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ST38421A Family

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ST36421A, ST34311A, ST38421A

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Ultra ATA Interface Drives

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Installation Guide

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The easiest way to install your drive

DiscWizard™ is Seagate's exclusive Windows program, provided on a diskette, that makes it easy to install your Medalist® drive.

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-capacity drives.



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.

If you can run DiscWizard, follow the instructions on the DiscWizard diskette to install your drive. If you need additional information, refer to this installation guide.

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

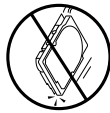
What you need

- Straight-edge and Phillips screwdrivers
- Four 6-32 UNC drive mounting screws
- A standard 40-pin ATA interface cable, *or* an 80-conductor cable if your system runs Ultra DMA mode 3 or 4 (max length: 18 inches)
- An unused drive power cable for your new drive

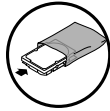
Before you begin

- 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.

To configure the drive as a master or one drive only:

- The drive is configured at the factory for a master or single-drive operation 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.

To configure the drive as a slave:

- Remove the jumper to configure the drive as a slave.

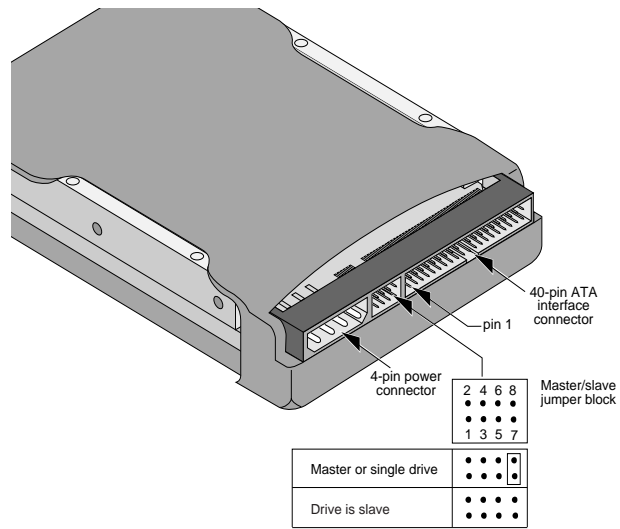


Figure 1. Master and slave jumper settings

Attaching cables and mounting the drive

1. If you are attaching an ATA (IDE) interface cable to a single drive, attach one end of the cable to the interface connector on your motherboard. Most computers provide two IDE connectors, primary and secondary, usually labeled as *IDE* or *HDD* on your motherboard. See your computer manual for connector locations.

Note. If you are running Ultra DMA mode 3 or 4, you must use a special 40-pin 80-conductor cable or these modes will not be enabled. For information on how to obtain this cable, contact your dealer.

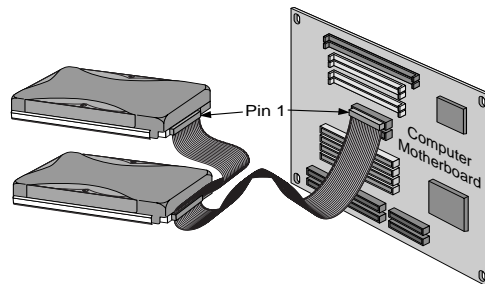


Figure 2. Attaching the cables

2. Thread the interface cable through the drive bay and attach the connector at the end of the interface cable to your new drive (the maximum ATA cable length is 18 inches (457 mm) long).

Note. If you are using the 80-conductor cable, attach the blue connector (with the longest section of the cable) to the motherboard, attach the black connector to the master or single drive, and attach the grey connector to the slave.



Caution. To avoid possible damage to your system, make sure to align pin 1 on the motherboard with pin 1 on your drive. Pin 1 on the interface cable is usually indicated by a stripe along the edge of the cable.

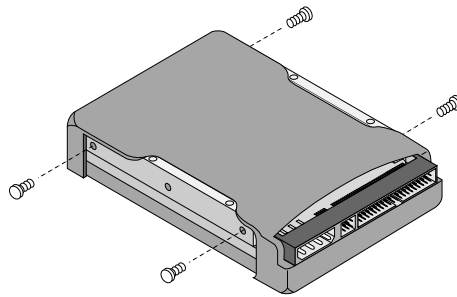


Figure 3. Mounting screws

3. You can mount the drive in any orientation. Usually it is mounted with the circuit board down.
4. Slide the drive carefully into the drive bay. Secure the drive with four 6-32 UNC mounting screws in either the side-mounting holes or the 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.

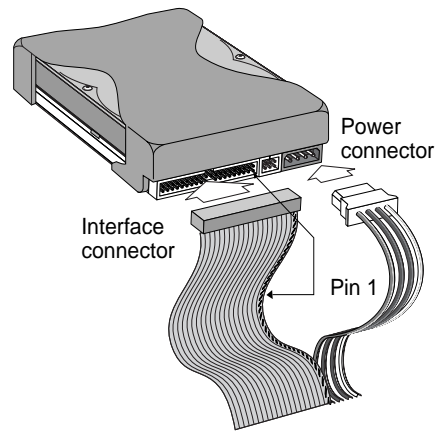


Figure 4. Cable connectors



Caution. To avoid possible damage to the drive, *do not* overtighten the screws or use metric screws.

- Note.** If you are mounting the drive in a 5.25-inch drive bay, you need a mounting adapter or frame kit. Contact your computer dealer. Some computers also require drive mounting rails, which can usually be obtained from your dealer.
5. Attach a power cable to the drive. If your computer does not have an unused power connector, you can purchase a Y-shaped power cable from your computer dealer.
 6. Check all cable connections and then replace your computer cover. Continue to "Configuring Your Computer."

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 the screen 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. This option allows your computer to configure itself automatically 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 10. These CHS values support 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. To run in Ultra DMA mode 3 or 4, the system requires a special 40-pin 80-conductor cable to ensure signal integrity. These modes will not be enabled unless the 80-conductor cable is present.
6. Save the settings and exit the System Setup program (your computer will automatically reboot).

BIOS Settings			
Drive Model	Cylinders	Heads	Sectors
ST38421A			
CHS addressing	16,368	16	63
Addressable sectors	16,498,944	—	—
ST36421A			
CHS addressing	13,330	15	63
Addressable sectors	12,596,850	—	—
ST34311A			
CHS addressing	8,944	15	63
Addressable sectors	8,452,080	—	—

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

Recommendation

We recommend you use Disk Manager to evaluate your BIOS and determine whether your system needs additional BIOS support. If your BIOS needs support for drives with capacities greater than 8.4 Gbytes, instructions will be provided. For more information, see "Installation using Disk Manager" on page 14.

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.

The 32-bit disk access feature in Windows 3.1 does not work with drives that have capacities greater than 528 Mbytes. If you want to use 32-bit disk access with Windows 3.1, see the file SEG32BIT.TXT, located on your DiscWizard diskette, for further information.

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 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

One-drive system

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” on page 14.

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 16.

Two-drive system

Use DiscWizard for a complete customized set of step-by-step instructions to install an additional drive. See “The easiest way to install your drive” on page 1.

To add a slave drive without using DiscWizard:

Use the FDISK.EXE command. See “Standard DOS installation” on page 16.

To add a slave drive using Windows 95 or Windows 98:

1. Click START.
2. Choose RUN.
3. Type **FDISK**. See “Standard DOS installation.”

Installation using Disk Manager

1. Boot your computer from your DiscWizard diskette. Booting from a diskette ensures that the Disk Manager installation does not conflict with other software. The Disk Manager software is stored on this diskette and automatically starts.

Or at the A: prompt, type **DM** and press ENTER.

2. Follow the onscreen instructions until you see the *Select an Installation Option* menu.
3. 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.

4. 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 Disk Manager determines that your BIOS needs support for drive capacities greater than 8.4 Gbytes, instructions on booting from your A: drive will be provided. 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.

5. Follow the instructions in the post-installation screens and continue with your Windows 95 or Windows 98 installation.

Windows 95 or Windows 98 Installation

1. Boot your computer from the Windows 95 or Windows 98 startup diskette with the CD-ROM loaded (Note the drive letter for your CD-ROM device).
2. At the A: prompt, type **x:setup**, where *x* is the letter of your CD-ROM drive.
3. Continue with the Windows setup instructions.

You're Done!

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:

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.

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 95 or Windows 98, it is not necessary to add the **/s** to the format command because these system files are automatically added.

After you format your drive, it is ready to use.

You're Done!

Additional installation options

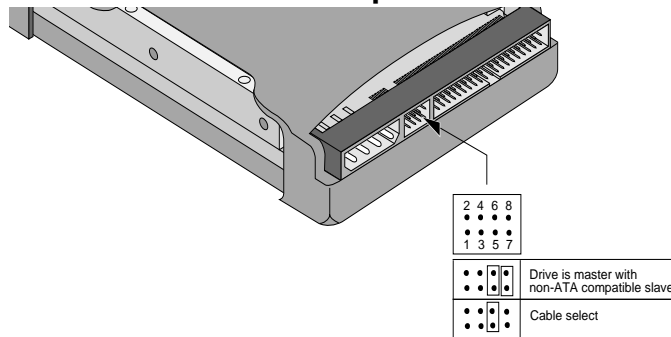


Figure 5. Non-ATA compatible and cable select jumpers

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 5 above.

Cable-select jumper

Some computers differentiate between master and slave drives using specially designed interface cables that have the line to pin 28 (the Cable select pin) 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 in Figure 5 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 popular hard drives. To view the Disk Manager online manual, insert the Disk Manager diskette into drive A and type **A:\DM /H**. 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 occurs automatically when you boot from your hard drive (drive C). However, if you boot from a diskette, the DDO will not be loaded and you will not be able to access your hard drive. The following procedure allows you to boot from a diskette and still access your hard drive.

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

If you boot from a diskette regularly, you can create a Dynamic Drive Overlay boot diskette. It loads DDO into memory and then loads the operating system. See the Disk Manager online manual for more information about 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

If Disk Manager installs a dynamic drive overlay (DDO) and you do not need this software to access the full capacity of your drive, you can remove the dynamic drive overlay 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 11).

Before you attempt to remove a DDO, 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 before you follow the procedure on page 21.



Caution. 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.

Follow these instructions to remove a DDO from a drive.

1. Boot the computer to drive C.
 2. Insert your DiscWizard diskette into drive A.
 3. Type **A:\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 host adapter (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:

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 the computer, 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 19.

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.
- Change the interrupt jumper setting on the host adapter.
- Some BIOS have a Track 0 protection feature that protects Track 0 from viruses. This may cause FDISK to hang the system. 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. Make sure pin 1 of the drive is connected to pin 1 of the hard-disc controller or host adapter.
- 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 full advantage of the drive's 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 or tape questions to:

Presales support:

DiscPreSales@Seagate.com *or*

Tape_Sales_Support@Seagate.com

Website: <http://www.seagate.com/feedback.shtml>

Technical support:

DiscSupport@Seagate.com *or*

TapeSupport@Seagate.com

Website: <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.

Seagate Express

You can purchase select tape products and tape accessories through Seagate Express 24 hours daily by calling 1-800-531-0968 or by faxing your order to: +1-972-481-4812.

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 (STxxxx).

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***

Disc: 1-877-271-3285 or +1-405-936-1210 FAX: +1-405-936-1683
Tape: 1-800-626-6637 or +1-714-641-2500 FAX: +1-714-641-2410

Technical Support (SeaFONE)

1-800-SEAGATE or +1-405-936-1234 (specific product phone number)
FAX: Disc: +1-405-936-1685; Tape: +1-405-936-1683

Warranty repair

USA and Canada 1-800-468-3472 FAX: +1-405-949-6740
Latin America +1-405-949-7758 FAX: +1-405-949-6738

SeaFAX 1-800-SEAGATE

SeaTDD +1-405-936-1687
SeaBOARD Disc: +1-405-936-1600; Tape: +1-405-936-1630

Authorized service centers**Brazil**

MA Informatica +55-21-516-6649 FAX: +55-21-516-5280

Canada

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

Adtech +1-905-812-8099 or FAX: +1-905-812-7807
1-800-624-9857

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 7 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.

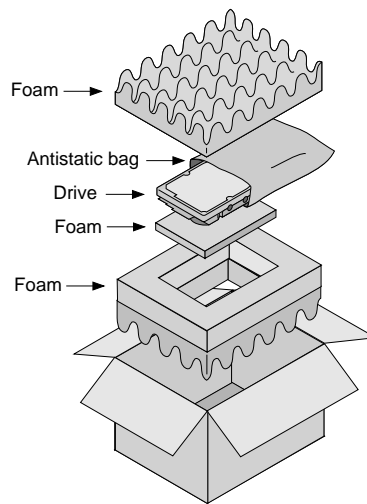


Figure 6. Seagate drive and approved packing materials

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 5% 0,8A (1,9A für ca. 30 Sek. für \pm 10%) **4.** Die Versorgungsspan-

nung muss SELV entsprechen. **5.** Alle Arbeiten auf dem Festplatte dürfen nur von Ausgebildetem Servicepersonal durchgeführt werden. Bitte entfernen Sie nicht die Aufschriftschilder des Laufwerkes. **6.** Der Einbau des Laufwerkes muss den Anforderungen gemäss DIN IEC 950 VDE 0805/05.90 entsprechen.



Seagate Technology, Inc.

920 Disc Drive, Scotts Valley, CA 95066-4544, USA

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