KEYBOARD CABINET ASSEMBLY

Due to various situations related to suppliers, hardware and wire colors, assembly instructions may vary without notice.
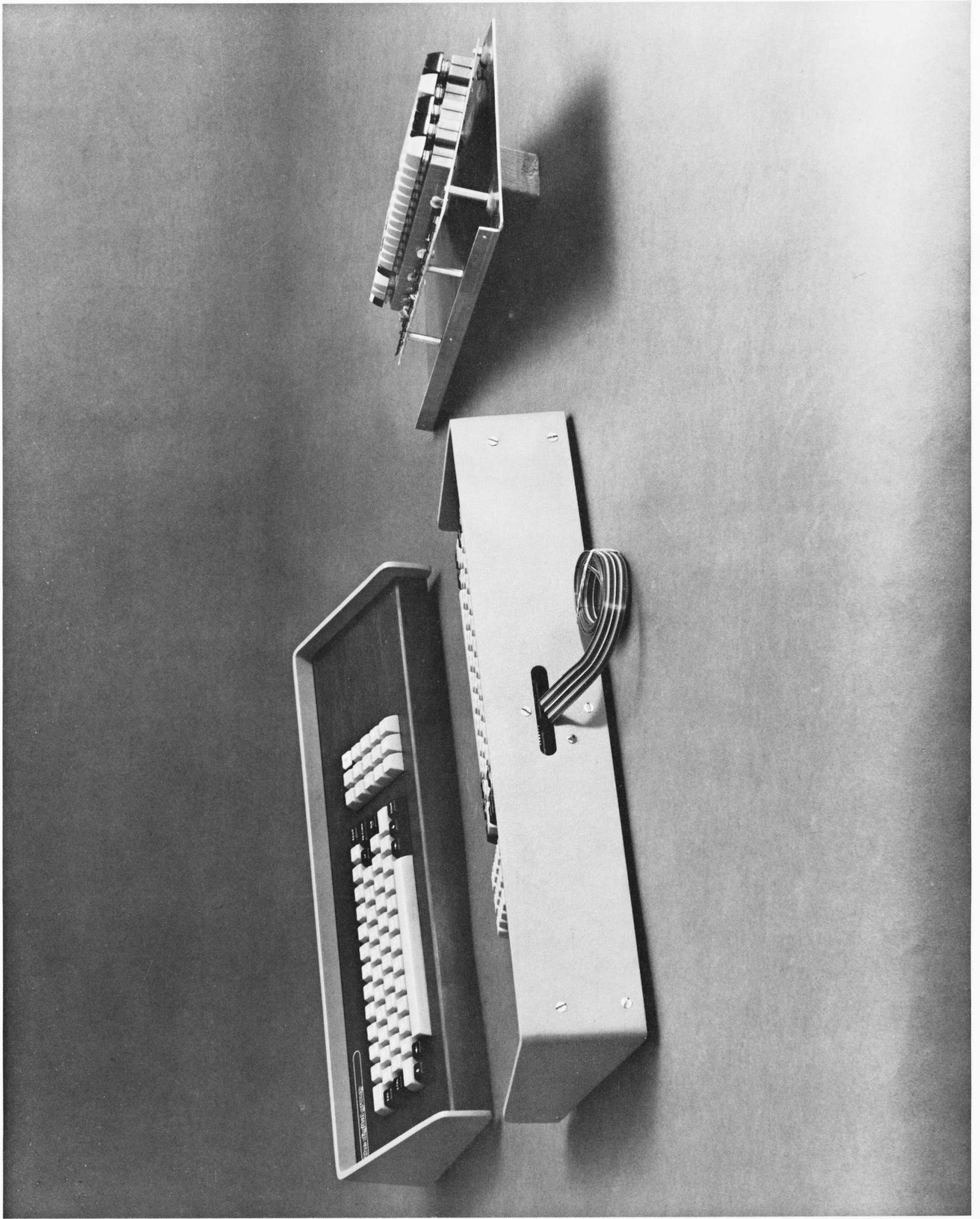
ASSEMBLY PROCEDURE

PARTS LIST

1 Keyboard cabinet shell (wrap around)
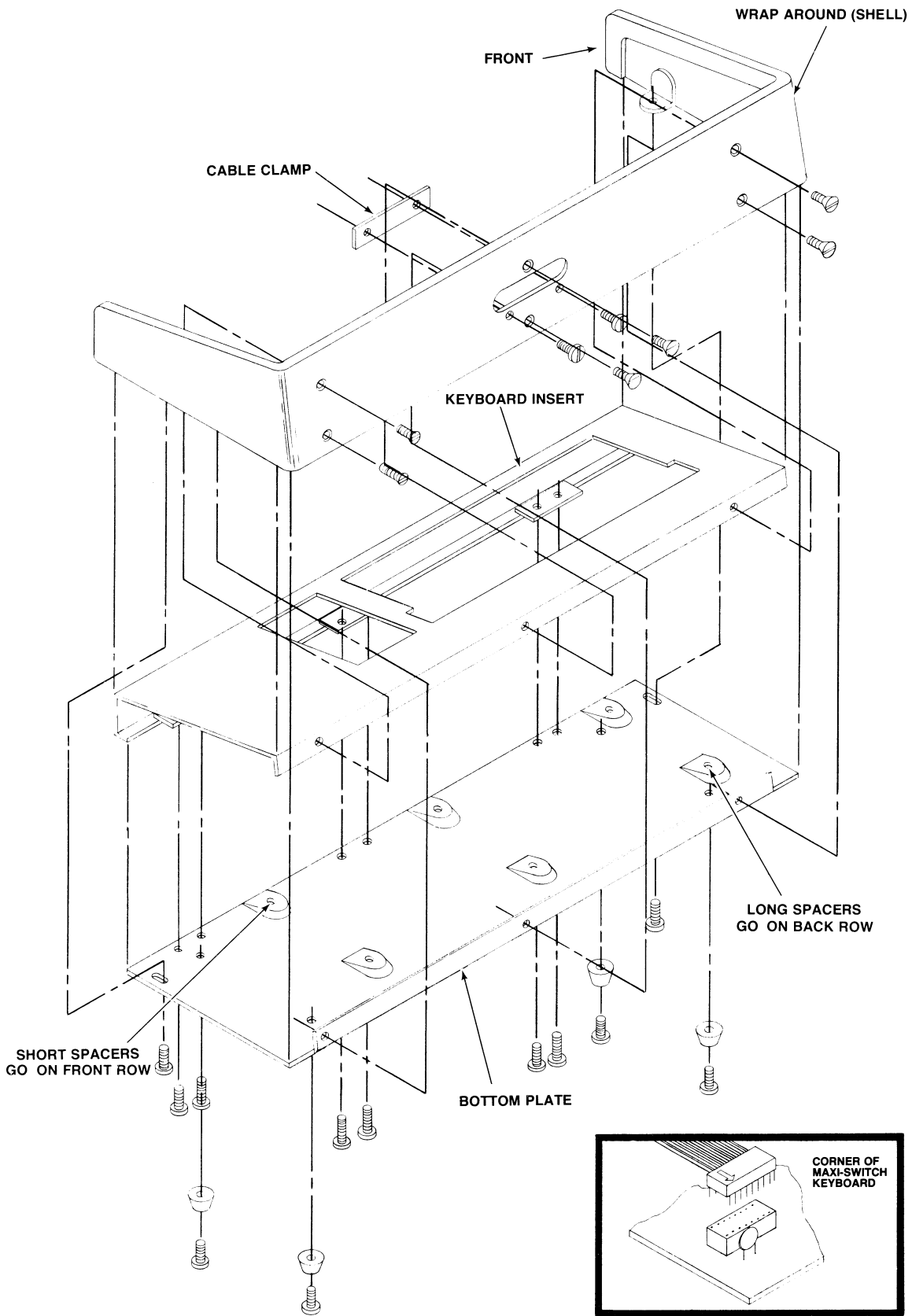1 Keyboard insert (with or without cutout)
1 Bottom plate

SMALL PARTS BAG (one)

17 8-32 x 1/4 inch round head machine screws
6 8-32 x 3/8 inch flat head screws
3 .150 inch hex aluminum spacers
3 1.250 inch hex aluminum threaded spacers
1 flat cable clamp
4 rubber furniture guards
3 4-40 x 3/8 inch screws
3 4-40 x 1/2 screws
3 4-40 hex nuts & washers
   SEE DRAWING AND PHOTO BEFORE PROCEEDING

1. ☐ Install three 1.250 inch threaded aluminum spacers on the three rear holes of the keyboard using three 4-40 x 3/8 inch screws. Be careful not to tighten too much or the board will crack.

2. ☐ Turn the keyboard upside down and place the bottom plate over the aluminum spacers. Install the bottom plate using three 8-32 x 1/4 inch screws through the bottom plate and into the 1.250 spacers. DO NOT TIGHTEN THE SCREWS.

3. ☐ Install three .150 inch aluminum spacers on the front three holes of the keyboard between the keyboard and bottom plate using three 4-40 x 1/2 inch screws and hex nuts. Do not tighten the nuts. The easiest way to do this is to place the plate up, facing you. Slip the spacer between the keyboard and plate, then place the screw through the keyboard, spacer and bottom plate. Then fasten the nut to the screw.

4. ☐ Insert the keyboard insert into the wrap-a-round shell, using three 8-32 x 3/8 flat head screws. To do this, hold the shell with the lip up, facing you. Then place the keyboard insert into the shell, widest edge first, by coming up from the bottom of the shell. Slide the keyboard insert toward the front of the shell, till it is stopped by the two mounting tabs of the shell. Then rotate the keyboard insert around until it fits into the shell and is stopped by the lip of the shell. Then fasten with the 8-32 screws.

5. ☐ Install the keyboard wiring cable to the keyboard plug. SEE EXPLODED DRAWING INSET.

6. ☐ Install the flat cable clamp inside the shell under the oblong hole with the flat keyboard cable under it using two 8-32 x 1/4 inch screws. Do not tighten screws.

7. ☐ Insert the keyboard and bottom plate into the keyboard insert. Use eight 8-32 x 1/4 inch screws to attach the bottom plate to the keyboard insert and three 8-32 x 3/8 inch flat head screws to attach the bottom plate to the shell.

8. ☐ Adjust the keyboard in the cutout for proper clearance and tighten the spacer screws and nuts.

9. ☐ Install four rubber furniture guards on the bottom plate using four 8-32 x 1/4 inch screws.

10. ☐ Pull the connecting cable out of the oblong cutout in the shell and tighten the cable clamp screws. Be sure the cable is not crimped or crushed.

KCASM-1

FRONT

WRAP AROUND (SHELL)

CABLE CLAMP

KEYBOARD INSERT

LONG SPACERS
GO ON BACK ROW

SHORT SPACERS
GO ON FRONT ROW

BOTTOM PLATE

CORNER OF
MAXI-SWITCH
KEYBOARD

A substition of 3 1.250 inch nonthreaded spacers for the 3
1.250 inch hex aluminum threaded spacers originally provided,
has caused a change in the parts list and assembly instructions.

The parts list for the SMALL PARTS BAG now reads as follows:

    14 8-32 x 1/4 inch round head machine screws
     6 8-32 x 3/8 inch flat head screws
     3 4-40 x 1/2 inch screws
     3 4-40 x 1 1/2 inch screws
     3 .150 inch spacers
     3 1.250 inch spacers
     1 flat cable clamp
     4 rubber furniture guards
     6 4-40 hex nuts
     6 4-40 flat washers

Steps 1 and 2 of the assembly procedure should now read:

    1. Install three 1.250 inch spacers on the three rear holes of
        the bottom plate using three 4-40 x 1 1/2 inch screws and flat
        washers.

    2. Place the keyboard over the spacers. Install the keyboard on
        the screw and spacer assembly with 3 4-40 hex nuts.
        DO NOT TIGHTEN THE NUTS
        (refer to figure below)

The rest of the assembly procedure is correct.

- 4-40 HEX NUT
- KEYBOARD
- SPACER
- BOTTOM PLATE
- FLAT WASHER
- 4-40 SCREW
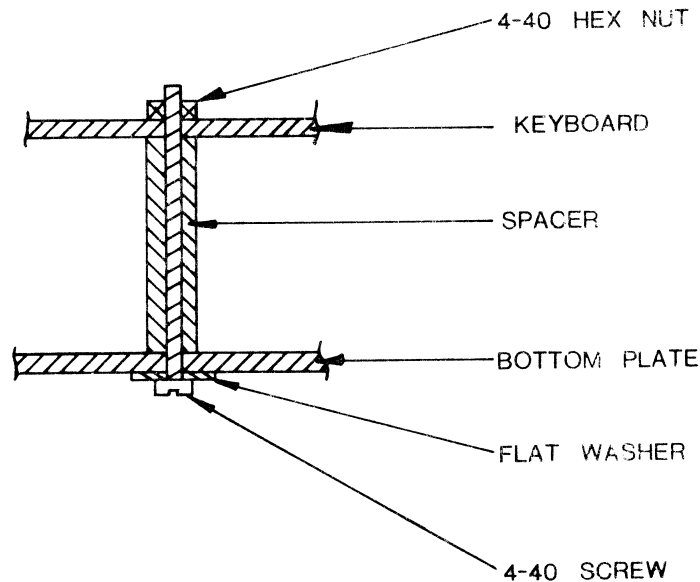
INTERFACING INSTRUCTIONS
FOR ASCII KEYBOARD

        The TTL level signals and power connections for the
keyboard you have received are acessed thru the 18 pin
connector located at the upper-left hand corner of the
P.C. board.
        Pin 1 is indicated by a dot and is located at upper
left of 18 pin socket.
        The pinout of the socket is as follows:

PIN #   DESCRIPTION

1   +5 Volt power
8   Ground (common)
18   Strobe (pulse)   MSB
17   DATA   MSB-1
16   DATA   MSB-2
15   DATA   MSB-3
14   DATA   LSB+3
13   DATA   LSB+2
12   DATA   LSB+1
11   DATA   LSB

6   Strobe (level)
5   SEND KEY (normally low)

        Note that there is a one mfd capacitor across pins 18
and 6 (positive side toward pin 6) and a resistor between
pins 8 and 18. These two components are used to derive the
pulse at pin 18.   (R=470 ohm)

        The difference between pins 6 and 18 are that while both
go high during keypress, pin 6 stays high until the key is
released while 18 goes high momentarily.

        Pin 5 is normally low until the send key is pressed
at which time it goes high until the key is released. With
an inverter this pin could be used as a reset from the
keyboard.

We suggest using pin 18 for the strobe connection but pin
6 will work also

A brightly colored connector cable has been included with
your keyboard. At one end of the cable the wires are terminated
in the DIP connector which plugs in your keyboard. There is a
marking on the connector which indicates where pin #1 is located.
On the keyboard itself this is indicated by a dot next to pin #1.

On the other end of the cable a variety of connectors can be attached.
We often use molex connectors on our systems. (not included)

Beginning with the brown wire on the edge of the cable the numbering
goes as follows.......

Brown   01   (PIN #1)
Red   18
Orange   02
Yellow   17
Green   03
Blue   16
Purple   04
Gray   15
White   05
Black   14
Brown   06
Red   13
Orange   07
Yellow   12
Green   08
Blue   11
Purple   09
Gray   10

Your keyboard has been shipped without the 1 mfd capacitor
or 470 ohm resistor being installed. They are enclosed if
you wish to add them. Pin 18 won't work as a strobe if you
don't add these parts. However, pin 6 will work without
addition of the parts.

We suggest you add the parts on and use pin 18 as the strobe
output.

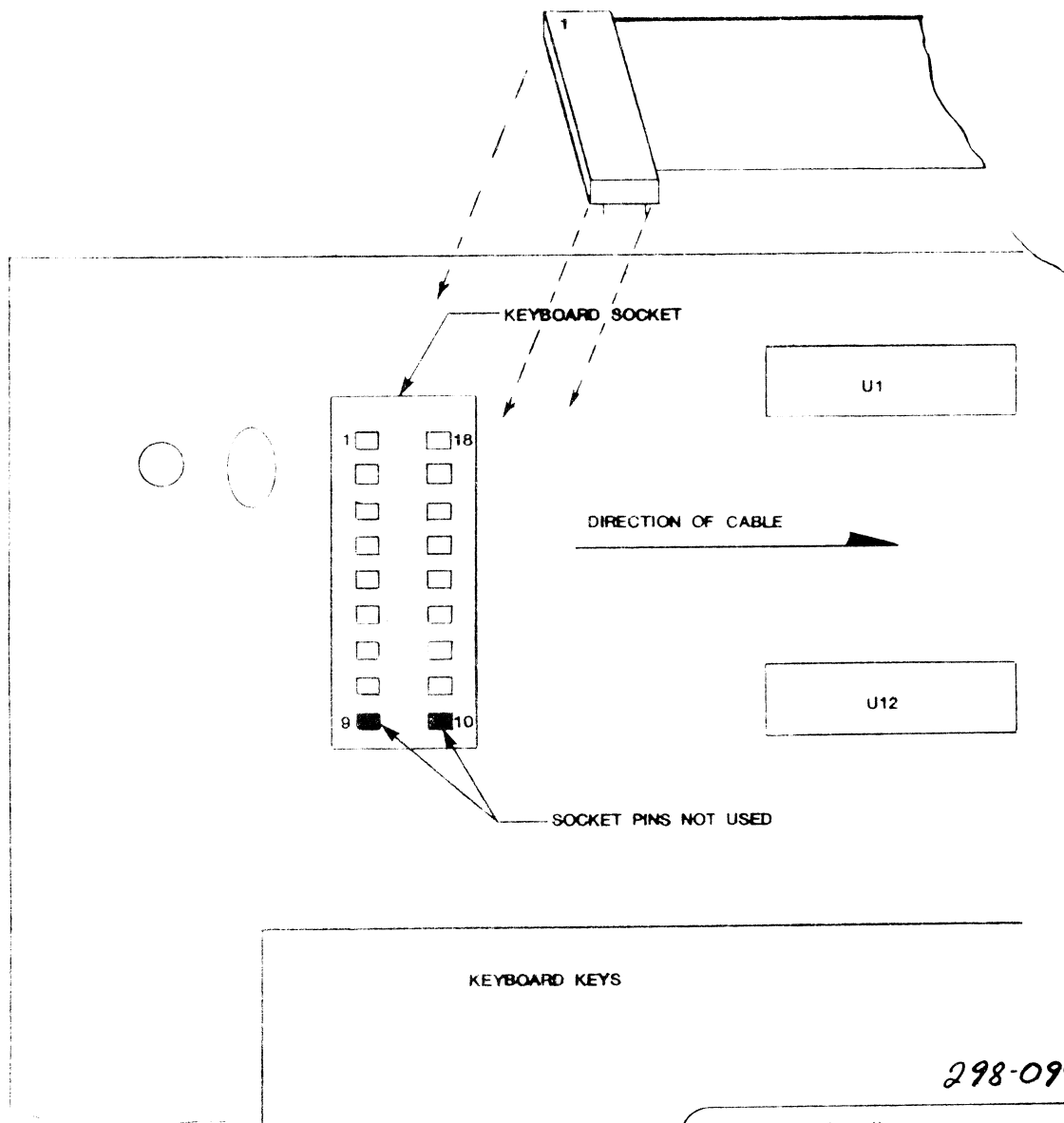Make sure your installed capacitor and resistor don't short
to other pins, etc.

Hook capacitor between pin 18 and pin 6 with positive side
to pin 6. (Positive side indicated by vertical stripe)
Hook resistor (470 ohm) between pins 18 and 8.
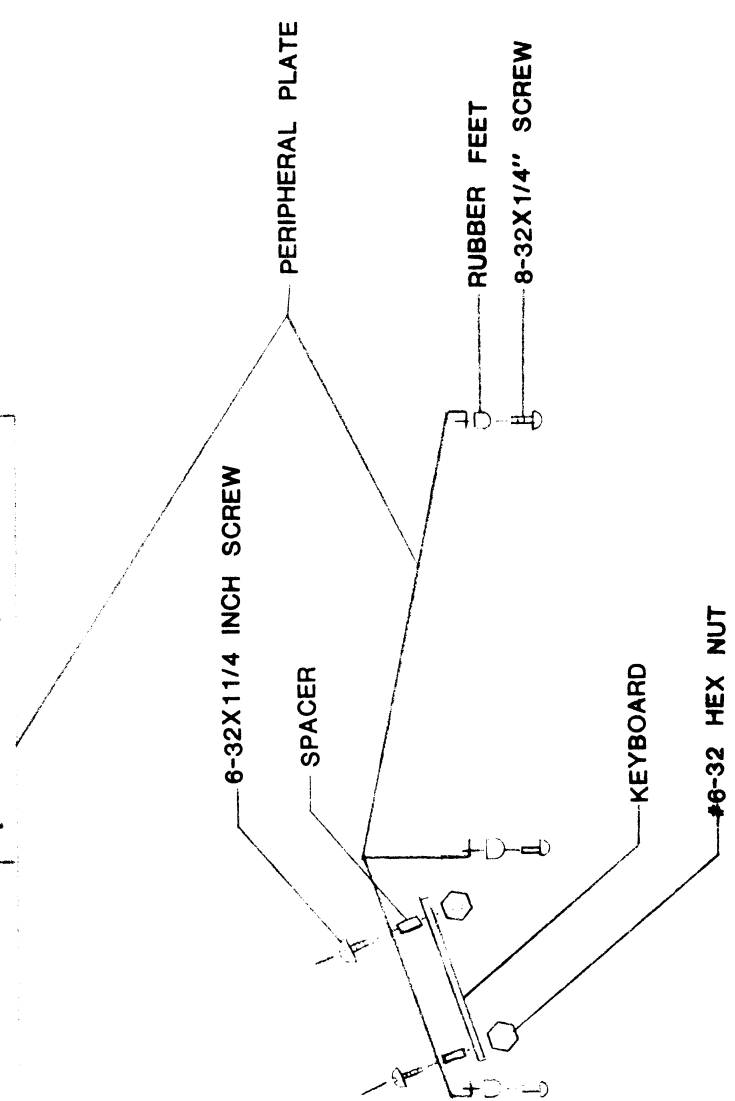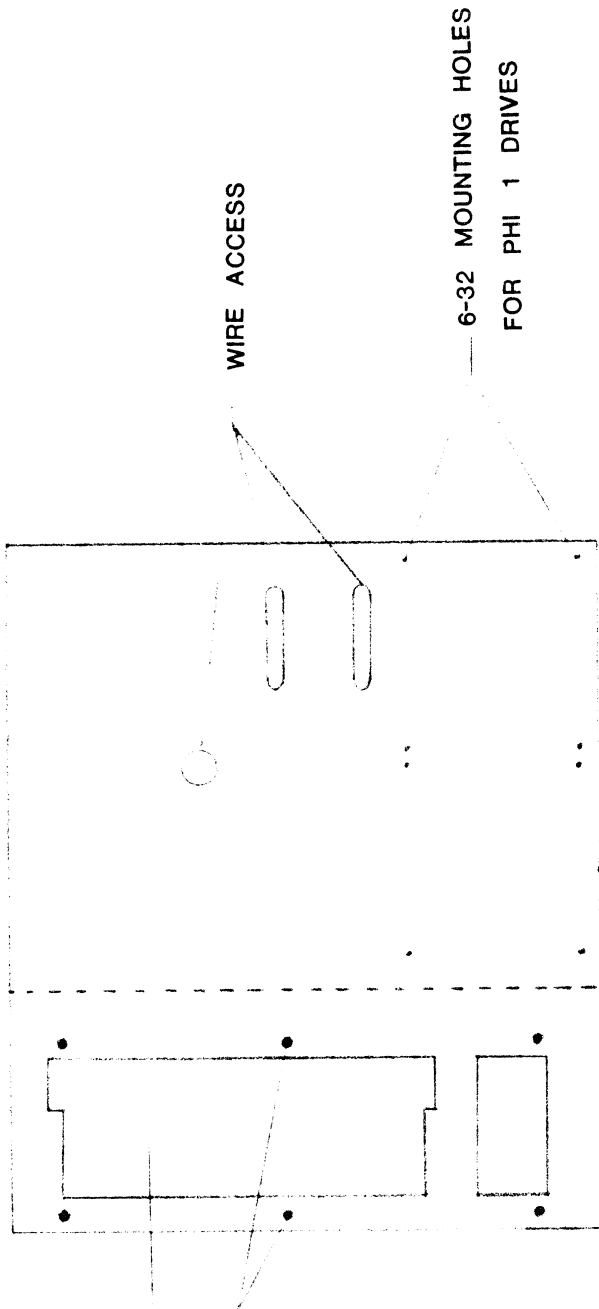
Instructions for Interfacing ASCII Keyboard

The keyboard cable that is supplied with your keyboard is different than that originally specified. The 16-pin keyboard cable plugs directly into the 18-pin keyboard socket with the number 1 position of the cable plug (red wire) matching the number 1 position of the keyboard socket. With the plug installed in the keyboard socket, pins 9 and 10 of the socket are not connected.

KEYBOARD SOCKET

U1

U12

DIRECTION OF CABLE

SOCKET PINS NOT USED

KEYBOARD KEYS

298-099

WIRE ACCESS

6-32 MOUNTING HOLES
FOR PHI 1 DRIVES

PERIPHERAL PLATE

RUBBER FEET

8-32X1/4" SCREW

6-32X11/4 INCH SCREW

SPACER

KEYBOARD

#6-32 HEX NUT

KEYBOARD CUTOUT

KEYBOARD MOUNTING HOLE