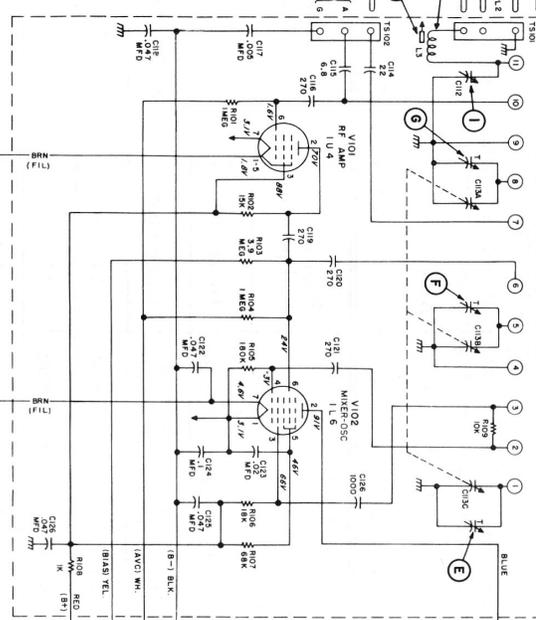
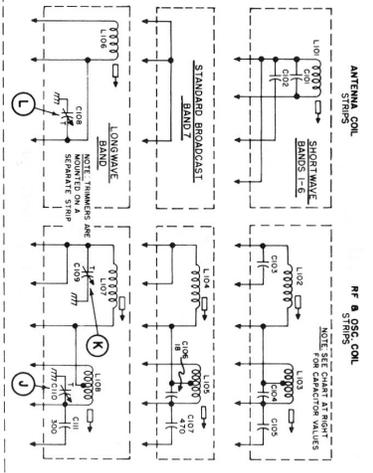


Hallicrafters TW-1000 Run 1



- NOTES**
- RESISTANCE IN OHMS AND CAPACITANCE IN MMF UNLESS OTHERWISE SPECIFIED. K=1000
 - RESISTORS ARE 1/2 WATT AND 0.2% UNLESS OTHERWISE SPECIFIED.
 - INTERMEDIATE FREQUENCY: 455 KC
 - TONE SWITCH S1 SHOWN IN RIGHT HAND POSITION.
 - POWER CHANGEOVER SWITCH S3 SHOWN IN AC/DC POSITION. FOR BATTERY OPERATION, INSERT LINE CORD PLUG INTO CHASSIS RECEPTACLE (SEE FIG. 3).
 - LINE VOLTAGE: AC/DC OPERATION - 117 VOLTS
 - BATTERY OPERATION - 90V "B" AND 9V "A"
 - ALL VOLTAGES MEASURED WITH VTVM BETWEEN TUBE SOCKET TERMINALS AND B-1 (-) VOLTAGES ARE DC AND POSITIVE UNLESS OTHERWISE SPECIFIED.
 - ALL VOLTAGES ARE MEASURED IN BROADCAST POSITION (BAND 7) WITH LOOP ANTENNA DISCONNECTED AND DMM PLUG CLOSED.

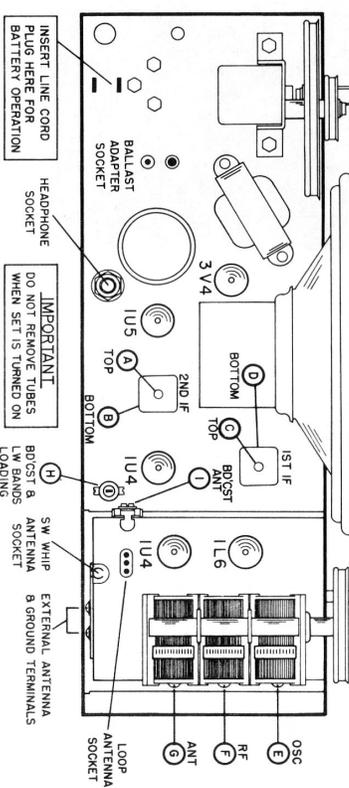
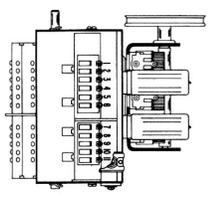
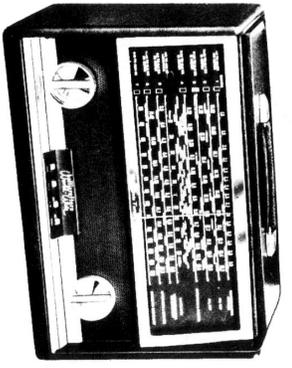


Fig. 3. Top View of Chassis Showing Location of Alignment Adjustments and Tubes



BAND	TUNING MARKING	RECEPTION	FREQUENCY NAME	C101	C102	C103	C104	C105
1	2L	SHORTWAVE	1.8 - 5.9 MC	NONE	550	560	5	340
2	4L	-	14.42 - 15.7 MC	NONE	13	17	NONE	12
3	7L	-	17.32 - 18.2 MC	NONE	10	14	NONE	12
4	9L	-	9.22 - 10.3 MC	NONE	22	24	NONE	18
5	4L	-	3.9 - 8.0 MC	4.25	350	340	6.8	380
6	11L	-	11.42 - 12.3 MC	NONE	15	18	NONE	12
7	1L	STDBCAST	540 - 1600 KC	NONE	NONE	NONE	NONE	NONE
	3L	LONGWAVE	180 - 400 KC	NONE	NONE	NONE	NONE	NONE

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

TECHNICAL SPECIFICATIONS

- TUBES AND RECTIFIERS** 5 tubes plus 1 selenium Rectifier
- POWER SUPPLY** 105-120 volt DC or 50/60 cycle AC; 90V "B" / 9V "A" battery pack; 220 volt AC/DC with Ballast Adapter 1X1438.
- POWER CONSUMPTION** 20 watts
- SPEAKER** 3 X 7 inch oval; 3.2-ohm voice coil
- INTERMEDIATE FREQUENCY** 455 KC
- ANTENNA** "Skyrider" for best and Loop and SW whip, SW whip, and terminals for long wire for use on all bands.

FREQUENCY COVERAGE

Band	Frequency Range
1	1.8 - 3.9 MC
2	14.62 - 15.7 MC
3	17.32 - 18.2 MC
4	9.22 - 10.3 MC
5	3.9 - 8.0 MC
6	11.42 - 12.3 MC
7	540 - 1600 KC
LW	180 - 400 KC

NOTE: BAND SELECTOR CONTROL
SET FULLY CLOCKWISE.

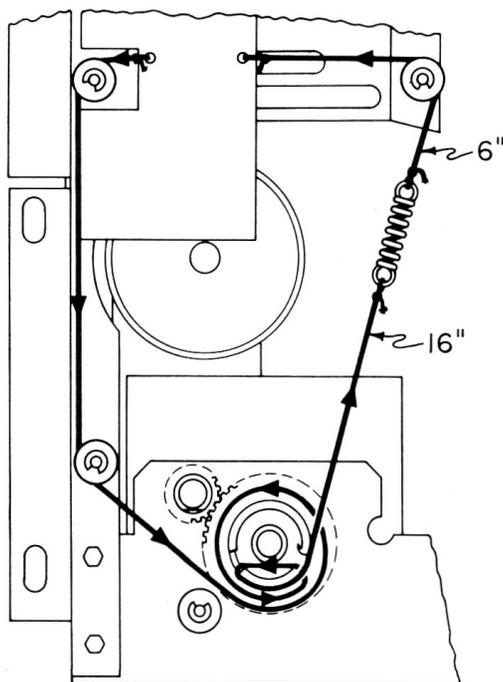


Fig. 2. Band Indicator Plate Stringing Diagram 92B1819

TUNING DIAL

To tune bands 1 thru 7, set the Band Selector knob so that the red band indicator at the left side of the dial is opposite the desired band. To tune the longwave band (yellow band), rotate the Band Selector knob fully clockwise so that the yellow band indicators become visible at the left side of the dial.

REMOVING CHASSIS AND FRONT PANEL ASSEMBLY FROM CABINET

The chassis and entire front panel assembly may be removed from the cabinet by removing the three screws at the bottom of the cabinet and the two machine screw nuts on the inside of the front panel assembly. The whip and loop antenna plugs must be removed before removing the chassis from the cabinet.

TUNER SERVICE

GENERAL

The Dynamic Turret Tuner employed in the TW-1000 portable consists of a 1U4 RF amplifier stage and a 1L6 mixer-oscillator stage.

Band selection is accomplished by rotation of the tuner turret assembly, which has a separate set of two snap-in coil strips for each band. One strip contains the antenna coil and the other contains the RF and oscillator coils. (See Fig. 6). Coils can be identified as to band by the number stamped on the outside of the coil strip. Refer to the chart at the top of the schematic diagram for cross reference of coil marking, band, and frequency range.

Extreme care must be exercised in handling or servicing the tuner. Location and lead dress of components and wiring are usually very critical. Parts location and ground connections should be as originally made. The tuner was carefully aligned at the factory and should normally not require complete realignment under normal operating conditions.

Replacement of tubes (especially 1L6 mixer-oscillator) may cause some slight detuning of the tuner circuits. When replacing the 1L6, it may be necessary to touch up the oscillator slug adjustments. Replacement of the tuning gang may require complete realignment of the receiver.

Be sure that the coils are properly paired for the indicated band and that the coils follow proper sequence. Refer to chart at top of schematic diagram.

REMOVING TUNER FROM CHASSIS

- a. Remove the front control knobs.
- b. Remove dial escutcheon by removing the screws at sides and bottom.
- c. Remove dial scale by removing (4) screws at front of dial and (1) screw at rear.
- d. Disconnect the speaker leads.
- e. Remove baffle board assembly by removing the (2) long and (2) short machine screws.
- f. Remove large gear and pulley assembly by removing (2) Allen Head set screws.
- g. Disconnect the tuner leads.
- h. Remove (2) screws at front of chassis and (2) studs at rear of chassis holding tuner in place.
- i. Lift out tuner at rear and remove.

REMOVING TUNER TURRET ASSEMBLY

- a. Remove tuner from chassis as outlined above.
- b. Remove the front and rear turret retainer springs by depressing straight end of spring from tab on tuner chassis end plate.
- c. Grasp turret shaft at front and rear and remove turret from tuner assembly.
- d. For reassembly, position turret so that the stop at the rear end of turret is facing outward from the tuner assembly. Then press turret into position and replace front and rear turret retaining springs.

REMOVING SNAP-IN COIL STRIPS

Insert a screwdriver blade between the coil retainer spring and the turret end plate. Twist the blade away from the turret and lift the end of the coil upward and remove.

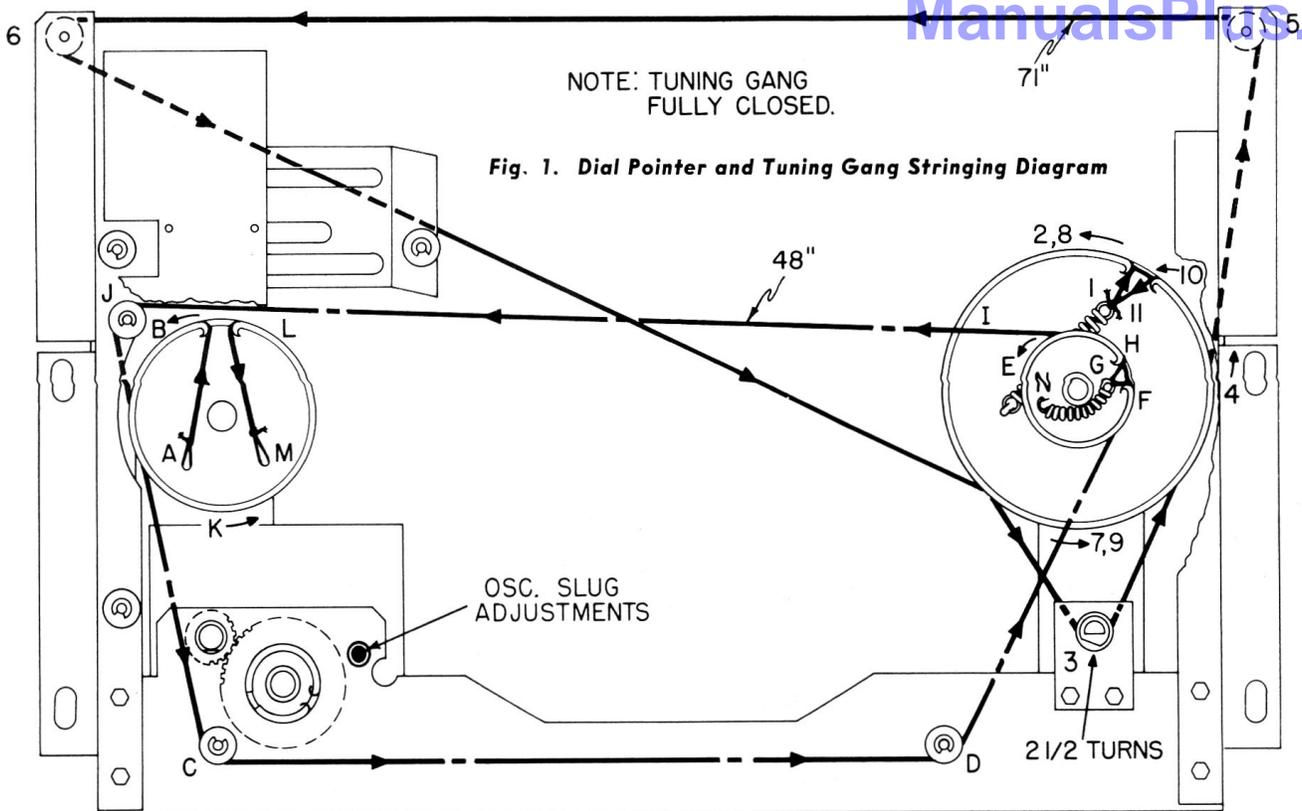
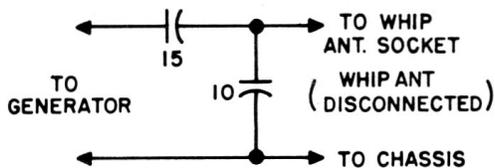
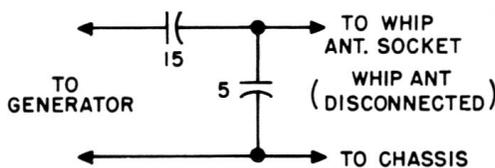


Fig. 1. Dial Pointer and Tuning Gang Stringing Diagram



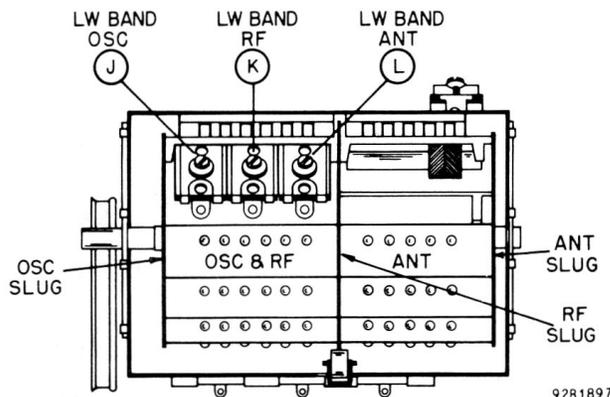
92A1903

Fig. 4. Dummy Antenna for Bands 1 and 5



92A1904

Fig. 5. Dummy Antenna for Bands 2, 3, 4 and 6



92B1897

Fig. 6. Bottom View of Tuner Showing Location of Alignment Adjustments

ALIGNMENT INSTRUCTIONS

- Be sure both the set and the signal generator are thoroughly warmed up before starting alignment.
- Use an accurate signal generator which has a modulated output and covers 455 KC to 17.55 MC.
- Set the volume control at maximum and disconnect the SW whip antenna. Raise the front cover to place the loop in operating position.
- Use a non-metallic alignment tool with a 1/8 inch blade.
- Connect the output meter across the speaker voice coil.
- To avoid AVC action, use lowest output setting of signal generator which gives satisfactory reading on meter (approx. 50 milliwatts).
- To gain access to oscillator slug adjustments, it will first be necessary to remove the baffle board assembly and dial. This is accomplished by following steps (a) thru (e) under REMOVING TUNER FROM CHASSIS
The oscillator slugs may then be adjusted by placing a screwdriver thru the opening at the front of the tuner. (See Fig. 1). An opening is also provided at the rear of the tuner for access to the antenna slug adjustments. To gain access to the RF slug adjustments, it will first be necessary to unclip the antenna coil strip of the band being aligned. The RF slugs can then be adjusted by placing a screwdriver thru the opening at the rear of the tuner.
- Refer to Figs. 3 and 6 for location of alignment adjustments. The alignment adjustments are also shown on the schematic diagram.

Step	Signal Generator Connections	Generator Frequency	Band Selector Setting	Receiver Dial Setting	Adjust for Maximum Output
1	High side thru .1 mfd capacitor to stator plates of center section of tuning gang. Low side to chassis.	455 KC	7	1000 KC	A and B (2nd IF) C and D (1st IF)
2	Construct a loop of a few turns of wire and connect it to generator. Loosely couple this loop to the loop antenna of the receiver.	1500 KC	7	1500 KC	E (oscillator trimmer on gang)
3	Same as Step 2.	1400 KC	7	1400 KC	F (RF trimmer on gang)
4	Same as Step 2.	600 KC	7	600 KC	Oscillator and RF slugs.
5	Connect dummy antenna as shown in Fig. 4.	1.8 MC	1	1.8 MC	Oscillator slug
6	Same as Step 5.	2.2 MC	1	2.2 MC	RF slug
7	Same as Step 5.	3.5 MC	1	3.5 MC	G (antenna trimmer on gang)
8	Same as Step 2.	600 KC	7	600 KC	H (loading coil on main chassis)
9	Same as Step 2.	1400 KC	7	1400 KC	I (antenna trimmer on side of tuner)
10	Connect dummy antenna as shown in Fig. 5.	14.6 MC	2	Gang Closed	Oscillator slug
11	Same as Step 10.	14.8 MC	2	14.8 MC	RF and antenna slugs
12	Same as Step 10.	17.3 MC	3	Gang Closed	Oscillator slug
13	Same as Step 10.	17.55 MC	3	17.55 MC	RF and antenna slugs
14	Same as Step 10.	9.2 MC	4	Gang Closed	Oscillator slug
15	Same as Step 10.	9.5 MC	4	9.5 MC	RF and antenna slugs
16	Same as Step 5.	4.0 MC	5	4.0 MC	Oscillator slug
17	Same as Step 5.	5.2 MC	5	5.2 MC	RF and antenna slugs
18	Same as Step 10.	11.4 MC	6	Gang Closed	Oscillator slug
19	Same as Step 10.	11.6 MC	6	11.6 MC	RF and antenna slugs
20	Same as Step 2.	400 KC	Long Wave	400 KC	J (oscillator trimmer)
21	Same as Step 2.	360 KC	Long Wave	360 KC	K (RF trimmer) and L (antenna trimmer)
22	Same as Step 2.	200 KC	Long Wave	200 KC	Oscillator, RF, and antenna slugs

REPLACEMENT BATTERY PACKS

Hall-crafters	Willard	Ever-easy	RCA	Bright Star	Ray O-Vac	Olin Bond	Mont. Ward	Sears	General	Usalite
P999	WZ-3	752	VSO47	66-03	AB995	0616	37	6401	343	AB677

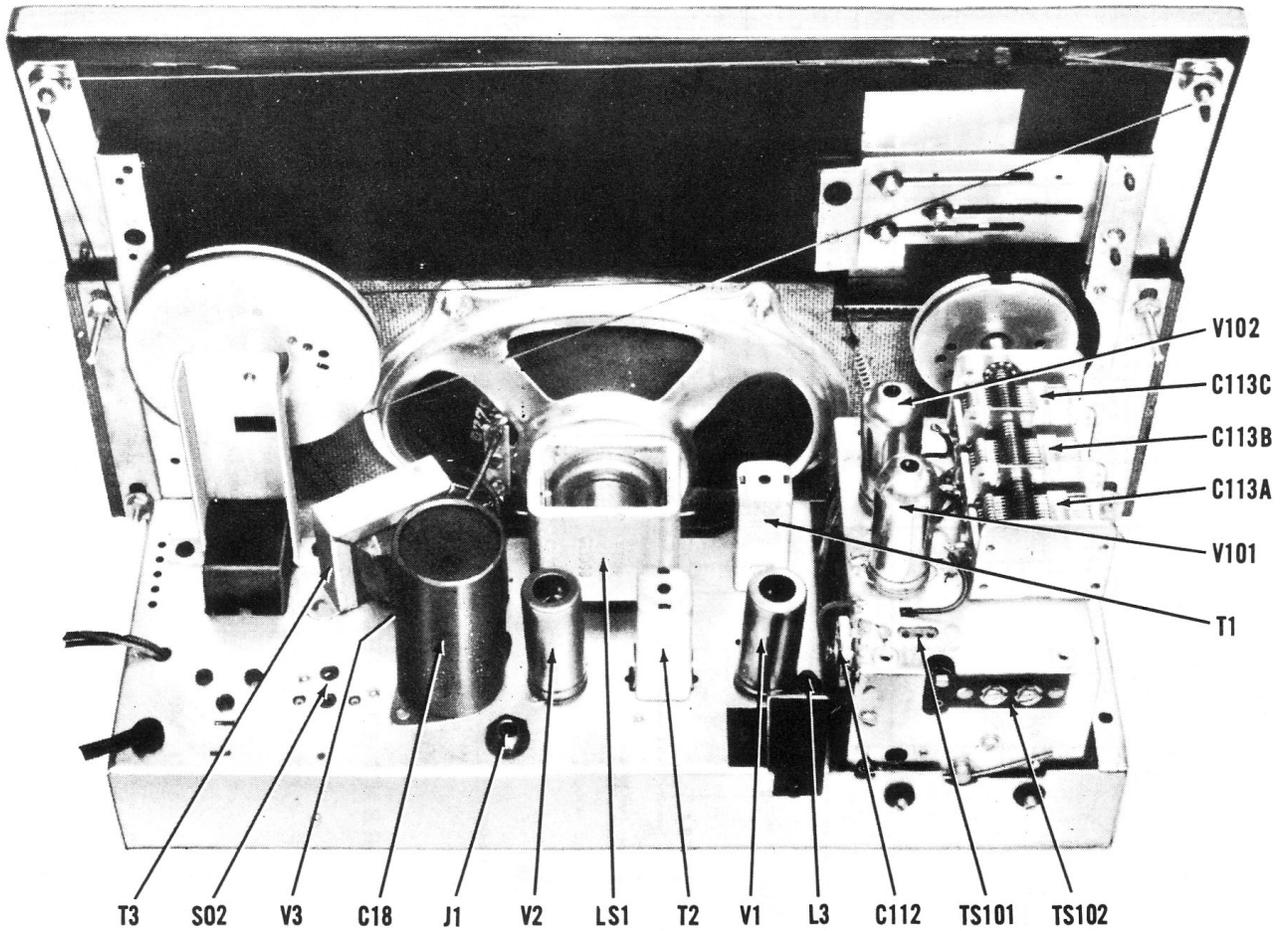


Fig. 7. Top View of Chassis Showing Component Location

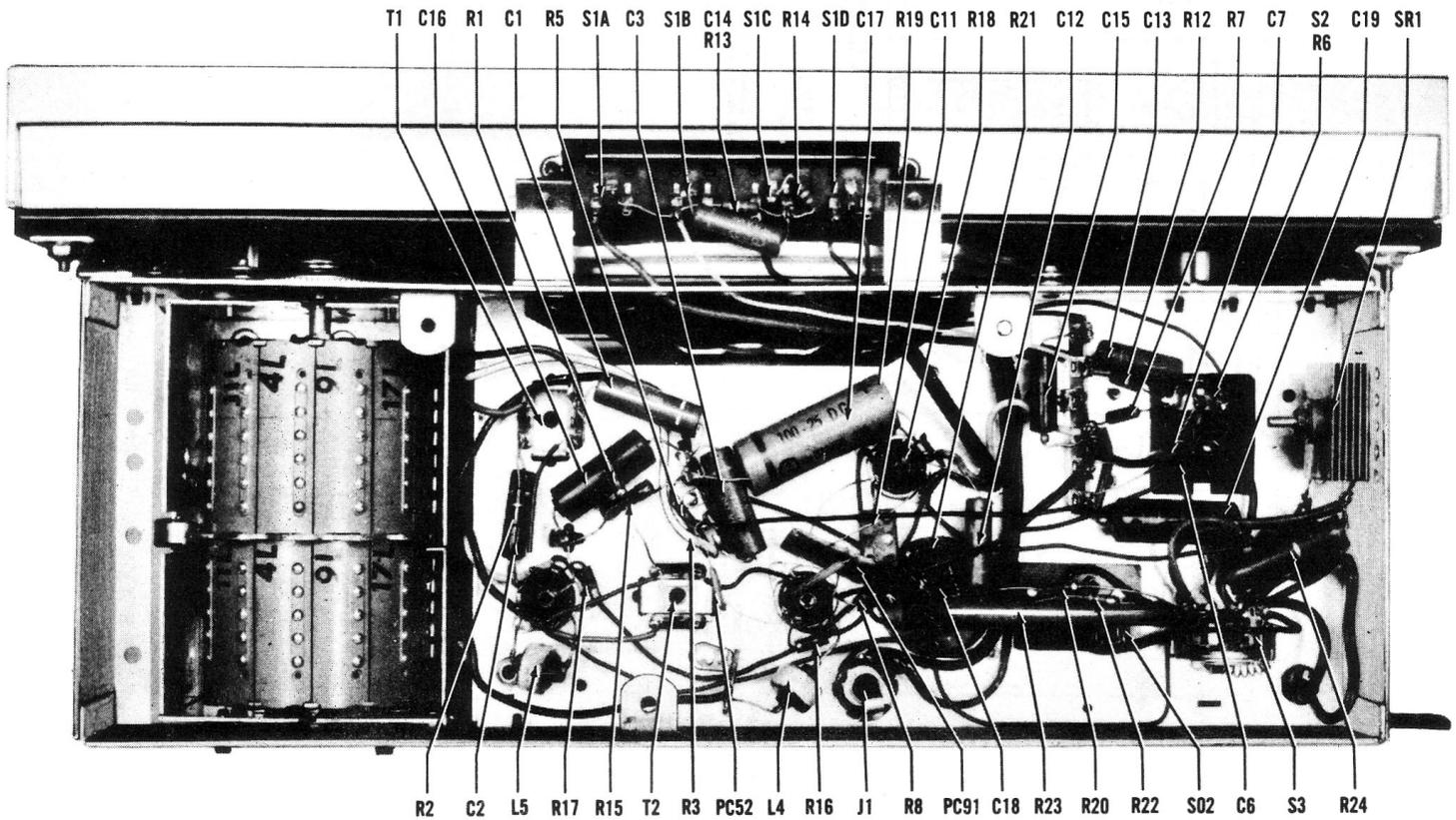


Fig. 8. Bottom View of Chassis Showing Component Location

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