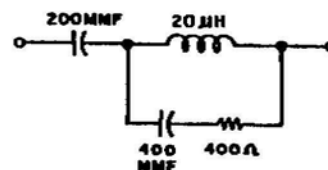




# ALIGNMENT PROCEDURE

- Use an amplitude modulated generator covering 455 KC to 30 MC.
- Use a modulated output for every step except Step 2.
- Connect output meter across speaker voice coil.
- Use a non-metallic alignment tool.
- Standard RETMA dummy antenna as shown in Fig. 3.
- Set the AM/CW switch at AM, (except for BFO adjustment), SPEAKER/PHONES switch at SPEAKER, VOLUME control at maximum. RECEIVE/STANDBY switch at RECEIVE and the BAND SPREAD control at 0.
- See Figs. 4 and 5 for location of alignment adjustments.

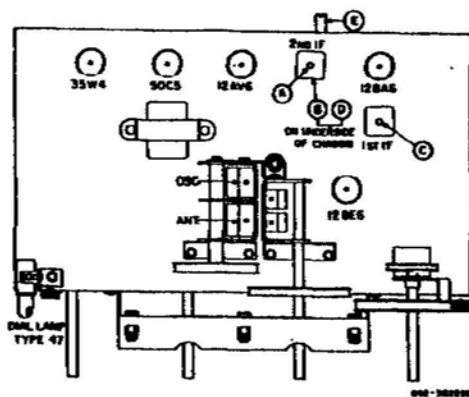


092-10549

Figure 3. RETMA Dummy Antenna

Step	Signal Generator Connections	Generator Frequency	Band Selector Setting	Receiver Dial Setting	Adjust
<b>IF ALIGNMENT</b>					
*1	High side thru a .01 mfd. capacitor to stator plates of front section of TUNING gang. Low side to chassis.	455 KC (30% Mod.)	1	1.0 MC	A, B, C and D for maximum output. Keep reducing gen. output so that the reading on the output meter does not exceed 50 milliwatts.
<b>BFO ADJUSTMENT</b>					
2	Same as Step 1. Set generator for 50 MW reference output, turn off generator mod., and place receiver BFO on.	455 KC (No Mod.)	1	1.0 MC	AM/CW control until a CW note is heard as a clear audio tone. Advance control until an output level of 50 MW is obtained.
<b>RF ALIGNMENT</b>					
2	High side thru RETMA antenna to terminal A1 on back of chassis. Low side to chassis. Connect jumper between A2 and G.	30 MC	4	30 MC	F and G for maximum output as in Step 1.
4	Same as Step 3.	14 MC	3	14 MC	H and J for maximum output as in Step 1.
5	Same as Step 3.	5 MC	2	5 MC	K and L for maximum output as in Step 1.
6	Same as Step 3.	1500 KC	1	1.5 MC	M and N for maximum output as in Step 1.
		800 KC	1	.8 MC	P for maximum output as in Step 1.

\* Before beginning IF alignment procedure, rotate AM/CW ratio control to its full counterclockwise position.



4 Top View Chassis

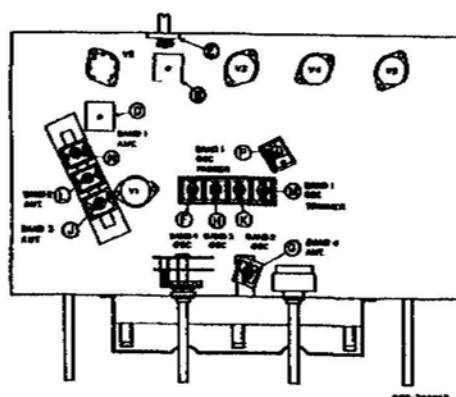


Figure 5. Bottom View Chassis

# SERVICE PARTS LIST

Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number
<b>CAPACITORS</b>			<b>*RESISTORS (CONTINUED)</b>			<b>TUBES AND DIAL LAMP (CONTINUED)</b>		
C1, 2, 3	Trimmer, 2-25 mmfd.; 3 Section, Compression Mica	044-200129	R9	2 megohm, VOLUME Control; Inc. On-Off Switch S-2	025-201479	V3	12AV6; Detector and Audio	090-901197
C4	20-120 mmfd.; Ceramic Trimmer	044-100424	R10	10 megohm	451-252106	V4	50C5; Audio Output	090-900541
C5	2700 mmfd., 500V., 5%; Mica	470-412272	R11	220K ohm	451-252224	V6	35W4, Rectifier	990-900384
C6A, C	Variable Capacitor, BAND-SPREAD	048-300410	R13	100 ohm	451-252101	LM1	Lamp, Dial Type #47	039-100004
C6B, D	Variable Capacitor, MAIN TUNING	040-300372	R14, 15, 17	15 ohm	451-252150	<b>MISCELLANEOUS</b>		
C7, 12	220 mmfd., 500V., 10%; Mica	470-213221	R16, 18	22 ohm	451-252220	Back, Cabinet		832-400754
C8, 13, 27	.022 mfd., 600V; Tubular Paper	499-034223	R19	380 ohm, 1 watt	451-352121	Bracket, Mtr., Pulley, and Dial Lamp		061-203191
C9	.047 mfd., 600V; Tubular Paper	499-034473	R20	1K ohm	451-252102	Bracket, Pulley Mtr.		067-205190
C10, 28, 33	.01 mfd., 450V; Ceramic Disc	047-100224	R23, 25	470 ohm	451-252471	Bracket, Switch Mtr.		067-385193
C11A, B, C	Printed Circuit Plate, .005 mfd., 220 mmfd., .002 mfd., 500 WVDC	047-100581	R26	1500 ohm, AM-CW RATIO Control	025-201751	Bushing, Tuning, and Band Spread Shaft		077-201684
C13	.01 mfd., 600V; Tubular Paper	499-034103	R27	680K ohm	451-252084	Cabinet, S-38E		068-481754
C14A, B	20 mfd. @ 25V; 00-40-40	046-300001	*All Resistors 10%, 1/2 watt, carbon type, unless otherwise specified.					
C, D	mfd. @ 150V; Electrolytic		<b>COILS AND TRANSFORMERS</b>					
C16	83 mmfd., 10%, N750; Ceramic Tubular	491-006820-95	**L1, C1, 2	Coil and Trimmer Assembly, Antenna; Bands 1, 2, and 3	051-302132	Cabinet, S-38EB		068-102175
C17	425-625 mmfd.; Mica Trimmer	044-100349	L2	Coil, Antenna; Band 4	031-201015	Cabinet, S-38EM		068-102176
C18	4700 mmfd., 500V., 5%; Mica	470-412472	**L3, C20	Coil and Trimmer Assembly, Oscillator; All Bands	051-302133	Clip, IF Mtr.		076-100385
C19	3000 mmfd., 500V., 5%; Mica	470-412303	L4	Choke; RF 540 oh	023-100107	Clip, Dial Lamp Mtr.		076-100660
C20, 21, 22, 23	Trimmer, 6.5-70 mmfd.; 3.5-30 mmfd.; 2.5-16 mmfd.; 2.5-30 mmfd.; 4 Section, Compression Mica	044-200158	T1	Transformer, 1st IF	050-300531	Cover, Cabinet Bottom		032-300501
C24	.047 mfd., 400V., 20%; Tubular Paper	499-024473	T2	Transformer, 2nd IF	050-300532	Dial Cord (Specify Length)		038-100026
C25, 26	.005 mfd., 450V; Ceramic Disc	047-100188	T3	Transformer, Audio Output	055-300247	Foot, Mtr.		016-200908
C31	.005 mfd., 500V., 20%; Ceramic Disc	047-100442	**The Trimmer Capacitor Assemblies are also available separately. See "CAPACITORS".					
C32	.01 mfd., 400V; Tubular Paper	499-034153	<b>SWITCHES</b>					
<b>*RESISTORS</b>			S1A, B	BAND SELECTOR	058-300881	PL1	Line Cord and Plug	067-100078
R1, 24	10K ohm	451-252102	C, D				Line Cord Lock (Male Section)	076-100397-01
R2, 5	2.2 megohm	451-252225	R2, 4, 6	SPEAKER PHONE, AM-CW, and RECEIVE-STANDBY On-Off; Part of R9	068-100477		Line Cord Lock (Female Section)	076-100397-02
R3	22K ohm	451-252223	S3				Pointer, Band-Spread (S-38E)	062-200330
R4	270 ohm	451-252271	<b>SOCKETS AND CONNECTORS</b>					
R6	330 ohm	451-252331	T21	Terminal Strip, Antenna	068-100071		Pointer, Band-Spread (S-38EB, EM)	062-200388
R7	47K ohm	451-252473	T22	Terminal Strip, Phone	068-100071		Pointer, Main Tuning (S-38EB, EM)	062-200385
R8, 12, 21, 22	470K ohm	451-252474		Socket, Dial Lamp (Inc. Leads)	068-100122		Pulley, 1.125" O. D.	038-200256
				Socket, 7 Pin Miniature	006-100306		Shield, Tube	068-100232
			<b>TUBES AND DIAL LAMP</b>					
			V1	12BE6; Converter	068-000040	LS1	Shield, Dial Lamp	068-151249
			V2	12BA6; IF Amplifier and BFO	050-900039		Speaker, 3" PM; 3.2 ohm voice coil	063-300030

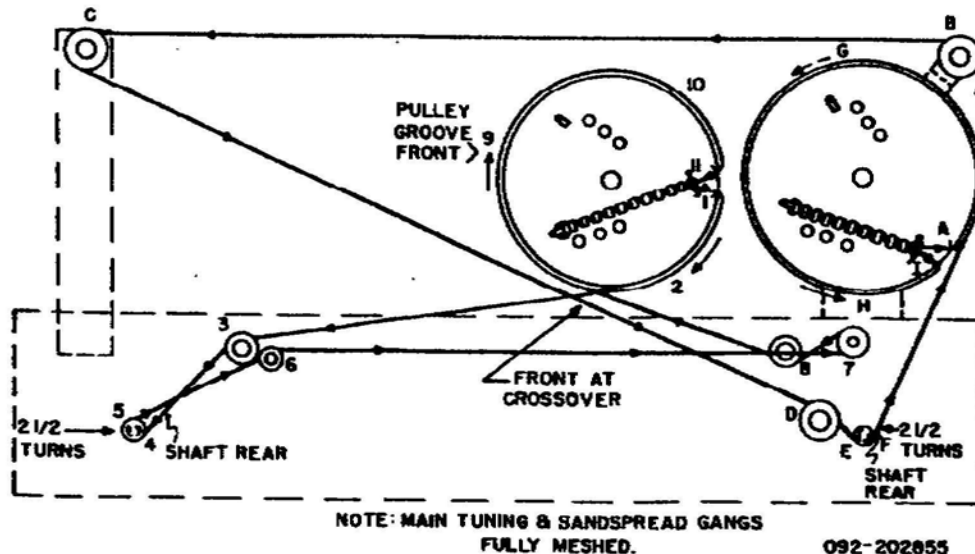
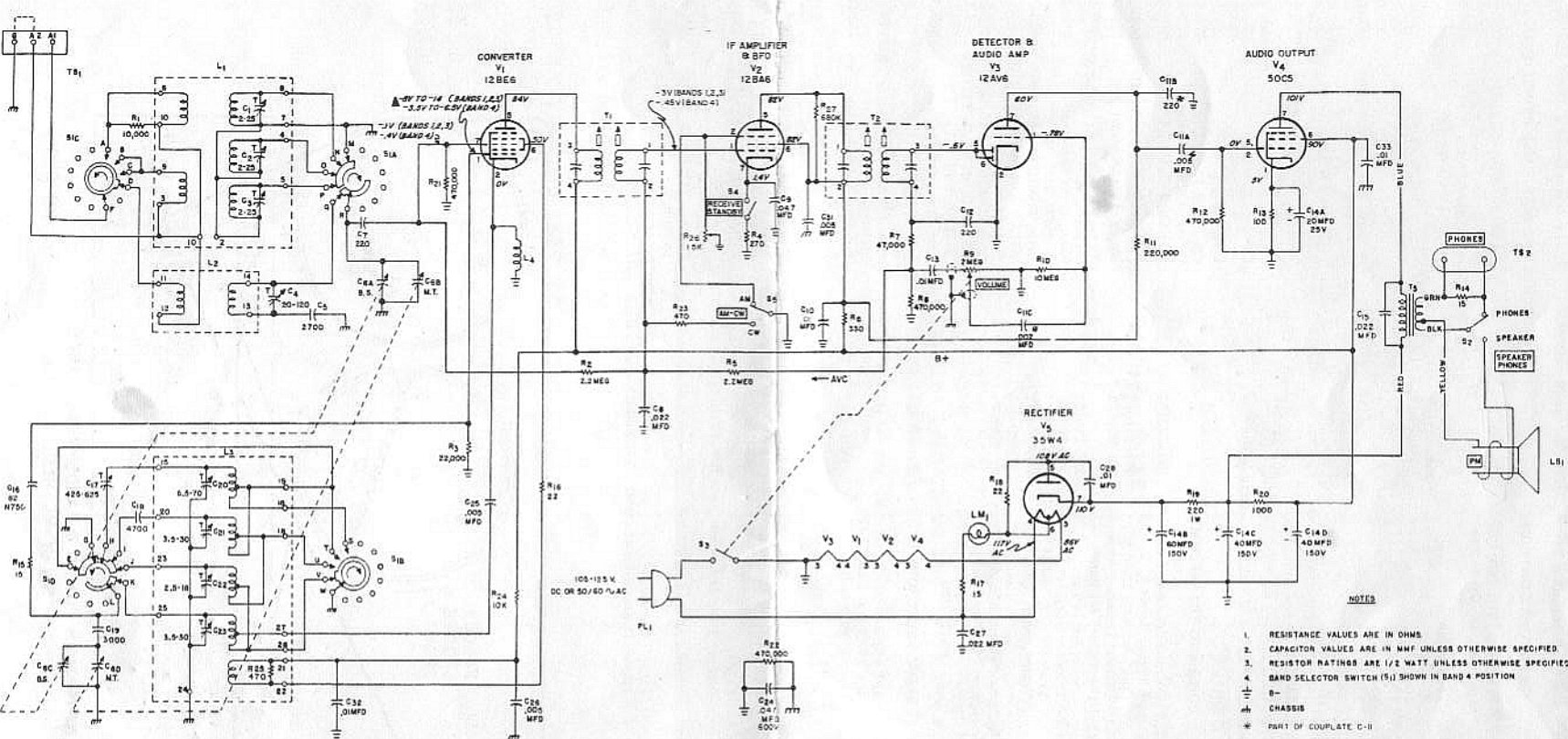


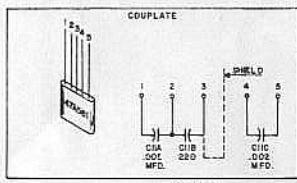
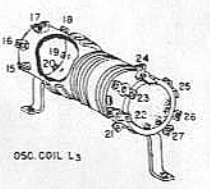
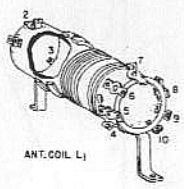
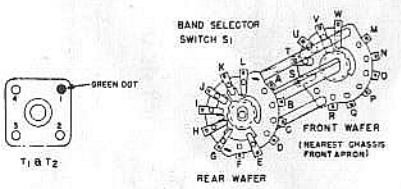
Figure 7. Main Tuning and Bandspread Gang Pointer Drive Stringing Diagrams





**NOTES**

1. RESISTANCE VALUES ARE IN OHMS
2. CAPACITOR VALUES ARE IN MMF UNLESS OTHERWISE SPECIFIED
3. RESISTOR RATINGS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED
4. BAND SELECTOR SWITCH (S1) SHOWN IN BAND 4 POSITION
5. CHASSIS
6. DC OR POSITIVE UNLESS OTHERWISE SPECIFIED
7. PART OF COUPLATE C-II



**NOTE:** VALUES & TOLERANCES SHOWN ARE NOMINAL AND VARIATIONS MAY BE FOUND. IT IS RECOMMENDED THAT THE VALUES OF ANY REPLACEMENT CORRESPOND TO THE NOMINAL VALUE OF THE PART BEING REPLACED.

- VOLTAGES**
1. ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS AND B- (PIN 3 OF 6AV6.) WITH ANTENNA TERMINALS SHORTED, AM/CW SWITCH AT AM, AND RECEIVE / STANDBY SWITCH AT RECEIVE.
  2. LINE VOLTAGE - 117 VOLTS AC.
  3. ALL VOLTAGES WERE MEASURED WITH A VACUUM TUBE VOLTMETER (VTVM) AND ARE DC AND POSITIVE UNLESS OTHERWISE SPECIFIED.
- ▲ VARIES WITH TUNING GANG SETTING.