altair 680b

IV. BACK PANEL ASSEMBLY

Transformer
Terminal Strip
AC Switch
Fuse Holder and Fuse
Power Cord
Wiring
25-pin I/O Connector Installation
I/O Connector Wiring
Cooling Fan (optional)

note:

Before you begin, remove the four screws
at the back of the case and take the
back panel off. Set the screws aside
for use later in replacing the back panel.

TRANSFORMER

A. Attach Connector Pins

A connector pin must be attached to each
of the following transformer wires:
white, white, orange, red, red. In ad-
dition, the pin with the orange wire
will also be used to connect a grounding
wire to the back panel. The connector
pins are supplied in a strip, as illus-
trated below. DO NOT SEPARATE THE PINS
UNTIL INSTRUCTED TO DO SO.

The blue wires will not be used in wir-
ing the transformer. They should be
clipped off at the point where they en-
ter the transformer. (Set the blue
wires aside for use later on.)

Use the following instructions to attach
a connector pin to each of the colored
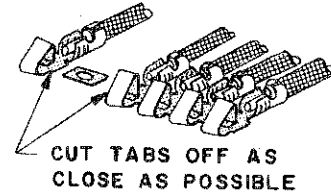transformer wires.

1. Trim 1/8" of insulation off the ends
   of the colored wires. Cut an 8"
   length from the wire supplied with
   your kit, and trim 1/8" of insula-
   tion off each end.

2. Insert the wires into the pins as
   shown below. When you insert the
   orange wire, insert one end of the
   8" wire into the same pin.
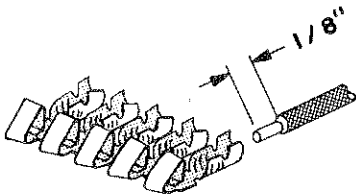
3. Crimp the portion of the pins which
   holds the insulation. Use needle
   nose pliers or a crimping tool.

4. Solder the exposed portions of the
   wires to the pins. Make sure no
   solder flows up under the lock tabs,
   and be careful not to melt any of
   the insulation.

SOLDER
&
CRIMP
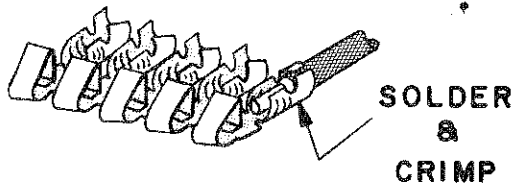
5. Separate the pins from each other by
   cutting the tabs off as close to the
   pins as possible.


CUT TABS OFF AS
CLOSE AS POSSIBLE

B. Attach Female Connector

Use the following instructions for in-
serting the colored transformer wires
into the 5-pin female connector.

1. Beginning with one of the white
   wires, orient the pin and the 5-pin
   female connector as shown in the il-
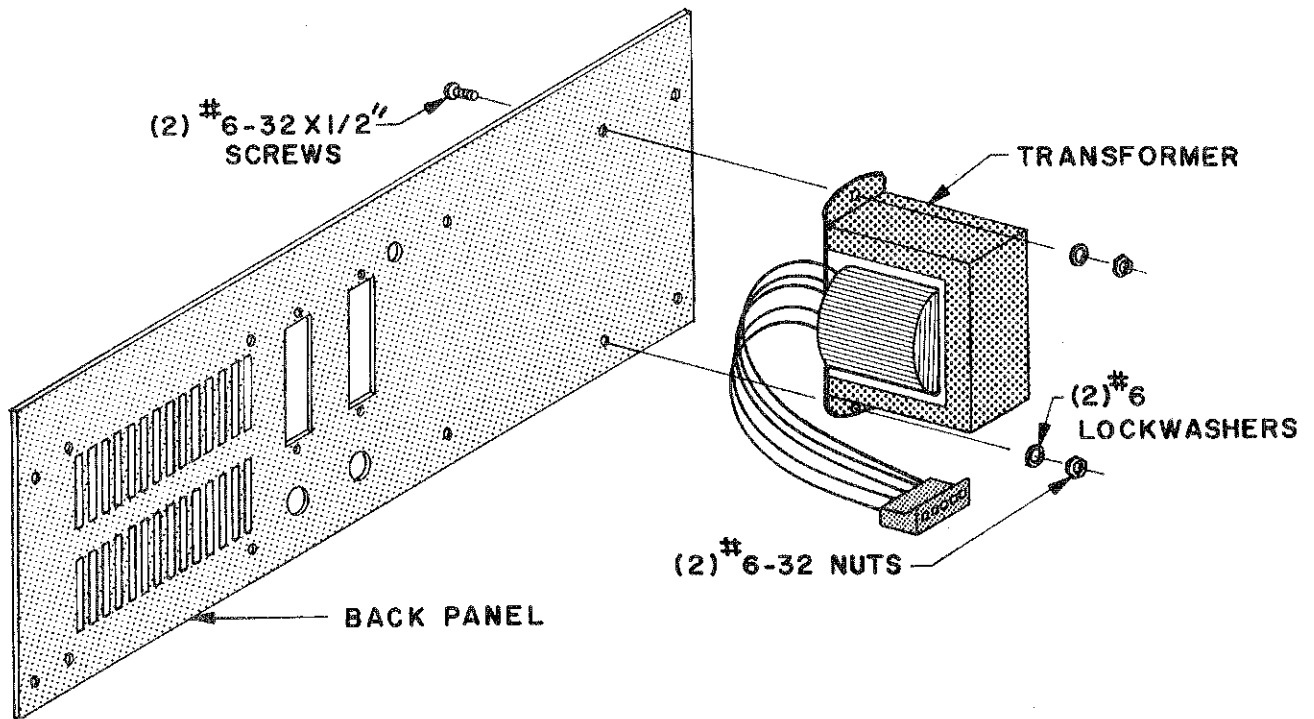   lustration.
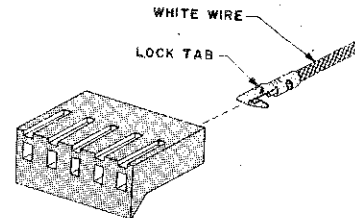
WHITE WIRE
LOCK TAB

2. Push the pin into its slot until it
   locks into place.

3. Make sure you put the remaining wires
   into the connector in the correct
   order (white, white, orange and ground
   wire, red, red), as shown below.

RED
RED
ORANGE
WHITE
WHITE

5-PIN FEMALE
CONNECTOR

8" GROUND WIRE

49
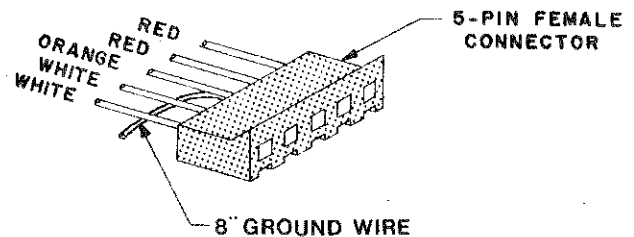
C. Mount Transformer to Back Panel

1. Refer to the illustration below for
    correct positioning of the trans-
    former on the back panel.

2. Mount the transformer to the back
    panel using two #6-32 x 1/2 inch
    screws, two #6-32 nuts and two #6
    lockwashers.

(2) #6-32 X 1/2" SCREWS

TRANSFORMER

(2) #6 LOCKWASHERS

(2) #6-32 NUTS

BACK PANEL

TERMINAL STRIP

In order to establish a ground connection with the back panel, it is necessary to remove the paint from around the mounting holes for the terminal strip and the AC switch. (see illustration below)

1. Use a screwdriver or some abrasive paper to chip the paint away from these two areas.

Next, mount the terminal strip to the back panel as follows:

2. Orient the terminal strip as shown in the drawing below. Remove the left-most terminal by cutting off 3/8" of the fiberglass strip.

3. Mount the strip to the back panel using a #6-32 x 3/8 inch screw, #6-32 nut and #6 lockwasher.

REMOVE PAINT FROM THESE AREAS

#6-32 X 3/8" SCREW

TERMINAL STRIP

3/8"

#6 LOCKWASHER
#6-32 NUT
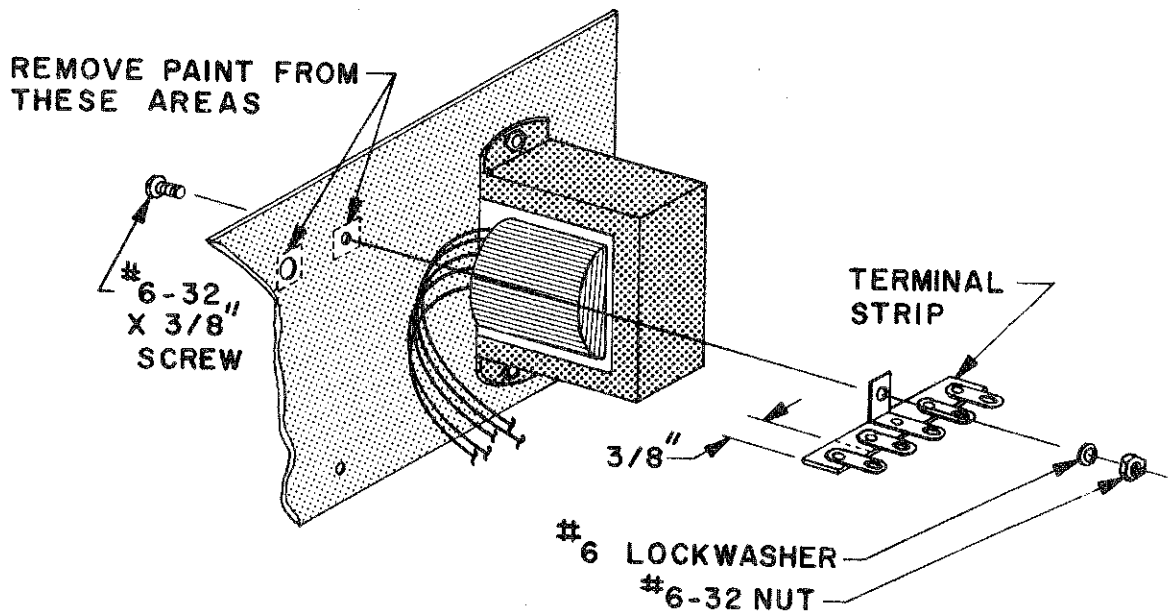
AC SWITCH

1. If you have not already removed the paint from around the AC switch mounting hole, do so at this time.

2. Refer to the drawing below for proper orientation and placement of the switch.

3. Mount the switch to the back panel using the nut and washer provided.
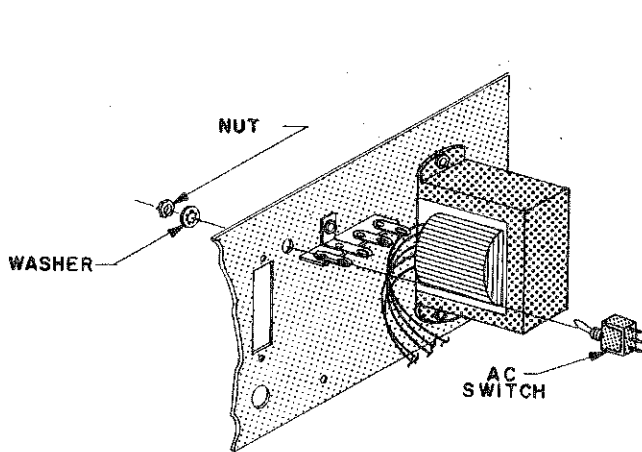
FUSE HOLDER & FUSE

1. Refer to the drawing below for proper orientation and placement of the fuse holder.

2. Mount the fuse holder to the back panel, as shown, using the nut and washer provided.

3. Put the fuse into the fuse holder.

NUT

WASHER

AC
SWITCH

WASHER

FUSE
HOLDER

NUT
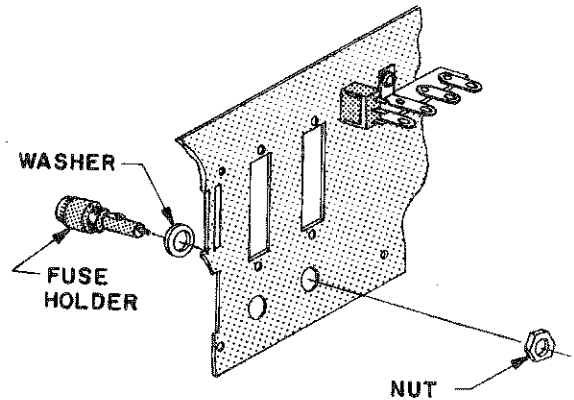
POWER CORD

1. Put the strain relief on the power cord.

2. Strip 4 inches of casing from the cord by cutting a circle four inches from the end and pulling the black insulation off. Be careful not to cut into any of the three wires inside the casing.

3. Put the free ends of the wires through the power cord opening on the back panel, and pull through until 3/4" of casing is on the inside of the panel.

4. Snap the strain relief in place.

POWER CORD

STRAIN RELIEF
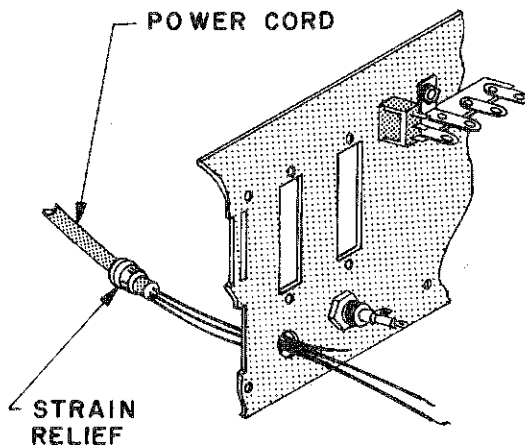
WIRING

Preparation

1. Cut the black wire from the AC power cord off about 1 inch from the cord casing.

2. You will need two additional wires-- one about 4 inches in length and the other 1 inch. Pieces of the blue transformer wires are suitable for this purpose.

3. Before any wire is connected, it should have at least 1/8" of insulation removed from the end and the exposed portion should be tinned with a thin coat of solder.

How to

Make the wire connections by hooking or folding the exposed portion of the wires onto their respective terminals and then soldering them in place. Be careful not to melt any of the insulation.

When wiring the terminal strip, it is usually easier to get all the wires in place before applying any solder. Then, to ensure a good connection, apply enough solder to completely fill the center hole of the terminal. (To simplify the instructions, the terminals on the strip will be called T1, T2 and T3, beginning with the left-most terminal.)

Make the wire connections as they are listed and diagrammed on the next page.

Wire Connections

( ) Two black transformer wires. One to T1 and the other to T3.

( ) Green wire from power cord to T2.

( ) White wire from power cord to T3.

( ) Black wire from power cord (cut to one inch) to the side terminal of the fuse holder.

( ) 8-inch ground wire from transformer connector to T2.

( ) Noise reduction capacitors. Both are .01uF, 1Kv. C1 goes across T1 and T2. C2 goes across T2 and T3.

( ) Connect the bottom terminal on the switch to T1 with the 1-inch piece of wire.

( ) Connect the terminal on the end of the fuse holder to the center terminal on the switch with the 4-inch piece of wire.

( ) Optional Fan. Attach one wire to each of the two terminals on the fan: one of them goes to T1 and the other goes to T3.

GREEN WIRE

TO FAN (OPTIONAL)

BLACK WIRES

C1 C2

BLACK WIRE
WHITE WIRE
GROUND WIRE
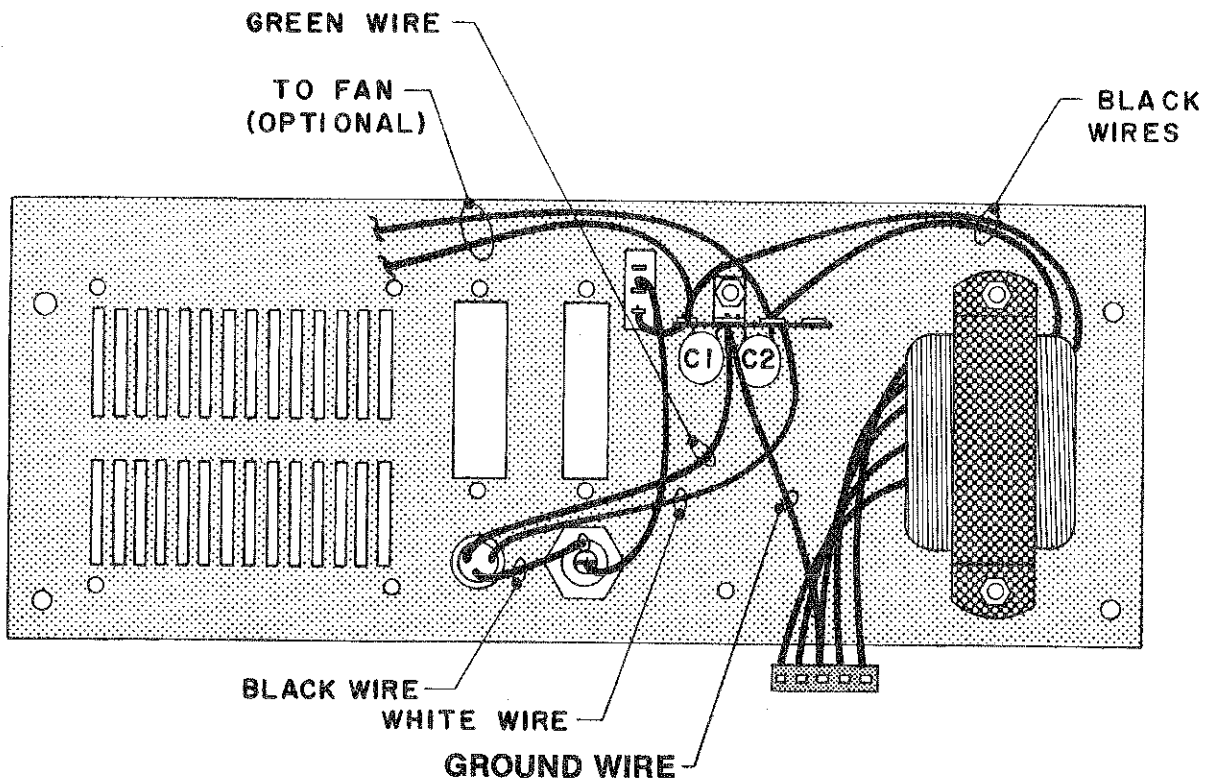
25-PIN I/O CONNECTOR INSTALLATION

The two rectangular openings in the back panel are spaces for 25-pin I/O connectors. One 25-pin female I/O connector is supplied with your kit and should be installed according to the diagram (left) below. Install the connector so that the hollow pins are toward the inside of the back panel and Pin 1 is on top.

The wiring of this connector for TTY, RS-232 or Baudot level I/O is explained on the next page.
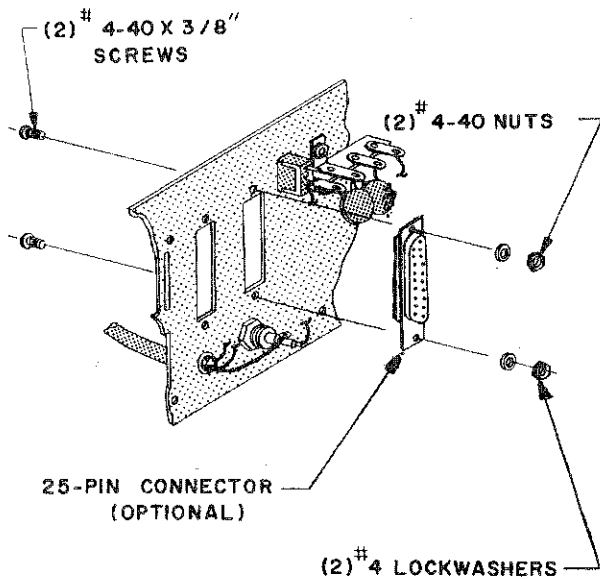
While not in use, the other opening should be covered with a blank panel. Install the blank panel as shown in the diagram (right) below.

Connector Installation
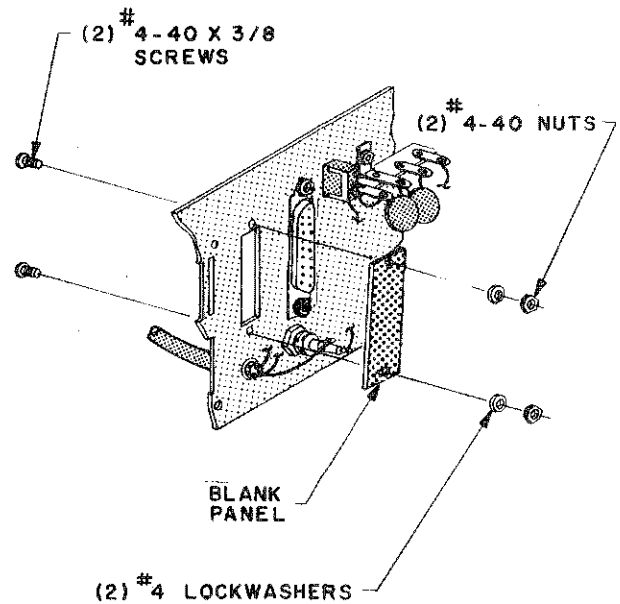
Blank Panel Installation

I/O CONNECTOR WIRING

The 25-pin I/O connector on the back panel may be wired for TTY, RS-232 or Baudot level I/O using one of two different wiring configurations. The wires that are to be attached to the 25-pin connector will be connected to a 5-pin miniature female molex connector. The miniature female connector will be installed onto the Main PC Board during the final case assembly.

Wiring for Teletype (TTY) Interface

1. Using a soldering iron, heat pins 2, 3, 4, 5 and 6 on the 25-pin connector one at a time and fill the hollow space in the pin with solder.

2. Cut five 8-inch wires and strip and tin both ends of each wire.

3. Crimp and solder a miniature connector pin onto one end of each wire (see instructions under "Transformer," Section A).

4. Connect the other end of each wire to one of the prepared pins on the 25-pin connector. To do this:
   a) Remelt the solder in the pin.
   b) Insert the wire up to the insulation.
   c) Remove the heat and hold the wire in place until the solder cools.

5. Note that one of the slots on the 5-pin miniature female connector is labeled with a "1." Insert the wires from the 25-pin connector into the slots on the miniature female connector in the following order:

Miniature Female Connector	25-pin I/O Connector
Slot 1	Pin 3
Slot 2	Pin 5
Slot 3	Pin 4
Slot 4	Pin 2
Slot 5	Pin 6

Wiring for RS-232 or Baudot Interface

1. Using a soldering iron, heat pins 2, 3 and 7 on the 25-pin connector one at a time and fill the hollow space in the pin with solder.

2. Cut three 8-inch wires. Strip and tin both ends of each wire.

3. Crimp and solder a miniature connector pin onto one end of each wire (see instructions under "Transformer," Section A).

4. Connect the other end of each wire to one of the prepared pins on the 25-pin connector. To do this:
   a) Remelt the solder in the pin.
   b) Insert the wire up to the insulation.
   c) Remove the heat and hold the wire in place until the solder cools.

5. Note that one of the slots on the 5-pin miniature female connector is labeled with a "1." Insert the wires from the 25-pin connector into the slots on the miniature female connector in the following order:

Miniature Female Connector	25-pin I/O Connector
Slot 1	Pin 3
Slot 2	Pin 2
Slot 4	Pin 7

connector pin

miniature female connector
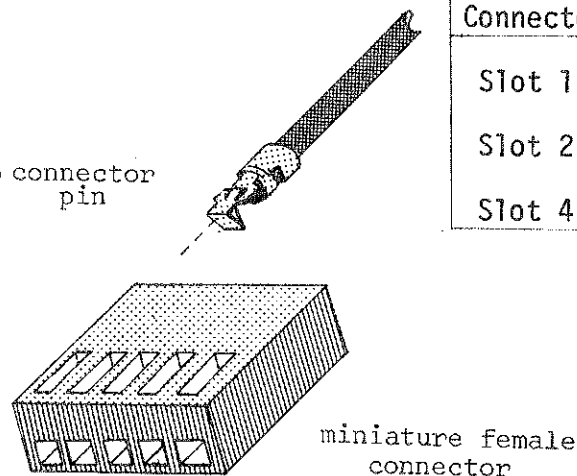
COOLING FAN (optional)

When one or more additional PC boards
are added to the Altair 680, it is neces-
sary to install a cooling fan on the
back panel.

Orient the fan so that the two solder
terminals are in the upper, right-hand
corner.

Install the fan as shown in the diagram
below. Connect the fan to the power
supply as shown in the Wiring diagram.

(4)#6-32 X 1/2" SCREWS

(4)#6 -32 NUTS

FAN
(OPTIONAL)

(4)#6 LOCKWASHERS