CAUTION: Static electricity can destroy integrated circuits. Be sure to
discharge any built-up static electricity by touching a grounded, metal ob-
ject before handling the hard disk drive or touching any of the computer's
logic boards.

If you have any doubts about your ability to install this drive, have the
service technicians at your Radio Shack Service Center install it for you.
This will not only ensure expert installation but will also enable the
technicians to quickly check that all equipment is functioning properly.

Note: If you are installing the 40/80-megabyte SCSI hard disk drive in a
Tandy 3000HL, you must install the Universal Mounting Kit provided with your
computer before you begin this procedure. Refer to the universal mounting
kit manual for instructions.

REMOVING THE COVER

If you have not already done so, remove the system unit cover for access to
the computer's internal components. Follow the steps below:

1. Be sure your computer and all peripherals are turned off, then discon-
    nect the power cord from the back of the computer.

2. Remove the three large cover mounting screws from the computer's back
    panel. Remove the cover by sliding the entire housing toward the front
    of the computer.

The cover removal procedure is illustrated in the installation and operation
manual supplied with your computer.

Note: If your computer has a fan in the front of the unit, you might find
it easier to remove and replace the cover if you first remove the fan
filter. Unfasten the Velcro tab that secures the filter to the bottom of
the unit housing, and pull the filter straight down to remove it. Be sure
to replace the fan filter after you complete the installation.

PREPARING THE HARD DISK DRIVE

To prepare the hard disk drive for installation, you must first set the
correct SCSI ID and drive termination status. The proper settings for the
40/80-megabyte SCSI hard disk drive depend on whether it is a primary or a
secondary hard disk drive. The settings are shown in the following chart.
You must also attach a from consisting of two side rail brackets to the
drive.

Primary Drive	Secondary Drive
Jumper the pair of pins labeled EP.	Jumper the pair of pins labeled AO and EP.
Be sure the three termination resistors are installed.	Be sure the three termination resistors are not installed.

Note: Two spare jumpers are seated on one end of the A1 and A2 pair of
pins. They are partially installed from the factory for shipping purposes
only; it is recommended that you remove the spare jumpers before installat-
ion.

ATTACHING THE DISK DRIVE FRAME

Before you can install the 40/80-megabyte SCSI drive, you must attach a
frame that consists of two side rail brackets. These parts are located in
slots in the foam packing material along the short sides of the drive.
Eight screws are provided, four for mounting these brackets, the others for
attaching the shock isolators.

To attach the frame, use four of the screws provided to secure the two
brackets to the long sides of the drive. Once you have attached the frame,
it should be considered part of the drive.

*   For a Tandy 3000HL installation, you are now ready to install the hard
    disk drive. Skip the next two sections of this manual, and proceed to
    the section entitled "Installing the Hard Disk Drive".

*   If you are installing the hard disk drive in a Tandy 3000 or Tandy 4000,
    refer to the next section, "Removing the Drive Tower".

REMOVING THE DRIVE TOWER

For easy drive installation in a Tandy 3000 or Tandy 4000, you can remove
the chassis that houses the disk drives. Before removing the drive tower,
be sure to note the location of and disconnect any cables attached to the
internal drives. Then, remove the four screws that secure the tower to the
bottom of the computer chassis and the three screws that secure the tower
to the front of the chassis.

Note: It is not necessary to remove the drive tower for a Tandy 3000HL
installation.

Carefully lift the drive tower up and out of the system unit. Check for a
load resistor that might be attached to the inner wall of the driver tower,
below the floppy disk drive. If the load resistor is present, proceed to
the next section, "Removing the Load Resistor". If there is no load resis-
tor, skip the next section, and proceed to "Installing the Hard Disk Drive".

REMOVING THE LOAD RESISTOR

If your computer is a floppy-based TAndy 3000/4000, a load resistor is
attached to the side of the bottom drive slot. Pull apart the white cable
connector to disconnect the load resistor from its cable, and remove the two
screws that secure the load resistor to the side of the drive tower.

Remove the load resistor and store it in a safe place. If you later remove
the hard disk(s) from your computer to reconfigure it as a floppy-only sys-
tem, you must reinstall the load resistor. Once you have removed this resi-
stor, you are ready to install the hard disk drive.

The procedure for installing the hard disk drive varies depending on whether
the installation is a primary or secondary drive in a Tandy 3000/4000 or is
into a Tandy 3000HL. Following are the instructions for each of these

procedures. Use the appropriate procedure to install the hard disk drive in
your computer.

Tandy 3000/4000 (Primary Drive)

If you are installing the hard disk drive as a primary drive in the Tandy
3000/4000, attach the four shock isolators included with this kit to the up-
per rear set of mounting holes along the sides of the side rail brackets you
attached to the disk drive.

Next, slide the hard disk drive into the bottom slot of the computer's drive
tower, making sure that the drives do not slide against each other. Use the
four machine screws provided with the hard disk kit to secure the hard disk
drive to the drive tower.

If you are adding another disk drive - a secondary hard disk or a floppy disk
drive - you should also install it at this time. Refer to the installation
instructions that come with the drive to install it.

You are now ready to install the host adapter board and complete all
connections. Proceed with the "Connecting the Cable to the Host Adapter
Board" section of this manual.

Tandy 3000/4000 (Secondary Drive)

If you are installing the hard disk drive as a secondary drive in a Tandy
3000 or Tandy 4000, install the four grommets that come with this hard disk
drive kit in the mounting holes in the second drive slot of the computer's
drive tower.

Next, slide the hard disk drive into the middle slot of the computer's drive
tower, making sure that the drives do not slide against each other. Use the
four shoulder screws provided with this kit to secure the hard disk drive to
the drive tower.

You are now ready to install the host adapter board and complete all
connections. Proceed with the "Connecting the Cable to the Host Adapter
Board" section of this manual.

Tandy 3000HL

For a Tandy 3000HL installation, follow the instructions in the universal
mounting kit manual (provided with your computer) to install the hard disk.
Attach the two mounting brackets and four of the shock isolators provided
with the universal mounting kit to the bottom set of mounting holes along
the sides of the side rail brackets of your hard disk drive.

If you are installing a secondary hard disk drive, the mounting brackets are
already installed in your computer. In this case, remove the bracket/disk
drive assembly. Then, follow the instructions in the universal mounting kit
manual to attach the drive to the brackets.

Now, slide the bracket/disk drive assembly into the computer's drive tower.
Use the four shoulder screws provided with this hard disk drive kit to
secure the bracket and disk drive(s) to the drive tower.

You are now ready to install the host adapter board and complete all

connections. Proceed with the "Connecting the Cable to the Host Adapter
Board" section of this manual.

CONNECTING THE CABLE TO THE HOST ADAPTER BOARD

Caution: A low humidity environment and walking on carpeted floors, among
other things, can cause static electricity to build-up on you. Discharge
any built-up static electricity by touching a grounded, metal object before
you begin.

The host adapter board is difficult to access after it is installed.
Therefore, you should set the jumpers and connect the cables to the board
before you install it. Refer to the "Tandy 16-bit SCSI Adapter Installation
Manual" (provided with the host adapter) for the proper jumper settings.

Note: For the purpose of this manual, the ends of the 50-pin SCSI bus data
cable are defined as follow:

    The "drive end" is the end of the SCSI bus data cable with two connectors
    situated close to one another; the "host end" is the end with only one
    connector.

Connect the "host end" of the SCSI bus data cable to the connector J2 on the
host adapter board. Be sure that the arrow on the SCSI bus data cable meets
with Pin 1 on the J2 connector. The stripe on the SCSI bus data cable should
always go to pin 1 of the cable connector.

INSTALLING THE HOST ADAPTER BOARD

Now you are ready to install the host adapter board. Follow these steps to
install this board.

1. Select an empty, full-size option slot in which to install the host
    adapter board. The best location for this board is usually in one of
    the two full-size option slots closest to the drive tower. This allows
    the SCSI bus data cable to easily reach the drive.

2. Before you actually install the host adapter, you must remove the slot
    cover. Remove the screw from the slot cover on the computer's back
    panel. Then tilt the slot cover away from the opening and lift it out
    of the computer.

3. If the slot you have chosen causes the SCSI bus data cable to reside
    between two PC boards, fold the cable.

4. Slip the front edge of the host adapter board into the plastic card guide
    at the front of the computer, and insert the board's metal mounting
    bracket into the option slot opening. As you slide the board down the
    card guide, avoid letting the SCSI bus data cable touch any adjacent PC
    boards. Push the board's edge connector firmly into the option slot
    socket. Be sure the board is fully seated.

5. Use the screw you removed previously to secure the host adapter board's
    mounting bracket to the back panel of the computer.

COMPLETING THE INSTALLATION

Connect all internal disk drive cables to complete the hard disk drive
installation. These cables are keyed to connect in only one way, so do not
force the cables as you connect them. Also, try to avoid twisting the cables
as you connect them. The easiest way to ensure that the disk drive cables
lay flat is to thread them under the power cables.

1. Disconnect the main power cable from the main logic board by pressing in
    on the tabs as you lift the connector.

2. Attach the end connector on the "drive end" of the SCSI bus data cable
    to the primary hard disk drive. Be sure that the arrows on the drive
    match with the cable connectors.

3. If you have two internal hard disk drives, attach the middle connector
    on the "drive end" of the SCSI data cable to the secondary hard disk
    drive. Again, be sure that the arrows on the drive match with the cable
    connectors.

4. Connect the 4-pin power cables to your internal disk drives. These
    power cables are identical and can be connected interchangeably to any
    internal disk drives.

5. Reconnect any cables that were disconnected to remove the drive tower.

6. If you previously removed the drive tower, replace it, using the screws
    you removed to secure it to the computer chassis. Be sure that no
    cables are under the drive tower when you replace it.

7. Reconnect the main power cable connector to the main logic board.

8. After all internal cables are properly connected, replace the cover.
    With the lip of the cover under the lower rail on the system unit's
    frame, slide the entire housing toward the back of the computer. Re-
    place the cover mounting screws on the computer's back panel. Replace
    the fan filter if you previously removed it.

9. Reconnect all peripheral cables to the appropriate connectors on the
    back of the computer. Reconnect the power cord.

(css 07/29/93)