SyQuest®

230 MB Portable SCSI Removable Cartridge Disk Drive

Installation Guide for
PC Compatible Systems

Welcome to SyQuest®

Thank you for buying a SyQuest removable cartridge disk drive, a truly unique combination of powerful features and performance. Our goal is to make your drive an invaluable asset for years to come, starting today. If you have questions or need assistance installing your drive, please contact SyQuest.

SyQuest® Technology is located at 47071 Bayside Parkway, Fremont, CA, 94538-6517. SyQuest's main phone number is 510-226-4000, which has a 24-hour automated system to help direct your calls. You may also contact Sales or Technical Assistance at these online addresses:

Sales		**Technical Assistance**	
U.S.A.		U.S.A.	
Email	sales@syquest.com	Email	support@syquest.com
		World Wide Web	http://www.syquest.com
		Germany	
		Email	support.de@syquest.com
		United Kingdom	
		Email	support.uk@syquest.com

Contents

Safety Standards

This product meets the following national and international regulations:

- UL 1950 Standard for Safety of Information Processing and Business Equipment
- UL Standard for Safety of Information Technology
- CSA C22.2 No. 154 Data Processing Equipment
- CSA C22 No. 220 Information Processing Equipment
- IEC 435 Safety Requirements for Data Processing Equipment
- IEC 380 Safety of Electrical Energized Office Equipment
- IEC 950 Safety of Information Technology Equipment in Electrical Business Equipment
- VDE 0871/1984
- VFG 243/1991

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FCC Warning

This equipment generates and uses radio frequency energy and, if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, try to correct the interference by one or more of the following measures:

- Reorient the antenna.
- Relocate the equipment with respect to the receiver.
- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. The booklet entitled *How to Identify and Resolve Radio-TV Interference Problems,* prepared by the Federal Communications Commission, may be helpful. This booklet, Stock No. 004-000-003454, is available from the U.S. Government Printing Office, Washington, DC 20402.

Notice

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The EZFlyer removable cartridge *disk drive* is covered by one or more of the following U.S. Patents: 4,864,437; 4,920,462; 5,400,201; 5,526,212.

The EZFlyer disk drive *cartridge* is covered by one or more of the following U.S. Patents: 5,218,503; 5,262,918; 5,280,403; 5,422,775; DES342,062; DES367,579.

Other U.S. Patents and other nations' patents pending.

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For civilian agencies, use, reproduction, or disclosure of the software and related documentation is subject to restrictions set forth in FAR 52.227-19. Unpublished rights are reserved under the copyright laws of the United States.

Getting Started

You can connect the EZFlyer™ portable SCSI drive to any 386™, 486™, or Pentium™ class desktop or tower computer that has the following features to operate the EZFlyer drive properly:

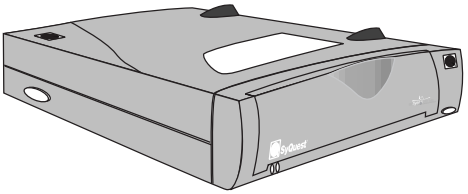
- A SCSI adapter capable of accepting an additional SCSI device. SCSI adapters support up to seven SCSI devices, including SCSI CD-ROMs, hard drives, scanners, tape drives and magneto optical (MO) drives.
- A compatible operating system from the following list:
  - MS-DOS™ 5.0 or higher
  - PC-DOS™ 5.0 or higher
  - Novell DOS™ 7.0 or higher
  - Windows® 3.1 or higher
  - Windows® 95
  - Windows® NT 3.51 or higher
  - OS/2™ 2.1 or higher
  - Novell NetWare™
  - UNIX™

This guide provides detailed installation instructions. Installation typically requires about an hour, and requires familiarity with computer hardware and software. Please review all instructions in this installation guide and familiarize yourself with your computer before you install your EZFlyer drive.

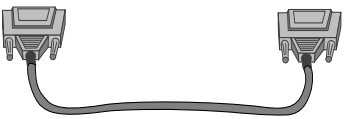
Preparing the Drive

1. Unpack your EZFlyer drive.

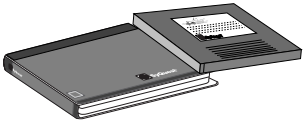
Unpack and inspect the contents of the shipping carton.



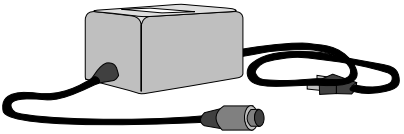
EZFlyer Portable SCSI Disk Drive



SCSI Cable*



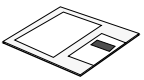
230MB SyQuest Cartridge and Protective Case



Power Adapter

Installation Guide

SyGear Accessories Brochure



SyQuest Installation Diskette

Note: The README.EXE file contains late-breaking information that may not be included in this document.

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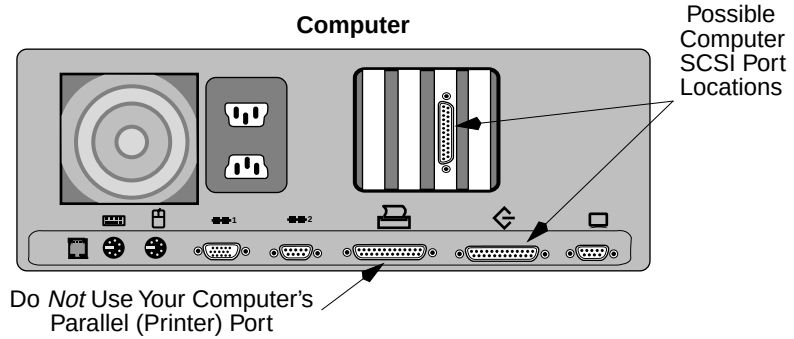
* Either a 25-pin to 50-pin high density SCSI cable or a 25-pin to 25-pin SCSI cable.

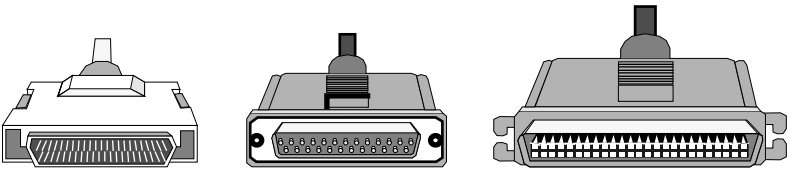
2. Locate your computer's SCSI port.

Your computer's SCSI port may be on a separate card, or on the main logic board on the back of your computer. Your computer's SCSI port will be labeled with a ⌁ symbol or the acronym *SCSI*. It may have a 25-pin connector, a 50-pin Centronics connector, or a 50-pin high-density SCSI connector.



3. Verify that the computer's SCSI connector matches the cable provided with your EZFlyer drive.

Your SCSI connector will match one of the connectors shown here:



If the connectors don't match the cable provided with your EZFlyer drive, call SyQuest at 1-(800) 245-7334 to purchase the correct cable.

Caution: Do not connect the cable to your computer at this time.

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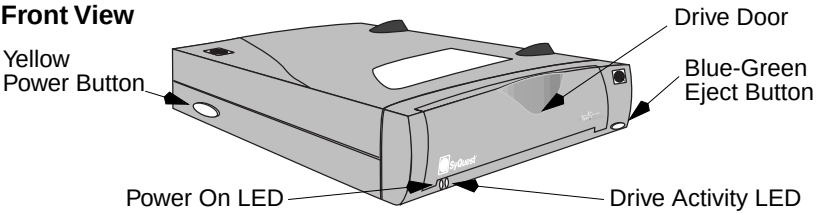
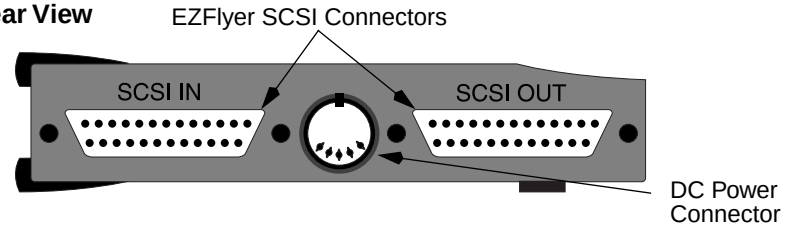
4. Study the parts of your EZFlyer drive.

Before you use the drive, familiarize yourself with the drive's controls and indicators.

Front View



Rear View



Caution: SyQuest recommends that you operate your EZFlyer drive in the horizontal position. If you use the drive in the vertical position, be sure to install the provided mounting foot provided as described in this guide.

Caution: Never store or transport the EZFlyer with the cartridge partially inserted. Transporting or storing the drive with a cartridge partially inserted may damage the drive and void your warranty.

Note: The EZFlyer drive automatically goes into a power saving mode after 5 minutes of inactivity. When the drive is in the power saving mode, the Drive Activity LED is off. Normal drive activity will restore full power to the drive when needed.

Installing the Drive

1. Identify an available SCSI ID on your computer.

- If you know which SCSI IDs are available on your computer, go to step 2.
- If you do not know which SCSI IDs are available, go to step 1a.

a. Write down the SCSI IDs of all the SCSI devices attached to your computer.

Look for a small numbered dial or switch on the back or side of the SCSI devices attached to your computer's SCSI adapter. Record each device in the Device Assignment column in the table below.

SCSI ID	Device Assignment	Notes
0		Available unless used by another device
1		Available unless used by another device
2		Available unless used by another device
3		Available unless used by another device
4		Default EZFlyer drive SCSI ID
5		Available unless used by another device
6		Available unless used by another device
7	SCSI Adapter	DO NOT USE THIS SCSI ID

Caution: Do not use SCSI ID 7. Also, SCSI ID 0 is normally reserved for your computer's SCSI boot drive. Do not use SCSI ID 0 if you have an internal SCSI boot drive. See the online manual if you want to use your EZFlyer drive as your computer's boot drive.

b. Verify that each SCSI device attached to your computer (including the EZFlyer drive) has a unique SCSI ID.

If you can't identify the SCSI IDs of all the SCSI devices attached to your computer, use SyQuest's CHKSCSI program to identify available SCSI IDs. To run CHKSCSI:

- **DOS/Windows 3.1x users:** Exit Windows to DOS. At the DOS prompt, type `A:\CHKSCSI` (or `B:\CHKSCSI` if your 3.5-inch diskette drive is B:) and press Enter.
- **Windows 95 users:** Use Explorer, My Computer, or an MS-DOS prompt and run the CHKSCSI.EXE program located on the A: (or B: if your 3.5-inch diskette drive is B:) diskette drive.

Follow the prompts in the CHKSCSI program. CHKSCSI reports whether or not a SCSI adapter and its ASPI manager are installed, and it recommends a SCSI ID for your SyQuest drive. CHKSCSI can update out-of-date DOS/Windows 3.1x drivers for many popular SCSI adapters.

Note: If you are an OS/2 user, or if you have trouble using CHKSCSI, write down the SCSI IDs of all devices attached to your PC's SCSI port and select an unused SCSI ID.

Note: If CHKSCSI doesn't find your SCSI adapter, or if CHKSCSI displays an incorrect SCSI adapter configuration, your SCSI adapter software may not be ASPI-compatible. Call your SCSI Adapter manufacturer to obtain ASPI-compatible software.

- **If you do not need to change the EZFlyer drive's SCSI ID, go to step 4.**
  You do not need to change the EZFlyer drive's SCSI ID if no device on your computer's SCSI chain uses SCSI ID 4.
- **If you need to change the EZFlyer drive's SCSI ID, go to step 2.**
  Change your EZFlyer drive's SCSI ID if another SCSI device attached to your computer's SCSI chain uses SCSI ID 4.

2. Change the SCSI ID on your EZFlyer drive, if necessary.

Your EZFlyer drive comes with a default SCSI ID setting of 4. If this ID is unavailable on your system, you will need to change the SCSI ID.

Before you change the SCSI ID, read all of steps 2a through 2i, then follow the procedure.

a. Plug the power adapter connector into the DC power port located on the rear of the EZFlyer drive.

Only use the EZ family power adapter. Using a different power adapter may damage your drive.

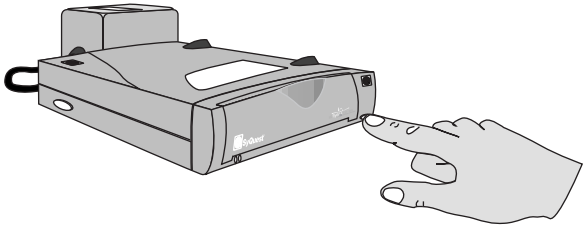
b. Plug the power adapter into an AC power outlet.

Verify that the power adapter is compatible with your AC power outlet.

c. Verify:

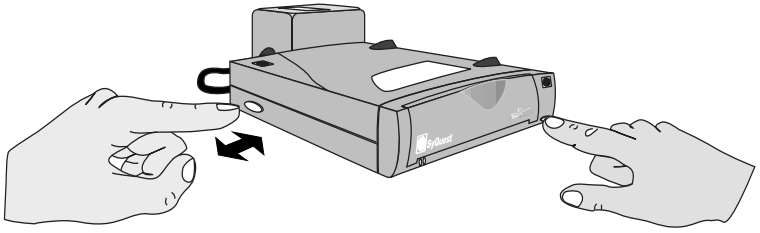
- The EZFlyer drive is plugged into a wall outlet and is turned off.
- The SCSI cable is disconnected from your EZFlyer drive.
- There is *no* cartridge in the drive.

d. Hold down the eject button on the front of the EZFlyer drive.



e. Continue to hold down the eject button. At the same time, press and release the power button on the side of the EZFlyer drive.

The Drive Activity LED blinks red 4 times, indicating that the SCSI ID is set to 4.



Note: Your EZFlyer drive is set to SCSI ID 4 at the factory. If you are performing this procedure after setting the SCSI ID to another number, the Drive Activity LED will blink to indicate the current SCSI ID setting.

Note: Continue to hold down the eject button. The Drive Activity LED will blink to indicate the SCSI ID setting only while you press the eject button.

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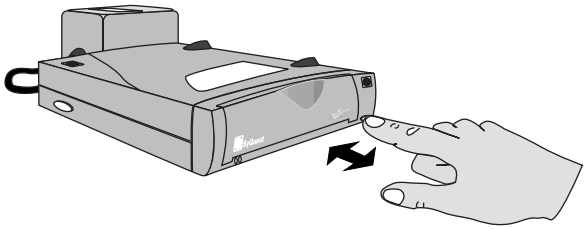
f. Release the eject button.

The EZFlyer drive accepts a new SCSI ID setting for 5 seconds after you release the eject button.

g. Within 5 seconds of releasing the eject button, press the eject button the same number of times as the SCSI ID setting you want to use.

For example:

- Press the eject button twice to set the SCSI ID to 2.
- Press the eject button 6 times to set the SCSI ID to 6.
  The activity LED blinks green every time you press the eject button.



Caution: Do not use SCSI ID 7. SCSI ID 7 is reserved for your system.

Note: If you want to set your EZFlyer drive SCSI ID to 0, press the eject button 8 times.

Note: The EZFlyer drive accepts a new SCSI ID setting for 5 seconds after you release the eject button. If you do not press the eject button within 5 seconds, the Drive Activity LED blinks red once to indicate that the drive is no longer accepting input. If the Drive Activity LED blinks red once, repeat this procedure, starting with step 2c, on page 7.

h. Wait 5 seconds after you set the SCSI ID.

The Drive Activity LED blinks red once to indicate the SCSI ID has been set.

i. Press the power button to turn off the drive.

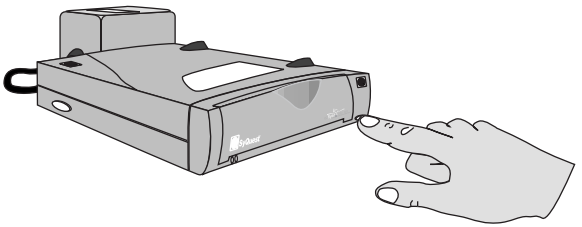
3. Verify the new SCSI ID setting of your EZFlyer drive.

To verify that your EZFlyer drive is set to the SCSI ID you selected:

a. Verify:

- The EZFlyer drive is plugged into a wall outlet and is turned off.
- The SCSI cable is disconnected from your EZFlyer drive.
- There is *no* cartridge in the drive.

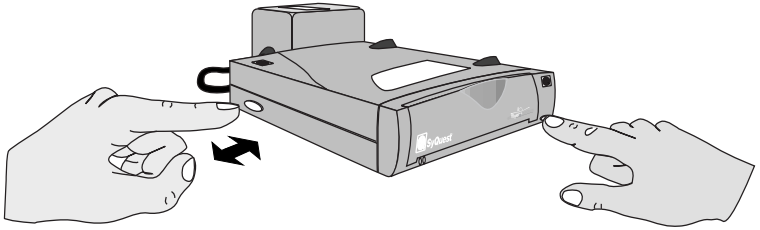
b. Hold down the eject button on the front of the EZFlyer drive.



c. Continue to hold down the eject button. At the same time, press and release the power button on the side of the EZFlyer drive.

The Drive Activity LED blinks red to indicate the SCSI ID setting of your EZFlyer drive. For example:

- The Drive Activity LED blinks red twice to indicate the SCSI ID is set to 2.
- The Drive Activity LED blinks red 6 times to indicate the SCSI ID is set to 6.



d. Release the eject button.

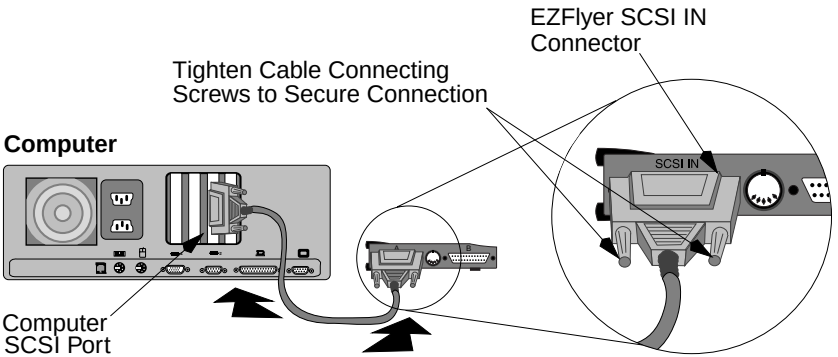
e. Turn off the drive and disconnect the power supply.

4. Shut down your computer.

Never attach or remove SCSI cables when your computer or your EZFlyer drive is on.

5. Plug one end of the provided SCSI cable into your EZFlyer drive's SCSI IN connector.

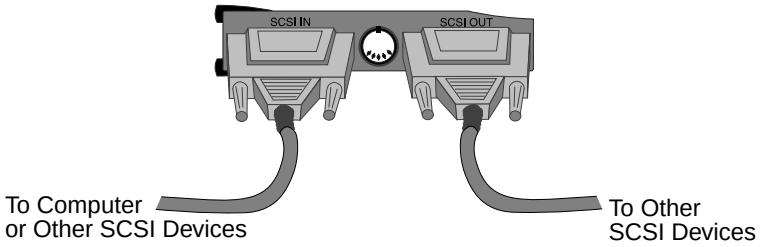
The SCSI cable included with your EZFlyer drive is the correct cable for connecting your EZFlyer drive to one of the two most common SCSI Adapters. You may need to purchase a different kind of SCSI cable in order to connect additional SCSI devices to your EZFlyer drive, or to connect your EZFlyer drive to other types of SCSI adapters. See the provided SyGear brochure for more information.



Caution: Do not attach your EZFlyer drive to the 25-pin parallel printer port found on most PCs.

6. **Plug the other end of the SCSI cable into your computer's SCSI adapter.**

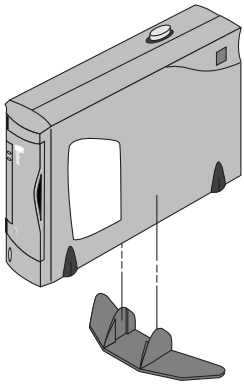
7. **If you will be using other SCSI devices with your EZFlyer drive, attach the next device to your EZFlyer drive's SCSI OUT connector.**



Note: If you will be attaching other SCSI devices to your EZFlyer drive, you must terminate the last device on the SCSI chain. It is the physical location of the drive, *not* its SCSI ID, that determines the need for termination. Only the physically last device on the SCSI chain requires a terminator.

Note: The EZFlyer drive features automatic sensing termination. You do not need to worry about proper SCSI termination if you connect the drive to the end of the SCSI chain using the SCSI IN connector. Leave the SCSI OUT connector open if the EZFlyer drive is the only SCSI device attached to your computer's SCSI port, or if it is the last drive on the SCSI chain.

8. **If you are using the drive in the vertical position, attach the mounting foot to the base of the drive.**



9. **Plug the provided power adapter into the DC power port located at the rear of the EZFlyer drive.**

Caution: Only use the EZ family power adapter. Using a different power adapter may damage your drive.

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10. **Plug the power adapter into an AC power outlet.**

11. **Insert an EZFlyer cartridge into the drive.**

12. **Turn on your EZFlyer drive and your computer.**
    The drive will begin to spin up the cartridge, and the Drive Activity LED will flicker. The LED will glow green when the drive is ready. If the Drive Activity LED does not glow green, see “Inserting the Cartridge” on page 16.

Note: You may want to run your SCSI adapter’s diagnostic program to verify that you set up your EZFlyer drive properly.

Installing SyQuest Software

In order to install SyQuest SCSI software, you must have already installed the ASPI manager provided by your system or your SCSI adapter manufacturer. Your SCSI adapter software must be ASPI-compatible, or some functions of your EZFlyer drive may not work. See your SCSI adapter documentation for details.

DOS and Windows 3.1x Users

1. **Exit Windows to DOS.**
   Press Alt + F4 to exit out of Windows; do not use a DOS shell.
2. **Insert the *SyQuest Installation Diskette* into your diskette drive.**
3. **At a DOS prompt, type `A:\INSTALL` and press Enter.**
   If `B:` is your 3.5-inch diskette drive, type `B:\INSTALL` and press Enter.
4. **Follow the prompts in the installation program.**

Windows 95 Users

1. **Click Start, then select Settings and click Control Panel.**
2. **In the Control Panel window, double-click the Add/Remove Programs icon.**
3. **Insert the *SyQuest Installation Diskette* into the diskette drive and click Install.**
   Click Next, then click Finish.

4. **Follow the instructions in the Installation Wizard window to complete the software installation.**

Note: If you are updating DOS/Windows 3.1 to Windows 95, you may need to comment out the DOS driver in your new CONFIG.SYS and AUTOEXEC.BAT files.

Windows NT Users

To install your EZFlyer drive under Windows NT, use the SCSI drivers provided with your SCSI adapter. Refer to your SCSI adapter documentation or the SyQuest online manual for details.

Note: You must use Disk Administrator to prepare your cartridge.

Novell Users

To install your EZFlyer drive under Novell, use the Novell SCSI drivers, or the SCSI drivers provided with your SCSI adapter. Refer to your SCSI adapter documentation for details.

OS/2 Users

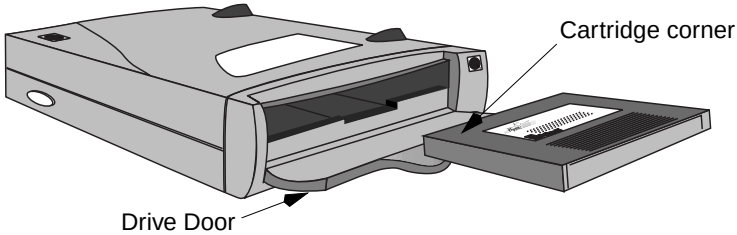
1. **Insert the *SyQuest Installation Diskette* into your diskette drive.**
2. **Select Device Driver Install from System Setup.**
3. **Change the source from `A:\` to `A:\OS2` and click Install.**

   If `B:` is your 3.5-inch diskette drive, change the source from `B:\` to `B:\OS2`.
4. **Click SyQuest SCSI Device and click OK.**

Inserting the Cartridge

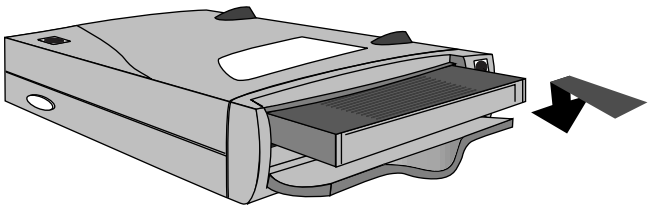
The EZFlyer drive reads, writes, and formats SyQuest 135 MB and 230 MB cartridges. The drive *cannot* read, write, or format other SyQuest cartridges.

1. **Hold the cartridge as shown in the figure below.**
2. **Open the drive door with the cartridge corner.**



Note: You can insert SyQuest cartridges with the drive power on or off.

3. **Slide the cartridge into the drive until it stops.**



4. **Press down on the cartridge until it locks into place.**
   The drive begins to spin up the cartridge, and the Drive Activity LED flickers. The LED will glow steadily green when the drive is ready.

Caution: If you drop your EZFlyer drive, do *not* test it or insert a cartridge to see if it was damaged by the drop. Contact your SyQuest reseller for instructions.

Removing the Cartridge

Use this procedure to remove the cartridge when changing cartridges or transporting your EZFlyer drive. Always remove the EZFlyer cartridge before transporting your EZFlyer drive.

1. **Verify that the power LED glows green.**
   The EZFlyer drive should always be switched on when you eject a cartridge.

2. **Exit out of all applications that use the cartridge and close all open files on the cartridge.**
   You may lose data if you eject the cartridge before closing all open files on the cartridge.

3. **Unlock the cartridge.**

   DOS users: Type `UNLOCK` at a DOS prompt.

   Windows 3.1x users: Double-click the SyQuest Unlock Utility icon, select the EZFlyer drive letter and click Ok.

   Windows 95 users: From My Computer or Explorer, click the right mouse button on the EZFlyer drive icon and select eject from the pop-up menu. Alternatively, you can use the SyQuest Windows 95 Utilities to eject the cartridge.

   Windows NT users: Windows NT automatically locks and unlocks the cartridge. You do not need to manually unlock the cartridge to remove the cartridge.

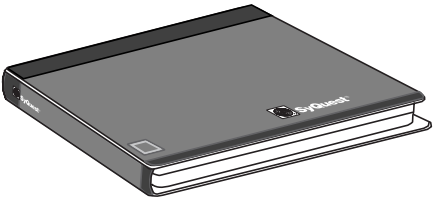
   OS/2 users: Select the EZFlyer drive icon, click the right mouse button, and select the Unlock menu item.

4. Press the eject button on the front of the EZFlyer drive.

The Drive Activity LED will flicker, the drive door will open, and the cartridge will pop out of the drive after a few seconds. If the Drive Activity LED does not flicker, unmount the cartridge using the SyQuest Windows 95 Utility, or use the SyQuest Unlock utility in Windows 3.1x.

5. Remove the cartridge and place it in its protective case.

Always store the cartridge in its protective case.



Caution: Never store or transport the EZFlyer drive with the cartridge partially inserted. Leaving a cartridge partially inserted, or transporting the EZFlyer drive with the cartridge inserted, may damage the drive and void your warranty.

Ejecting the Cartridge without Power

In the event of a power failure, you can remove the cartridge using the manual eject hole.

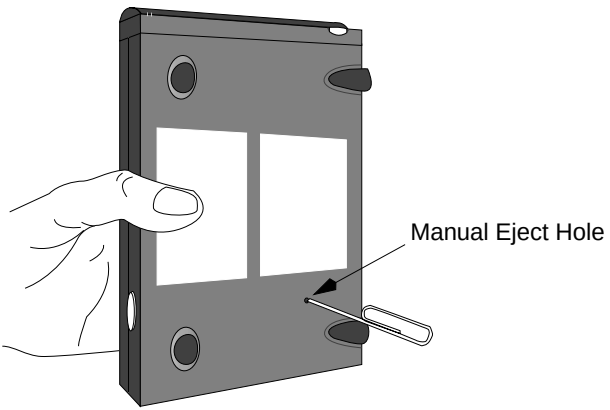
1. **Wait at least one minute after the power fails before you perform this procedure.**

2. **Locate the manual eject hole on the bottom of the drive.**

   The manual eject hole is a small round hole on the bottom of the EZFlyer drive.

3. **Insert a straightened paper clip into the manual eject hole on the bottom of the drive.**

   The cartridge will eject partway.



Caution: Be careful not to hold the EZFlyer drive with the drive door facing down. The cartridge may fall out of the drive and be damaged.

4. **Remove the cartridge and place it in its protective case.**

Write-protecting the Cartridge

You can use the EZFlyer drive's write-protect software (part of the SyQuest Utilities) to prevent data on the cartridge from being altered or erased. You can use SyQuest Utilities under DOS, Windows 3.1x, and Windows 95.

Caution: The silver Read Only switch on 135 MB or 230 MB cartridges does *not* write-protect the cartridge in your EZFlyer drive. The write-protect feature of the EZFlyer drive is controlled by software utilities only, regardless of any hardware write-protect settings.

SyQuest cartridges ship from the factory ready to record data. To write-protect a cartridge:

1. **Verify that a cartridge is in the drive and the Drive Activity LED glows green.**

2. **Run the SyQuest Utilities software**

   You installed the SyQuest Utilities in "Installing SyQuest Software" on page 14.

   DOS users: Run the SQSHELL program and select Options. Select either:

   - Enable Write Protect Utility
     Data on the cartridge cannot be altered or erased.

   or

   - Disable Write Protect Utility
     Data on the cartridge can be edited or erased.

Windows 3.1x users: Run the SyQuest Utilities and click the Control button. Click the EZFlyer drive letter button and click the Set to ON button in the Write Protect box. To disable the write-protect feature, select the drive letter in the list box and click the Reset to OFF button in the Write Protect box.

Windows 95 users: Run the SyQuest Win95 Utility and click the Control button. Select the letter of the EZFlyer drive in the list box and click the Set to ON button in the Write Protect box. To disable the write-protect feature, select the drive letter in the list box and click the Reset to OFF button in the Write Protect box.

Note: Write-protection is not supported under Windows NT or OS/2.

How Drive Letters Are Assigned

DOS and Windows assign drive letters to any drive (SyQuest or not) that you add to your system. Sometimes, when you add a new drive, DOS or Windows can assign a new letter to an existing drive that you would prefer remain unchanged. In order to manage drive letter assignments in PCs, you should understand the mechanisms which determine how drive letters are assigned by DOS. The following describes disk drive partitions and how DOS assigns letters to them.

Partitions

DOS, like most operating systems, deal with large storage devices as a collection of contiguous storage elements (blocks) called *volumes* (or *logical drives*). DOS treats floppies, CD-ROMS, tape drives and hard disk drives as logical volumes which have the following *bookkeeping* elements associated with them:

- drive code letter
- (optional) name
- directory
- files

Every operating system has its own specific way of dealing with storage on a volume; DOS controls the storage of files in the fixed drive volume with a structure called the *partition*. Because most volumes have only one partition, the terms will often be used interchangeably. Think of a partition as a contiguous area of the disk drive in which the operating system stores files. A physical hard disk drive is partitioned into at least one partition.

In DOS, two types of partitions are defined—primary and extended. A primary partition may contain the programs necessary to run DOS. An extended partition can be divided into one or more logical volumes. Each logical volume is treated by the operating system as if it was a separate physical device and is therefore assigned its own drive letter. A single hard disk drive can be partitioned into several logical volumes, each volume having a drive letter assigned to it. A table in the first block of the physical drive contains information about the partitions on the drive. DOS will first assign the primary partitions drive letters and then later drive letters to the logical volumes of an extended partition.

Drive-Letter Assignment Protocol

The partition table information from the disk drive(s) is used by DOS to assign a letter to each partition. The operating system works in conjunction with the BIOS ROM to accomplish this. The BIOS ROM contains the Basic Input/Output Support to control the hard disk drives attached to your computer. This BIOS ROM, which we further identify as the mother board BIOS ROM, contains support for the hard disk drives attached to the EIDE controller.

EIDE hard disk drives are made known to the BIOS by the CMOS, which is special memory that contains information about the standard devices attached to the computer. During system power up, DOS looks at the CMOS to determine which hard disk drives are attached to the EIDE controller. Since the BIOS ROM is the first place hard disk drives are identified by the PC, any drives defined in the CMOS are assigned the first drive letters. This also means that drives attached to the EIDE controller but not defined in CMOS are not assigned drive letters at this stage.

PCs provide a means for expansion of the original mother board BIOS ROM to allow for additional devices. After the mother board BIOS has installed the standard devices, it will search for adapter boards equipped with their own BIOS ROMs.

After the BIOS ROMs have finished their initialization, the operating system (DOS) is loaded. DOS first scans each BIOS-accessible disk for primary partitions and assigns them drive letters. DOS then scans each BIOS-accessible disk for extended partitions and assigns them drive letters. The system initialization then loads and execute the two special system configuration files—CONFIG.SYS and AUTOEXEC.BAT—in this order. CONFIG.SYS loads and executes the device drivers that it finds. Logical volumes installed by device drivers are assigned the next available letters. This includes logical volumes like compressed files and RAM drives. Device drivers are executed in the order listed in CONFIG.SYS. Next, programs in the AUTOEXEC.BAT file are executed and those programs which install logical volumes are assigned the next available drive letters.

One of the most common problems encountered when adding a drive to a system is that insufficient drive letters are available to the system and logical volumes (for example, CD-ROM drives) appear to become *lost*. This situation is easily remedied by the addition of a `LASTDRIVE=` statement in CONFIG.SYS, which allows you to extend the available letters.

Finally, network volumes are assigned after the operating system has loaded and the network is attached.

Drive-Letter Assignment Summary

Drive letters are assigned in the following order:

- Hard disk drives defined in CMOS as having primary partitions
- Hard disk drives controlled by HBA BIOSes having primary partitions
- Logical volumes in an extended partition
- Logical volumes installed by device drivers in the order they are found in CONFIG.SYS
- Logical volumes installed by software in the order they are found in AUTOEXEC.BAT
- Network installed logical volumes

Example of Drive-Letter Reassignment

This example assumes that there are two existing hard drives on your computer—the Master hard drive and the Slave hard drive. The Master drive has a primary partition and two logical drives in an extended partition. The Slave drive has a primary partition and a single logical drive in an extended partition.

The DOS internal driver assigns letters in the following order:

C:\ Master Primary

D:\ Slave Primary

E:\ Master Logical Drive (1)

F:\ Master Logical Drive (2)

G:\ Slave Extended

Note: Drive letters A and B are reserved for floppies.

Installing a SyQuest cartridge with a single primary partition changes the order as follows:

C:\ Master Primary

D:\ Slave Primary

E:\ SyQuest Primary

F:\ Master Logical Drive (1)

G:\ Master Logical Drive (2)

H:\ Slave Extended

In this example, DOS reassigned the drive letters of each drive in an extended partition.

Using the Extended Partition

One way to prevent drive letter reassignment is to partition your SyQuest cartridge into one or more logical drives with an extended partition and no primary partitions. This way, your SyQuest drive will be assigned the last letter(s) in the series, leaving the original drive assignments unchanged.

Caution: Partitioning your SyQuest drive in this manner will prevent booting with your SyQuest cartridge, and may cause interchange problems, especially with non-SyQuest drivers.

Compressed Drives

DOS native data compression drivers may assign drive letters to compressed drives after all of the above have been assigned. Refer to your MS DOS manual for details and possible problems associated with compressed drive letter assignments.

SCSI Host Bus Adapter BIOS

Some SCSI Host Bus Adapters (HBA) have on-board BIOS, most of which can be specifically enabled or disabled to a specific SCSI ID (some vendors' HBA's are automatically BIOS-enabled and cannot be disabled). If the SCSI BIOS is enabled to the SyQuest drive, then it probably has its letter assigned by the BIOS and cannot be changed, much like IDE drive letter assignment.

In DOS and Windows 3.1x, the SCSI device drivers are usually external and loaded through either the CONFIG.SYS or the AUTOEXEC.BAT files.

CONFIG.SYS

Note: Windows 95 contains a volume management layer that handles drive letter assignments. SyQuest recommends that Windows 95 users who do not intend to run in DOS mode not install *any* drivers in either the CONFIG.SYS file or AUTOEXEC.BAT file, since doing so can cause conflicts within this volume management layer.

You must load the SyQuest drivers in the CONFIG.SYS file. Drive letter assignment occurs in device driver order. Devices with multiple partitions receive letter assignments in consecutive order, regardless of whether these partitions are primary or extended.

Device drivers supporting multiple devices receive multiple drive letters. You can change the drive letter assignment by changing the order of the device drivers in the CONFIG.SYS file.

AUTOEXEC.BAT

Note: Windows 95 contains a volume management layer that handles drive letter assignments. SyQuest recommends that Windows 95 users who do not intend to run in DOS mode not install *any* drivers in either the CONFIG.SYS file or AUTOEXEC.BAT file, since doing so can cause conflicts within this volume management layer.

The MSCDEX DOS CD-ROM extension, network drivers, and other device drivers in the AUTOEXEC.BAT file are assigned drive letters in the order that they appear.

SyQuest recommends that you use the `LASTDRIVE=[drive letter]` command to preassign your CD-ROM a drive letter far enough along in the alphabet to create a gap in your drive letter assignments large enough to accommodate drive assignments for additional devices without disturbing the order of your existing devices.

Referring to New Drive Letters

Several system files refer to the disk drives by their drive letter. If DOS rearranges your drive letters, you must correct all references to the affected disks to ensure that your system functions properly. Perform these tasks:

- Edit the CONFIG.SYS and AUTOEXEC.BAT file to reflect the new drive letters.
- Edit the PATH statement in your AUTOEXEC.BAT file to refer to the new drive letters.
- Edit all batch files to refer to the new drive letters.
- Edit all Windows .INI files and your Windows groups to reflect the new drive letters.
- Rerun INSTALL or SETUP for any application programs if you cannot change the reference drive letter for that application.
- Edit the network LOGIN script as needed to reflect the new drive letters.
- Remount compression drives if you are using DOS compression.

CD-ROM Drive Letters

CD-ROMs are usually assigned the last local drive letter because they are supported by a device driver (MSCDEX.EXE) that is the last to load (typically at the beginning of the AUTOEXEC.BAT file). In the most common PC configuration, DOS assigns drive letter D to the CD-ROM, because it is the only drive in addition to the boot drive, C.

You can direct MSCDEX (and other equivalent CD-ROM device drivers) to use a specific drive letter with the `/L` command line option in the AUTOEXEC.BAT file. This allows you to guarantee that the CD-ROM is assigned a particular drive letter even when you add several devices over time. SyQuest recommends that you leave a one drive letter *gap* between the highest drive letter that you plan to install and the CD-ROM drive letter. This ensures that the CD-ROM drive letter is not changed when you install other drives.

For example, if you wish to ensure that your CD-ROM drive retains the drive letter `G`, even if you add several hard drives to your computer, modify the MSCDEX.EXE line in the AUTOEXEC.BAT file to read as follows:

```
C:\DOS\MSCDEX.EXE /D:MSCD001 /L:G
```

Note: If you use the `LASTDRIVE` command in your CONFIG.SYS file, set `LASTDRIVE` equal to or higher than the CD-ROM drive letter. In our example, you might use `LASTDRIVE=G`.

Network Drive Letters

A Network Operating System (NOS) assigns DOS drive letters to network drives alphabetically after DOS has assigned letters to the local devices, but rarely does the NOS assign a drive letter lower than `F`. This means that you can usually add a local drive and not affect your network drive letter assignment.

If your first network drive letter is changed and your network LOGIN script refers to a specific drive letter for LOGIN (typically `F`), you may need to change the script to refer to the new drive letter. Your network system administrator can help in rearranging your network drives.

Changing Your Network Drive Letter: The DOS `LASTDRIVE` command allows you to set the highest drive letter that DOS will use for local drives. This, in turn determines the first network drive letter. For example, you can force the your network to start at drive letter H by using `LASTDRIVE=G` in your CONFIG.SYS file.

The NOS can only assign drives up to `Z`, so be sure to allow enough letters between the last local drive and drive `Z` for your network drives.

Managing Drive Letter Reassignments

Whenever drive letters change, you must perform the following tasks:

- Update the CONFIG.SYS and AUTOEXEC.BAT files to reflect the new drive letters. Update the path of device drivers loaded from drives other than the C: drive.
- Update the PATH statement in your AUTOEXEC.BAT file to correctly refer to new drive letters.
- Update all batch files to reference the proper drive letters.
- Update all Windows .INI files and your Windows groups for new drive letters.
- Rerun INSTALL or SETUP of your application program if the reference drive letter cannot be changed.
- Update the network LOGIN script as necessary to reflect the new drive letters.
- REMOUNT the compressed drives if you are using DOS compression.
- Update Windows 3.1x icons by first selecting the icon and then selecting Properties under the Program Manager File menu.

OS/2 Drive Letter Assignment

When OS/2 boots, drive letters are assigned in the following order:

- EIDE primary partitions (drive 0 followed by drive 1, and so on)
- SCSI primary partitions
- SyQuest SCSI Drive primary partitions
- EIDE logical partitions
- SCSI logical partitions
- SyQuest SCSI Drive logical partitions
- Removable media drives

Reserving More Drive Letters (OS/2)

When OS/2 boots, OS/2 reserves one drive letter for a primary partition and a drive letter for each logical partition that OS/2 finds on the cartridge. If you plan to interchange cartridges that have different numbers of partitions, you can force OS/2 to reserve additional drive letters by modifying the OS2DASD.DMD statement to include:

```
/NUMVOL:u,n
```

where `u` is the physical hard disk index (0 for the boot drive, 1 for the second drive, and so on) and `n` is the number of drive letters to reserve to a maximum of four.

For example, to reserve three drive letters for drive 1, change the OS2DASD.DMD statement in CONFIG.SYS:

from

```
BASEDEV=OS2DASD.DMD
```

to

```
BASEDEV=OS2DASD.DMD /NUMVOL:1,3
```

Using the Visit Program to Manage Drive Letters

SyQuest SCSI drives may be temporarily installed on PCs using the Visit program. Visit loads the required device drivers and allows you to quickly attach and software-connect a SyQuest SCSI drive while the computer is operating—you need not even reboot the system.

Visit assigns a new drive letter (after all other drive letters are assigned in the normal order) for the SyQuest SCSI drive. The drive is accessible as a removable cartridge disk drive using the newly-assigned drive letter.

Note: The Visit program will not work in this manner if you have enabled your HBA BIOS to install the EZFlyer drive. In this case, Visit will use the assigned drive letter. See "SCSI Host Bus Adapter BIOS" on page 26.

To *visit* a personal computer, follow these steps:

- Turn off the computer.
- Connect the SyQuest SCSI drive to the computer's SCSI adapter.
- Connect the SyQuest power supply and turn on the SyQuest SCSI drive.
- Turn on the computer and allow the operating system to load.
- Insert the *SyQuest Installation Diskette* into the primary diskette drive.
- Type `A:\VISIT` (or `B:\VISIT`) and press the Enter key.

Troubleshooting

Symptom	Problem	Solution
Computer does not recognize a newly installed SyQuest drive.	SCSI adapter software was not installed before installing SyQuest software.	Install ASPI-compatible SCSI adapter software before installing SyQuest software. Run the diagnostic software provided by your SCSI adapter manufacturer after connecting the SyQuest drive, but before installing SyQuest software.

Note: If you have more than one SyQuest drive attached to your computer when you install SyQuest SCSI software, make sure each connected drive has a cartridge fully inserted.

Note: You can update the software drivers on older SyQuest cartridges without losing existing data on the cartridges. The driver update program preserves existing data.

Glossary of Common System Terms

ASPI: Acronym for Advanced SCSI Programming Interface. It establishes *standard language* for SCSI device control programs to communicate with SCSI HBAs. The standard allows the maker of a SCSI device to write a single ASPI-compatible device driver rather a unique driver for each different HBA. HBA vendors provide an ASPI manager written specifically for their board and the operating system. The interface between SCSI device(s) and the HBA is accomplished at the common ASPI control level.

ASPI Manager: This is the software module written for a specific HBA and operating system (usually provided by the HBA vendor). This software allows disparate SCSI devices to be easily interfaced to the HBA. Each SCSI device will have its own ASPI-compatible device driver that communicates to the HBA and operating system through the ASPI Manager.

BIOS: (Basic Input/Output System) is the software that starts up, tests, and provides basic communication services for a computer's standard hardware components. The BIOS program is loaded prior to the loading of the operating system. The BIOS is contained on a ROM on the mother board of the computer. Some adapter boards (including SCSI HBAs) contain their own BIOS ROM which act as extensions to the computer's on board BIOS providing support for added devices.

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