

# hac

## SHORT WAVE RECEIVERS

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### Instructions for Constructing And Operating Model "T" Twin Transistor Receiver

Sole Manufacturers:  
"H.A.C." SHORT-WAVE PRODUCTS  
P.O. BOX 16, EAST GRINSTEAD, SUSSEX, RH19 3SZ

## CONSTRUCTION

1. Mount the coil holder on the underside of the chassis using two bolts and nuts. Note the position of the wider space between pins 1 and 9. See Fig. 2.
2. Mount the two socket strips for headphones and aerial/earth on the outside of the chassis with the prongs protruding inwards using two bolts and nuts for each strip. Punch out the holes in the dial card and mount it with adhesive to the front panel. Bend the two phone tags up to clear T2.
3. Mount the tuning capacitor (using the two short counter-sunk screws) the 5 K ohm potentiometer and the bandspread capacitor in the positions indicated in Fig. 2. The two short screws will pass through the dial card. The bottom lug on the tuning capacitor should be flattened and the shake-proof washer on the potentiometer should be on the inside of chassis.
4. Hold the soldering iron to all tags on the tag board in turn and apply solder to "tin" them in readiness to receive the components. Mount the single soldering tag in the centre of the tag board using a bolt with a nut on the underside. This nut will also serve to space the board away from the chassis.
5. Solder the wire links on the tag board and mount the various resistors and capacitors in the positions shown in Fig. 1. The wire leads on these components should be shortened to make neat wiring, and "tinned" first to assist soldering. Note position of black band on C4.
6. Examine the transistor connections as shown in Fig. 1 and spread the outer leads carefully to span the tags on the tag board. Note that they have a 'flat' on one side. The transistors should now be soldered to their relevant tags, taking great care that they are not overheated by the soldering iron. Just a quick touch with the iron should be sufficient. These should be mounted vertically with their flat sides outwards from the centre of the tag board.
7. Secure the tag board to the chassis through the hole provided with a nut on the top of the chassis. See that it is "square" with the chassis. Connect C1, run wires from the tag board and connect the red and black leads of the battery "snap" connector as shown in Fig. 2. The bandspread capacitor should have a wire connected from one of its prongs on the "fixed" vanes at the back to pin No. 5 of the coil holder.
8. Connect the aerial socket to pin No. 8 of the coil holder. Connect pins 2, 4 and 9 to the centre spigot of the coil holder and take a wire from there to the earth socket. Run a wire from the earth socket and loop it under the adjacent nut which secures the aerial/earth socket strip to the chassis. Tighten the nut.
9. Cut the spindle of the potentiometer to the same length as the other two controls and fix the three operating knobs.
10. Unscrew the brass thread on the coil so that approximately  $\frac{1}{4}$ " protrudes from the coil former and insert the coil in its holder. Plug the headphones into their sockets. These should be of 2,000 ohm resistance for best results. Connect a battery type PP3 or similar.
11. Connect an aerial of about 30' to the aerial socket. An earth is not essential for coil Nos. 4 and 5 but helps considerably with coil No. 3. Only coil No. 4 is normally supplied with the kit.
12. Turn the reaction control potentiometer fully anti-clockwise and then turn it slowly in a clockwise direction until the set is heard to go into oscillation. For ordinary 'phone signals the receiver should be operated with the reaction control held just below the point of oscillation. It will be noted that this setting will vary according to the position of the tuning condenser and both hands will be needed to search for stations. For SSB and CW signals, the reaction control should be set so that the receiver is oscillating. The use of the reaction control needs some practise.

Figure 3 shows a schematic diagram of the receiver circuit.

**LIST OF COMPONENTS:—**

C1	.01	MF	VC1	170	pf	(Tuning)	R1	4.7	K	ohm	(yellow-mauve)
C2	.01	MF	VC2	35	pf	(Bandspread)	R2	2.2	K	ohm	(Red-red-red)
C3	0.1	MF					R3	2.2	K	ohm	(Red-red-red)
C4	10	MF					R4	2.2	M	ohm	(Red-red-green)
C5	.001	MF					VR1	5	K	ohm	LN Potentiometer
C6	.001	MF									

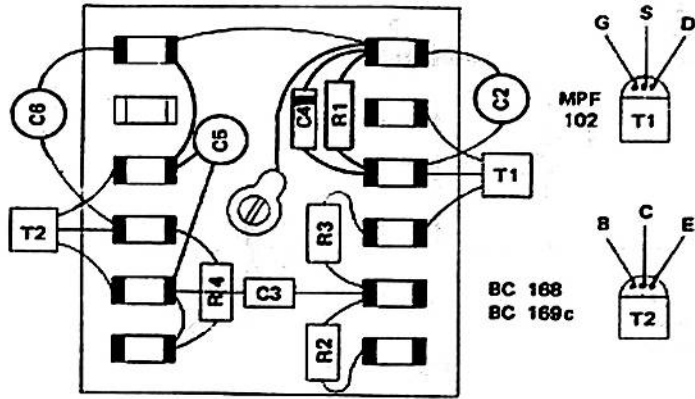


Fig. 1.

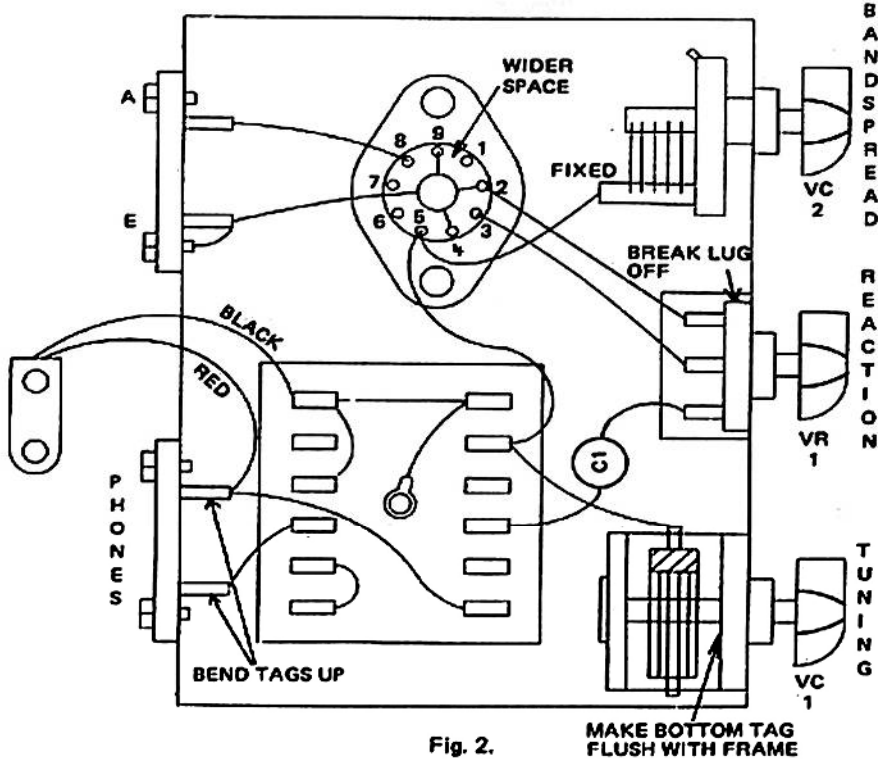


Fig. 2.

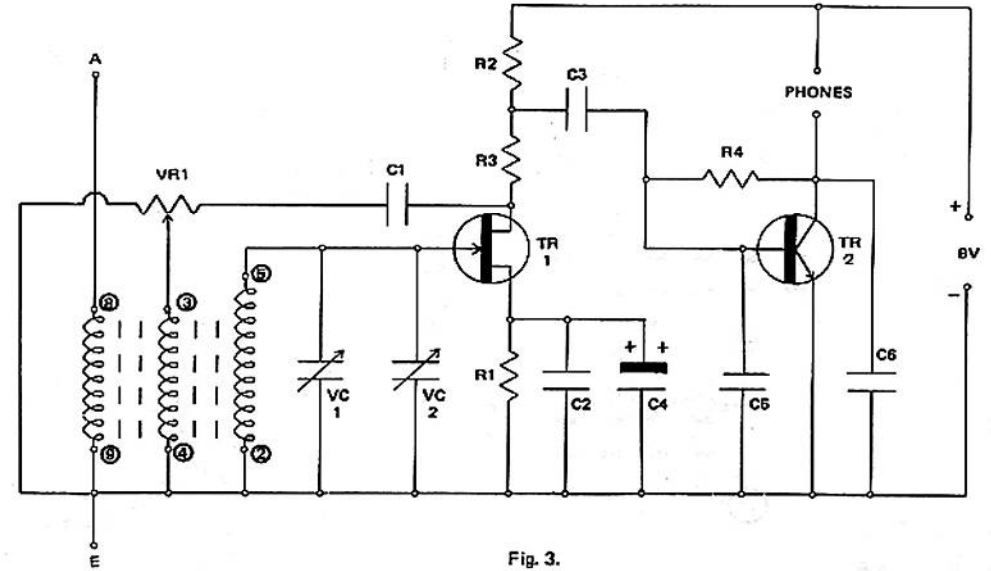


Fig. 3.