

SERVICE INSTRUCTIONS

Communication Receiver Model S38D-DM-DB

Mark 1A, Mark 1B and Mark 2

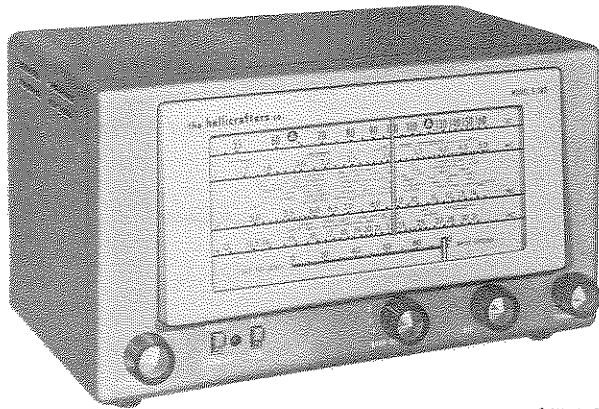


Fig. 1. Hallicrafters Model S-38D

TECHNICAL SPECIFICATIONS

TUBES Five including rectifier
 SPEAKER 5-inch PM; 3.2-ohm voice coil
 HEADPHONE OUTPUT 15 ohms

ANTENNA INPUT For single wire or 52-600 ohm
 balanced or unbalanced line

POWER SOURCE 105-125 volts DC or 50/60 cycles AC

POWER CONSUMPTION 30 watts

RECEPTION AM and CW

INTERMEDIATE FREQUENCY 455 KC

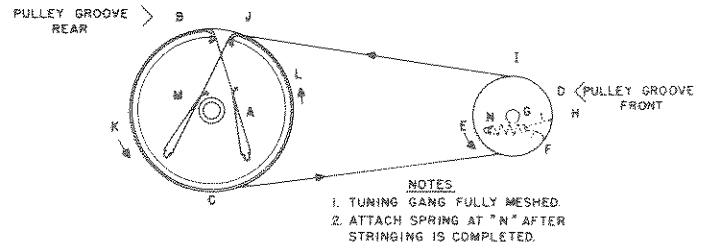
WEIGHT Net-11 lb., Shipping-13 lb.

DIMENSIONS 13" x 7 1/2" x 8 7/8" deep

TUBE AND DIAL LAMP REPLACEMENT

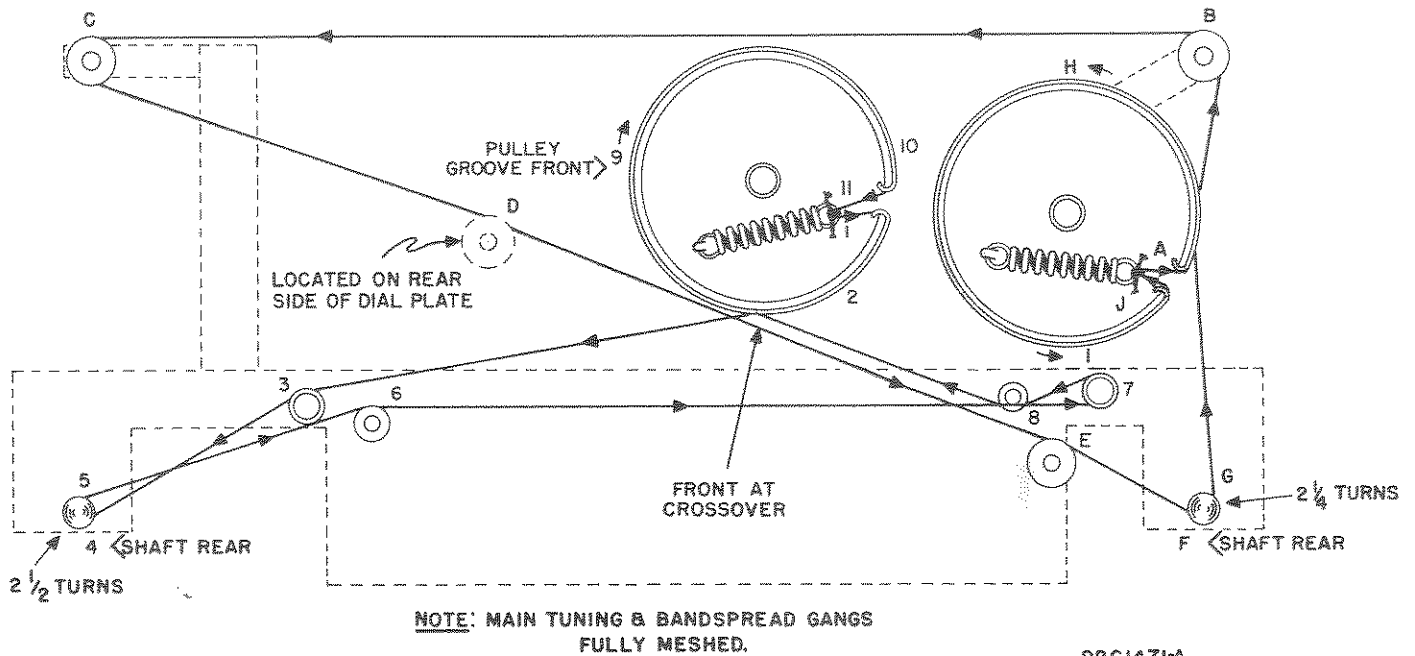
The dial lamp and tubes are accessible for replacement by removing the cabinet back. For types used, refer to Page 4.

CAUTION: Before attempting to make any replacement, rotate the Bandspread control fully clockwise and the Tuning control fully counterclockwise to prevent damage to the tuning gang.



92C1472-B

Fig. 2. Main Tuning Gang Drive Stringing Diagram



92C1471-A

Fig. 3. Main Tuning Pointer Drive and Band Spread Gang and Pointer Drive Stringing Diagrams

ALIGNMENT

- 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.
- 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. 5 and 6 for location of alignment adjustments.

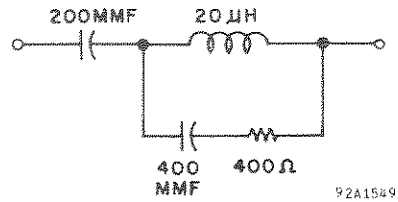


Fig. 4. RTMA Dummy Antenna

Step	Signal Generator Connections	Generator Frequency	Band Selector Setting	Receiver Dial Setting	Adjust
IF ALIGNMENT					
1	High side thru an .01 mfd. capacitor to stator plates of front section of TUNING gang. Low side to chassis.	455 KC	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.	455 KC (No Mod.)	1	1.0 MC	Set the AM/CW switch at CW. (Reset the switch at AM when Step 2 is completed.) For correct BFO operation, vary the coupling between lead E and pins 4 and 8 of the 12SG7 (V-2) for a maximum beat note. Pushing lead E toward pin 4 increases the strength of the beat.
RF ALIGNMENT					
3	High side thru RTMA dummy 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.

* Step 2 is usually unnecessary. Adjustment should be made ONLY if a weak beat note is obtained on strong CW signals indicating lack of coupling between wire lead E and pins 4 and 8 of the 12SG7.

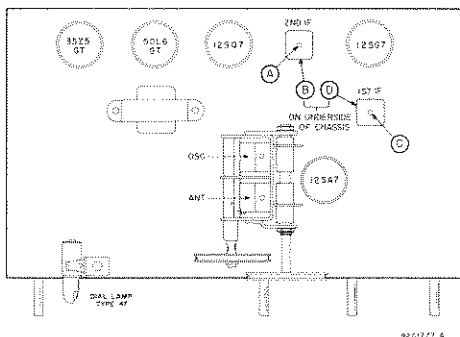


Fig. 5. Top View of Chassis Showing Location of Alignment Adjustments, Tubes and Dial Lamp.

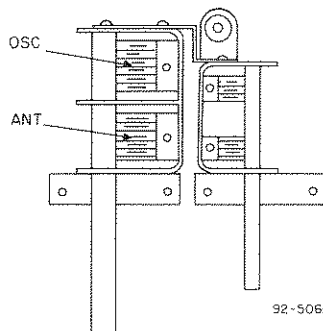


Fig. 5A. Tuning Capacitor Mark II Chassis.

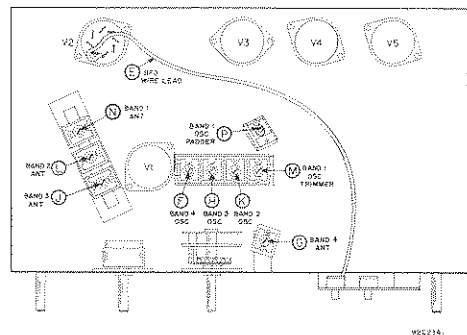
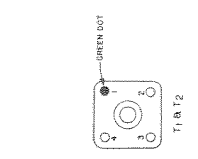
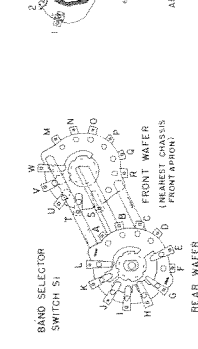
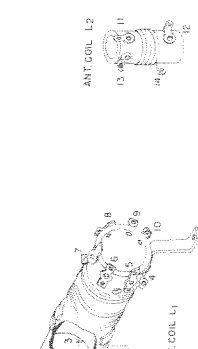
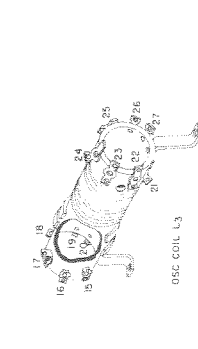
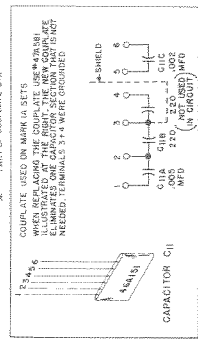
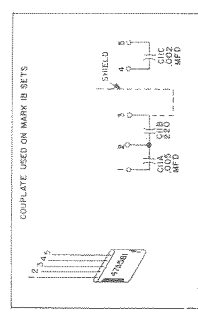
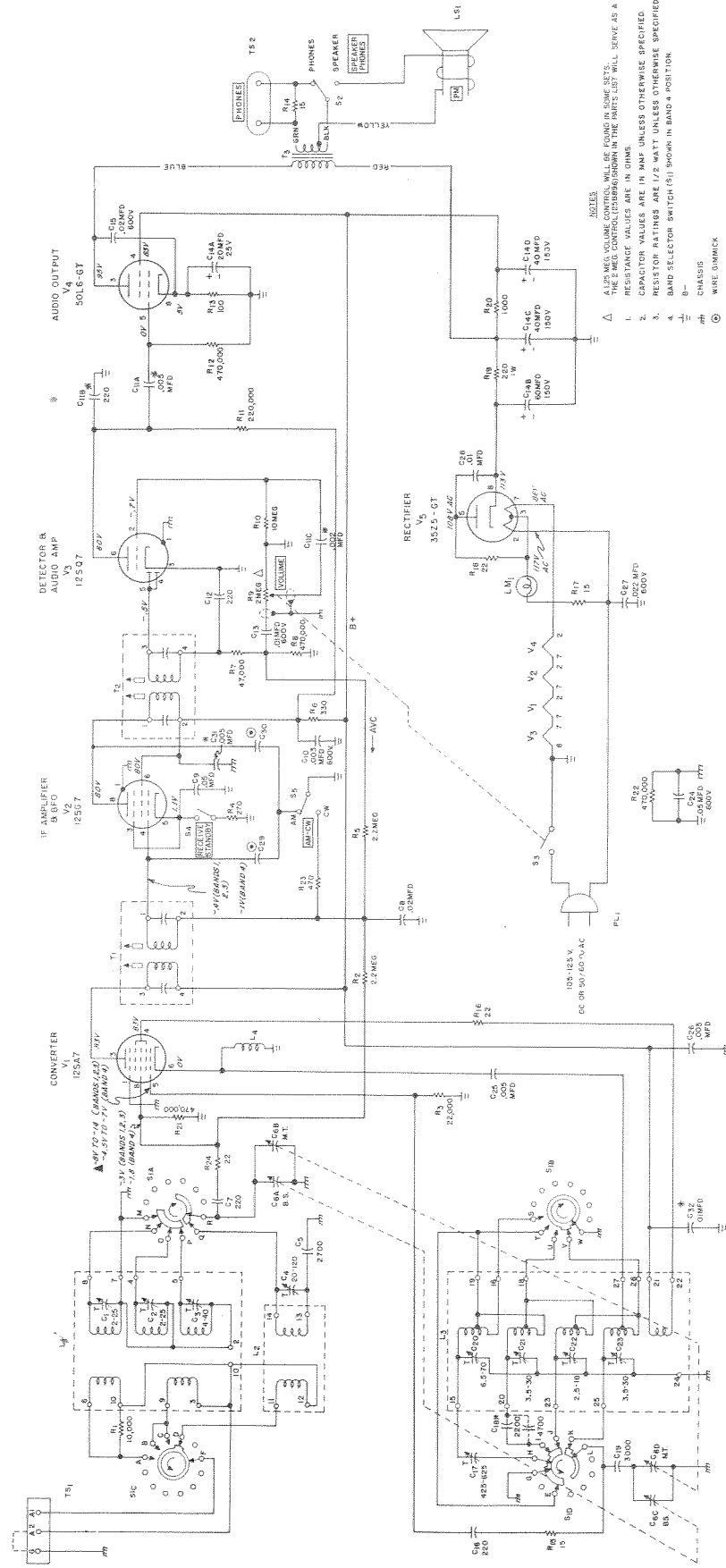


Fig. 6. Bottom View of Chassis Showing Location of Alignment Adjustments and Tubes.

MODEL S-38D MARK 1A & 1B & 2



NOTES

1. ALL VOLTAGES ARE MEASURED BETWEEN TUBE SOCKET TERMINALS AND B- (PIN 1 OF 12507) WITH ANTENNA TERMINALS SHORTED. AM/FM SWITCH AT LINE VOLTAGE - 117 VOLTS A.C.

2. ALL VOLTAGES WERE MEASURED WITH A VACUUM TUBE VOLTMETER (VTVM) AND ARE DC AND POSITIVE UNLESS OTHERWISE SPECIFIED.

3. VARIES WITH TUNING COND. SETTING.

4. RESISTANCE VALUES ARE IN OHMS.

5. CAPACITOR VALUES ARE IN MUF UNLESS OTHERWISE SPECIFIED.

6. RESISTOR RATINGS ARE 1/2 WATT UNLESS OTHERWISE SPECIFIED.

7. BAND SELECTOR SWITCH (S1) SHOWN IN BAND A POSITION.

8. CHASSIS

9. WIRE GROUND

10. PART OF COMPLETE SET

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.

* 2200MUF ON MARK 1A & 1B
* 4700MUF ON MARK 2

SERVICE PARTS LIST

Schematic Symbol	Description	Hallicrafters Part Number
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CAPACITORS

C-1, 2, 3...	Trimmer assembly, 3 section; 2-25 mmfd., 2-25 mmfd., 4-40 mmfd.	44B129
C-4	20-120 mmfd., mica trimmer ...	44A424
C-5	2700 mmfd, 5%, 500V.; mica	47X30B272J
C-6A-B-C-D.	Tuning capacitor, 2 section; includes drive pulleys mark 1A and 1B ...	48-269
C-6A-B-C-D.	Capacitor, tuning general coverage; mark II	48-372
C-6A-B-C-D.	Capacitor, tuning band spread mark II	48-373
C-7, 12, 16	220 mmfd, 10% 500V.; mica	47X20B221K
C-8, 15, ...	0.02 mfd. 600V., tubular paper	46AY203J
C-9	0.05 mfd. 200V., tubular paper	46AU503J
C-10	0.003 mfd. 600V., tubular paper	46AZ302F
C-11A-B-C..	Printed circuit capacitor plate, .005 mfd., 220 mmfd., .002 mfd.	47A581
C-13	0.01 mfd. 600V., tubular paper	46AZ103J
C-14A-B-C-D	Filter capacitor, 4 section; 20 mfd. 25V, 60-40-40 mfd., 150V ..	45B091
C-17	425-625 mmfd., mica padder	44A349
*C-18	4700 mmfd. 5% 500V.; mica	47X30B472J
C-19	3000 mmfd. 5%, 500V.; mica	47X30B302J
C-20, 21, 22, 23	Trimmer assembly, 4 section; 6.5-70 mmfd., 3.5-30 mmfd., 2.5-18 mmfd., 3.5-30 mmfd. ...	44B159
C-24	0.05 mfd. 600V., tubular paper	46AY503J
C-25, 26, 31	0.005 mfd. 450V., ceramic disc.	47A168
C-27	0.022 mfd. 600V., molded tubular paper	46BR223L6
C-28	0.01 mfd. 450V., ceramic disc	47A224
C-32	0.01 mfd. 200V., tubular paper	46AU103J

**RESISTORS

R-1	10,000 ohms	23X20X103K
R-2, 5	2.2 megohms	23X20X225K
R-3	22,000 ohms	23X20X223K
R-4	270 ohms	23X20X271K
R-6	330 ohms	23X20X331K
R-7	47,000 ohms	23X20X473K
R-8, 12, 21, 22,	470,000 ohms	23X20X474K
R-9	2 megohms, variable; Volume control (includes on-off switch S-3)	25B896
R-10	10 megohms	23X20X106K
R-11	220,000 ohms	23X20X224K
R-13	100 ohms	23X20X101K
R-14, 15, 17,	15 ohms	23X20X150K
R-16, 18, 24,	22 ohms	23X20X220K
R-19	220 ohms, 1 watt	23X30X221K
R-20	1000 ohms	23X20X102K
R-23	470 ohms	23X20X471K

**All resistors are 1/2 watt, 10% carbon type unless otherwise specified.

COILS AND TRANSFORMERS

***L-1, C-1-2-3	Coil and trimmer assembly, antenna; bands 1, 2 and 3 Mark 1A and 1B	51C821
	Mark II	51B2132
L-2	Coil, antenna; band 4	51B1015
***L-3, C-20, 21, 22, 23	Coil and trimmer assembly, oscillator; all bands Mark 1A and 1B	51C822
	Mark II	51B2133
L-4	Choke, RF; 540 uh	53A107
T-1	Transformer, 1st IF	50C531
T-2	Transformer, 2nd IF	50C532
T-3	Transformer, audio output	55A127

*C-18 was 2200 mmfd. on Mark 1A and 1B Part No. 47X30B222J

***The trimmer capacitor assemblies are also available separately. See "Capacitors"

Schematic Symbol	Description	Hallicrafters Part Number
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SWITCHES

S-1A-B-C-D.	Switch, rotary wafer; Band Selector	60C393
S-2, 5	Switch, spdt slide; Speaker-Phones and AM-CW	60A477
S-3	Switch, on-off; part of Volume control R-9	-----
S-4	Switch, spst slide; Receive-Standby	60A476

SOCKETS AND CONNECTORS

TS-1	Terminal strip, antenna	88A671
TS-2	Twin jack strip, Phones	88A071
	Socket, dial lamp; with leads	86A122
	Socket, octal tube	6A250

TUBES AND DIAL LAMP

V-1	12SA7; converter	90X12SA7
V-2	12SG7; IF amplifier and VFO ..	90X12SG7
V-3	12SQ7; detector and audio amplifier	90X12SQ7
V-4	50L6GT; audio output	90X50L6GT
V-5	35Z5GT; rectifier	90X35Z5GT
LM-1	Lamp, dial; type 47	39A004

MISCELLANEOUS

Cabinet S-38D	Cabinet S-38DB	66C1070
	Cabinet S-38DM	66-1564
	Cabinet back	66-1565
	Cabinet bottom cover	32C500
	Channel, rubber; for escutcheon glass	32C501
	Clip, dial mts	16A707
	Clip, escutcheon glass mtg.	76A646
	Clip, IF mtg.	76A645
	Clip, mtg.; for coil L-2	76A385
	Clip, mtg. for dial lamp socket ..	76A326
	Ring, Retaining	76A660
	Dial background, paper	76A883
	Dial cord (specify length)	32B679
	Dial scale; mark 1A and 1B	38A026
	Dial scale; mark II	22E426
	Escutcheon, front panel S-38D ...	22-515
	Escutcheon S-38DB and DM	7C587
	Glass, escutcheon	7-684
	Grommet, rubber; gang mtg	22B319
	Grommet, rubber; switch bracket mtg.	16A718
	Knob, Band Selector (S-38D)	15B323
	Knob, Bandsread, Off-Volume and Tuning (S-38D)	15-1121
	Knob, Bandsread, Off-Volume and Tuning (S-38D)	15B322
	Knob, Bandsread, Off-Volume and Tuning (S-38D)	15-1120
PL-1	Line cord and plug	87A078
	Line cord lock male section	76A397-1
	Line cord lock female section	76A397-2
	Mounting foot, rubber	16A244
	Pointer, dial bandsread tuning ..	82A198
	Pointer, dial bandsread tuning ..	82A251
	Pulley, 1-13/32" od; mark 1A and 1B	28A090
	Pulley, 2.625" od; mark 1A and 1B	28A091
	Pulley; mark II	28A052-7
	Pulley; mark II	28A052-6
	Retaining ring, "E" type (for bandsread idler pulleys)	76A776
	Retaining ring, "E" type (for tuning and bandsread shafts) ...	76A811
	Shield, dial lamp	8A1249
LS-1	Speaker, 5-inch PM; 3.2 ohm voice coil	85C030
	Spring, dial drive; 17/32"	75A012
	Spring, dial drive; 3/8"	75A173