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Barracuda ATA Family

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ST328040A, ST320430A

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ST313620A, ST310220A

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ST36810A

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Installation Guide

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Contents

The easiest way to install your drive	1
What you need	2
Ultra ATA/66 requirements.....	2
Before you begin	2
Handling precautions.....	3
Master/slave jumpers	4
Attaching cables and mounting the drive	6
Configuring your computer	8
BIOS settings.....	9
Addressing drive-capacity limitations	10
Preparing your drive for use	12
Installation using Disk Manager.....	12
Standard DOS installation	14
Loading the Operating System	15
Additional installation options	16
Non-ATA compatible slave jumper	16
Cable-select jumper.....	16
Advanced Disk Manager options	17
Troubleshooting	20
Alternate capacity jumper	22
Seagate Technology support services	28
Storing and shipping your drive	35

The easiest way to install your drive

DiscWizard™ is Seagate's exclusive Windows program that is included with your drive for easy drive installation.

DiscWizard helps you configure your new drive and your computer. It analyzes your system, lets you select various installation options and creates customized step-by-step instructions. It also allows older computers to access the full capacity of large hard drives. Run this software *before* installing your drive.

You can run DiscWizard to install your new hard drive if:

- You already have an existing, bootable hard drive in your computer with at least 3 Mbytes of available disc space, *and*
- You are running Windows 95 or Windows 98.

To run DiscWizard:

- Select Run from the Windows Start menu and type **x:\setup**, where x is the drive letter of your diskette or CD-ROM.

If you cannot run DiscWizard, follow the instructions in this installation guide to install and configure your new drive.

What you need

- Straight-edge and Phillips screwdrivers
- Four 6-32 UNC drive mounting screws
- A standard 40-pin ATA interface cable, *or* an 80-conductor cable to run Ultra ATA 66 (max length: 18 inches)
- An unused drive power cable for your new drive

Ultra ATA/66 Requirements

The drive can support transfer rates up to 66 Mbytes per second in Ultra ATA/66 mode. For your drive to run in this mode you need the following:

- A computer that supports UDMA modes 3 and 4
- A 40-pin 80-conductor cable (maximum length 18 inches)
- A software utility to activate Ultra ATA/66. Seagate provides a utility called UTA66.exe that is included on your CD, or you can download it from our Web site at www.Seagate.com.
- The Windows 98 operating system

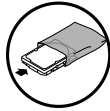
Before you begin

- Make sure your computer is turned off before you open the case.
- Read the handling precautions at the right and inspect the drive to make sure that it is not damaged.
- Save your foam-lined Seagate® disc drive box. This box has been approved by Seagate for shipping a Seagate disc drive. Using any other container or packing material voids your drive warranty.

Handling precautions



Disc drives are extremely fragile. Do not drop or jar your drive.



Keep the drive in its antistatic bag until you are ready to install it.



Protect your drive from static discharge by making sure you are well grounded before touching the drive. We recommend wearing a grounded wrist strap throughout the installation process. Do not touch the connectors or any part of the printed circuit board.



Always handle the drive by its edges or frame.



Do not apply pressure or attach labels to the circuit board or the top of the drive.

Master/slave jumpers

If you already have one hard drive in your computer and you are installing a second drive, you must configure one drive as a master and the other as a slave.

Note. If you need to change the jumpers on your existing hard drive, see the Disk Manager online manual, look on the drive label, or contact the drive manufacturer.

Installing a master or one drive only:

- The drive is shipped configured for a master or single-drive installation with a jumper set on pins 7 and 8.

Note. The master drive usually defaults to being the “boot” drive (drive C), from which the computer loads system software when it first starts up.

Installing a slave drive:

- If you are installing your drive as the second drive on the cable, remove all the jumpers.

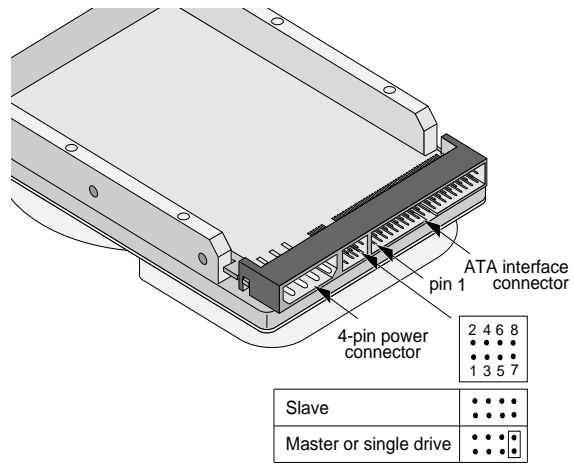


Figure 1. Master and slave jumper settings

Attaching cables and mounting the drive

1. Attach one end of the drive interface cable to the interface connector on your motherboard (See your computer manual for connector locations).

! **Caution.** Align pin 1 on the motherboard connector with pin 1 on your drive connector. Pin 1 on is marked by a stripe on one side of the cable.

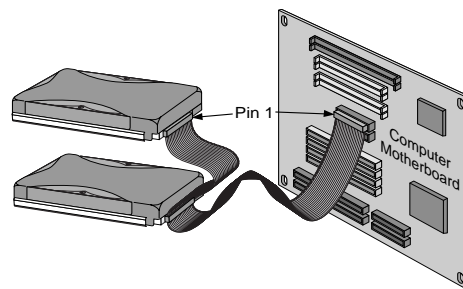


Figure 2. Attaching the cables

Note. A 40-pin 80-conductor cable is required to run in Ultra ATA/66 mode. Attach the *blue* connector to the motherboard, the *black* connector to the master or single drive, and the *grey* connector to the slave.

2. Attach the interface cable and the power connector to the new drive.

Note. You can mount the drive in any orientation. Usually it is mounted with the circuit board down.

! **Caution.** Do not overtighten the screws or use metric screws. This may damage the drive.

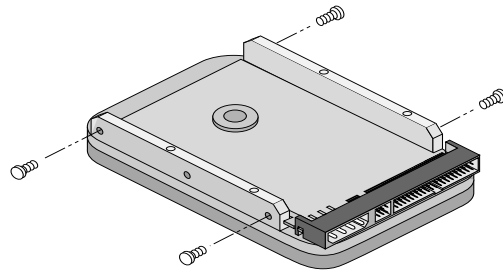


Figure 3. Mounting the drive

3. Secure the drive in the computer using four 6-32 UNC mounting screws in either the side-mounting or bottom-mounting holes. Insert the screws no more than 0.22 inch (5.58 mm) into the bottom-mounting holes and no more than 0.20 inch (5.0 mm) into the side-mounting holes.

Configuring your computer

Before you format or partition your new drive, you must configure your computer's BIOS.

To configure your computer's BIOS:

1. Turn your computer on. As your computer starts up, watch for a message that describes how to run the system setup program (also called BIOS or CMOS setup). This is usually done by pressing a special key, such as DELETE, ESC OR F1, during startup. See your computer manual for details. Press the appropriate key to run the system setup program.
2. Select the BIOS hard drive settings menu. To set the drive parameters, choose Primary Master or Slave, *or* Secondary Master or Slave.
3. Select automatic drive detection if available. Choosing this option automatically configures the computer for your new drive. If your BIOS does not provide automatic drive detection, select "user-defined" drive settings and enter the CHS values from the table on page 9. These CHS values support drive capacities up to 8.4 Gbytes.
4. Verify that LBA mode is enabled. Many BIOS use the logical block addressing (LBA) mode to access drives with capacities greater than 528 Mbytes. Most BIOS automatically set this mode during the auto-detection process.
5. Enable UDMA mode if it is available.

Save the settings and exit the System Setup program. Your computer will automatically reboot.

BIOS Settings			
Drive Model	Cylinders	Heads	Sectors
ST328040A CHS addressing Addressable sectors	16,383 53,385,552	16	63
ST320430A CHS addressing Addressable sectors	16,383 40,079,088	16	63
ST313620A CHS addressing Addressable sectors	16,383 26,692,776	16	63
ST310220A CHS addressing Addressable sectors	16,383 20,005,650	16	63
ST36810A CHS addressing Addressable sectors	14,123 13,346,235	15	63

Note. Set the *write precomp* or *landing zone* parameters to zero.

We recommend you use Disk Manager to evaluate your BIOS and determine whether your system needs additional BIOS support. For more information, see "Installation using Disk Manager" on page 12.

Addressing drive-capacity limitations

Some DOS-based computers and operating systems are not designed to accommodate large-capacity hard disc drives. The most common system limitations are listed below.

528-Mbyte limit

The BIOS in some older computers cannot support drives with capacities greater than 528 Mbytes. Seagate provides free Disk Manager software with your drive to overcome this limitation. Alternatively, you can purchase a hard drive controller or a BIOS upgrade that supports drives with capacities greater than 528 Mbytes.

8.4-Gbyte limit

If your drive's capacity is greater than 8.4 Gbytes, the capacity may exceed the limits of your system BIOS and operating system. DOS and Windows operating systems and most system BIOS limit the drive partitions to 8.4 Gbytes per physical drive. Because of this limitation, a 32-bit file allocation table (FAT32) is needed to support drive capacities greater than 8.4 Gbytes.

To achieve your drive's full capacity, you need a Windows operating system that supports FAT32 *and* device support for drive capacities greater than 8.4 Gbytes, from one of the following:

- Third-party device driver, such as Disk Manager (Disk Manager is provided on the DiscWizard diskette or CD included with your drive), *or*
- An intelligent ATA host adapter, *or*
- A system BIOS upgrade

BIOS upgrades

If you need to upgrade your BIOS, contact the appropriate BIOS manufacturer listed below:

American Megatrends (AMI): 1-800-828-9264
www.megatrends.com

Award Software International, Inc.: 1-800-800-2467
www.award.com

Phoenix Technologies Ltd.: 1-800-767-5465
(Upgrades from Microfirmware)
www.ptltd.com

Preparing your drive for use

Installing a single drive

For a quick installation, we recommend you use Disk Manager to automatically partition and format your drive.

Disk Manager also ensures that your computer can access the full capacity of your hard drive. See "Installation using Disk Manager" below.

If you *do not* want to use Disk Manager, you can use the standard DOS commands to partition and format your drive. See "Standard DOS installation" on page 14.

Installing a second, or slave drive:

Use the DiscWizard software provided with your drive to install an additional drive. For information on running DiscWizard, see page 1.

To add a second, or slave drive, *without* using DiscWizard:

Use the standard DOS commands FDISK and FORMAT. See "Standard DOS installation" on page 14.

Installation using Disk Manager

Note. The Disk Manager software is stored on the diskette or CD provided with your drive.

1. Boot your computer from your Windows startup diskette. Insert your DiscWizard diskette or CD (If you are using the CD, change to the drive letter of your CD-ROM).
2. At the prompt, type **dm**. Then press ENTER.
3. Follow the onscreen instructions until you see the *Select an Installation Option* menu.

4. Select either *(E)asy Disk Installation* or *(A)dvanced Disk Installation*.

Disk Manager lists all the hard drives that it detects. You should see your new Seagate drive and your existing hard drive, if any.

If any hard drive is not recognized, exit Disk Manager and turn off your computer. Check all cables, jumpers and BIOS settings. Then start at step 1 to run Disk Manager again.

5. If Disk Manager recognizes all your drives, select the drive you want to install and press ENTER. Disk Manager partitions and formats the drive.

Important. If your BIOS does not support drive capacities greater than 8.4 Gbytes, Disk Manager installs a *Dynamic Drive Overlay (DDO)* on your hard drive. If this driver has been installed, you should see a blue Disk Manager banner each time you boot your computer. See the Disk Manager online manual for details.

6. Follow the instructions in the post-installation screens.

Standard DOS installation



Caution. Partitioning or formatting a drive erases all data on it. Seagate assumes no liability if you erase your data.


Drive partitioning

Partitioning a hard drive divides it into sections (partitions) that function as separate logical drives (labeled C,D,E, etc.).

To partition your new drive using DOS:

1. Insert a bootable DOS diskette into your diskette drive and restart your computer. (Seagate recommends using DOS Version 5.0 or greater.)
2. Insert a DOS program diskette that has the FDISK.EXE and FORMAT.COM programs into your diskette drive. At the A: prompt, type **fdisk** and press ENTER.
3. If you have two hard drives installed, the FDISK menu displays five options. Option five allows you to select the drive you want to partition. Make sure that your new drive is selected.
4. Select "Create DOS partition or logical DOS drive" by pressing **1**, *then* press ENTER.
5. Select "Create primary DOS partition" by pressing **1** again. Then press ENTER. Create your first drive partition. If you are creating a partition that will be used to boot your computer (drive C), make sure the partition is marked *active*.
6. Create an extended partition and additional logical drives, as necessary, until all the space on your new hard drive has been partitioned.

7. When partitioning is complete, FDISK reboots your computer. Proceed to "Drive Formatting."

Note. If you are adding a second drive to your system, you can run FDISK from Windows. Click the  **Start** button. Select **Run...** Then type **fdisk** and click OK.

Drive formatting



Caution. Use the correct drive letters so that you *do not* format a drive that already contains data.

At the A: prompt, type **format x:/s**, where *x* is the letter of your first new partition. Repeat the format process for all the new partitions you have created.

Note. From FDISK in Windows, it is not necessary to add the **/s** to the format command because these system files are automatically added.

Loading the Operating System

1. Boot your computer from your Windows startup diskette with the Windows CD loaded.

At the prompt, type **x:\setup**, where *x* is the drive letter of your CD-ROM drive. Continue with the Windows setup instructions.

Additional installation options

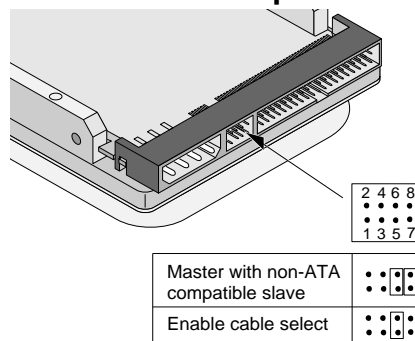


Figure 4. Non-ATA compatible and cable select jumpers

Non-ATA compatible slave jumper

If your computer does not recognize your new drive as a master in a two-drive system, the slave drive may not be ATA-compatible. You may be able to solve this problem by setting a jumper on pins 5 and 6 and a jumper on pins 7 and 8 as shown in Figure 4.

Cable-select jumper

Some computers differentiate between master and slave drives using specially designed interface cables, where the line to pin 28 (the cable select pin), is removed or cut at one connector. The connector that has pin 28 disabled is used for the slave drive. See your computer manual to determine whether your computer supports this feature. To configure your drive for cable select, set a jumper on pins 5 and 6 as shown above.

Advanced Disk Manager options

The Disk Manger online manual

Disk Manager contains an extensive online manual. This manual includes detailed installation instructions, troubleshooting and a list of master/slave jumper settings for many different hard drives. To view the Disk Manager online manual, type **dm**. Then press ENTER. You can also view the online manual from within Disk Manager by selecting *(V)iew/Print Online Manual* in the main menu.

Booting from a diskette

If Disk Manager installs the dynamic drive overlay (DDO) to access the full capacity of your drive, the DDO must load into memory before the operating system loads. This happens automatically when you boot directly from your hard drive (drive C). If, however, you boot from a diskette, the DDO cannot load and your hard drive will not be recognized.

To boot from a diskette and access your hard drive:

1. Boot the computer from the hard drive (with no diskette in the diskette drive).
2. When the Disk Manager banner appears on the screen, immediately press the SPACEBAR.
3. Insert your boot diskette and press the SPACEBAR again.

If you boot from a diskette often, you can create a Dynamic Drive Overlay boot diskette. It loads DDO into memory and then loads the operating system. For more information, refer to the Disk Manager online manual on creating a dynamic drive overlay boot diskette.

Supported operating systems

The Disk Manager dynamic drive overlay provides support for drives with capacities greater than 528 Mbytes under MS-DOS, Windows 3.x, Windows 95, Windows NT 3.51, Windows NT 3.50 (requires DM upgrade drivers), OS/2 V3.0 (Warp full pack), and OS/2 V2.0–3.0 (requires DM upgrade drivers).

Before you install a non-DOS operating system on the drive, install DOS and Disk Manager and make sure that the drive is bootable. Instructions for running the dynamic drive overlay with other operating systems are available in the Disk Manager online manual.

Removing the Dynamic Drive Overlay

You can remove the dynamic drive overlay (DDO) from your drive without losing your data. However, if you do not have another method for accessing high-capacity drives, you will lose access to the full capacity of your drive (see “Addressing drive-capacity limitations” on page 10).



Caution. Before you remove a DDO from a drive, make a backup copy of all the data on your hard drive. Also, run CHKDSK, SCANDISK or a third-party equivalent to detect and repair any damaged files. If the DDO migration program encounters a serious file problem or is interrupted by a power loss or hardware failure, the migration will fail and your data will be lost.

To remove a DDO from a drive:

1. Boot the computer to drive C.
 2. Insert your DiscWizard diskette or CD.
 3. Type **dm** to start Disk Manager.
 4. Select the *Select Installation Options Menu*.
 5. Select *(M)aintenance Menu*.
 6. Select *(M)igrate Dynamic Drive*. This program moves the data on your drive so that it can be accessed without the DDO. The migration may take up to an hour to complete, depending on the size of your drive.
 7. When the migration program has finished, exit Disk Manager.
 8. Remove the diskette and reboot the computer. Enter your system setup program (see your system manual for details).
 9. Configure the hard drive with the Cylinder/Head/Sector parameters.
 10. When your computer has rebooted, insert the DiscWizard diskette into drive A.
 11. Type **A:\dm** and choose the *Maintenance Menu*.
 12. Select *Uninstall (D)isk Manager*.
 13. Select the correct drive to uninstall.
 14. When the uninstall is complete, exit Disk Manager and reboot.
- Note.** Disk Manager can also remove a drive overlay placed by the EZ-Drive program. Select *(C)onvert Drive Format* from the Maintenance Menu.

Troubleshooting

If you have installed your drive and it does not function properly, perform the following basic checks:



Warning. Always turn off the computer before changing jumpers or unplugging cables and cards. Wear a ground strap or use other antistatic precautions while working on your computer or handling your drive.

- **Verify compatibility.** Verify that the host adapter and drive are appropriately matched to each other and to your computer. Refer to the relevant documentation for details.
- **Check all cards.** Verify that all cards are seated in their slots on the motherboard and are secured with mounting screws.
- **Check all connectors and cables.** Make sure all ribbon and power cables are securely connected. Ribbon cables are easily damaged, especially at the connector. Try a new cable that you know is good. Make sure no connector pins are bent. Verify that pin 1 on the interface cable is aligned with pin 1 on the drive and the motherboard (see Figure 2 on page 6).
- **Verify jumper settings.** Review the instructions in this guide and in your host adapter installation guide. Make sure all appropriate jumpers are installed or removed as necessary.
- **Check your power-supply specifications.** Each time you add a new device to your computer, make sure your computer's internal power supply can support the total power demand. If necessary, consult your dealer for a new power supply.

- **Verify the drive-type settings in the system setup program.** The drive-type settings in the system BIOS must not exceed the physical specifications of your drive. Also, the settings must not exceed the limitations set by the operating system and BIOS.
- **Check for viruses.** Before you use someone else's diskette in your system for the first time, scan the diskette for viruses.

Additional troubleshooting tips

If you have performed the preceding basic checks but the problem persists, follow these guidelines for troubleshooting specific cases:

After you install your new drive, your computer will not boot, and no error message appears on the screen.

Check your computer manual or BIOS manufacturer to determine whether your BIOS supports drives that have more than 4,092 cylinders. If your system has this limitation, use the following procedure to configure your computer:

1. Turn off your computer, open the case, and remove your new Seagate drive.



Caution. To avoid electrostatic discharge damage to your computer or hard drive, make sure you are well-grounded before touching the drive, cable, connector or jumpers.

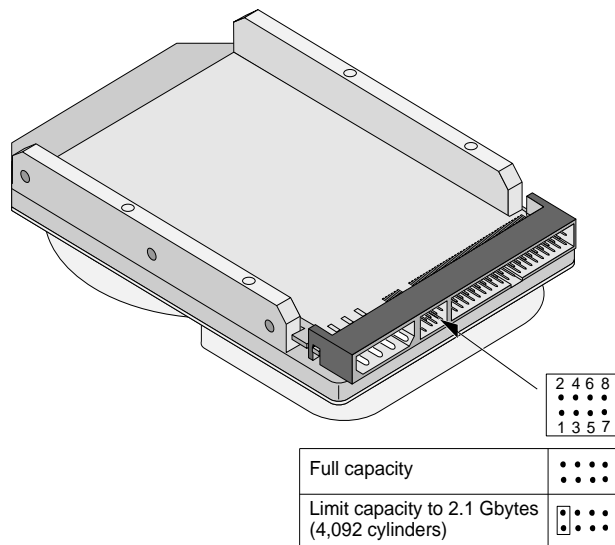


Figure 5. Alternate Capacity Jumper

2. Move the jumper on the alternate-capacity jumper, as shown in Figure 5. This causes the drive to appear to your BIOS as having a 2.1-Gbyte capacity (4,092 cylinders, 16 heads, 63 sectors per track). You may need third-party partitioning software, such as Disk Manager, to achieve full capacity of the drive.

3. Remount your drive in the computer and replace the computer cover.
4. Insert a bootable system diskette into drive A and turn on the computer. It should boot from drive A and automatically detect the new drive as a 2.1-Gbyte drive.
5. Insert your DiscWizard diskette or CD (If you are using the CD, change to the drive letter of your CD-ROM). Type **dm**. Then press ENTER. This runs the Disk Manager program.
6. Follow the Disk Manager instructions to install the dynamic drive overlay and to partition and format your new drive to its full capacity.
7. After Disk Manager is done, reboot your system. You should see the Disk Manager banner and be able to access the full capacity of your new drive.

The screen remains blank when you power up the system.

If the steps listed above do not remedy this problem, try the following:

- Make sure the monitor is plugged in and turned on.
- Check all cards.
- Make sure the video card is seated in its slot and secured with mounting screws.
- Turn off the computer and remove the drive host adapter. If the screen turns on after you reboot, the host adapter may be incompatible or defective. If so, see your dealer.

The system does not recognize the drive.

- Check all cables.
- Make sure the power supply is adequate for system needs.

- Reboot the computer and listen to make sure the drive motor starts up. If the drive is very quiet, it may be difficult to hear its discs reach operating speed. If the drive motor does not start up, recheck all drive cables.
- Verify that for each drive, a drive-type value is listed in the system setup program.
- Try rebooting your computer by pressing the CTRL, ALT and DELETE keys simultaneously. If the drive is recognized after you reboot the system, the computer BIOS test may be completing before the drive is ready.

One solution is to slow the processor speed during startup. If your computer has a turbo switch, set it to slow speed before turning the computer on. If there is no turbo switch, you may be able to use keyboard commands; see your computer manual for details. After the computer is up and running, return the processor to the fast speed.

Another solution is to warm-boot your computer after every power-on.

- Check for I/O address conflicts. To isolate the conflict, verify that the drive and host adapter are compatible with your computer. Turn off the computer and remove all the peripheral adapter cards except for the video card and host adapter. If the computer recognizes the drive when you reboot, turn off the computer. Reinstall the other peripheral cards, one at a time, until the conflict reoccurs. After you have isolated the source of the address conflict, you can resolve the conflict by changing the I/O address of the peripheral that appears to cause the conflict.

- If Disk Manager has installed the DDO on your hard drive and you have booted directly from a diskette, the information in the boot record for the drive may not have been loaded. Make sure there is no diskette in drive A and reboot. If you want to boot from the diskette, follow the “Booting with a Diskette” instructions under “Advanced Disk Manager options” on page 17.

The dealer partitioned and formatted the drive for you in the store, but the drive does not respond when you install it.

- Reboot the computer and make sure the drive spins up. Check all cables.
- Make sure the power supply is adequate for system needs.
- Make sure the DOS or Windows version the dealer used to partition and format the drive is the same version you have installed in your computer. If it isn't, see your dealer.
- Verify the drive-type values in the system setup program. You must install the drive using the same drive-type values your dealer used to partition the drive.
- Check for I/O address conflicts between peripheral cards.
- Check for viruses.

The system hangs in FDISK or fails to create or save the partition record.

- Check all cables.
- Your setup system diskette may be corrupted. Try using a backup diskette.
- Make the partitions smaller.
- Some BIOS have a Track 0 protection feature that protects Track 0 from viruses. This may cause FDISK to hang the sys-

tem. You must disable this feature in the system setup program before you can use FDISK. See your computer reference guide for assistance. Be sure to re-enable this important feature when FDISK is done.

The system error message, “Drive not Ready,” appears.

- Check all cable connections. Verify that pin 1 on the drive is connected to pin 1 on the motherboard.
- Make sure the power supply is adequate for system needs.
- Reboot the computer and make sure the drive spins up.

The FDISK error message, “No Fixed Disk Present,” appears.

- Make sure the power supply is adequate for system needs.
- Verify the drive-type values in the system setup program.
- Check for I/O address conflicts.

The drive does not format to full capacity.

- Verify the drive-type values in the system setup program. One of the following problems may have occurred:
 - The values may be set with an incorrect translation characteristic.
 - You may have entered a parameter value that exceeds the physical capacity of the drive.
 - You entered a translation characteristic that does not take advantage of the drive’s full capacity.
 - The drive’s physical specifications exceed the translation limits imposed by the BIOS.



Caution. If you change the drive-type values in the system setup program, you must partition and format the drive again. *This erases data on the drive.*

- If you have partitioned the drive into individual logical drives, you may need to make the partitions smaller to access the full drive capacity.
- If your computer supports LBA mode, you may need to enable LBA mode in the system setup program to access the full capacity of the drive. Refer to your computer's reference guide to find out how to enable LBA.

The DOS message “Disk Boot Failure,” “Non-System Disk” or “No ROM Basic – SYSTEM HALTED” appears.

- Reinstall the DOS system files using the DOS SYS utility.
- Check all cables.
- Use FDISK to verify that the primary partition is active.
- Check for viruses.

The system error message, “HDD controller failure” appears.

- Confirm the jumper settings on the drive.
- Verify the drive-type settings in the system setup program.

Seagate Technology support services

Online services

Internet

For online information about Seagate products, visit www.seagate.com or e-mail your disc questions to:

Presales support:

DiscPreSales@Seagate.com

Web site: <http://www.seagate.com/feedback.shtml>

Technical support:

DiscSupport@Seagate.com

Web site: <http://www.seagate.com/feedback.shtml>

SeaBOARD®

SeaBOARD is a computer bulletin board system that contains information about Seagate disc and tape drive products and is available 24 hours daily. Set your communications software to eight data bits, no parity and one stop bit (8-N-1). This service is available worldwide.

Automated services

SeaFONE® (1-800-SEAGATE) is Seagate's toll-free number (1-800-732-4283) to access our automated self-help services. Using a touch-tone phone, you can find answers to service phone numbers, commonly asked questions, troubleshooting tips and specifications for disc drives and tape drives 24 hours daily. International callers can reach this service by dialing +1-405-936-1234.

SeaFAX® is Seagate's automated FAX delivery system. Using a touch-tone phone, you can obtain technical support information by return FAX 24 hours daily. This service is available worldwide.

Presales Support***Presales Support***

Our Presales support staff can help you determine which Seagate products are best suited for your specific application or computer system.

Technical support***Technical support***

If you need help installing your drive, consult your dealer. Dealers are familiar with their unique system configurations and can help you with system conflicts and other technical issues. If you need additional help, you can talk to a Seagate technical support specialist. Before calling, note your system configuration and drive model number (ST#####).

SeaTDD™ (+1-405-936-1687) is a telecommunications device for the deaf (TDD). You can send questions or comments 24 hours daily and exchange messages with a technical support specialist from 8:00 A.M. to 12:15 P.M. and 1:30 P.M. to 6:00 P.M. (central time) Monday through Friday.

Customer Service (CSO)***Warranty repair***

Seagate offers worldwide customer support for Seagate drives. Seagate direct OEM, Distribution and System Integrator customers should contact their Seagate service center representative for warranty information. Other customers should contact their place of purchase.

Authorized service centers

If you live outside the US, you can contact an Authorized service center for service or repair.

USA/Canada/Latin America support services**Presales support**

1-877-271-3285 or +1-405-936-1210 FAX: +1-405-936-1683

Technical Support (SeaFONE)

1-800-SEAGATE or +1-405-936-1234 (specific product phone number)
FAX: +1-405-936-1685

SeaFax 1-800-SEAGATE

SeaTDD +1-405-936-1687

SeaBOARD +1-405-936-1685

Warranty Repair

USA 1-800-468-3472 FAX: +1-405-949-6740

Mexico and Latin America +1-405-949-7758 FAX: +1-405-949-6738

Canada

Memofix* +1-905-660-4936 FAX: +1-905-660-4951

Adtech* +1-905-812-8099 or FAX: +55-21-516-5280

1-800-624-9857

Brazil

MA Informatica* +55-21-516-5280

**Authorized Service Centers*

European support services

For European customer support, dial the toll-free number for pre-sales support, technical support, SeaFAX and warranty repair. If your country is not listed here, dial our European call center at +31-20-316-7222 from 8:30 A.M. to 5:00 P.M. (European central time) Monday through Friday. The European call center is located in Amsterdam, The Netherlands.

Call Center

Austria	0 800-20 12 90
Belgium	0 800-74 876
Denmark	80 88 12 66
France	0 800-90 90 52
Germany	0 800-182 6831
Ireland	1 800-55 21 22
Italy	1 677 90 695
Netherlands	0 800-732 4283
Norway	800-113 91
Poland	00 800-311 12 38
Spain	900-98 31 24
Sweden	0 207 90 073
Switzerland	0 800-83 8411
Turkey	00 800-31 92 91 40
United Kingdom	0 800-783 5177

SeaBOARD

Germany +49-89-1409331

FAX Services—All European Countries

Presales/Technical Support/Warranty Repair +31-20-653-3513

Africa/Middle East support services

For presales, technical support, warranty repair and FAX services in Africa and the Middle East, dial our European call center at +31-20-316-7222 from 8:30 A.M. to 5:00 P.M. (European central time) Monday through Friday, or send a FAX to +31-20-653-3513. The European call center is located in Amsterdam, The Netherlands.

Asia/Pacific support services***Technical support***

Australia	+61-2-9725-3366	FAX: +61-2-9725-4052
Hong Kong	+852-2368 9918	FAX: +852-2368 7173
Japan	—	FAX: +81-3-5462-2979
Singapore	+65-488-7584	FAX: +65-488-7528
Taiwan	+886-2-2514-2237	FAX: +886-2-2715-2923

SeaFAX

Australia	+61-2-9756-5170
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Warranty repair

Japan	+81-3-5462-2904	FAX: +81-3-5462-2979
Asia/Pacific and Australia	+65-485-3595	FAX: +65-488-7503

Storing and shipping your drive

Keep your original box and packing materials for storing or shipping your drive. The box has a *Seagate Approved Package* label. Shipping a drive in an unapproved container voids the warranty. Call your authorized Seagate distributor for information on packing materials. Figure 6 shows how a drive fits in an approved single-pack box, including the packing materials.

Note. Back up the data on your drive before shipping the drive. Seagate assumes no responsibility for data lost during shipping or drive repair.

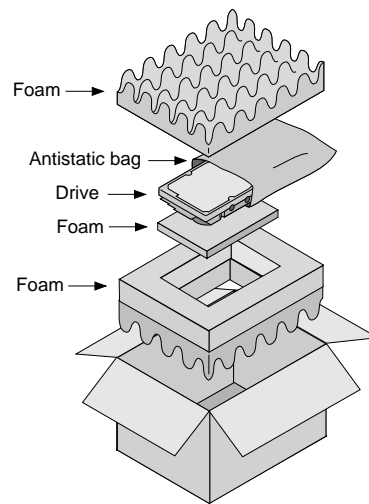


Figure 6. Seagate drive and approved packing materials

Warranty

See your authorized Seagate distributor or dealer. Preinstalled or bundled software is provided “as is.” There are no warranties of merchantability or fitness for a particular purpose. All such warranties are expressly and specifically disclaimed.

Maintenance and repair

Seagate drives do not require maintenance. The head/disc assembly is sealed; a broken seal voids the warranty. Seagate customer-service centers are the only facilities authorized to repair Seagate drives.

Electromagnetic Compliance for the European Union

This model complies with the European Union requirements of the Electromagnetic Compatibility Directive 89/336/EEC of 03 May 1989 as amended by Directive 92/31/EEC of 28 April 1992 and Directive 93/68/EEC of 22 July 1993.

Compliance of this drive, as a system component, was confirmed with a test system. We cannot guarantee that your system will comply. The drive is not meant for external use (without properly designed enclosure, shielded I/O cable, etc.).

Sicherheitsanleitung

1. Das Gerät ist ein Einbaugerät, das für eine maximale Umgebungstemperatur von 55°C vorgesehen ist.
2. Zur Befestigung des Laufwerks werden 4 Schrauben 6-32 UNC-2A benötigt. Bei seitlicher Befestigung darf die maximale Länge der Schrauben im Chassis nicht mehr als 3,3 mm und bei Befestigung an der Unterseite nicht mehr als 5,08 mm betragen.

3. Als Versorgungsspannungen werden benötigt: +5V \pm 5% 0,6A; +12V \pm 0,8A (1,9A für ca. 30 Sek. für \pm 10%)
4. Die Versorgungsspannung muss SELV entsprechen.
5. Alle Arbeiten auf dem Festplatte dürfen nur von Ausgebildetem Servicepersonal durchgeführt werden. Bitte entfernen Sie nicht die Aufschriftenschilder des Laufwerkes.
6. Der Einbau des Laufwerkes muss den Anforderungen gemäss DIN IEC 950 VDE 0805/05.90 entsprechen.



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