

Upgrading and Servicing Guide



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Introduction

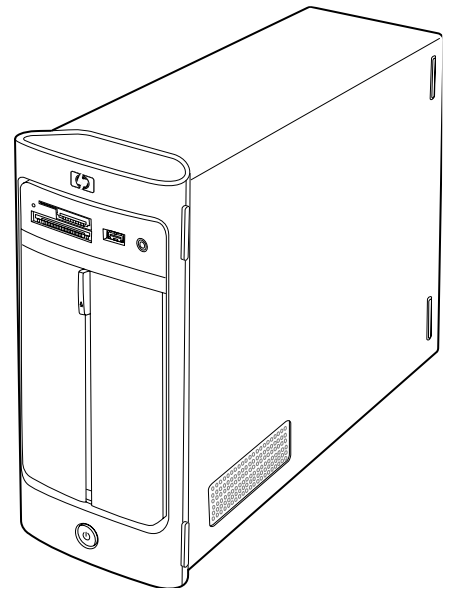
The *Upgrading and Servicing Guide* provides instructions on how to remove and replace the following hardware components in your Slimline PC:

- Optical disc drive
- Hard disk drive
- Memory module
- Modem card (PCI card)
- Battery

Safety Information

Please read the following important safety information before performing any procedure.

This product has not been evaluated for connection to an “IT” power system (an AC distribution system with no direct connection to earth, according to IEC 60950).



WARNING: Please read “Safety Information” in your *Warranty and Support Guide* before installing and connecting your system to the electrical power system.



WARNING: Keep your hands away from the moving fan. Keep fingers and tools clear of the fan when power is applied. Never open the cover with the power cord attached or power applied. You may damage your PC or be injured from the spinning fan blades.



WARNING: Avoid touching sharp edges inside the PC.

Opening the PC

Before you upgrade any component in your PC, prepare the PC so that you can safely handle the unit and the components.

Read the following items before attempting to upgrade or service the PC:

- Print out this document before attempting any removal/replacement procedures.
- These procedures assume familiarity with the general terminology associated with PCs and with the safety practices and regulatory compliance required for using and modifying electronic equipment.
- Write down and save the system model number and serial number, all installed options, and other information about the system. If you need this information later, you will not need to open up and examine the PC.



CAUTION: Static electricity can damage the electronic components of the PC or optional equipment. Ensure that you are discharged of static electricity by briefly touching a grounded metal object.

- HP recommends that you use an antistatic wrist strap and a conductive foam pad when working on system electronic components.
- You need a Phillips screwdriver.

Preparing the PC

To avoid injury and equipment damage, always follow this procedure in this order before opening the PC:

- 1 Remove any memory card from the memory card reader or an optical disc (CD or DVD) from the optical drive.
- 2 Turn off the PC:
 - a Click the **Start** button on the taskbar.
 - b Click **Turn Off Computer** and then click **Turn Off** again.
- 3 Disconnect the modem/telephone cable, if present.



WARNING: Always disconnect the modem cord from the telephone system before opening the cover.

- 4 Disconnect the power cord from the electrical outlet and then from the PC.



WARNING: To reduce the risk of personal injury from electrical shock or hot surfaces, disconnect the power cord from the electrical outlet. Then disconnect the PC from the power source before removing the PC cover. Failure to do so before you open the PC or do any procedures can result in personal injury or equipment damage.

- 5 Disconnect all other attached cables (such as the keyboard, mouse, Ethernet, and monitor).
- 6 Disconnect all external devices.

Removing the PC Cover



WARNING: Remove power before opening the PC cover. Allow the internal system components to cool before touching.

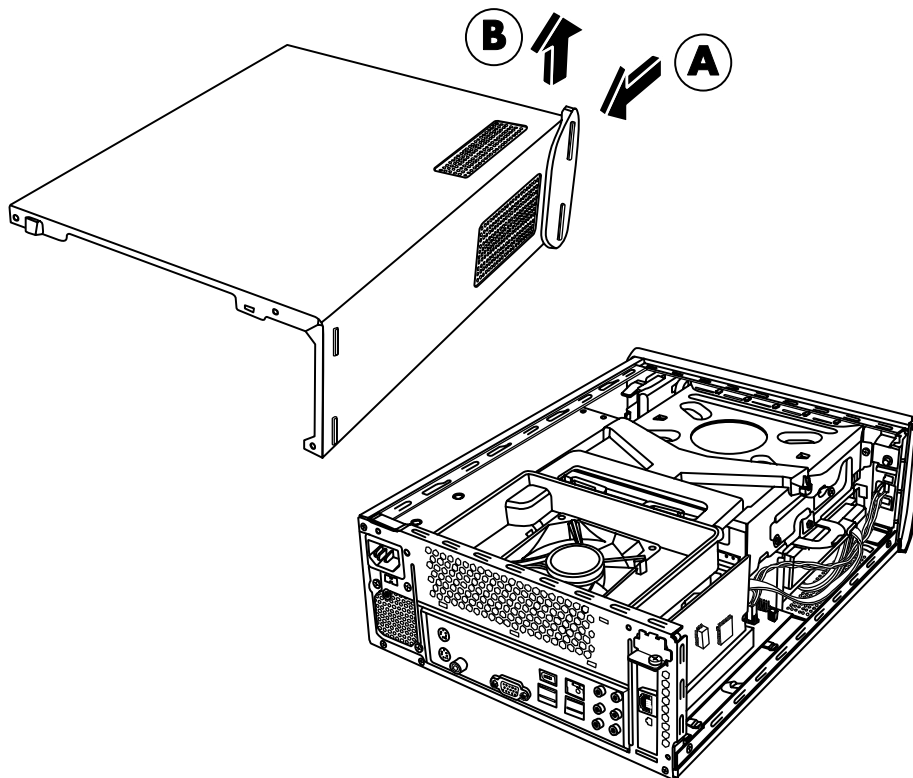
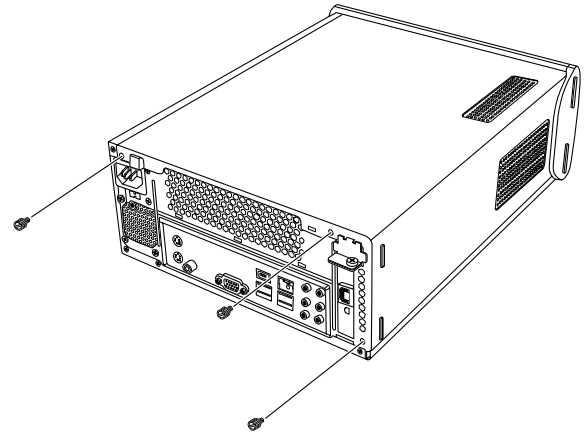
- 1 Complete the procedure "Preparing the PC" on page 2.
- 2 Lay the PC flat.
- 3 Loosen the three screws on the back cover. Use a Phillips screwdriver.



WARNING: Avoid touching sharp edges inside the PC.

- 4 Slide the PC cover back about 1.25 cm (1/2 inch) (A), and then lift it off the PC (B). Set it aside.

NOTE: Use the screwdriver slot on the back of the cover to loosen the cover, as required.



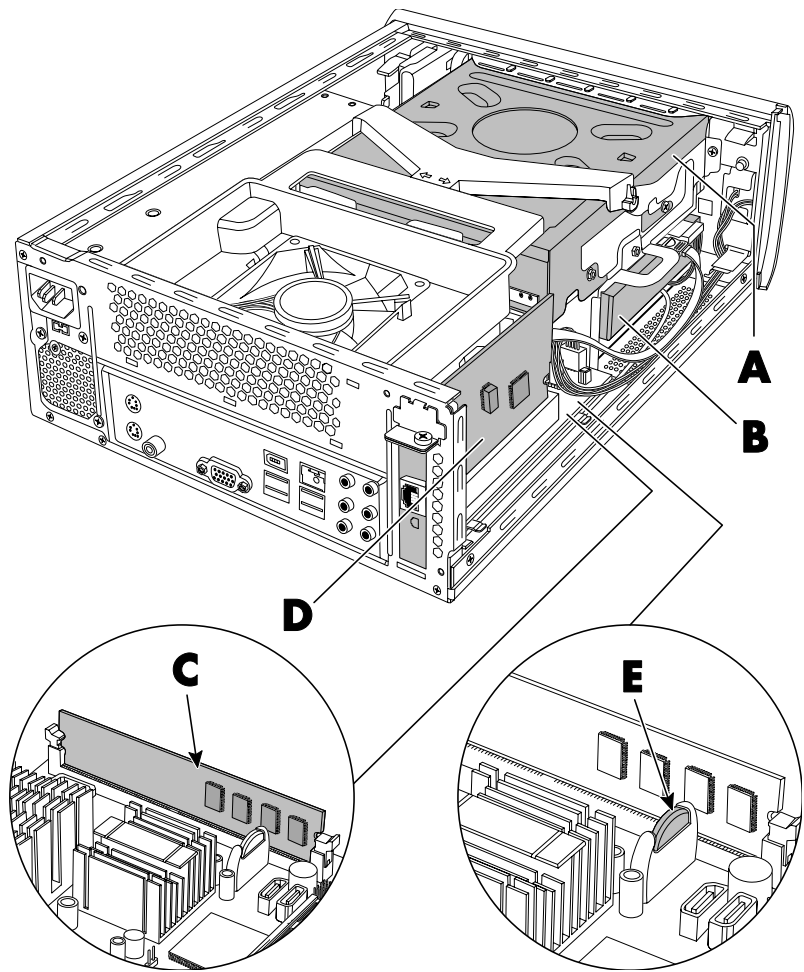
Locating Components Inside the PC

PC component configurations vary by model. You can remove and replace the following components:

	Component	See:
A	Optical disc drive. May be a CD-ROM, CD-RW, DVD-ROM, DVD+RW, or combination drive.	"Removing and Replacing an Optical Disc Drive" on page 6
B	Hard disk drive (located under the optical drive bay)	"Removing and Replacing a Hard Disk Drive" on page 10
C	Memory module	"Removing and Replacing Memory" on page 13
D	Modem card (PCI card)	"Removing and Replacing a PCI Card" on page 16
E	Battery	"Removing and Replacing the Battery" on page 18

Read the "Before You Begin" section at the start of each component procedure. This section contains requirements and important information about the replaceable component.

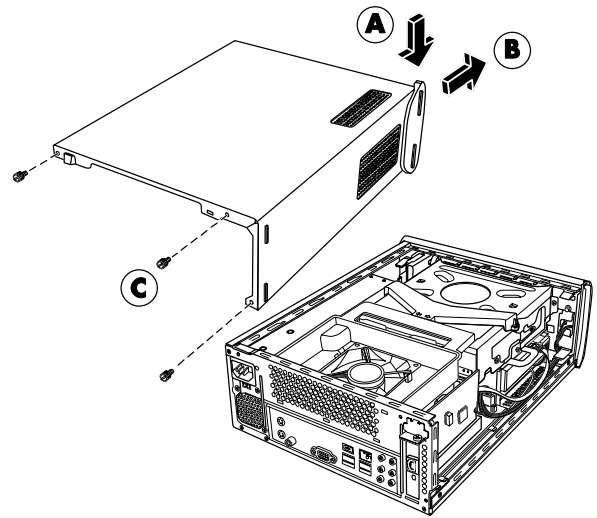
The following illustration shows component locations:



Closing the PC

Replacing the PC Cover

- 1 Place all cables inside of the PC case.
- 2 Place the cover onto the PC (A) about 2.5 cm (1 inch) back. Make sure the slots in the PC case align with the cover tabs.
- 3 Slide the cover forward on the frame until it locks into place (B). Make sure the bottom of the cover lines up with the PC case.
- 4 Align the screws on the PC cover with the holes on the back of the PC frame. Insert and then tighten the screws on the cover (C).
- 5 Complete the procedure "After Closing the PC" on page 5.



After Closing the PC

To avoid injury and equipment damage, always follow this procedure in this order after closing the PC:



WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telecommunications or telephone connectors into the Ethernet network interface connector.

- 1 Reconnect the modem/telephone cable and all other attached cables, such as the keyboard, mouse, Ethernet, and monitor cables.
- 2 Reconnect external devices, such as a printer.
- 3 Reconnect the power cord.
- 4 Turn on the PC and all peripherals, such as the monitor.

Removing and Replacing an Optical Disc Drive

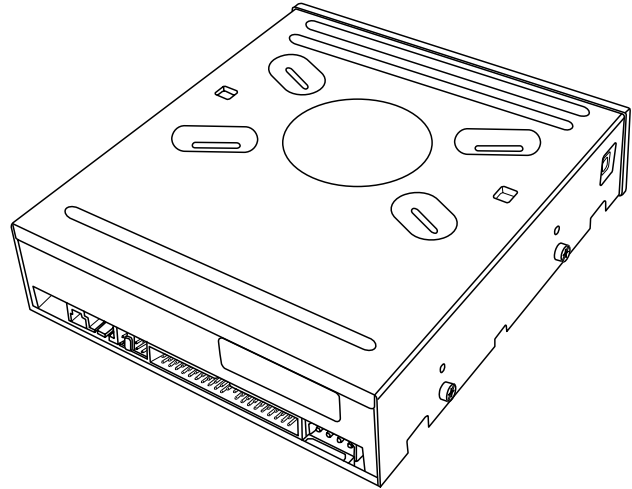
Your PC includes an optical disc drive that you can replace or upgrade. See “Locating Components Inside the PC” on page 4.

Before You Begin

Observe the following requirements before removing and replacing the component:

IMPORTANT: Due to the small PC size, you can only install an optical disc drive of less than the approximate length of 170-mm (6.7 inches).

IMPORTANT: Before installing a new optical disc drive, make sure that it is compatible with the Microsoft® Windows® XP operating system. Also, make sure you have the correct software and drivers for the optical drive to work with the operating system.



Optical Disc Drive

The optical disc drive may be either a PATA (Parallel advanced technology attachment) drive or SATA (Serial advanced technology attachment) drive that uses a narrow data cable with an optional latch.

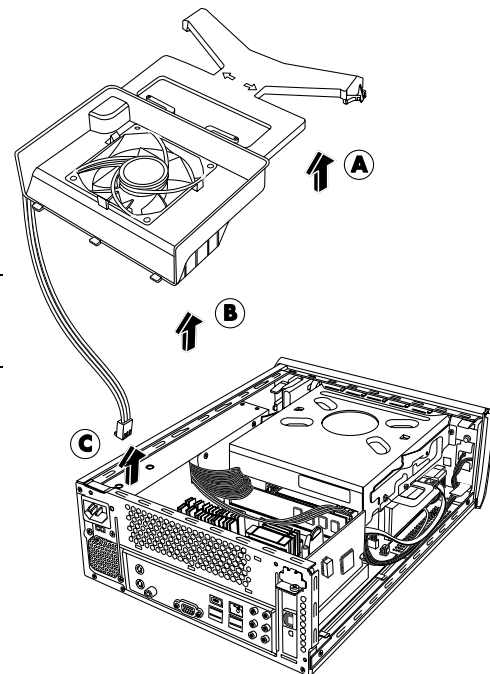
This procedure requires a Phillips screwdriver.

Removing an Optical Disc Drive

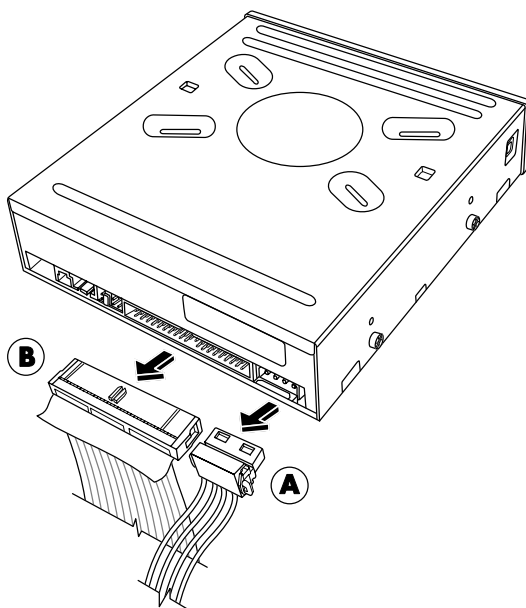
- 1 Prepare the PC and remove the PC cover. Complete the “Opening the PC” procedures on page 2.
- 2 Remove the fan assembly:
 - a Lift the fan assembly upward at the arrows shown (A).
 - b Lift out the fan assembly (B).
 - c Disconnect the fan power cable by grasping the connector and pulling up (C).

IMPORTANT: Make a note of the fan power cable routing before removing the cable.

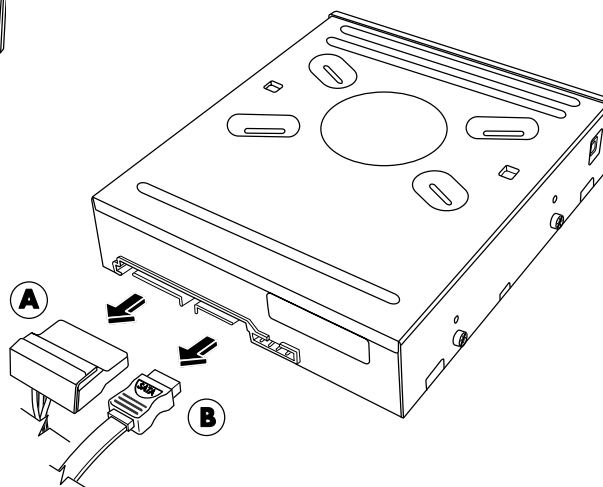
- 3 Make a note of each cable and plug orientation attached to the back of the optical disc drive before removing the cables.



- 4 Disconnect the power cable (A) and data cable (B) from the back of the optical disc drive. Pull the tab on the data cable. Use a gentle rocking motion on the power cable.



PATA Optical Disc Drive



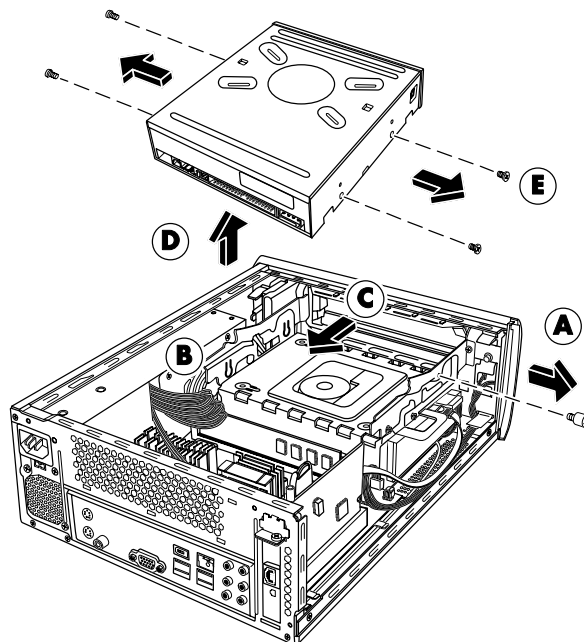
SATA Optical Disc Drive

NOTE: SATA data cables may include a latch. Press the latch and pull the plug to remove the data cable from the drive.

- 5 Disconnect the sound cable, if present.
- 6 Remove the thumbscrew (A) from the optical disc drive side.
- 7 Hold back the power supply cables to clear the optical disc drive (B), and slide the drive 2 cm (3/4 inch) toward the back of the PC (C).
- 8 Lift the drive straight up out of the PC (D).

IMPORTANT: Do not tilt the drive during removal.

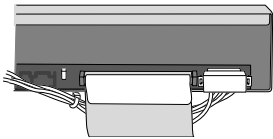
- 9 Remove the four guide screws from the sides of the old drive (E). You need these screws to install the new drive.



Replacing an Optical Disc Drive

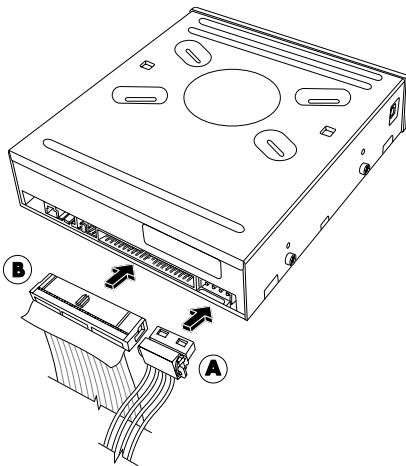
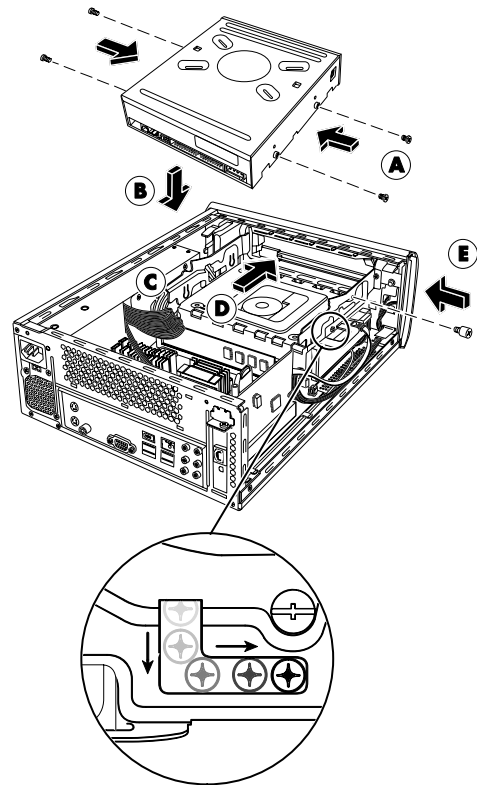
- 1 Complete the procedure "Removing an Optical Disc Drive" on page 6.
- 2 Screw all four guide screws into the sides of the new optical disc drive (A).
- 3 Gently lower the new optical disc drive into the tray (B).
- 4 Hold the power supply cables against the power supply to clear the optical disc drive (C) (as required) and slide the drive 2 cm (3/4 inch) to the front of the PC (D).
- 5 Insert the thumbscrew on the side of the optical disc drive (E).
- 6 Connect the power cable (A) and data cable (B) firmly to the back of the optical disc drive. Ensure that the cables are completely inserted.

NOTE: The optical drive model may have PATA cables or SATA cables that use narrow data cables.

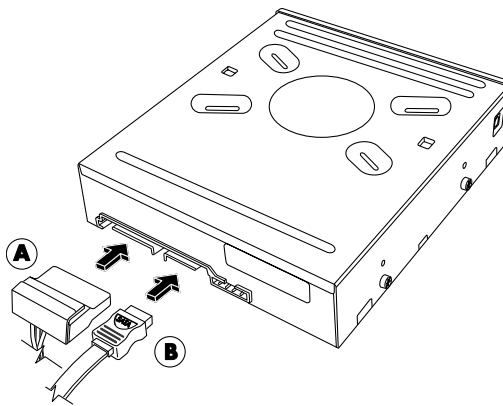


NOTE: SATA cables may include a latch.

NOTE: Route the PATA power cable under the data cable to prevent interference with the fan.



PATA Optical Disc Drive



SATA Optical Disc Drive

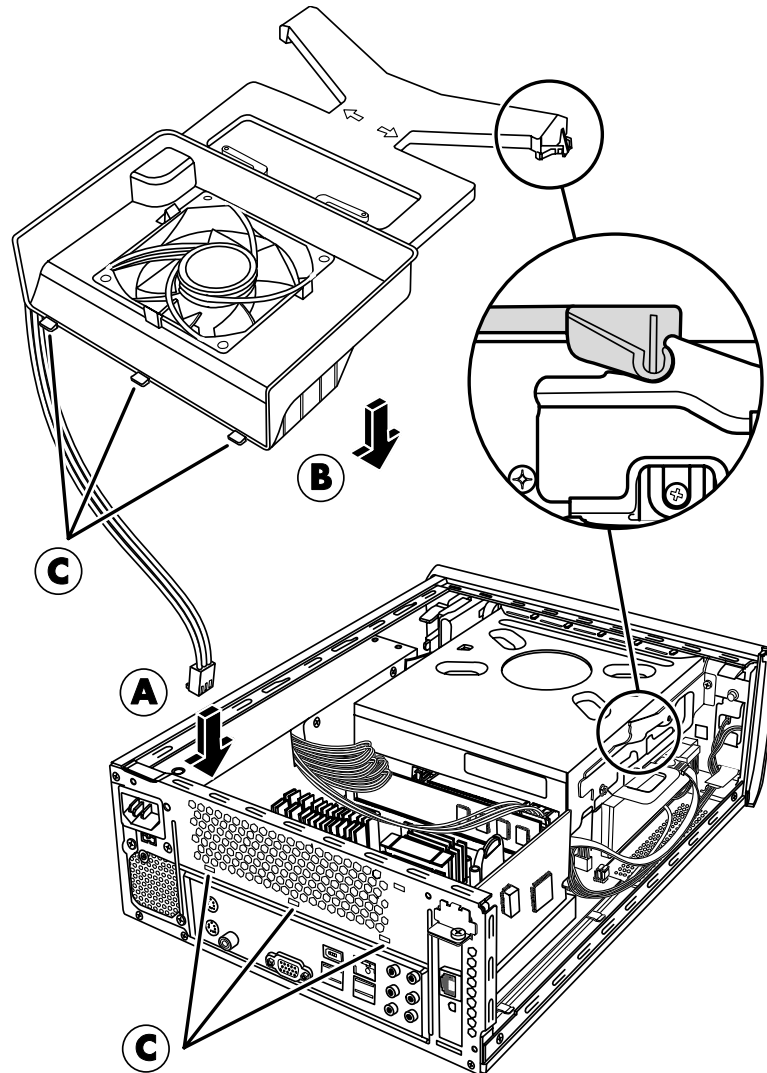
7 Some drive models may have a sound cable. If so, connect the sound cable.

8 Replace the fan assembly.



WARNING: Route the fan power cable around the power supply cable lines, exactly as removed, to prevent the fan power cable from contacting fan blades.

- a** Connect the fan power cable (**A**).
 - b** Lower the fan assembly into place (**B**).
 - c** Slide the fan assembly back (**C**). Set the three tabs on the fan assembly into the three slots in the back panel. Snap the two posts on the fan assembly into the two receptacles on the drive tray.
- 9** Replace the PC cover and close the PC. Complete the "Closing the PC" procedures on page 5.

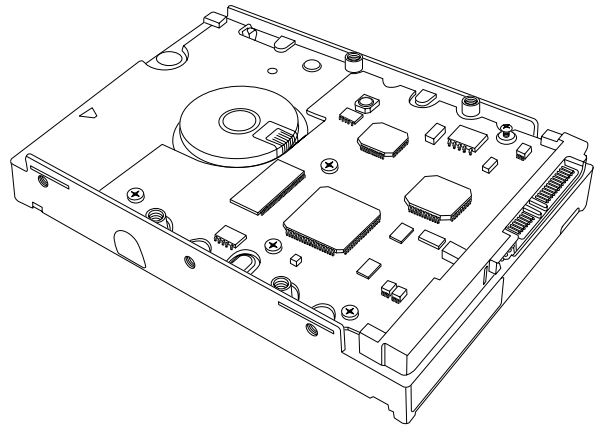


Removing and Replacing a Hard Disk Drive

Your PC includes a hard drive that you can replace or upgrade. See “Locating Components Inside the PC” on page 4.

The original hard disk drive is preloaded with the PC system recovery partition. If you remove this hard disk drive, store it in a properly sealed antistatic bag.

The hard disk drive is a SATA (Serial advanced technology attachment) drive that uses a narrow data cable with an optional latch.



Hard disk drive

Before You Begin

Observe the following requirements before removing and replacing the component:



CAUTION: Before you remove the hard disk drive, back up your personal files on the hard disk drive to an external storage device, such as a DVD, CD, or USB Drive. Failure to do so will result in data loss.

After you replace the hard disk drive, perform the System Recovery procedure. Use the recovery discs to load the factory-installed files. Refer to the *PC Troubleshooting Guide* for detailed system recovery steps.

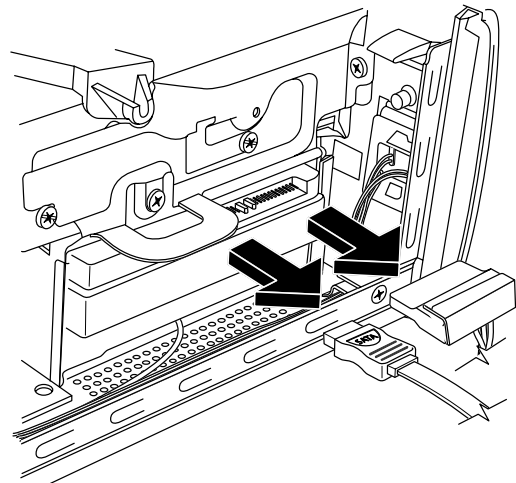
IMPORTANT: Before upgrading a hard disk drive, make sure a recovery disc is available.

IMPORTANT: Before installing a new hard disk drive, make sure that it is compatible with the Microsoft Windows XP operating system. Also, make sure you have the correct software and drivers for the drive to work with the operating system.

This procedure requires a Phillips screwdriver.

Removing a Hard Disk Drive

- 1 Prepare the PC and remove the PC cover. Complete the “Opening the PC” procedures on page 2.
- 2 Make a note of each cable attached to the hard disk drive before removing the cables.
- 3 Disconnect the power and data cables from the back of the hard disk drive.



NOTE: SATA data cables may include a latch (underneath the plug for select models only). Press the latch and pull the plug to remove the data cable from the drive.

- 4** Remove the retaining screw from the drive tray.

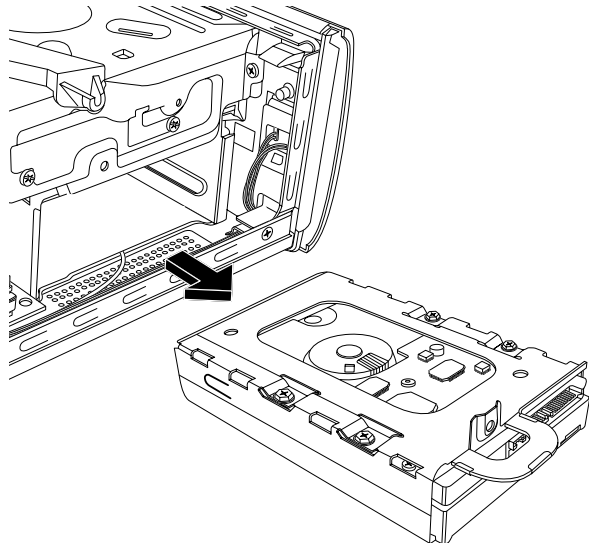
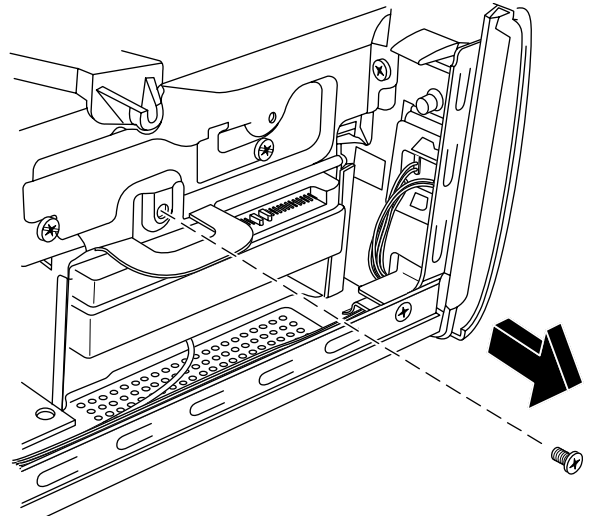
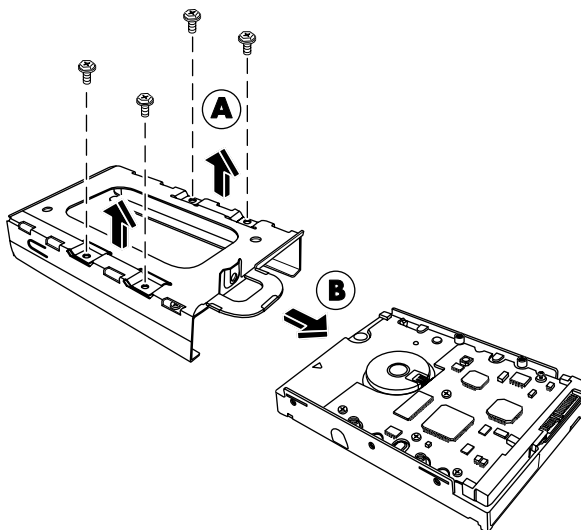


CAUTION: Handle hard disk drives with care. Dropping or banging the hard disk drive could result in data loss.

- 5** Slide the hard disk drive tray out of the drive bay by pulling the tab on the drive tray.

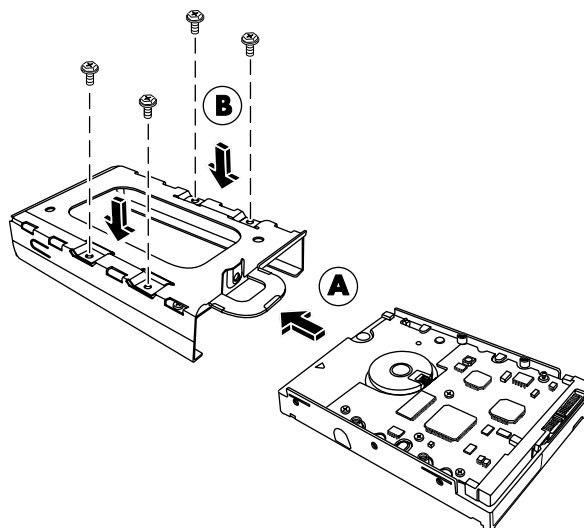
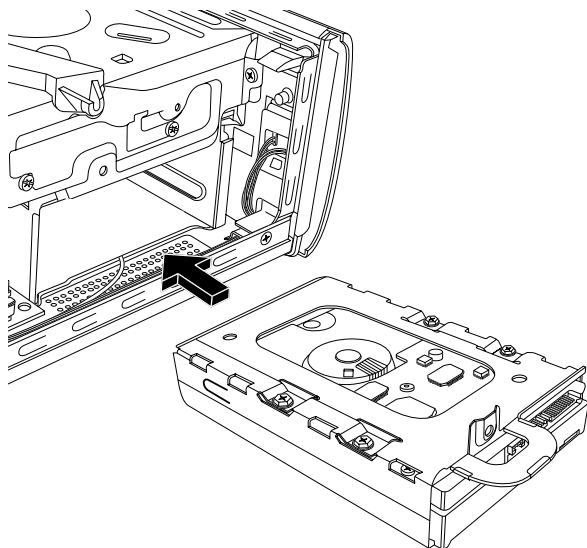
NOTE: Ensure that the PC cables are clear of the drive tray when removing. Push them away, as required, before removing the tray.

- 6** Remove the four screws that secure the hard disk drive to the drive tray (A) and slide out the hard disk drive out of the tray (B).

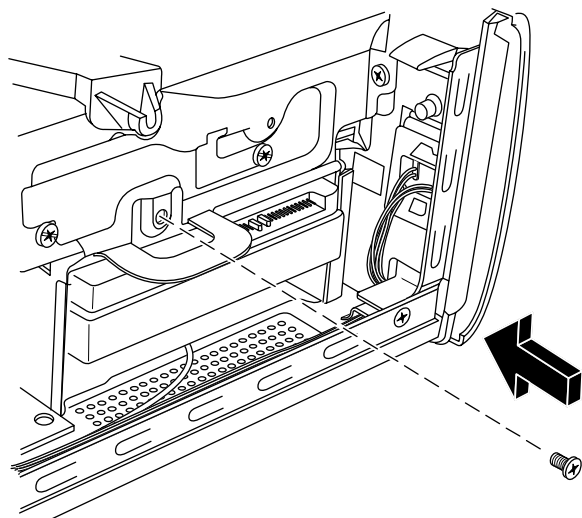


Replacing a Hard Disk Drive

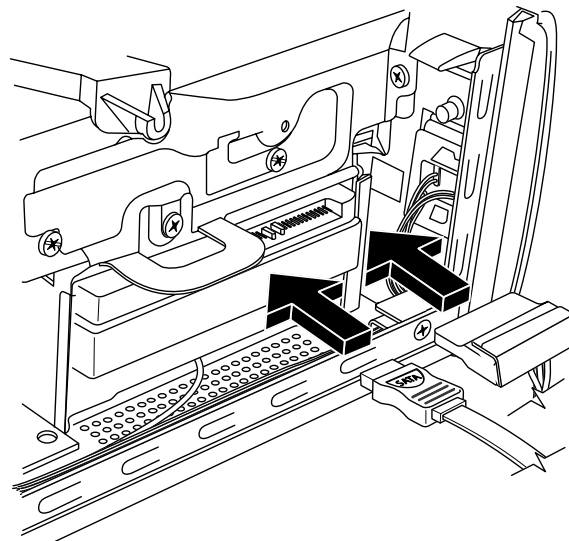
- 1 Complete the "Removing a Hard Disk Drive" procedure on page 10.
- 2 Slide the hard disk drive into the tray (A).
- 3 Insert and tighten the four screws that secure the hard disk drive to the drive tray (B).
- 4 Slide the hard disk drive tray into the PC drive bay.



- 5 Insert and tighten the hard disk drive retaining screw into the drive tray.



- 6 Attach the data and power supply cables to the back of the hard disk drive.
- 7 Complete the procedures to replace the PC cover and close the PC. See "Closing the PC" on page 5.
- 8 Perform a system recovery, as required. Use the recovery discs to replace the factory-installed files. Refer to the *PC Troubleshooting Guide* for detailed system recovery procedures.



Removing and Replacing Memory

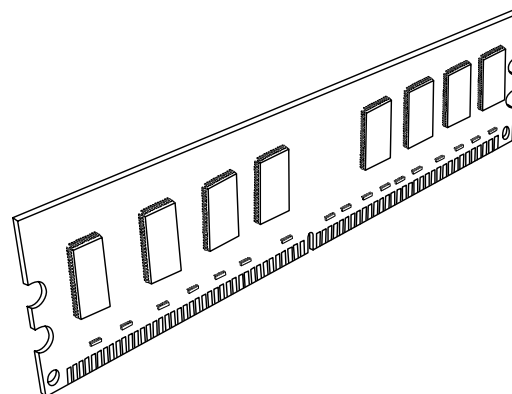
The motherboard contains one memory module socket for DDR DIMMs (double data rate dual in-line memory modules).

Before You Begin

Observe the following requirements before removing and replacing the component:

To determine which type and speed of memory module your PC uses, and for specific memory module information and specifications:

- 1 Go to <http://www.hp.com/support>
- 2 Click your country/region on the map.
- 3 Click the **See Support and Troubleshooting Information** option.
- 4 Enter your model number, and then press Enter.



Memory Module



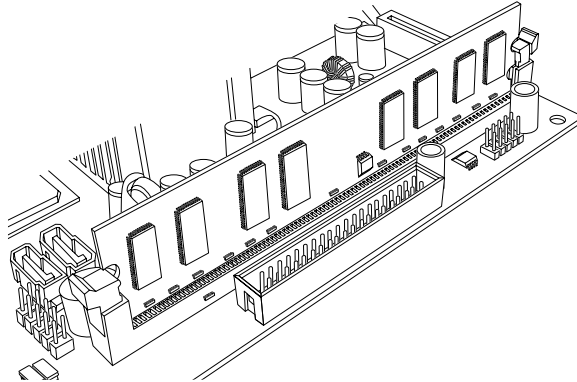
WARNING: Using the wrong type of memory module could damage the system.



WARNING: Handle the memory module with care. Be careful to not touch any memory module contacts. Touching the gold contacts may damage the module. Avoid touching the memory chips.

Removing a Memory Module

- 1 Remove the optical disc drive. See "Removing an Optical Disc Drive" on page 6.
- 2 Locate the memory socket on the motherboard.

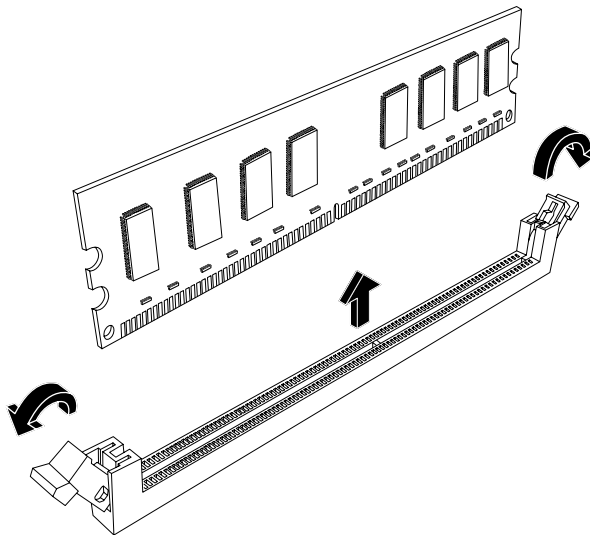


- 3 Move any cabling out of the way, if necessary.



WARNING: Do not pull the memory module out of the socket. Use the retaining clips to eject the module.

- 4 Push down the two retaining clips on the ends of the socket until the memory module pops out of the socket. Hold the memory module by its edges only, as you lift it away from the socket.



- 5 Store the memory module in antistatic packaging.

Replacing a Memory Module

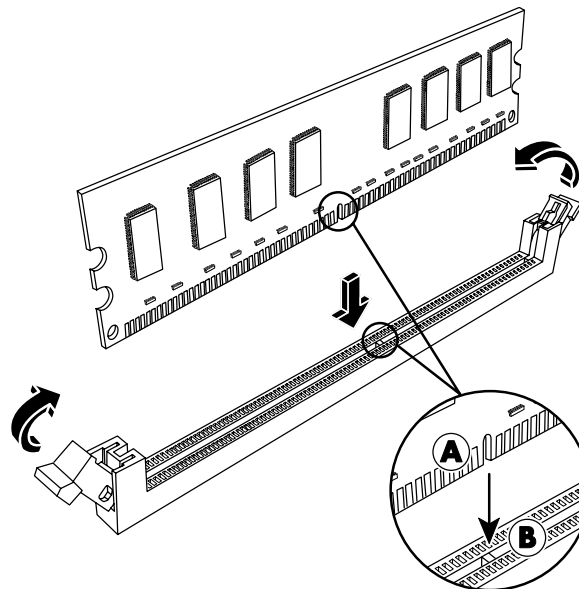
Upgrade the memory in your PC with memory of the same type and speed as the memory originally installed in your PC.

- 1 Complete the procedure in "Removing a Memory Module" on page 14.
- 2 Open both latches of the memory module socket.



WARNING: Handle the memory module with care. Be careful to not touch any memory module contacts. Touching the gold contacts may damage the module. Avoid touching the memory chips.

- 3 Remove the new memory module from the antistatic packaging. Hold it by its edges only.
- 4 You can install the memory module in only one position. Match the notch (A) on the memory module with the tab (B) on the memory socket. Push the module carefully and firmly into the slot, ensuring that the latches on both ends snap into place.



- 5 Replace any cabling that was moved.
- 6 Complete the procedures to replace the optical disc drive. See "Replacing an Optical Disc Drive" on page 8.

Removing and Replacing a PCI Card

You can also replace the modem card in the PCI card slot with a new modem card or another PCI card. The Modem card is a telephone modem circuit board that fits into a PCI card slot.

Before You Begin

Observe the following requirements before removing and replacing the component:

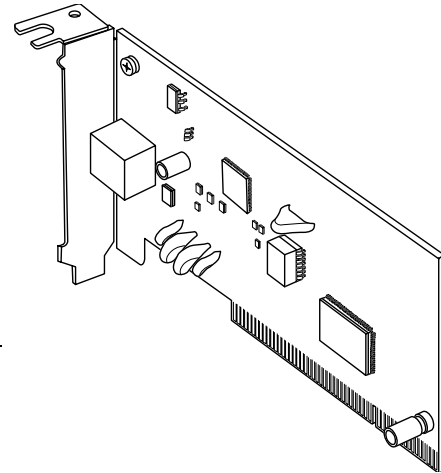
IMPORTANT: Due to the small PC size, you can only install a small, low-profile PCI card of the same approximate size of the modem card. HP recommends that you install a card with power consumption of 5 watts or less.

Not all low-profile cards will fit into the PCI slot. Some external connectors, especially connectors located at the top of the card, may not fit properly into the back panel.

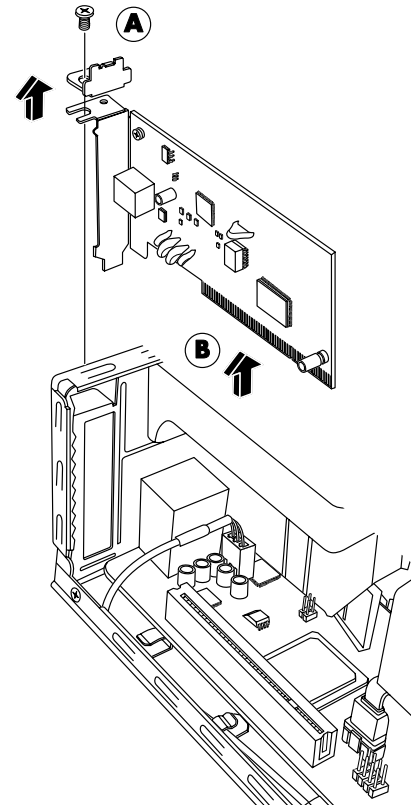
This procedure requires a Phillips screwdriver.

Removing a PCI Card

- 1 Prepare the PC and remove the PC cover. Complete the "Opening the PC" procedures on page 2.
- 2 Inside the PC, locate the PCI card slot on the motherboard.
- 3 Make a note of any internal cables attached to the card, and then disconnect them.
- 4 Remove the screw on the modem card bracket holder (A) on the outside of the frame. Remove the bracket holder.
- 5 Hold the card at the top and carefully pull the card straight out of the slot (B).



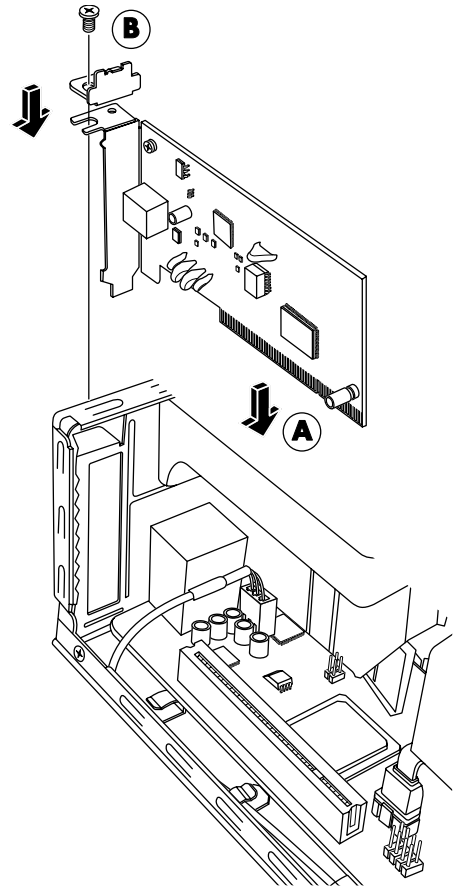
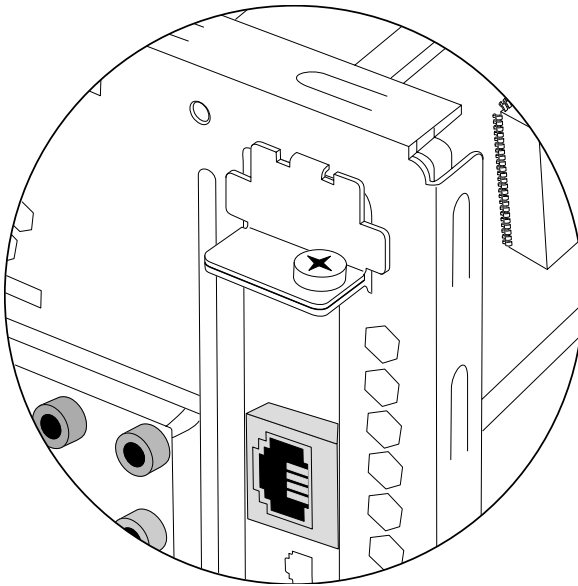
PCI card



Replacing a PCI Card

You can replace the modem card with a new modem card or another PCI card in the PCI card slot:

- 1 Complete the procedures to remove the modem card. See “Removing a PCI Card” on page 16.
- 2 Align the edge of the add-in card with the slot on the PC and gently but firmly press the card straight down into the card slot **(A)**. The whole connector should be seated properly in the card slot.
- 3 Attach the bracket holder with the screw to secure the card **(B)**.



- 4 Connect any internal cables attached to the card.
- 5 Complete the procedures to close the PC. See “Closing the PC” on page 5.
- 6 Install any software drivers; supplied by the card manufacturer if you are installing another PCI card, or as required.

NOTE: If the new card or device isn't working, read the card manufacturer's installation instructions, and recheck all connections, including those to the card, power supply, keyboard, and monitor.

Removing and Replacing the Battery

A lithium battery on the motherboard provides backup power for the PC's timekeeping capability.

When the battery starts to weaken, the date and time may be incorrect. If the battery fails, replace it with a CR2032 lithium battery (3 volt, 220mAH rating) or an equivalent battery.

Before You Begin

Observe the following requirements before removing and replacing the component:



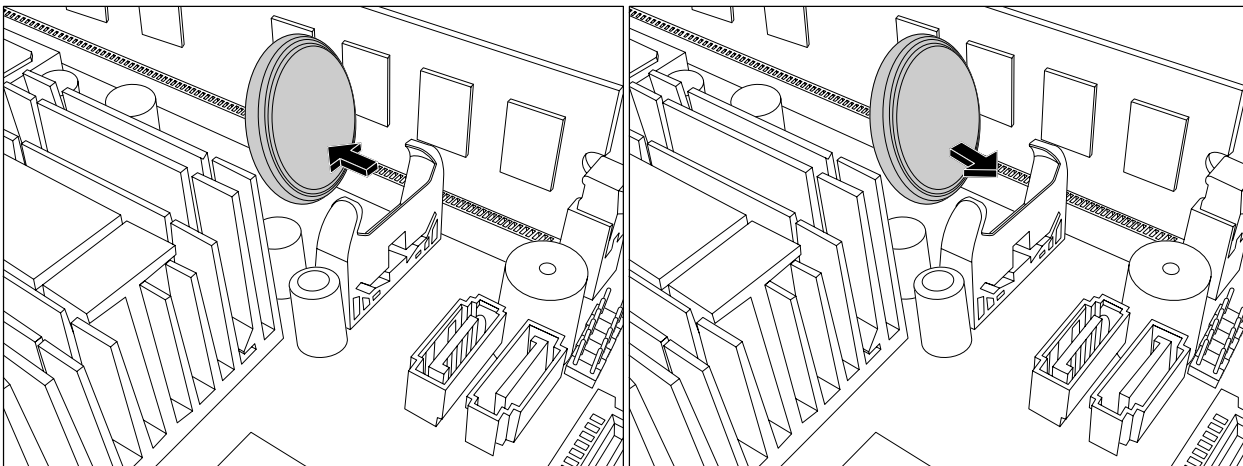
WARNING: There is danger of explosion if the battery is incorrectly replaced. Replace only with the same, or equivalent, type of battery. Discard used batteries according to the manufacturer's instructions.



WARNING: Never use metal, such as pliers, to remove or replace the battery. Metal contact may cause a battery short and damage the battery.

Procedure

- 1 Prepare the PC and remove the PC cover. Complete the "Opening the PC" procedure on page 2.
- 2 Gently lay the PC on its side.
- 3 Complete the procedure "Removing an Optical Disc Drive" on page 6.
- 4 Remove any cabling, if necessary, to reach the battery.
- 5 Lift the battery from the socket to release the battery.



- 6 Install the new CR2032 battery in the socket, with the positive (+) side facing the open side of the socket.
- 7 Replace all cables that you removed.
- 8 Complete the procedure "Replacing an Optical Disc Drive" on page 8.
- 9 Complete the procedures to replace the PC cover and close the PC. See "Closing the PC" on page 5.

NOTE: You may have to manually set the time and date on the PC after startup.

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