Installation of Your Quantum ATA Hard Disk Drive

For PC Compatible Systems Running DOS/Windows

v1.70

Tools Required

Before beginning the installation you will need:

(1) A formatted, bootable floppy diskette. *Note:* If you are unable to boot from this bootable floppy diskette, your system CMOS (BIOS) floppy-boot-sequence setting may require a change (from C, A to A, C) in order for your computer to boot to the A:\ prompt. If you intend to use your CDROM to install your operating system once your hard drive is installed, you may wish to add the required CDROM driver and a CONFIG.SYS file to this floppy disk before beginning the installation. This is true for DOS or Windows 95. The bootable Windows 98 Startup Disk already provides this CDROM Support.

(2) If you are installing your hard drive on a system that is several years old, you may require one additional tool, a copy of the Ontrack Disk Manager software utility. This program may be downloaded free of charge from Quantum's Web Site at http://www.quantum.com. The Ontrack Disk Manager software need only be used on older systems lacking sufficient BIOS support for large capacity ATA hard drives. These older systems will require an "alternative" installation procedure, which is described below.

Types Of Installation – Standard and Alternative

Standard Installation

A standard installation is one, in which, the PC can detect a hard drive and its full capacity without any special drivers, software, hardware, or BIOS upgrade. Basically, you configure, install, partition, and format the hard drive without any additional steps or considerations. A PC of recent manufacture, which has native BIOS support for Logical Block Addressing (LBA) generally can detect the full capacity of all the new larger hard drives. If you are unsure of your PCs ability to detect the drive or the full capacity, consult with your PC manufacturer to determine support of large capacity hard disk drives before proceeding.

Alternative Installation

An alternative installation is used when a standard method cannot be used. This method is used when the PC cannot detect either the hard drive and/or its full capacity. Special software or hardware will be required to install the drive. Most PCs manufactured prior to today's larger capacity hard drives do not have the ability to recognize these high capacity hard drives and require software or hardware to detect the drives and their full capacity. These PCs include 386, 486, and some Pentium class PCs. A high probability exists that the original BIOS in these systems will not natively support the hard drive's full physical capacity. On 486 based systems the hard drive's capacity is typically limited to 528MB and on earlier Pentium based systems the capacity may be limited to 2.1GB or 8.4GB. These systems will most likely require the use of a third party installation utility or third party host adapter to support the hard drive's full capacity. In some cases a BIOS upgrade can be obtained from the system manufacturer or purchased from a third party vendor (Unicore Software and Microfirmware are two such vendors) to support larger hard drives. Quantum provides an OEM version of the Ontrack Disk Manager software utility free of charge to its customers as one possible solution (refer to the Alternative Installation Instructions/Required Tools section). The "alternative" installation method discussed in this guide is in reference to using the Disk Manager software to install your Quantum ATA hard drive.

Standard Installation

Without the use of overlay programs, such as Disk Manager, there are four basic steps required for installing an ATA hard disk drive. You must:

(1) Set correct Master or Slave Jumper Settings on each drive.
(2) Set and save system BIOS (CMOS) hard drive settings.
(3) Run FDISK.EXE to create one (at least one) or more partitions then reboot the system.
(4) Use the operating system file FORMAT.COM to format each of the letters assigned by the FDISK.EXE partitioning software program. (For example, in a computer having a single hard disk drive the command would be FORMAT C: issued at the A:\ prompt after powering down or re-booting the system to the A:\ DOS prompt.)

Step 1: Set the Jumpers and connect the ATA cable.

Quantum ATA/IDE hard drives are usually shipped with the DS jumper installed. The DS setting is correct if the hard drive is going to be installed as the only ATA device on the cable (Single device setting) or if it is going to be installed as the MASTER, or the first of two ATA devices installed on the same cable. To install the hard drive as a SLAVE, or as the second of two ATA devices on the same cable, you must remove all of the jumpers from the hard drive (alternatively you can install the jumper on the PK position, which serves as a park position for storing the jumper when it is not in use). No jumpers installed would be the correct setting for SLAVE for any Quantum ATA hard drive. See figures 1-6 at the end of this document for jumper diagrams.

On some *rare* occasions, two jumpers may be required. If a SLAVE fails to be detected and the DS jumper is installed on the MASTER, install jumpers on both the DS and SP jumper positions. If there is no SP setting present, then place a jumper on both the DS and CS jumper positions. **Two jumpers may be required on the MASTER on some systems before the SLAVE can become recognized by the system BIOS.**

Certain non-Quantum hard drives require a jumper change when adding a SLAVE to the cable. This jumper setting information is often printed on the drive but may also be obtained at the Ontrack Web site (www.ontrack.com) or by invoking the Disk Manager help files by inserting your Disk Manager Disk and typing DM /h at the A:\ prompt. (See "Using Disk Manager to Determine Drive Type and Master/Slave Settings" below).

Standard ATA Cables:

Computers typically have two 40-pin ATA (IDE) cable connectors on the system motherboard which serve all standard types of ATA cables. The motherboard ATA connectors are defined as *primary* and *secondary*. Each of these connections will support two ATA devices for a total of four devices. The role of the ATA device(s) on each cable is defined as either MASTER or SLAVE and is determined by jumper settings on each device. A device will typically be either a hard drive or a CDROM drive. The hard drive you want to boot your system from must be attached to the cable connected to the primary motherboard ATA connector and it must be configured as a MASTER (referred to as the *primary master*).

A device will typically be either a hard drive or a CDROM drive. On standard ATA cables it does not matter whether the MASTER or SLAVE is connected in the middle of the cable or at the end of the cable. However, the CDROM should never be installed as a MASTER when used on the same cable with a hard drive. The colored line (usually red or blue) on the edge of the wide ribbon cable indicates pin number one. This colored line must be installed in the direction closest to the hard drive's 4-pin power plug (some cables are keyed and will only install in one direction).

Standard Installation - continued

Cable Select ATA Cables:

OEM (Original Equipment Manufacturers) sometimes use a special CABLE SELECT (CS) type cable. The CS jumper setting is identical for each and every device using this type of cable. Each drive using this type of cable must have a jumper installed on the CS position only. In this configuration MASTER or SLAVE is determined by the position of the device on the cable. The device connected to the middle of the cable is the MASTER. The device connected to the end of the cable is SLAVE. This type of cable is not commonly in use.

Ultra ATA-66 Cables:

Ultra ATA-66 cables are similar to cable-select cables in that the master and slave drives both have their jumpers set to CS. However, the MASTER is installed at the end of the cable and the SLAVE is installed on the middle of the cable. Ultra ATA-66 cables use a 40-pin, 80-conductor cable assembly rather than the 40-conductor assembly found in conventional ATA cables. This type of cable is required for Ultra ATA-66 operation. The additional conductors in these cables provide additional ground lines for improved signal quality.

Ultra ATA-66 cables are designed to be fully backward compatible to the conventional 40-pin ATA connectors found on the system motherboard and ATA hard drives. Ultra ATA-66 cables are often color coded so that the ***blue*** connector connects to the motherboard, the ***gray*** connector connects to the middle device (SLAVE) and the ***black*** connector connects to the end device (MASTER). The blue connector MUST be plugged into the motherboard or your system will not work.

Special Considerations:

Hard drives greater than 2.1GB may need to be divided into multiple partitions/logical drives depending on the operating system you are using. MS-DOS versions 4.0 through 6.22 allow a maximum primary partition /logical drive size of 2.1GB and are limited to 8.4GB in physical drive capacity. The file systems supported by Windows 95, Windows 98 and Windows NT are not restricted to the 8.4GB physical drive limit, but special BIOS support (LBA) is required. Hard drives greater than 8.4GB in capacity may be restricted to 8.4GB (or less) due to system BIOS limitations, operating system limitations, or both. Check with your system manufacturer to determine if your BIOS supports the correct Interrupt 13 extensions for hard drives greater than 8.4GB. No matter what operating system you select to use the drive **MUST** be partitioned and formatted.

In order to achieve the Ultra ATA-66 transfer speed, you must have a Chipset and BIOS that will support Ultra ATA-66. The correct drivers must be loaded, and an Ultra ATA-66 data cable must be used. The Ultra ATA-66 cables use the Cable Select (CS) method rather than a Drive Select (DS) scheme, so the drive must be configured to enable Cable Select. If your system's BIOS and Chipset do not support Ultra ATA- 66 there are third party add on ATA adapters, such as the Promise Ultra 66 ATA adapter, that will not only support the drive's capacity but will also support Ultra ATA-66 transfer modes.

Standard Installation – continued

Step 2: Set the drive type.

Computer systems typically have a hard disk drive "Auto-detect" feature that allows the system to directly "read" the hard drive's parameters during the system's hard disk setup routine (AUTODETECT HARD DISK) or automatically during system startup. If the hard drive is properly cabled and its jumpers correctly set, the Auto-Detect feature will identify the hard drive and read its parameters. Some systems may require you to "write" or update the new settings. Be certain to save the settings you have changed before exiting the system's BIOS Setup. *Quantum hard drives typically support your computer's fastest transfer settings and the industries most advanced features.*

Invoking Your System Setup or CMOS To Set Drive Type.

Different systems have different ways of getting into the motherboard BIOS setup areas. The specific keystrokes for invoking your system's BIOS setup routine will vary depending on the BIOS and/or system manufacturer. Usually, you hold down the "Del "key on your keyboard when powering up the system in order to invoke the System BIOS Configuration Settings or Setup Display (sometimes also referred to as CMOS Setup). Or try CTRL + ALT + ESC on powering up. Or try CTRL + ALT + DEL, or CTRL + ALT + ENTER, or CTRL + ALT + INS. **The + sign means you press the keys at the same time.** Some systems require you to press F1 or F10 during boot up to reach CMOS. Here, you can locate the Custom or User-Definable option, enter the parameters and then save the settings.

Step 3: Run FDISK to create partitions.

You must create at least one partition on every hard disk drive. To skip using FDISK and FORMAT, go to the FAQ section and reference question #3 entitled "You can use Disk Manager to Fast Format".

Run the FDISK.EXE program. If you are installing the new hard drive as a standalone device on the cable or as the first of two drives on the cable (MASTER), then select option number "1" from the FDISK.EXE menu to "Create DOS Partition". If you are installing the new hard drive as the second device on the cable (SLAVE), then choose number "5" from the FDISK menu to "Change current fixed disk drive". Enter the number of the hard drive you wish to select. If you become confused, choose number "4 " to "Display partition information", on each hard drive you select until you locate the new device. The new device should have a "NO PARTITIONS DEFINED" message. Once you have located the hard drive you wish to partition, choose "1" to "Create DOS Partition". Then choose "1 " again to "Create Primary DOS Partition". Then type "Yes", if you wish to create the maximum partition size.

If you are using DOS 6.22, or Windows 95/A which limit the primary partition and logical drive sizes to 2 gigabytes, you can then choose "1" again, then "2" to "Create An Extended DOS Partition". You will then be presented with a number. This figure represents the remaining available space on the drive. Press ENTER to accept. Press Escape and you will be offered Logical DOS partitions and you will then be assigned drive partition letters, one at a time, until all hard drive space has been used. Write down the letter of each logical drive partition that you create. You will need to format each of these logical drives (partitions assigned) to complete the final steps after the system reboots.

If you are adding one or more additional hard disk drives to the system, and wish to keep the letters that are assigned to each logical drive in alphabetical order, you will have to create a single EXTENDED DOS partition for the entire drive and then create logical drives within this partition. **This will prevent any of the previously assigned drives from changing letter assignments**.

Standard Installation – continued

Microsoft Operating System Partition Size Limitations:

The FDISK.EXE file name is used for all versions of DOS and Windows. What you boot the system with determines what operating system controls your computer. If you want to check, type VER at the prompt. Don't mix operating systems!

MS-DOS 6.22 and Windows 95/A (Original Release) use a FAT16 file system and limit the maximum size of your primary partition and logical drive partitions in your extended partition to approximately two gigabytes (2047 Megabytes).

No choice here. On drives larger than two gigabytes, using FDISK.EXE, you can create a Primary DOS Partition of two gigabytes (2047 MB). You can then select "Create EXTENDED DOS PARTITION" for the remaining space on the drive. You then choose "Create Logical DOS Drive(s) in the Extended DOS Partition"; adding drive letters one by one, until all of the available space on your hard drive is used. You will now have to re-boot and format each of these before they can be used.

Microsoft Operating System Partition Size Limitations: (continued)

Windows 95/B (OSR-2) and Windows 98 support both FAT16 and FAT32 capability. You can choose FAT32 and create partitions of virtually any size up to two Terra bytes. You can alternately choose FAT16 and limit the maximum size of your partition to about two gigabytes (this is useful for backward compatibility with older applications that may not support the newer FAT32 file system).

On these versions, select FAT16 or FAT32 when you run FDISK and are asked "Do You Wish To Enable Large Disk Support? [Y/N]. If you answer N for No, you will be limited to two gigabytes for each partition (you will be using FAT16). If you answer Y for YES, you can create partitions up to two terabytes. You can create a single partition for the entire drive, (you will be using FAT32).

Note: If you are using a dual boot system with Windows 98 and Windows NT 4.0 you will have to choose FAT16. Windows NT 4.0 does not support the FAT32 file system.

Question: How do I know if I have Windows 95/B?

If you can issue the keyboard command VER [ENTER] at the DOS prompt, only Windows 95/B will say: Windows **95. [Version 4.00.1111].** Be careful about mixing DOS versions. Keep in mind that the system disk you boot with DETERMINES which operating system controls the computer.

Step 4: Format each partition created.

After you create the partitions, reboot to the A:\ prompt and insert your boot disk containing the FORMAT.COM file in the A:\ drive. If you are preparing a bootable drive, enter the command FORMAT C:/S. When formatting is completed and if other logical drive partitions were created, format these one by one; that is, enter the command FORMAT D:, FORMAT E:, etc. until all partition letters have been formatted. The FORMAT C: /S is necessary only on the first partition. The /S switch transfers the system files which makes the hard drive bootable.. After completing these four steps the hard drive should be able to boot without a floppy and be ready to complete the remaining steps of the operating system installation (refer to your operating system documentation).

Alternative Installation

Getting Started

Prior to installation, you should create a bootable floppy diskette that will allow you to boot to the A:\ prompt. If you are adding a hard drive, the operating system used to create this bootable floppy should be the same version of the operating system (e.g. Windows 95, Windows 98, DOS 6.22, etc.) installed on your original hard drive. Do not mix operating systems! On this floppy diskette, you should have copies of the FORMAT.COM and FDISK.EXE programs from your original hard drive. These are usually located in the C:\DOS or C:\WINDOWS\COMMAND directory. These two programs are required to partition and prepare your drive for use in a *standard* installation not requiring the use of the Disk Manager software. A Windows 95/98 Startup Disk should contain these two essential programs. As well as being bootable, a Startup Diskette is a perfect tool for both *standard* and *alternative* hard disk drive installations. You may create a Windows 95/98 Startup Disk by obtaining a blank floppy diskette, and then choosing START from the Windows 95/98 Desktop, followed by SETTINGS, then CONTROL PANEL, then Add/Remove Programs, then STARTUP DISK, then choosing CREATE DISK.

If you are installing your hard drive on a system that is several years old, besides having a bootable floppy diskette, you may require one additional tool. You should have a copy of Ontrack's Disk Manager software. This program may be downloaded free from Quantum's Web Site at http://www.quantum.com. Since the system BIOS is older it may lack support for large capacity hard drives. If this is the case, you can set the BIOS drive type to "1" or, if Type 1 is unavailable, use a Custom or User Definable Drive Type Setting of 1024 cylinders, 16 heads and 63 sectors per track (528 megabytes). In some rare cases the drive will need to be defined as "Not Installed", or "None" Use this setting regardless of the actual capacity of the new hard drive to be installed. Once the BIOS settings are saved, you may use the bootable Disk Manager diskette to boot the system. During the boot sequence you will see the prompt;

Your system has booted from the Disk manager diskette

Press ENTER to run Disk Manager with default switches.
Press SPACEBAR to change default Disk Manager switches.

When Disk Manager launches you will be prompted to read the license agreement. After you have viewed the license agreement press enter. At the next screen choose "Easy Disk Installation" and follow the steps to easily complete your hard drive installation.

Using Disk Manager to Determine Drive Type and Master/Slave Settings.

If you have the Disk Manager program, you can, as an alternate boot method, boot to the A:\ prompt using your DOS boot diskette, then insert the Disk Manager diskette, type DM /h, and press the ENTER key. From the menu, choose "ATA (IDE) Drive Jumper Settings", and then choose "Quantum ATA (IDE) Drives". When you locate your model press the ENTER key and the jumper settings for your drive will be displayed. If you use Disk Manager to install, always configure the new hard drive in your system's BIOS setup program as a Type 1 if possible (Type 1 is normally predefined as a 10MB hard drive using 306 cylinders, 10 heads, and 17 sectors per track). If Type 1 is not an available hard drive setting in your BIOS setup program then use a Custom or User Definable drive type configured as 1024 Cylinders, 16 heads, and 63 sectors per track.

If you move a hard drive installed with Disk Manager from one system to another, once again select Type 1 on the new system (or configure as Custom or User Definable as previously discussed). You may then need to re-run Disk Manager and choose Update Disk Manager to provide Disk Manager DDO support on the new system. Be careful about mixing operating systems when moving hard drives from system to system.

Alternative Installation – continued

Problem: System Locks up When Installing A Hard Drive Greater in Size than Two Gigabytes.

Some system BIOS's may have problems dealing with cylinder values greater than 4096. Disk Manager will provide a solution for these systems. These cylinder values are typically only found on ATA hard drives greater than 2.1GB (Gigabyte) in size. If your system locks up at power on, after installing your greater than 2.1GB hard drive, try this:

(1) Power off the system; remove the 40-pin ATA interface cable from the hard drive.
(2) Power the system back on.
(3) Enter your system setup (CMOS) and disable the AUTO feature for this drive.
(4) Enter drive Type 1 or use the Custom or User Defined drive type and enter a value less than 4096 for the cylinder count, such as 1024 cylinders, 16 heads, 63 sectors per track. LZ and WPCOM are irrelevant and can be set to Zero (0).
If the new hard drive is connected to the Secondary ATA/IDE cable, and all drive settings fail to detect the hard drive, use "No hard drive installed" for the Secondary Master or the Secondary Slave drive type entry. That is, make no entry for the hard drive type; simply leave the hard drive setting at None.
(5) Save and exit.
(6) Power down the system, re-attach the ATA interface cable and then reboot the system.

Use your Ontrack Disk Manager software to install the new hard drive. Simply boot to the A:\ prompt, insert your Disk Manager floppy diskette, type the command "DM" and choose Easy Disk Installation. When installing with Disk Manager it is a good idea to accept the option to "Create an Ontrack boot diskette" when it is offered. If you ever experience a problem booting to your Disk Manager installed drive, you can use this diskette and it will load the special Ontrack DDO that will allow you to access your drive and easily correct the boot problem.

If you find that your BIOS doesn't provide adequate support for your new Quantum hard drive, but you don't wish to use Disk Manager or other software overlay programs, you can:

(1) Either contact your BIOS manufacturer and inquire about obtaining a BIOS upgrade for your system motherboard, or
(2) Call your computer system hardware provider and inquire about obtaining an enhanced ATA host adapter with on-board BIOS that will successfully support large hard disk drives.

Frequently Asked Questions (FAQ)

1. What can I do if Disk Manager fails to load?

If Disk Manager hangs or stalls when you type DM at the A:\ prompt, instead of typing DM to begin the program, try typing DM /C /L=0 /P-

2. What is the fastest way to erase all of the information on my drive so that I can start over gain?

There are two ways of cleaning off the drive of data.
1. Ontrack's Zero Fill will write zeros to the entire partition and data area of the drive effectively wiping off all partition information and data. A complete backup of all unsaved data is recommended.

2. You can use the Ontrack Disk Manager Program to erase your drive.

Frequently Asked Questions (FAQ) - continued

Be certain to back up data on the hard drive before performing the steps below**!** ***All data on the drive will be erased*****!** You may wish to completely erase the boot track from your hard disk drive. Or you may wish to erase a computer virus from the boot sector of your drive. Or you may wish to erase all traces of the Disk Manager Hard Drive Installation program.

The following erase procedure will effectively overwrite as much as the first 63 sectors of your drive.
Note. You are not required to have used Disk Manager to install your drive in order to use this procedure. All partitions and all data on the drive will be destroyed after using this procedure and the drive will have to be reinstalled

1. At the A:\ prompt, insert your Disk Manager Disk. Type *DM* and press *Enter*. When you reach the menu that says "Easy Disk Installation" press the "ALT " key and the "T" key on your keyboard at the same time.

2. Choose "Disk Overview" and press ENTER. If you have more than one hard drive you will be prompted to choose which hard drive you wish to erase. Carefully select the hard drive you wish to erase.

3. Press the CTRL and F10 on your keyboard at the same time. A message will appear that says:
   "*Ready To Zero out the First 63 Sectors on This Drive*?" (The number of sectors may vary). Answer Y for Yes and the hard drive's boot sector and the Disk Manager DDO will be erased. This only takes a few seconds and you will not be notified when the process is finished. If you wish, you can then run FDISK, select the hard drive and choose number 4 on the menu to DISPLAY DRIVE INFORMATION. FDISK will respond with "NO PARTITIONS DEFINED".

4. Exit the Disk Manager program and restart your system. You must now reinstall the hard drive by using the FDISK program to create one or more partitions, and then format each partition created, by using the operating system FORMAT Command. If the erased drive was your boot drive, you will have to boot to a formatted, bootable floppy diskette.

3. My hard drive wasn't installed with Disk Manager. Now that I used Disk Manager to erase my hard drive, do I have to go through all of those steps in order to FDISK and re-FORMAT my hard drive?

You can use Disk Manager to Fast Format the drive. If you deleted all your partitions, want to recreate and reformat them, and you were not using Disk Manager in this system, simply boot up with a correct version of your operating system, at the A:\ prompt, remove the floppy and insert your Disk Manager Disk. Run DM and choose **(only)** Advanced Disk Installation, Disk Manager will now re-partition and prepare your hard drive using Fast Format taking only a few minutes. You must be careful that you do not accidentally re-install the hard drive using Disk Manager. Avoid selecting Easy Disk Installation. Also be careful about selecting the correct hard drive model. Use only the Advanced Disk Installation option and have your boot diskette ready to insert when requested by Disk Manager.

Frequently Asked Questions (FAQ) – continued

4. I installed my Hard Drive using Disk Manager. Can I use the Disk Manager Fast Format routine?

Yes, but you must create an Ontrack Boot Diskette and use this diskette to boot the system before running Disk Manager. This will allow the special Ontrack DDO file to be loaded at start up. This DDO file is vital to translate the special Disk Manager installed partitioning information.

To create an Ontrack Boot Disk, run DM. At the Disk Manager Main Menu select (A)dvanced Options, next select (M)aintenance Options. Choose "Create Ontrack Boot Diskette" from the menu. It is an excellent idea to have a copy of this Ontrack Boot Diskette available so that you can access your files if the hard drive ever fails to boot or if you need to install an additional hard disk drive in the future. Write "Emergency Ontrack Boot Disk" on the floppy and store it in a safe place.

5. How can I test my Quantum ATA hard drive without backing up the data first?

Download Quantum's Data Protection Software (QDPS). This program may be downloaded free from Quantum's Web Site at http://www.quantum.com. It takes only a few minutes to test your hard drive and is harmless to the existing data. No writing to the hard drive will take place during the QDPS testing.

Another non-destructive ATA hard disk drive test software that is available for free downloads is Ontrack's Data Advisor. This program creates a bootable floppy diskette with its own operating system, works on most brands of hard disk drives and can be an aid in recovering lost data. Both programs are completely safe, they will not write anything to your hard disk drive.

6. How can I low-level format my Quantum ATA hard drive?

Actually, a true low-level format can only be performed at the factory. But you can invoke the Zero Fill utility from the Maintenance Menu located in the Utilities Section of our latest version of 0ntrack Disk Manager. Or you may obtain a stand-alone version of Zero Fill (Data Eraser) by going to our web site as mentioned above. The Zero Fill program will write zeroes throughout your hard drive and then read them back. Sometimes bad sectors are phantom errors created by software. Zero Fill will allow you to see if your hard drive is truly defective.

Zero Fill will destroy all data and render it incapable of being recovered so back up all data before use. *Please be careful when selecting the hard drive you wish to erase.*

7. How can I tell if my BIOS supports this large hard drive?

The easiest way is to choose to perform a *standard* installation. Choose LBA [Logical Block Addressing] in the BIOS and then save the setting. When you run FDISK, and select "1" to create a DOS partition, it asks if you want the maximum partition size. Answer No. If the partition size is reported as less than your hard drive's capacity than you can assume that the BIOS lacks native support for larger hard drives. At this point you will need to enter your system's BIOS setup program and set the hard drive as a Type 1 (306 cylinders, 4 heads and 17 sectors per track), save the new BIOS settings, and then run the Disk Manager installation as described. Or you may wish to obtain a system BIOS upgrade or perhaps purchase an enhanced ATA hard disk drive controller/host adapter from your dealer.

Frequently Asked Questions (FAQ) – continued

8. Use Caution When Handling Hard Disk Drives – Avoid Static Discharge and Shock

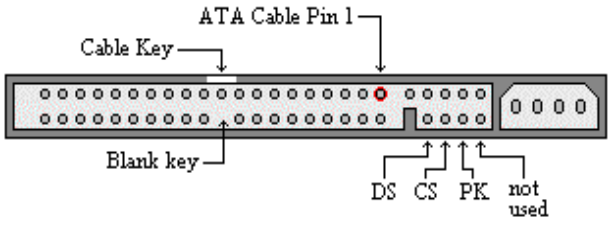
You may be certain that every effort was made to ship your new Quantum hard drive to you in perfect condition. Now it is up to you to be careful when handling the hard drive so that it continues to remain defect free. Please use both hands when handling the hard drive and avoid subjecting the drive to rough handling or static shock. Try to remember to touch the unpainted portion of the metal chassis on your computer to discharge static electricity before touching any hard disk drives or other sensitive electronic components in your computer system. Better yet, when handling hard drives or other system hardware, use an anti-static wristband to ensure that static sensitive system components stay fully protected.

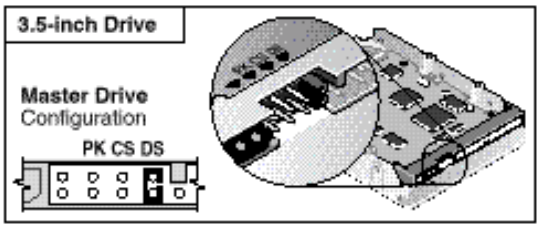
ATA JUMPER CONFIGURATION LOCATIONS

3.5 Inch Hard Disks:

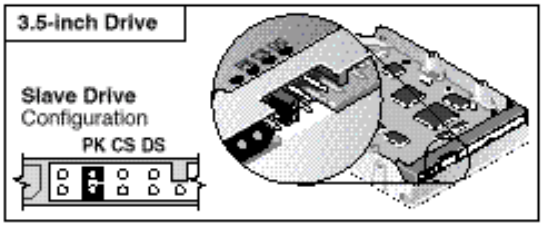
Fireball and Fireball Plus Drives

(Applies to the ST, SE, EL, EX , CR, CX, lct, and lct10 series Fireball Drives)
(Applies to the KA, KX, and LM series Fireball Plus Drives)





Use the Master Drive Configuration for both standalone and master operation.



For slave drive operation the jumper can either be stored on the PK position or removed completely.

Figure 1.

ATA JUMPER CONFIGURATION LOCATIONS - continued

3.5 Inch Hard Disks:

Fireball (FB), Fireball Tempest (TM), Sirocco (SR)

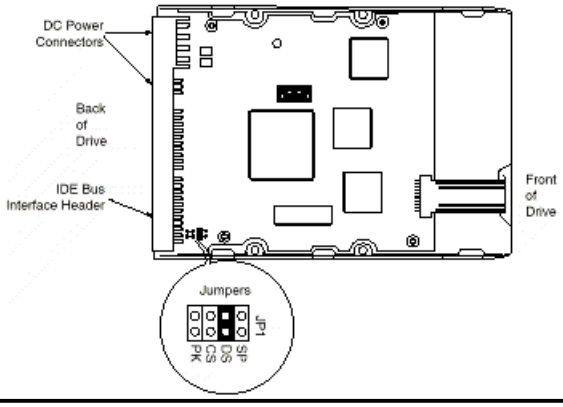


Figure 2.

Fireball 540/640/1080/1280, Trailblazer (TB), Lightning (LT), Maverick (MV)

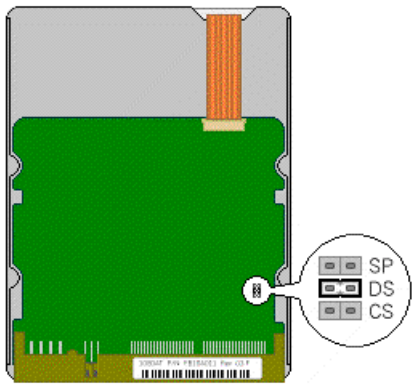


Figure 3.

ATA JUMPER CONFIGURATION LOCATIONS - continued

5.25 Inch Hard Disks:

Bigfoot TS

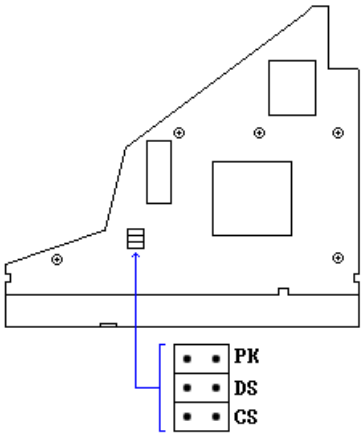


Figure 4.

Bigfoot 1.2/2.1/2.5GB

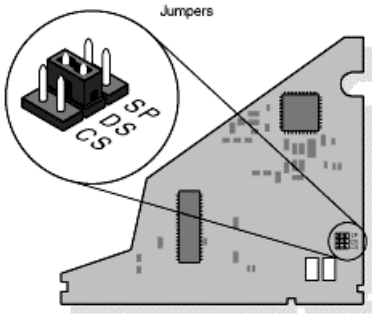


Figure 5.

Bigfoot CY/TX

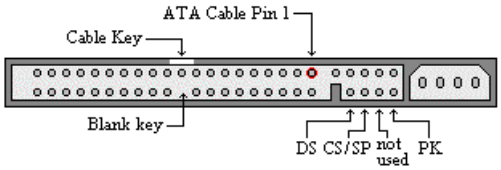


Figure 6.

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