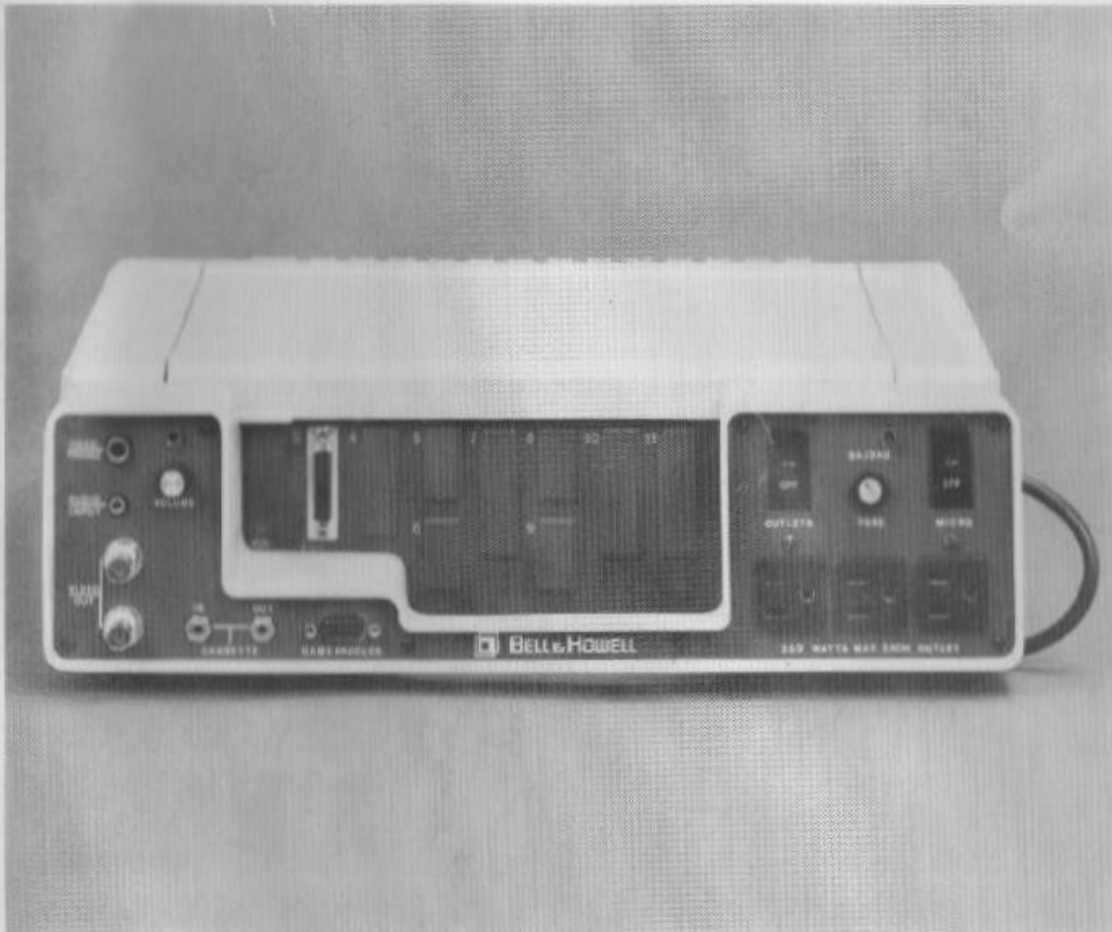


Bell & Howell

**BACKPACK
INSTALLATION MANUAL**

*For The
APPLE® IIe MICROCOMPUTER*



Interactive Communications Division

8bitsystem.com

TABLE OF CONTENTS

TOOLS NEEDED	1
GETTING READY	1
PREPARATION.....	2
ELECTRICAL ASSEMBLY.....	4
FINAL ASSEMBLY	7
SPEAKER CONNECTION	9
MOUNT WIRE-TIE	10
TESTING THE COMPLETED ASSEMBLY	10
BEFORE TURNING POWER ON.....	10

WARNING
DO NOT PLUG POWER CORD
INTO AC OUTLET UNTIL
BACKPACK IS INSTALLED
ON COMPUTER.

LABEL #20713993

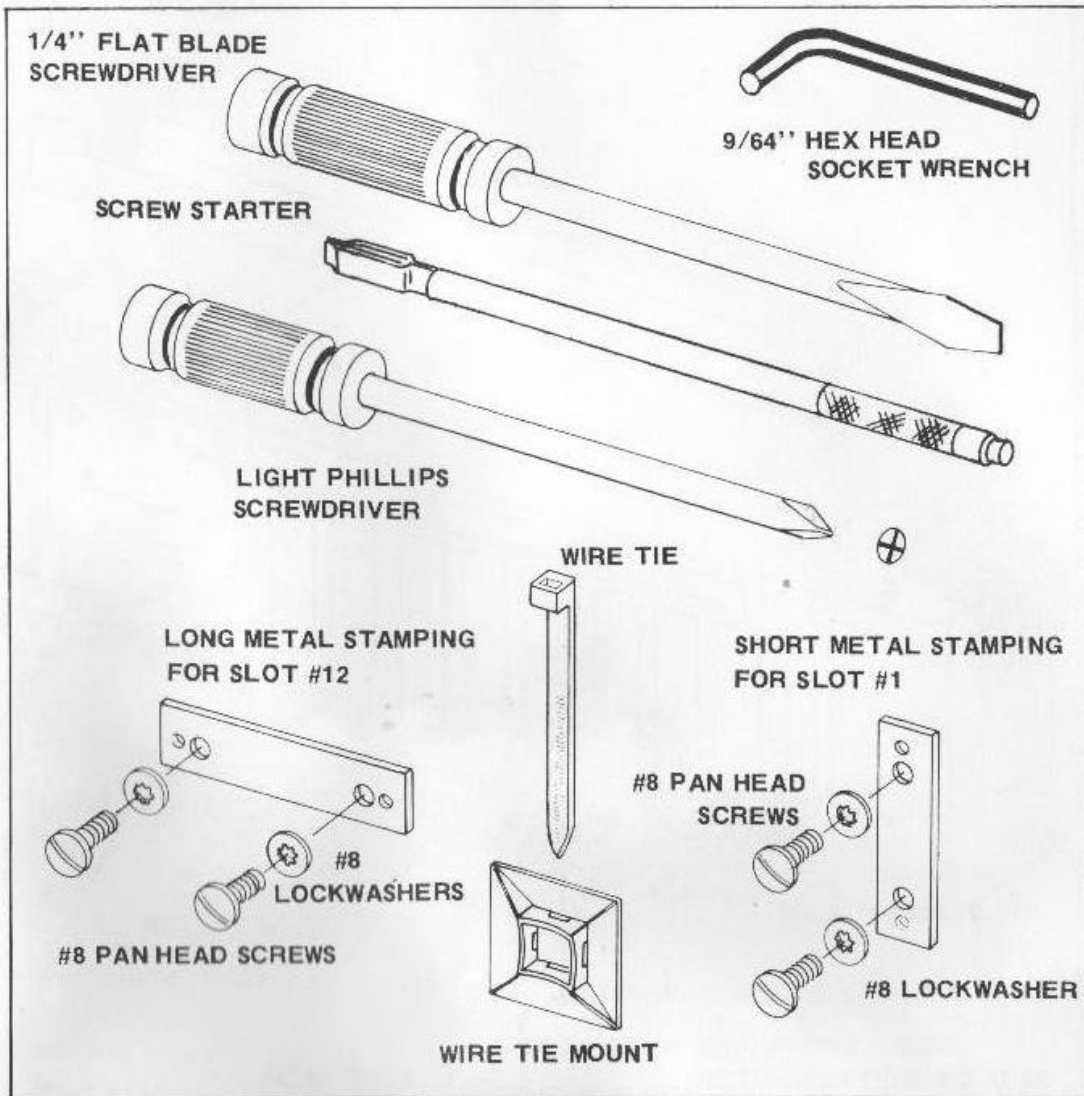


FIGURE 1

TOOLS NEEDED

The only tools you will need are (Figure 1):

- (1) 9/64" hex head socket wrench
- (2) 1/4" light flat blade screwdriver
- (3) One screw starter (similar to type manufactured by HJJ Co., Los Gatos, CA, part #3-8)
- (4) Light Phillips screwdriver

GETTING READY

Check the plastic packet of components. You should find:

- (1) two flat metal stampings (different sizes) with 2 holes drilled in each
- (2) four #8 pan head screws
- (3) four #8 lockwashers
- (4) one wire tie
- (5) one self adhesive wire-tie mount
- (6) one hex head socket wrench

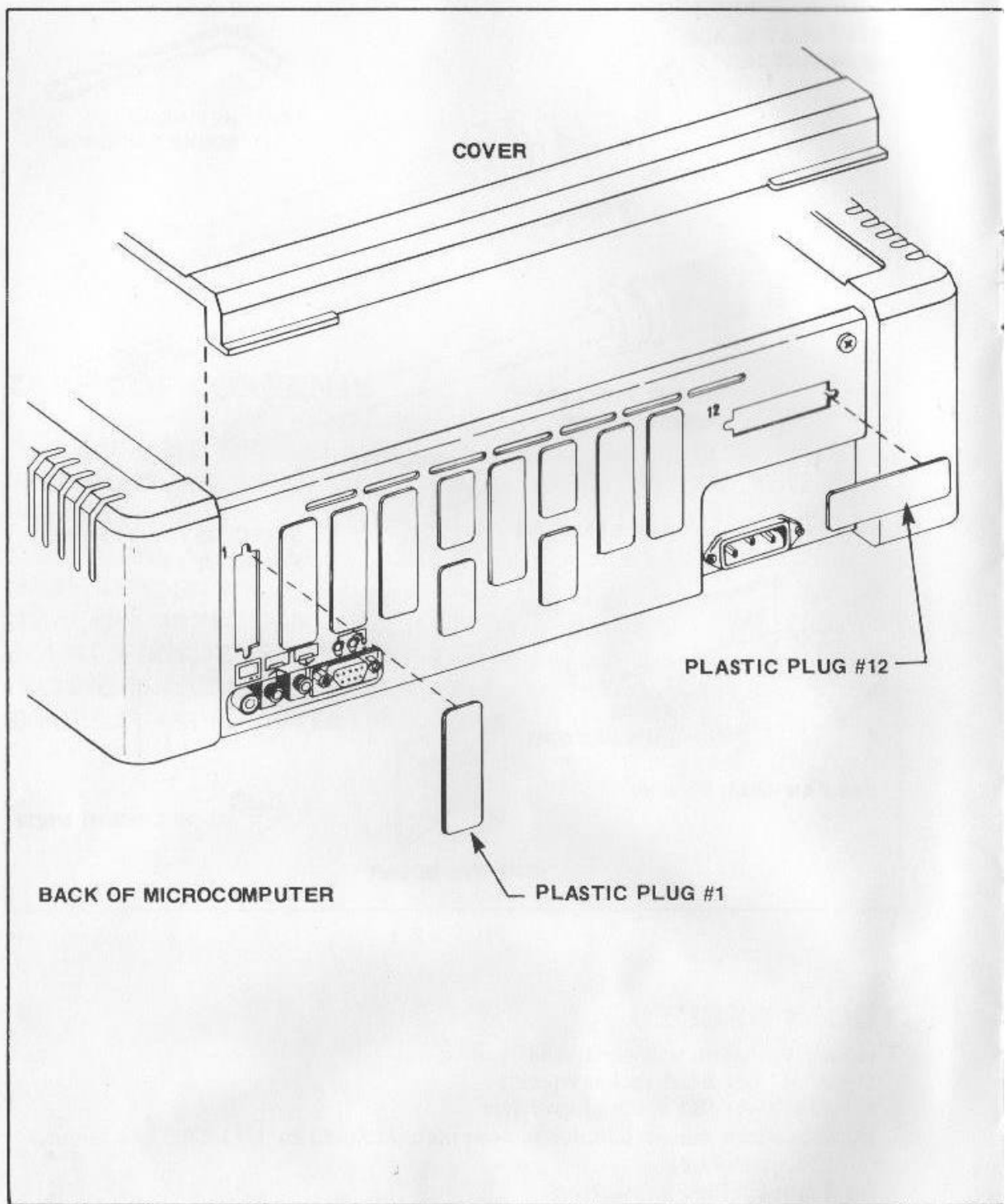


FIGURE 2

PREPARATION

Remove the Backpack from the carton and packing material, taking care not to lose the plastic packet of components. To make the installation process go smoothly, please read through the manual first. Then go back and install the Backpack using the illustration as a guide.

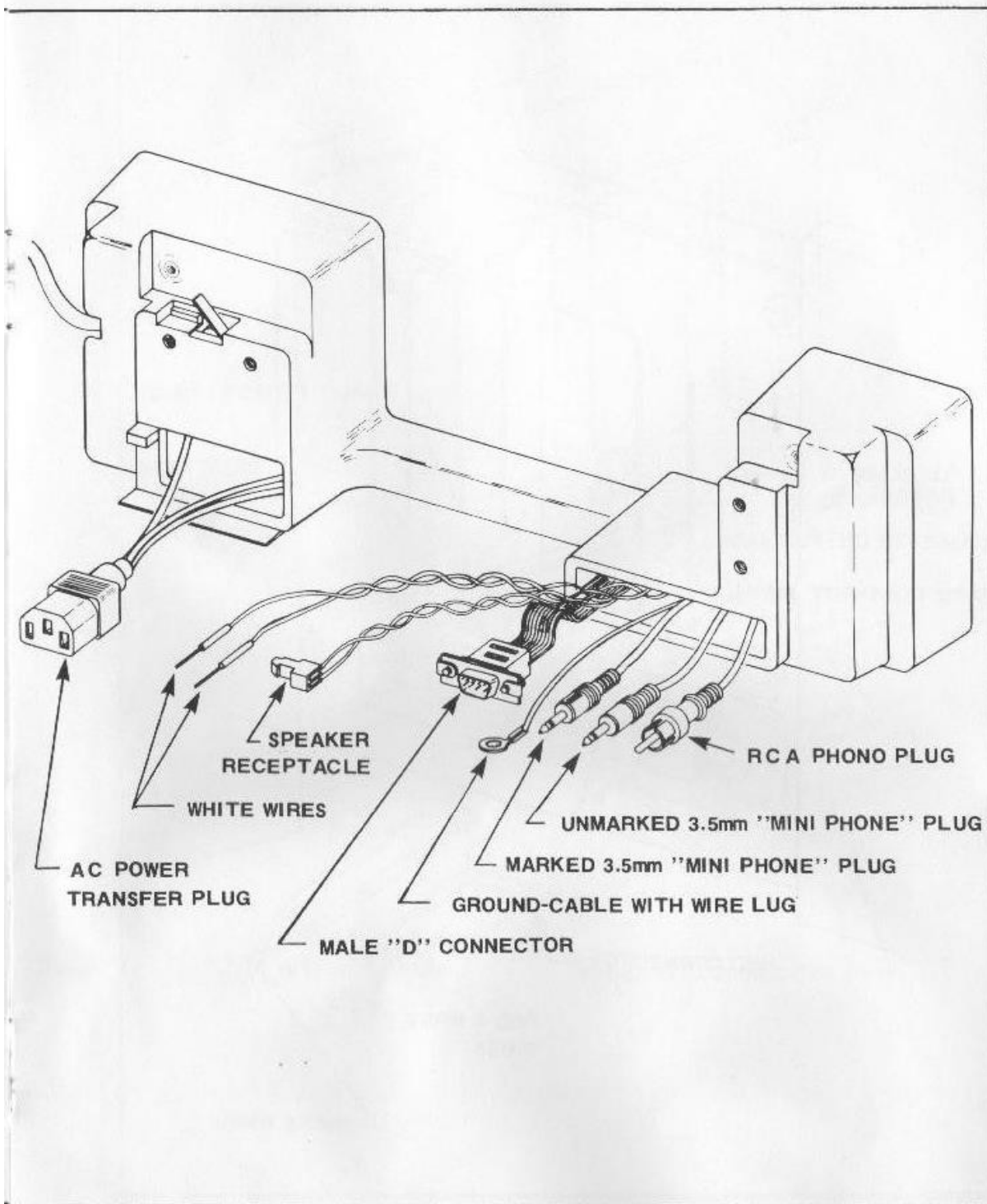


FIGURE 3

Remove the cover from the Microcomputer. Locate and remove the plastic plugs which cover access openings numbers 1 and 12 on the rear panel of the computer (Figure 2). Remove the Backpack packaging. Position the Backpack about 3" from the rear of the computer. The Backpack will be secured to the rear of the Microcomputer by using the flat metal stampings and the #8 lockwashers and the #8 screws. Assemble the screws and washers and set aside (Figure 1).

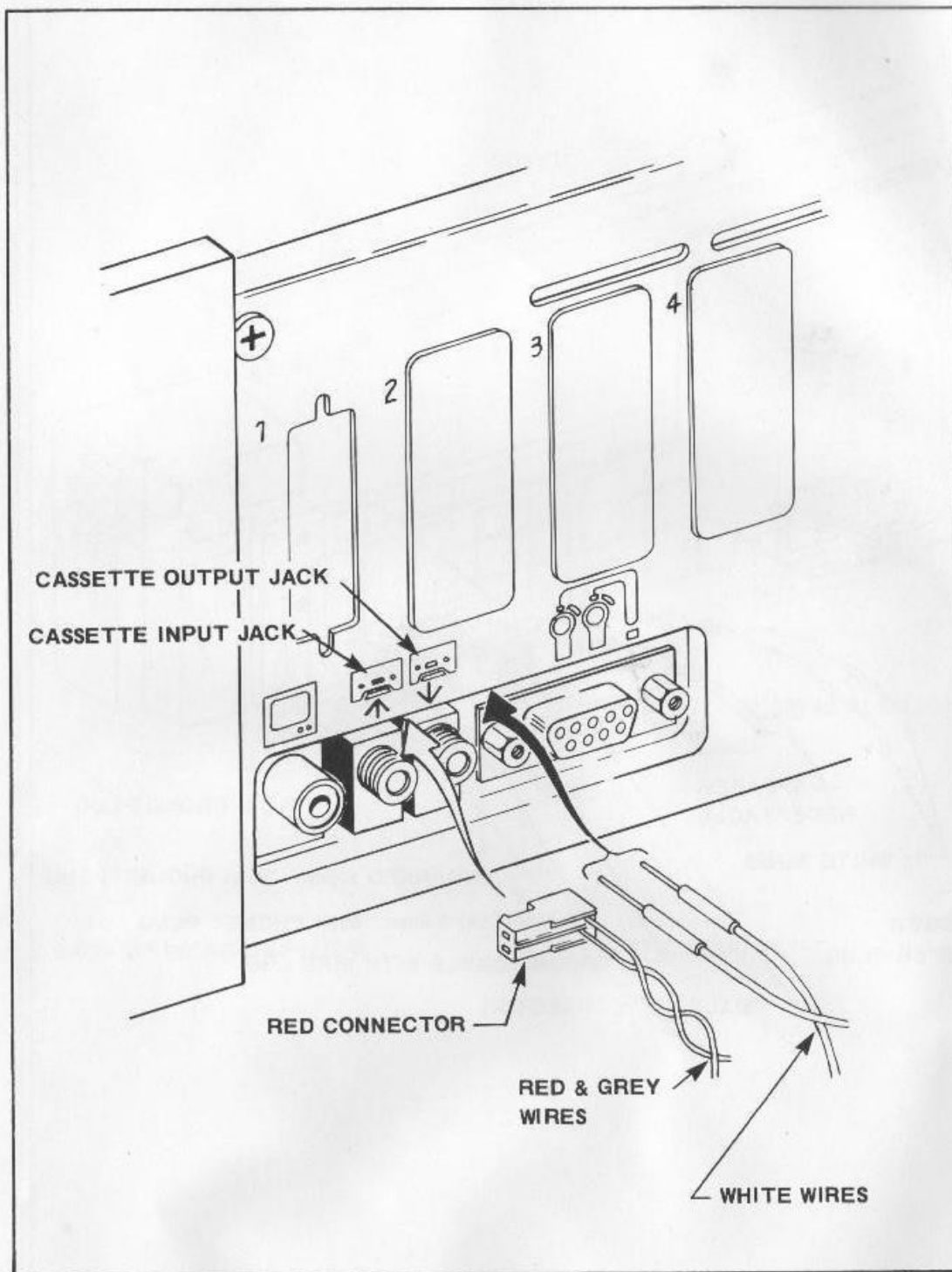


FIGURE 4

ELECTRICAL ASSEMBLY

Next route and connect the following wires as shown (Figure 3):

- (1) Take the 4 wire twisted cable (two white wires and one red and grey set combined) and insert it through the rear panel of the computer in the opening above the cassette output/input jacks. Hold the red connector flat with the snout facing left as shown, and gently insert it through the opening. Take care not to force it. By carefully inserting it as described it will fit easily through the opening indicated (Figure 4).

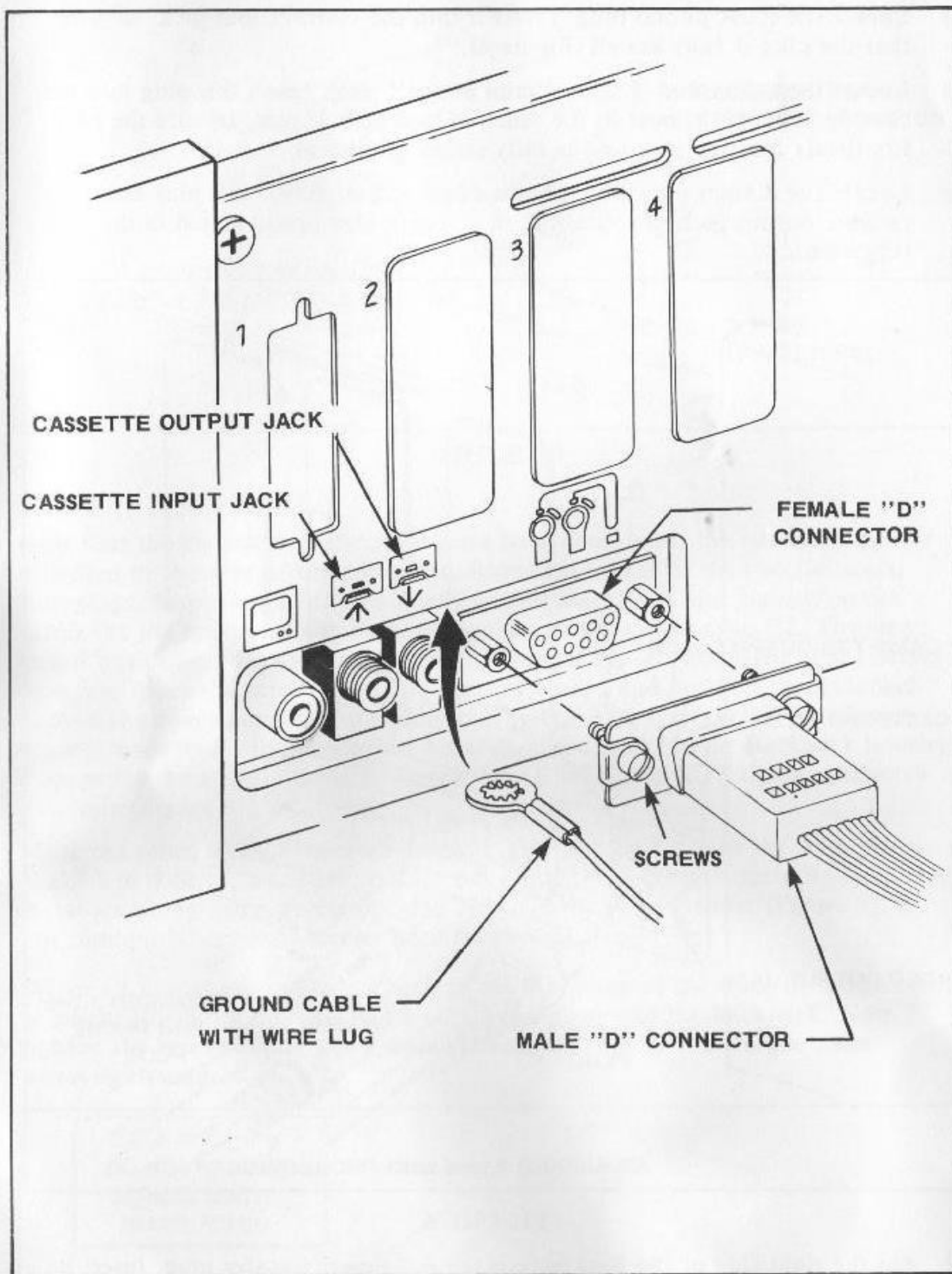


FIGURE 5

- (2) Locate the male "D" connector. Mate this with the 9 pin female "D" type connector on the back of the computer, taking care to align the "D" shells properly. Snug the screws down firmly to seat the two connectors fully. Do not over-torque the screws (Figure 5).
- (3) Locate the green, ground-cable with the wire lug on it. Route this wire into the computer in the opening above the cassette input/output jacks. Be sure this cable stays inside the computer during the remainder of the assembly process (Figure 5).

- (4) Locate the RCA phono plug. Insert it into the video output jack. Be sure that the plug is fully seated (Figure 6).
- (5) Locate the *unmarked* 3.5mm "mini phone" plug. Insert this plug into the cassette input jack, next to the video output jack. Again, be sure the plug fits firmly into the jack and is fully seated (Figure 6).
- (6) Locate the 3.5mm plug which has a *black stripe*. Insert this plug into the cassette output jack. Be sure that this plug is also firmly seated in the jack (Figure 6).

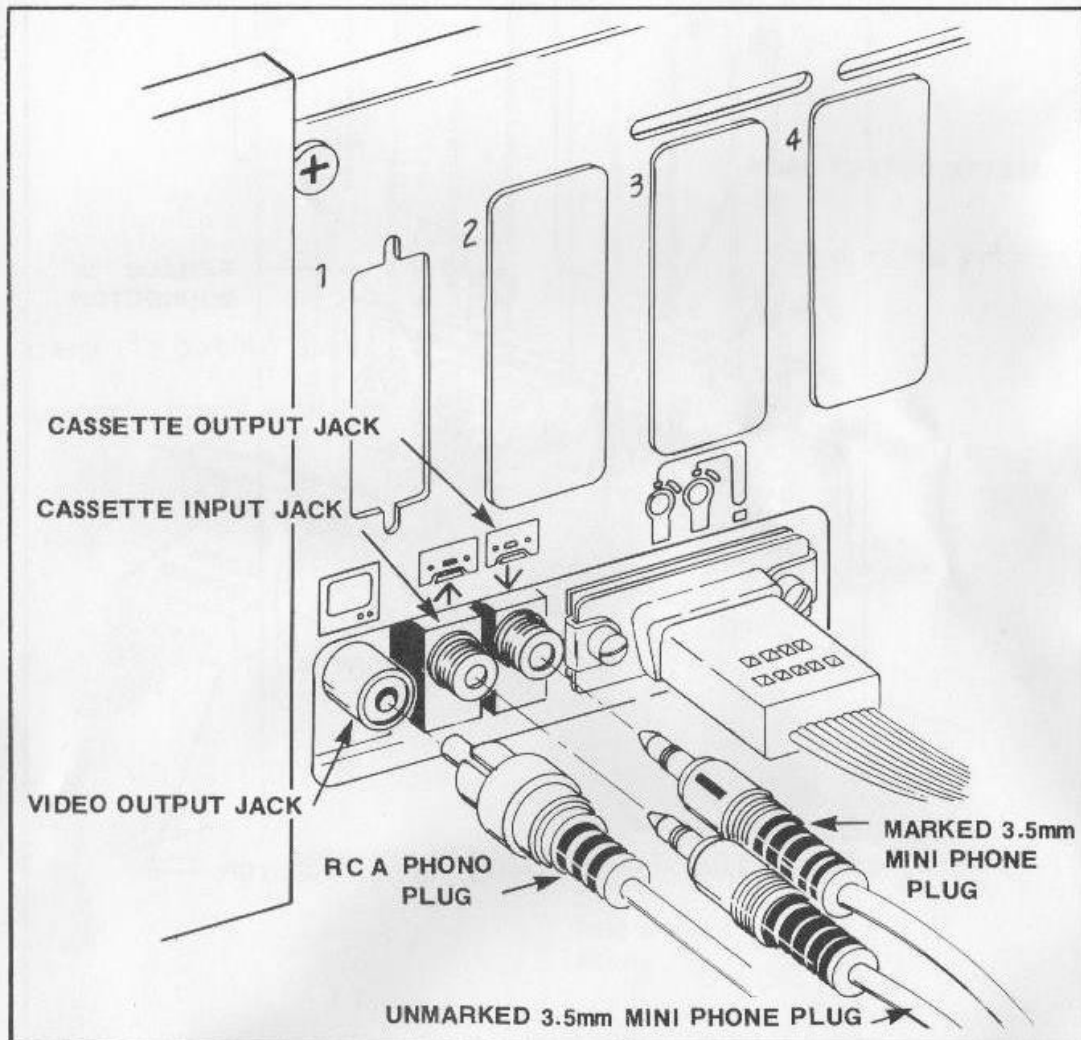


FIGURE 6

- (7) On the right side of the Backpack is the AC power transfer plug. Insert it into the receptacle designated "Computer Power Supply". Take care to seat it firmly. Turn the Microcomputer switch (far right side) to the "ON" position (Figure 7).
- (8) Carefully place the Backpack next to the computer rear panel.

Check to be sure that all plugs which were previously inserted are still firmly engaged in their jacks. Finally, check that the green cable with the wire lug is still in position inside the computer.

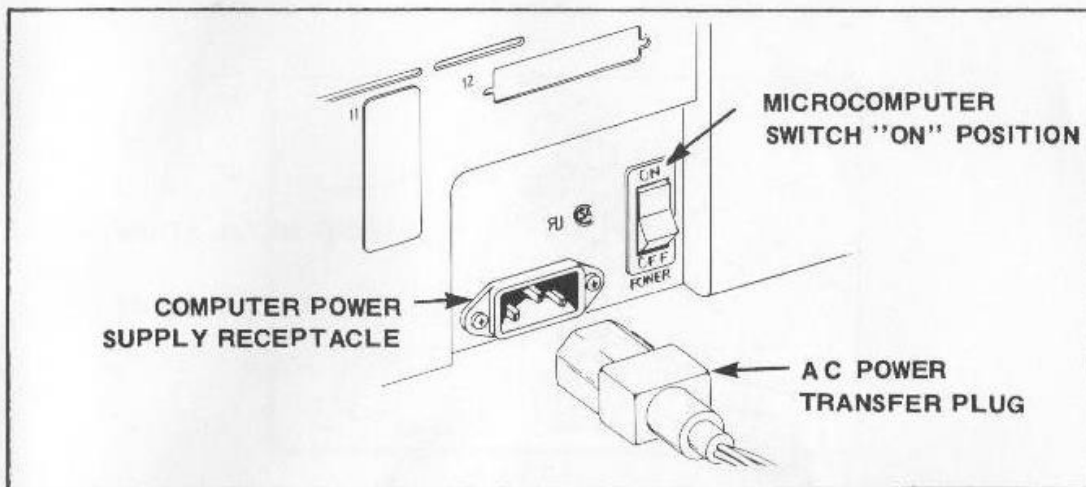


FIGURE 7

FINAL ASSEMBLY

Now that the electrical connections have been completed, the Backpack can be mounted to the rear of the computer. Select the longer of the two flat metal stampings. Insert one of the #8 screw/washer assemblies and place it on the *inside* of the computer's back panel against access opening No. 12. The small raised positioning lugs will drop into the slots at the left and right of the access opening. Place the screw starter on the screw head and position the Backpack against the computer's rear panel by raising the Backpack slightly to align the screwthreads with the appropriate brass threaded insert in the Backpack housing. Engage the insert by turning the screw 3 to 4 turns. Do NOT tighten the screw at this time (Figure 8).

Place the other screw on the screwholder and insert it through the stamped plate. Make 3 to 4 turns, as above, but do not tighten the screw. Attach the remaining metal stamping using access opening No. 1 in the same manner (Figure 9). Do not tighten either set of screws until instructed.

When all screws are in place, check to see that none of the wires or the line cord is pinched between the rear panel of the computer and the Backpack. **Now, tighten the screws until firmly seated. Be careful not to over-torque them when tightening.**

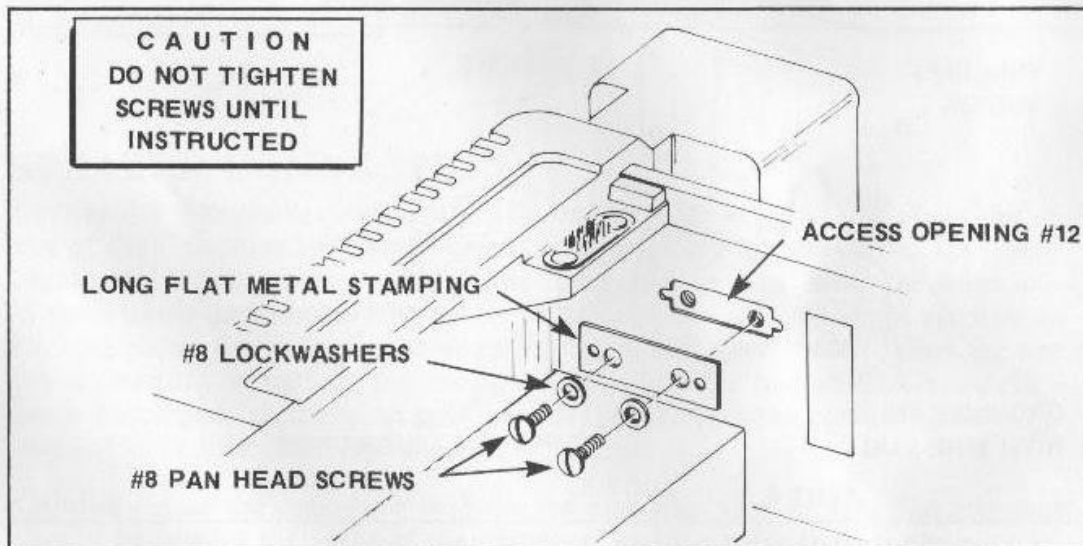


FIGURE 8

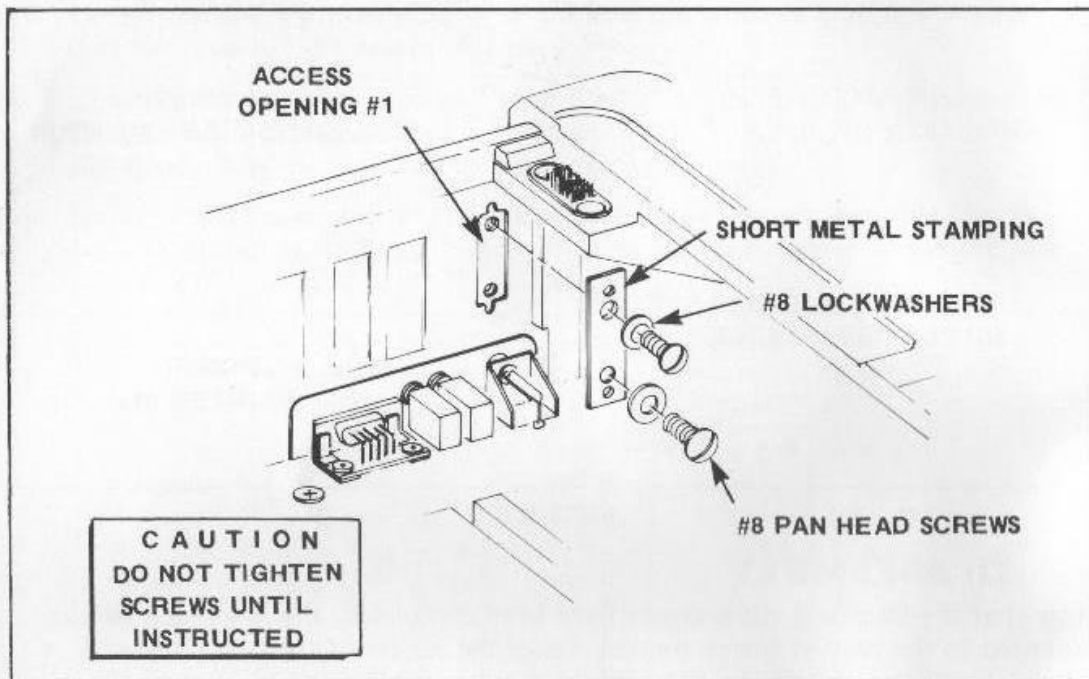


FIGURE 9

Next look inside the computer. Along the rear panel on the mother-board you will see four Phillips head screws. Locate the one next to the 9 pin "D" connector (between slots 5 and 6 of the mother-board) (Figure 10). Remove the screw and insert the wire lug attached to the green cable. Replace the screw with lug attached in the hole from which it was removed. Be careful to position the lug so that it doesn't touch any components (as in inset, Figure 10).

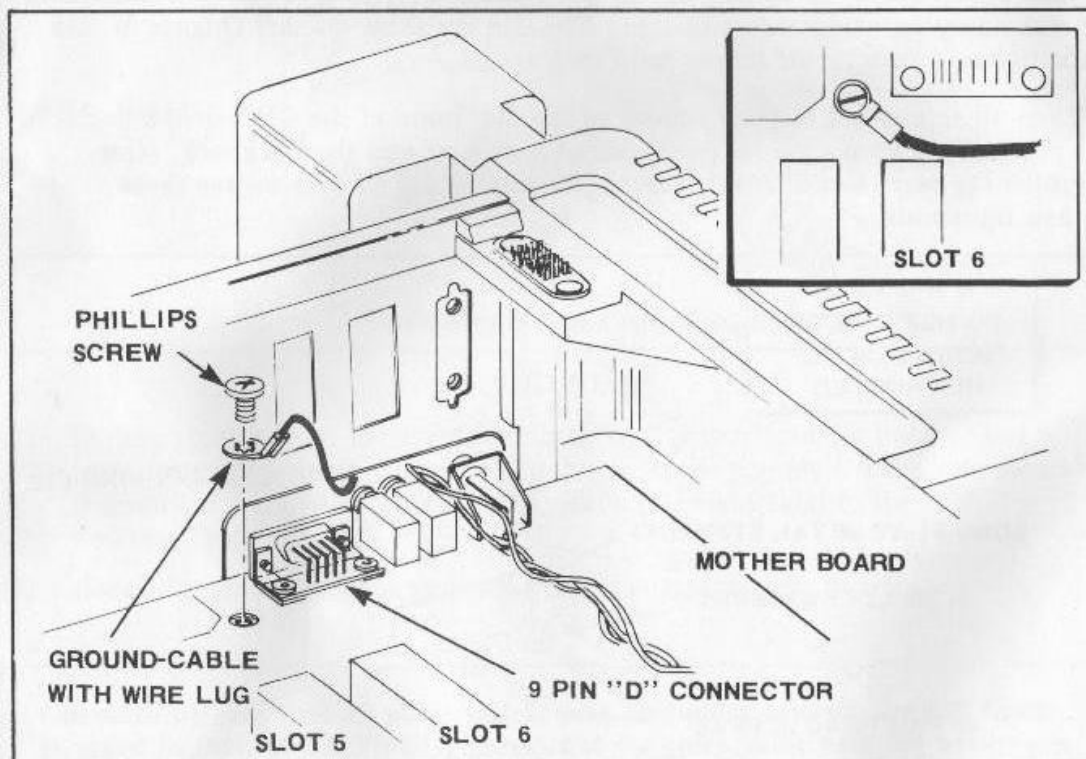


FIGURE 10

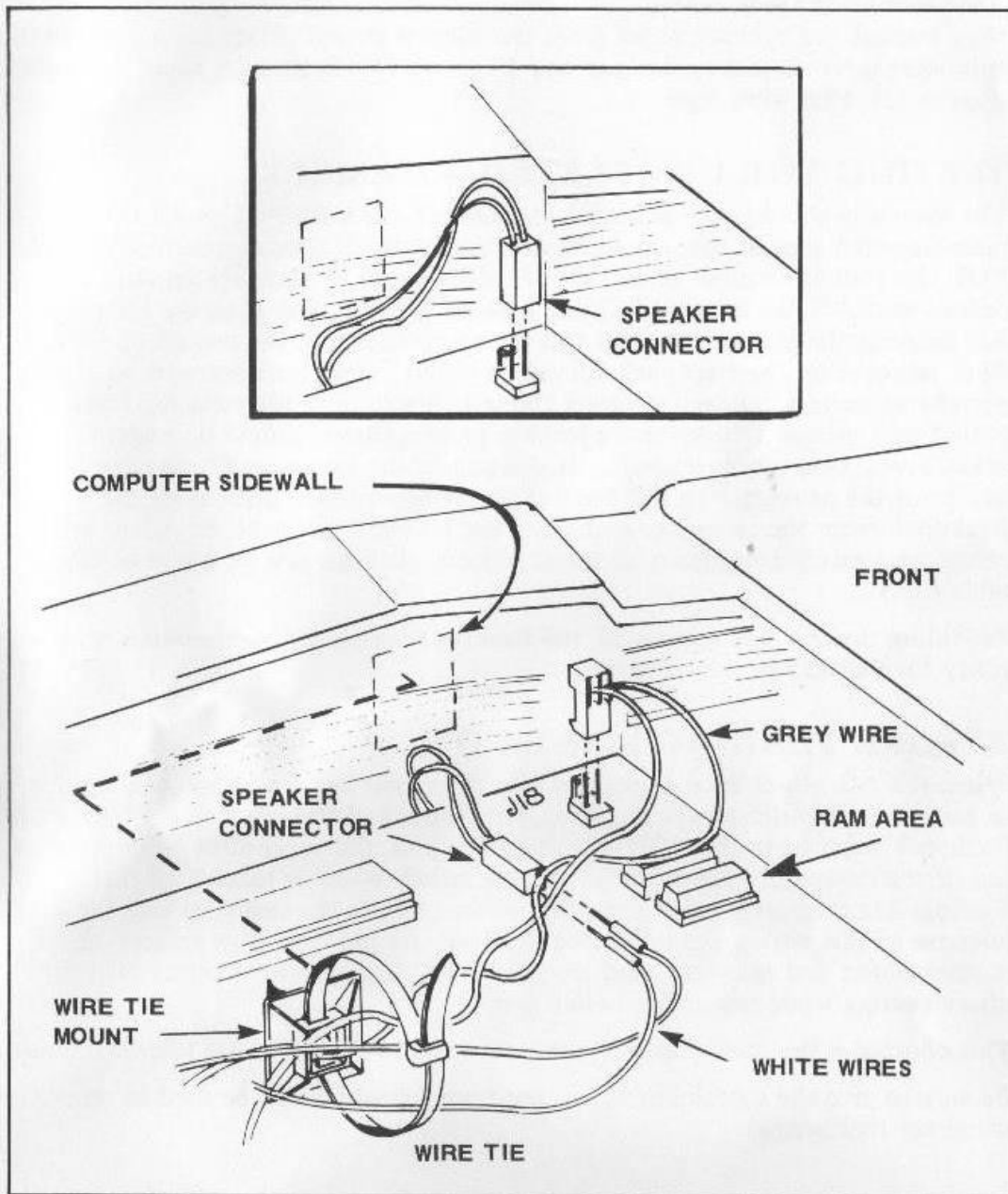


FIGURE 11

SPEAKER CONNECTION

Next locate the speaker connector (J18) on the mother-board just under the reset key of the computer keyboard. Remove the speaker connector from J18 (inset, Figure 11). Using the wire-tie from the component packet gather the wires loosely in the wire-tie and attach the wire-tie to the wire-tie mount. Do not remove the backing paper from the mount or attach the mount at this time. Insert the tips of the connectors on each of the two white wires into the two receptacles on the cable which goes to the speaker (Figure 11). Make sure the contact tips are inserted fully into the receptacles.

Carefully mate the receptacle with the red and grey wires to J18. The grey wire should be toward the front of the computer and the wires from the receptacle should be toward the RAM area of the mother-board (Figure 11).

MOUNT WIRE-TIE

Now remove the backing paper from the wire-tie mount. Place the mount on the computer sidewall just to the rear and 1" above J18. Secure the wires in the tie (Figure 11). Pull wires tight.

TESTING THE COMPLETED ASSEMBLY

The assembly should now be tested for safety using a HI-POT meter. The recommended type is *Associated Research* Model 4025, or equivalent. The HI-POT test should be done at the end of the line cord by shorting the two spade connectors (AC line hot and AC line neutral) together and applying 1000 volts AC between the ground terminal and the combination of the two spade lugs. Both switches on the Backpack should be in the "ON" position with no peripheral devices connected during the test. Apply the 1000 volts AC for a period of 1 minute. No excessive leakage or breakdown should be evident. If a breakdown takes place, immediately disconnect the system and determine the source of the problem. To test for leakage or breakdown, disconnect the Backpack from the computer and rerun the HI-POT test with the AC power receptacles safely away from all metal objects. (Do this test on a non-metallic table top.)

Providing the test was successful, the Backpack/computer combination is now ready for delivery to the customer.

BEFORE TURNING POWER ON

When the AC power cord is plugged into the power line, two steps are required to turn the computer power on. First, switch marked "Micro" on the back of the Backpack must be in the "ON" position. Second, the cover must be in place on top of the computer. The cover contacts a switch which is located on the Backpack immediately behind the fuseholder. Advise the customer that the purpose of this switch should not be defeated. Its function is to protect the mother-board and interface card circuitry from damage when mating or disconnecting while the power switch is on.

This concludes the installation of the Backpack on the Apple IIe Microcomputer.

Be sure to give the customer the hex head wrench which can be used to reposition the cover lock screws.

Bell & Howell ***Interactive Communications Division***

BELL & HOWELL is a trademark of Bell & Howell Company
APPLE is a trademark of Apple Computer, Inc.

Interactive Communications Division, Attn: Market Services Dept.
7100 N. McCormick Road, Chicago, IL 60645
Call Toll Free: 1-800-323-4338. In Area Code 312 call 673-3300

© 1983 Bell & Howell Company. All Rights Reserved.
Printed in U.S.A.

Manual Part No. 20713992