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Troubleshooting and Upgrade Guide

www.hp.com/go/vectrasupport

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Troubleshooting and Upgrade Guide

This manual is for anyone who wants to:

- Troubleshoot problems on the PC
- Add accessories to the PC
- Configure the PC
- Find out where to get more information and support.

For information about setting up and using your PC, refer to the *User's Guide* that came with your PC. The *User's Guide* is also available on HP's web site at: **`http://www.hp.com/go/vectrasupport`**.

Important Safety Information

WARNING

For your safety, never remove the PC's cover without first removing the power cord and any connection to a telecommunication network. Always replace the cover before switching the PC on again.

There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace only with the same or equivalent type recommended by the manufacturer. The battery in this PC is a lithium battery that does not contain heavy metals. Nevertheless, in order to protect the environment, do not dispose of batteries in household waste. Please return used batteries to the shop from which you bought them, to the dealer from whom you purchased your PC, or to HP so they can either be recycled or disposed of in a sound way. Returned used batteries will be accepted free of charge.

If you have a modem:
Do not attempt to connect this product to the phone line during a lightning storm. Never install telephone jacks in wet locations unless the telephone line has been disconnected at the network interface. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface. Use caution when installing or modifying telephone lines. Avoid using a telephone (other than a cordless type) during an lightning storm. There may be a risk from lightning.
Do not use the telephone to report a gas leak in the vicinity of the leak.
Never touch or remove the Communications board without first removing the connection to the telephone network.

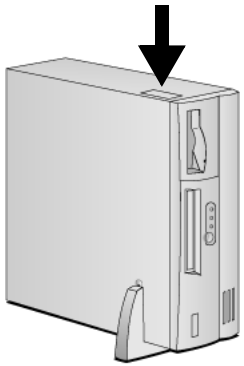
Care of Equipment

CAUTION

To avoid damage when operating the CD-ROM drive, do not touch the lens.

Which Vectra PC Do You Have?

Before connecting to HP's web site or phoning your support organization, look at the identification label on the side of your PC. It will tell you the series and model of your Vectra PC.



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3 Security and Manageability Features

4 Technical Information

Troubleshooting Your PC

This chapter can help you solve problems you may have when using your PC. Do not hesitate to use the *HP DiagTools Hardware Diagnostics* utility (described on page 10). DiagTools can help you to quickly diagnose hardware problems for a speedy recovery.

Troubleshooting With HP Hardware Diagnostics

NOTE

HP strongly recommends you use the Hardware Diagnostics utility. It provides the most effective means for troubleshooting the vast majority of hardware problems.

DiagTools, the Hardware Diagnostics utility, helps you diagnose hardware-related problems on HP PCs and PC Workstations. It is a series of tools designed to help you:

- Check the configuration of your system and verify that it is functioning correctly.
- Diagnose hardware-related problems.
- Provide precise information to HP-dedicated Support Agents so that they can solve any problems quickly and effectively.

For more information about this utility, refer to the *Hardware Diagnostics User's Guide*, available on the HP web site in PDF (Adobe Acrobat) format.

Where Can I Get DiagTools?

DiagTools is on the *Diagnostics & Recovery CD-ROM* that came with your PC. You can also download the latest version of this utility from HP's Web Site at **`www.hp.com/go/vectrasupport`**.

Starting DiagTools

To start DiagTools:

1. Insert the PC's *Diagnostics &Recovery CD-ROM* into the CD-ROM drive. (The *Diagnostics & Recovery CD-ROM* is delivered with your PC.)
2. Restart the PC.
3. The PC will start (boot) from the CD-ROM and display a menu. Select the option to run DiagTools.
4. Follow the instructions on-screen to carry out the diagnostic tests.

   This utility will automatically detect the complete hardware configuration of your system before any tests can be performed.

Getting Online Support for Troubleshooting

HP's support web site provides extensive support material that can help you troubleshoot problems on your PC:

- Documentation for your PC (described below)
- Technical Notes
- BIOS updates (including the upgrade utility and instructions)
- The latest drivers and software utilities
- HP DiagTools Hardware Diagnostics (also provided preloaded and on the *Recovery CD-ROM*), described on page 10.

For HP's support web site, connect to:

`www.hp.com/go/vectrasupport`.

Documentation For Your PC

You can download documentation for your PC free of charge from HP's support web site. The documents provided are in Adobe Acrobat (PDF) format.

The available documents include:

- *User's Guide*—describes how to set up your PC for the first time and contains quick troubleshooting information. It also contains information on how to replace hardware components.
- *Troubleshooting and Upgrade Guide*—describes how to troubleshoot your PC and install accessories. It also contains information on the technical and security features of your PC.
- *Service Handbook* Chapters—information on upgrade and replacement parts, including HP part numbers.
- *Technical Reference Manual*—technical information on system components, such as system board, chipset and BIOS.

Troubleshooting Orientation Table

Symptom	Problem	Cause	Solution
PC does not start.	No power.		Refer to page 13.
PC's power indicator light works but monitor remains blank.	No display.		Refer to page 15.
The display's resolution is wrong.	Wrong resolution settings.		Refer to page 15.
An error message/code appears when the PC is switched on.	Power-On-Self-Test has detected an error.	Beep code error.	Refer to page 14.
		Memory error.	
		Keyboard or mouse error.	Refer to page 17.
		Floppy drive error.	Refer to page 18.
		Hard disk or CD-ROM error.	Refer to page 19.
		CMOS error.	Refer to page 20.
		Serial or parallel port error.	Refer to page 21.
		Other configuration problems.	Refer to page 22.
You cannot turn off the PC.	The PC is frozen in power saving mode.		Refer to page 23.

Problem	Solution
You have forgotten your password.	Refer to page 24.
The LAN feature does not work.	Refer to page 25.
There is an IRQ conflict when you install a new accessory board.	Refer to page 26.
The PC has an audio problem.	Refer to page 27.
The PC has a software problem.	Refer to page 28.
Recovering hard disk contents.	Refer to page 30.
Further problems with floppy/hard disk and CD-ROM drives.	Refer to page 35.

If There Is No Power

Problem	Check that...	How
PC does not start – the PC's power-on indicator is not illuminated.	The PC's power cord is correctly connected.	Connect the power cord to a grounded power outlet and the PC.
	The PC's power outlet is working.	Plug a light into the grounded power outlet and check it illuminates.
	The PC voltage switch is correctly set.	1 Disconnect the power cord. 2 Select the correct setting. 3 Reconnect the power cord. 4 Start the PC.
If the PC still does not start		
WARNING: for your safety, when the PC is open and switched on, do not touch any of the internal components with a screwdriver or other metal instrument.	None of the internal devices are causing the problem.	1 Disconnect the PC's power cord. 2 Remove the PC's cover. 3 Remove internal power connectors from all internal devices. 4 Reconnect the PC's power cord. 5 Reconnect the power connectors one by one to the internal devices to see which device is defective. 6 Contact HP Support or your authorized dealer.
If the PC still does not start		
	There is not a problem with the power supply unit.	1 Replace the power supply unit by a known working power supply from the same model of PC. 2 If the PC starts, contact HP Support or your authorized dealer, the power supply unit might need replacing.

If There is a Beep Code During Boot

If an error occurs during the Power-On Self-Test (POST), which prevents the PC from starting, the system issues a beep code before attempting to display the error in the upper left corner of the screen. Beep codes are useful for identifying the error when the system is unable to display the error message.

Beep Pattern	Beep Code	Numeric Code	Description	Recommended Action
— -- -- ---	1-2-2-3	16h	BIOS ROM check-sum failure	Inform HP support/HP reseller that system board is defective.
— --- — —	1-3-1-1	20h	DRAM refresh test failure	Reset the memory. If the error still occurs, replace the module.
— --- — ---	1-3-1-3	22h	8042 Keyboard controller test failure	Inform HP support/HP reseller that system board is defective.
— --- --- —	1-3-3-1		RAM module missing or not installed correctly[1]	Replace or reset the memory.
— --- ---- —	1-3-4-1	2Ch	RAM failure on an address line[1]	Replace or reset the memory. If the error still occurs, replace an existing module.
— --- ---- ---	1-3-4-3	2Eh	RAM failure on data bits xxxx of low byte of memory bus[1]	Replace or reset the memory. If the error still occurs, replace an existing module.
— ---- — —	1-4-1-1	30h	RAM failure on data bits xxxx of high byte of memory bus[1]	Replace or reset the memory. If the error still occurs, replace an existing module.
-- — -- ---	2-1-2-3	46h	ROM copyright notice check failure	Inform HP support/HP reseller that system board is defective.
-- -- --- —	2-2-3-1	58h	Unexpected interrupts test failure	Inform HP support/HP reseller that system board is defective.
— --	1-2	98h	Video configuration failure or option ROMs check-sum failure	This can be caused by problems with the ROM on the integrated video, or on an accessory video board or the ROM on a SCSI accessory board.

1. Non-HP memory modules are not supported. Only HP memory modules should be used.

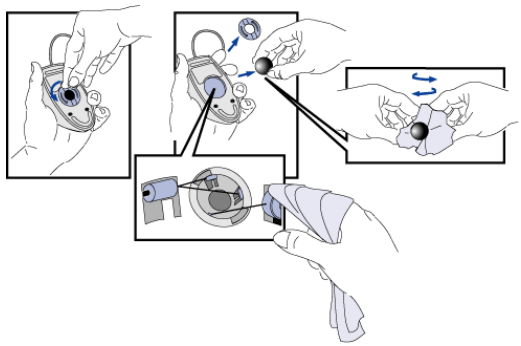
If Your Monitor Is Not Working Properly

Problem	Check that...	How
PC's power indicator light and hard disk activity light work but the screen remains blank.	The display is switched ON (LED is on).	Refer to the monitor manual for an explanation of the LEDs.
	The monitor's power cord is correctly connected.	Ensure the power cord is plugged into a grounded power outlet and into the monitor.
	The monitor's power outlet is working.	Plug a light into the grounded power outlet and check it illuminates.
If the monitor still does not work		
	The monitor's brightness and contrast settings are correct.	Refer to the monitor manual if necessary.
	The video cable pins are not damaged.	1 Switch off and unplug the monitor. 2 Disconnect the video cable and straighten any bent pins. 3 Reconnect the video cable and plug the monitor in. 4 Switch on the monitor and see if it works.
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
	The PC's integrated video is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Install a known working system board from the same model of PC. 4 Reconnect the power cord. 5 If the monitor works, inform HP Support or your authorized dealer that the system board is defective.
	The monitor settings in your PC are compatible with your monitor	• Windows NT 4.0: Enter VGA mode when prompted during start-up, then reset the resolution. • Windows 95/98: Restart the PC. The Hewlett-Packard screen is displayed. When you hear a beep, press **F8** and then start the PC in safe mode. Double-click on the **Display** icon in your PC's **Control Panel**, then click on the Settings button. Use the sliding control to reset the resolution.
	The monitor itself is not faulty.	1 Replace the monitor by a known working monitor from the same model of PC. 2 If the monitor starts, contact HP Support or your authorized dealer. The monitor may need to be replaced.

If There Is a Memory Test Error

Problem	Check that...	How
Power-On-Self-Test (POST) displays a memory test error.	The PC's memory modules are correctly installed.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Check the memory modules are correctly installed, of the correct type and in the correct sockets (refer to page 45). 4 Close the PC, reconnect the power cord and check that the PC boots (starts).
	The PC's memory modules are working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the memory modules by known working memory modules from the same model of PC (refer to page 45). 4 Close the PC, reconnect the power cord and check that the PC boots (starts).
If the PC boots but you still have a problem...		
	Run DiagTools	Refer to page 10.
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
	The system board is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the system board by a known working board from the same model of PC. 4 Close the PC, reconnect the power cord and check that the PC boots (starts). 5 If the PC works, contact HP Support or your authorized dealer for further troubleshooting information.
If the problem persists, contact HP Support or your authorized dealer		

If There Is a Keyboard or Mouse Test Error

<table>
<tr><th>Problem</th><th>Check that...</th><th>How</th></tr>
<tr><td rowspan="2">POST displays a keyboard or mouse test error.</td><td>The keyboard and mouse cables are correctly connected.</td><td>1 Switch off the PC.
2 Plug the cables into the correct connectors on the back of the PC.</td></tr>
<tr><td>The keyboard is clean and no keys are stuck down.
The mouse is clean.</td><td>• Check all keys are at the same height, and none are stuck (keyboard).
• Clean the mouse ball as shown below.</td></tr>
<tr><td colspan="3">  </td></tr>
<tr><td colspan="3">If the PC boots but you still have a problem...</td></tr>
<tr><td>Run DiagTools</td><td colspan="2">Refer to page 10.</td></tr>
<tr><td>You may need to update your PC's Basic Input Output System (BIOS).</td><td colspan="2">Create a bootable floppy to update your PC's BIOS. Refer to page 31.</td></tr>
<tr><td></td><td>The keyboard/mouse are working</td><td>1 Switch off the PC.
2 Replace the keyboard/mouse by known working units.
3 Switch on the PC, and check it works.</td></tr>
<tr><td></td><td>The keyboard/mouse are working</td><td>1 Switch off the PC.
2 Replace the keyboard/mouse by known working units.
3 Switch on the PC, and check it works.</td></tr>
<tr><td>PC's Basic Input Output System (BIOS) may need updating.</td><td>Your PC has the latest BIOS version.</td><td>Refer to page 31.</td></tr>
</table>

If There Is a Floppy Disk Drive Test Error

Problem	Check that...	How
Power-On-Self-Test displays floppy drive test error.	The drive is correctly configured in the PC's Setup program. Refer to page 35.	1 Switch the PC OFF then ON. 2 When the Vectra logo appears, press the **F2** key. 3 Check the floppy disk drive is enabled.
	The drive cables are correctly connected.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Check the floppy drive cables are correctly connected (refer to page 46). 4 Close the PC then switch it on and check it works.
	The drive cable is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the floppy drive cable by a known working cable from the same model of PC. 4 Close the PC then switch it on and check it works.
	The floppy is working.	Insert a known working floppy disk and see if it works.
If the drive still does not work...		
	Run DiagTools.	Refer to page 10.
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
	The drive is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the floppy drive by a known working drive from the same model of PC (refer to your PC User's Guide). 4 Close the PC then switch it on and check it works. 5 If the drive works, replace the defective drive.
	The system board and riser card are working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the system board and\or riser card by known working units from the same model of PC. 4 Close the PC, reconnect the power cord and check that the PC and drive work.
If the problem persists, contact HP Support or your authorized dealer		

If There Is a Hard Disk or CD-ROM Drive Test Error

Problem	Check that...	How
Power-On-Self-Test displays hard disk or CD-ROM drive test error	The drive is correctly configured in the PC's Setup program. Refer to page 35.	1 Switch the PC OFF then ON. 2 When the Vectra logo appears, press the **F2** key. 3 Check the drive is enabled and the correct type is selected.
	The drive cables are correctly connected.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Check the drive cables are correctly connected (refer to chapter 2). 4 Close the PC then switch it on and check it works.
	The drive cable is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the drive cable by a known working cable from the same model of PC (refer to chapter 2). 4 Close the PC then switch it on and check it works.
If the drive still does not work...		
	Run DiagTools from the floppy drive.	Refer to page 10.
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
	The drive is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Carefully replace the drive by a known working drive from the same model of PC (refer to chapter 2). 4 Close the PC then switch it on and check it works.
	The system board and riser card are working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the system board and\or riser card by known working units from the same model of PC. 4 Close the PC, reconnect the power cord and check that the PC and drive work.
If the problem persists, contact HP Support or your authorized dealer		

If There Is a CMOS Test Error

Problem	Check that...	How
POST displays CMOS test error. CMOS is a chip that keeps a record of installed components when the PC is turned off.	Power is correctly connected to the riser card.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Check the power connector is correctly attached to the riser card. 4 Close the PC, reconnect the power cord and check that the PC boots (starts). 5 You may need to restore the default configuration settings. Refer to page 22.
	The internal battery is working.	1 Set the PC to the correct time (refer to the operating system manual). 2 Switch off and unplug the PC for an hour. 3 Restart the PC and check the time is correct. 4 If the time is incorrect, replace the PC's battery by a new one (refer to page 58).
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
	The system board is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the system board by a known working board from the same model of PC. 4 Close the PC, reconnect the power cord and check that the PC works.
If the problem persists, contact HP Support or your authorized dealer		

If There Is a Serial/Parallel Port Connection Test Error

Problem	Check that...	How
POST displays a port test error.	The port is correctly configured in the PC's Setup program.	1 Switch the PC OFF then ON. 2 When the Vectra logo appears, press the **F2** key. 3 Check the port is enabled in **Integrated I/O Ports** in the **Advanced** menu.
	All connected devices are correctly connected and switched on.	1 Switch off the PC. 2 Plug the cables into the correct connectors on the back of the PC. 3 Switch on the PC and the external devices.
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
If the PC still has a problem...		
	Run DiagTools.	Refer to page 10.
	The system board is working.	1 Disconnect the power cord. 2 Remove the PC's cover. 3 Replace the system board by a known working board from the same model of PC. 4 Close the PC, reconnect the power cord and check that the PC works. 5 If the port works, contact HP Support or your authorized dealer for further troubleshooting information.
If the problem persists, contact HP Support or your authorized dealer		

Other Configuration Problems

Problem	Check...	How
POST displays an error not covered by an earlier section in this chapter.	The Setup program settings.	1 Turn on or restart the PC. 2 When the Vectra logo appears, press the **F2** key. 3 Verify that the Setup program settings are correct.
You may need to update your PC's Basic Input Output System (BIOS).		Create a bootable floppy to update your PC's BIOS. Refer to page 31.
You think you may have a problem with the audio or LAN features.		Download the latest drivers from HP Support Web: **`www.hp.com/go/vectrasupport`**
Your hard disk may be fragmented or contain errors.		Use your operating system's System Tools to defragment your hard disk or perform ScanDisk.
If the PC still displays an error		
This suggests the configuration settings are corrupted. Restore the default values.		1 Turn off the PC and disconnect the power cord. 2 Remove the cover. 3 Set the system board switch 5 (Clear CMOS) to ON to clear the configuration. 4 Replace the cover, and reconnect the power cord. 5 Turn on the PC. This will erase the CMOS memory. 6 Wait until the PC has started. A message will be displayed saying that the configuration has been cleared. 7 Turn off the PC, disconnect the power cord, and remove the cover. 8 Set the system board switch 5 (Clear CMOS) on the switch block to OFF to re-enable the configuration. 9 Replace the cover, and reconnect the power cord. 10 Switch on the PC. The PC may start more slowly than usual because it will load the default configuration values. 11 Press **F2** to enter the *Setup* program. Update the necessary fields, such as the date and time, then save and exit the *Setup* program. The PC will restart with the new configuration.

If You Cannot Turn Off Your PC

Problem	Check...	How
PC makes a buzzing or beeping sound when you press the power button.	Whether the PC is in a suspend/sleep mode, in which case a "power off" could cause a loss of information/data.	Move the mouse or press a key to try to wake up the PC. If you cannot wake up the PC, and you still cannot turn it off using the power button, unplug the PC from the power supply.
PC does *not* make a buzzing or beeping sound when you press the power button, but you are still unable to turn it off.	That you have saved all data and exited all programs.	1 Save all data and exit all programs (if you can). 2 Press the power button and keep it pressed for 5 seconds. The PC will turn off.

If You Have Forgotten Your Password

NOTE

Use these instructions if the passwords were set with the *Setup* program.

Problem	Solution
You have forgotten the User password.	1 Switch off the PC. 2 Restart the PC. If you are prompted for a password, enter the Administrator password. 3 When the Vectra logo appears, press the **F2** key. 4 Enter the Administrator Password to access the *Setup* program. 5 Go to the **`Security`** menu. 6 Go to the **`Set User Password`** field and set a new User Password. This will replace the old password which you had forgotten. 7 Press **F3** to save the new Password and exit Setup.
You have forgotten the Administrator password.	1 Switch off the PC and remove the power cord. 2 Remove the computer's cover. 3 Set switch 4 on the system board switch block to ON. 4 Switch on the PC and allow it to complete its startup routine. A message is displayed. 5 Switch off the computer. 6 Reset switch 4 to OFF. 7 Replace the computer's cover. 8 Switch on the PC and allow it to complete its startup routine. 9 After the Power-On-Self-Test has completed, press **F2** when prompted to use the Setup program. 10 Set new User and Administrator Passwords. 11 Press **F3** to save the new passwords and exit Setup.

If There is a LAN Problem

Problem	Solution
The LAN feature does not work.	• Check that the **Integrated Network Interface** is enabled in the *Setup* program's **Advanced ➪ PCI Configuration** menu. • Ensure there are no IRQ conflicts with other devices.
The Wake On LAN feature does not work.	Check that the **Power On Network Interface** is enabled in the *Setup* program's **Power** menu.
You have installed a LAN accessory board that supports the Wake On LAN feature but this feature does not work.	There is no Wake On LAN connector on the system board. This HP PC does not support Wake On LAN with LAN accessory boards.
You have installed a LAN accessory board but it doesn't work.	Check that: 1 The **Integrated Network Interface** is disabled in the *Setup* program's **Advanced ➪ PCI Configuration** menu. 2 There are no IRQ conflicts with other devices. 3 The accessory board is correctly installed in the slot. 4 There are no bent connector pins. 5 You have installed the correct drivers (refer to the board manufacturer's web site). 6 The relevant fields in the HP *Setup* program are correctly set. 7 The software installation steps have been followed correctly.

If There Is an IRQ Problem

Problem	Solution
You have installed an accessory board but it won't working.	Check that: 1 The accessory board is correctly installed in the slot. 2 There are no bent connector pins. 3 You have installed the correct drivers (refer to the board manufacturer's web site). 4 The relevant fields in the HP Setup program are correctly set. 5 The software installation steps have been followed correctly.
You have installed an accessory board and you get a message telling you that there is no IRQ (Interrupt Request) available for the accessory board.	• Check that you have followed the installation instructions provided with the accessory board. • Check if the new accessory board supports shared interrupts, and if possible, implement a shared interrupt (refer to the accessory board manufacturer for more information). • Remove the new accessory board.
If there is still a problem	
	For ISA Legacy accessory boards under Windows NT: 1 Restart the PC and press **F2** when the Vectra logo is displayed. 2 Reserve an IRQ for the accessory board. You can reserve IRQ 5, IRQ 9, IRQ 10 or IRQ 11 for this purpose. To do this, go to the **`Advanced ➪ ISA Resource Exclusion`** menu in the *Setup* program and reserve the chosen IRQ. 3 In the Main menu, set the **`PnP Operating System`** item to **`NO`**. 4 Press the **`F3`** key to save the changes and quit the *Setup* program. 5 Redo the Windows installation procedure for the accessory board and ensure that the Service Pack has been reinstalled.

NOTE

Plug and Play operating systems such as Windows 95 and Windows 98 should, in normal circumstances, be able to allocate the IRQs that are used according to the hardware installed in the PC.

If Your PC Has an Audio (Sound) Problem

Problem	Solution
No sound when running any applications.	1 Check that the speakers and headphones are connected correctly. 2 Check that the integrated audio interface is enabled in the **Advanced ➪ Integrated Audio Interface** menu of your PC's Setup program. 3 Check that the audio driver has been installed (under some operating systems, a speaker icon will appear in the bottom right-hand corner of your screen if the driver is installed). 4 Double-click on the speaker icon to check that the volume level is set high enough to be heard and that Mute is not selected. 5 Check there are no hardware conflicts with other devices. If there is a hardware conflict, you will need to allocate resources through the BIOS. To do this, ensure that the **PnP Operating System** field is set to **NO**, and reserve an available IRQ for the other device in the **Advanced ➪ ISA Resource Exclusion** menu of your PC's Setup program.
Audio input from the microphone is too low, or no audio at all.	1 Check that the microphone specifications meet the requirements of the 16-bit sound components. The microphone should be a 600-ohm electret type. 2 Double-click on the speaker icon to check that **Microphone** is selected, and that the volume level is set high enough to be heard. Ensure that the **Microphone Boost** option is selected in **Multimedia** in the **Start** menu.
The PC hangs while recording.	Uncompressed digital audio can eventually fill your hard disk. For example, one minute of stereo sound recorded at a resolution of 44 kHz will occupy about 10.5 MB. Before recording, check that there is enough free space on your hard disk. Data compression can reduce the space required. The A-law and m-law hardware compression used by the audio interface enables the sampling of sound at a resolution of 16-bits, but it generates the same quantity of data as an 8-bit sample.
A new audio accessory board does not work.	If you install an audio accessory board, you will need to disable the integrated sound feature on your PC. To do this, go to **Advanced ➪ Integrated Audio Interface** in your PC's Setup program.
DOS legacy game does not work.	PCI Audio is not SoundBlaster compatible. To use DOS games, you will need to install an ISA accessory board.

If Your PC Has a Software Problem

Problem	Solution
Power indicator light is illuminated, but some software won't run.	• Refer to the application software documentation and/or the operating system documentation for guidance. • If the software is running but not functioning properly, try to save any unsaved data, then close down the application and relaunch it. If it still does not work, restart the PC and then try launching the software again. • Reinstall the software. • If the problem continues, contact the software manufacturer's support services.
Date and time are wrong.	The date and time can be incorrect for the following reasons: • The time has changed to or from Summer Time. • The PC has been unplugged from the power too long, and the battery is discharged. To change the date and time, use your operating system utilities or the Setup program. If necessary, install a new battery (refer to page 58).

If you Have Problems Using the Euro Symbol

If your keyboard has a Euro symbol key, it can only be used with operating systems and applications that support this feature.

- Only the latest Operating Systems, such as Microsoft Windows 98, provide integrated support for the Euro symbol (in certain languages only)
- Not all applications support the Euro symbol
- Not all fonts contain the Euro character.

For Windows 95 and Windows NT Users

Windows NT 4.0 and Windows 95 do not provide integrated support. For more information on how to enable support of the Euro symbol, refer to Microsoft's web site at:

www.microsoft.com/windows/euro.asp

Configuring Your Keyboard

To configure your keyboard, go to **Settings** ➪ **Control Panel** in the **Start** menu. Double-click on **Keyboard** and select the **Language** or **Input Locales** tab in the **Keyboard Properties** window. Click on **Add** and select the country that corresponds with your keyboard, and click **OK**. Click **OK** to exit the **Control Panel**.

Recovering Hard Disk Contents

In the unlikely event of a hard disk crash, you can recover your PC's preloaded operating system and software using the Diagnostics & Recovery CD-ROM supplied with your PC. You can recover, for example:

- Windows 95 or Windows NT 4.0 & Service Pack.
- Any HP-supplied drivers (for example, video, IDE and LAN).
- Any HP-designed manageability applications (for example, HP TopTools and HP DiagTools).

NOTE

Any software that has been installed on the PC after it was manufactured, and any personal data that has been generated by applications installed on the PC, are not covered by the recovery process.

Recovering Preloaded Software from a CD-ROM

You can use the *Diagnostics & Recovery CD-ROM* to change or reconfigure your operating system, reinstall drivers or other factory supplied software components. The following paths are available (where D: is the drive letter assigned to your CD-ROM drive):

- **`D:\Win95`** for Windows 95 (CAB files)
- **`D:\I386`** for Windows NT 4.0
- **`D:\Drivers`** for drivers
- **`D:\Application`**s for software applications and other components.

Reinstallation of Windows NT Service Pack

After reinstalling drivers or reconfiguring your operating system you must install the Service Pack. This can be found in the **`D:\I386\SPx`** directory on the *Diagnostics & Recovery CD-ROM*. To install the Service Pack, double-click on the **`SP4I386.EXE or UPDATE.EXE`** file, as appropriate.

Changing the Hard Disk

If the hard disk is corrupted and you can no longer use it, you should replace it with a new hard disk drive. Refer to “Upgrading the Hard Disk Drive” on page 48.

If the replacement hard disk drive is brand new, you will need to partition and format the drive. Refer to your operating system documentation for information on how to do this.

BIOS Problems

Many problems with your PC can be solved by updating (flashing) the PC’s BIOS (Basic Input Output System). The BIOS is a set of program routines that gives the PC its fundamental operational characteristics.

Updating Your PC’s BIOS

Updating (flashing) your BIOS is a simple procedure that involves booting your PC from a floppy disk containing the new BIOS.

The latest BIOS for your PC along with instructions on updating can be downloaded from HP’s Support Web site at:
`www.hp.com/go/vectrasupport`.

Recovering from a BIOS Update Failure

Although the BIOS update (flashing) process is very well protected, there is always the possibility of a failure. This may occur, for example, if there is a power failure while the BIOS is being updated. To avoid having to replace the motherboard due to corrupted EEPROM, follow this recovery procedure to restore the contents of EEPROM:

1 Create a bootable floppy disk in MS-DOS.

2 Copy the BIOS image you require (for example, **`HZxxxx.FUL`**), and **`phlash.exe`** and **`platform.bin`** onto the bootable floppy disk.

3 Add the following line to the floppy’s **`AUTOEXEC.BAT`** file:
`Phlash/c/mode=3 HZxxxx.FUL`.

4 Remove the PC's cover and set system board switch 2 (BIOS Crisis Recovery) to ON.

5 Replace the PC's cover and insert the floppy disk into the floppy drive.

6 Power on the PC to flash the BIOS.
When this process is complete, you will hear a long beep.

NOTE

The power button is protected in BIOS update mode, and will appear inactive even after the update procedure has finished.

To power off the system after the update, press and hold the power button for at least 4 seconds.

7 Power off the PC and remove the PC's cover.

8 Reset system board switch 2 (BIOS Crisis Recovery) to OFF and replace the PC's cover.

HP Setup Program

Follow these instructions to check your PC's configuration when you first use the PC:

First, Turn On or Restart Your PC

If your PC is off, turn on the display and then the PC.

If the PC is already turned on, save your data, exit all programs and restart your PC. For Windows NT 4.0, Windows 95 or Windows 98, use the **Shut Down – Restart your computer** command in the **Start** menu. This command will automatically exit the operating system and restart the PC. For operating systems such as Windows NT 3.51, you must exit the operating system, then manually switch off and then on the PC.

To Go to the HP Summary Screen

While the *Vectra* logo appears on your display, press **Esc**. This will take you to the HP Summary Screen. The Summary Screen will appear for only a short time. To retain the screen indefinitely (until you decide to leave it), press the **Pause** key.

The summary screen shows the basic configuration of your PC, such as the amount of main memory.

To Go to the Setup Program

To go immediately into the *Setup* program while the *Vectra* logo appears on your display (and bypass the Summary Screen), press **F2** instead of **Esc**.

The *Setup* program allows you to view and change the configuration of your PC, such as the passwords, standby (power saving) mode, IRQ settings and boot device order.

Device Boot Order

Boot Menu for the Current Startup Only

The current startup Boot menu gives the order of devices which the PC attempts to start or "boot" from (for example, the floppy drive first, the CD-ROM drive second, the hard disk drive third, and lastly the network). From this menu you can choose the device to boot from *for the current startup*.

To Go to the Current Startup's Boot Menu

To go to the current startup Boot menu while the *Vectra* logo appears on your display, press **F8**.

Boot Menu for the Default Startup

You can also enter the *Setup* program to change the boot order for *all startups*. To do this, go to the "Boot Device Priority" submenu of the Boot menu in the *Setup* program, accessed by pressing **F2** at startup.

Boot Menu for Hard Disk Drives

In the *Setup* program, you can also select the hard disk drive to boot from if there is more than one hard disk drive installed. To do this, go to the "Hard Disk Drives" submenu of the Boot menu in the *Setup* program.

NOTE

If your PC comes with an IDE hard disk drive, it will by default boot from the hard disk drive when you first start your PC.

More Troubleshooting for Drives

This section provides more information on how to solve problems with your disk drives.

WARNING

Be sure to disconnect the power cord and any telecommunication cables from your computer before you remove the cover to check the cable connections or jumper settings.
To avoid electric shock and harm to your eyes by laser light, do not open the CD-ROM drive enclosure. The CD-ROM drive should be serviced by service personnel only. Refer to the label on the CD-ROM for power requirements and wavelength. This PC is a class 1 laser product. Do not attempt to make any adjustment of the laser unit.

If the Floppy Drive Does Not Work

1 Ensure you are using a formatted diskette and it is inserted correctly.

2 Make sure that the Flexible Disk Drives/Floppy Disk Controller option in the *Setup* **Advanced** menu is enabled

3 Clean the floppy drive using a diskette cleaning kit.

- Check that the floppy drive has been enabled in the *Setup* program, accessed by pressing **F2** at startup.
  - The **Flexible disks** field in the **Hardware Protection** submenu (**Security** menu group) in *Setup* should be **unlocked**.
  - The **Start from floppy** field in the **Boot Devices Security** submenu (**Security** menu group) in *Setup* should be enabled.
  - The **Write on flexible disks** field in the **Hardware Protection** submenu (**Security** menu group) in *Setup* should be **unlocked**.

4 Check that the drive's power and data cables are correctly connected.

If your Hard Disk Does Not Work

- If you receive a S.M.A.R.T. alert, this indicates that your hard disk drive is defective. Carry out an immediate data backup, then contact HP Support at **www.hp.com/go/vectrasupport** to ask for a replacement hard disk drive.
- Check that the disk power and data cables are correctly connected (refer to Drive Connectors, on page 46).
- Check that the hard disk drive has been **unlocked** (refer to the **Hardware Protection** submenu (**Security** menu group) in the HP *Setup* program, accessed by pressing **F2** at startup). There is also an option in the *Setup* program that lets you disable or enable boot on hard disk drive (refer to the **Boot Devices Security** submenu (**Security** menu group) in the *Setup* program).
- Check that the hard disk drive has been detected (refer to the **IDE Devices** submenu (**Advanced** menu group) in the *Setup* program, accessed by pressing **F2** at startup).
- Check that the on-board Bus IDE is enabled if you are using the integrated IDE controller (refer to the **IDE Devices** submenu (**Advanced** menu group) in the *Setup* program, accessed by pressing **F2** at startup).

If the Hard Disk Activity Light Does Not Work

If the hard disk activity light does not flicker when the PC is accessing the hard disk drive:

- Check that the control panel connector is firmly attached to the system board.
- Check that the disk power and data cables are correctly connected.

NOTE

If you are using a hard disk drive with a controller board (a SCSI hard disk, for example), the activity light does not flicker when the PC is accessing the hard disk drive.

If the CD-ROM Drive Has a Problem

CD-ROM Drive Does Not Work

1 Check that all cables (data, power and audio) have been properly connected.

2 Check that a CD-ROM is inserted in the drive.

3 Check that the drive's lens is not dirty or damaged.

- Verify that the drive is declared in the HP Setup program (**Advanced ➪ IDE Devices**), accessed by pressing **F2** at startup.
- Verify that the **Local Bus IDE Adapter** parameter is set to **Both, IRQ 14/15** the HP *Setup* program *(***Advanced ➪ IDE Devices**), accessed by pressing **F2** at startup.

4 If you intend to boot from the CD-ROM drive, verify that:

- **Start From IDE CD-ROM** is enabled in the HP *Setup* program (**Security ➪ Boot Devices Security**), accessed by pressing **F2** at startup.
  - **ATAPI CD-ROM** is placed before **Hard Drive** in the HP *Setup* program (**Boot ➪ Boot Device Priority**) accessed by pressing **F2** at startup.
  - **Removable Media** is prioritized after pressing **F8** at startup.

5 For further information refer to the manual supplied with the drive.

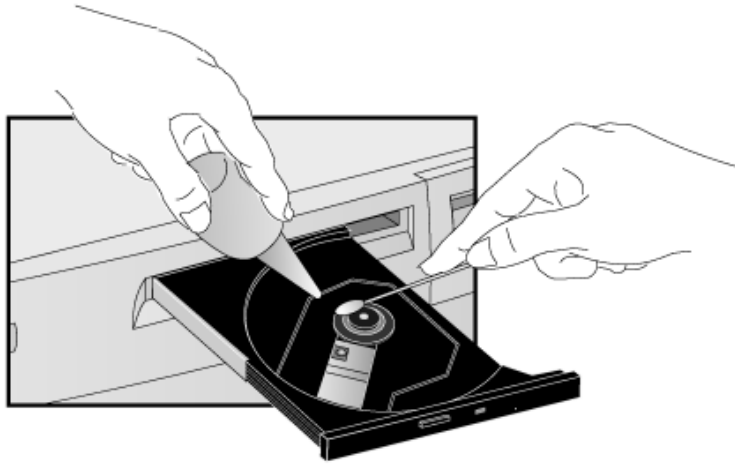
CD-ROM Drive is Idle

If the CD-ROM drive does not appear to be working, try accessing the disk by clicking on the CD-ROM drive icon or drive letter assigned to the CD-ROM drive by your operating system.

Care and Cleaning

CAUTION

To avoid damaging the drive's lens, do not apply pressure in the lens area.



1 If there are small particles on the drive's lens, use a manual air blower to gently remove it.

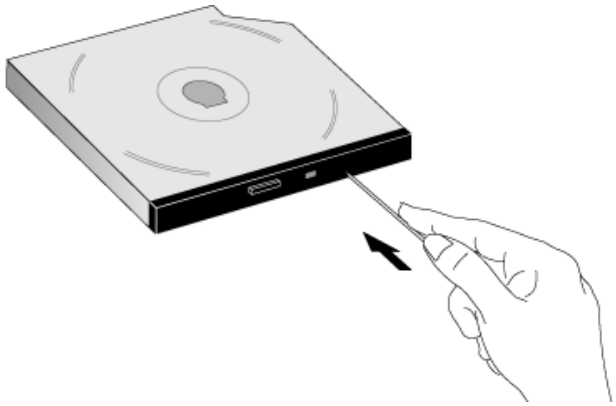
2 If there are fingerprints or grease on the drive's lens, use a cotton bud soaked in B4 No.2 (Nihon Menbo) to gently remove it.

CD-ROM Drive Door Does Not Open

If you have difficulty removing a CD-ROM from the CD-ROM drive (during a power failure for example), you can use the manual eject button.

To eject a CD-ROM using the manual eject button:

1 With a thin, solid rod, such as the end of a paper clip, push the CD-ROM drive's manual eject button.



2 The CD-ROM drive door will be released, opening slightly. Carefully pull it open fully and retrieve the CD.

3 To close the CD-ROM drive door, push it gently closed without forcing it. The CD-ROM drive door may not close completely until it is fully functional (for example, when the power comes back on).

Hewlett-Packard Support and Information Services

You can learn more about HP service and support from the support Web site:

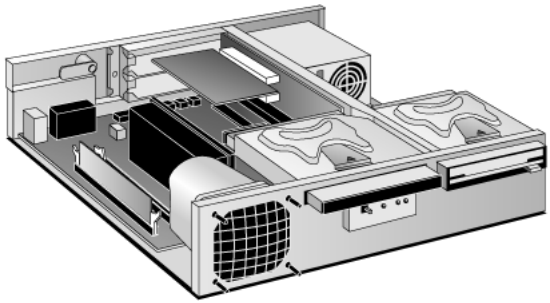
www.hp.com/go/vectrasupport.

Collecting Information on Your PC Before Contacting Support

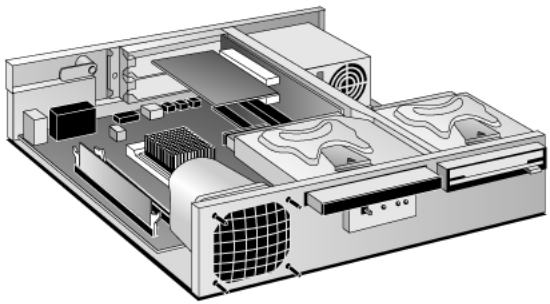
Take a piece of paper and note down some of the information mentioned below. This will help HP support deal with your problem quickly and efficiently:

PC Description	
Model number	See label on the right side of your PC (refer to page iv)
Serial number	See label on the right side of your PC (refer to page iv).
RAM • Number of megabytes installed • HP RAM or RAM from another manufacturer	• The amount of RAM is displayed on the Summary Screen, accessed by pressing **Esc** during start-up. • There may be some compatibility problems with non-HP RAM.
Question or Problem	
Write down a brief description of the problem	
Frequency	How often has the problem occurred?
Run OK?	How long has the PC been running normally?
Recent changes to the PC	Have there been any recent changes made to the PC?
Hardware Configuration	
Which BIOS version is used?	The BIOS version is displayed on the Summary Screen, accessed by pressing **Esc** during start-up.
Any BIOS parameter changes?	Did the problem occur after changes were made to the BIOS using the Setup program?
Make a list of slots and interrupts used by additional cards (for example, LAN, sound and SCSI)	This is to check for interrupt conflicts. You can find IRQs by running DiagTools (see page 10) and slot numbers by looking at the Summary Screen, accessed by pressing **Esc** during start-up.
Operating System	
Are you using the original operating system software that came preloaded on your PC?	
If no, what is the operating system version?	Select **Settings** ➪ **Control Panel** from the **Start** menu, then click on the **System** icon. The operating system version is displayed under System.
Any operating system-generated error messages	Please note down exact text of error message.
Any errors during boot (Power-On Self Test). This test checks all installed components.	Any POST errors will be displayed on your monitor screen or signalled by beep codes.

With a Pentium Processor



With a Celeron Processor



Expandability:
Slim Front Access Shelf
For a slim CD-ROM drive (already installed on some models)
Hard Disk Drive
You can replace the hard disk drive with a larger one
Main Memory Modules
(100 MHz SDRAM only)
Two memory modules for up to 512 MB
Up to Two Accessory Boards

How to Install or Replace Accessories In Your PC

This chapter explains in detail how to install accessories, such as extra memory, accessory boards, and additional disk drives, in your PC. For information about supported accessories, refer to HP's web site **`www.hp.com/go/vectraaccessories`**.

Before Starting

Read this section before replacing any components.

WARNING

For your safety, never remove the PC's cover without first removing the power cord from the power outlet, and any connection to a telecommunication network. Always replace the cover before switching the PC on again.

CAUTION

Static electricity can damage electronic components.
Turn all equipment OFF. Don't let your clothes touch the accessory.
To equalize the static electricity, rest the accessory bag on top of the PC while you are removing the accessory from the bag. Handle the accessory as little as possible and with care.

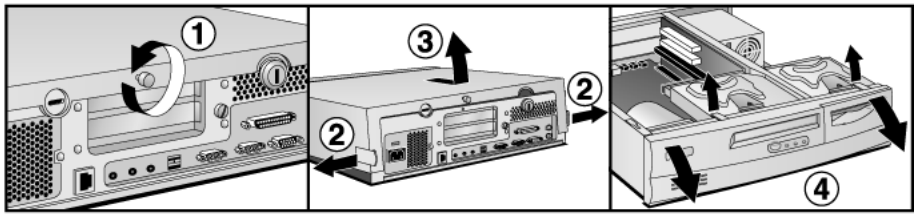
Removing and Replacing the Cover & Front Panel

Removing the Cover

Before removing the cover, switch off the monitor and PC, disconnect all power cords and any telecommunication cables. If necessary, unlock the cover at the rear of the PC.

1 Unfasten the thumb screw at the rear of the PC, open the rear latches and slide the cover backwards to remove it.

2 If replacing the fan, remove the front panel.

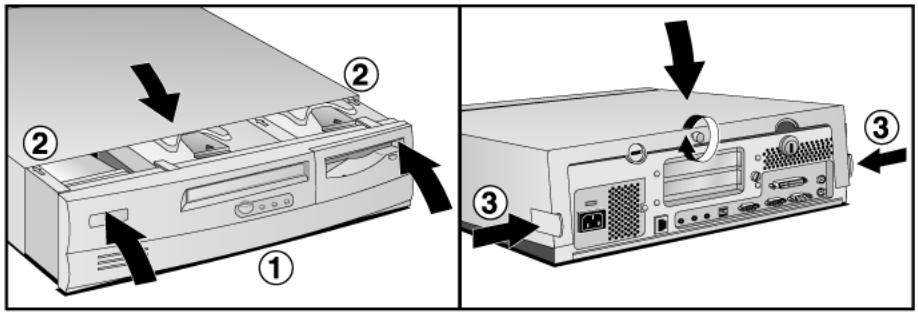


Replacing the Cover

Before replacing the cover, ensure that all internal cables are properly connected and safely routed.

1 If necessary, replace the front panel.

2 Align the cover with the arrows indicated and replace it.



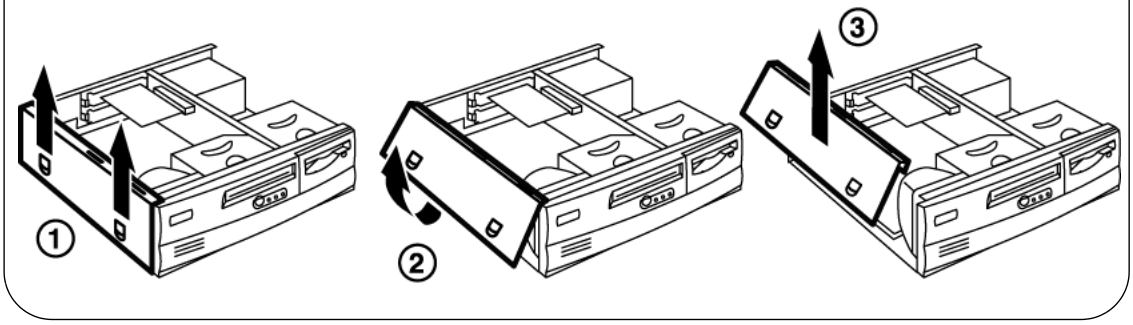
3 Close the latches on the rear of the PC and fasten the thumb screw.

4 If required, lock the cover at the rear of the PC.

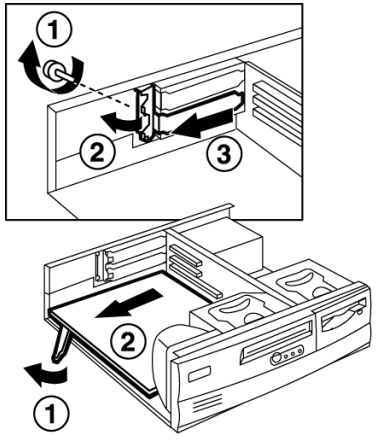
The Label Inside Your PC

Your PC contains a label that can be used as a simplified guide to help you install accessories and replace components.

Shows how to remove the side panel

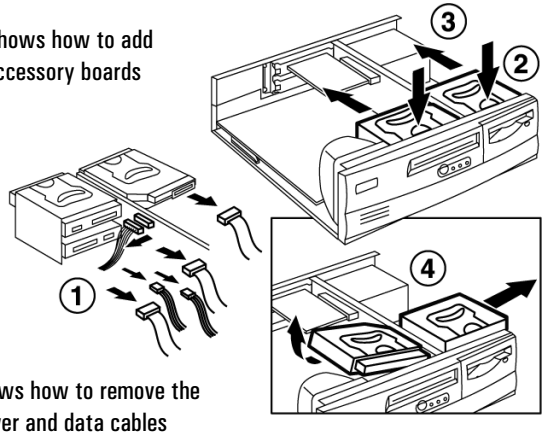


Shows how to remove the hard disk, floppy disk and CD-ROM drives



Shows how to remove the system board

Shows how to add accessory boards

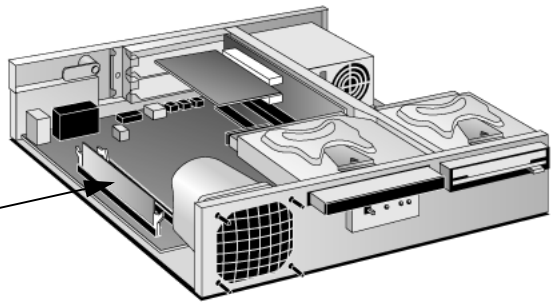


Shows how to remove the power and data cables before removing a hard disk, floppy disk or CD-ROM drive.

Upgrading the Main Memory

CAUTION

Static electricity can damage electronic components.
Turn all equipment OFF. Don't let your clothes touch the accessory.
To equalize the static electricity, rest the accessory bag on top of the PC while you are removing the accessory from the bag. Hold the accessory by the edges, being careful not to touch the components or connectors.

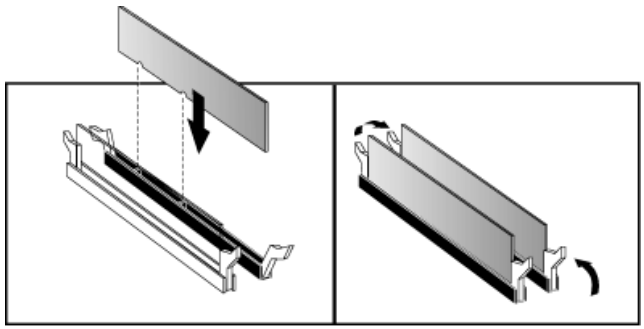


Location of Main Memory — modules can be installed in either slot

You can install up to a total of 512 MB 100 MHz SDRAM (two 256 MB modules). Main memory is available in modules of 32 MB, 64 MB, 128 or 256 MB non-ECC.

1 Remove the computer's cover (described in this chapter).

2 Insert the new memory module (aligning it) and close the two tabs.



3 Replace the cover (described in this chapter).

Upgrading Mass Storage Devices

WARNING

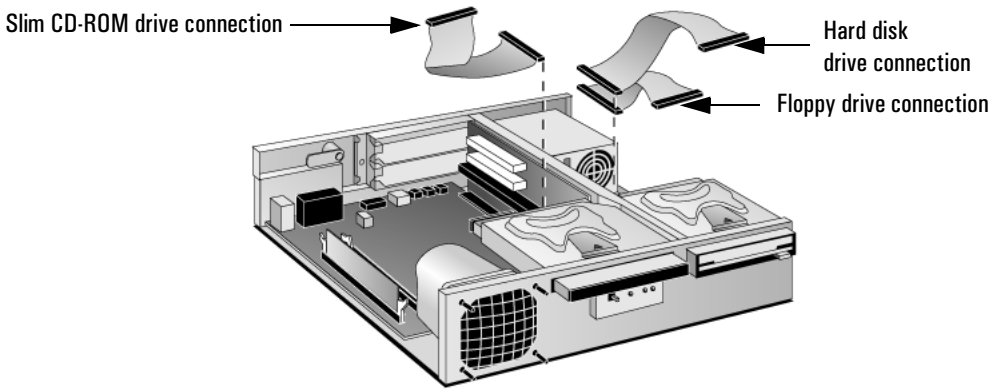
For your safety, never remove the PC's cover without first removing the power cord from the power outlet, and any connection to a telecommunication network. Always replace the cover before switching the PC on again.

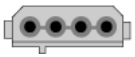
CAUTION

Static electricity can damage electronic components.
Turn all equipment OFF. Don't let your clothes touch the accessory.
To equalize the static electricity, rest the accessory bag on top of the PC while you are removing the accessory from the bag. Handle the accessory as little as possible and with care.

Drive Connectors

Internal drives, such as hard disk and CD-ROM drives, must be connected to data and\or power cables. When replacing these drives, ensure you use the correct data and\or power connectors.



Power Connectors	Number in Desktop	Use for
	1	Hard disk drive
	1	Floppy disk drive

NOTE

There is no separate power connector for the Slim CD-ROM drive.

Which IDE Data Connectors to Use

There are three data cables inside your PC. Two of these are for IDE devices.

- An IDE (Integrated Drive Electronics) hard disk drive cable.
- A second IDE drive cable that supports a single slim IDE device. If you install a slim CD-ROM drive connect it to this cable.
- The third cable is non-IDE and has one connector for a floppy drive.

Up to two IDE devices can be connected to the system board using the IDE data cables.

Selecting the Bootable Hard Disk Drive

To select the IDE hard disk drive to start (boot) from, you must enter the *Setup* program and go to the "Hard Disk Drives" submenu of the Boot menu.

Upgrading the Hard Disk Drive

CAUTION

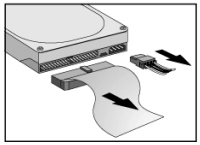
Handle the hard disk drive with care. Avoid shocks and violent movement as this can cause damage to the hard disk drive's internal components.

Make sure that you back up your files before you install a hard disk drive. Refer to your operating system documentation for information on how to do this.

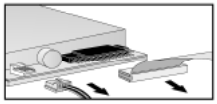
You can install a 3.5-inch hard disk drive in the tray.

1 Remove the computer's cover (described in this chapter).

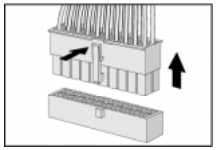
2 Remove all drive connectors.



Hard drive



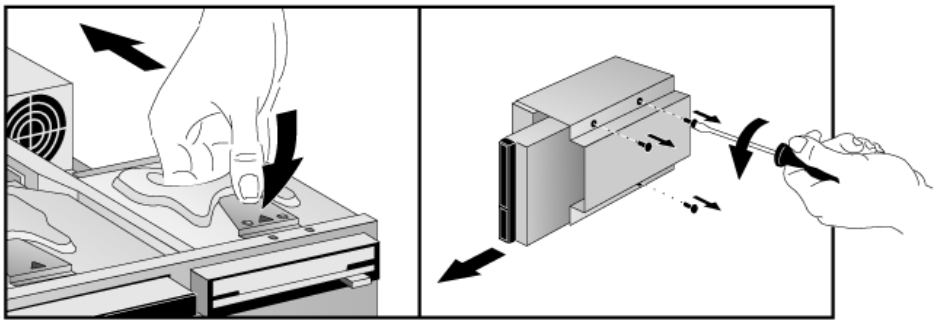
Floppy drive



Main power

3 Press the retaining clip on top of the drive tray and slide it backwards to remove it.

4 Unfasten the screws on the bottom of the drive tray and remove the hard disk drive.

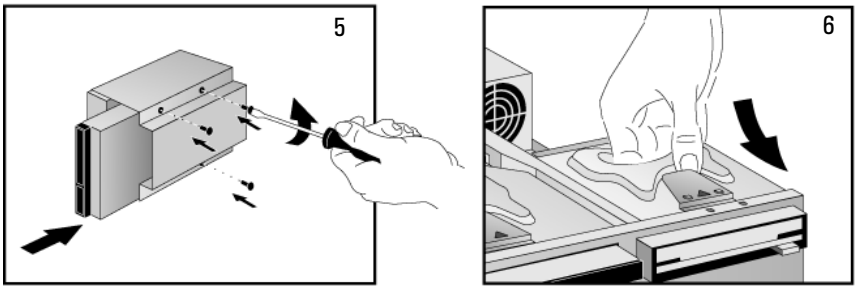


CAUTION

Take care when handling the hard disk drive during installation. A one-quarter inch drop can damage it.

5 Slide the new hard drive into the drive tray (with correct orientation) and fasten the screws.

6 Replace the drive tray.



7 Attach all data and power connectors.

8 Replace the cover (described in this chapter).

9 Verify the new configuration by checking the HP Summary Screen. To access the HP Summary Screen, press **Esc** when the *Vectra* logo appears during startup.

NOTE

If you intend to boot from the newly installed drive, ensure that you have configured *Setup* to do this. Also ensure that you have installed all the required operating system and HP drivers on the newly installed drive. To reinstall operating system and HP drivers, use the *Diagnostics & Recovery CD-ROM* provided with the PC. In addition, you can find the most up-to-date versions of HP drivers on HP's Web site at: **www.hp.com/go/vectrasupport**.

Upgrading Removable Media

WARNING

To avoid electric shock and harm to your eyes by laser light, do not open the laser module. The laser module should be serviced by service personnel only. Do not attempt to make any adjustment to the laser unit. Refer to the label on the CD-ROM drive for power requirements and wavelength. This product is a class 1 laser product.

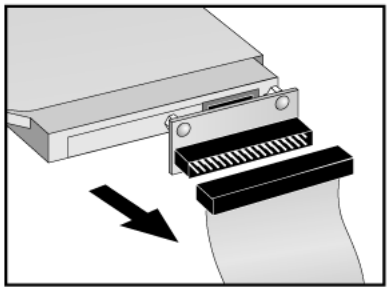
Removable media devices, such as slim CD-ROM drives require front access. You can install a slim CD-ROM drive in the slim front access shelf provided.

Slim CD-ROM Drive

Refer to the drive's manual to see if you must set jumpers or if there is a special installation procedure to follow.

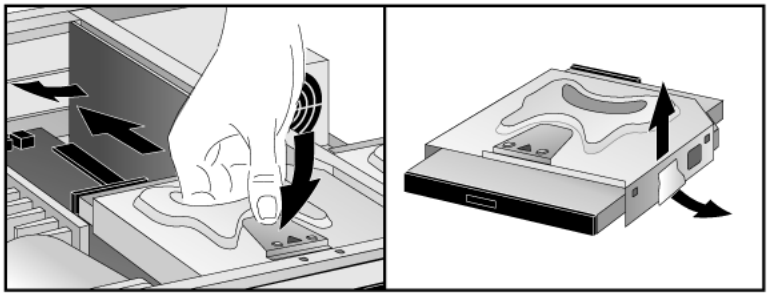
1 Remove the computer's cover (described in this chapter).

2 Remove the drive's connector.



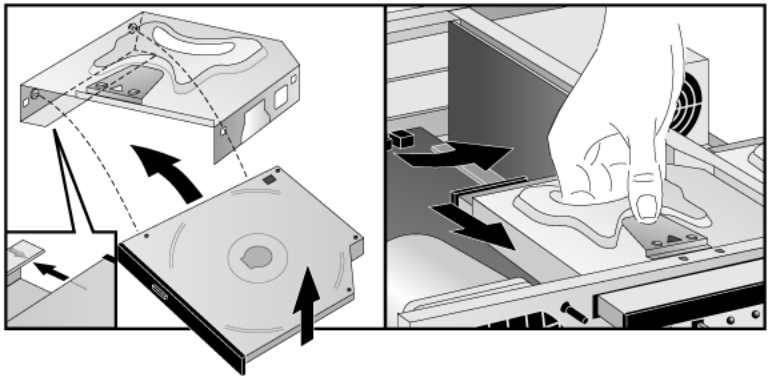
3 Press the retaining clip on top of the drive tray and slide it backwards to remove it.

4 Unlatch the CD-ROM drive to remove it from the drive tray.



5 Align the new CD-ROM drive with the arrow indicated on the drive tray and clip it into position.

6 Replace the drive tray.



7 Attach drive's connector.

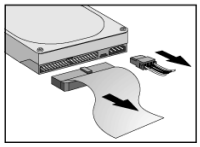
8 Replace the cover (described in this chapter).

9 Verify the new configuration by checking the HP Summary Screen. To access the HP Summary Screen, press **Esc** when the *Vectra* logo appears during startup.

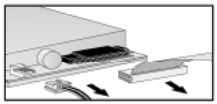
Floppy Disk Drive

1 Remove the computer's cover (described in this chapter).

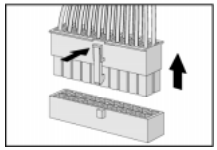
2 Remove all drive connectors.



Hard drive



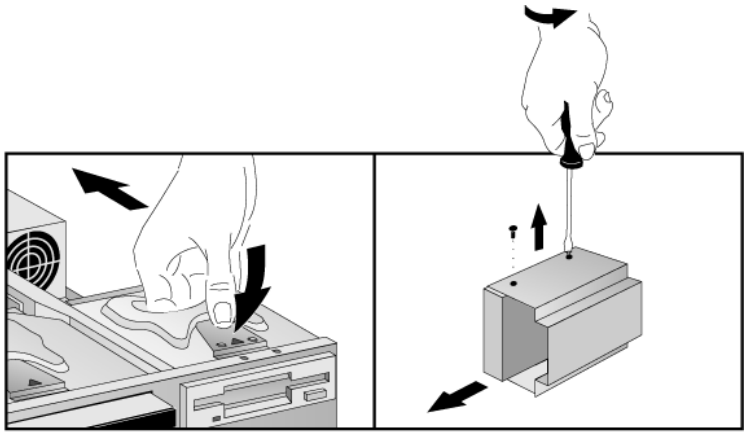
Floppy drive



Main power

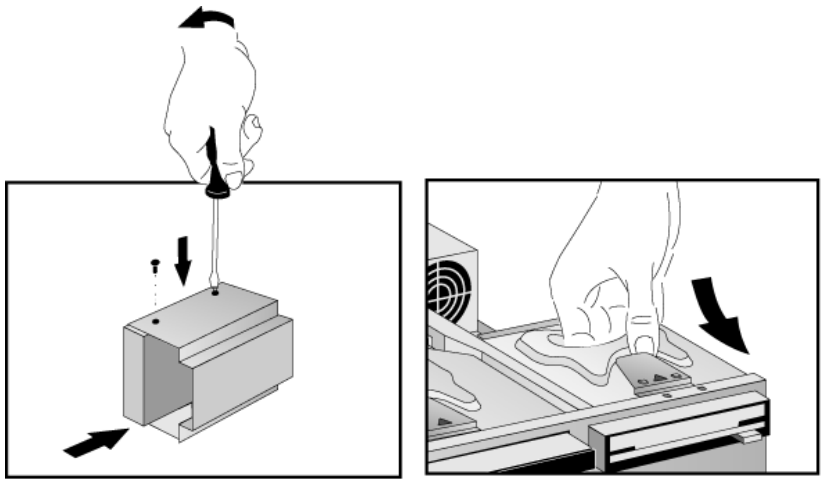
3 Press the retaining clip on top of the drive tray and slide it backwards to remove it.

4 Unfasten the screws on the sides of the drive tray and remove the floppy drive.



5 Slide the new floppy drive into the drive tray (with correct orientation) and fasten the screws.

6 Replace the drive tray.



7 Attach all data and power connectors.

8 Replace the cover (described in this chapter).

Configuring a Device After Installation

After installing a floppy drive, you will need to verify that your PC has correctly identified the new configuration, by viewing the HP Summary Screen. If the configuration is not correct, run the *Setup* program to configure the device. To enter the *Setup* program, press **F2** during startup.

A newly installed CD-ROM may require that you install an appropriate device driver. Refer to your operating system documentation for details. You can obtain the latest drivers from HP's Web site at:

`www.hp.com/go/vectrasupport`.

Installing Accessory Boards

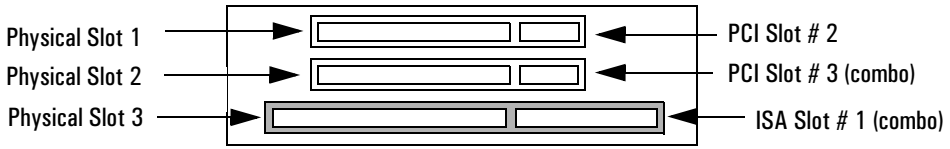
Accessory Board Slots

The PC has two accessory board slots.

NOTE

Only use XT format accessory boards (width less than 10.4 cm or 4.09 inches) that are less than 17.6 cm (6.9-inches) in length.

Accessory Board Connectors



- PCI slot #2 (the top slot) can be used for a standard length (less than 17.6 cm or 6.9-inches long) XT format 32-bit PCI board.
- PCI slot #3 can be used for a standard length (less than 17.6 cm or 6.9-inches long) XT format 32-bit PCI board, or
- ISA slot #1 can be used for a half-length XT format 16-bit ISA board.

CAUTION

When installing an accessory board in physical slot 3, ensure you do not bend the accessory board slot's connector pins.

To avoid this, partly remove the system board before installing the accessory board.

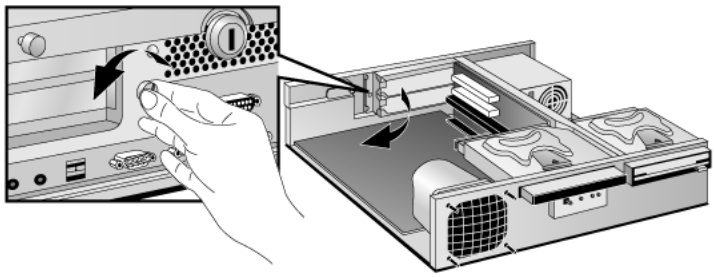
Installing an Accessory Board

NOTE

Only use XT format accessory boards (width less than 10.4 cm or 4.09 inches) that are less than 17.6 cm (6.9-inches) in length.

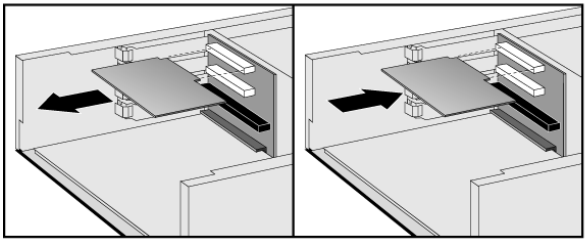
1 Remove the computer's cover (described in this chapter).

2 Unfasten the retaining bracket and rotate it open.

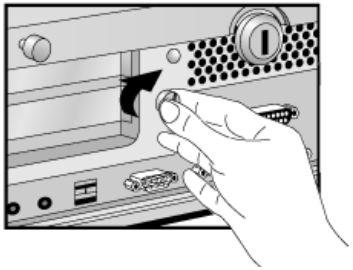


3 Hold the old board firmly and carefully pull it out.

4 Aligning the new board carefully, slide it into position and press it firmly into the slot.



5 Rotate the retaining bracket closed and fasten it.



6 Replace the cover (described in this chapter).

Configuring Accessory Boards with Plug and Play

Plug and Play is an industry standard for automatically configuring your PC's hardware resources and the accessory boards installed in it. Your PC has configurable support for Plug and Play in the BIOS.

All PCI accessory boards are Plug and Play, although not all ISA boards are. Check the accessory board's documentation if you are unsure.

When you start your PC after installing an accessory board, the Plug and Play BIOS automatically detects which hardware resources (IRQs, DMAs, memory ranges, and I/O addresses) are used by PC components (such as the keyboard, the communications ports, network adapters, and accessory boards).

Windows 95 or Windows 98

Operating systems that support Plug and Play, such as Windows 95, will automatically detect a newly installed Plug and Play accessory board and install the driver for this device, if the driver is available.

Windows NT 4.0

For operating systems that do not support Plug and Play, such as Windows NT 4.0, refer to the operating system documentation for information about installing accessory boards.

In Windows NT 4.0, click the **Start** button then click **Help**. You can use the contents or index to find information about installing devices. Windows NT 4.0 helps you through the installation of devices such as modems and sound boards.

NOTE

After installing a new device in Windows NT 4.0, you must re-install the Microsoft Service Pack to update the operating system for your PC. To do this, click the **Start** button then select **Programs – Windows NT Update**.

Configuring non-Plug and Play ISA Accessory Boards

If you install an ISA accessory board that is not Plug and Play, you will need to configure the board before your PC can use it. For instructions about configuring the board, refer to the documentation that came with the board.

For guidelines on available IRQs and I/O addresses in your PC, refer to page 70. Some operating systems, such as Windows 95, can display the IRQs and I/O addresses currently used by your PC. Refer to the operating system documentation for more information.

Refer to the documentation supplied with the operating system for details on your operating system's capabilities and restrictions concerning non-Plug and Play accessory boards.

Resetting the PC's Configuration Data

If your PC is having difficulties recognizing the ISA board, try resetting the PC's data configuration. This will clear any old configuration data that is no longer used. To do this, enter the PC's *Setup* program, set the **`Reset Configuration Data`** parameter to **`Yes`**, and restart the PC. To enter the *Setup* program, press **`F2`** during startup.

Changing the Battery

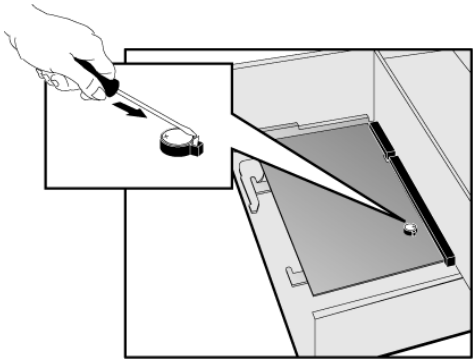
WARNING

There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. The battery in this PC is a lithium battery which does not contain heavy metals, nevertheless, in order to protect the environment, do not dispose of batteries in household waste. Please return used batteries to the shop from which you bought them, or to the dealer from which you purchased your PC, or to HP, so that they can either be recycled or disposed of in an environmentally sound way. Returned used batteries will be accepted free of charge.

You should order replacement battery HP 1420-0356 from your local Sales and Service office, or a "CR2032 type" battery, which is available from most local stores.

After removing the computer's cover:

1 Remove the old battery by pressing the retaining clip with a screwdriver and lifting the battery clear of the battery holder.



2 Place the new battery in the battery holder, with the "+" on top, and ensure that it is properly seated.

After installing a replacement battery, replace the computer's cover and run the *Setup* program to reconfigure the computer. You enter *Setup* by pressing **F2** at startup.

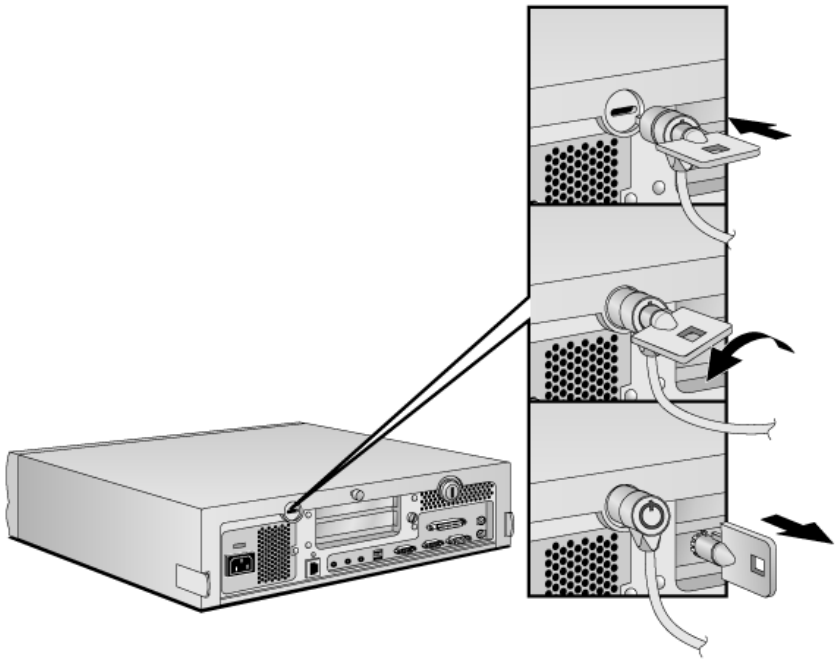
Installing a Security Cable

You can secure the PC to your desk, or any other fixed object, using a Kensington™ security cable. The PC has a slot at the rear for securing the cable.

1 Insert the lock into the slot located at the rear of the PC.

2 Turn the key to lock the cable to the PC.

3 Remove the key and store it in a safe place.



NOTE

The Kensington™ security cable is not an HP accessory. It cannot be ordered from HP. Contact your reseller for more information.

3

Security and Manageability Features

This chapter explains how to use the security features of your PC, such as passwords and hardware monitoring.

Setting Passwords

Your PC has two types of passwords:

- BIOS passwords.

  You can set two passwords, the Administrator password and the User password, to provide two levels of protection for your PC. You set both passwords in the Security menu group of the *Setup* program.

- Software passwords.

  Operating systems such as Windows NT 4.0 and Windows 95 have a password facility. Refer to your operating system documentation for more information.

Tips for Using Passwords

- Set a User password to prevent your PC from being started in your absence.
- Set an Administrator password to protect your PC's *Setup* configuration.

Setting the Administrator Password

Set the Administrator password to protect the PC's configuration in *Setup*. An Administrator password can provide a power-on password prompt to prevent your PC being started or used in your absence.

If you have set both an Administrator password and a User password, and you enter the *Setup* program by using the User password, you will be restricted in your ability to change setup items. If you enter the *Setup* program with an Administrator password, you will have no restrictions.

How to Set an Administrator Password

To set an Administrator password:

1. Enter the *Setup* program, by pressing **F2** during startup.
2. Select the **Security** menu group.
3. Select the **Administrator Password** submenu.
4. Choose the **Set Administrator Password** setup item. You will be asked to enter your password twice. Save your changes when you exit the *Setup* program by selecting "Exit", then "Save and Exit".

To remove the password, follow the same procedure as to set a password. You will be asked to enter the existing password first. Then, for the new password, leave the password field blank and press **Enter**. To confirm your choice, press **Enter** a second time.

Setting the User Password

A User password can only be set if an Administrator password has already been set.

The User Password provides these security features:

- automatic lock at startup to enable remote management, but prevent unauthorized access
- a power-on password prompt to prevent your PC being started in your absence
- a keyboard lock timer to automatically lock your PC after a specified number of minutes of keyboard inactivity—you must type the password and press **Enter** to unlock the keyboard
- blank the screen to conceal confidential data when the PC is locked.

If you have set both an Administrator password and a User password, and you enter the *Setup* program by using the User password, you will be restricted in your ability to change setup items. If you enter the *Setup* program with an Administrator password, you will have no restrictions.

How to Set a User Password

To set a User password:

1 Enter the *Setup* program, by pressing **F2** during startup.

2 Select the **Security** menu group.

3 Select the **User Password** submenu.

4 Choose the **Set User Password** setup item. You will be asked to enter your password twice. Save your changes when you exit the *Setup* program by selecting “Exit”, then “Save and Exit”.

To remove the password, follow the same procedure as to set a password. You will be asked to enter the existing password first. Then, for the new password, leave the password field blank and press **Enter**. To confirm your choice, press **Enter** a second time.

Hardware Monitoring with HP TopTools

If you have HP TopTools, the Health tool in the HP TopTools for Desktops agent interface provides the following tools for hardware monitoring:

- Status, for a general overview of your PC's health, showing an indicator light and a text message for each health feature
- Disk reliability, for the health status of your IDE hard disk drives. Non-IDE disks such as SCSI are not supported by this tool
- Power-on self test information, for the details of power-on test failures as well as recommendations for remedy
- Chassis Intrusion, which alerts your system administrator if your PC's cover is removed
- Alert Log, which allows you to view alerts generated by DMI-enabled applications such as TopTools and McAfee VirusScan®

HP TopTools also includes a Crash Monitor module that can be downloaded and installed together with TopTools. This module helps you to save your data if an application crashes. Since crashes are often caused by low system resources, TopTools can send out alerts when these resources are running low.

You can use the HP TopTools Device Manager to carry out remote updates from the Web on video, LAN, IDE device and SCSI device drivers. PCs whose drivers are being updated must have TopTools for Desktops 4.0 agent or higher installed.

HP TopTools is provided on preloaded Windows 95 and Windows NT 4.0 models. It is also available free of charge on the HP Web site at **`www.hp.com/go/manageability`**.

To start TopTools or to consult the TopTools online help in Windows NT 4.0 or Windows 95, click the **`Start`** button, then select **`Programs`**, and click **`HP TopTools for Desktops`**.

For more information about HP TopTools, connect to HP's Web site at **`www.hp.com/go/manageability`**.

Master Pass Key System

The Master Pass Key System is an accessory that enables a system administrator to open all machines in an installed base with a single key. The Master Pass Key System can be purchased from any authorized HP reseller.

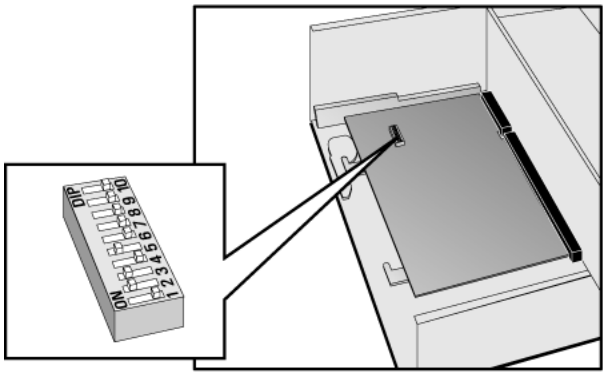
For more information, refer to HP's Support web site at **www.hp.com/go/vectraaccessories**.

Technical Information

System Board Switches

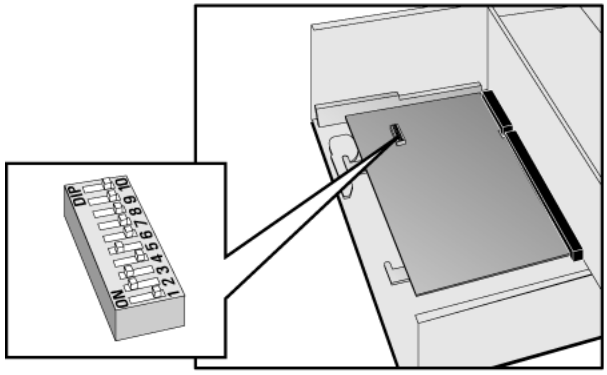
With Pentium Processor

The position of system board switches is shown below:



Switch	Switch function:	
1	Reserved	Do not use - OFF (default)
2	BIOS Crisis Recovery	Should normally be kept in the OFF position. Used in case of power loss during BIOS update. Refer to flash.txt in the BIOS package downloadable from the HP Web site.
3	Keyboard power-on:	ON = enabled (default) OFF = disabled
4	Clear Password:	OFF = disabled (default) ON= enabled / clear User and Administrator passwords
5	Clear CMOS:	OFF = normal (default) ON = clear CMOS and reload default values in *Setup*
6- 9	Processor speed, refer to the table on your PC's system board.	
10	Reserved	Do not use - OFF (default)

With Celeron Processor



Switch	Switch function:	
1	Reserved	Do not use - OFF (default)
2	BIOS Crisis Recovery	Should normally be kept in the OFF position. Used in case of power loss during BIOS update. Refer to flash.txt in the BIOS package downloadable from the HP Web site.
3	Keyboard power-on:	ON = enabled (default) OFF = disabled
4	Clear Password:	OFF = disabled (default) ON = enabled / clear User and Administrator passwords
5	Clear CMOS:	OFF = normal (default) ON = clear CMOS and reload default values in *Setup*
6- 9	Processor speed, refer to the table on your PC's system board.	

Even though the Celeron processor's speed settings are automatic, HP recommends that you set the system board switches to the appropriate settings.

IRQs, DMAs, and I/O Addresses Used by Your PC

IRQs used by PC The IRQ, DMA, and I/O address mappings shown here are for a PC with a basic configuration. The resources used by your PC may vary, depending upon which accessory boards are bundled with the PC.	IRQ0 IRQ1 IRQ2 IRQ3 IRQ4 IRQ5 IRQ6 IRQ7 IRQ8 IRQ9 IRQ10 IRQ11 IRQ12 IRQ13 IRQ14 IRQ15	system timer keyboard system cascade used by serial port if enabled used by serial port if enabled free if not used for parallel port floppy disk controller used by parallel port if enabled real-time clock available for PCI devices, if not used by ISA board or USB port available for PCI devices, if not used by ISA board or USB port available for PCI devices, if not used by ISA board or USB port mouse co-processor integrated IDE hard disk drive controller free if not used by second IDE controller
DMAs used by PC	DMA 0 DMA 1 DMA 2 DMA 3 DMA 4 DMA 5 DMA 6 DMA 7	free free if not used for parallel port in *Setup* floppy disk controller free if not used for parallel port in *Setup* used to cascade DMA channels 0-3 free free free

NOTE

An audio card will use at least 1 IRQ and 1DMA.
A LAN card will use at least one IRQ.
A video card will use one IRQ.

I/O Addresses used by PC	96h - 97h HP reserved 170h - 177h, 376h IDE secondary channel 1F0h - 1F7h, 3F6h IDE primary channel 278h - 27Fh (and 3A8h) parallel port 2E8h - 2EFh serial port 2F8h - 2FFh serial port 378h - 37Fh parallel port 3B0h - 3DFh (3B0-3BB,300-3DF) integrated video graphics controller 3E8h - 3EFh serial port 3F0h - 3F5h, 3F7h integrated floppy disk controller 3F8h - 3FFh serial port 678h - 67Bh parallel port if ECP mode is selected 778h - 77Bh parallel port if ECP mode is selected

Power Consumption

All models have an EPA-compliant power management system.

Total Power Consumption

Power Consumption	Windows NT 4.0		Windows 95	
	115V / 60Hz	230V / 50Hz	115V / 60Hz	230V / 50Hz
Operating	≤ 31 W	≤ 31 W	≤ 31 W	≤ 31 W
Standby	≤ 25 W	≤ 25 W	≤ 25 W	≤ 25 W
Off	≤ 4.0 W	≤ 4.0 W	≤ 4.0 W	≤ 4.0 W

Physical Characteristics

Characteristic	Description
Weight (excluding display and keyboard)	7.54 kg (16.5 pounds)
Dimensions	37 cm (W) by 9.5 cm (H) by 39 cm (D) (14.6 inches by 3.7 inches by 15.4 inches).
Footprint	0.144 m^2
Storage temperature	–40 ºC to 70º (–40 ºF to 158 ºF)
Storage humidity	8% to 85% (relative), non-condensing at 40 ºC (104 ºF)
Operating temperature	10 ºC to 35 ºC (50 ºF to 95 ºF)
Operating humidity	15% to 80% (relative)
Power supply	Input voltage: 100 – 127, 200 – 240V ac (all models have voltage selection switch) Input frequency: 50/60 Hz Maximum output power: 90W continuous

Acoustic Noise Emission

Acoustic Noise Emission (Measured according to ISO 7779)	Sound Power (typical)	Sound Pressure (typical)
Operating	LwA ≤ 35.5 dB	LpA ≤ 26.5 dB
Operating with HDD access	LwA ≤ 36.0 dB	LpA ≤ 31.5 dB
Operating with CD-ROM access	LwA ≤ 44.4 dB	LpA ≤ 40.0 dB
Operating with FDD access	LwA ≤ 35.5 dB	LpA ≤ 34.5 dB

For more information, refer to HP's Support web site at **`www.hp.com/go/vectrasupport`**.

HEWLETT PACKARD
Expanding Possibilities

Troubleshooting Quick Reference

PC won't start	• Check power cord is correctly connected • Check voltage switch is correctly set
PC starts but there is no display	• Check the display is correctly connected and switched ON • Check the display's brightness and contrast settings
PC starts but there may be a software problem	• Refer to the software documentation or the software provider's support web site for information.
PC starts but there may be a hardware problem	• Run the HP DiagTools software to analyze the problem
PC starts but there is a configuration error	• Run the HP *Setup* program to correct the configuration problem
If there is a memory error	• Check memory modules are of the correct type, HP-supported and in the correct sockets
If there is a mouse or keyboard error	• Check power cord is correctly connected • Check the device driver is correctly installed • Check the device configuration in *Setup* • Clean the mouse ball
If there is a floppy disk error	• Try using a known working floppy disk • Check the floppy drive configuration in *Setup* • Check the drive cable is correctly connected
If there is a hard disk or CD-ROM error	• Check the drive configuration in *Setup* • Check the drive cable is correctly connected • Ensure the OS and drivers are installed
If there is a CMOS error	• Check the power cord is connected • Check power cables to system board are correctly connected • Ensure the OS and drivers are installed
If there is a serial or parallel port error	• Check the devices are connected and on line • Check device drivers are installed • Check the device configuration in *Setup* • Try using a known working device

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