POWER SUPPLY

For operation from a 12-volt DC source, the power supply uses two transistors and a special transformer, the circuit functioning as an invertor. The transistors are used as "switches" and serve the same function as the mechanical vibrator used in many older DC invertor circuits. The transformer windings in the base circuits are the feed-back windings. The Blue-Brown-Yellow windings are connected to the collectors of the transistors and serve as the primary windings. The entire circuit operates at a switching rate of approximately 90 cycles.

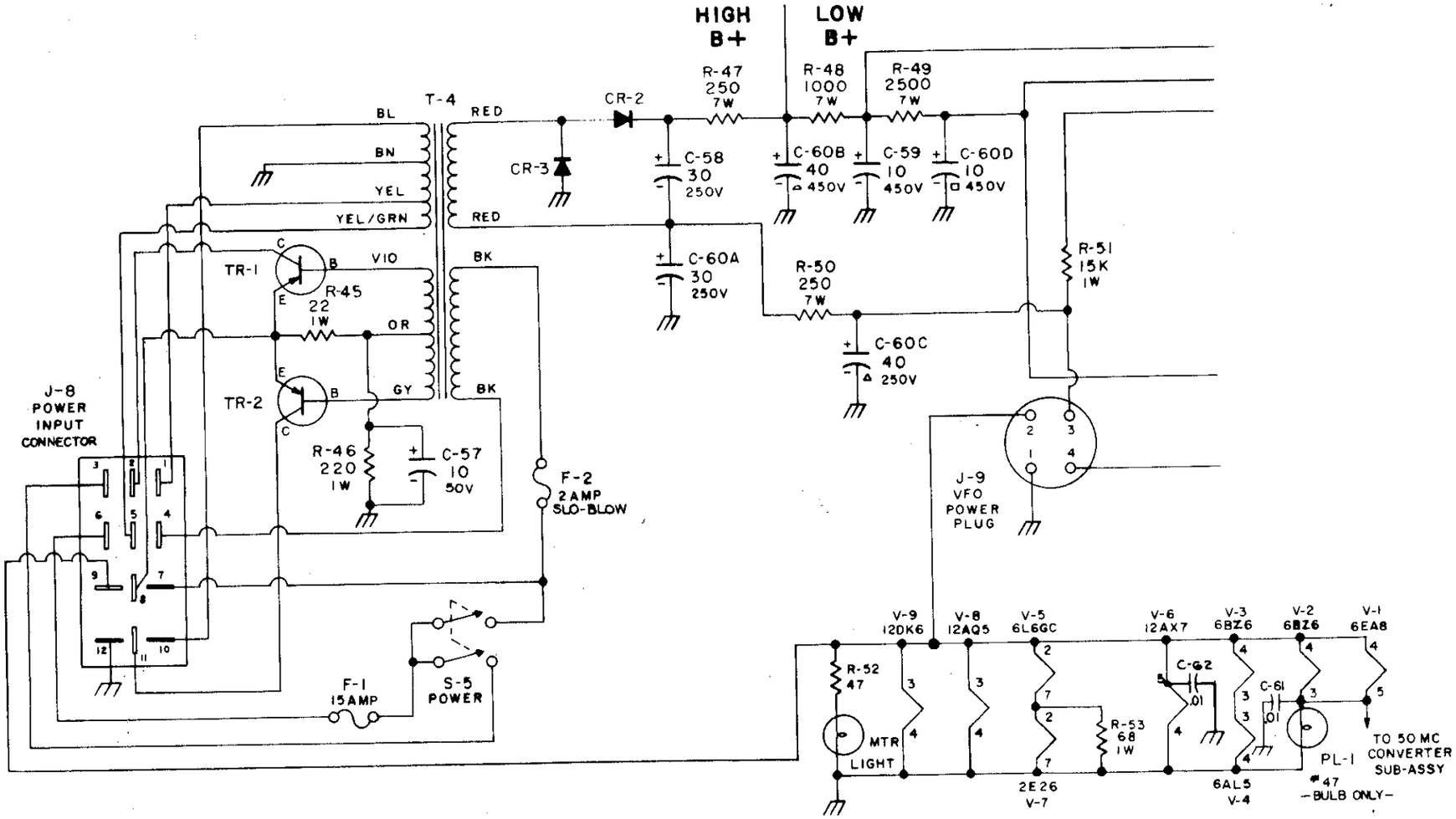
For AC operation, the transformer functions as a normal step-up type to provide the required voltage to the secondary.

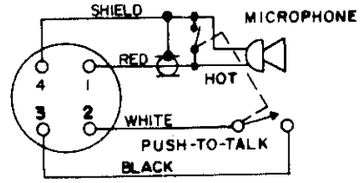
Two power cables, with appropriately wired connectors, determine the proper transformer and circuit connections. Separate fuses are provided for AC and DC operation. Filament wiring is in series-parallel combination to provide proper current drain at the 12.6 volt level. You will notice that filament by-passing is utilized at critical circuit points.

True push-to-talk operation is achieved with the front panel Transmit/Receive switch. Thus, the microphone switch can be used to operate the transmit-receive function, or the front panel switch can be used. If a microphone other than the one included with the unit is to be used, both push-to-talk circuit features are still operational. The relay contacts switch the critical circuit points; the microphone button and Transmit/Receive switch only complete the circuit for the relay coil.

Notice that there is a shorting switch contact across the microphone element when the microphone button is in the normal position. Thus, you can operate the front panel T/R switch for tune-up purposes without fear of pick-up from the microphone. This also points out the fact that for transmission, the T/R switch cannot be used by itself, unless the mic switch is defeated in this shorting function. That is, you must press the mic button to allow the crystal element to become active and functional.

We call your attention to the liberal use of decoupling and by-passing throughout the circuit. This prevents any coupling back through the power supply circuits. All critical points are more than adequately by-passed and isolated from other circuits.





P-3

DC Power Cord. See Figure 26.

- ☑ Position a 12-pin plug as shown.
- ☑ ½" bare wire. Solder one end to terminal 1. Solder the other end to terminal 2.
- ☑ 1" bare wire and ½" of tubing. Solder one end of the wire to terminal 3. Slip the tubing over the wire and solder to terminal 9. **Do not let the wire touch nearby terminals.**
- ☑ ½" bare wire. Solder one end to terminal 8. Solder the other end to terminal 7.
- ☑ ½" bare wire. Solder one end to terminal 10. Solder the other end to terminal 11.
- ☐ 6 foot length of heavy red stranded wire. Twist this wire and the 6 foot length of heavy black wire together. Insert one end of these wires through the cover for the plug and through a medium grommet. Slip ½" of large tubing over each of these two ends.
- ☐ Remove ¼" of outer insulation from these wire ends. Spread out the strands and cut off 16 strands as shown in the figure. Twist the remaining strands and lightly coat them with solder.
- ☐ Solder the red wire to terminal 6. Solder the black wire to terminal 12. Slip the tubing down over the terminals.
- ☐ Check the wiring of the plug to be sure no wire or solder is touching an adjacent terminal.
- ☐ Push the cover down over the plug and insert the retaining pin through the cover into the plug base. Drive the pin all the way into the base. Position the grommet inside the adjustable clamp and tighten the screws on the clamp to hold the wire tightly.

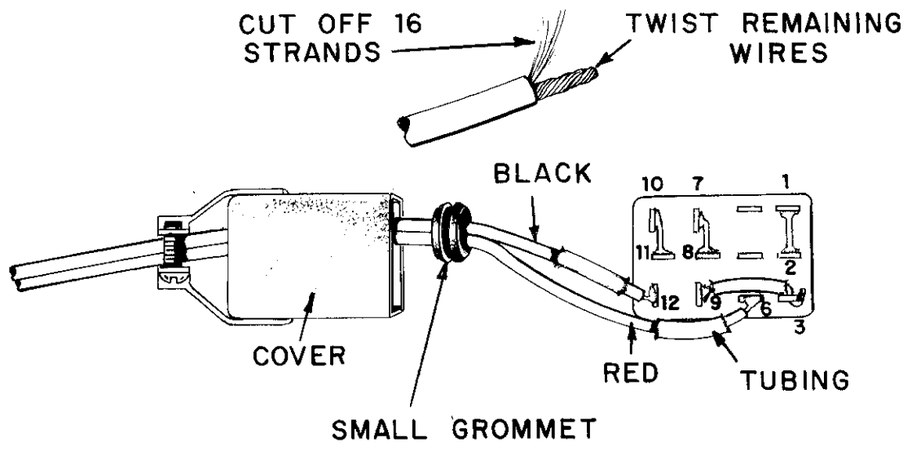


FIGURE 26

See Figure 27.

The free ends of the heavy red and black wires can be wired directly to the ignition switch (accessory terminals) if your transceiver will be permanently installed as a mobile unit. Otherwise, you may connect the accessory plug to the free ends. In either case, keep the length of these DC power cables as short as possible; excessive length will cause excessive voltage drop in the wires.

A. Remove exactly ¼" of insulation from each wire end. Crimp a small clip to the free end of each wire.

NOTE: If excessive solder is used, the clips will not fit in the plug.

B. Solder each clip where shown.

NOTE: Be sure to insert the clips correctly. Once they are inserted into the plug, they cannot be removed.

C. Push the clip soldered to the red lead into the hole marked + (positive) on the plug. Push the clip soldered to the black lead into the hole marked − (negative) on the plug.

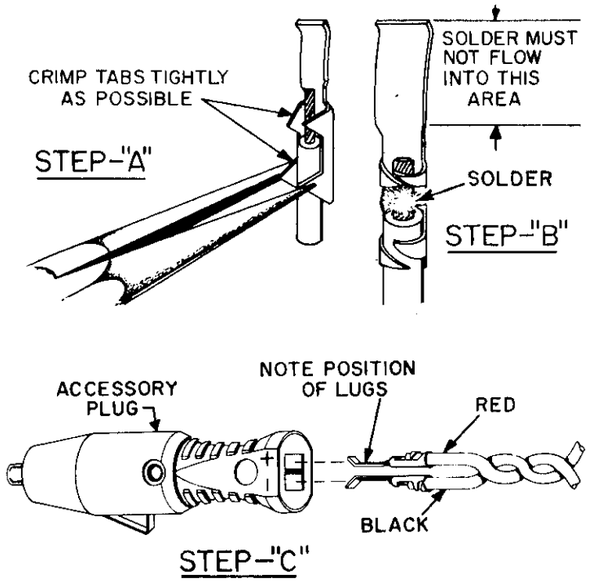


FIGURE 27