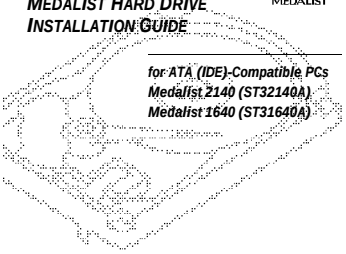
Seagate

MEDALIST HARD DRIVE INSTALLATION GUIDE



for ATA (IDE)-Compatible PCs
Medalist 2140 (ST32140A)
Medalist 1640 (ST31640A)

INSTALLING YOUR NEW SEAGATE HARD DRIVE

Thank you for selecting a Seagate disc drive. Installing your new Seagate hard drive is easy when you use this easy drive installation sheet. For technical information and troubleshooting tips, see the back of this sheet. If you have additional questions, call your computer dealer or contact Seagate technical support.

This symbol indicates additional information on this topic appears on the back of this sheet.

BEFORE YOU BEGIN

STOP Important. Do not format this drive without first reading the instructions and removing the free drive support software that is stored on the drive.

- 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.

HANDLE WITH CARE!

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.

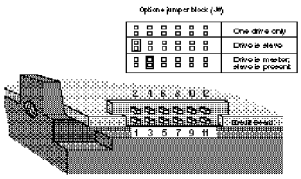
WHAT YOU WILL NEED

- Straight-edge and Phillips screwdrivers
- Drive mounting screws
- If you are mounting this 3.5-inch drive in a 5.25-inch drive bay, you need a mounting adapter or frame kit.
- You may need drive mounting rails if your drive bay is not designed for direct mounting.
- A drive host adapter and connector cable with enough connectors for all your drives
- An unused drive power cable to plug into your new drive
- A bootable DOS system diskette (Seagate recommends using DOS version 5.0 or later)
- A blank 1.2-Mbyte or 1.4-Mbyte diskette for transferring the drive support software to after you have mounted the drive

1. ONE DRIVE OR TWO?

Your Seagate drive is factory-configured to operate as a single drive on the hard disc controller. If it will be the only drive on the controller, skip ahead to "Accessing More Than 528 Mbytes." If there will be two drives on the controller, you must configure your Seagate drive as either the master (drive 0) or the slave (drive 1).

The options jumper block (J6), the small connector opposite the I/O and power connectors on the circuit board, is used to configure the drive. The drawing below shows where to place the shunt to configure the Seagate drive. If your computer does not recognize your new drive as the slave, you may need to use a shunt to configure your existing drive as the master.


Options jumper block (J6)
One drive only
Drive is slave
Drive is master; slave is present
Pin 1
Pin 1
Pin 3
Pin 5
Pin 7
Pin 9
Pin 11
Pin 13
Pin 15
Pin 17
Pin 19
Pin 21
Pin 23
Pin 25
Pin 27
Pin 29
Pin 31
Pin 33
Pin 35
Pin 37
Pin 39
Pin 2
Pin 4
Pin 6
Pin 8
Pin 10
Pin 12
Pin 14
Pin 16
Pin 18
Pin 20
Pin 22
Pin 24
Pin 26
Pin 28
Pin 30
Pin 32
Pin 34
Pin 36
Pin 38
Pin 40

WINDOWS 3.1 32-BIT DISK ACCESS

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 this feature, install the Seagate replacement 32-bit access driver, SEG32BIT.386, located on your Seagate software diskette.

If Windows 3.1, during installation, activates the 32-bit disk access feature in your system, a message suggesting that you disable 32-bit disk access appears the first time Windows loads into memory. Choose to disable 32-bit disk access to open Windows.

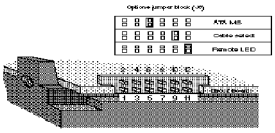
To install the Seagate 32-bit disk access replacement driver:

1 Place your Seagate software diskette in Drive A.
2 Open the Windows Program Manager menu and select File.
3 Select Run.
4 In the command line box, type **a:\stsetup.exe**.
5 Read the license agreement that appears on the screen. If you agree to the terms, select Accept Agreement to continue.
6 The next screen lists the features the SEG32BIT.386 driver supports. If your computer supports these features, they will be active in 32-bit disk access mode with SEG32BIT.386 for all drives that support them. Select Install Driver to continue.

To make the feature active, you must enable the 32-bit disk access option in the Windows control panel. Open the Control Panel. Select 386 Enhanced. Select Virtual Memory. Select Change>>. Select Use 32-Bit Disk Access (an X in the box enables the feature). Save the change.

ADDITIONAL INSTALLATION OPTIONS

The options jumper block allows you to configure your Seagate drive for ATA MS (master/slave timing), cable select and a remote LED. The drawing below shows you how to configure the drive for each option. A brief description of each option follows the drawing.



ATA MS

If the computer does not recognize the slave following power-on, the slave may not be communicating quick enough with the master during the boot cycle. With your Seagate drive as the master, try placing a shunt on pins 5 and 6. This gives the slave up to 30 seconds to post ready.

Systems Using Cable Select

Some computers differentiate between master and slave drives using specially-designed interface cables that has the line to pin 28 (the Cable Select pin) removed or cut at one end. The connector that has pin 28 disabled is used for the slave drive. See your computer manual to determine if your computer supports this feature. To configure your Seagate drive for cable select, place a shunt on pins 9 and 10.

Remote LED

You can attach a remote LED cable to pins 11 (–) and 12 (+) of the drive. Attach the LED ground wire (usually the black wire) to pin 11 (–).

ADVANCED DISK MANAGER OPTIONS

General

Disk Manager partitions and formats your drive. It installs the Dynamic Drive Overlay (DDO) software driver to provide access to your drive's full capacity if your computer's BIOS is not configured to access more than 528 Mbytes. DDO bypasses the BIOS during the boot sequence and loads the drive information before DOS is loaded. Disk Manager:

– Provides an easy installation option that partitions and formats the new drive in seconds
– Provides an easy to use format if you want to customize your drive installation
– Installs a software driver, Dynamic Drive Overlay, that allows the computer to access the full capacity of your Seagate drive when the BIOS limits the drive capacity to 528 Mbytes
– Modifies the boot record with geometry for the new drive if the Dynamic Drive Overlay driver is required
– Copies the system files onto the new Drive C to make it bootable
– Enables read/write multiple, a feature that increases performance by allowing multiple blocks of data to be transferred in a single burst if your computer also support this feature
– Provides full drive-capacity support for several operating systems
– Provides complete, easy to use online documentation

Booting with a Diskette

If Disk Manager installs DDO to access the full capacity of your drive, the information DDO uses to access the drive must load into memory before the operating system. This occurs automatically when you boot to Drive C. To gain access to the drive when booting to Drive A:

1 Boot the computer with Drive A door open.
2 When the blue Disk Manager banner appears on the screen, immediately press the SPACEBAR (you have about 2 seconds).
3 Insert the boot diskette and press the SPACEBAR.

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

Supported Operating Systems

Dynamic Drive Overlay provides support for drives with capacities greater than 528 Mbytes in the following operating systems:

MS-DOS
Windows 3.*x*
Windows NT 3.51
Window NT 3.50 (requires DM upgrade drivers)
Windows 95
OS/2 V3.0 (Warp full pack)
OS/2 V2.0–3.0 (requires DM upgrade drivers)

If you are installing an operating system other than DOS, you must first install your drive with DDO and make sure that it is bootable before you install the other operating system. Instructions for installing other operating system are available in the online manual. To open the online manual:

1 Go to the Select an Installation Option menu.
2 Select (V)iew/Print Online Manual.
3 Select Operating System Installation.
4 Select the operating system you want to install.

You can also open the online manual from the command line. Type dm/h and press ENTER. Press ENTER again to open the online table of contents menu.

Note. If your are installing OS/2 or Windows NT, we suggest that your print the instructions before you start the installation.

To use DDO with OS/2 and Windows NT V3.5, you must replace up to four of the original files with files supplied by Disk Manager. The replacement files are located in the OS2 and the NT subdirectories on your Seagate software diskette. The online manual tells you which files you need to replace and under what conditions to replace them. If you need assistance renaming a file, refer to your DOS reference manual. If you need to make a copy of an install diskette, follow the instructions below—the installation diskette will not install if you use the standard copy command to copy it.

1 Insert the original diskette into Drive A and access the drive.
2 Type **diskcopy a: a:** . The computer will read the original diskette and prompt you to insert the destination diskette into Drive A.
3 Insert a blank diskette into Drive A and press any key.

Erase the files you need to replace on the copy diskette, and copy the replacement files using the standard copy command. (If only one diskette drive is available for copying, first copy the required files to the hard drive from the appropriate subdirectory, then copy the files to your new diskette.)

Removing the Dynamic Drive Overlay

If Disk Manager installs your drive with DDO, you can, in many cases, remove DDO without losing your data. However, you will lose access to the full capacity of your drive unless you use another method that supports more than 528 Mbytes (see "Accessing more than 528 Mbytes" on the front side). Three steps are required to remove DDO safely: 1) migrating the data, 2) configuring Setup with the drives's translation and 3) uninstalling the DDO. Follow the instructions below to safely remove the DDO.

Caution. Before you attempt to remove the DDO, back up your data files. You may need to use the backup files to restore your disc if your data is lost.

If the migration encounters a media defect or is interrupted by a power lose or hardware failure, the migration will fail and your data will be lost. Run CHKDSK, SCANDISK or a third party equivalent to detect and repair any media defects before you attempt the migration.

1 Boot the computer to Drive C.
2 Put your Seagate software diskette into a diskette drive and access that drive.
3 Type **dm** and go to the Select Installation Options menu.
4 Select (M)aintenance Menu.
5 Select (M)igrate Dynamic Drive. This program shifts the data to where the standard format can find it. The migration may take up to an hour to complete, depending on the size of your drive.
6 When the Migration is complete, exit Disk Manager.
7 Remove the diskette and reboot the computer. Enter Setup.
8 Configure the hard drive with the parameters shown for your drive in the translation geometry table in Section 3 "Configuring Setup" on the front side of this poster. Save your changes and exit Setup.
9 When the boot is complete, insert the diskette and access that drive.
10 Type **dm** and go to the Maintenance Menu.
11 Select Uninstall (D)isk Manager.
12 Select the correct drive to uninstall.

When the uninstall is complete, exit Disk Manager and reboot. You should be able the access the drive and your data.

GENERAL TROUBLESHOOTING

Basic Troubleshooting Techniques

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

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

- **Verify compatibility.** Verify that the host adapter and the 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 cables.** Make sure all ribbon and power cables are securely connected. Ribbon cables are easily damaged, especially at the connector. Try a new cable or a known good cable. Make sure no socket pins were bent when the cable was inserted. For each cable, verify that pin 1 on the cable is aligned with pin 1 on the drive and host adapter. The edge-stripe on the ribbon cable is used to denote pin 1.

Caution. Do not reverse-plug the power connector. This can damage your drive.

- **Verify equipment configuration.** Review the instructions in this guide and the host adapter installation guide and make sure that all appropriate shunts are installed, or removed, to suit your application.
- **Check the power-supply specifications.** If new devices are installed, your computer's power supply may not support the new total power requirement. Consult your dealer.
- **Verify the drive type setting in Setup.** The drive-type settings in Setup 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.

Advanced Troubleshooting

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

The system does not recognize the drive.

- Check all cables.
- Make sure the power supply is adequate for system needs.
- Reboot the computer and make sure the drive motor runs. If the drive is very quiet, it may be difficult to hear its discs reach operating speed. Recheck all drive cables if the drive is not running.
- Verify that each drive has a drive-type value in Setup.
- Try rebooting your computer by pressing the CTRL, ALT, and DELETE keys simultaneously. If the drive is recognized after the warm boot, the computer BIOS setup 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 by removing all the peripheral adapter cards (power must be off) except for the video card. Reinstall the drive and host adapter card and boot the computer. If this is successful, reinstall the other peripherals one at a time until the conflict occurs. 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 you are booting from a diskette and Disk Manager installed your drive using DDO, the information in the boot record for the drive was not loaded. Make sure there is not a diskette in Drive A and reboot. If you want to boot with the diskette, follow the "Booting with a Diskette" instructions in column one.

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 version the dealer used to partition and format the drive is the same version you have installed on your computer. If it isn't, see your dealer.
- Verify the Setup drive-type values. 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 screen remains blank when you power up the system.

- 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.
- While the computer is powered down, 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 hangs in FDISK or fails to create or save the partition record.

- Check all cables.
- The DOS utilities diskette may be corrupted. Try your backup DOS diskette.
- Make the partitions smaller.
- Change the interrupt jumper setting on the host adapter.
- Check for media defects at the beginning of the drive. Use CHKDSK, SCANDISK or a third-party surface scan utility.
- Some BIOSs have a Track 0 protection feature that protects Track 0 from viruses. This can causes FDISK to hang the system. You must disable this feature in Setup 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 that 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 Setup drive-type values.
- Check for I/O address conflicts.

The drive does not format to full capacity.

- Verify the drive-type values in Setup. 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.

Note. If you reset the Setup drive-type value, you must partition and format the drive again.

- If you have partitioned the drive into individual logical drives, you may need to make the partitions smaller for the computer to assess the full drive capacity.
- If your computer supports LBA mode, you may need to enable an LBA mode function in Setup to get the drive's full capacity. Refer to your computer's reference guide.
- You can use the Disk Manager software to install the drive.

The DOS messages "Disk Boot Failure," "Non-System Disk" or "No ROM Basic – SYSTEM HALTED" appear.

- 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.

System error message, "HDD controller failure" appears.

- Confirm the jumper settings on the drive.
- Verify the Setup drive-type values.

SEAGATE TECHNICAL SUPPORT SERVICES

If you need assistance installing your drive, consult your dealer. Your dealer is familiar with system configurations and can help you with system conflicts and other technical issues. If you need additional assistance with your Seagate drive or other Seagate products, you can call SeaBOARD®, SeaFAX®, Seagate Technical Support FAX, SeaFONE® and SeaTDD® services. Seagate technical support is also available on CompuServe and through the Internet.

SeaBOARD

Using a modem, you can access documentation, drive specifications and jumper settings for Seagate's entire product line. You can also download software for installing and analyzing your drive. SeaBOARD is available 24 hours daily. It supports communications up to 9,600 baud. Set your communications software to eight data bits, no parity and one stop bit (8-N-1). SeaBOARD phone numbers are listed in the following table.

Location	*Modem number*
United States	408-438-8771
England	44-1-62-847-8011
France	(+33 1) 48 25 35 95
Germany	49-89-140-9331
Singapore	65-292-6973
Thailand	662-531-8111
Australia	61-2-756-2359
Korea	82-2-556-7294

SeaFAX

You can use a touch-tone telephone to access Seagate's automated FAX system to receive technical support information by return FAX. This service is available 24 hours daily.

Location	*Telephone number*
United States	408-438-2620
England	44-1-62-847-7080

SeaFAX document numbers are indicated by this symbol throughout this installation guide.

Seagate Technical Support FAX 408/438-8137

You can FAX questions or comments to technical support specialists 24 hours daily. Responses are sent between 8:00 A.M. and 5:00 P.M. (Pacific time) Monday through Friday.

SeaFONE 408/438-8222

You can talk to a technical support specialist between 8:00 A.M. and 5:00 P.M. (Pacific time) Monday through Friday. SeaFONE provides recorded technical information on selected Seagate products while you are on hold. You can access the recordings 24 hours daily. Before calling, note your system configuration and drive model number (ST*xxxx*).

SeaTDD 408/438-5382

Using a telecommunications device for the deaf (TDD), you can send questions or comments 24 hours daily and exchange messages with a technical support specialist between 8:00 A.M. and 5:00 P.M. (Pacific time) Monday through Friday.

SeaBOARD CompuServe Forum

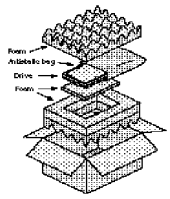
Online technical support for Seagate products is available on CompuServe. To access our technical support forum, type **go seagate**. This forum provides information similar to that found on SeaBOARD.

Seagate's Internet Connections

You can obtain technical information on Seagate drives and much more over the internet from Seagate's World Wide Web home page (http://www.seagate.com) or Seagate's ftp server (ftp://ftp.seagate.com). The ftp server contains information similar to that found on SeaBOARD.

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 to purchase additional boxes. The figure below shows how to pack a drive into an approved single-pack box, including the packing materials.



Warranty. See your authorized Seagate distributor or dealer. With regards to the Disk Manager and SEG32BIT software, there are no warranties, express or implied, including, but not implied, 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. Seagate does not sanction any third-party repair facilities.

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 ± 5% 0,6A; +12V ± 5% 0,8A (1,9A fur ca. 30 Sek. fur ± 10%) **4.** Die Versorgungsspannung muss SELV entsprechen. **5.** Alle Arbeiten auf dem Festplatte dürfen nur von Ausgebildetem Servicepersonal durchgeführt werden. Bitte schaffen Sie Festplattetiketten nicht weg. **6.** Der Einbaudes Drives muss den Anforderungen gemäss DIN IEC 950/ DC 0805/05.90 entsprechen.

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