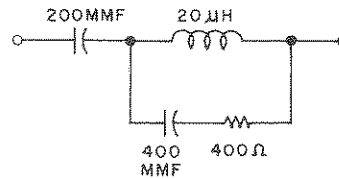


ALIGNMENT PROCEDURE

- 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.



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Figure 3. RETMA Dummy Antenna

Step	Signal Generator Connections	Generator Frequency	Band Selector Setting	Receiver Dial Setting	Adjust
IF ALIGNMENT					
*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.
BFO ADJUSTMENT					
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.
RF ALIGNMENT					
3	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.
		600 KC	1	.6 MC	P for maximum output as in Step 1.

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

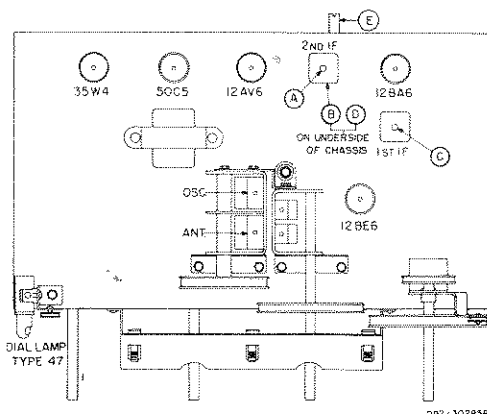


Figure 4. Top View Chassis

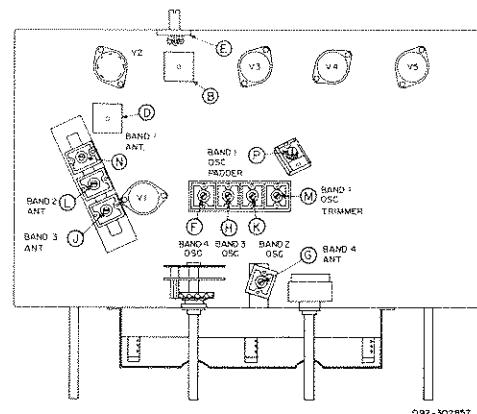
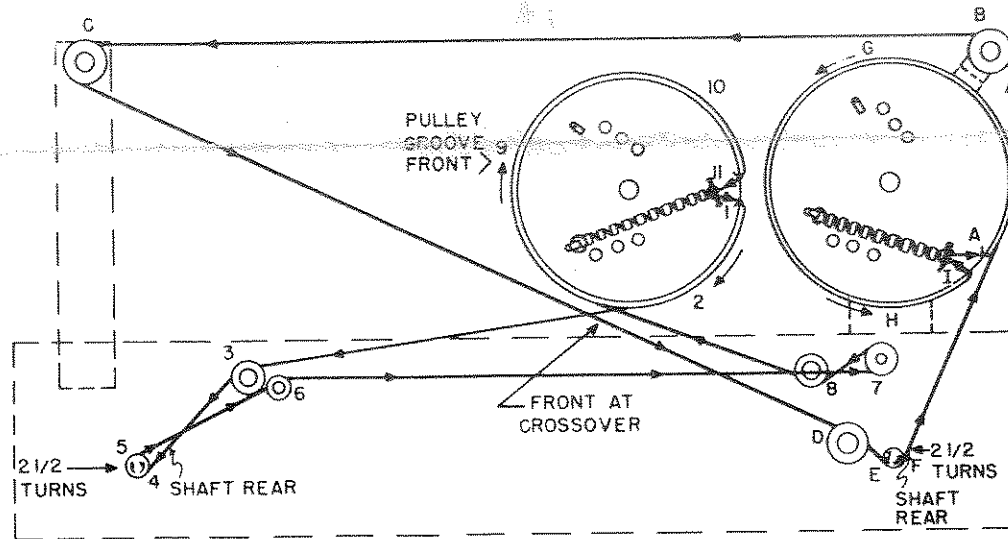


Figure 5. Bottom View Chassis

SERVICE PARTS LIST

Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number
CAPACITORS			*RESISTORS (CONTINUED)			TUBES AND DIAL LAMP (CONTINUED)		
C1, 2, 3	Trimmer, 2-25 mmfd.; 3 Section, Compression Mica	044-200129	R9	2 megohm, VOLUME Control; Inc. On-Off Switch: S-3	025-201479	V3	12AV6; Detector and Audio	090-901187
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	V5	35W4, Rectifier	090-900394
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	048-300372	R14, 15, 17	15 ohm	451-252150	MISCELLANEOUS		
C7, 12	220 mmfd., 500V., 10%; Mica	470-213221	R16, 18	22 ohm	451-252220	Back, Cabinet	032-400754	
C8, 15, 27	.022 mfd., 500V; Tubular Paper	499-034223	R19	220 ohm, 1 watt	451-252221	Bracket, Idler, Pulley, and Dial Lamp	087-205191	
C9	.047 mfd., 600V; Tubular Paper	499-034473	R20	1K ohm	451-252102	Bracket, Pulley Mtg.	067-205190	
C10, 28, 33	.01 mfd., 450V; Ceramic Disc	047-100224	R23, 25	470 ohm	451-252471	Bracket, Switch Mtg.	067-303192	
C11A, B, C	Printed Circuit Plate, .005 mfd., 220 mmfd., .002 mfd., 500 WYDC	047-100551	R25	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	885K ohm	451-252684	Cabinet, S-38E	066-401754	
C14A, B	20 mfd. @ 25V; 60-40-40	045-300091	COILS AND TRANSFORMERS			Cabinet, S-38EB	066-102175	
C, D	mfd. @ 150V; Electrolytic		**L1, C1, 2	Coil and Trimmer Assembly, Antenna; Bands 1, 2, and 3	051-302132	Cabinet, S-38EM	066-102176	
C16	32 mmfd., 10% NT50; Ceramic Tubular	499-034220	L2	Coil, Antenna; Band 4	051-201015	Clip, IF Mtg.	076-100385	
C17	425-625 mmfd.; Mica Trimmer	044-100349	21, 22, 23	Oscillator; All Bands	051-302132	Clip, Dial Lamp Mtg.	076-100669	
C18	4700 mmfd., 500V., 5%; Mica	470-412472	L4	Choke; RF 540 oh	053-100107	Cover, Cabinet Bottom	032-300501	
C19	3000 mmfd., 500V., 5%; Mica	470-412302	T1	Transformer, 1st IF	030-300531	Dial Cord (Specify Length)	039-100026	
C20, 21, 22, 23	Trimmer, 6.5-70 mmfd.; 3.5-30 mmfd.; 2.5-18 mmfd.; 3.5-30 mmfd.; 4 Section, Compression Mica	044-200159	T2	Transformer, 2nd IF	050-300532	Foot, Mtg.	016-200983	
C24	.047 mfd., 400V., 20%; Tubular Paper	499-024473	T3	Transformer, Audio Output	055-300347	Gasket, Rubber	016-101245	
C25, 26	.005 mfd., 450V; Ceramic Disc	047-100168	SWITCHES			Glass; Dist Window	022-200572	
C31	.005 mfd., 500V., 20%; Ceramic Disc	047-100442	S1A, B	BAND SELECTOR	060-300861	Knob, Band Selector (S-38E)	015-201259	
C32	.01 mfd., 400V; Tubular Paper	499-024103	C, D			Knob, Band Selector (S-38EB, EM)	015-201280	
*RESISTORS			S2, 4, 5	SPEAKER-PHONE, AM-CW, and RECEIVE-STANDBY On-Off; Part of R9	060-100477	Knob, BANDSPREAD, OFF-VOLUME or MAINT TUNING (S-38E)	015-301258	
R1, 24	10K ohm	451-252103	S3			Knob, BANDSPREAD, OFF-VOLUME, or MAIN TUNING (S-38EB, EM)	015-301281	
R2, 5	2.2 megohm	451-252225	SOCKETS AND CONNECTORS			Line Cord and Plug	087-100078	
R3	22K ohm	451-252223	TS1	Terminal Strip, Antenna	088-100671	Line Cord Lock (Male Section)	076-100397-01	
R4	270 ohm	451-252271	TS2	Twin Jack Strip, Phones	088-100071	Line Cord Lock (Female Section)	076-100397-02	
R6	330 ohm	451-252331		Socket, Dial Lamp (Inc. Leads)	086-100122	Pointer, Band-Spread (S-38E)	082-200350	
R7	47K ohm	451-252473		Socket, 7 Pin Miniature	006-100308	Pointer, Band-Spread (S-38EB, EM)	082-200386	
H8, 12, 21, 22	470K ohm	451-252474	TUBES AND DIAL LAMP			Pointer, Main Tuning (S-38EB, EM)	082-200395	
			V1	12BE6; Converter	090-900040	Pointer, Main Tuning (S-38E)	082-200349	
			V2	12BA6; IF Amplifier and BFO	090-900039	Pulley, 3.125" O. D.	028-200256	



NOTE: MAIN TUNING & BANDSPREAD GANGS FULLY MESHED.

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