MODIFICATION OF INVADER VFO

This modification involves placing all of the frequency controlling components in the heated compartment above the chassis. This modification may be done in the following manner:

1. Loosen all the set screws on the upper VFO shaft coupling and slide the coupling all the way on the VFO shaft. mark on VFO cover and gear = 4050 K

2. Remove the VFO shield located below the chassis.

3. Unsolder the shielded lead from the variable capacitor. in the VFO compartment

4. Remove C50, 25N750 capacitor. ceramic disc 25 pf

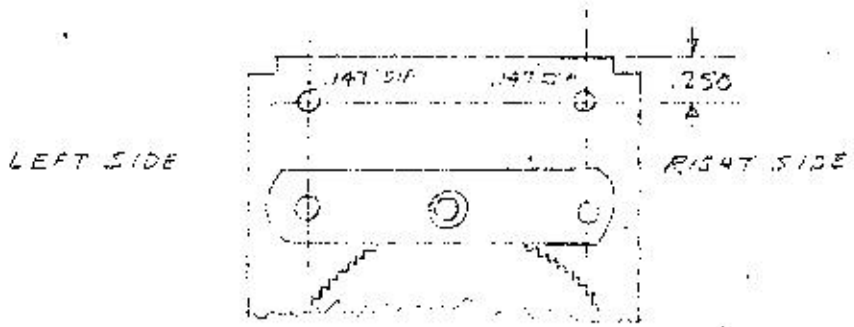
5. Remove C48 and C49, 400 µµfd silver mica capacitors.

6. Remove C47, 100 µµfd durmica capacitor.

7. Unscrew the 3 screws holding the upper VFO compartment to the chassis and remove the VFO compartment from the unit.

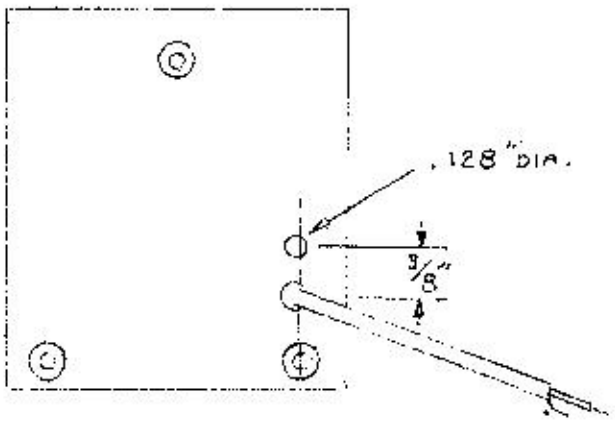
8. Remove the cover from the VFO compartment.

9. Drill two .147" dia. holes in the compartment front as shown below:



10. Mount two insulated tie terminals (22.1522) inside the compartment using 6-32 x 3/16 B.H. screws and #6 lockwashers.

11. Drill a .128" diameter hole in the bottom of the VFO compartment as shown below:

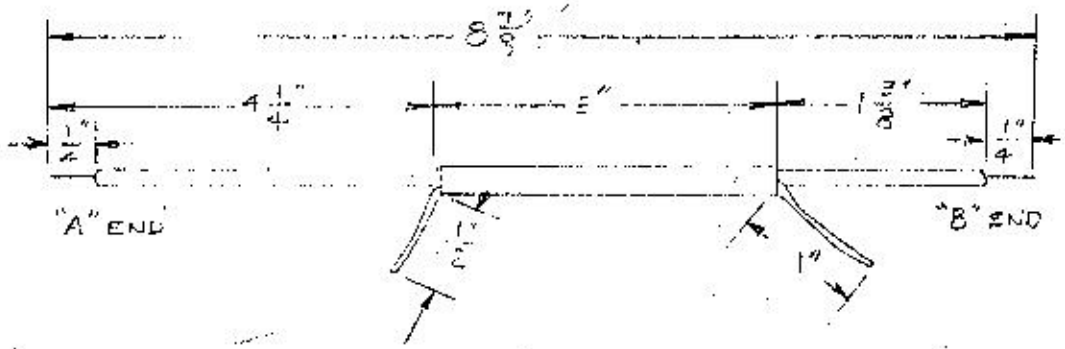


12. Remove C144 (15N220) from the top compartment and install a 22 µµfd ±5% durmica (22.4033-5) in the same location (S).

13. Connect one end of each of the two 400 µµfd capacitors to the insulated tie point on the upper right hand corner (S). Connect the lead of the 400 µµfd capacitor next to the coil to the grounded rotor terminal of the variable capacitor C51 (S). Connect the remaining lead from the 400 µµfd capacitor to the outside stator rear connector of C52 (S).

14. Connect the 25N750 (C50) to the outside rear stator connector of C52 and to the rotor connector (S). Leave a 1/32" space between the 25N750 and the top of the stator plates of C52.

15. Make up a short length of 50 ohm Subminax cable (71.0321-600) per the diagram shown below:



16. Slide the "A" end of the coax. into the hole drilled in the bottom of the VFO compartment from the outside until the 1/2" length of shield is just inside the compartment. Solder the coax. shield to the shield of the shielded wire.

17. Route the unshield wire of the coax. around the variable capacitor and coil at the front of the compartment. Solder this end to the right hand tie point to which the two 400 μμfd capacitors are soldered.

18. Unsolder the shielded wire from the stator terminal of the variable capacitor.

19. Connect the 100 μμfd capacitor C47 to the stator terminal and the tie point terminal on the left side (S).

20. Connect the shielded wire to the tie point terminal on the left side (S). It may be necessary to extend this connector with a short piece of tinned #20 wire and a short piece of insulating tubing.

21. Drill a .128" dia. hole 3/8" to the rear of the hole in the main chassis that is used to feed through the shielded wire from the upper VFO compartment.

22. Mount the cover on the upper VFO compartment using all screws but the two that go into the top.

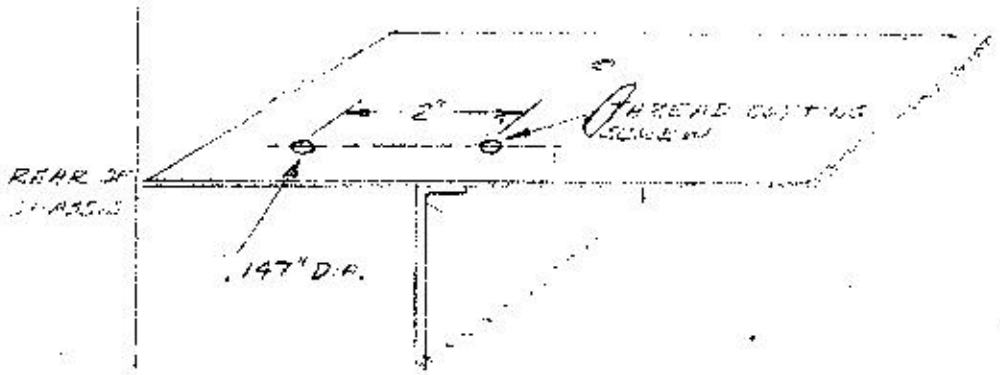
23. Feed the shielded wire and coaxial cable of the VFO compartment through the chassis holes and remount the VFO compartment on the chassis. Make sure the VFO capacitor shaft and the vernier dial shaft are in line and tighten the coupling on both shafts.

24. Connect the shielded wire to the first terminal on the terminal strip in the lower VFO. Solder a short length of #20 black plastic covered wire to this first terminal and to the #1 pin on the VFO tube. Solder the shield braid to the adjacent solder terminal.

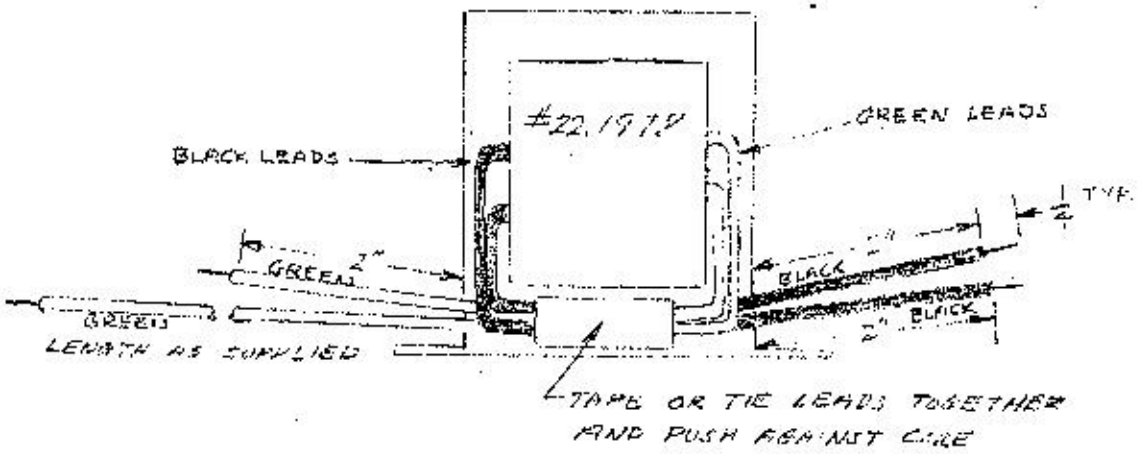
25. Solder the inner wire of the coaxial line to pin 7 of the VFO tube. Solder the shield braid to the ground wire going to the potentiometer R31.

26. Disconnect the green wire from the second terminal of the terminal strip, clip off the bare end and insulate the end with a short length of insulating tubing.

27. Drill a .147" dia. hole in the side of the final loading compartment shield as shown below:



28. Cut the leads on the VFO filament transformer as shown below:



29. Mount the filament transformer on the compartment shield using the hole just drilled and the shield compartment screw. Use a 6-32 x 1/4" B.H, #6 lockwasher and 6-32 hex nut in the .147" dia. hole. Use the present thread cutting screw, a #6 teardrop solder lug and a #6 lockwasher at the other transformer mounting foot.

30. Solder the black wires to terminals 1 and 2 on jack J3.

31. Solder the short green lead to the solder lug on the transformer mounting foot.

32. Route the long green lead along the cable next to the compartment shield into the bottom VFO area. Tie the green wire to the cable.

33. Solder the green wire to the second terminal of the VFO terminal strip (this is the terminal from which the green wire was removed).

34. Replace the lower VFO compartment shield and tighten all nuts and bolts securely. Be sure the cables and wires are in the slots in the shield sides. opened corner about 1/8" higher and 1/8" inside (only the one corner VFO shielded cable)

35. Adjust the differential TC compensating capacitor so it is fully meshed on the NPO side (shaft dot toward main chassis). ← ORIGINAL TC CAP SETTING = 1/2 MESHED

36. Recalibrate VFO. after heater is left on overnight

Dec, 6, 1962