

## Instructions for S-53472 Beat Frequency Oscillator (BFO) Kit

The addition of the BFO to Models R760, R780, R790 and R1000D equips these sets to receive the Consol and Consolan Bearing information transmitted as a navigational aid. In addition to this, the B.F.O. permits CW shortwave reception on Models R790, R1000, R1000D, and R3000.

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### Receiver Operation using the BFO

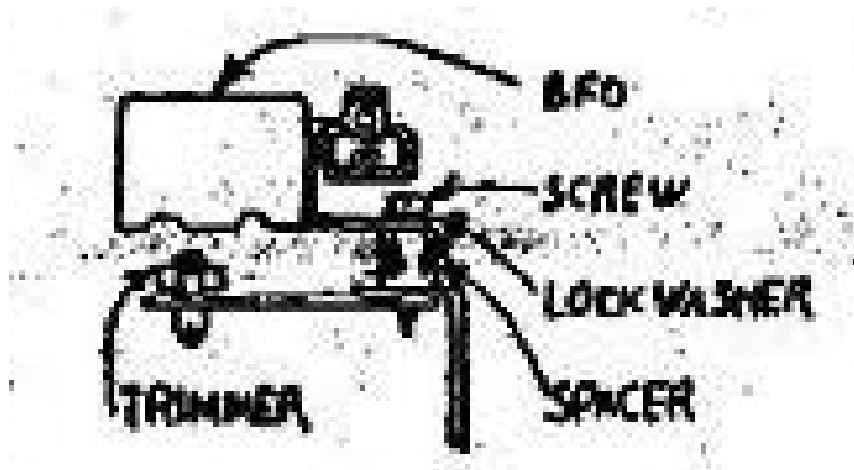
Tune to a weak station then place the switch on the BFO in the "ON" position. Using the non-metallic screw driver supplied, adjust the slug in the BFO coil until the desired beat note is obtained. The Pitch of the beat may be varied by detuning the receiver slightly. Receivers equipped with NAV-NOR switch will perform best in the NAV position.

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**Installing the BFO on Models R760, R780, and R790:** Remove the chassis and position it so the bottom edge of the chassis faces you, then proceed as follows:

- (1) Remove and discard the hex-head screw next to the U-shaped cut-out at the rear of the chassis. Using the #8-32 x 5/8" slotted hex head screw, the lock washer, and spacer provided in the kit, mount the BFO to the chassis as illustrated.
- (2) Route the RED lead from the BFO across the top of the chassis and solder it to the terminal on the on-off switch (at the rear of volume control) which has a RED lead soldered to it.
- (3) Route the GREEN and BLACK leads from the BFO through the U-Shaped cutout. Solder the BLACK lead to the chassis Ground. Remove the 2<sup>nd</sup> I.F. Transistor from its socket and solder the GREEN lead to the Emitter terminal of the 2<sup>nd</sup> I.F. Transistor socket. After all soldering operations have been completed, replace the 2<sup>nd</sup> I.F. Transistor.

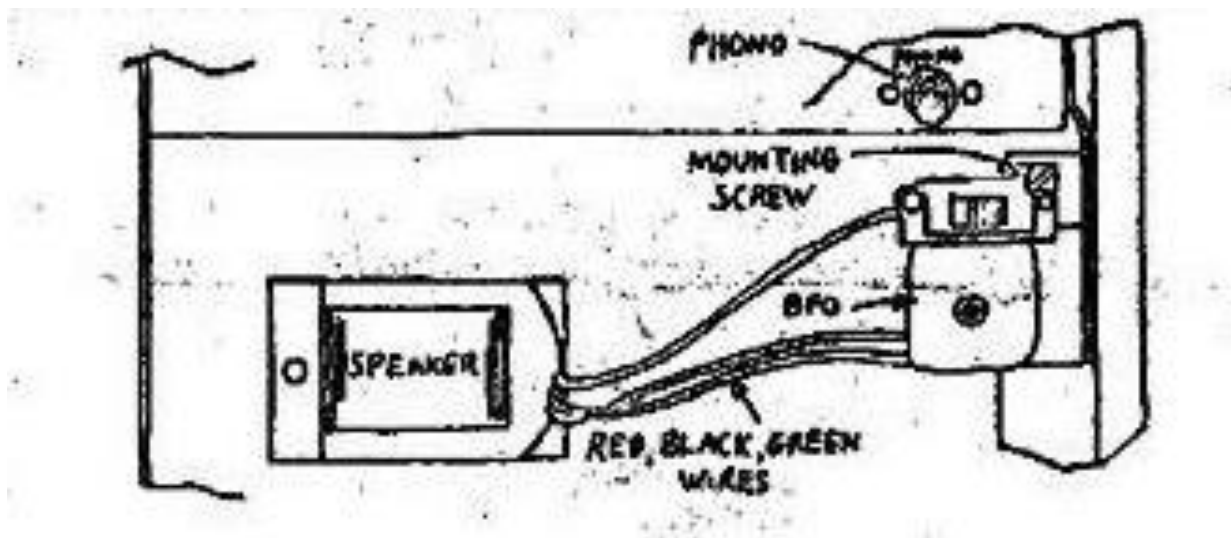
Socketed PNP transistors [E B S \_ C] Emitter, Base, Shield (if present), Collector



**Installing the BFO on Models R1000 and R1000D:** Remove the chassis, then proceed as follows:

- (1) Route the three leads from the BFO through the rectangular speaker cutout in the chassis. Connect the RED lead to the terminal board adjacent to the Earphone jack and Volume control. Solder this RED lead to the same Lug on the terminal board to which the 500uF electrolytic is connected.
- (2) Remove the 2<sup>nd</sup> I.F. Transistor from its socket and solder the GREEN lead to the Emitter terminal of the socket. Solder the BLACK lead to the chassis Ground. After all soldering operations have been completed, replace the 2<sup>nd</sup> I.F. transistor.
- (3) Now remount the chassis except discard the original upper right chassis mounting screw and use the new washer #6-32 x 3/8" slotted screw provided. **Before installing this screw**, place it through the hole in the BFO mounting bracket using it to fasten both the BFO and receiver chassis to the cabinet. See illustration.

2<sup>nd</sup> I.F. 121-74 [ E B \_ C ] socket is above and to the right side of the speaker cutout (to the left of the audio transformer)



**Installing the BFO on Models R3000:** Remove the chassis, then proceed as follows:

- (1) Remove the black Bakelite strip from the back of the chassis by removing three hex-head screws holding it in place.
- (2) Remove the #8-32 slotted hex-head screw from the rear door locking bracket, with the same #8-32 slotted screw mount BFO to the right side of bracket as shown in diagram.
- (3) Cut off 3 ½" of GREEN wire. Cut off 1 ½" of the BLACK and RED leads. Strip and tin the ends of the three leads to 3/8".
- (4) Route the BLACK and GREEN leads from the BFO through the opening which the bakelite strip covered. Great care should be used in the following procedures not to warp the drum dial or burn it with too much heat. Route the RED lead externally to the R.F. section terminal board lug No. 6 (-7.0v) above the Mixer Transistor.
- (5) Remove the 3<sup>rd</sup> I.F. Transistor from its socket and solder the GREEN lead to the Emitter terminal at the socket. Solder the BLACK lead to the chassis Ground to the right back side of chassis at base of tuner output jack. **Do NOT use terminal Ground where diode is connected.** After all soldering operations have been completed, dress the three leads along the back of the chassis. Replace 3<sup>rd</sup> I.F. Transistor.
- (6) Place a one inch long piece of plastic electrical tape behind the BFO switch terminals to chassis back. Do Not replace the black Bakelite strip.

