

Your system supports up to three drives (two diskette drives and one hard drive or two hard drives and one diskette drive). To expand your storage capacity, you can install 5.25-inch or 3.5-inch of the following types:

- * SCSI hard disk drives, and either SmartDrives or ST-506 hard disk drives.
- * Tape or disk cartridge drives.

Additional Storage Devices - The computer supports:

DRIVE	CAT.NO.
52MB SmartDrive	25-4124
105MB SmartDrive	25-4130
40MB SCSI Hard drive	25-4159 (requires 25-4161 adapter)
80MB SCSI Hard drive	25-4160 (requires 25-4161 adapter)
170MB SCSI Hard drive	25-4162 (requires 25-4161 adapter)
440MB SCSI Hard drive	25-4167 (requires 25-4161 adapter)
20MB Hard Card	25-1032
40MB Hard Card	25-4059
160MB SCSI Tape backup	25-4166 (requires 25-4161 adapter)
60MB Tape backup	25-4079
20MB Disk Cartridge	25-4064A

Use only one-inch high, 3.5 inch devices in the two upper drive bays. The lower drive bay is universal and can hold any half-height, 5.25 inch or any size 3.5 inch device.

After installing a new drive, run the Setup utility to update the system configuration as recorded in the CMOS RAM.

NOTES TO HARD DISK OWNERS:

Before installing a hard drive, record the following drive information on the worksheet at the end of your manual:

- * Drive type and type number
- * Number of heads and cylinders
- * Head and cylinder numbers of defective tracks

This information either is on a media error map attached to the hard drive or is in the hard drive installation guide. You need the drive type number when you configure your system and the head and cylinder information when you format the hard disk.

After installing the hard drive, position the computer as you plan to use it (on its side or flat) before you format the hard disk. Check the drive installation guide to see if low-level formatting is necessary.

If you are installing a SmartDrive, be sure to set DIP switches 7 and 8 to the ON position.

INSTALLING A 3.5 INCH DRIVE

Note: If you are installing a 3.5 inch drive in a 5.25 inch drive, bay, use a 5.25 inch mounting adapter.

1. Adjust the selector switches and terminating resistors on the drives as necessary. See the drive installation guide for more information.
2. Open the computer to gain access to the 3.5 inch drive bay in the carriage. Refer to "Opening the Computer".
3. Select the appropriate mounting holes for your drive. See the drive installation guide for more information. Use the rear set of holes to mount a hard drive.
4. Slide the drive into the 3.5 inch drive bay. With the drive resting on the center rail, align the appropriate mounting holes on the drive with the two mounting holes on the side of the carriage. The drive's third screw hold must align with the hole on the center rail.
5. Secure the drive, using the screws included in your drive kit.
6. Connect the drive power and data cables. See the drive installation for more information. Connect the drive cable to the drive and to the main logic board using the correct pin 1 orientation for the connectors. Pin 1 of the cable connector is indicated by a colored stripe. Refer to the "Main Logic Board Layout" to locate pin 1 of the SmartDrive connector.

Align pin 1 of the cable connector with pin 1 of the main logic board connector, and then press firmly. Be sure to follow the instructions in your drive installation guide.

INSTALLING A 5.25 INCH DRIVE

1. Adjust the selector switches and terminating resistors on the drives as necessary. See the drive installation guide for more information.
2. Open the computer to gain access to the 3.5 inch drive bay in the carriage. Refer to "Opening the Computer".
3. Select the appropriate mounting holes for your drive. See the drive installation guide for more information. Use the rear set of holes to mount a hard drive.
4. Slide the drive into the 5.25 inch drive bay. align the appropriate mounting holes on the drive with the three mounting holes on the drive with the three mounting holes on the bottom of the carriage.
5. Secure the drive, using the screws included in your drive kit.
6. Connect the drive power and data cables. See the drive installation for more information. Connect the drive cable to the drive and to the main logic board using the correct pin 1 orientation for the connectors. Pin 1 of the cable connector is indicated by a colored stripe. Refer to the "Main Logic Board Layout" to locate pin 1 of the SmartDrive connector.

Align pin 1 of the cable connector with pin 1 of the main logic board connector, and then press firmly. Be sure to follow the instructions in your drive installation guide.

INSTALLING A SMARTDRIVE

A SmartDrive (IDE hard disk drive) is a hard disk drive with a built-in controller. Because a hard disk controller usually occupies one of the expansion slots in a computer, using a SmartDrive frees one of the expansion slots for some other use and saves you the cost of a separate controller. The SmartDrive is designed to work with its built-in controller, so you get maximum performance and guaranteed compatibility at a lower cost than with other drive/controller combinations.

To install a SmartDrive:

- * Install the drive in your computer. For instructions on installing a drive in the computer, refer to "installing a 3.5 or 5.25 inch disk drive".
- * Connect a SmartDrive data/controller cable between the SmartDrive data/controller cable between the SmartDrive and the 40-pin SmartDrive connector on the main logic board. A SmartDrive data/controller cable supports up to two SmartDrives.

To help you connect the SmartDrive cable correctly, the SmartDrive connector on the main logic board is keyed; it has one pin fewer than an unkeyed connector. Omitting a pin creates an empty slot on the connector. This open area on the connector is called the key.

The connector on your SmartDrive data/controller cable might also be a keyed connector. A keyed connector on a cable has one fewer hole than an unkeyed connector, and again, the empty area on the connector is called the key.

To connect a keyed SmartDrive cable, simply align the keys on the two connectors and then firmly press the cable connector onto the main logic board connector.

If your cable connector is not a keyed connector, you must locate Pin 1 on the cable connector and on the main logic board connector. On the cable, one wire is a different color from the other wires. This wire is connected to Pin 1 on the cable connector. On the main logic board, "1" is printed next to Pin 1 of the main logic board connector.

To connect an unkeyed SmartDrive cable, align Pin 1 of the cable connector with Pin 1 of the main logic board connector and then press the cable connector onto the main logic board connector.

After installing a SmartDrive (or any hard disk drive), run the Setup Utility to update your system configuration. To run Setup, insert the Utilities Diskette into Drive A and turn on the computer.

After you reset the computer, use the FDISK, FORMAT, and COPY commands to partition the drive (if necessary), high-level format each partition, and copy data and programs to the hard disk.

Caution: Do not use the Format Hard Disk utility on the utilities diskette

with a SmartDrive, any other IDE hard disk drive, or a SCSI hard disk drive.

FDISK - PREPARING THE HARD DRIVE

Fdisk creates a partition for MS-DOS on the hard disk. CAUTION: Reconfiguring the hard disk with fdisk destroys all existing files. Be sure you have backed up your data!

1. With the MS-DOS disk in drive A, at the dos A> prompt type:
FDISK
2. At the Disk Options menu, choose option 1, create DOS partition, and press ENTER.
3. At the Create DOS Partition menu, choose option 1, create primary DOS partition, and press ENTER.
4. At the Create Primary DOS Partition menu, press ENTER to accept the default (yes) answer to the question:
"Do you wish to use the maximum size for a DOS partition and make the DOS partition active (Y/N).....? [Y]"

Fdisk displays the message "System will now restart".

FORMAT - PREPARING THE HARD DRIVE

The format command prepares the hard disk to accept MS-DOS files. You must use this command before you can use any disk (hard or floppy) with the computer. CAUTION: Formatting destroys any previously existing data on a disk.

Place the MS-DOS disk in drive A, and at the A> prompt type:

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FORMAT C: /S
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In response, FORMAT displays the following:
"WARNING, ALL DATA ON NON-REMOVABLE DISK DRIVE X: WILL BE LOST!"

Proceed with the format by typing Y and pressing ENTER.

When formatting is complete, format displays a message that reports the total space, available, the amount of defective disk space, the space used by the operating system, and the space available for your files.

Hardcards

Due to mechanical considerations, the weight of the hardcards (25-1032 and 25-4059), cannot be supported in the 4020 SX. Installing the card will cause excessive stress on the connector.

(Catalog correction has been submitted on the information on page 37 of the 1991 Computer Catalog. 09/21/90)