COMPAQ

Hardware Reference Guide

Compaq Presario 4000 Series Computer

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This guide provides information on identifying computer components and upgrading this series of computers.

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WARNING: Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

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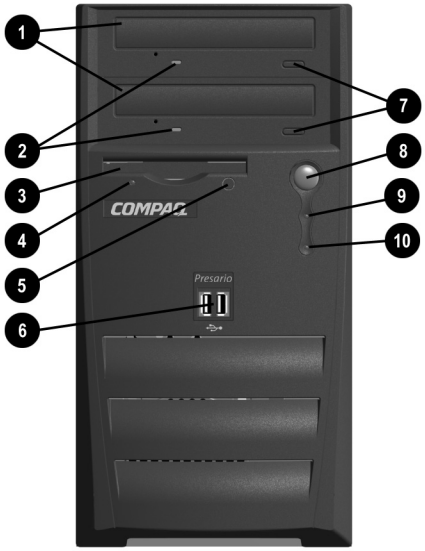
A Look at the Computer

Front Panel Components

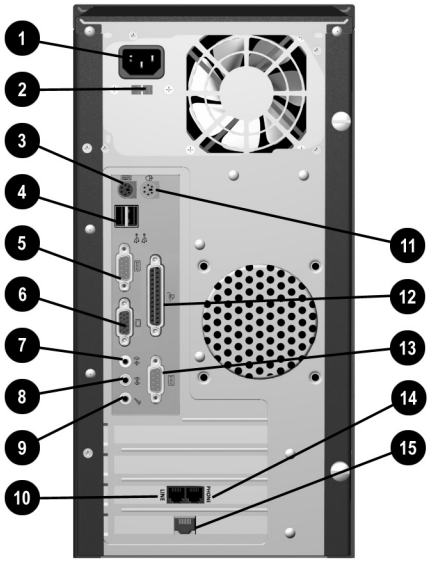


Front Panel Components

❶	Optical drives	Depending on your computer model, may be a CD-ROM, CD-RW, or DVD-ROM drive. If a second optical drive is not installed, it is replaced by a removable blank bezel panel.
❷	Optical drive activity lights	When lit, indicates the optical drive is being accessed.
❸	Diskette drive	Reads and writes information onto a 3.5-inch diskette.
❹	Diskette drive activity light	When lit, indicates the diskette drive is being accessed (Do not remove the diskette while the light is on).
❺	Diskette eject button	Ejects the diskette from the diskette drive.
❻	USB (Universal Serial Bus) ports (available on select models)	Connects USB devices, such as gamepads, joysticks and video cameras.
❼	Optical drive eject buttons	Releases the optical drive disc tray.
❽	Power button	Turns on the computer. To turn off the computer, use the operating system "Turn Off Computer" command.
❾	Power-on light	When lit, indicates power is on.
❿	Hard drive activity light	When lit, indicates the hard drive is being accessed.

✎ Arrangement and number of drives and connectors may vary by model.

Rear Panel Components



Rear Panel Components

❶	Power cord connector	Connects the computer's power cord.
❷	Voltage select switch (available on select models)	Selects 230 volts (for some areas of Asia, Africa, Australia and Europe) or 115 volts (for North America, South America, and Japan). This switch may be factory set to 230 volts. Before plugging the power cord into an electrical outlet, be sure the switch is set to your regional requirements. ⚠ Failure to set the switch to the correct regional voltage requirement may damage your internal components.
❸	PS/2 keyboard connector	Connects a PS/2-compatible keyboard.
❹	USB (Universal Serial Bus) ports	Connects USB devices, such as a USB keyboard, mouse, or pointing device.
❺	Serial port	Connects a serial device, such as a scanner.

Rear Panel Components *(Continued)*

❻	VGA connector	Connects the monitor to the computer.
❼	Audio line-out connector	Connects stereo speakers.
❽	Audio line-in connector	Connects audio devices.
❾	Microphone connector	Connects a microphone.
❿	Modem port	Connects the modem cable. A modem cable is included with the computer.
⓫	PS/2 mouse connector	Connects a PS/2-compatible mouse or other pointing device.
⓬	Parallel port	Connects a parallel device, such as a printer.
⓭	Second serial port	Connects a serial device.
⓮	Telephone extension (not available in all countries)	Connects the telephone to the computer.
⓯	Network Interface Card (NIC connector (available on select models)	Connects an Ethernet network cable. A network cable is not included with your computer.

✎ Arrangement and number of connectors may vary by model.

Mouse Components

Your computer includes a Scroll Mouse, a Wireless Wheel Mouse, or a USB Optical Mouse. The Wireless Wheel Mouse and the USB Optical Mouse are available with select models.

Mouse Components

❶	Left mouse button	Click and quickly release to make screen selections. Double-click and quickly release to open applications and files.
❷	Scroll wheel	Moves the screen backward and forward through a document without having to continuously move the mouse or mouse wheel.
❸	Right mouse button	Click and quickly release to display application menu selections.

Using the Scroll Mouse

The mouse directs the cursor on the Windows desktop. Use the mouse to move quickly and easily through a document or Web site.

Moving the scroll wheel on your mouse through a document or Web site is faster than using the scroll bar. You can use the scroll wheel to:

- Scroll forward or backward through a document or Web site by turning the scroll wheel forward or backward.
- Autoscroll by pressing down on the scroll wheel until it clicks (you will see an autoscroll icon on your desktop). Move the mouse vertically, horizontally, or diagonally to scroll in the desired direction. The farther you move the cursor from the starting point icon, the faster the scrolling occurs. To stop, press the mouse button.

Some mouse functions, such as autoscrolling, may not work with all software.

Refer to the *Learning More About Your Computer* guide contained on the *Documentation Library* CD for information on customizing your mouse.

Using the Wireless Wheel Mouse

The wireless wheel mouse is available with select models. It has the same features and functions as the scroll mouse with the addition of a connect receiver box. Refer to the *Getting Started* guide included with your computer for instructions on installing the batteries.

When using the wireless mouse:

- Replace the batteries approximately every six months. The wireless mouse does not alert you when the batteries are low.
- For optimal performance, place the connect receiver box at least 8-inches/20-centimeters away from other electrical devices, such as the computer, monitor or external storage equipment.
- Refer to the "Solving Minor Problems" section in your *Getting Started Guide* if your wireless mouse does not function properly.

Using the USB Optical Mouse

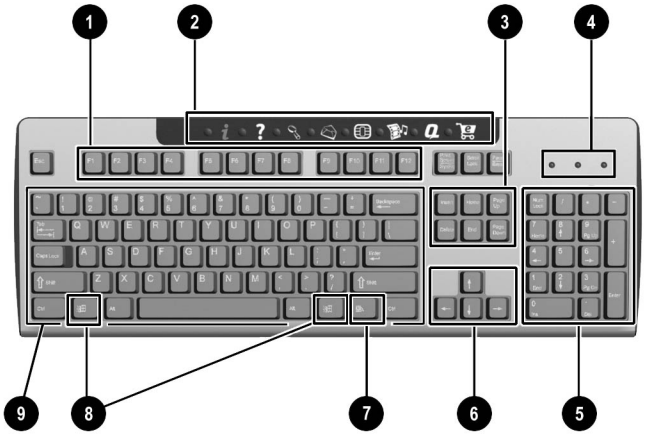
The USB optical mouse is available with select models. It provides the same functions as the scroll mouse and wireless wheel mouse except it uses an optical sensor instead of a mechanical ball to determine the position of the cursor on the screen. The surface on which you use the optical mouse plays an important role in tracking the cursor. When using the optical mouse:

- Use a mousepad or a white sheet of paper underneath your mouse. Using it on a glass or see-through surface will inhibit the ability of the sensor to track the cursor.
- Avoid using the mouse on a reflective surface such as a mirror or shiny metal desk. This may cause tracking problems.
- Some wood grains and grooved surfaces may also cause tracking problems.
- Refer to the "Solving Minor Problems" section in your *Getting Started Guide* if your optical mouse does not function properly.

2

Keyboard Features

Easy Access Keyboard Components



Easy Access Keyboard Components

❶	Function keys	Perform special functions, depending on the software application being used.
❷	Easy Access Buttons	Provide quick access to your favorite Web sites, services, and applications.
❸	Edit keys	Includes the following: Insert, Home, Page Up, Delete, End, and Page Down.
❹	Status Lights	Indicates a quick status of your computer and keyboard settings (Num Lock, Caps Lock, and Scroll Lock).

Easy Access Keyboard Components *(Continued)*

❺	Numeric Keys	Works like a calculator keypad.
❻	Arrow Keys	Navigates through games or through a document or Web site. These keys allow you to move left, right, up, and down, using the keyboard instead of the mouse.
❼	Application Key*	Opens (used like the right mouse button) pop-up menus in a Microsoft Office application. May perform other functions in other software applications.
❽	Windows Logo Keys*	Opens the Start menu in Microsoft Windows. Used in combination with other keys to perform other functions.
❾	Main Keys	Works like standard typewriter-style keys.

* Keys available in select geographic regions.

Using the Easy Access Buttons

The Easy Access Buttons make accessing your favorite Web sites, services, and applications easier and faster.

Several Easy Access Buttons are programmed to default to an Internet Web site. However, until you set up your Internet Service Provider (ISP), the buttons will take you to a window that guides you through the ISP setup process.

Easy Access Buttons

❶	*i*	Instant Internet	Provides your daily starting point to the Internet. It connects you to a customizable Web page filled with local weather, news, sports, and financial information.
❷	?	Help	Takes you to the Compaq Help & Support center, which provides information about your computer. You can find information about your computer and computer-related peripherals as well as access links to online technical support.
❸		Search	Accesses a Web site that helps you locate news and information on the Internet. Search for topics including news and information, shopping, graphics, music, and video.
❹		E-mail	Launches your e-mail application.

Easy Access Buttons *(Continued)*

❺		Smart Card or Community	Depending on your region, this button launches the Smart Card of Compaq online Community. • The Smart Card button is available on U.S. English keyboards. When pressed, it provides information on obtaining a Smart Card and shopping at participating online merchants. • The Community button provides online collaboration between novice and technical experts, who share knowledge and information and provide assistance. Participate in existing product discussions, review commonly asked questions and answer or post new questions to a community of users.
❻		Entertainment	Your online connection to the world of entertainment, featuring music downloads, streaming video, Web casts, entertainment news, and reviews.
❼		My Compaq PC	Takes you to the My Presario Web site.
❽		Retail/Affinity Central	Provides an instant connection to your computer store and a variety of leading consumer companies.

✎ Easy Access Button functions may vary by model and by region.

Customizing the Easy Access Buttons

All Easy Access Buttons can be reprogrammed to open any software application or data file on your hard drive, or any Internet address.

To reprogram the Easy Access Buttons, complete the following steps:

1. Double-click the keyboard icon in the notification area (lower right corner) of the Windows taskbar. The Keyboard Properties dialog box is displayed.
2. Click the **Help** button on the keyboard properties dialog box for instructions.

Using the Windows Logo Key

Use the Windows Logo key in combination with other keys to perform certain functions available in the Windows operating system. Refer to "Easy Access Keyboard Components" in this chapter to identify the Windows Logo key.

Windows Logo Key + **F1**	Displays a pop-up menu for the selected object
Windows Logo Key + **Tab**	Activates the next Taskbar button
Windows Logo Key + **e**	Launches Explore My Computer
Windows Logo Key + **f**	Launches Find Document
Windows Logo Key + **Ctrl** + **f**	Launches Find Computer
Windows Logo Key + **m**	Minimizes all open applications
Shift + Windows Logo Key + **m**	Undoes Minimize All
Windows Logo Key + **r**	Displays the Run dialog box

Identifying System Status Lights

The system lights on the keyboard provide a quick status of your computer and keyboard settings.

System Status Lights

❶	Num Lock	When lit, the Num lock is on and indicates that you can use the numeric key pad to type numbers.
❷	Caps Lock	When lit, the Caps lock is on and indicates all text typed will appear as capital letters.
❸	Scroll Lock	When lit, the Scroll lock is on and indicates when the scroll-lock function is engaged, enabling you to scroll through a document without moving the cursor.

3

Computer Upgrades

You can replace or upgrade several components in your computer. This chapter provides procedures on accessing and installing the internal parts of the computer.

Preparing the Computer

CAUTION: Static electricity can damage the electronic components of the computer or optional equipment. Before beginning these procedures, ensure that you are discharged of static electricity by briefly touching a grounded metal object. Refer to "Appendix A" in this guide for additional information on preventing electrostatic discharge.

1. Remove any diskette or compact discs (CDs) from the computer.
2. To shut down the computer, click the **Start** button, and then click **Turn Off Computer.** The *Turn Off Computer* dialog box is displayed. Select **Turn Off** to turn the computer off.

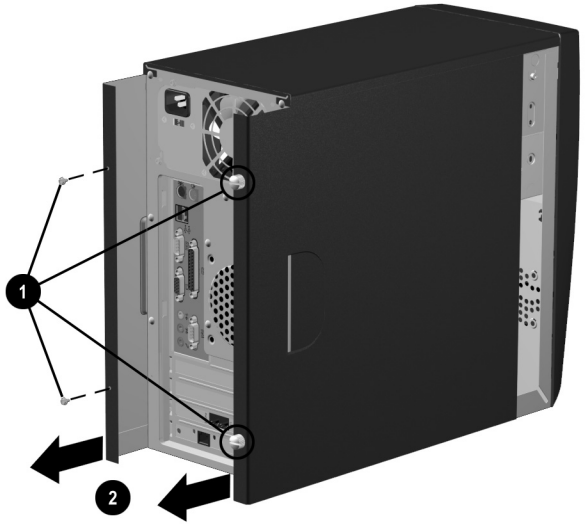
3. Disconnect the power cord from the electrical outlet ❶ and then from the computer ❷.

Disconnecting the Power Cord

WARNING: To reduce the risk of personal injury from electrical shock and/or hot surfaces, be sure to disconnect the power cord from the wall outlet, and allow the internal system components to cool before touching.

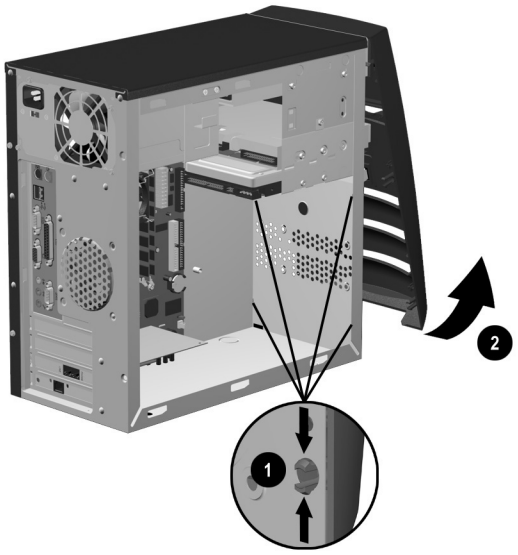
4. Disconnect all external devices connected to the computer.

5. Remove the access panels by loosening the screws ❶ that secure the access panels to the computer chassis. Slide the access panels back ❷ from the unit.



Removing the Computer Access Panels

6. Remove the front bezel by pressing the release tabs ❶, then rotating the front bezel away from the chassis to release it ❷.



Removing the Front Bezel

Removing or Upgrading a Drive

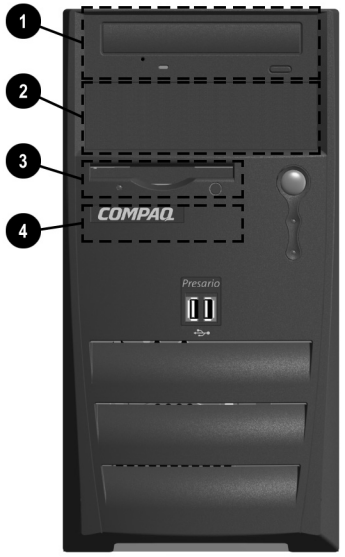
Depending on your computer configuration, you may have up to four of the following storage drives in your computer.

- CD-ROM or CD-RW drive
- DVD-ROM drive
- Hard drive
- Diskette drive

This section provides the procedure on replacing or upgrading your storage drives. You will need a Torx or Flathead screwdriver to remove or replace a drive.

CAUTION: Make sure you backup your personal files on the hard drive to an external storage device, such as a CD, before removing the hard drive. Failure to do so will result in data loss. After replacing the hard drive, you will need to run the *Compaq Restore Plus!* CD to load the Compaq factory installed files.

Locating Drive Positions



Drive Positions

❶ Optical drive (may be a CD-ROM, CD-RW or DVD-ROM drive)

❷ Second optical drive (may be a CD-ROM, CD-RW or DVD-ROM). If you do not have a second optical drive installed, a blank bezel panel is provided.

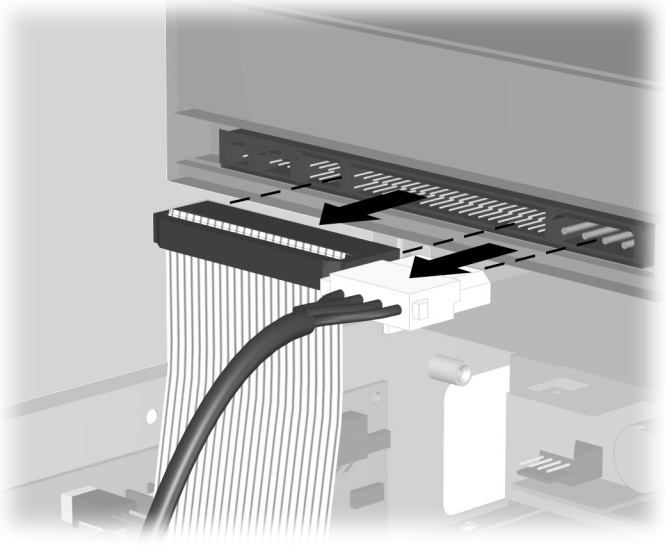
❸ Diskette drive

❹ Hard drive

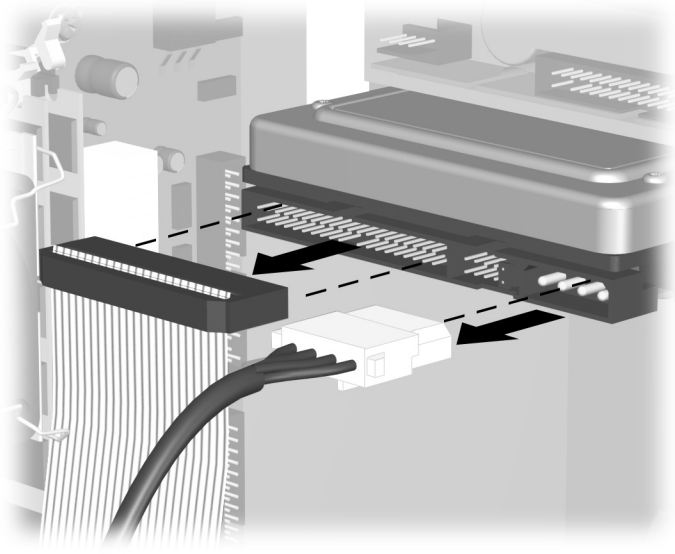
Removing a Drive

1. Locate the drive you want to remove. Refer to the previous section in this chapter on "Locating Drive Positions" for details.
2. Complete the procedure described in "Preparing the Computer" at the beginning of this chapter.

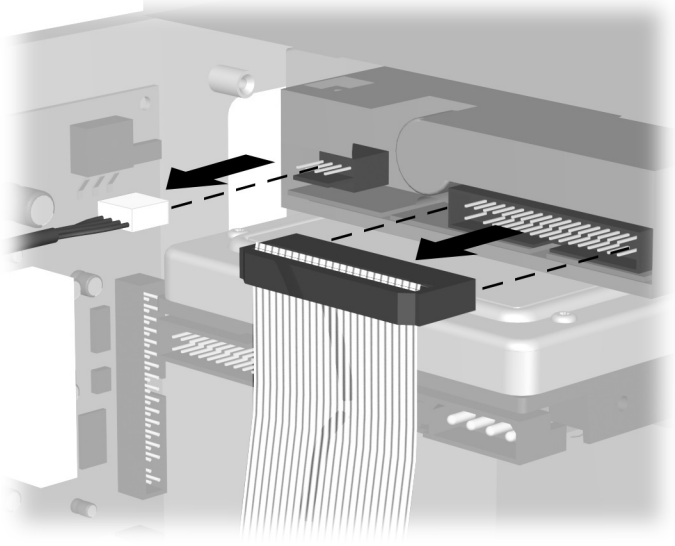
3. Disconnect the power and data cables from the back of the drive you want to remove as indicated in the following illustrations.



Disconnecting the Optical Drive Cables

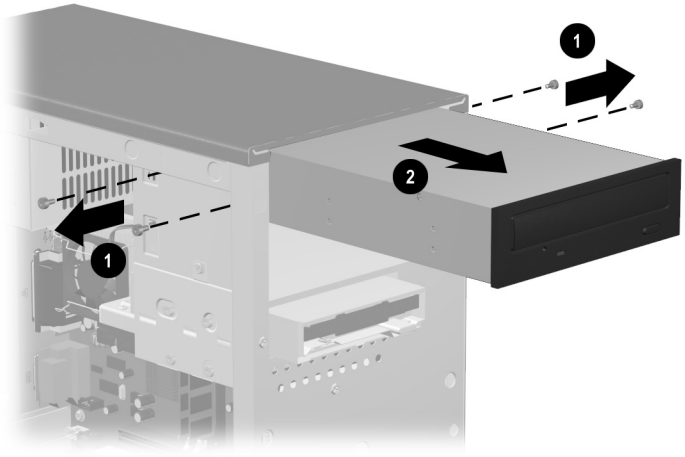


Disconnecting the Hard Drive Cables



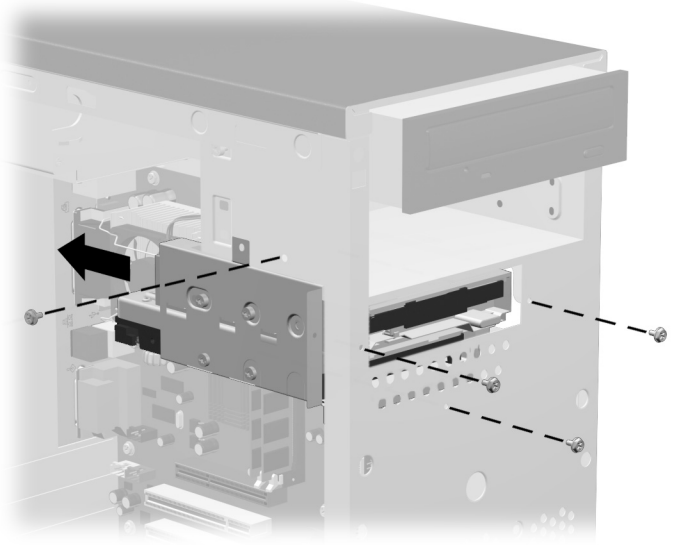
Disconnecting the Diskette Drive Cables

4. **If you are removing an optical drive,** remove the four screws ❶, two from each side, that connect the drive to the chassis, then slide the drive out of the chassis ❷.



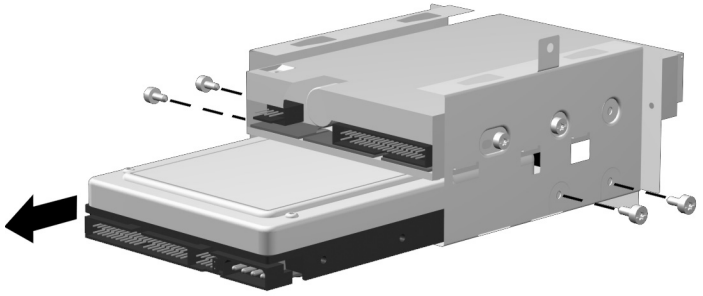
Removing an Optical Drive

5. The diskette drive and hard drive are enclosed in a drive cage. **If you are removing a hard drive or diskette drive,** remove the four screws from the drive cage, then slide the drive cage back, toward the rear, and out of the chassis.

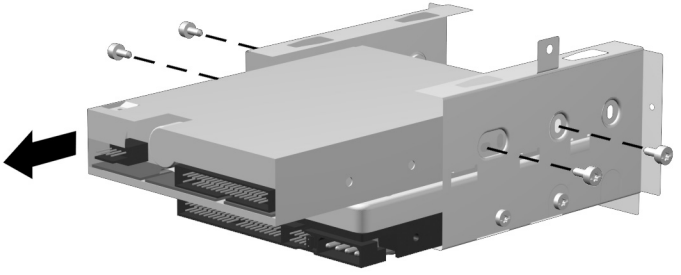


Removing the Drive Cage

6. Place the drive cage on a flat working surface. Remove the four screws, two on each side, securing the drive to the drive cage. Slide the drive from the drive cage as indicated in the following illustrations.



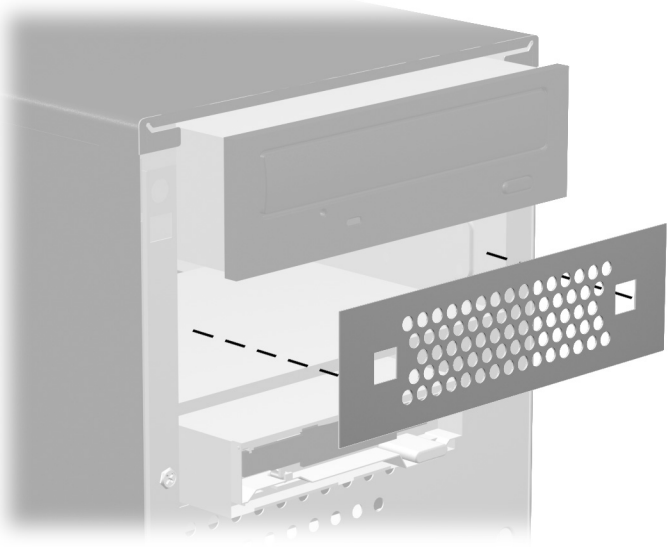
Removing the Hard Drive from the Drive Cage



Removing the Diskette Drive from the Drive Cage

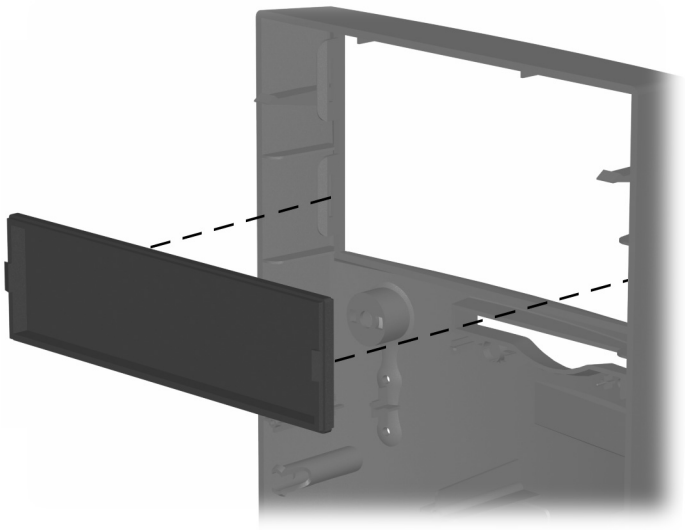
Replacing or Adding a Drive

1. Follow the procedures described in “Preparing the Computer” and “Removing A Drive,” sections at the beginning of this chapter.
2. If you are adding a drive to an empty drive bay, remove the metal break away plate from the chassis.



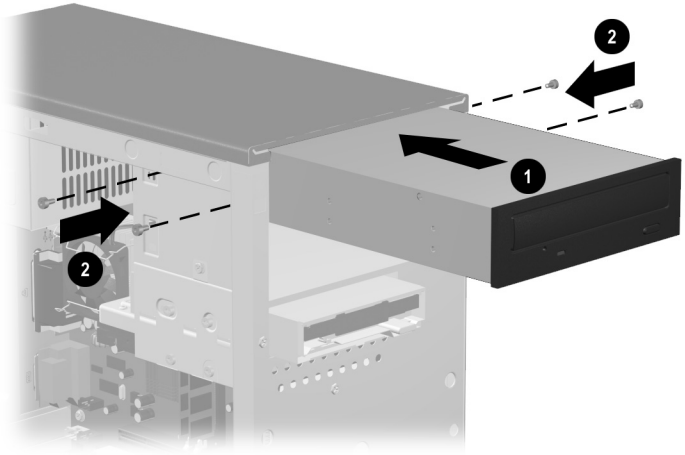
Removing the Metal Plate

3. Remove the blank bezel from the front panel bezel.



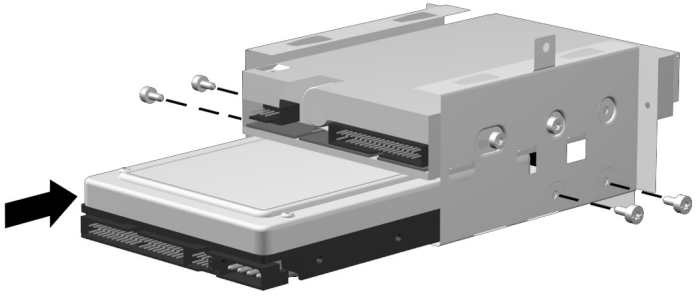
Removing a Blank Bezel

4. **If you are installing an optical drive,** slide the drive into the chassis ❶, then install the four screws, two on each side, to secure the drive to the chassis ❷.

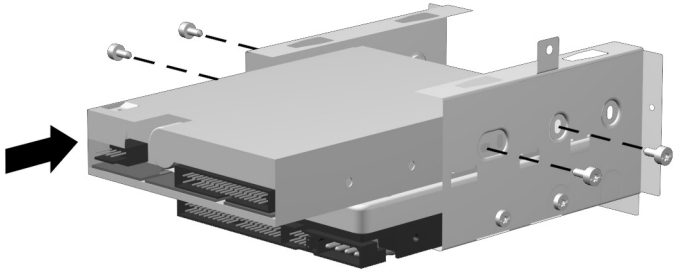


Installing the New Optical Drive

5. **If you are installing a hard drive or diskette drive,** insert the drive into the drive cage as indicated in the following illustrations. Reinstall the screws (two on each side) that secure the drive to the drive cage.

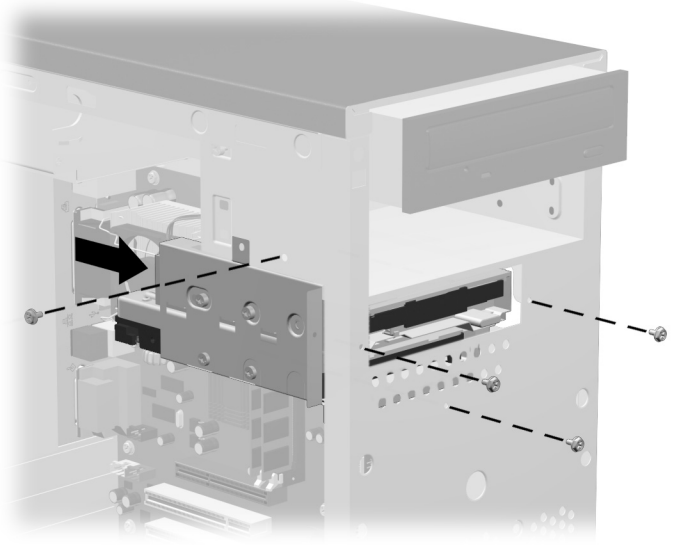


Installing the New Hard Drive in the Drive Cage



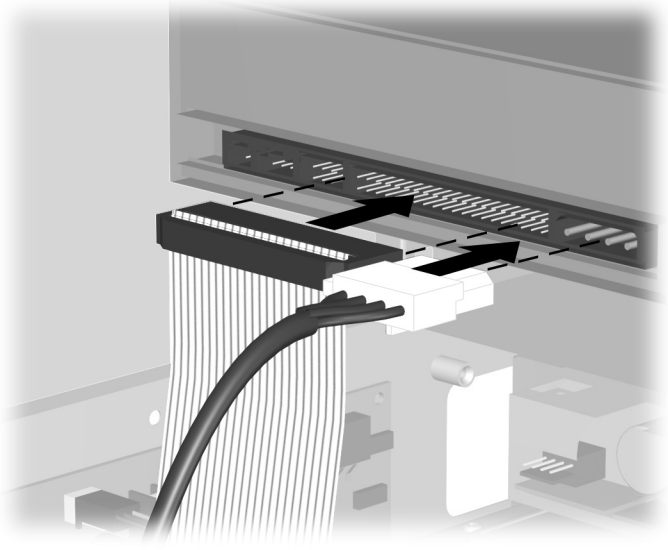
Installing the New Diskette Drive in the Drive Cage

6. Replace the drive cage inside the chassis by sliding it toward the front of the chassis into position. Reinstall the screws to secure the cage to the chassis.

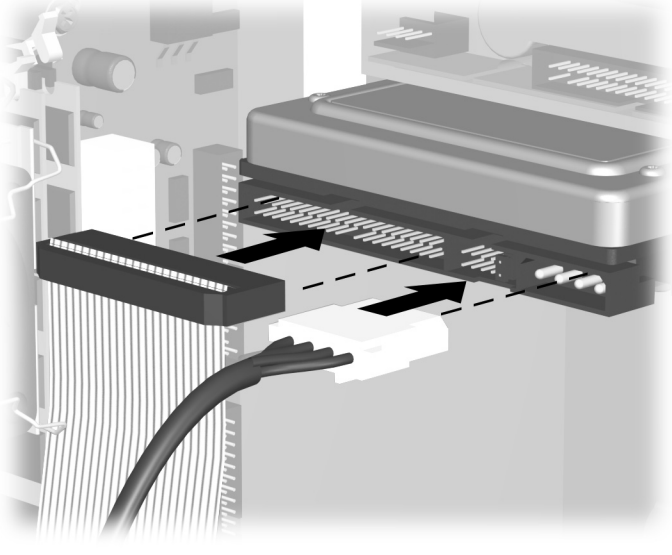


Replacing the Drive Cage

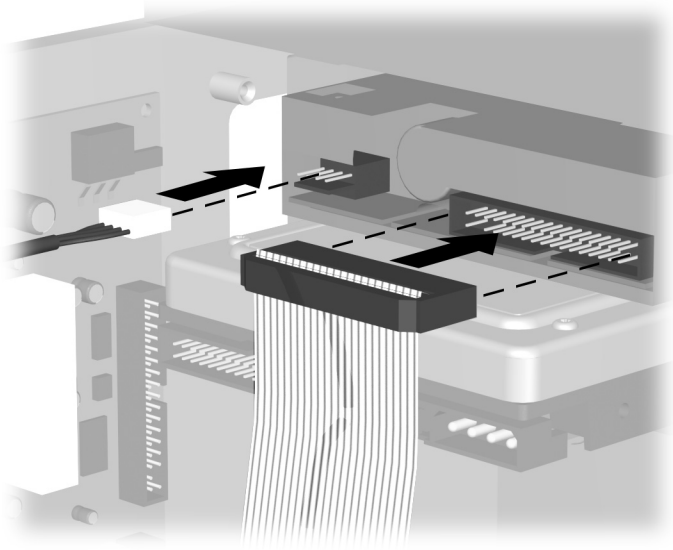
7. Reconnect the power and data cables to your drive.



Reconnecting the Optical Drive Cables



Reconnecting the Hard Drive Cables



Reconnecting the Diskette Drive Cables

8. Complete the procedure described in "Reassembling the Computer" section of this chapter.
9. Turn on the computer.
10. If you replaced the hard drive insert the *Compaq Restore Plus!* CD to restore the operating system, software drivers, and/or any software applications that were preinstalled on the computer from Compaq. Follow the instructions in the guide included with the restore CD. When the restore process is completed, reinstall your personal files that you backed up before replacing your hard drive.

Upgrading or Replacing Memory

Your computer comes with random access memory (RAM), which temporarily stores data and instructions on your computer. Memory expansion modules can be installed in the memory expansion slots in the computer.

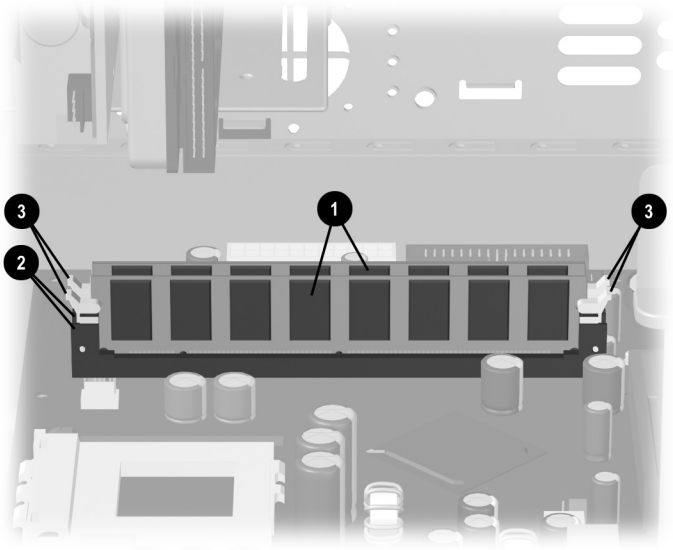
There are several different types of memory modules. Install the same type of memory currently in your computer. To find your type of memory, go to the **compaq.com/athome/memory** Web site.

No tools are needed to remove, replace, or upgrade memory modules.

Removing a Memory Module

CAUTION: When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

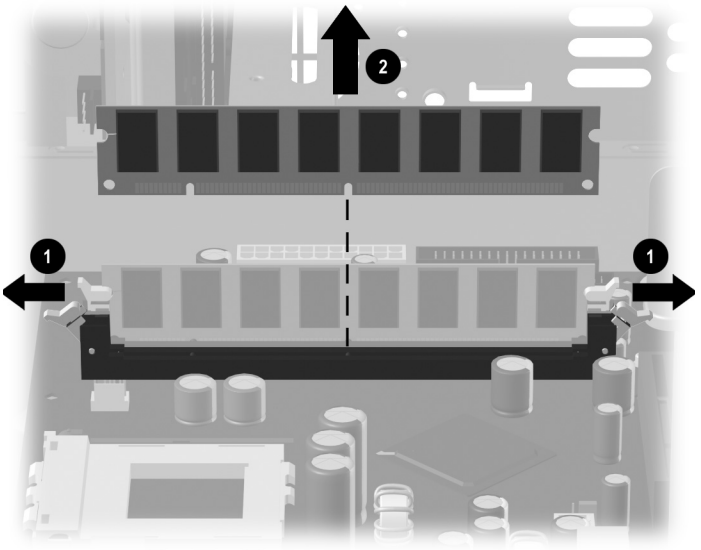
1. Complete the procedure described in "Preparing the Computer" section at the beginning of the chapter, but do not remove the front bezel.
2. Locate the memory module inside your computer. See the following illustration for the location of the memory modules ❶, memory slots ❷ and release latches ❸ on the system board.



Locating the Memory Module

The location and number of memory modules may vary slightly by model.

3. Open both latches of the memory module socket ❶ found at each end of the memory module. Lift the memory module ❷ from the memory slot.



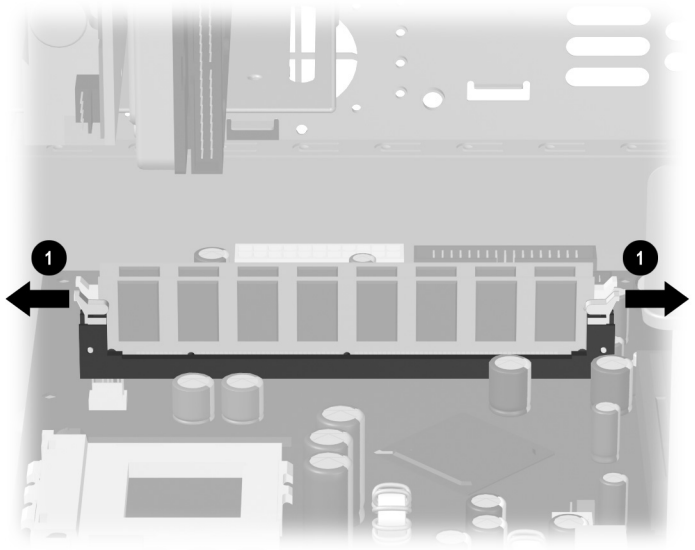
Removing a Memory Module

Replacing or Adding a Memory Module

CAUTION: When handling a memory module, be careful not to touch any of the contacts. Doing so may damage the module.

Upgrade the memory in your computer with memory of the same type and speed to the memory originally installed in your computer. You can find out exactly what type of memory is in your computer at the **compaq.com/athome/memory** Web site (not available in all languages).

1. Open both latches of the memory module socket.

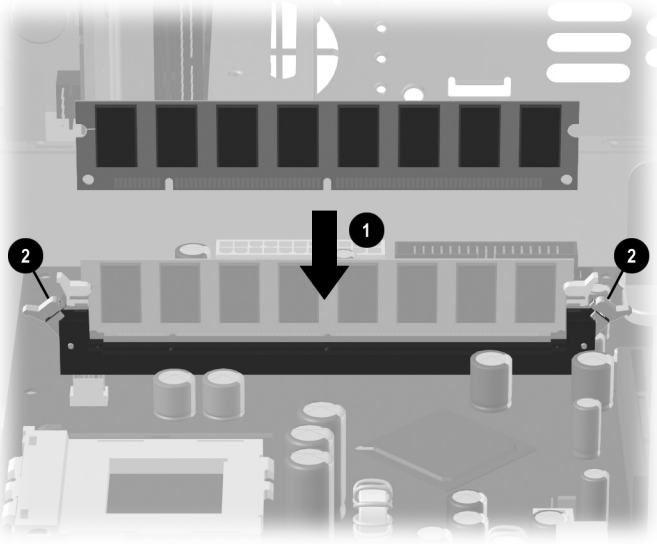


Opening the Latches on the Memory Module Socket

If you are replacing a memory module, put the new memory module in the same memory slot from which the old memory was removed.

If you are adding a memory module, install the new module into the socket nearest the preinstalled module, and install additional modules in the next available sockets.

2. The memory module can be installed in only one way. Match the notch on the module ❶ with the tab on the memory socket. Push the module carefully and firmly into the slot ensuring that the latches on both ends snap into place.



Installing a Memory Module

3. Complete the procedure described in "Reassembling the Computer" section of this chapter.

If a blank screen is displayed after replacing or adding a memory module, the memory is installed incorrectly or it is the wrong type of memory. Remove and reinstall the memory modeuls as previously described in the "Replacing or Adding a Memory Module" section of this chapter.

Removing or Installing an Expansion Card

An expansion card is a circuit board that fits into a computer expansion slot. Your computer contains several expansion slots that can be used to add components to your computer.

Expansion cards you can add to your computer include:

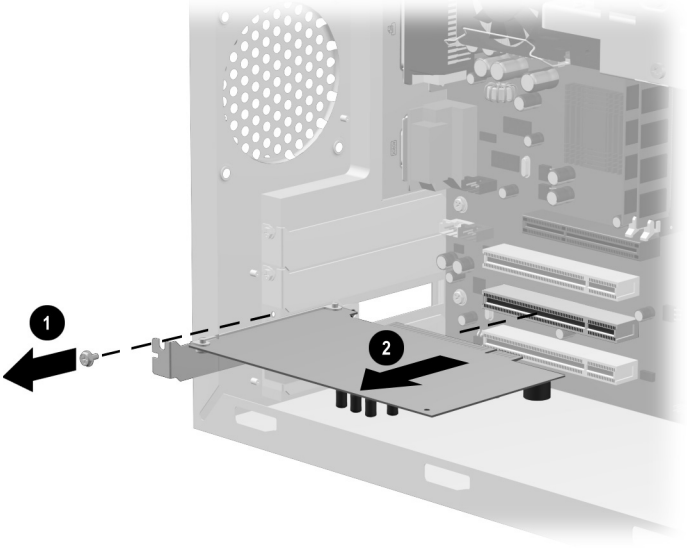
- Modem
- Network Interface Card (NIC)
- Graphics Card
- Sound Card

A Phillips screwdriver is needed to remove, replace, or add an expansion card.

1. Complete the procedure described in "Preparing the Computer" section at the beginning of this chapter, but do not remove the front bezel.
2. Inside the computer, locate the expansion slots on the system board.

3. If you are removing an existing expansion card, remove the screw ❶ at the top of the expansion slot. Holding the card at each end, carefully rock it back and forth until the connectors pull free from the socket ❷. Be sure not to scrape the card against the other components.

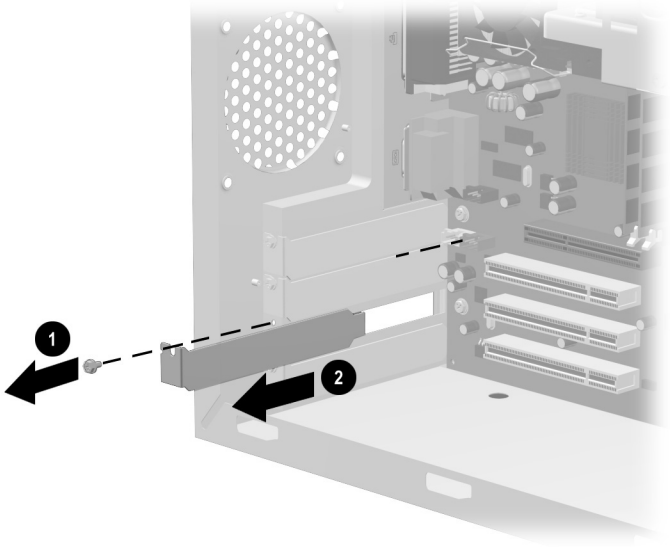
Keep the screw that secures the expansion slot cover to the chassis. You will need it when installing the new card.



Removing an Expansion Card

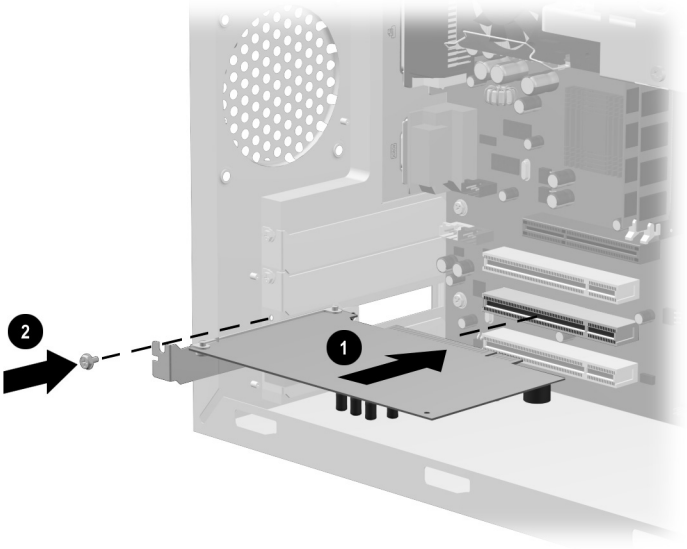
4. If you are not replacing the old expansion card with a new expansion card, install an expansion slot cover to close the open slot. Insert the metal slot cover in the opened slot and install a screw to to the top of the cover to secure it in place.

5. If you are adding a new expansion card to the computer, remove the screw ❶ securing the slot cover, then remove the expansion slot cover ❷ from the slot.



Removing the Screw and Expansion Slot Cover

6. Add or replace an expansion card to a slot by aligning the edge of the expansion card with the slot on the chassis and gently pressing the card straight down into the expansion slot ❶. Reinstall the screw that secures the card to the chassis ❷.
7. If you have replaced or added a new expansion card, store the old card in the anti-static packaging that contained your new card.



Replacing or Adding an Expansion Card

When you install an expansion card, press firmly on the card so that the whole connector seats properly in the expansion card slot.

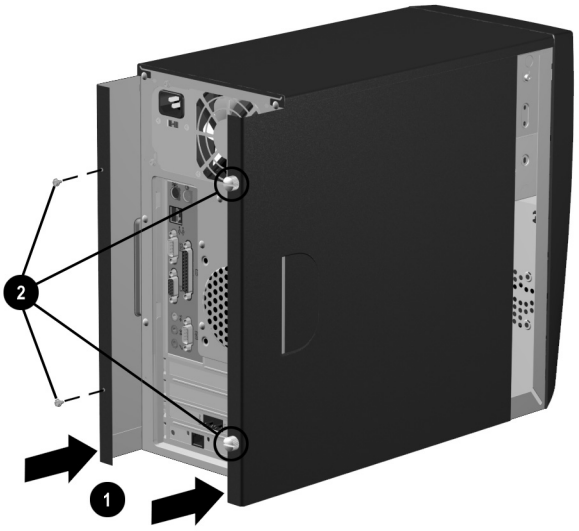
8. Complete the procedure described in "Reassembling the Computer" section of this chapter.

Reassembling the Computer

1. Place the front bezel in the correct position. Ensure the slots ❶ are aligned correctly and rotate the bezel toward the chassis ❷ until it snaps into place.

Replacing the Front Bezel

2. Place the side access panels in the proper position on the chassis and slide them into place ❶. Ensure that the holes for the thumbscrews are aligned with the holes on the chassis and replace the thumbscrews ❷.



Replacing the Side Acess Panels

3. Reconnect the power cable ❶ to the computer and plug the cable into an electrical outlet ❷.

Reconnecting the Power Cable

4. Reconnect all peripheral devices to the computer.

WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not plug telecommunications or telephone connectors into the network interface controller (NIC) ports.

5. Turn on the computer by pressing the power button.

A

Electrostatic Discharge

A discharge of static electricity from a finger or other electrostatic conductor may damage electronic components. Before handling electrostatic-sensitive components, discharge static electricity by one the methods described in this appendix.

Preventing Electrostatic Damage

When Handling Drives

- Before handling a drive, discharge static electricity by touching the unpainted metal surface or lug nuts on the connectors on the rear of the computer.
- Avoid touching connector pins on the computer or a drive.

When Installing Internal Components

- Keep components in their electrostatic-safe containers until you are ready to install them.
- Have everything needed for the installation within reach so that you do not have to leave the area after beginning installation.
- Use nonmagnetic tools.
- Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.
- If you remove a component, place it in an electrostatic-safe container.

B

Specifications

Depending on your computer model, specifications may vary.

Compaq 4000 Series Computer

Desktop Dimensions		
Height	3.8 in	9.7 cm
Width	12.5 in	31.8 cm
Depth	14.6 in	37.1 cm
Approximate Weight	20.0 lb	9.1 kg
Weight Supported (maximum distributed load)	100.0 lb	45.5 kg
Temperature Range		
Operating	50° to 95°F	10° to 35°C
Nonoperating	-4° to 140°F	-20° to 60°C
Relative Humidity (noncondensing)		
Operating	8-90%	8-90%
Nonoperating	5-95%	5-95%
Maximum Altitude (unpressurized)		
Operating	10,000 ft	3048 m
Nonoperating	30,000 ft	9144 m
Power Supply		
Operating Voltage Range	90-132 VAC	180-264 VAC
Rated Voltage Range	100-127 VAC	200-240 VAC
Rated Line Frequency	50-60 Hz	50-60 Hz

Compaq 4000 Series Computer (Continued)		
Power Output	200 W	200 W
Rated Input Current (maximum)	6 A	3 A
Heat Dissipation		
Maximum	1050 BTU/hr	264 kg-cal/hr
Nominal	525 BTU/hr	132 kg-cal/hr

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