

TELEVISION Service Manual

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GORDON OLIVER TELEVISION
T. V. RADIO SERVICE
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NORTH VANCOUVER, B.C.

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RCC
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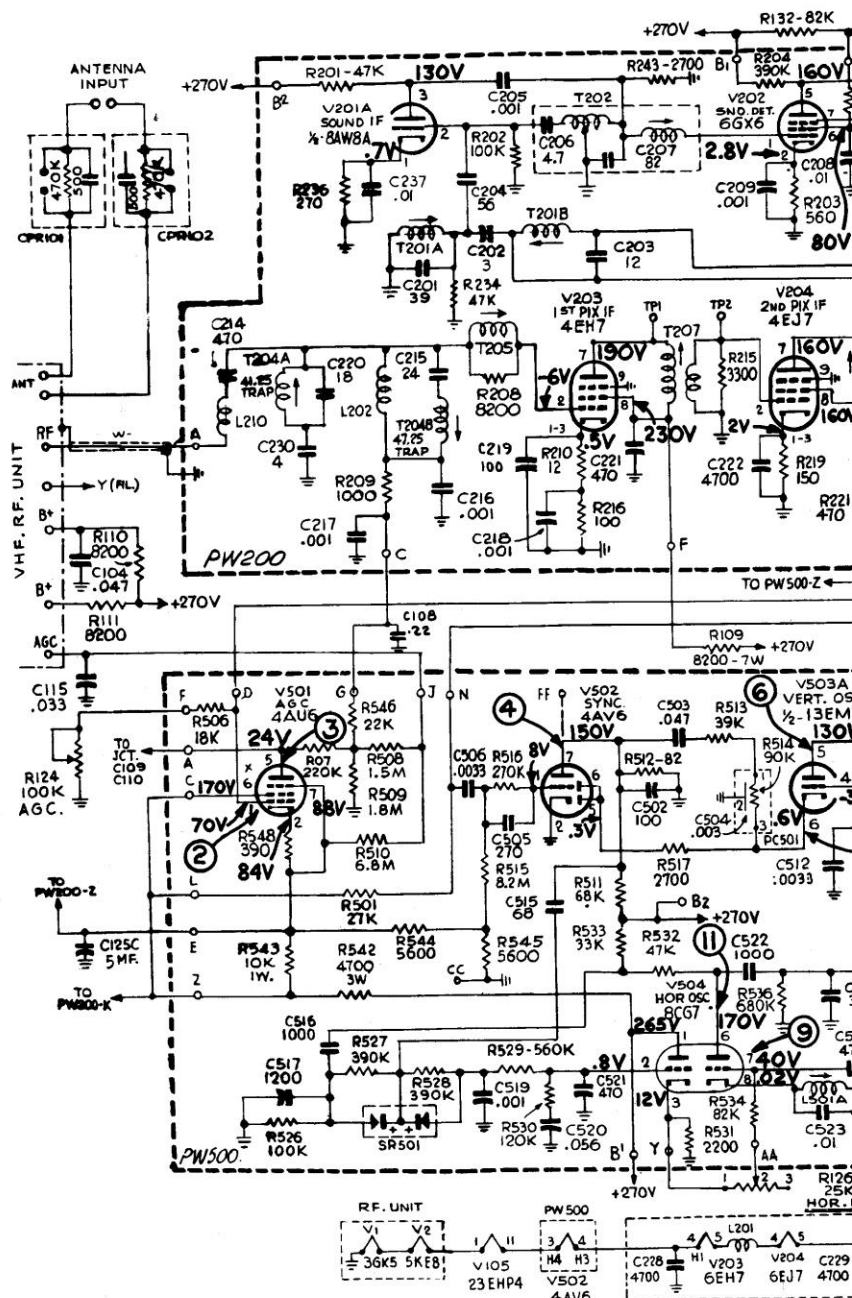
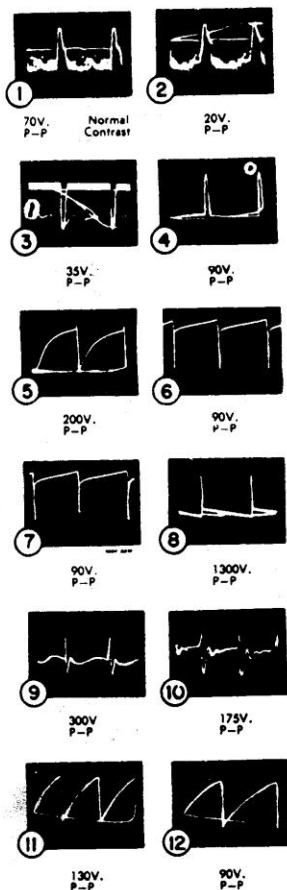
All schematics are shown in the latest condition at the time of printing.

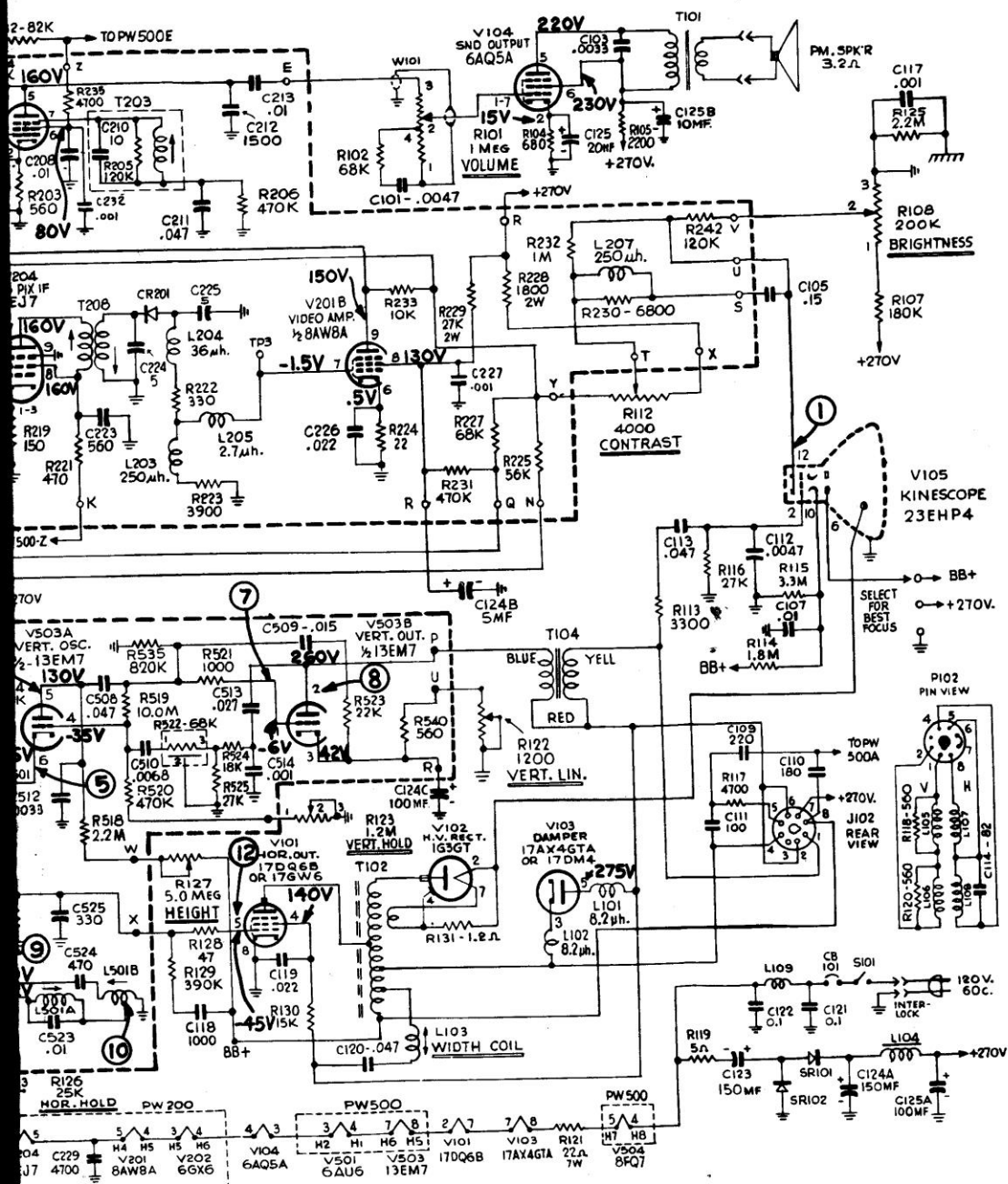
All resistance value in ohms. K = 1000.

All capacitance values less than 1 in MF and above 1 in MMF unless otherwise noted.

All voltages measured with "Volt-Ohmyst" and with no signal input. Voltages should hold within $\pm 20\%$ with 117 v. a-c supply.

*Measured with 1 megohm, $\frac{1}{2}$ watt resistor in series with meter probe. Balloons ① ② etc., shown on schematics indicate points of observation of the waveforms shown below the individual schematic.





PICTURE I-F ALIGNMENT
PICTURE I-F TRANSFORMER AND TRAP ADJUSTMENTS

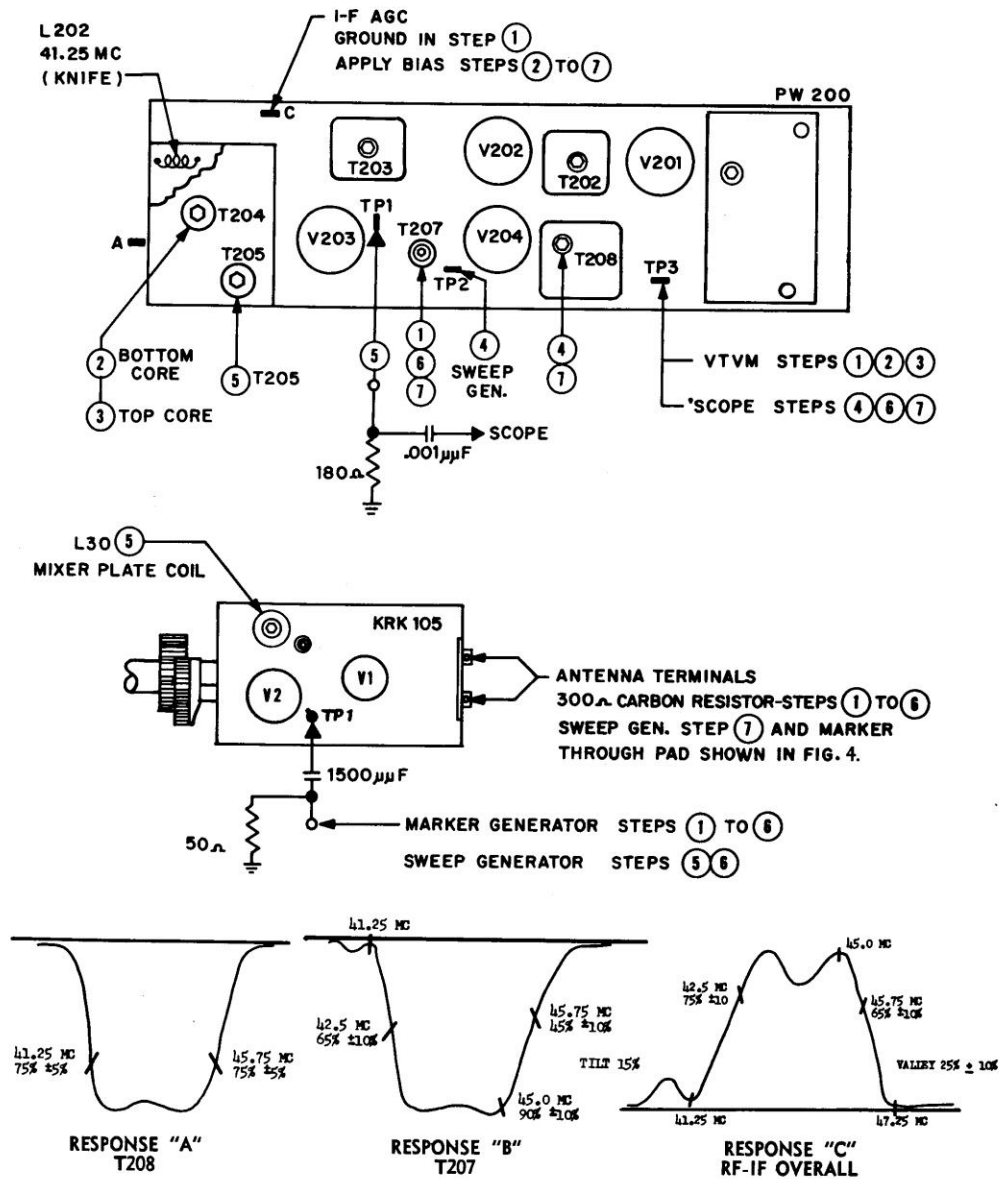


Figure 5—Picture I-F Alignment

PICTURE I-F ALIGNMENT

PICTURE I-F TRANSFORMER AND TRAP ADJUSTMENTS

TEST EQUIPMENT CONNECTIONS:

BIAS SUPPLYNONE IN STEP 1 (Ground I-F AGC term. "C" of PW200). Bias I-F AGC terminal "C" at —6 to —8 volts when adjusting traps in steps 2 and 3.

MARKER GENERATORConnect to Mixer Grid test point (TP1) of RF18E in series with mixer pad shown.

VTVMAttach through DC probe at test point TP3 (2nd Detector).

MISCELLANEOUSAttach a 300 Ω dummy load across the antenna terminals.
Refer to facing page for all adjustment locations and responses.

PEAK ALIGNMENT

	STEP	SWEEP GENERATOR	MARKER GENERATOR	ADJUST	REMARKS
1	PEAK 1st Pix IF Plate Trans. (T207)	NOT USED	44.25 mc.	T207	PEAK T207 and adjust generator output to maintain approx. 3 volts on VTVM when finally peaked.
2	Adjust 47.25 mc. Trap		47.25 mc.	T204B (Bottom Core)	Adjust for min. on VTVM. Readjust 47.25 mc. trap, if necessary, after step 5.
3	Adjust 41.25 mc. Trap		41.25 mc.	T204A (Top Core)	

PICTURE I-F SWEEP ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

BIAS SUPPLYAdjust to —8 volts. Same connection as above.

OSCILLOSCOPEAttach through direct probe to test point TP3. Calibrate to 5 volts peak to peak.

MARKER GENERATORMaintain connected to Mixer Grid test point TP1 of RF18E.

SWEEP GENERATORConnect to test point TP2 (pin 2 of 4EJ7). Use short leads.

	STEP	SWEEP GENERATOR	MARKER GENERATOR	ADJUST	REMARKS
4	Adjust 2nd Pix IF plate trans.	40-50 mc.	41.25 mc. 45.75 mc.	T208 (Top & Bottom Cores)	Adjust for max. gain and response curve "A". Reduce sweep gain to maintain 5 V. P. to P.
Move the OSCILLOSCOPE to the test point TP1 using the diode probe and 180 Ω detector. Calibrate the OSCILLOSCOPE for 0.5 volts Peak to Peak. Sweep Generator to Mixer Grid TP1. Lightly couple Marker to sweep cable. Channel selector to 4.					
5	Adjust tuner IF (L30) and 1st IF grid (T205)	40-50 mc.	42.5 mc. 45.75 mc.	L30 T205	Adjust for response "A". Use inner peak of L30 coil slug (bottom of winding).
Change OSCILLOSCOPE probe to DC probe and attach to test point TP3. Calibrate to 5 Volts Peak to Peak. Remove 180 Ω detector.					
6	Check IF Overall	40-50 mc.	42.5 mc. 45.0 mc. 45.75 mc.	T207	Retouch T207 slightly to maintain response "C".
Remove dummy antenna load and substitute the sweep attenuator pad (Fig. 4). Attach the sweep generator to the attenuator pad. The Marker Generator remains lightly coupled to the sweep generator input cable.					
7	Check RF Overall	40-50 mc.	42.5 mc. 45.0 mc. 45.75 mc.	T207 & T208 Top Core only	Make slight adjustments only. Observe response "A". Do not disturb T208 bottom core.

NOTE the position of the 41.25 mc. marker in response "C". If this marker is difficult to position within limits on the IF overall step 6, it may be necessary to knife the turns of coil L202 slightly. The acceptable position of the 42.5 mc. marker may be 75% $\pm$ 10% from the base of the overall response curve. No adjustment of L202 should be attempted before checking the condition of the 4EJ7, 1st I-F Amplifier tube.

RF18E TUNER R-F ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

BIAS.....Apply —3 volts to R-F AGC terminal.

OSCILLOSCOPE.....Connect to tuner I-F output at feed-thru C16. Use DC probe. Calibrate for 1 volt peak to peak.

SWEEP GENERATOR.....Connect to antenna terminals through Sweep/Marker pad

MARKER GENERATOR.....Couple R-F output cable loosely to sweep output cable to provide markers.

VTVM.....For injection voltage reading at test point TP1. Do not leave connected during alignment. Injection voltage should read —1.5 to —2.5 volts at no signal. Replace V2 if not within limits.

MISCELLANEOUS.....Set fine tuning so that hole in cam is aligned with Channel 13 slug access hole in front of tuner. See Step 3. The following procedure is illustrated on the facing page. Do not sacrifice gain to obtain unnecessarily wide bandwidth.

	STEP	SWEEP GENERATOR	MARKER GENERATOR	ADJUST	REMARKS
1	Adjust antenna coil L6 adjust mixer and coil L5. Detune L30 mixer I-F core to avoid interaction	Channel 13	211.25 mc. 213.75 mc.	Knife L5 & L6	L5 positions marker. L6 adjusts for maximum mid-channel gain.
	Bias tuner to cut-off; —15 to —25 volts at R-F AGC terminal. Maximum sweep output and "scope" vertical gain may be required to observe correct neutralization.				
2	Adjust neutralization	Channel 10	Not used this step	C20 "Gimmick"	Move copper leaf (C20) in relation to body of C9 for least mid-channel response.
3	Feed "sample" of R-F oscillator signal to "R-F IN" terminals of marker generator with tuner on Channel 13 (275 mc.). Tune L32. Channel 13 slug, for audible beat. Repeat steps in numerical order through Channel 2.				
	Reconnect sweep generator and marker generator as in Step 1 to adjust high band interstage coils. Set R-F AGC to —3 volts.				
4	Adjust interstage coils for the high band Channels 12 to 7.	Channel 12 to 7	Pix & sound carrier for channel involved.	L18 (Ch. 12) L19 (Ch. 11) L20 (Ch. 10) L21 (Ch. 9) L22 (Ch. 8) L23 (Ch. 7)	Adjust each interstage coil, highest channel first. The interstage coils affect principally the sound side of the response curve on high and low channels.
5	Adjust antenna and interstage coils low band	Channel 6 to 2	Pix & sound carrier for channel involved.	L13-L17 antenna coils and L24-L28 interstage coils.	Adjust antenna and interstage coils. The antenna coils principally influence the pix side of the curve. Large adjustments (knifing) of interstage coils will produce excessive bandwidth.

L-5	62-16010	Coil-RF Choke Coil
L-30	62-112909	Coil-Mixer Plate
L-31	62-14571	Coil-Fine Tuning Assembly
L-44	62-15012	Coil-Filament Coil
L-45	62-16011	Coil-RF Plate Coil
S-1	62-16032	Assembly-Coil and Stator Assembly Antenna

S-2	62-16033	Assembly-Coil and Stator Assembly Interstage
S-3	62-16034	Assembly-Coil and Stator Assembly Oscillator
T-1	62-113196	Transformer-Antenna Matching
T-2	62-113195	Transformer-Coupling

VHF TUNER R-F ALIGNMENT
RF18E VHF TUNER

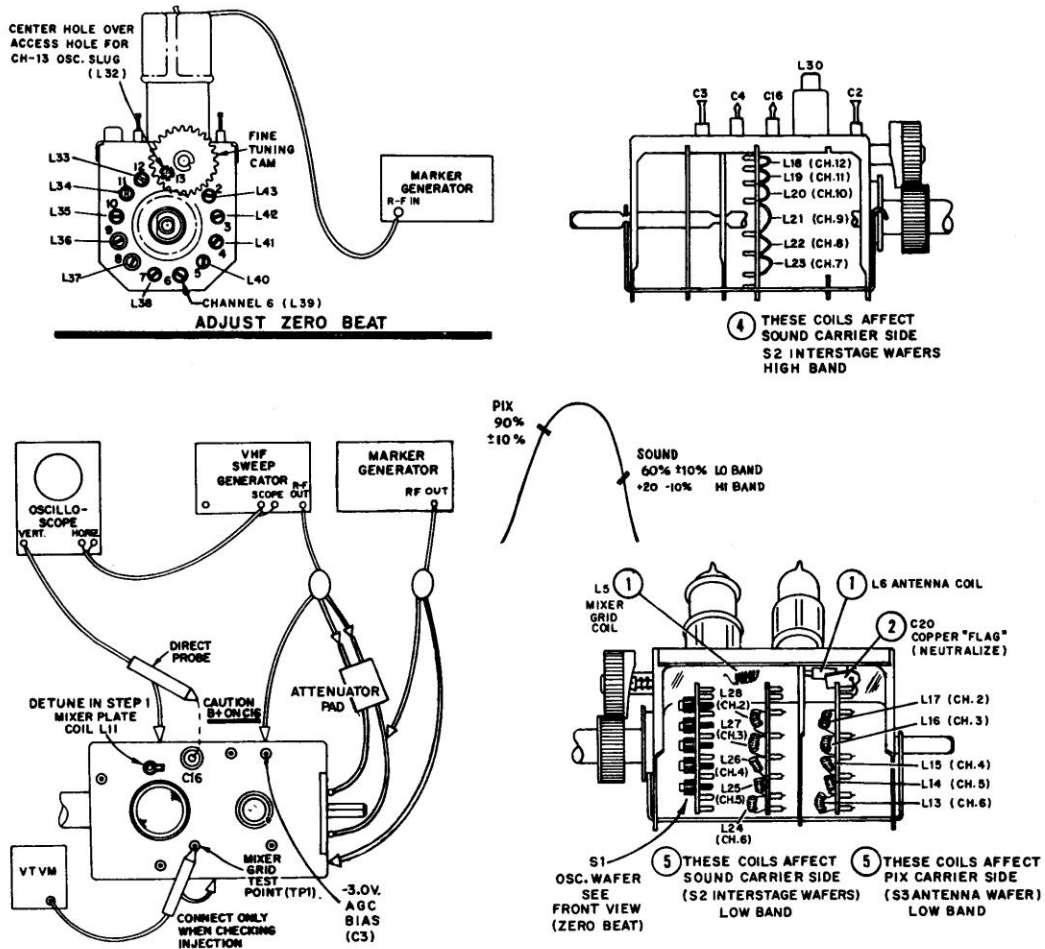


Figure 6—VHF Tuner R-F Alignment RF18E Chassis

RCA-VICTOR CT2308A, B, C

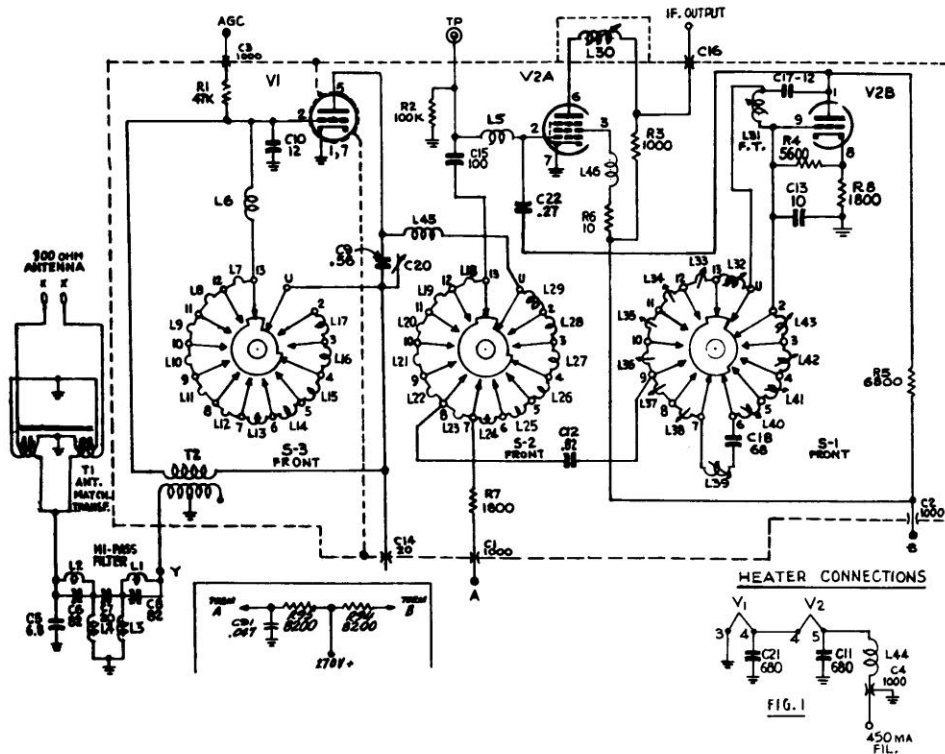


Figure 14—RF18E Tuner Schematic Diagram

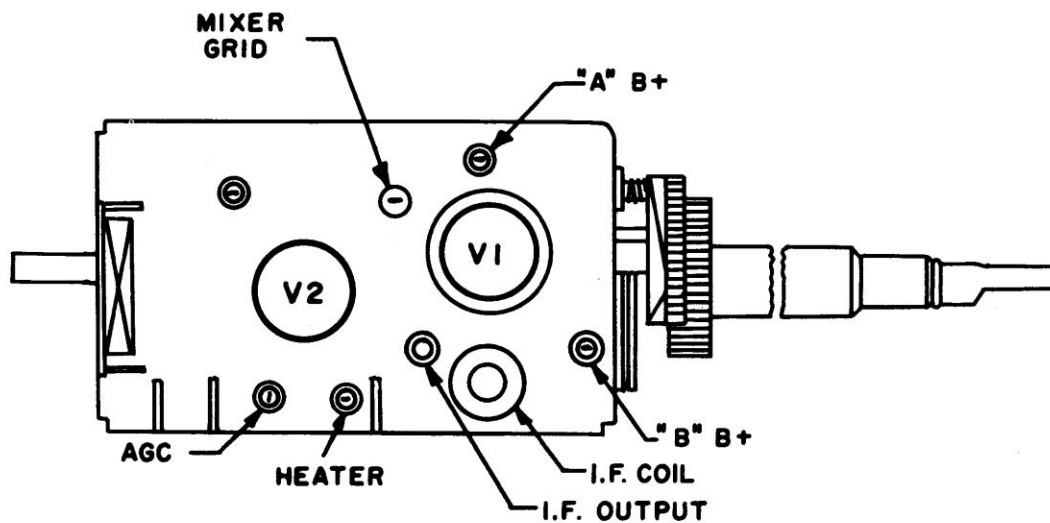


Figure 15—Tuner Layout Showing Components and Test Points

SOUND I-F ALIGNMENT

SOUND I-F, SOUND DETECTOR AND 4.5 MC. TRAP ALIGNMENT

TEST EQUIPMENT CONNECTIONS:

BIAS SUPPLY Apply —10 volts to the I-F AGC bus at terminal "C" on PW200.
OSCILLOSCOPE Connect to kinescope cathode lead through diode detector.
SIGNAL GENERATOR..... Connect to test point TP3 on PW200.
VACUUM TUBE VOLTMETER... Connect to output of diode detector shown. Set meter for negative voltage readings.
MISCELLANEOUS..... Connect test diode detector to pin 7 of V202. See below for adjustment locations.

	STEP	SIGNAL GENERATOR	ADJUST	REMARKS
8	Adjust detector grid transformer	4.5 mc.	T202	Adjust for maximum negative DC on meter. Set generator for 1.0 to 1.5 volts when peaked. T201A top core and T202 core should penetrate the coil from top of can when finally peaked.
9	Adjust sound take-off transformer	4.5 mc.	T201A (top)	
10	Disconnect the diode test detector. Turn off signal generator and tune in strongest signal in area, adjusting volume control for normal volume (approx. ¼ turn from C.C.W.). Turn core of T203 flush with top of coil form. Remove bias.			
11	Adjust sound detector transformer	————	T203	Turn core clockwise to 2nd peak adjusting for maximum volume.
12	Adjust 4.5 mc. trap	4.5 mc., 400 cycle, AM mod.	T201B (bottom)	Adjust for minimum 4.5 mc. indication on oscilloscope. The core should penetrate the coil from the bottom of the can when finally adjusted.

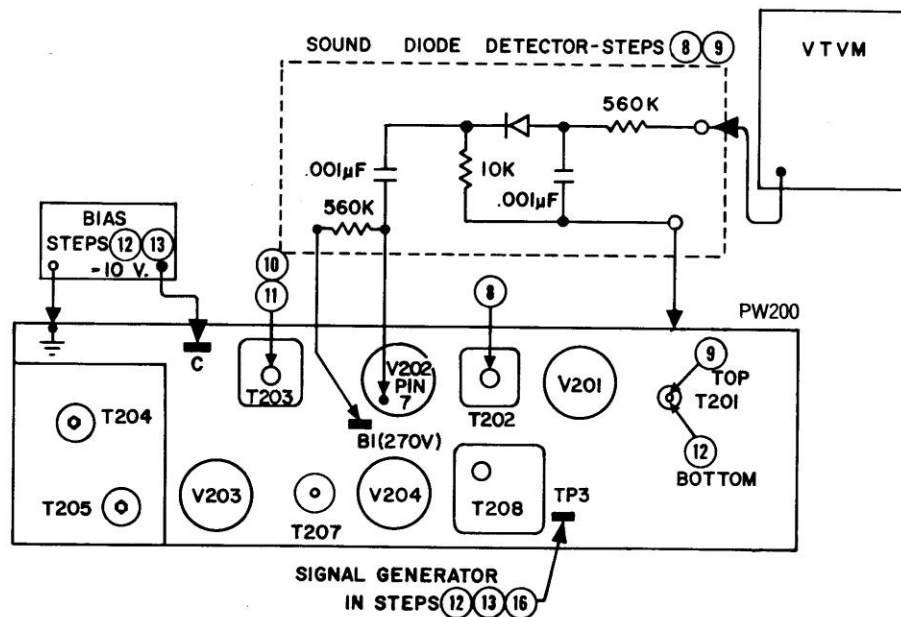


Figure 7—Sound I-F Alignment

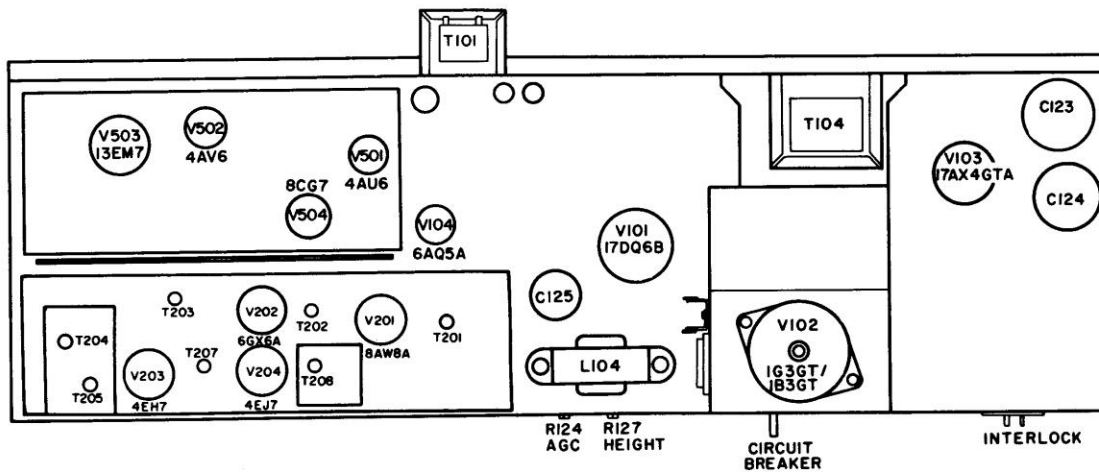


Figure 8 Chassis Layout — Top View — Showing Components

T-101	62-15655	Transformer-Audio Output
T-102	62-14052	Transformer-High Voltage
T-104	62-14101	Transformer-Vertical Output
T-201	62-14073	Transformer-4.5 mc and sound take off
T-202	62-14070	Transformer-Sound Detector Grid

T-203	62-14072	Transformer-Quad Grid
T-204	62-15863	Transformer-Trap
T-205	62-15943	Transformer-1st IF Grid
T-207	62-14067	Transformer-1st IF Plate
T-208	62-15942	Transformer-2nd IF Plate

L-101,	62-12931	Coil-RF Choke Coil 8.2 mh.
L-102	62-14413	Coil-Width Coil
L-103	62-14611	Coil-Reactor Choke
L-104		
L-202	62-15947	Coil-AGC Coil
L-203,		
L-207	62-14071	Coil-Peaking Coil 250 mh.
L-204	62-14062	Coil-Peaking Coil 36 mh.
L-205	62-107463	Coil-Peaking Coil 2.7 mh.
L-210	62-15944	Coil-Link Coil
L-501	62-14061	Coil-Horizontal Freq.

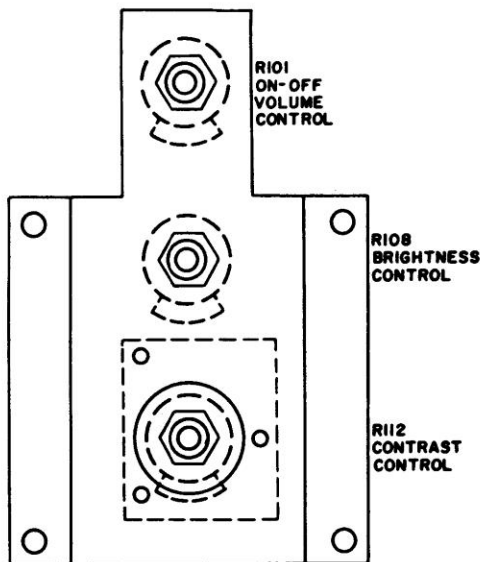


Figure 9—Control Plate

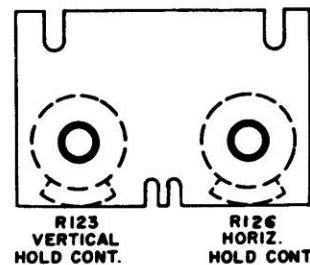


Figure 10—Rear Control Plate

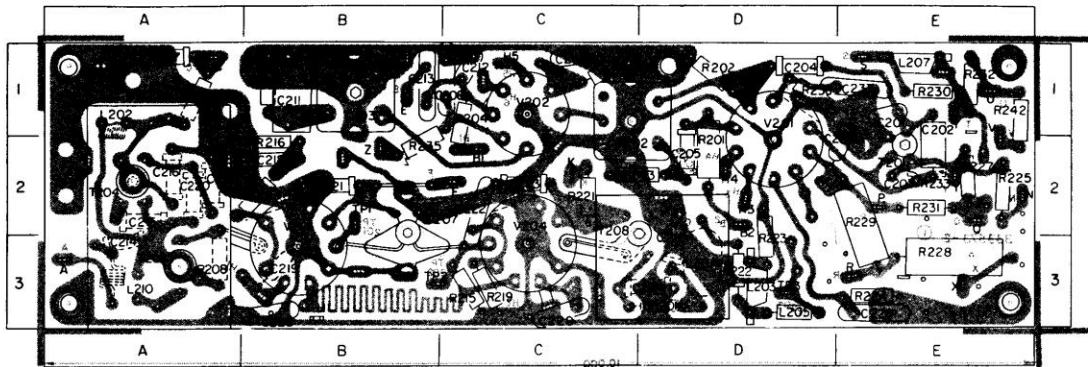


Figure 11 PW200 Sealed Circuit I-F and Video Assembly Composite Diagram

PW 200 COMPONENT LOCATION GUIDE

C201 E1	C214 A3	C224 D3	L202 A1	R204 C1	R223 D3	R235 B2	T205 A3
C202 E1	C215 A2	C225 D3	L203 D3	R206 B1	R224 E3	R236 D1	T207 B3
C203 E2	C216 A2	C226 E3	L204 D3	R208 A3	R225 E2	R242 E1	T208 C3
C204 D1	C217 A1	C227 D2	L205 D3	R209 A1	R227 E2	R243 D2	
C205 D2	C218 B2	C228 B3	L207 E1	R210 A2	R228 E3		
C206 C1	C219 B3	C229 C3	L210 A3	R215 C3	R229 E2		
C209 C1	C220 A2	C237 E1		R216 B2	R230 E1	T201 E2	
C211 B1	C221 B2		R201 D2	R219 C3	R231 E2	T202 C2	
C212 C1	C222 C2	CR201 D3	R202 D1	R221 C2	R232 E1	T203 B1	
C213 B1	C223 C2		R203 C1	R222 D3	R233 E2	T204 A2	

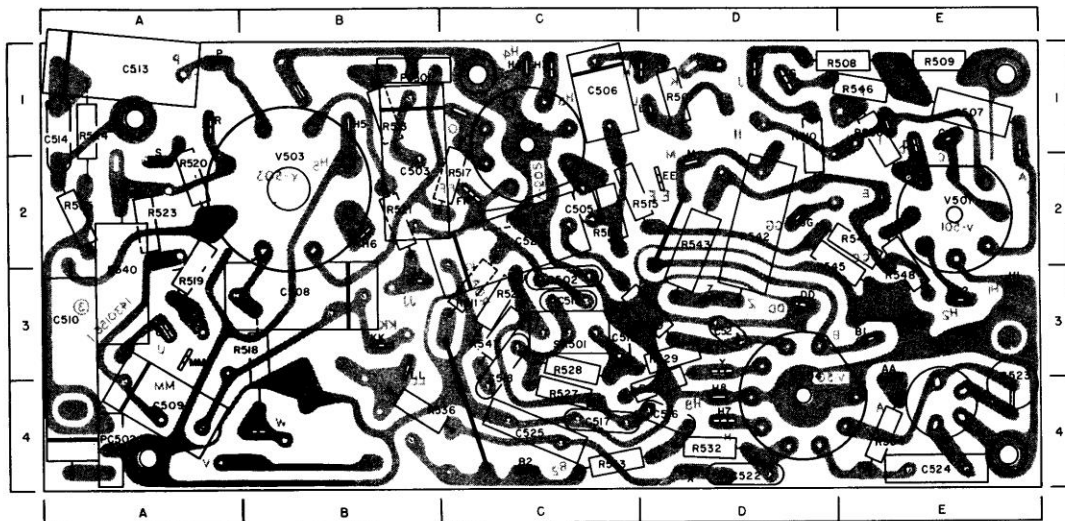


Figure 12 PW500 Sealed Circuit Deflection Assembly Composite Diagram

PW 500 COMPONENT LOCATION GUIDE

C-502 C3	C-514 A1	C-534 E4	R-506 E1	R-516 C2	R-526 C3	*R-535 B3	SR-501 C3
C-503 B2	C-515 C3	C-535 C4	R-507 E1	R-517 C2	R-527 C4	R-536 B4	
C-505 C2	C-516 D4		R-508 E1	R-518 B3	R-528 C3	R-540 A3	
C-506 C1	C-517 C2	L-501 E4	R-509 E1	R-519 A3	R-529 D3	R-542 D2	
C-508 B3	C-518 C2	PC-501 B1	R-510 D1	R-520 A2	R-530 D3	R-543 D2	
C-509 A4	C-520 C2	PC-502 A4	R-511 C3	R-521 B2	R-531 D4	R-544 E2	
C-510 A3	C-521 D3		R-512 C2	R-523 A2	R-532 D4	R-545 D3	
C-512 B3	C-522 D4	R-501 D1	R-513 B1	R-524 A1	R-533 C4	R-546 E1	
C-513 A1	C-523 B4		R-515 C2	R-525 A2	R-534 E4	R-548 E3	

* under board