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Before Starting

Read this section before installing any accessories.

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 telecommunications network. If a power protection device is fitted to your PC, you must remove the power cord then wait for a complete shutdown of your system before removing the cover. Remove the power protection device cables before any servicing operation. Always replace the cover before switching the PC on again.

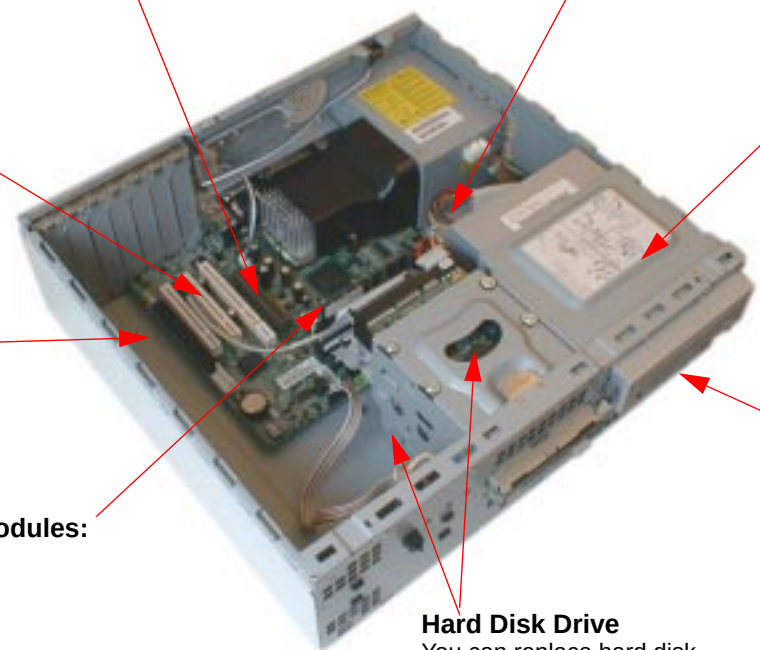
To avoid electric shock and harm to your eyes by laser light, do not open the laser module. The laser module should be serviced by service personnel only. Do not attempt to make any adjustment to the laser unit. Refer to the label on the CD-ROM drive for power requirements and wavelength. This product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

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.

Accessories You Can Install



Internal Speaker
(not shown)

Graphics Memory Extension
Only for models using the integrated graphics controller. Fits into AGP slot.

Front-Access Device Upper Shelf
(Some models already have a CD-ROM, DVD or CD-RW drive installed in this shelf).
CD-ROM drive, DVD drive, CD-RW drive, Tape drive, or Zip drive

Up to Four Accessory Boards
Three PCI and one AGP
Some slots may come with pre-installed boards

Two ISA Slot Extension Kit
(Not shown)
Provides two ISA slots

Front-Access Device Lower Shelf
CD-ROM drive, CD-RW drive, DVD drive, Tape drive, Zip drive or Power Protection Device

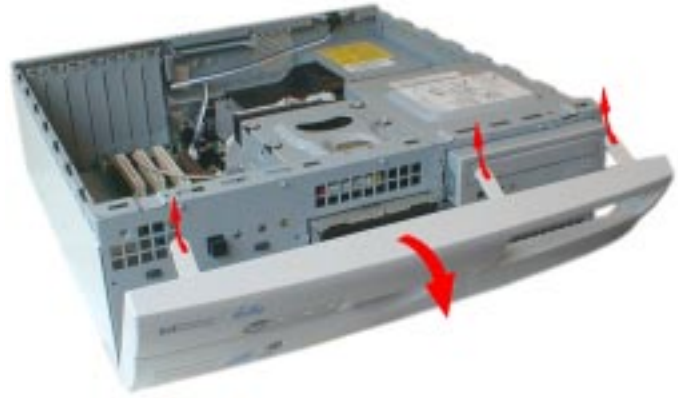
Main Memory Modules:
(133MHz SDRAM)
64 MB kit
128 MB kit
256 MB kit
512 MB kit (you can install only one 512MB module)

Hard Disk Drive
You can replace hard disk drive with a larger one or add a second drive

Removing the PC's Cover

1 Switch off the monitor and PC, disconnect all power cords and any telecommunication cables.
2 If necessary, unlock the cover (with the key) at the rear of the PC.
3 Open the latch and remove the cover.

4 Remove the front panel (if you are adding a front-access device).



Replacing the PC's Cover

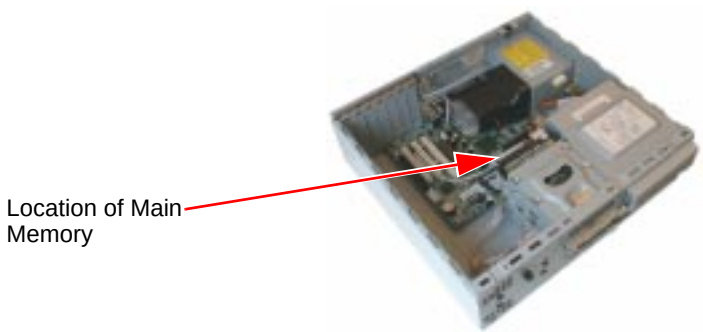
1 Ensure that all internal cables are properly connected and safely routed (not trapped or snagging on anything.)
2 Replace the front panel.
3 Replace the cover, making sure you align the hinges properly.

Upgrading or Replacing Main Memory

NOTE

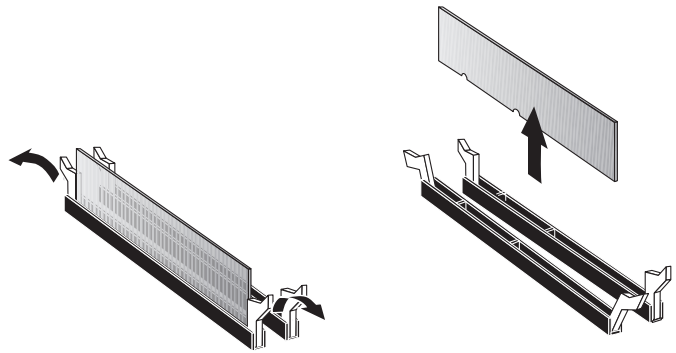
Use only HP memory modules provided for your PC model. The use of other memory modules is not supported. For information about supported HP accessories, connect to the web site **`www.hp.com/go/pcaccessories`**.

You can install up to a total of 512 MB.

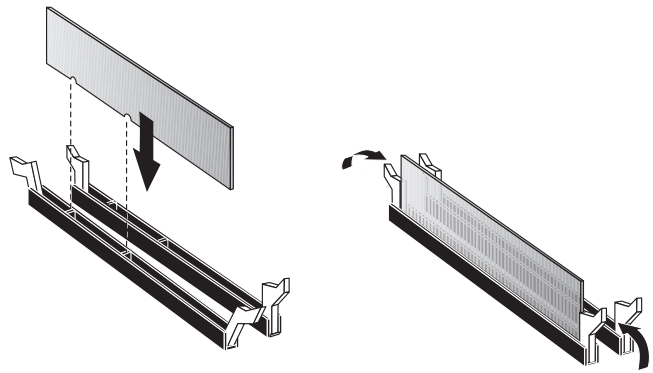


1 Remove the PC's cover (refer to page 4).

2 Open the two tabs and remove the old memory (if required).



3 Line up the two side notches correctly and insert the new memory module, pressing down firmly on the top.

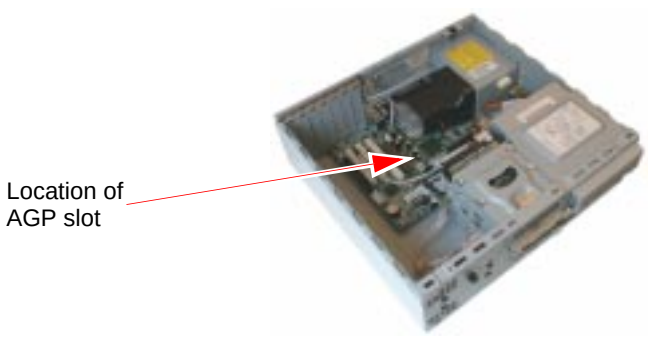


4 Replace the cover (refer to page 5).

Installing More Graphics Memory (some models only)

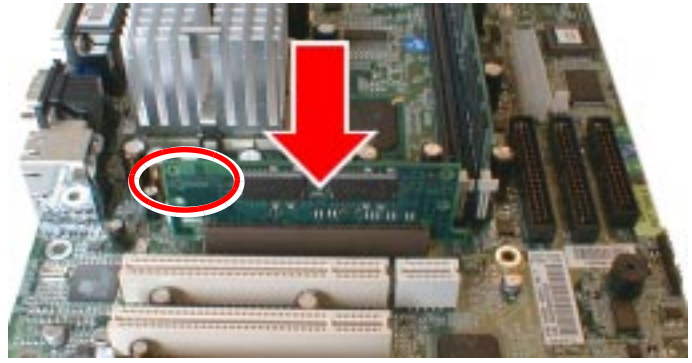
For models that use the integrated graphics controller, you can install a Graphics Memory Extension card to increase the amount of memory available for graphics.

The Graphics Memory Extension card fits into the AGP accessory board slot on the system board.



1 Remove the PC's cover (refer to page 4).

2 With the arrow pointing to the rear Input/Output panel, align the card carefully and press it firmly into the slot.



3 Open the plastic retaining clip and slide it onto the AGP slot.

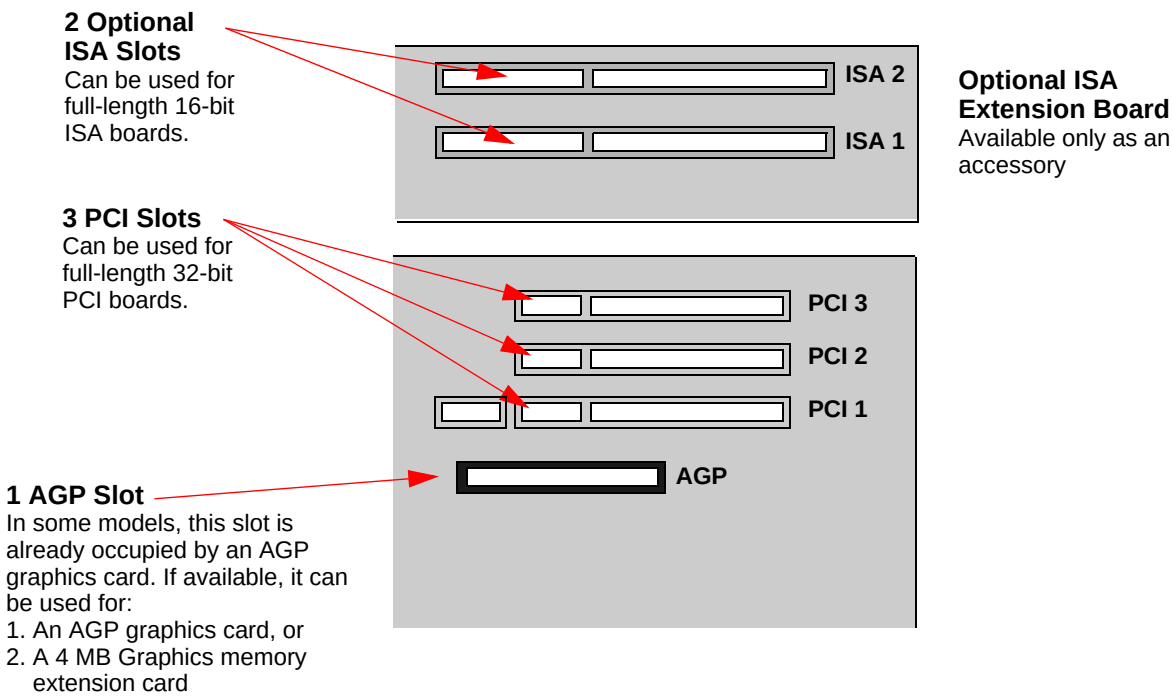
Installing More Graphics Memory (some models only)

4 Close the retaining clip to secure the memory extension card in place.

5 Replace the cover (refer to page 5).

Which Accessory Board Slots to Use

The PC has four standard accessory board slots. You can also add two additional slots using the ISA Extension Board accessory (refer to page 14 for installation instructions).

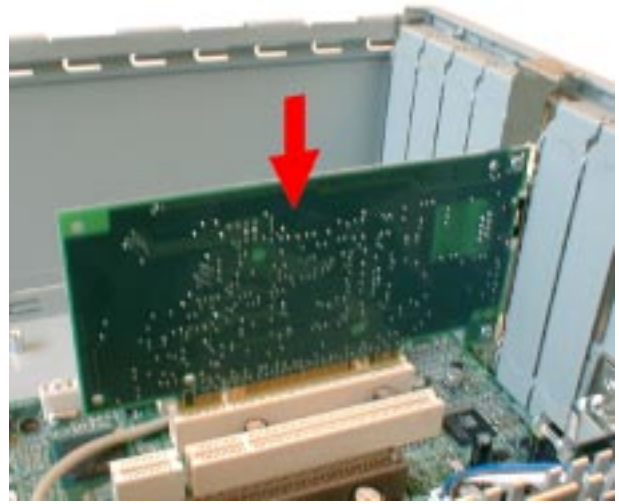


How to Install an Accessory Board

1 Remove the computer's cover (refer to page 4).
2 Remove the retaining bracket.

3 Remove the slot cover.

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



5 Replace the retaining bracket.

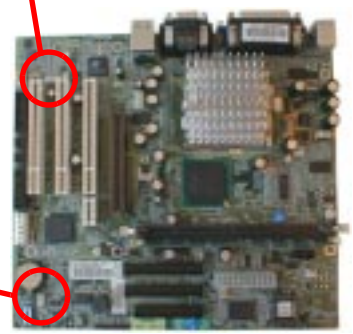
How to Install an Accessory Board

6 The accessory board may need a special connection, such as:

- WOL (Wake on LAN) connector to the network card (not necessary with PCI 2.2-compliant network cards).
- CD-ROM drive to the sound board (if you no longer want to use the integrated audio).

For more information, refer to the documentation that came with the accessory board. The necessary cables are usually provided with the accessory board.

Integrated Audio Connector
If you install an add-on sound board, remove the cable in this connector and insert it into the sound board's connector.



WOL Connector

7 Replace the cover (refer to page 5).

NOTE

If you install a network card, you must disable the integrated network controller in the PC's Setup program. To do this, go to the **Advanced** *menu and set* **Integrated Network Interface** *to* **Disabled***.*

If you install a network board and connect it to the WOL connector, you must enable the **Suspend Wake-Up/Integrated Network** *and/or* **Integrated Network** *fields in the* **Power** *menu of the PC's Setup program. This only applies if the network board supports these modes. To enter the Setup program, press F2 during startup.*

If you install an AGP or PCI graphics card, the integrated graphics controller is automatically disabled.

If you want to use dual monitors with your PC using:-

- *Integrated AGP + PCI card: set the* **Multidisplay** *field to* **Enabled** *in the* **Advanced** - **Video Options** *menu of the PC's Setup program.*
- *AGP card + PCI card: OK, no action needed.*
- *Integrated AGP + AGP card: this is not possible.*

If you install an audio/sound board (and you no longer want to use the integrated audio), you must set the **Integrated Audio Interface** *in the* **Advanced** *menu of the Setup program to* **Disabled***.*

Configuring Boards with Plug & 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, Windows 98 and Windows 2000

Operating systems that support Plug and Play, such as Windows 95, Windows 98 and Windows 2000 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 & Play ISA 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.

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.

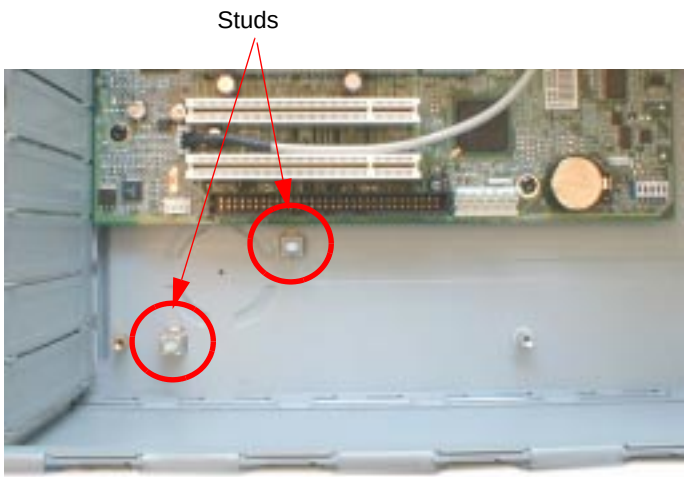
Resetting the PC's Configuration Data

If your PC is having difficulty 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.

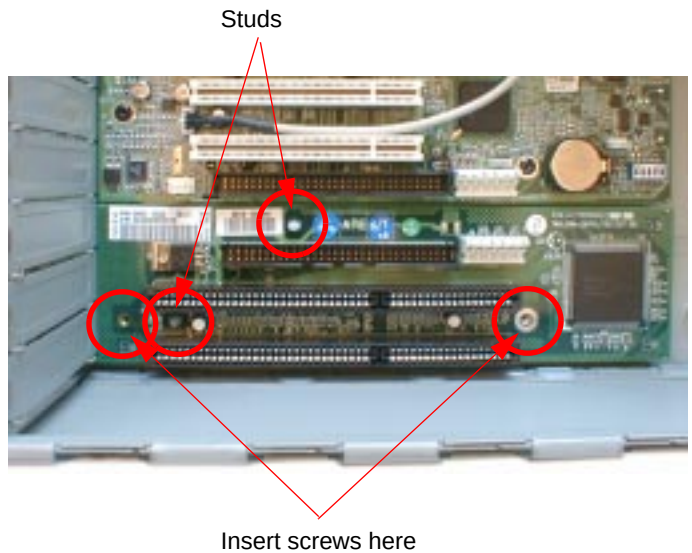
Installing an ISA Extension Kit

You can install an HP Two ISA Slot Extension Kit for two ISA accessory board slots.

1 Remove the PC's cover (refer to page 4).
2 Clip the two positioning studs into the PC chassis as shown.



3 Position the card over the studs and lower it into place.



4 Insert the two screws.

Installing an ISA Extension Kit

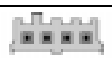
5 Connect the data and power cables.

6 Replace the cover (refer to page 5).

Which Drive Connectors to Use

When replacing hard disk drives, CD-ROM, DVD-ROM or CD-RW drives, ensure you use the correct data and power connectors.

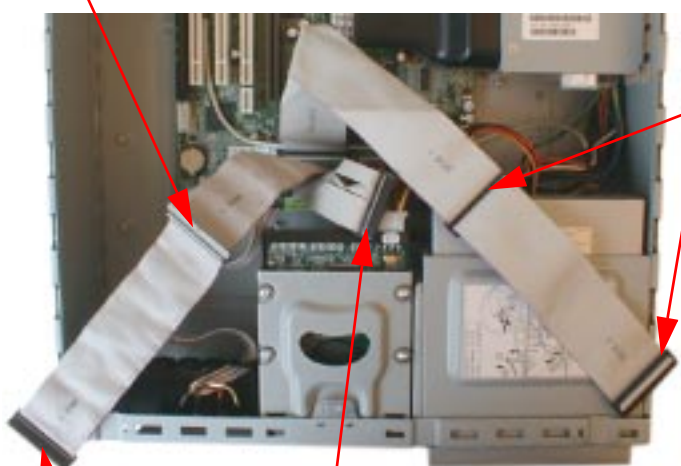
IDE hard disk drives should always be connected to the primary IDE controller. CD-ROM, DVD-ROM and CD-RW drives should always be connected to the secondary IDE controller. PRIMARY and SECONDARY are printed on the system board to help you locate the connectors.

Power Connectors	Number	Use for
	4	Hard disk drives, DVD-ROM or CD-RW drives, CD-ROM drives, Zip drives
	1	Floppy disk drive

NOTE

Do not connect a hard drive and a CD-ROM drive (or a CD-RW, or DVD drive) to the same IDE cable as this would adversely affect the drives' performance.

The IDE cables in your PC are cable select. You must, therefore, set the jumpers on any IDE devices you install to cable select. See the documentation for the device for more information.



Which Drive Connectors to Use

Which IDE Data Connectors to Use

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

- An Enhanced Ultra ATA IDE (Integrated Drive Electronics) hard disk drive cable.
  For optimum performance, use this cable to connect the Ultra ATA IDE hard disk drive.
- A second IDE drive cable that supports two IDE devices. If you install a CD-ROM drive, a DVD drive or a Zip drive, connect it to this cable.
- The third cable is non-IDE and has one connector for a floppy drive.

Up to four 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.

NOTE

Connecting a hard disk drive to the IDE master connector does not ensure that the PC will boot on that hard disk drive.

Before Installing a Hard Drive

Refer to the drive's installation guide to see if you must set jumpers or if there is a special installation procedure to follow. The cables provided with your PC are *cable select*. This means that you do not need to change the jumper settings on a hard drive if you set the drive to cable select.

Upgrading the Hard Disk

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.

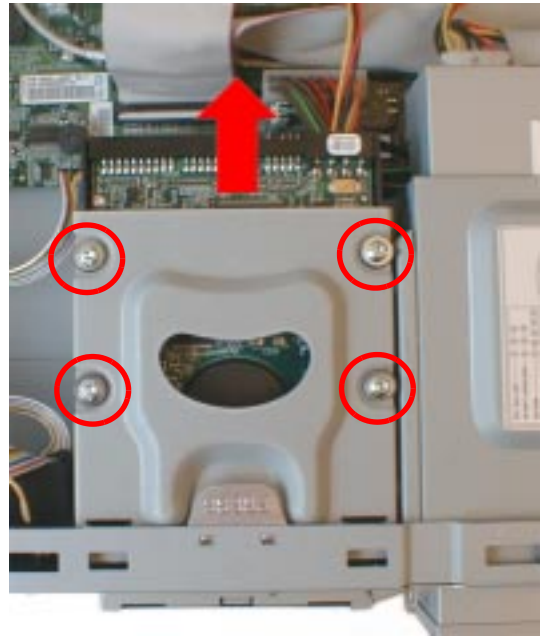
Make sure that you back up your files before you install a hard disk drive. Refer to your operating system documentation for information on how to do this.

You can replace your PC's hard disk drive with a larger one. To do this:

1 Remove the computer's cover (refer to page 4).

2 Remove the drive's connectors.

3 Loosen the hard drive screws from the top of the drive tray and slide out the old hard drive.



4 Align the new hard drive in the tray (with the correct orientation) and tighten the screws.

5 Attach the data and power connectors.

6 Replace the cover (refer to page 5).

Upgrading the Hard Disk

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

NOTE

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 Image Creation & 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****.*

Installing a Second Hard Disk

CAUTION

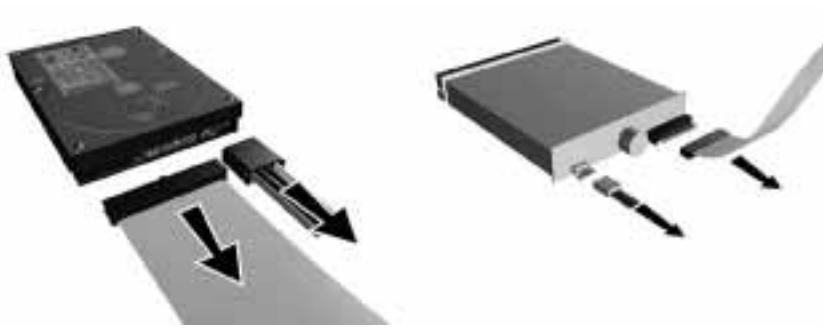
Handle the hard disk drive with care. Avoid shocks and violent movement as this can cause damage to the hard disk drive's internal components.

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.

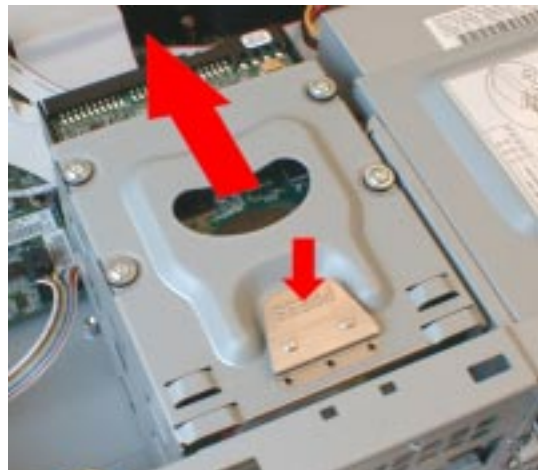
You can install a second hard disk drive in the lower bay of your desktop PC's drive tray.

1 Remove the computer's cover (refer to page 4).

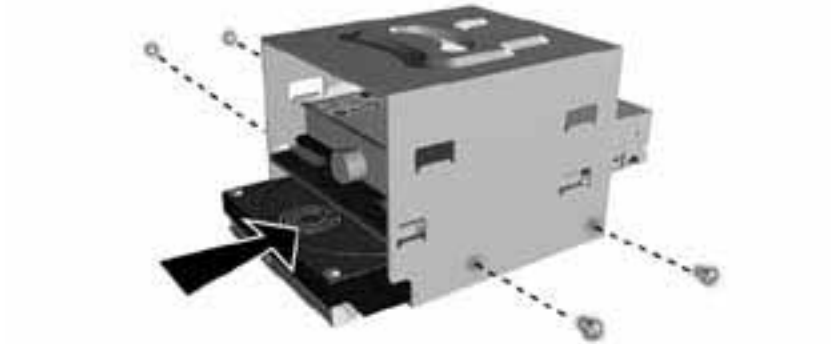
2 Remove data and power connectors from both the hard drive and the floppy drive.



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



4 Align the new hard drive in the lower part of the tray (with the correct orientation) and secure it with the screws provided with the drive.



Installing a Second Hard Disk

5 Replace the drive tray in the PC.
6 Attach all data and power connectors. Assuming you want to use the original hard drive to boot your PC from, attach the end connector (marked DRIVE 0) to this drive and the middle connector (marked DRIVE 1) to the new drive. This requires you to bend the data cable slightly round the floppy drive data cable.
7 Replace the cover (refer to page 5).
8 Verify the new configuration by checking the HP Summary Screen. To access the HP Summary Screen, press **Esc** when the *HP logo* appears during startup.

NOTE

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 HP Image Creation & 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****.*

Installing Removable Media Devices

WARNING

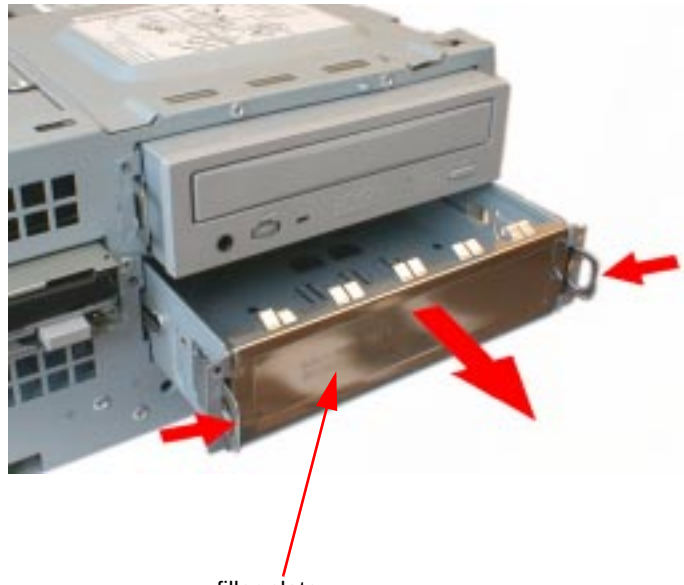
To avoid electric shock and harm to your eyes by laser light, do not open the laser module. The laser module should be serviced by service personnel only. Do not attempt to make any adjustment to the laser unit. Refer to the label on the CD-ROM drive for power requirements and wavelength. This product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

The PC has an integrated Enhanced IDE controller which supports up to four IDE devices. Removable media IDE devices, such as CD-ROM drives, CD-RW drives, DVD drives, tape drives and Zip drives, require front access. You can install a removable media IDE drive in an empty front shelf.

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 and front panel (refer to page 4).

2 Press the two latches inward and slide out the drive tray.



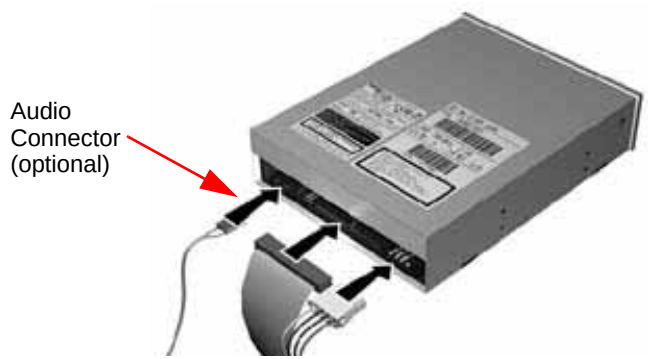
3 Remove the metal filler plate from the tray.

Installing Removable Media Devices

4 Tighten the tray's four screws (two on each side).

5 Slide the drive tray back into the PC until it clicks into place.

6 Attach all data and power connectors. If you are installing a CD-ROM, CD-RW or DVD drive, connect the audio cable too.



7 Replace the cover (refer to page 5).

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

Configuring an IDE Device After Installation

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

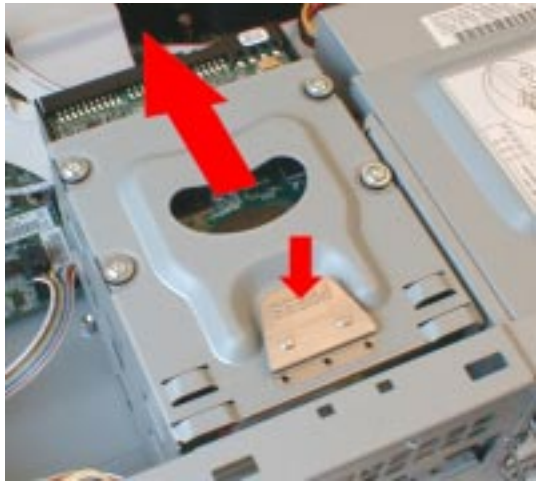
IDE drives are automatically detected by the *Setup* program. However, a newly installed device may require that you install an appropriate device driver. Refer to your operating system documentation for details. You can obtain the latest drivers from HP's support web site.

The IDE cables in your PC are *cable select*. You must, therefore, set the jumpers on any IDE devices you install to cable select. See the documentation for the device for more information.

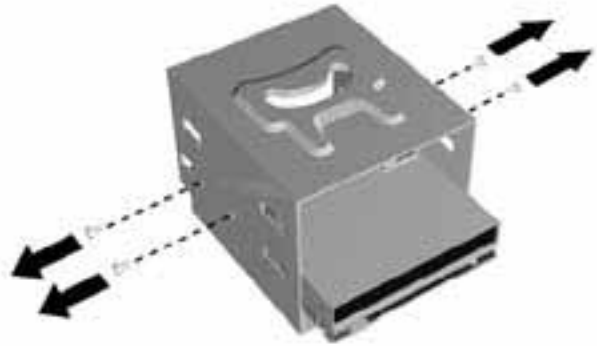
Replacing the Floppy Drive

1 Remove the computer's cover and front panel (refer to page 4).
2 Remove the connectors from both the floppy drive and the hard drive.

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



4 Remove the tray's screws and remove the old floppy drive.



5 Align the new floppy drive in the tray (with the correct orientation) and replace the screws.
6 Slide the drive tray back into the PC.
7 Attach the data and power connectors.
8 Replace the cover (refer to page 5).

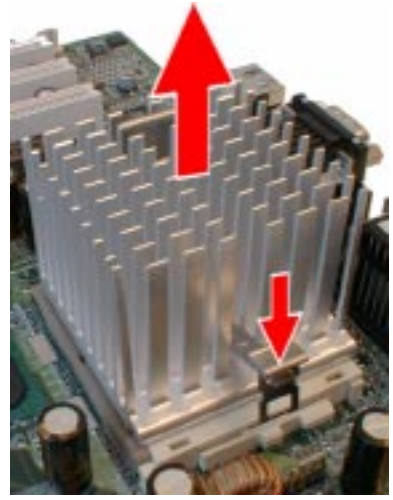
Replacing the Processor

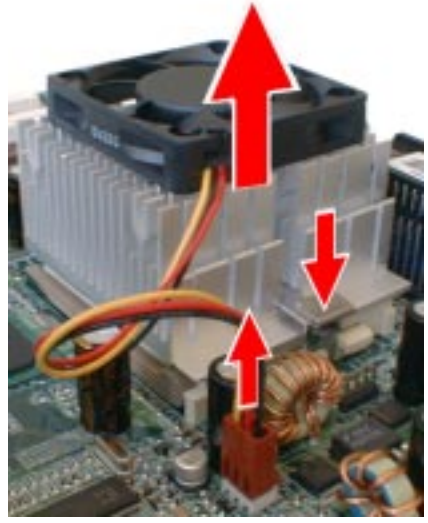
1 Remove the computer's cover (refer to page 4).
2 Remove the airflow guide.

Press firmly on both sides then remove it

3 Remove the heatsink.

Passive heatsink

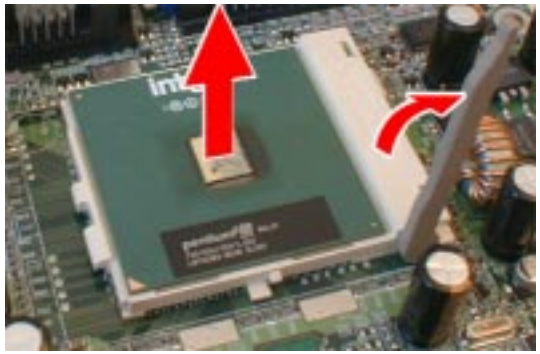




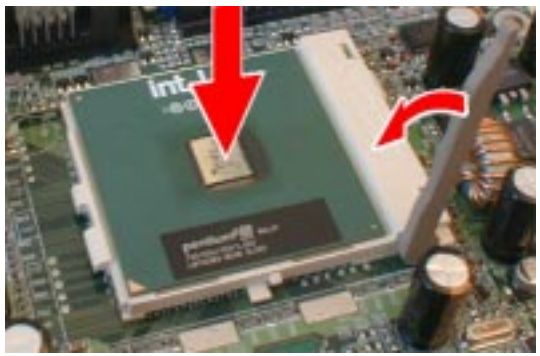
Heatsink with fan
First remove the fan's power connector from the system board, then remove the heatsink.

Replacing the Processor

4 Remove the old processor.



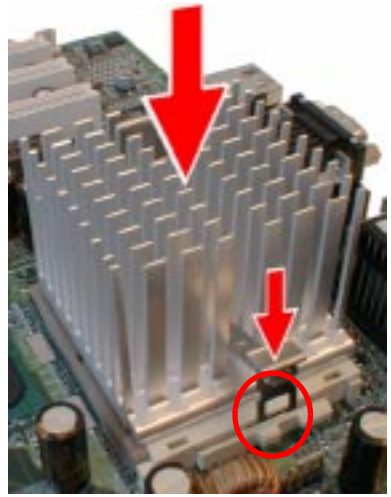
5 Install the new processor.



Insert the processor carefully. Ensure the orientation is correct - it can go in one way only.

6 Remove any traces of the old thermal interface material (sticker or polymer) from the underside of the heatsink. Affix the new thermal interface material (sticker or polymer, provided with the new processor) to the underside of the heatsink.

7 Install the heatsink, making sure you line it up correctly.

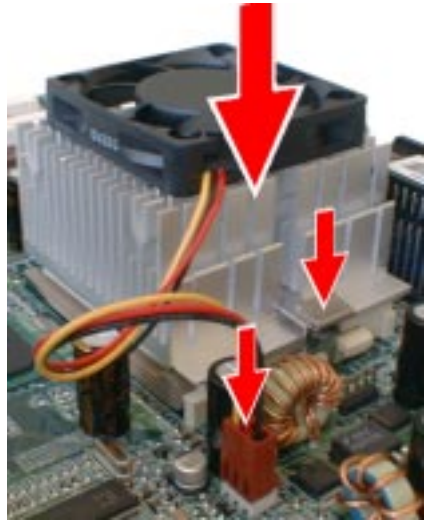


Passive heatsink

Replacing the Processor

Heatsink with fan
After installing the heatsink, connect the fan's power connector to the system board.

CAUTION
Ensure you use the correct system board connector (marked CPU FAN) - refer to page 30 for the position of this connector.



8 Replace the airflow guide, aligning the clips with the holes on the power supply. Insert the bottom clip in the hole first, then squeezing the airflow guide on both sides, insert the side clips.

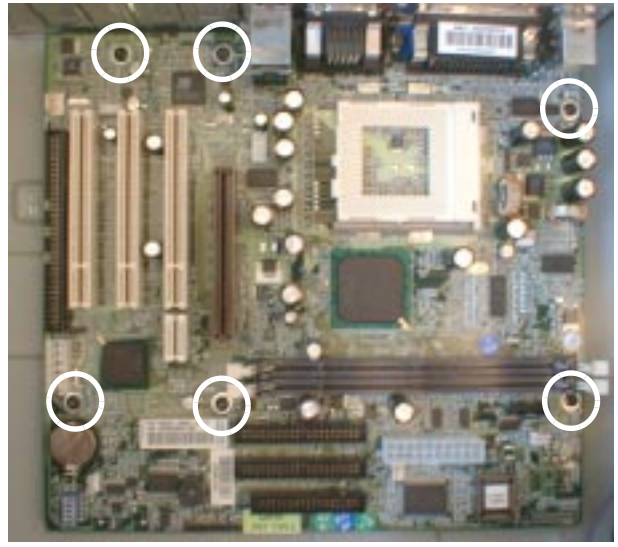
9 Replace the cover (refer to page 5).

10 Ensure that the latest version of BIOS is installed on your PC. To learn which version of BIOS is currently installed on your PC, press **ESC** during startup.

Replacing the System Board

1 Remove the computer's cover (refer to page 4).
2 Remove the airflow guide.

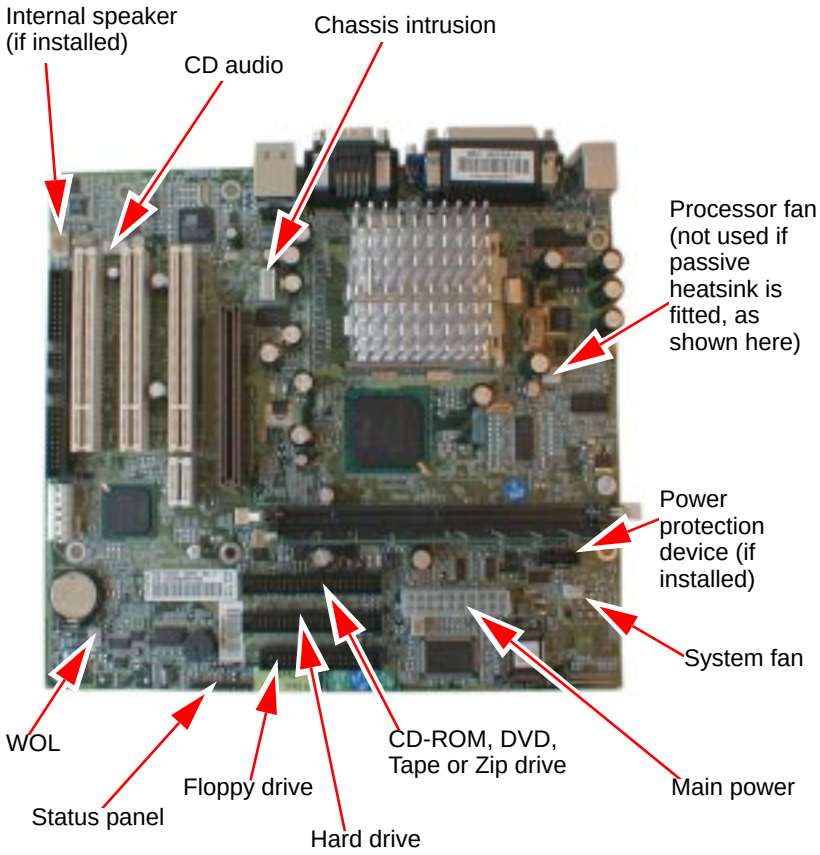
3 Remove the main memory (refer to page 6) and processor (refer to page 26) from the old system board.
4 Remove all data, power and other cables from the old system board.
5 Remove the screws securing the system board.



6 Remove the old system board by carefully disengaging the rear connectors then lifting it out of the PC.
7 Insert the new system board, lining up the rear connectors carefully, and fasten the screws to secure the board in place.
8 Replace the main memory (refer to page 6) and processor (refer to page 26) in the new system board.

Replacing the System Board

9 Replace all data, power and other cables in the new system board. The system board connectors are shown below.



10 Replace the airflow guide.

11 Replace the cover (refer to page 5).

Replacing the Power Supply

WARNING

To avoid electric shock, do not open the power supply. There are no user-serviceable parts inside.

1 Remove the computer's cover (refer to page 4).

2 Remove the airflow guide.

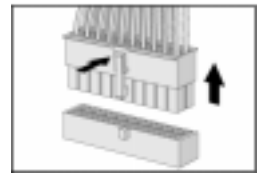
Press firmly on both sides then remove it

3 Remove *all* internal power supply connectors.

Hard drive(s)

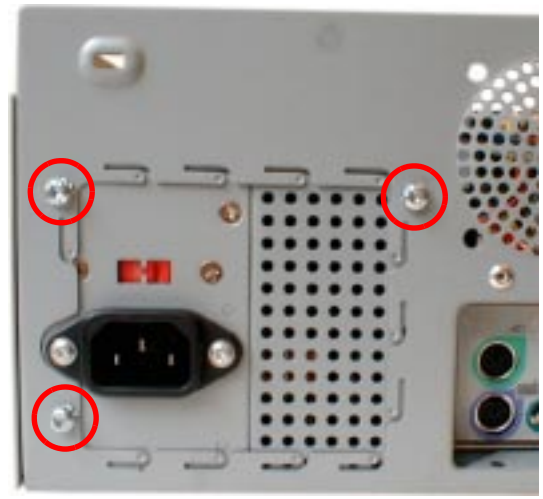
DVD, CD-RW, CD-ROM drive(s)

Floppy drive



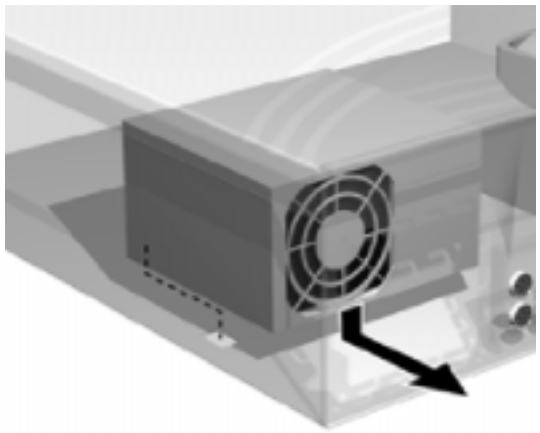
Main power (located on system board near memory modules)

4 Remove the four screws (three external, one internal) securing the power supply.



Replacing the Power Supply

5 Slide the old power supply forward and remove it.
6 Insert the new power supply (lining up the metal catches).



7 Replace the four screws to secure the power supply.
8 Reconnect *all* internal power supply connectors.
9 Replace the airflow guide.
10 Replace the cover (refer to page 5).
11 **Select the correct voltage setting for your country**.

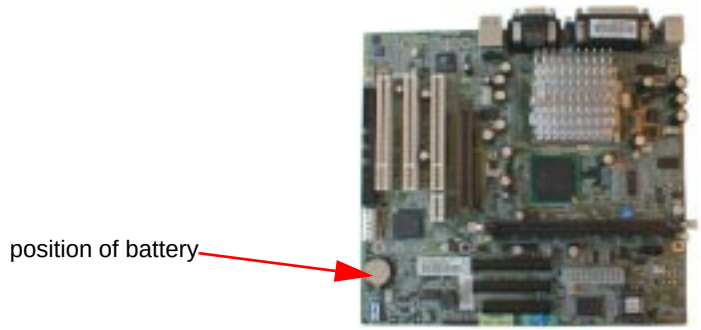
Replacing the Battery

WARNING

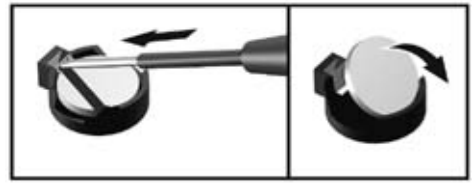
There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. The battery in this PC is a lithium battery which does not 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.

1 Remove the computer's cover (refer to page 4).



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



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

4 Replace the cover (refer to page 5).

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.

Replacing the Power Protection Device (some models only)

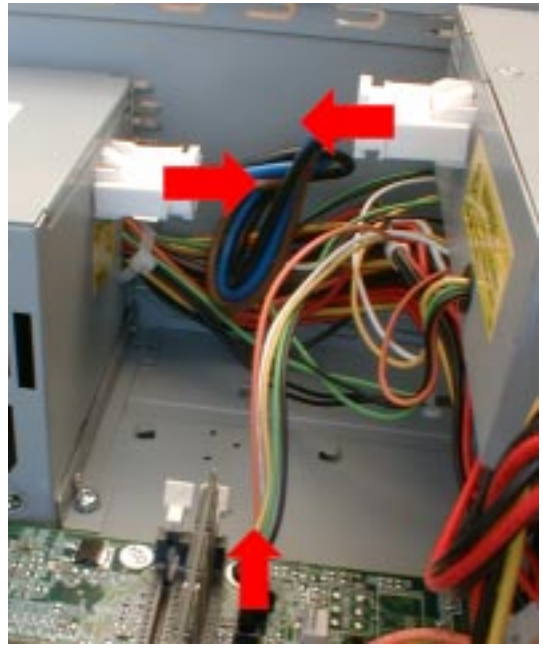
WARNING

For your safety, never remove the PC's cover without first removing the power cord from the power outlet and any connection to a telecommunications network. If a power protection device is fitted to your PC, you must remove the power cord then wait for a complete shutdown of your system before removing the cover. Remove the power protection device cables before any servicing operation. Always replace the cover before switching the PC on again.

1 Remove the computer's cover and front panel (refer to page 4).

2 Remove the power alert and passthru cables from the power protection device, and from the power supply unit and system board.

For more information, refer to the *Installation Guide* that comes with this device.



Replacing the Power Protection Device (some models only) 2 of 2

3 Press the two latches inward and slide out the device.

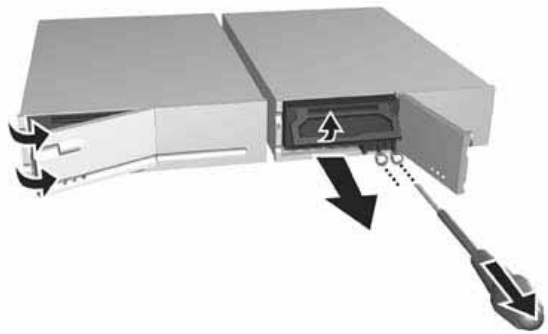
4 Remove the power protection device from the tray by removing the two retaining screws.

5 Attach the new device to the tray and secure it into position with the two retaining screws.

6 Slide the device back into the PC.

7 Replace the power alert and passthru cables to the power protection device, and to the power supply unit and system board.

8 Remove the battery compartment cover and retaining screws.



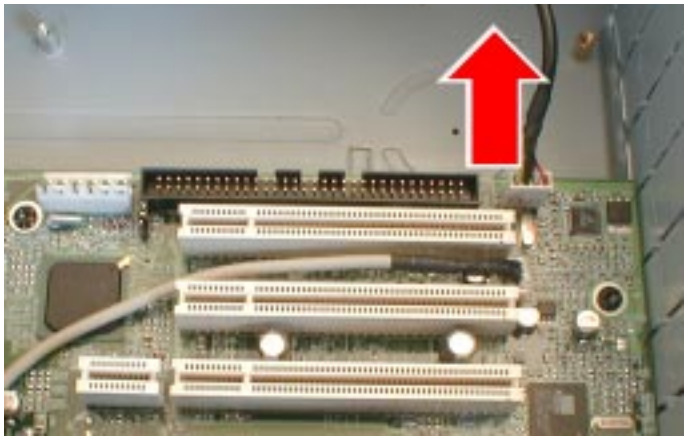
9 Slide the battery into the battery compartment and secure into position with the retaining screws.

10 Replace the battery compartment cover.

11 Replace the cover and front panel (refer to page 5).

Replacing the Internal Speaker (some models only)

1 Remove the PC's cover (refer to page 4).
2 Disconnect the speaker cable from the system board.



3 If the speaker cable is fixed to the chassis, remove it.

4 Remove the speaker unit by sliding it out as shown.

5 Insert the new speaker by sliding it into place.
6 Connect the end of the speaker cable to the system board.
7 If required, attach the length of speaker cable to the fixation provided.
8 Replace the cover (refer to page 5).