



the hallicrafters co.
MANUFACTURERS OF ELECTRONIC EQUIPMENT, CHICAGO 24, U. S. A.

GENERAL DESCRIPTION

World-wide radio reception is yours with the Hallicrafters Model S-38C. This 5 tube communications receiver tunes from 540 kilocycles to 32 megacycles to bring you standard broadcast programs, foreign and domestic shortwave broadcasts, amateurs, police, ships, aircraft and countless other exciting distant stations. It receives both voice and code broadcasts and is designed to operate from 105 to 125 volt direct current (DC) or 60 cycles alternating current (AC). A 5-inch Alnico V permanent magnet speaker is built into the top of the cabinet and tip jacks have been provided on the back of the set for plugging in a pair of headphones. The RECEIVE-STANDBY switch on the front panel is a special feature which permits you to silence the receiver without turning the set off.



Hallicrafters Model S-38C

Good reception of both standard and shortwave broadcasts can be obtained in most localities with the 15 foot antenna wire included with your receiver. It is merely necessary to uncoil this wire, connect one end of it to terminal A1 on the back of the set and then run it about the room in any convenient manner. To complete the antenna installation, connect the jumper between terminals A2 and G.

Your set is provided with two tuning knobs for greater ease of tuning. Wide tuning is done with the knob marked TUNING and fine tuning with the knob marked BAND SPREAD. The BAND SPREAD knob permits you to accurately tune in stations on crowded bands by spreading them out so that they may be more easily separated. In this way you are able to hear many more stations than you would on an ordinary radio with just one tuning knob.

The amateur bands and principal shortwave channels of the world are clearly marked on the dial for your convenience. Since shortwave conditions vary with the season of the year and even with the time of day, shortwave programs may not be heard with the same regularity as standard broadcasts. A special table has been provided on page 3 to aid you in determining the most favorable times for shortwave listening.

IMPORTANT

Your careful attention is especially invited to the installation and operating instructions. They have been provided to insure the satisfaction you have a right to expect from a Hallicrafters "Precision Built" product. Your receiver has an unusually high degree of sensitivity necessary to receive weak and distant stations. Careless operation of a high sensitivity receiver may result in excess noise or background hiss. These undesirable effects can be held to a minimum by careful adjustment of the tuning controls as well as the proper selection and arrangement of the antenna.

INSTALLATION INSTRUCTIONS

ANTENNA - The terminals marked A1, A2 and G on the back of the set are for antenna and ground connections. Good results can be obtained in most localities with the 15 foot antenna wire included with your receiver. This wire should be uncoiled to provide maximum signal pickup. An outside antenna 50 to 100 feet long (ordinary copper wire) may be necessary if the receiver is operated in a difficult reception area or steel constructed building. Connect the antenna wire to terminal A1 on the back of the set and then connect the jumper between terminals A2 and G. In some locations, reception may be improved by connecting a lead from terminal G to a cold water pipe or outside ground rod.

For really top performance, there is no substitute for an outside antenna such as used by the commercial radio stations. Provision has been made on your receiver for the connection of this type of antenna, commonly called a doublet. When a doublet antenna is used, the jumper is removed and the antenna is connected to terminals A1 and A2. Consult your radio dealer for further information.

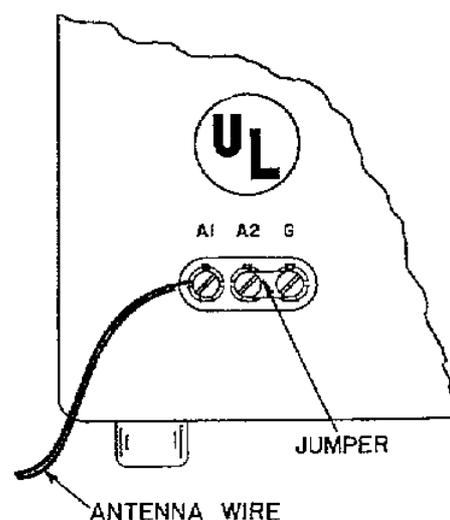


Fig. 1. Rear View of Receiver Showing Antenna and Ground Terminals

OPERATING INSTRUCTIONS

TUNING DIAL - All dial readings are in megacycles. To convert the readings on the standard broadcast band (band 1) to kilocycles, simply remove the dot and add two zeros; thus, .7 on the dial corresponds to 700 kilocycles.

AM-CW SWITCH - Set this switch at AM to listen to voice and musical broadcasts. Set it at CW only if you wish to hear code signals.

SPEAKER-PHONES SWITCH - For operation of the built-in speaker, set the switch at SPEAKER. Tip jacks are provided on the back of the set for plugging in a pair of headphones. Use any 500 to 5000 ohm headphones. For headphone operation set the switch at PHONES.

BAND SELECTOR CONTROL - Set this control for the band you wish to tune.

VOLUME CONTROL - Turn this control clockwise to turn the set on. Allow about 30 seconds for the tubes to reach operating temperature and then advance the control to increase volume. To turn the set off, turn this control counter-clockwise until a click is heard.

NOTE - If the receiver does not operate after the 30 second warm up when connected to a DC source, the power plug should be reversed in the wall outlet to obtain proper polarity.

RECEIVE-STANDBY SWITCH - Set this switch at RECEIVE for radio reception. If you wish to silence the receiver without turning the set off, set the switch at STANDBY. To resume radio reception, simply return the switch to the RECEIVE position.

TUNING KNOB - Your receiver has been provided with two tuning knobs - The TUNING knob which operates the pointer on the left hand dial and a separate BAND SPREAD knob which operates the pointer on the right hand dial. The TUNING knob is for wide tuning and the BAND SPREAD knob for fine tuning. Use the TUNING knob to tune in the desired station. Tune for the clearest and strongest signal. If the signal is too strong, reduce it by means of the VOLUME control, not by using the TUNING knob. For code reception, adjust the TUNING knob for the desired pitch of the CW code signal when tuning in the station.

IMPORTANT - The dial readings will correspond to the exact station frequencies only if the BAND SPREAD dial pointer is set at 0.

BAND SPREAD KNOB - The BAND SPREAD knob permits you to accurately tune in stations on crowded bands by spreading them out so that they can be more easily separated. The BAND SPREAD knob can be used in two different ways. First, it may be left with the pointer at 5 while you partially tune in the desired station with the TUNING knob. Then, by "rocking" the BAND SPREAD knob back and forth (turn it a few degrees to the left and right through the desired station), you will be able to tune in the desired station with precision accuracy.

The second way to operate the BAND SPREAD knob is to use it to cover a group of stations. Set the BAND SPREAD knob so that the pointer reads 0 and then turn the TUNING knob to tune in the highest frequency station in the group. The other stations can be heard by slowly turning the BAND SPREAD knob from 0 to 100.

BEST SHORTWAVE RECEPTION TABLE

Band	Most Favorable Time	Most Favorable Distance
6-7 MC	Night - Winter	Day - 400 Miles - Night - Over 1500 Miles
9-10 MC	Day - Late Afternoon and Night - Winter	Over 500 Miles
11-12 MC	Evenings or Late Summer Afternoons	Day - Under 1500 Miles - Night - Over 1500 Miles
15-18 MC	Early Mornings and Summer Evenings	Over 1500 Miles

SERVICE INSTRUCTIONS

GENERAL SPECIFICATIONS

Tubes 5 including 1 rectifier
 Speaker 5 inch PM
 Voice Coil Impedance 3.2 ohms
 Headphone Output Impedance . . . 15 ohms
 Antenna Terminals for single wire or
 doublet antenna. (See Page 2.)
 Intermediate Frequency 455 KC
 Frequency Coverage 540 KC - 32 MC
 Power Supply 105-125 volts DC or
 60 cycles AC
 Power Consumption 30 watts

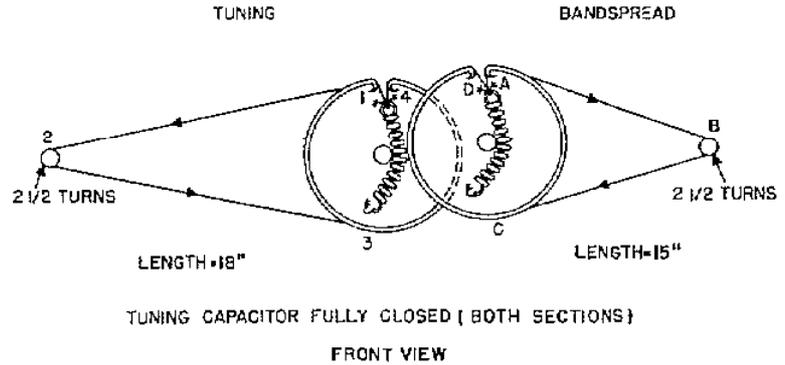


Fig. 2. Dial Cord Stringing Diagram

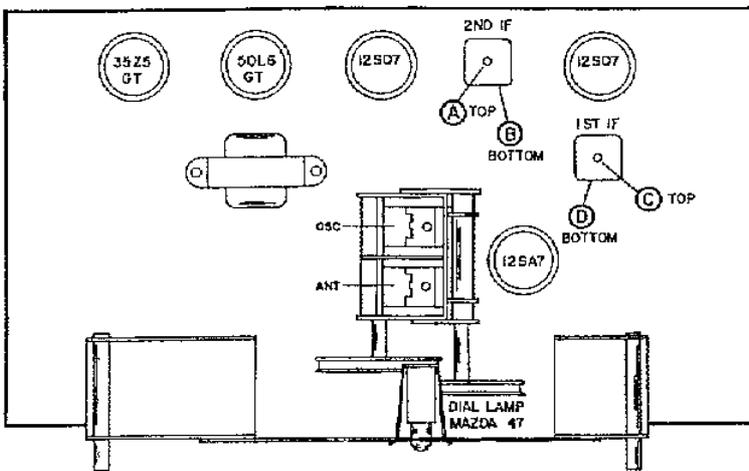


Fig. 3. Top View of Chassis Showing Location of Alignment Adjustments, Tubes and Dial Lamp

DIAL CORD STRINGING - Refer to Fig. 2 for the stringing diagram. Both sections of the tuning gang should be fully meshed. To restring the TUNING dial cord, tie one end of an 18 inch length of 30 lb. dial cord to the dial spring at 1 on the drive pulley. Follow the stringing sequence 1 through 4. At 4, stretch the spring and tie the cord securely to the spring. Cut off the excess cord and apply a drop of quick drying cement to the knot.

To restring the BAND SPREAD dial cord, cut a 15 inch length of dial cord and follow the procedure as explained above, starting at A and proceeding through D.

TUBE AND DIAL LAMP REPLACEMENT - Refer to Fig. 3 for the location of the tubes and dial lamp used in the receiver. To gain access to the tubes and lamp, remove the back cover from the cabinet. Before attempting to make any replacement, set the BAND SPREAD control fully clockwise and the TUNING control fully counterclockwise to prevent damage to the tuning gang. To replace a tube, insert the center guide pin into the center hole of the tube socket, rotate the tube until the key drops into position and then push down until the tube is held firmly in the socket. To make a dial lamp replacement, remove the dial lamp socket by compressing the side springs. Make replacement only with a type 47 pilot lamp.

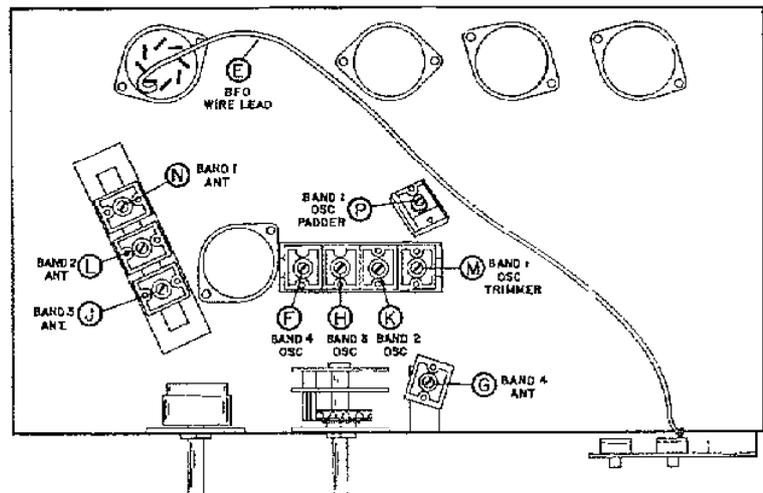


Fig. 4. Bottom View of Chassis Showing Location of Alignment Adjustments

ALIGNMENT INSTRUCTIONS

- 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. 3 and 4 for location of alignment adjustments.

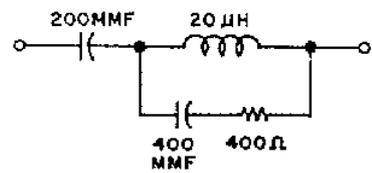


Fig. 5. RMA Dummy Antenna

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	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 tube for a maximum beat note. Pushing lead E toward pin 4 increases the strength of the beat.
RF ALIGNMENT					
3	High side thru RMA dummy antenna (Fig. 5) 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.
		500 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.

SERVICE OR OPERATING QUESTIONS - For further information regarding operation or servicing of your radio, contact your dealer. Make no service shipments to the factory as the Hallicrafters Co. will not accept the responsibility for unauthorized shipments. Factory type service is available at any HALLICRAFTERS AUTHORIZED SERVICE CENTER which displays the sign shown at the right of the page. For the location of the one nearest you, consult your dealer or telephone directory.

The Hallicrafters Co. reserves the privilege of making revisions in current production of equipment and assumes no obligation to incorporate these revisions in earlier models.



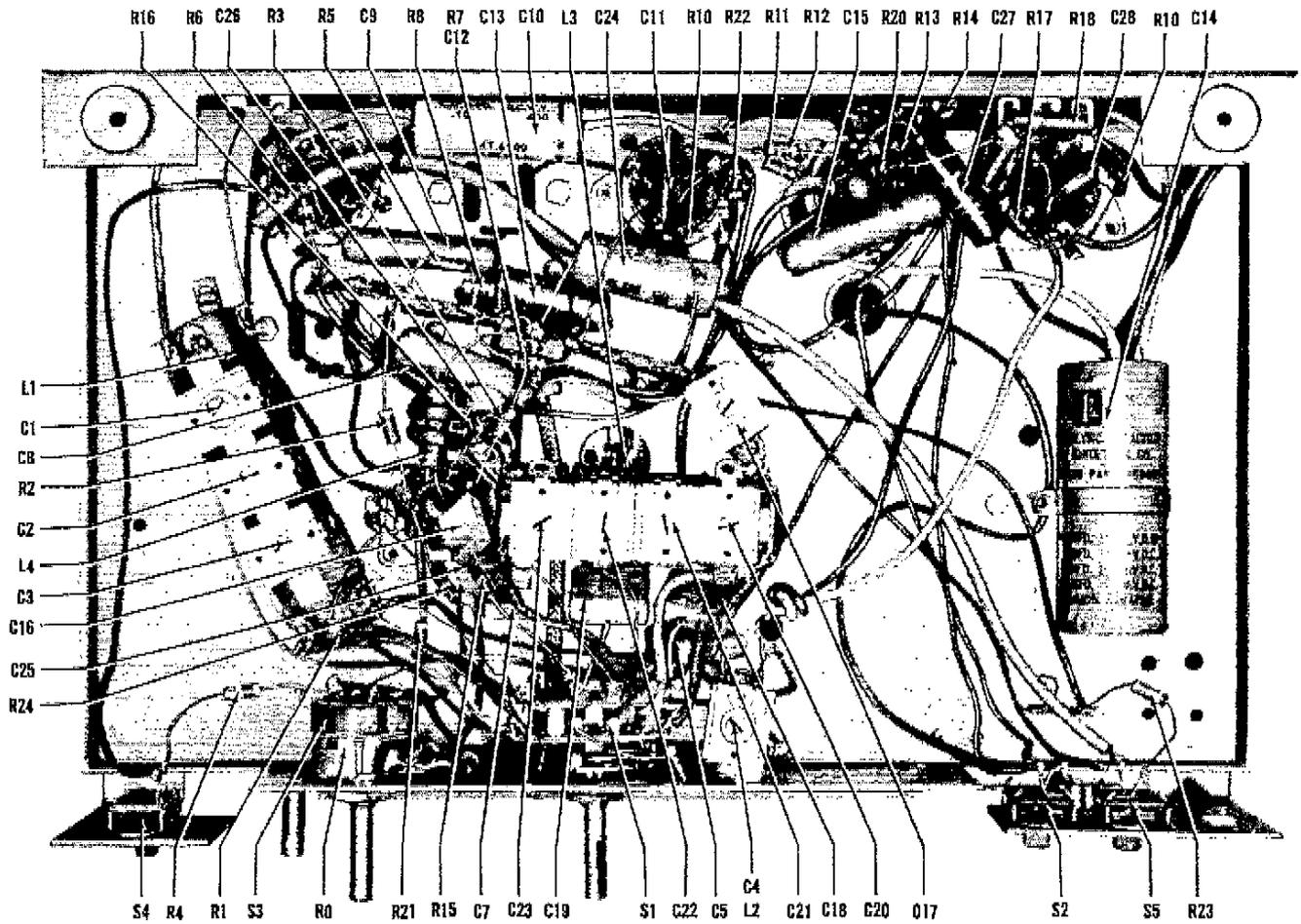


Fig. 6. Bottom View of Chassis Showing Component Location

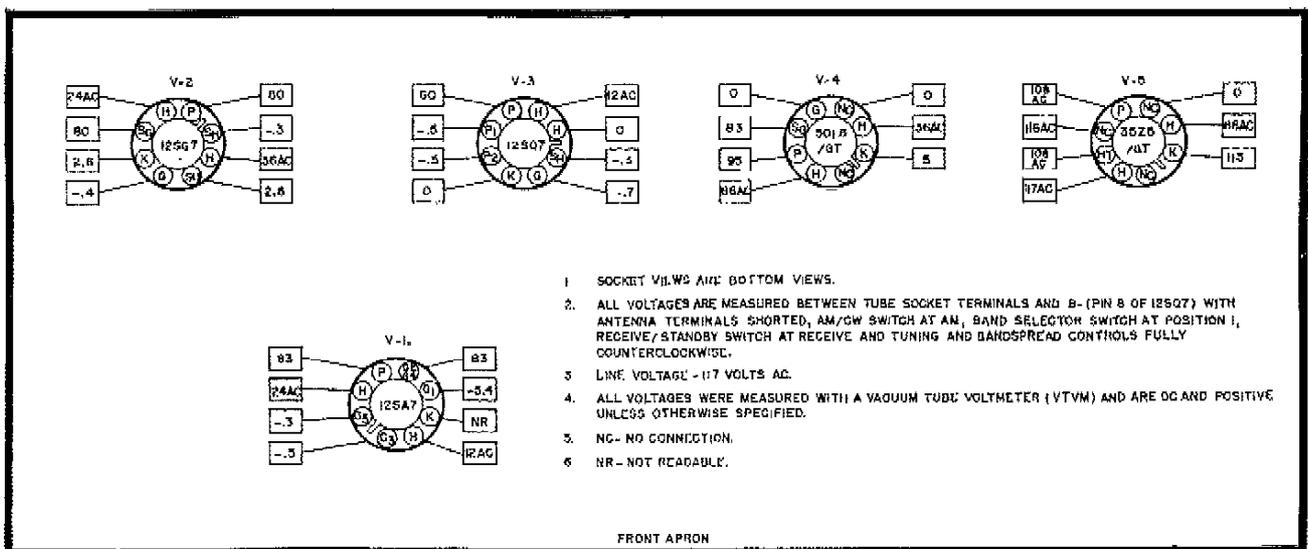


Fig. 7. Tube Socket Voltage Chart

SERVICE PARTS LIST

Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number
CAPACITORS			SWITCHES		
C-1,2,3	Trimmer; part of antenna coil L-1	-----	S-1A,B,C&D	Bandswitch assembly (BAND SELECTOR)	60C393
C-4	Trimmer, 20-120 mmf.	44A424	S-2,5	Switch, slide; spdt (SPEAKER/ PHONES and AM/CW)	60A477
C-5	2700 mmf. 5%, 500V.; mica	47X30B272J	S-3	Switch, ON-OFF; part of VOLUME control R-9	-----
C-6A,B,C&D	Tuning capacitor, 2 section	48C162-1	S-4	Switch, slide; spst (RECEIVE/ STANDBY)	60A476
C-7,12,16	220 mmf. 10%, 500V.; mica	47X30B221K	SOCKETS AND CONNECTORS		
C-8,15	.02 mfd. 600V., tubular	46AY203J	Socket, dial lamp; includes leads		
C-9	.05 mfd. 200V., tubular	48AU503J	Socket, tube; octal		
C-10	.002 mfd. 600V., tubular	48AZ302F	Terminal strip, antenna		
C-11A,B,C &D	Capacitor, composite: 5000, 220, 220 and 2000 mmf., 500V.; ceramic	46A151	Tip jacks, PHONE		
C-13	.01 mfd. 600V., tubular	46AZ103J	TS-1		86A011
C-14A,B,C &D	60-40-40 mfd. 150V., 20 mfd. 25V.; electrolytic	45B091	TS-2		6A250
C-17	Padder, 525 mmf.	44A349	TUBES AND DIAL LAMP		
C-18	2200 mmf. 5%, 500V.; mica	47X30B222J	V-1	12SA7: convertor	90X12SA7
C-19	3000 mmf. 5%, 500V.; mica	47X30B302J	V-2	12SG7: IF amplifier and BFO	90X12SG7
C-20,21,22, 23	Trimmer; part of oscillator coil L-3	-----	V-3	12SQ7 or 12SQ7GT/G: detector and audio amplifier	90X12SQ7 or 90X12SQ7GT/G
C-24	.05 mfd. 600V., tubular	46AY503J	V-4	50L6GT: audio output	90X50L6GT
C-25,26	5000 mmf. 450V., ceramic disc	47A168	V-5	35Z5GT: rectifier	90X35Z5GT
C-27	.02 mfd. 600V., molded tubular	46BR203L6	LM-1	Lamp, dial; type 47	39A004
C-28	10,000 mmf. 450V., ceramic disc	47A224	MISCELLANEOUS PARTS		
RESISTORS			Cabinet		
R-1	10,000 ohms 1/2 watt, carbon	23X20X103M	Cabinet beck		
R-2,5	2.2 megohms 1/2 watt, carbon	23X20X225M	Cabinet bottom cover		
R-3	22,000 ohms 1/2 watt, carbon	23X20X223M	Chip, mtg; for antenna coil L-2		
R-4	270 ohms 1/2 watt, carbon	23X20X271K	Dial cord (specify length)		
R-6	330 ohms 1/2 watt, carbon	23X20X331M	Dial scale		
R-7	47,000 ohms 1/2 watt, carbon	23X20X473M	Dial window		
R-8,12,21,22	470,000 ohms 1/2 watt, carbon	23X20X474M	Knob, BAND SELECTOR and VOLUME		
R-9	2 megohms; VOLUME control	25B896	Knob, BAND SPREAD and TUNING		
R-10	10 megohms 1/2 watt, carbon	23X26X106M	Line cord and plug		
R-11	220,000 ohms 1/2 watt, carbon	23X20X224M	Line cord lock; male section		
R-13	150 ohms 1/2 watt, carbon	23X20X151K	Line cord lock; female section		
R-14,15,17	15 ohms 1/2 watt, carbon	23X20X150M	Mounting foot, cabinet		
R-16,18,24	22 ohms 1/2 watt, carbon	23X20X220M	Pointer, dial; BAND SPREAD		
R-19	220 ohms 1 watt, carbon	23X30X221M	Pointer, dial; TUNING		
R-20	1000 ohms 1/2 watt, carbon	23X20X102M	Speaker, 5-Inch PM		
R-23	470 ohms 1/2 watt, carbon	23X20X471K	Spring, dial cord		
COILS AND TRANSFORMERS			MISCELLANEOUS PARTS		
L-1	Coil, antenna; bands 1, 2 and 3	51C821	Cabinet		
L-2	Coil, antenna; band 4	51B1015	Cabinet beck		
L-3	Coil, oscillator; all bands	51C822	Cabinet bottom cover		
L-4	Choke, RF; 540 microhenries	53A107	Chip, mtg; for antenna coil L-2		
T-1	Transformer, 1st IF	50C531	Dial cord (specify length)		
T-2	Transformer, 2nd IF	50C532	Dial scale		
T-3	Transformer, audio output	55A127	Dial window		
			Knob, BAND SELECTOR and VOLUME		
			Knob, BAND SPREAD and TUNING		
			Line cord and plug		
			Line cord lock; male section		
			Line cord lock; female section		
			Mounting foot, cabinet		
			Pointer, dial; BAND SPREAD		
			Pointer, dial; TUNING		
			Speaker, 5-Inch PM		
			Spring, dial cord		

Warranty

"The Hallicrafter's Company warrants each new radio product manufactured by it to be free from defective material and workmanship and agrees to remedy any such defect or to furnish a new part in exchange for any part of any unit of its manufacture which under normal installation, use and service discloses such defect, provided the unit is delivered by the owner to our authorized radio dealer, wholesaler, from whom purchased, or, authorized service center, intact, for examination, with all transportation charges prepaid within ninety days from the date of sale to original purchaser and provided that such examination discloses in our judgment that it is thus defective.

This warranty does not extend to any of our radio products which have been subjected to misuse, neglect, accident, incorrect wiring not our own, improper installation, or to use in violation of instructions furnished by us, nor extend to units which have been repaired or altered outside of our factory or authorized service center, nor to cases where the serial number thereof has been removed, defaced or changed, nor to accessories used therewith not of our own manufacture.

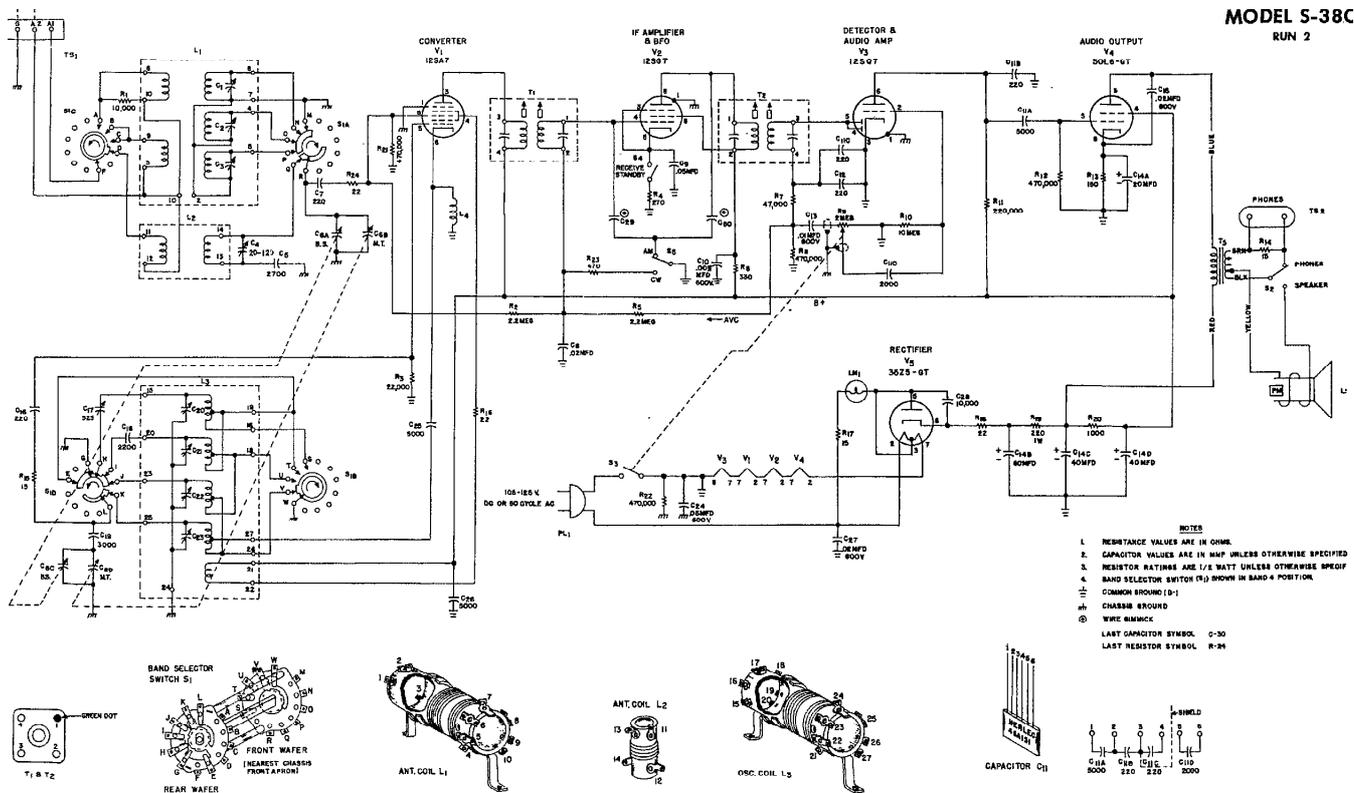
Any part of a unit approved for remedy or exchange hereunder will be remedied or exchanged by the authorized radio dealer or wholesaler without charge to the owner.

This warranty is in lieu of all other warranties expressed or implied and no representative or person is authorized to assume for us any other liability in connection with the sale of our radio products."

Form No. 94X622

the Hallicrafters co.

MODEL 5-38C
RUN 2



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.

Fig. 8. Schematic Diagram