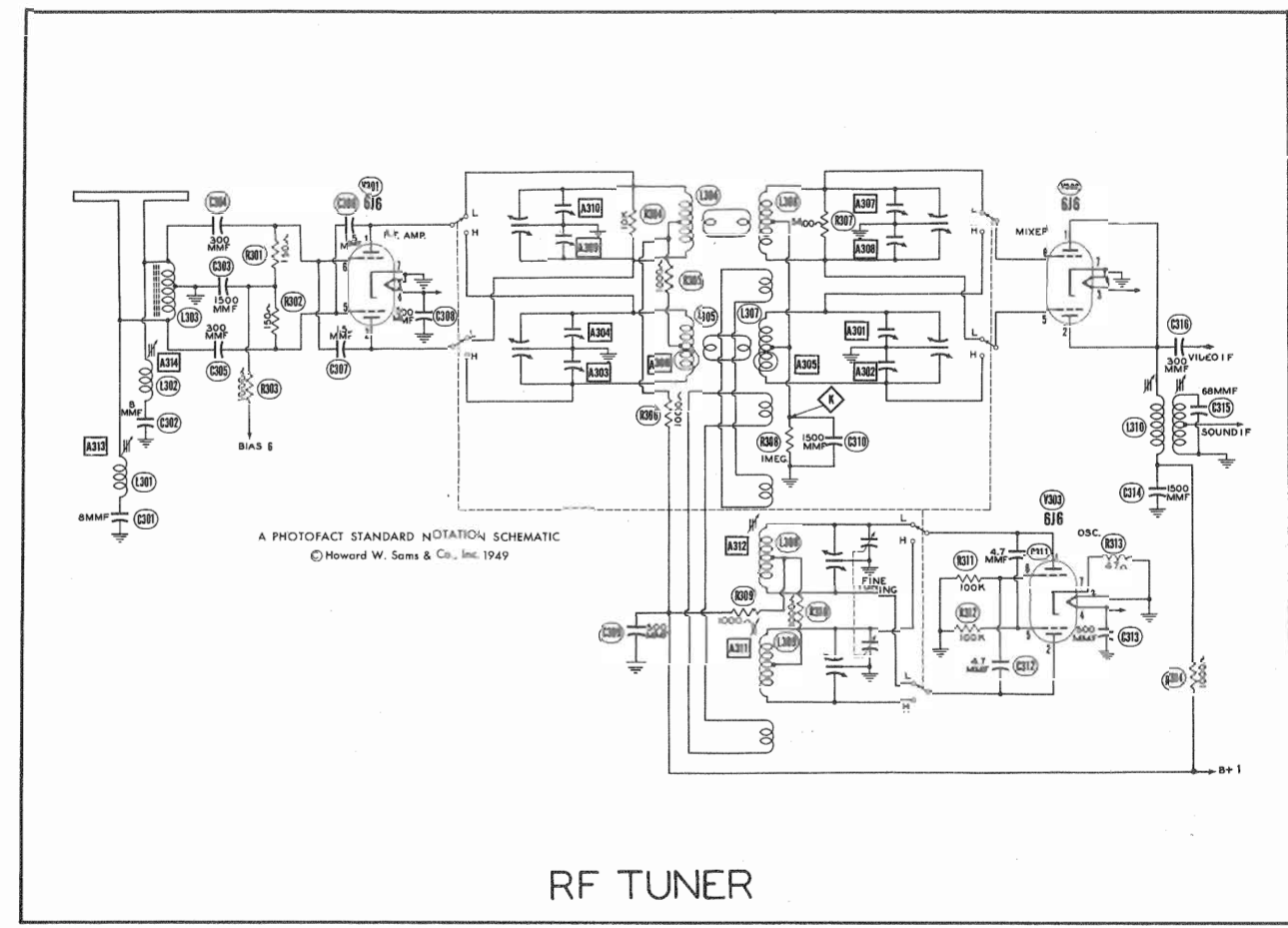
DEWALD MODELS CT-102, CT-103, CT-104, DT-160, DT-161



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE



RF TUNER

PARTS LIST AND DESCRIPTIONS

TUBES				RESISTORS		
ITEM No.	USE	REPLACEMENT DATA STANDARD REPLACEMENT	RMA BASE TYPE	RATING		IDENTIFICATION
				RESISTANCE	WATTS	
V301	RF Amp.	6J6	7BF	R301 150Ω		RF Grid
V302	Mixer	6J6	7BF	R302 150Ω		RF Grid
V303	Oscillator	6J6	7BF	R303 1000Ω		Bias Filter
				R304 10KΩ		RF Coil Shunt
				R305 1000Ω		RF Plate
				R306 1000Ω		RF Plate
				R307 5600Ω		Mixer Coil Shunt
				R308 1 Meg		Mixer Grid
				R309 1000Ω		Osc. Plate
				R310 1000Ω		Osc. Plate
				R311 100KΩ		Osc. Grid
				R312 100KΩ		Osc. Grid
				R313 47Ω		Osc. Cathode
				R314 1000Ω		Mixer Decoup.

CAPACITORS			IDENTIFICATION
ITEM No.	RATING CAP. VOLT		
C301 8			Fixed Trimmer
C302 8			Fixed Trimmer
C303 1500			Bias Filter
C304 300			RF Coupling
C305 300			RF Coupling
C306 1.5			Neutralizing
C307 1.5			Neutralizing
C308 500			Filament Bypass
C309 500			RF Bypass
C310 150Ω			Mixer Grid Filter
C311 4.7			Osc. Feedback
C312 4.7			Osc. Feedback
C313 500			Filament Bypass
C314 150Ω			Mixer Decoupling
C315 68			Fixed Trimmer
C316 300			IF Coupling

COILS			DC RES.	
ITEM No.	USE		PRI.	SEC.
L301	Interference Trap		0Ω	
L302	Interference Trap		0Ω	
L303	Ant. Input		0Ω	
L304	RF Low Band		0Ω	
L305	RF High Band		0Ω	
L306	Mixer Low Band		0Ω	
L307	Mixer High Band		0Ω	
L308	Osc. Low Band		0Ω	
L309	Osc. High Band		0Ω	
L310	IF Trans.		.2Ω	0Ω

PHOTOFACT

BRIGHTNESS

TRADE NAME
MANUFACTURER
TYPE SET
TUBES

POWER SUPPLY
TUNING RANGE

Alignment Instru

Block Diagram...

Horizontal Frequen

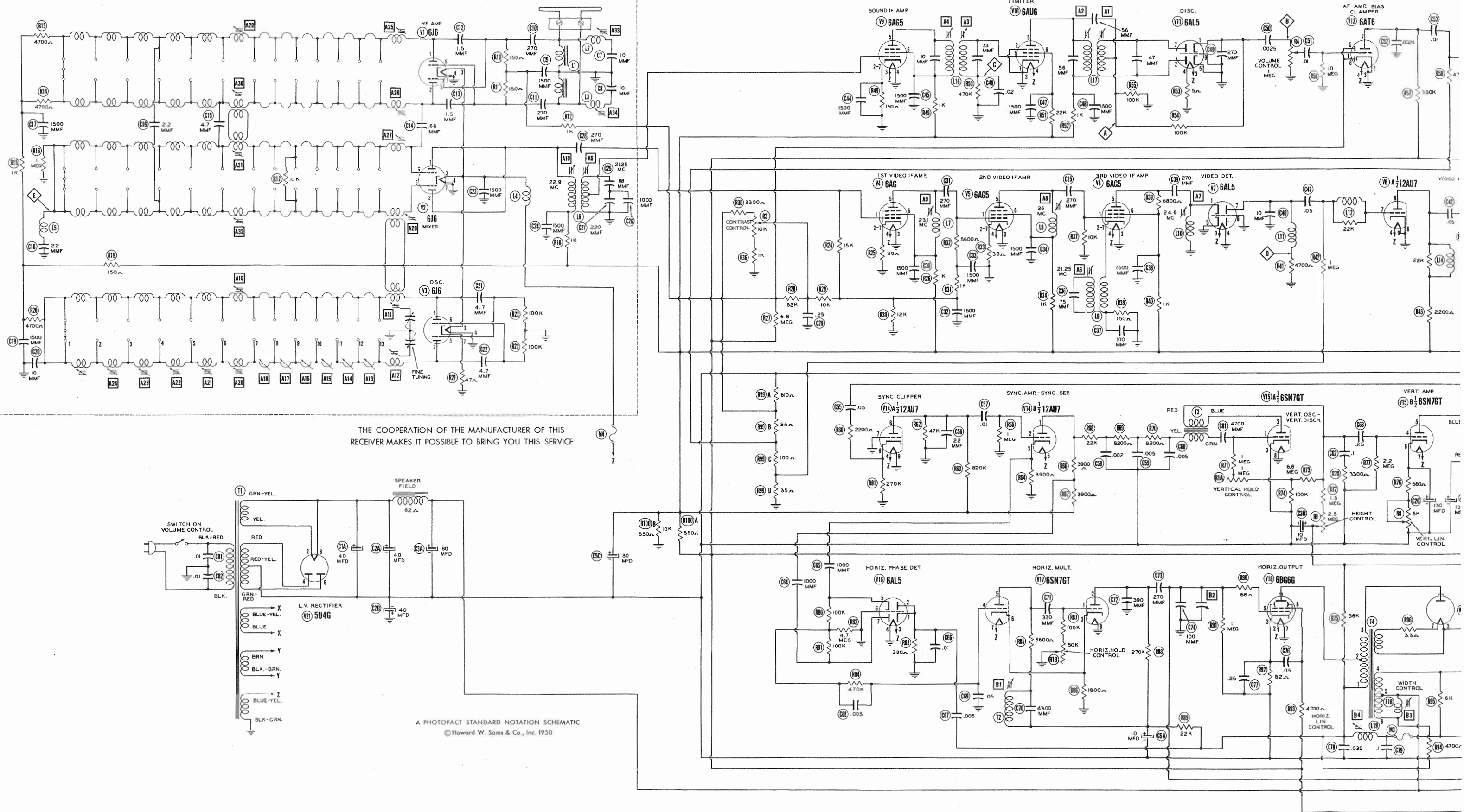
Parts List and Des

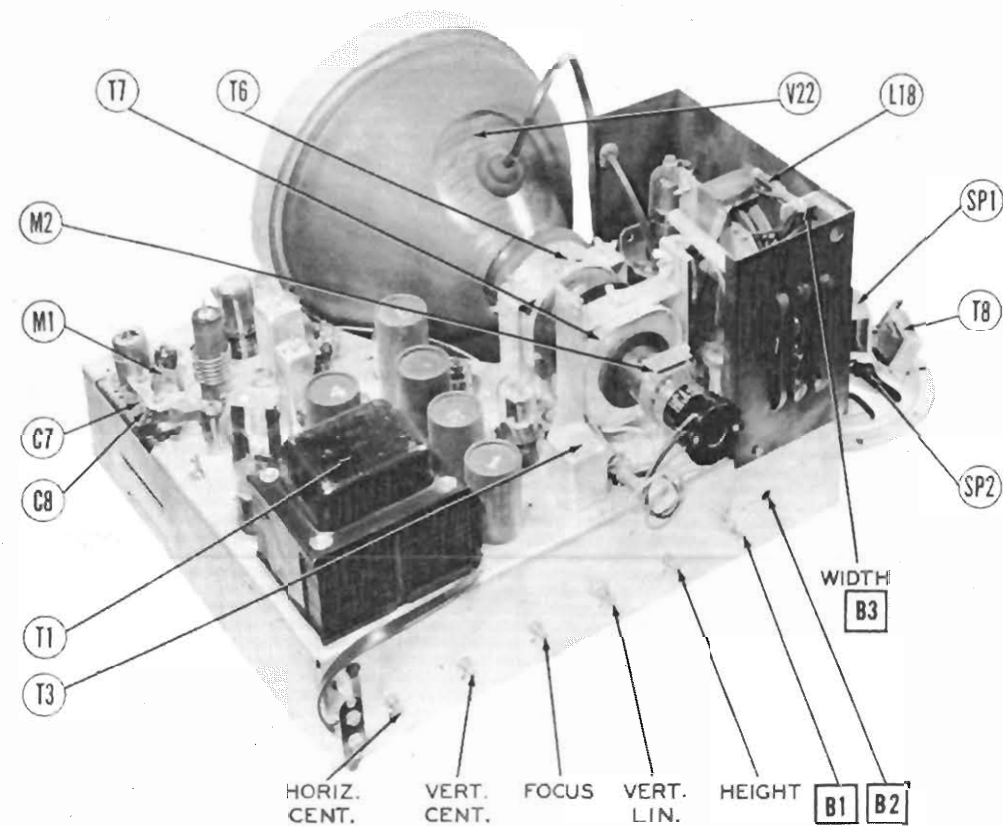
Photos
Capacitor Identi

Chassis - Top V

RF Tuner
RCA
Standard Co
General Inst

"The listing of any available case a recommendation, war as to the quality and suitability parts have been compiled frs Inc., by the manufacturers or "Reproduction or use, witho

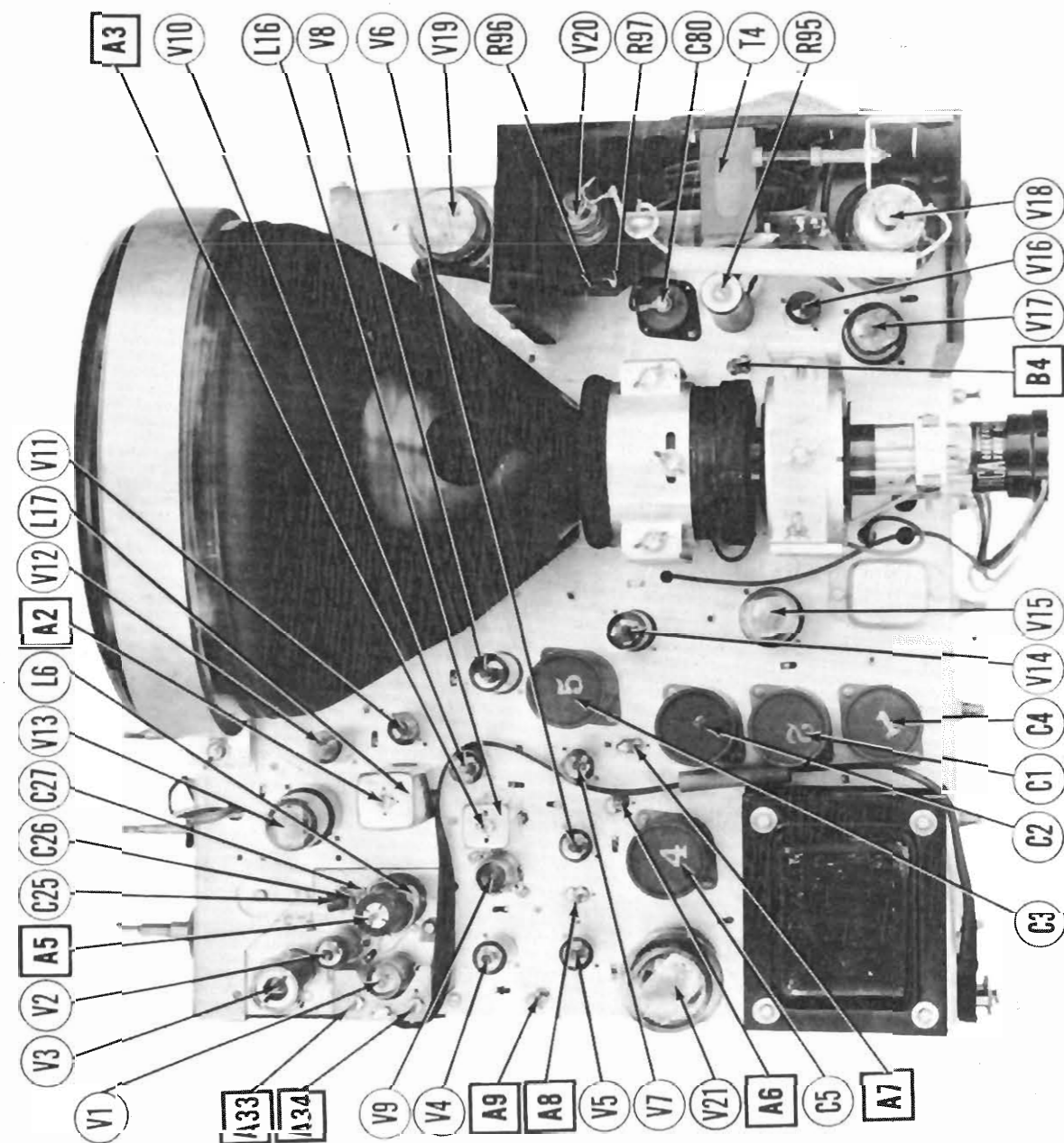
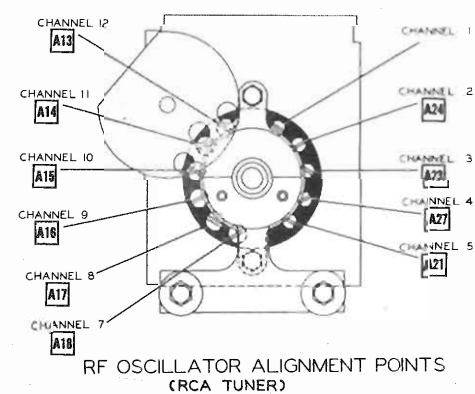




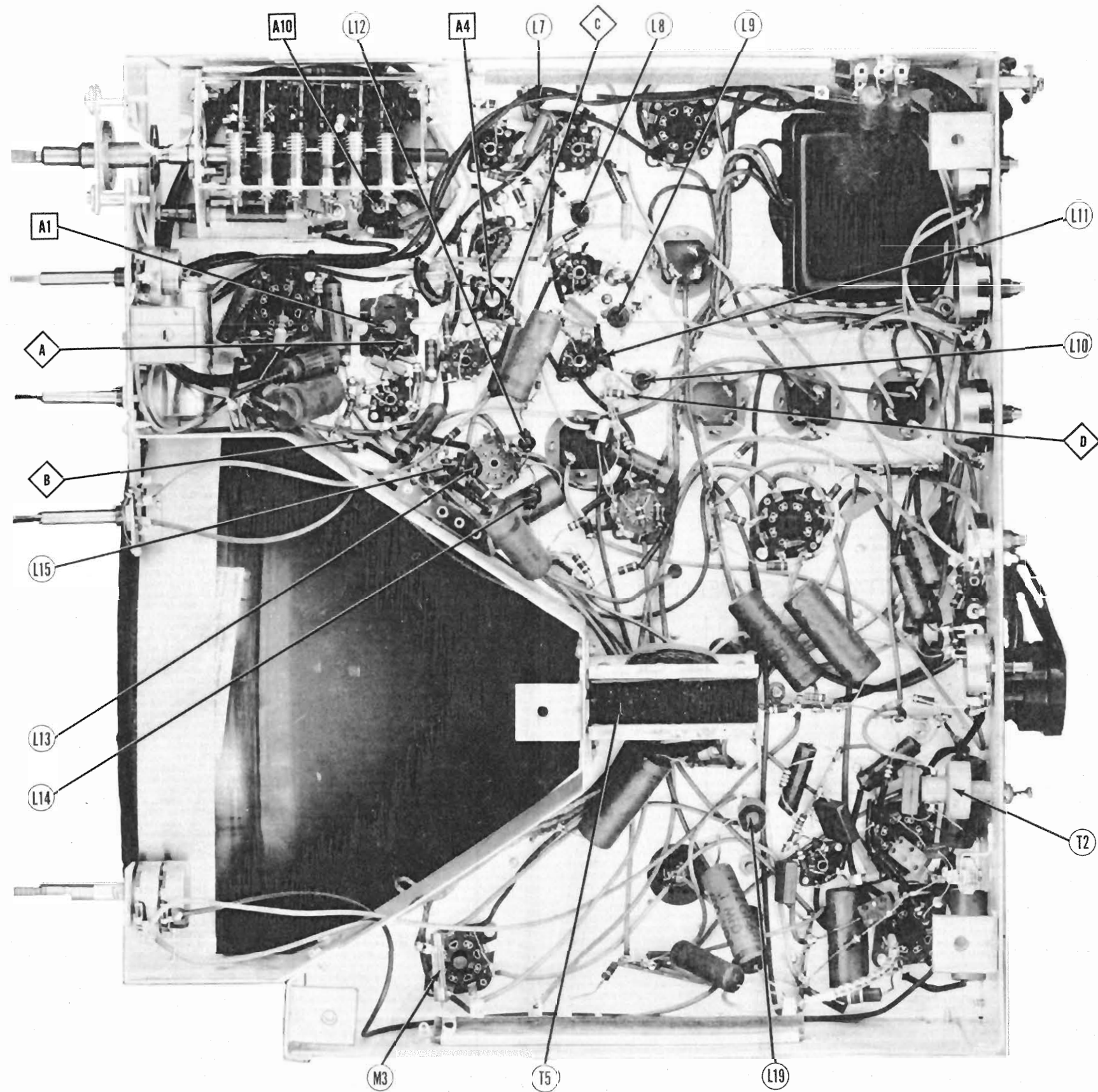
CHASSIS-TOP VIEW

HORIZONTAL FREQUENCY AND LINEARITY ADJUSTMENTS

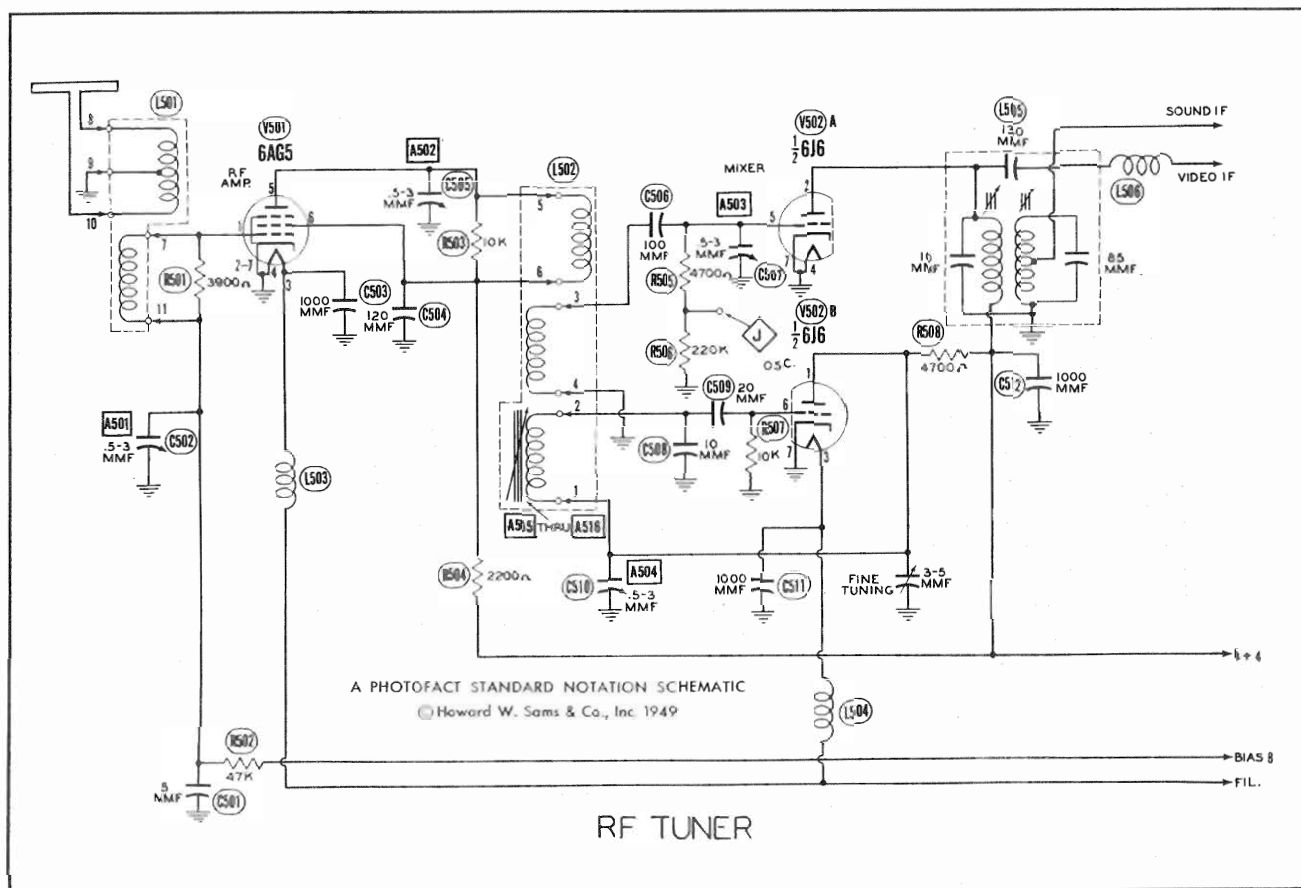
Turn the set on and tune in a TV station, preferably a test pattern.
 Turn the horizontal hold control to the mid-position of its range.
 Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
 Turn the horizontal drive trimmer (B2) clockwise as far as possible without crowding the right side of the picture.
 Adjust the width slug (B3) until picture fills the mask horizontally.
 Adjust the horizontal linearity slug (B4) until picture is symmetrical from left to right.
 Due to interaction of the controls, it may be necessary to repeat the adjustments of B2, B3 and B4.



DEWALD MODELS CT-102,
 CT-103, CT-104, DT-160, DT-161
 MAIN TOP SIDE-CH



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	REPLACEMENT DATA	RMA BASE TYPE	
		STANDARD REPLACEMENT		
V501	RF Amp.	6AG5	7BD	
V502	Mixer-Osc.	6J6	7BF	

RESISTORS

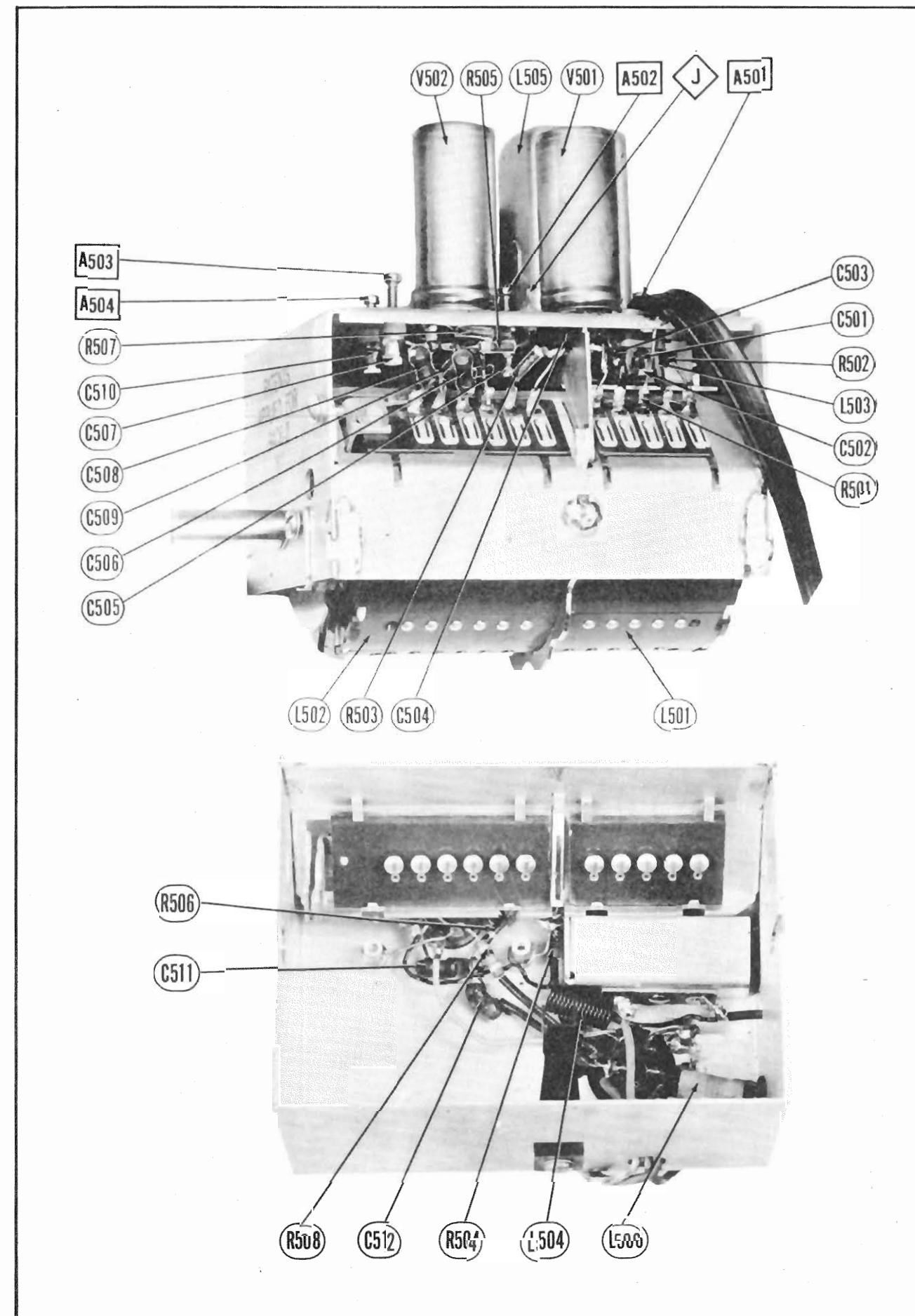
ITEM No.	RATING	IDENTIFICATION
	RESISTANCE WATTS	
R501	3900Ω	RF Grid Shunt
R502	47KΩ	RF Grid
R503	10KΩ	RF Plate Shunt
R504	2200Ω	RF Decoupling
R505	4700Ω	Mixer Grid
R506	220KΩ	Mixer Grid
R507	10KΩ	Osc. Grid
R508	4700Ω	Osc. Plate

CAPACITORS

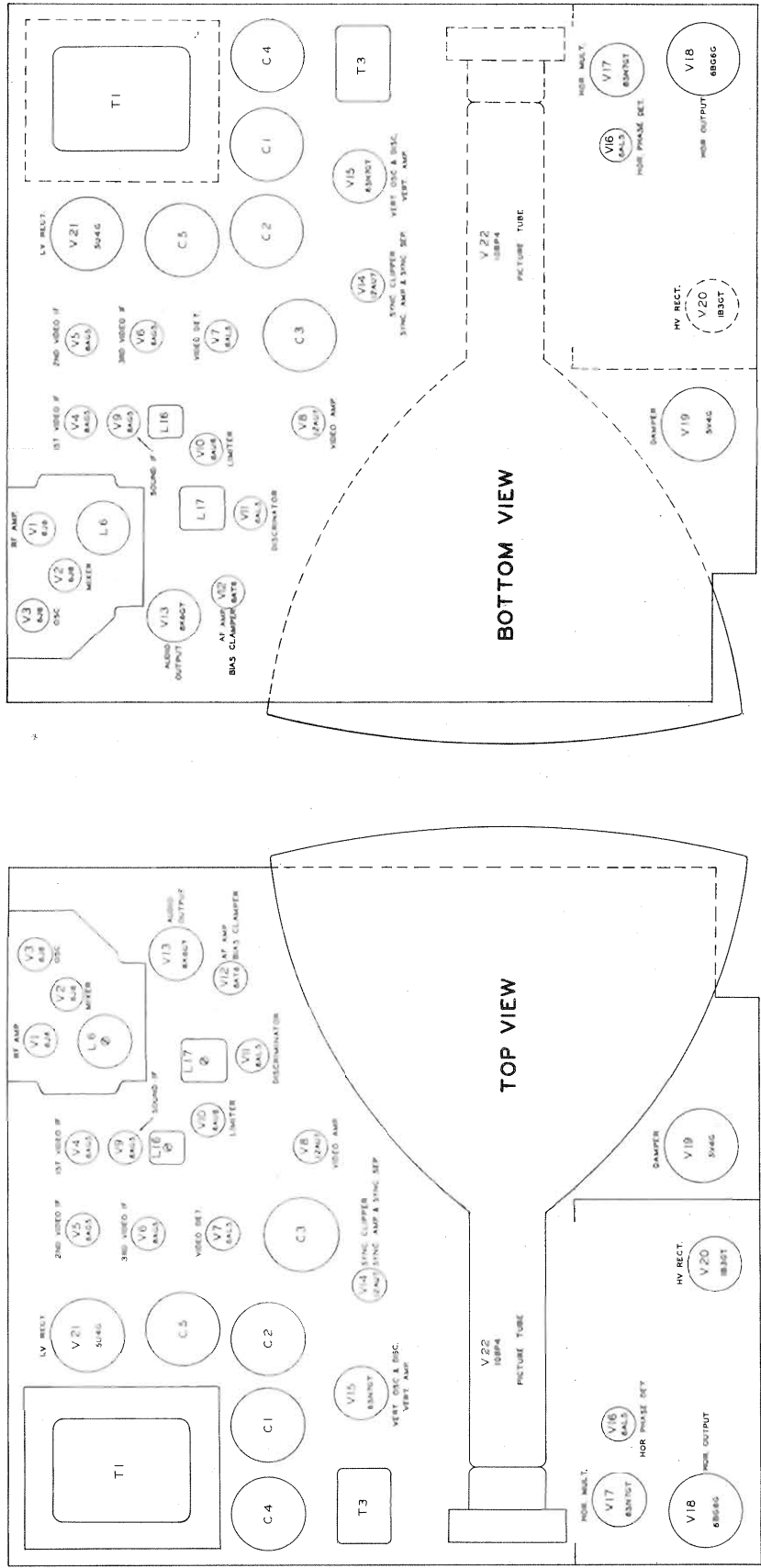
ITEM No.	RATING	IDENTIFICATION
	CAP. VOLT	
C501	5	Fixed Trimmer
C502	.5-3	RF Trimmer
C503	1000	Filament Bypass
C504	120	RF Decoupling
C505	.5-3	RF Trimmer
C506	100	RF Coupling
C507	.5-3	RF Trimmer
C508	10	Osc. Feedback
C509	20	Osc. Grid Cap.
C510	.5-3	Osc. Trimmer
C511	1000	Filament Bypass
C512	1000	RF Bypass

COILS

ITEM No.	USE	DC RES.	
		Ω SEC.	
L501	Ant. Coil	0Ω	0Ω
L502	Mixer & Osc.	0Ω	0Ω
L503	Fil. Choke	0Ω	0Ω
L504	Fil. Choke	0Ω	0Ω
L505	IF Trans.	0Ω	.2Ω
L506	RF Coil	.2Ω	.2Ω



DEWALD MODELS CT-102,
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TUBE PLACEMENT CHART

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	6X6	145K	145K	10	00	00	00	00	00	00	
V 2	6X6	11.5K	11.5K	10	00	00	00	00	00	00	
V 3	6X6	15K	15K	10	00	00	00	00	00	00	
V 4	6AG5	25K	30	00	00	00	00	00	00	00	
V 5	6AG5	15K	30	00	00	00	00	00	00	00	
V 6	6AG5	10K	1500	00	00	00	00	00	00	00	
V 7	6AL5	10	Inf	10	00	00	00	00	00	00	
V 8	12AU7	14K	1.5M	4470	10	00	00	00	00	00	
V 9	6AG5	00	1500	10	00	00	00	00	00	00	
V 10	6AU6	470K	00	00	00	00	00	00	00	00	
V 11	6AL5	200K	100K	10	00	00	00	00	00	00	
V 12	6AT6	10 Meg	00	00	00	00	00	00	00	00	
V 13	6X6GT	10	10	11.5K	11.2K	470K	1500	00	00	00	
V 14	12AU7	18K	1.5M	4470	10	00	00	00	00	00	
V 15	6X6GT	2 Meg	1.5M	4470	10	00	00	00	00	00	
V 16	6AL5	3000	3000	10	00	00	00	00	00	00	
V 17	6X6GT	150K	130K	1.8K	5 Meg	130K	1.8K	00	00	00	
V 18	6X6GT	Inf	10	4470	10	00	00	00	00	00	
V 19	5Y4G	Inf	16K	16K	1700	Inf	1700	Inf	Inf	Inf	
V 20	1B3GT	Inf	Inf	Inf	Inf	Inf	Inf	Inf	Inf	Inf	
V 21	5Y4G	Inf	11K	11K	4200	Inf	4200	Inf	Inf	Inf	
V 22	10BP4	11500	14K	160K	17200	17500	17500	17500	17500	17500	

† Measured from pin 8 of V21.
Measured from pin 3 of V16.

RESISTANCE READINGS											
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	
V 1	6X6	145K	145K	10	00	00	00	00	00	00	
V 2	6X6	11.5K	11.5K	10	00	00	00	00	00	00	
V 3	6X6	15K	15K	10	00	00	00	00	00	00	
V 4	6AG5	25K	30	00	00	00	00	00	00	00	
V 5	6AG5	15K	30	00	00	00	00	00	00	00	
V 6	6AG5	10K	1500	00	00	00	00	00	00	00	
V 7	6AL5	10	Inf	10	00	00	00	00	00	00	
V 8	12AU7	14K	1.5M	4470	10	00	00	00	00	00	
V 9	6AG5	00	1500	10	00	00	00	00	00	00	
V 10	6AU6	470K	00	00	00	00	00	00	00	00	
V 11	6AL5	200K	100K	10	00	00	00	00	00	00	
V 12	6AT6	10 Meg	00	00	00	00	00	00	00	00	
V 13	6X6GT	10	10	11.5K	11.2K	470K	1500	00	00	00	
V 14	12AU7	18K	1.5M	4470	10	00	00	00	00	00	
V 15	6X6GT	2 Meg	1.5M	4470	10	00	00	00	00	00	
V 16	6AL5	3000	3000	10	00	00	00	00	00	00	
V 17	6X6GT	150K	130K	1.8K	5 Meg	130K	1.8K	00	00	00	
V 18	6X6GT	Inf	10	4470	10	00	00	00	00	00	
V 19	5Y4G	Inf	16K	16K	1700	Inf	1700	Inf	Inf	Inf	
V 20	1B3GT	Inf	Inf	Inf	Inf	Inf	Inf	Inf	Inf	Inf	
V 21	5Y4G	Inf	11K	11K	4200	Inf	4200	Inf	Inf	Inf	
V 22	10BP4	11500	14K	160K	17200	17500	17500	17500	17500	17500	

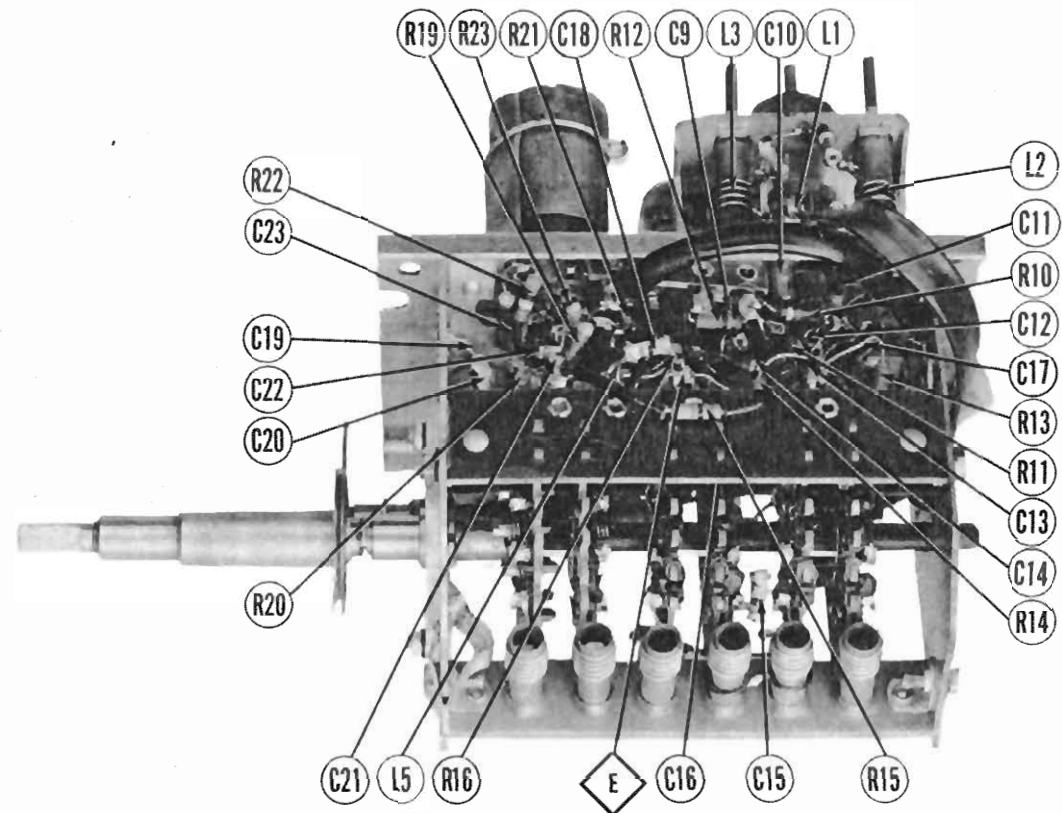
§ Taken with vacuum tube voltmeter.
* Do not measure.
† 6.3VAC measured across filament.
Note: Contrast control set at maximum for these measurements.

1. DC Voltage measurements are of 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.

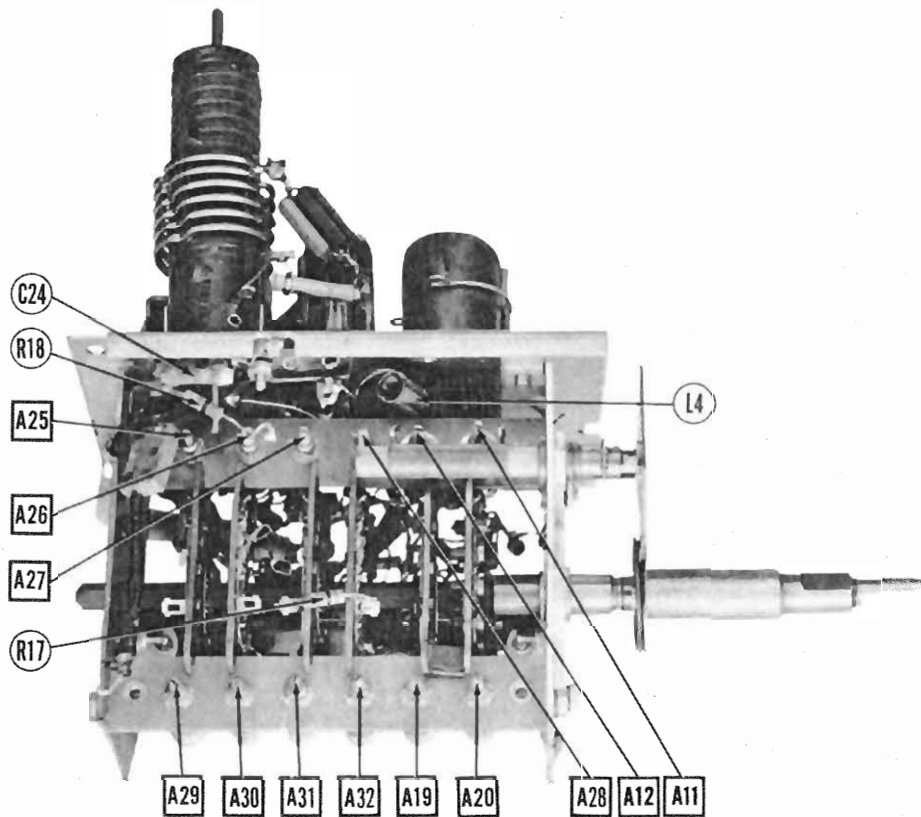
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panel controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

DEWALD MODELS CT-102,
CT-103, CT-104, DT-160, DT-161

ALIGNMENT INSTRUCTIONS



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT							
If the picture tube is removed during alignment, remove the horizontal oscillator tube V17, to eliminate the high voltage shock hazard.							
SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM							
Set the contrast control to read -3 volts on VTVM connected between junction of R27 and R28 and chassis.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
.01MFD	High side to pin 1(Grid) of 6AU6 (V10). Low side to chassis.	21.25MC (Unmod.)	9 (If unused locally)	EC Probe thru 1 Meg. to Point \diamond Common to chassis.	A1, A2	Detune A1 counter-clockwise. Adjust A2 for maximum deflection.	
.01MFD	"	"	"	EC Probe thru 1 Meg. to Point \diamond Common to chassis.	A1	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.	
Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	"	"	EC Probe thru 33K Ω to Point \diamond Common to chassis.	A3, A4, A5	Adjust for maximum deflection.	
SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE							
Set the contrast control to read -3 volts on VTVM connected between junction of R27 and R28 and chassis. Use frequency modulated signal with 60 ~ modulation and 450KC sweep. Use I20 ~ sawtooth voltage in scope for horizontal deflection.							
DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
.01MFD	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.25MC (1MC Sweep)	21.25MC	9 (If unused locally)	Vert. Amp. to Point \diamond Low side to chassis.	A3, A4, A5	Adjust for maximum amplitude and symmetry as per Fig 1.
.01MFD	"	"	"	"	Vert. Amp. to Point \diamond Common to chassis.	A1, A2	Adjust A1 so 21.25MC marker occurs at center of crossover lines as per Fig 2. Adjust A2 for maximum amplitude and straightness of crossover lines. Continue with step 4.
VIDEO IF ALIGNMENT							
Set the contrast control to read -3 volts on VTVM connected between the junction of R29 and R30, and chassis. Remove the local oscillator tube V3, to prevent erroneous indications. If the set has a Standard Coil tuner, remove the channel 13 segment of the mixer section the tuner turret and turn the channel switch to channel 13 to disable the local oscillator during video alignment.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.25MC (Unmod.)	Any	DC Probe to Point \diamond Common to chassis.	A6	Adjust for MINIMUM deflection.	
Direct	"	24.6MC	"	"	A7	Adjust for maximum deflection.	
Direct	"	26MC	"	"	A8	"	
Direct	"	23.1MC	"	"	A9	"	
Direct	"	22.9MC	"	"	A10	"	
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
Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (10MC Sweep)	21.25MC 23MC 25.75MC	Any	Vert. Amp. to Point \diamond Low side to chassis.		Check for response curve similar to Fig 3 with 25.75MC marker appearing at 50%. If necessary retouch A6 thru A10 for optimum response.
TUNER ALIGNMENT							
These receivers employ one of three tuners, determine which tuner is in the set and use the alignment instructions for that tuner.							
OSCILLATOR ALIGNMENT (RCA TUNER)							
Replace the local oscillator tube V3. Set the fine tuning control approximately 140 from maximum counter-clockwise. This aligns the holes in the drive disc with the oscillator adjustment screws. Do not change this setting during oscillator alignment.							
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS	
Two 150 Ω carbon res.	Across antenna terminals with 150 Ω in each lead.	215.75MC (Unmod.)	13	DC Probe thru 1 Meg. to Point \diamond Low side to chassis.	A11, A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Keep slug pairs at approximately the same relative position.	
"	"	209.75MC	12	"	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.	
		203.75MC	11	"	A14		
		197.75MC	10	"	A15		
		191.75MC	9	"	A16		
		185.75MC	8	"	A17		
		179.75MC	7	"	A18		
"	"	87.75MC	6	"	A19, A20	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Keep slug pairs at approximately the same relative position.	
"	"	81.75MC	5	"	A21	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.	
		71.75MC	4	"	A22		
		65.75MC	3	"	A23		
		59.75MC	2	"	A24		

SEE PAGE 14 FOR RCA TUNER OSCILLATOR ALIGNMENT POINTS.

DEWALD MODELS CT-102,
CT-103, CT-104, DT-160, DT-161

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT (RCA TUNER)

Connect a 1000MMF capacitor from pin 1 of the first video IF amp., (6AG5, V4) to chassis with the shortest possible leads.

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14. Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	213MC (10MC Sweep)	211.25MC 215.75MC	13	Vert. Amp. thru 10KΩ to Point \odot Low side to chassis.	A25, A26 A27, A28	Adjust for response curve similar to Fig 4 with markers above 70%. The dip between peaks should not exceed 30%. Keep slug pairs at approximately the same relative position.
15. "	"	207MC (10MC Sweep) 201MC (10MC Sweep) 195MC (10MC Sweep) 189MC (10MC Sweep) 183MC (10MC Sweep) 177MC (10MC Sweep)	205.25MC 209.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC	12 11 10 9 8 7	"	"	Check all high band channels for response curve similar to Fig 4. If markers are below 70% on any channel, make slight adjustment of A25, A26, A27, and A28 with channel switch set for that channel. Recheck all high band channels to see that they have not been seriously effected.
16. "	"	85MC (10MC Sweep)	83.25MC 87.75MC	6	"	A29, A30 A31, A32	Adjust for response curve similar to Fig 4 with markers above 70%. Keep slug pairs at approximately the same relative position.
17. "	"	79MC (10MC Sweep) 69MC (10MC Sweep) 63MC (10MC Sweep) 57MC (10MC Sweep)	77.25MC 81.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	5 4 3 2	"	"	Check all low band channels for response similar to Fig 4. If markers are below 70% on any channel, make slight adjustment of A29, A30, A31, and A32 with channel switch set for that channel. Recheck all low band channels to see that they have not been seriously effected.

Wave traps A33 and A34 are used for specific types of interference and their alignment will depend upon the type encountered. With the receiver tuned to the channel having the interference set fine tuning control until interference is at maximum. Adjust A33 and A34 for minimum interference in the picture and sound, keeping the cores at approximately the same relative position. Turn one core 1/2 turn, adjust the other for minimum interference.

OSCILLATOR ALIGNMENT (STANDARD COIL TUNER)

Replace the channel 13 segment of the tuner turret. Set the fine tuning control to the mid-position of its range. Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A504. It should be noted this is an all channel oscillator circuit adjustment and should not be used for any individual channel. If adjustment of A504 will not bring all channels within the range of the fine tuning control, it will be necessary to use the individual channel oscillator adjustments for each channel that is off frequency, (steps 10 and 11). The individual channel oscillator adjustment screws are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10. Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	215.75MC (Unmod.)	13	DC Probe thru 1 Meg. to Point \odot Common to chassis.	A505	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
11. "	"	209.75MC 203.75MC 197.75MC 191.75MC 185.75MC 179.75MC 87.75MC 81.75MC 71.75MC 65.75MC 59.75MC	12 11 10 9 8 7 6 5 4 3 2	"	A506 A507 A508 A509 A510 A511 A512 A513 A514 A515 A516	"

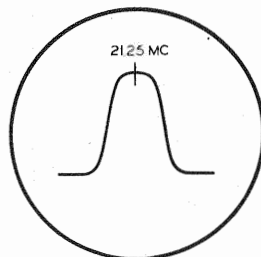


FIG. 1

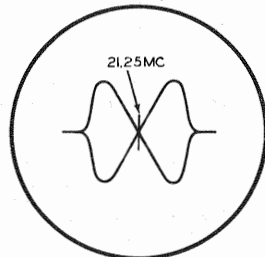


FIG. 2

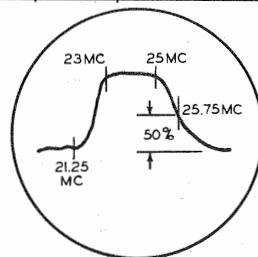


FIG. 3

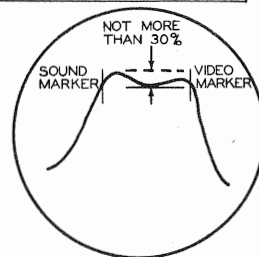


FIG. 4

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT (STANDARD COIL TUNER)

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12. Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	207MC (10MC Sweep)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to Point \odot Low side to chassis.	A501, A502, A503	Adjust for response curve similar to Fig 4 with markers above 70%.
13. "	"	213MC (10MC Sweep) 201MC (10MC Sweep) 195MC (10MC Sweep) 189MC (10MC Sweep) 183MC (10MC Sweep) 177MC (10MC Sweep) 85MC (10MC Sweep) 79MC (10MC Sweep) 69MC (10MC Sweep) 63MC (10MC Sweep) 57MC (10MC Sweep)	211.25MC 215.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC 83.25MC 87.75MC 77.25MC 81.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	13 11 10 9 8 7 6 5 4 3 2	"	"	Check all channels for response similar to Fig 4. If markers are below 70% on any channel, make slight adjustment of A501, A502, and A503 with channel switch set for that channel. Recheck all other channels to see that they have not been seriously effected.

OSCILLATOR ALIGNMENT (G. I. TUNER)

Replace the local oscillator tube V3. 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
10. Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	215.75MC	13	DC Probe thru 1 Meg. to Point \odot Common to chassis.	A311	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
11. "	"	87.75MC	6	"	A312	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Check to see that all channels are received well within the range of the fine tuning control. If not, compromise may be made using A311 for the high band channels and A312 for the low band channels.

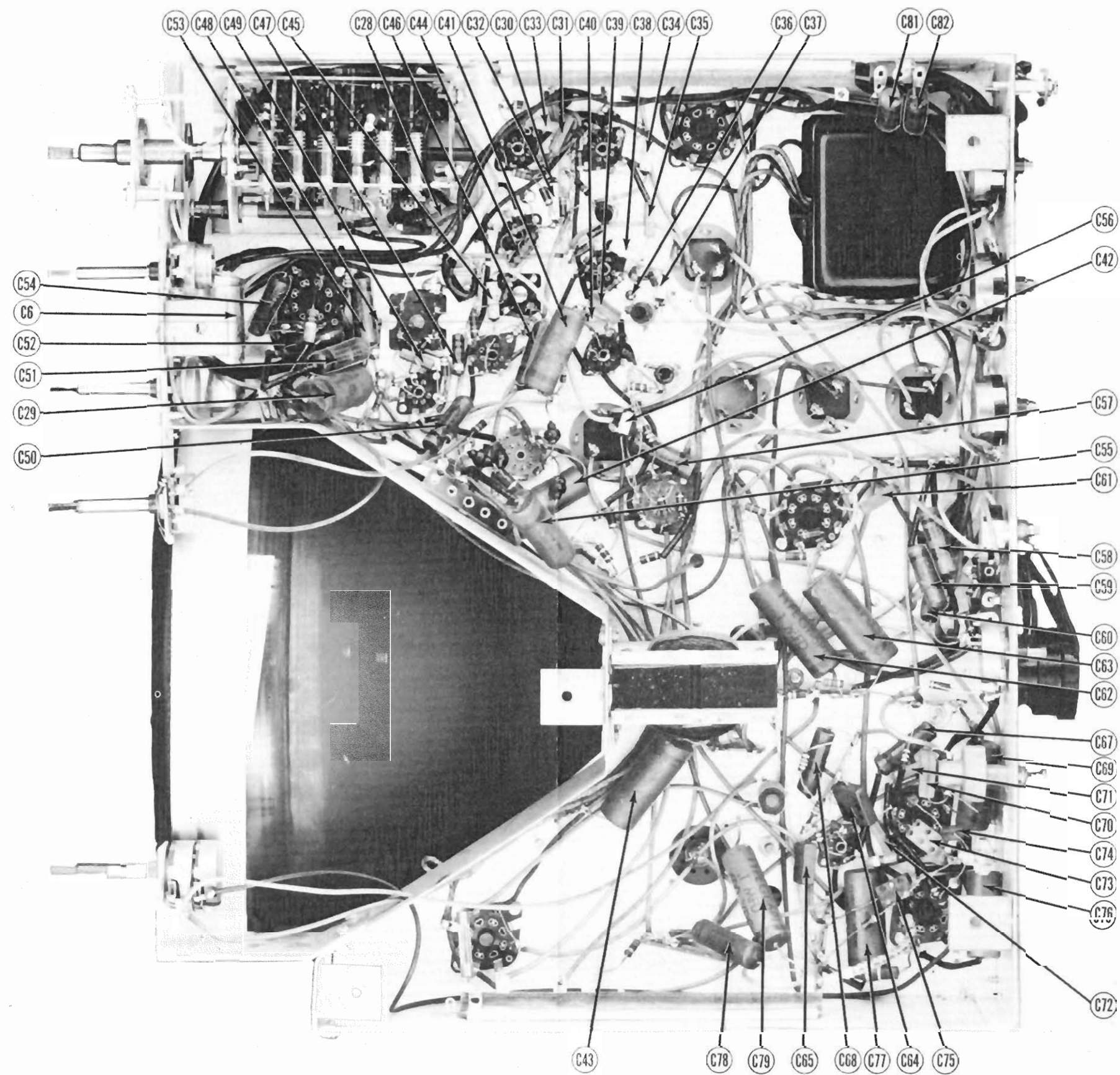
RF AND MIXER ALIGNMENT (G. I. TUNER)

DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
12. Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	213MC (10MC Sweep)	211.25MC 215.75MC	13	Vert. Amp. to Point \odot Low side to chassis.	A301, A302, A303, A304	Adjust for response curve similar to Fig 4 with markers above 70%. Keep trimmer pairs at approximately the same relative position.
13. "	"	177MC (10MC Sweep)	175.25MC 179.75MC	7	"	A305, A306	Adjust rings for response similar to Fig. 4 with markers above 70%.
14. "	"	183MC (10MC Sweep) 189MC (10MC Sweep) 195MC (10MC Sweep) 201MC (10MC Sweep)	181.25MC 185.75MC 187.25MC 191.75MC 193.25MC 197.75MC 199.25MC 203.75MC	8 9 10 11	"	"	Check all high band channels for response curve similar to Fig 4. SLIGHT adjustments of A301 thru A306 may be necessary to obtain optimum response on all channels.
15. "	"	85MC (10MC Sweep)	83.25MC 87.75MC	6	"	A307, A308, A309, A310	Adjust for response curve similar to Fig 4 with markers above 70%. Keep trimmer pairs in approximately the same relative position.
16. "	"	79MC (10MC Sweep) 69MC (10MC Sweep) 63MC (10MC Sweep) 57MC (10MC Sweep)	77.25MC 81.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	5 4 3 2	"	"	Check all low band channels for response similar to Fig 4. If markers are below 70% on any channel, make slight adjustment of A307, A308, A309 and A310 with channel switch set for that channel. Recheck all low band channels to see that they have not been seriously effected.

WAVE TRAP ADJUSTMENTS (G. I. TUNER)

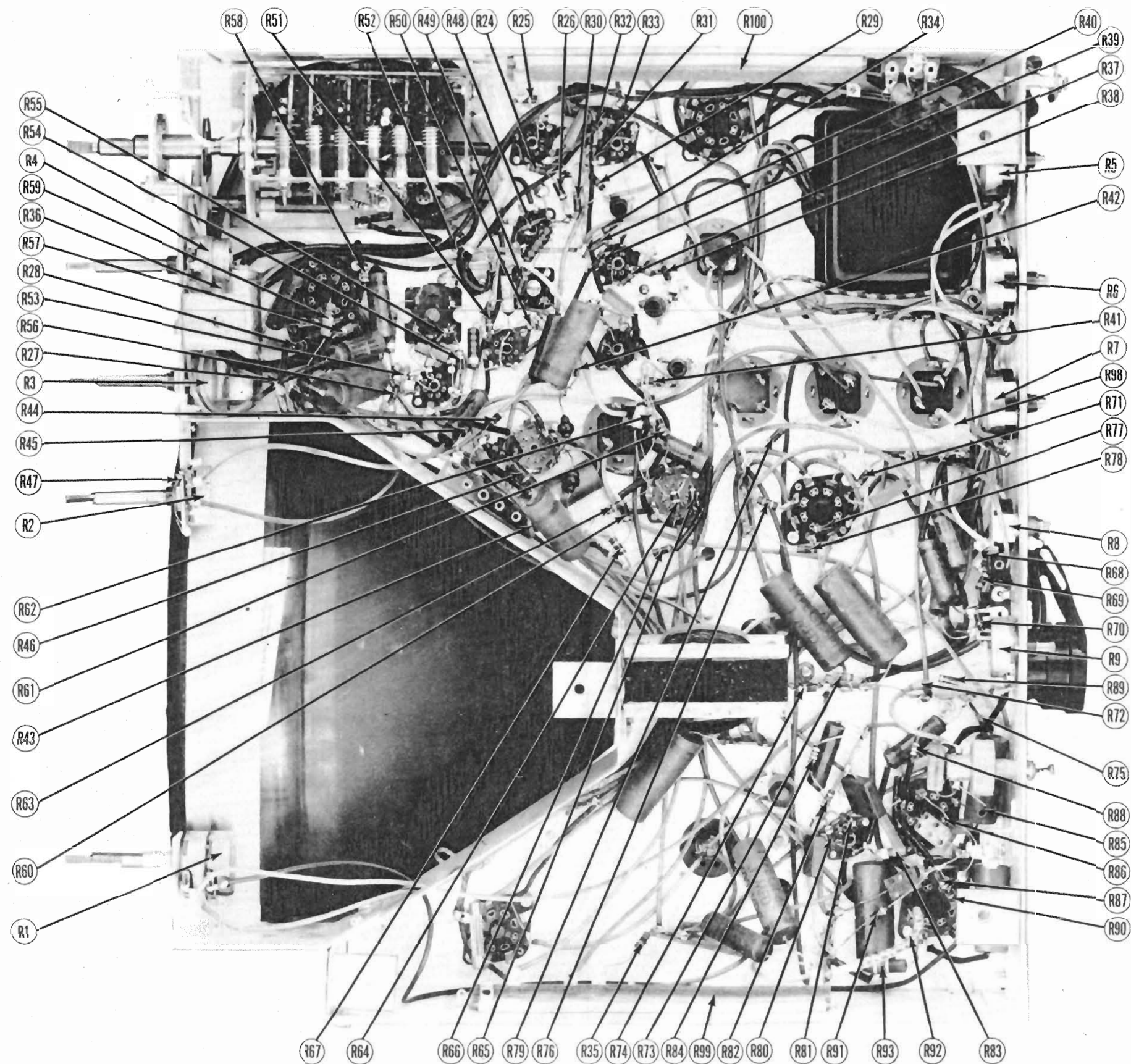
Wave traps A313 and A314 are used for specific types of interference and their alignment will depend upon the type encountered. With the receiver tuned to the channel having the interference set fine tuning control until interference is at maximum. Adjust A313 and A314 for minimum interference in the picture and sound, keeping the cores at approximately the same relative position. Turn one core 1/2 turn, adjust the other for minimum interference.

DEWALD MODELS CT-102,
CT-103, CT-104, DT-160, DT-161



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

DEWALD MODELS CT-102,
CT-103, CT-104, DT-160, DT-161



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

DEWALD MODELS CT-102,
CT-103, CT-104, DT-160, DT-161

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

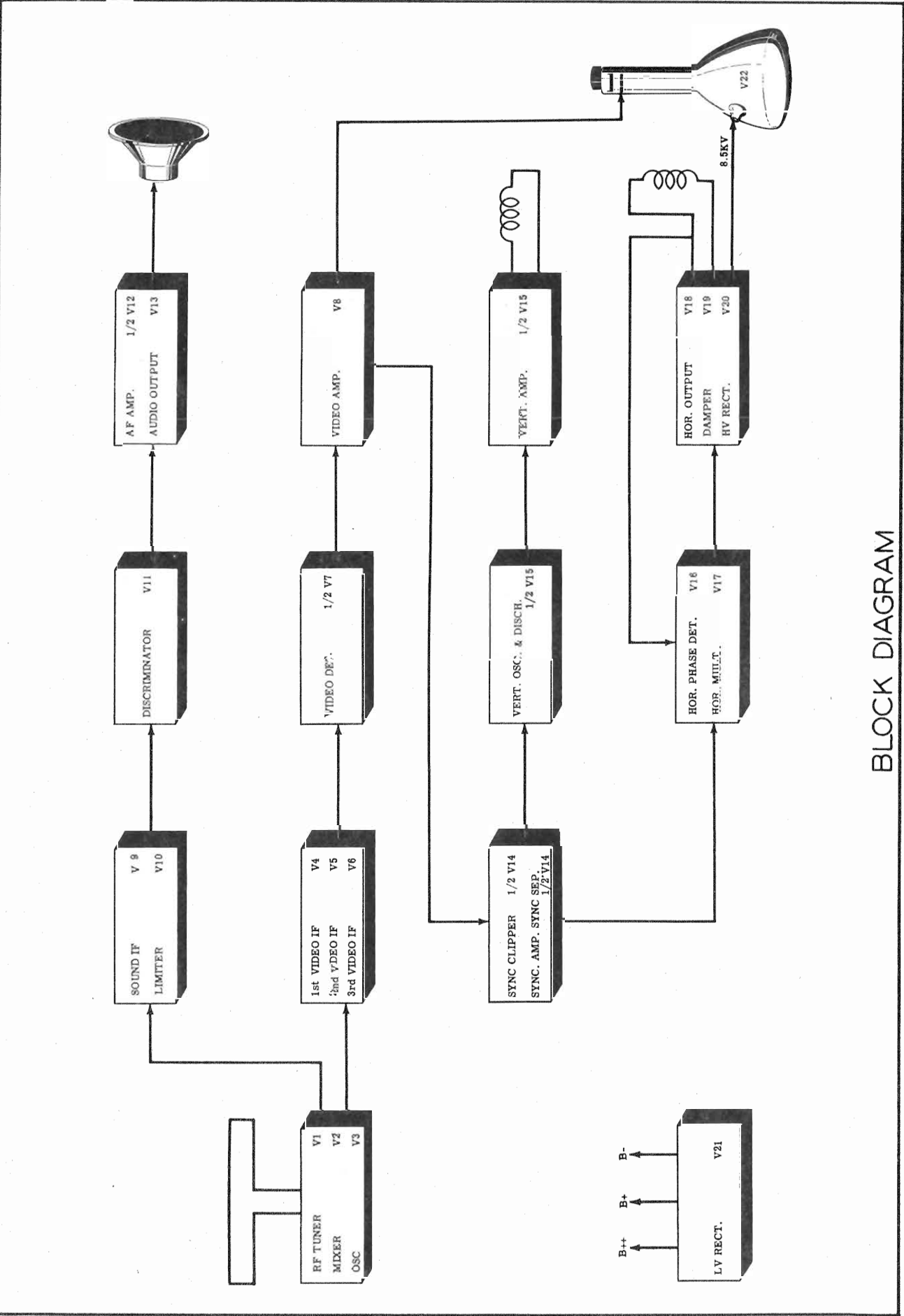
ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	DEWALD PART No.	JENSEN PART No.	OUAM PART No.	
SP1	62Ω	3.4Ω			6E*	* Supplied on order. Specify field current and resistance.
SP2	CONE DIA.	V. C. DIA.				
	6"	3/4"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	DEWALD PART No.	MEISSNER PART No.	
L1	Ant. Input	0Ω				
L2	Interference Trap	0Ω				
L3	Interference Trap	0Ω				
L4	Fill. Choke	0Ω				
L5	Mixer Grid	0Ω				
L6	1st Video IF and Sound					
	Trap	.2Ω	0Ω			
L7	2nd Video IF	.1Ω				
L8	3rd Video IF	.1Ω				
L9	Sound Trap	0Ω	0Ω			
L10	4th Video IF	.1Ω				
L11	Peaking	2.2Ω				36 Microhenries
L12	Peaking	4.7Ω				120 Microhenries. Wound on 22KΩ resistor.
L13	Peaking	2.2Ω				36 Microhenries
L14	Peaking	4.7Ω				120 Microhenries. Wound on 22KΩ resistor.
L15	Peaking	4.7Ω				120 Microhenries. Wound on 22KΩ resistor.
L16	Sound IF	0Ω	0Ω			
L17	Disc. Trans.	0Ω	0Ω			
L18	Width Cont.	.1Ω				
L19	Hor. Linearity	36Ω				

MISCELLANEOUS

ITEM No.	PART NAME	DEWALD PART No.	NOTES
M1	RF Tuner		
M2	Ion Trap		Permanent magnet type.
M3	Fuse		Type GJV .2A
M4	Fuse		Not used in all models.
	Trimmer		Hor. drive (25-280MMF)



DEWALD MODELS CT-102, CT-103, CT-104, DT-160, DT-161
BLOCK DIAGRAM

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		DEWALD PART No.	STANDARD REPLACEMENT		
V1A	RF Amp.	6J6	6J6	7BF	
B	RF Amp.	6AG5	6AG5	7BD	
V2A	Mixer	6J6	6J6	7BF	
B	Converter	6J6	6J6	7BF	
V3	Osc.	6J6	6J6	7BF	
V4	1st Video IF Amp.	6AG5	6AG5	7BD	
V5	2nd Video IF Amp.	6AG5	6AG5	7BD	
V6	3rd Video IF Amp.	6AG5	6AG5	7BD	
V7	Video Det.	6AL5	6AL5	6BT	
V8A	Video Amp.	12AU7	12AU7	9A	
B	Video Amp.	6SN7GT	6SN7GT	8BD	Used in early production.
V9A	Sound IF Amp.	6AG5	6AG5	7BD	
B	Sound IF Amp.	6BA6	6BA6	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Disc.	6AL5	6AL5	6BT	
V12	AF Amp.-Bias Clamper	6AT6	6AT6	7BT	
V13	Audio Output	6K6GT	6K6GT	7S	
V14	Sync. Clipper-Sync. Amp.-Sync. Separator	12AU7	12AU7	9A	
V15	Vert. Osc.-Vert. Disch.-Vert. Amp.	6SN7GT	6SN7GT	8BD	
V16	Hor. Phase Det.	6AL5	6AL5	6BT	
V17	Hor. Mult.	6SN7GT	6SN7GT	8BD	
V18	Hor. Output	6BG6G	6BG6G	5BT	
V19	Damper	5V4G	5V4G	5L	
V20	HV Rectifier	1B3GT	1B3GT	3C	
V21	LV Rectifier	5U4G	5U4G	5T	
V22A	Picture Tube	10BP4	10BP4	12D	Used in models CT-102, CT-103.
B	Picture Tube	12LP4	12LP4	12D	Used in model CT-104.
C	Picture Tube	16AP4	16AP4	12D	Used in models DT-160, DT-161.

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. VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		DEWALD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	
C1A	40 450		AFH82J	UP9CJ731		TVL-69
B	40 450		AFH82J	UP9CJ731		TVL-69
C2A	40 450		AFH82J	UP9CJ731		TVL-69
B	40 150		AFH82J	UP9CJ731		TVL-69
C	130 50		AFH82J	UP9CJ731		TVL-69
C3A	80 450		AFH82J	UP9CJ731		TVL-69
B	80 450		AFH82J	UP9CJ731		TVL-69
C4A	250 6		PRSKC/250	UP7BJ808		TVL-66
B	1000 6		PRSKC/1000	UP7BJ808		TVL-66
C5A	10 450		AFH266J	UP8CJ898		TVL-30
B	30 450		AFH266J	UP8CJ898		TVL-30
C	30 450		AFH266J	UP8CJ898		TVL-30
C6	30 450		PR8450/30	BR3045A		TVA-23
C7	10				NPOK-10	
C8	10				NPOK-10	
C9	1500				GP2L-0015	
C10	270				GP2K-270	
C11	270				GP2K-270	
C12	1.5				NPOK-1.5	
C13	1.5				NPOK-1.5	
C14	68				NPOK-4.7	
C15	4.7				NPOK-4.7	
C16	4.7				GP2L-0015	
C17	1500				GP2L-0015	
C18	22				GP2L-0015	
C19	1500				GP2L-0015	
C20	10				NPOK-10	
C21	4.7				NPOK-4.7	
C22	4.7				NPOK-4.7	
C23	1500				GP2L-0015	
C24	1500				GP2L-0015	
C25	68				GP2L-0015	
C26	1000				GP2L-0015	
C27	220				GP2L-0015	
C28	270				GP2L-0015	
C29	1.25				GP2L-0015	
C30	1500				GP2L-0015	
C31	270				GP2L-0015	
C32	1500				GP2L-0015	
C33	1500				GP2L-0015	
C34	1500				GP2L-0015	
C35	270				GP2L-0015	
C36	75				GP2L-0015	
C37	100				GP2L-0015	
C38	1500				GP2L-0015	
C39	270				GP2L-0015	
C40	10				GP2L-0015	
C41	.05				GP2L-0015	
C42	.05				GP2L-0015	
C43	.21				GP2L-0015	
C44	1500				GP2L-0015	
C45	1500				GP2L-0015	
C46	.02				GP2L-0015	
C47	1500				GP2L-0015	
C48	1500				GP2L-0015	
C49	270				GP2L-0015	
C50	.0025				GP2L-0015	
C51	.01				GP2L-0015	
C52	.0025				GP2L-0015	
C53	.01				GP2L-0015	

CAPACITORS (CONT.)

ITEM No.	RATING CAP. VOLT	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		DEWALD PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	
C54	.005		P688-005	GT6D5	GP2M-005	TM-25
C55	.05		P688-05	GT6S5	GP2M-005	TM-25
C56	22		1468-000025	5W5Q25	GP2M-005	TM-25
C57	.01		P688-01	GT6S1	GP2M-005	TM-25
C58	.002		P688-002	GT6D2	GP2M-005	TM-25
C59	.005		P688-005	GT6D5	GP2M-005	TM-25
C60	.005		P688-005	GT6D5	GP2M-005	TM-25
C61	4700		1467-005	1D5D5	GP2M-0047	TM-25
C62	.1		P688-1	GT6P1	GP2M-0047	TM-25
C63	.25		P488-25	GT6P25	GP2M-0047	TM-25
C64	1000		1468-001	1W5D1	GP2L-001	IFM-21
C65	1000		1468-001	1W5D1	GP2L-001	IFM-21
C66	.01		P688-01	GT6S1	GP2M-005	TM-25
C67	.005		P688-005	GT6D5	GP2M-005	TM-25
C68	.005		P688-005	GT6D5	GP2M-005	TM-25
C69	.05		P688-05	GT6S5	GP2M-005	TM-25
C70	4300		1468-00035	5W5T3	GP2K-330	IFM-335
C71	330		1468-0004	5W5T4	GP2K-330	IFM-335
C72	390		1468-00025	5W5T25	GP2K-270	IFM-31
C73	270		1468-0001	5W5T1	GP2K-270	IFM-31
C74	100				GP2K-270	IFM-31
C75	18				GP2K-270	IFM-31
C76	.05		P688-05	GT6S5	GP2K-270	IFM-31
C77	.25		P488-25	GT4P25	GP2K-270	IFM-31
C78	.035		P688-033	GT6P1	GP2K-270	IFM-31
C79	.1		P688-1	GT6P1	GP2K-270	IFM-31
C80	500				GP2K-270	IFM-31
C81	.01		P688-01	GT6S1	GP2K-270	IFM-31
C82	.01		P688-01	GT6S1	GP2K-270	IFM-31

* Not used in all models.
† Some models use .005MFD in this application.
‡ Some models use 4300MMF in this application.

CONTROLS

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA			INSTALLATION NOTES
		DEWALD PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	1 Meg.		B11-137 *	3034A	Vert. hold control, panel (Dual Concentric)
B	50KΩ		B11-123 *		Horiz. hold control, rear
C	Shaft End		E187 *		Attach per instructions in "Concentrikit".
R2A	500KΩ		Q11-133	AM-58-S	Brightness Control
B	10KΩ		Not Req.	KSS-3	Attach to R2A per instructions
R3A	10KΩ			AM-30-V	Contrast control
B	1 Meg.		Q13-137	KSS-3	Attach to R3A per instructions
R4A	1 Meg.		Not Req.	AM-63-Z	Volume control
B	Switch		76-J	SW-A	Attach to R4A per instructions
R5	20Ω		W-20	43-20C	Horiz. centering control, Wire Wound
R6	20Ω		W-20X10	43-20CT	Vert. centering control, tapped at 10Ω, Wire Wound
R7	1500Ω		W-1600	10-1500	Focus control, Wire Wound
R8	5000Ω		Q11-114	M-19-S	Vert. linearity control
R9	2.5Meg.		Q11-239	M-84-S	Height control

* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING RESISTANCE WATTS	REPLACEMENT DATA		IDENTIFICATION CODES
		DEWALD PART No.	IRC PART No.	
R10	1500			RF Grid
R11	1500			RF Grid
R12	1000Ω 20%			Bias Filter
R13	4700Ω 20%		BTS-1000	RF Plate
R14	4700Ω 20%		BTS-4700	RF Plate
R15	1000Ω 20%		BTS-1000	RF Decoupling
R16	1 Meg.			Mixer Grid
R17	10KΩ		BTS-10K	Mixer Grid Shunt
R18	1000Ω 20%		BTS-1000	Mixer Decoupling
R19	150Ω 20%			Decoupling
R20	4700Ω 20%		BTS-4700	Osc. Plate
R21	47Ω 20%			Osc. Cathode
R22	100KΩ 20%			Osc. Grid
R23	100KΩ 20%			Osc. Grid
R24	15KΩ			1st Video IF Grid
R25	39Ω			1st Video IF Cathode
R26	1000Ω		BTS-1000	1st Video IF Decoupling
R27	6.8 Meg.		BTS-6.8 Meg.	Voltage Divider
R28	62KΩ		BTS-62K	Bias Network
R29	10KΩ		BTS-10K	Bias Network
R30	12KΩ		BTS-12K	Voltage Divider
R31	1000Ω		BTS-1000	Bias Network
R32	5600Ω			2nd Video IF Grid
R33	39Ω			2nd Video IF Cathode
R34	1000Ω		BTS-1000	2nd Video IF Decoupling
R35	3300Ω		BTS-3300	Bias Voltage Divider
R36	1000Ω		BTS-1000	Voltage Divider
R37	10KΩ			3rd Video IF Grid
R38	150Ω			3rd Video IF Cathode
R39	6800Ω			3rd Video IF Plate
R40	1000Ω		BTS-1000	3rd Video IF Decoupling
R41	4700Ω		BTS-4700	Video Det. Diode Load
R42	1 Meg.		BTS-1 Meg.	Video Amp. Grid
R43	2200Ω		BTS-2200	Video Amp. Plate
R44	47Ω		BW-1-47	Video Amp. Cathode
R45	1 Meg.		BTS-1 Meg.	Video Amp. Grid
R46	3300Ω		BTA-3300	Video Amp. Plate
R47	100KΩ		BTS-100K	Voltage Divider
R48	150Ω			1st Sound IF Cathode See Note 1
R49	1000Ω			1st Sound IF Decoupling See Note 2
R50	470KΩ			Limiter Grid
R51	22KΩ			Limiter Screen

RESISTORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	DEWALD PART No.	IRC PART No.	
R52	1000Ω			BTS-1000	Limiter Plate Decoupling
R53	5Ω			BW-1-4.7	Disc. Filament, Wire Wound
R54	100KΩ			BTS-100K	Disc. Diode Load
R55	100KΩ			BTS-100K	Disc. Diode Load
R56	10 Meg. 20%			BTS-10 Meg.	AF Grid
R57	330KΩ			BTS-330K	AF Plate
R58	470KΩ			BTS-470K	Output Grid
R59	1000Ω			BTA-1000	Filter
R60	2200Ω			BTS-2200	Picture Tube Grid
R61	270KΩ			BTS-270K	DC Rest. Load
R62	47KΩ			BTS-47K	Voltage Divider
R63	820KΩ			BTS-820K	Sync. Clipper Plate
R64	3900Ω			BTS-3900	Sync. Amp. Cathode
R65	1 Meg.			BTS-1 Meg.	Sync. Amp. Grid
R66	3900Ω			BTS-3900	Sync. Amp. Plate
R67	3900Ω			BTS-3900	Sync. Amp. Plate
R68	22KΩ			BTS-22K	Integrator
R69	820Ω			BTS-820Ω	Integrator
R70	8200Ω			BTS-8200	Integrator
R71	1 Meg.			BTS-1 Meg.	Vert. Osc. Grid
R72	1.5 Meg.			BTS-1.5 Meg.	Vert. Osc. Plate
R73	6.8 Meg.			BTS-6.8 Meg.	Voltage Divider
R74	100KΩ			BTS-100K	Voltage Divider
R75	56KΩ			BTS-56K	Filter
R76	560Ω			BTS-560	Vert. Output Cathode
R77	2.2 Meg.			BTS-2.2 Meg.	Vert. Output Grid
R78	3300Ω			BTS-3300	Vert. Peaking
R79	1000Ω			BTS-1000	Vert. Output Plate Decoupling
R80	100KΩ			BTS-100K	Horiz. Phase Det. Load
R81	100KΩ			BTS-100K	Horiz. Phase Det. Load
R82	4.7 Meg.			BTS-4.7 Meg.	Horiz. Phase Det. Load
R83	390Ω 20%			BTA-390	Feedback Network See Note 3
R84	470KΩ			BTS-470K	Horiz. AFC Filter Network
R85	5600Ω			BTS-5600	Horiz. Osc. Plate
R86	1800Ω			BTS-1800	Horiz. Osc. Cathode
R87	100KΩ			BTS-100K	Horiz. Discharge Grid
R88	270KΩ			BTS-270K	Horiz. Discharge Plate
R89	22KΩ			BTS-22K	Filter
R90	68Ω				Parasitic Supp.
R91	1 Meg.			BTS-1 Meg.	Horiz. Output Grid
R92	82Ω			BW-2-82	Horiz. Output Cathode, Wire Wound
R93	470Ω			BTA-4700	Horiz. Output Screen
R94	4700Ω			BTS-4700	Feedback Network See Note 4
R95	6000Ω			EP-6000	Damper Filter, Wire Wound
R96	3.3Ω				HV Rect. Filament, Wire Wound
R97	1 Meg.				HV Filter
R98	270Ω			BW-1-270	Focus Coil Shunt, Wire Wound
R99A	610Ω	20			Bias Network, Wire Wound
B	35Ω	1		BW-1-33	Bias Network, Wire Wound
C	100Ω	2		BW-2-100	Bias Network, Wire Wound
D	35Ω	1		BW-1-35	Voltage Divider, Wire Wound
R100A	550Ω	20		DG-500	Filter, Wire Wound
B	10KΩ	20		DG-10K	Bleeder, Wire Wound