

Installation of Second Transformer for the 680b

By Ron Scales

To expand the 680b computer to three boards, it may be necessary to add a second transformer. When this second transformer is properly connected, the supply current will be doubled without increasing the supply voltages.

In order to meet the above requirements, these two transformers must be wired in parallel and it is important to wire them so that their phase relationship is identical.

Pay close attention to the following procedure because each step is critical. Check both of transformers and make sure they match each illustration exactly. Failure to wire these transformers correctly may result in permanent damage to your unit.

1. Disconnect the first transformer completely from the 680b back panel by unsoldering the primary leads from the terminal strip and removing the terminal pins from the secondary leads. Be sure to leave all the wires long enough to reach their destination.

2. Place both of the transformers upright in front of you and straighten and separate all of the wires coming from the coil winding.

3. Place the transformers so that the side with the two black wires is facing you. If the new transformer has two blue wires on the same side as the black wires, cut off the blue wires.

4. Tie a knot in the middle of the black wire that enters the coil winding the closest to the left side. (See Figure 1.)

5. Turn the transformers around so that the side with five wires coming from the coil winding is facing you.

6. Tie a knot in the middle of the red wire that enters the coil winding furthest to the right side. Do the same to the white wire that is furthest to the left on each transformer.

7. Strip off approximately 3/8" insulation from each of the secondary wires on both transformers. Now position the red wires with knots in them according to Figure 2. Wrap the bare end of one knotted red wire once around the other and solder them together. Heat shrink (if used) may be inserted now on the wires before crimping on the terminal pins.

8. Now crimp the terminal pin on the wire and use a little solder to insure a good connection (see Figure 3). Repeat steps 7 and 8 with the remaining secondary wires making sure that the two knotted white wires are tied to each other and also that an extra 8" wire is tied to the two orange wires before crimping the terminal pin on. The third wire connected to the two orange wires is to insure a good chassis ground for the system. After all the secondary wires have been crimped on, it should resemble Figure 4.

9. Separate each of pins by cutting tabs as close as possible to each of the terminal pins.

10. Beginning with the two knotted white wires, orient the terminal pin and the 5-pin female connector according to Figure 5. Now, push the pin into the female connectors' slot until it locks into place.

11. Make sure you put the remaining wires into the connector in the correct order (white, white, orange with ground, red, red) according to Figure 6. When all the wires have been inserted into the connector, it may be necessary to insulate the bare wires with either heat shrink or electrical tape.

12. With the secondary wiring completed, install both transformers according to Figure 7. The terminal strip is mounted with the top screw over the second transformer.

13. Instructions for wiring up the terminal strip line cord and fuse holder are covered in the 680b Assembly Manual for the back panel. But it's essential to remember that the two primary wires with knots on them must be tied to the same terminal on the terminal strip. It's also advisable to replace the 1/2 amp fuse to a 1 amp slow blow fuse.

If the preceding steps have been followed exactly, the finished back panel should look similar to Figure 8. Your 680b power supply should then be able to handle 3 add-on boards to your system without any problems.

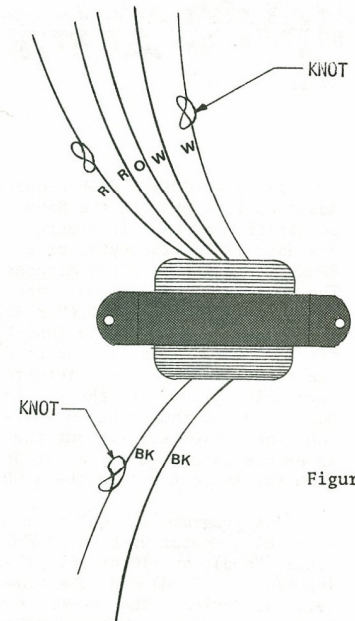


Figure 1



Figure 2
Knotted Red Wires

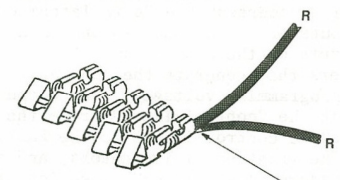


Figure 3
SOLDER & CRIMP

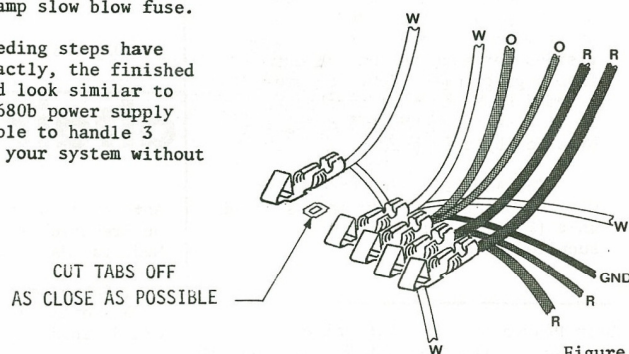


Figure 4

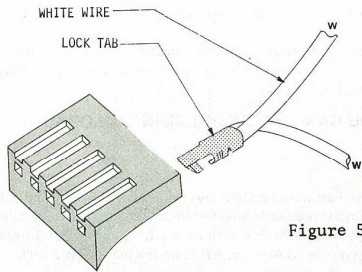


Figure 5

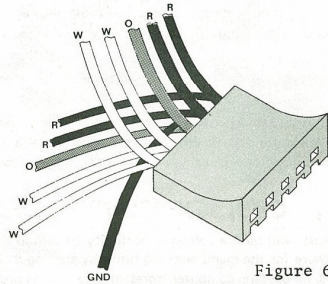


Figure 6

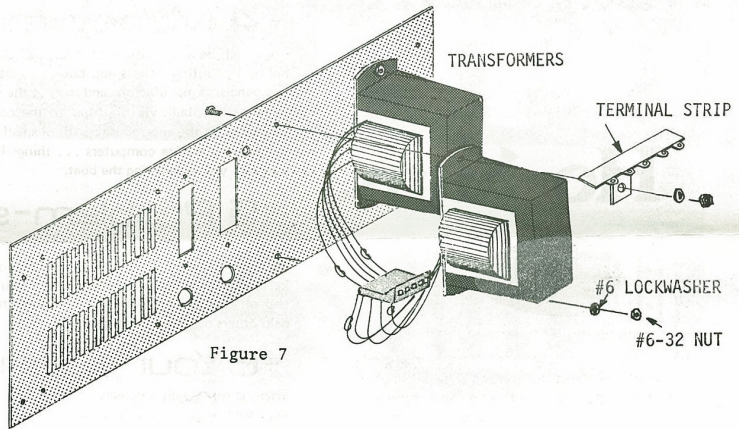
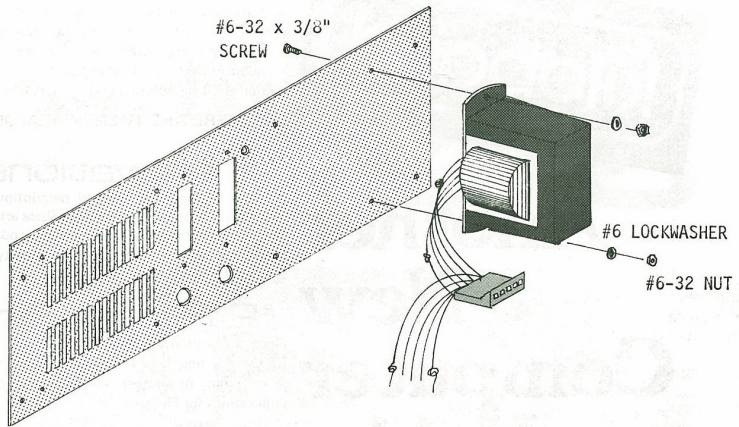


Figure 7

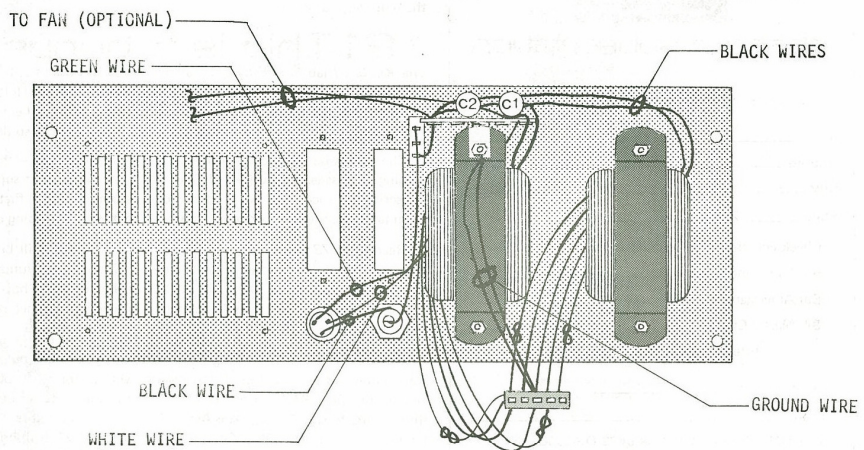


Figure 8