COMPAQ

Hardware Guide

compaq notebook series

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This guide explains how to identify and use notebook hardware features, including connectors for external devices. It also includes power and environmental specifications, which may be helpful when traveling with the notebook.

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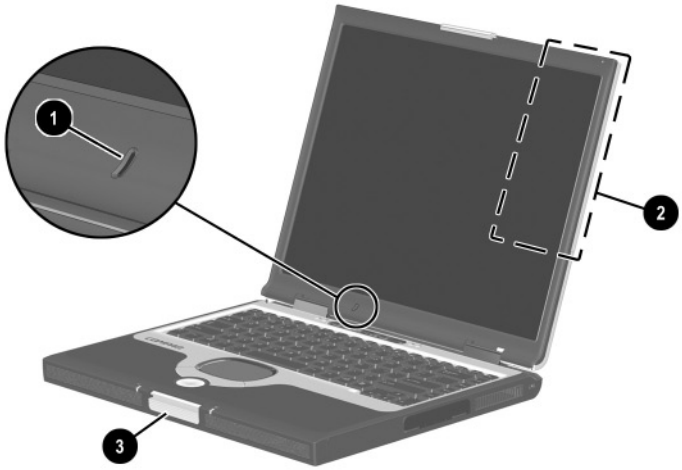
1

Identifying External Hardware

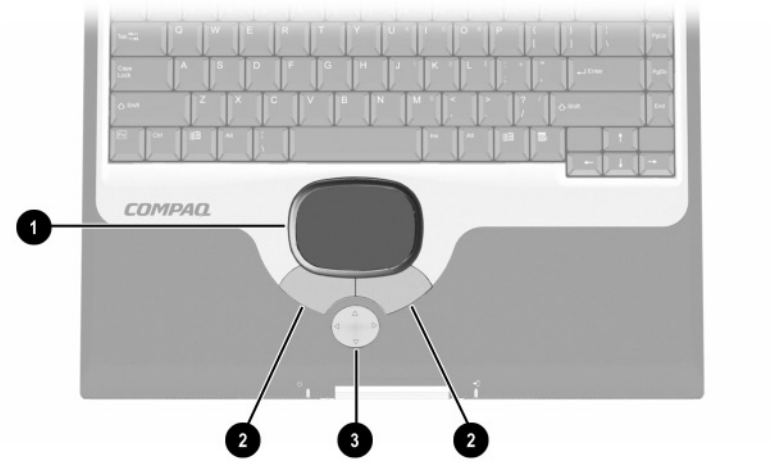
Display Components



Display Components		
❶	Microphone	Inputs single-channel sound.
❷	MultiPort	Supports an optional USB-enabled wireless device such as a Bluetooth MultiPort, 802.11b Wireless LAN MultiPort, and future wireless technologies.
❸	Display release latch	Opens the notebook.

Pointing Device Components

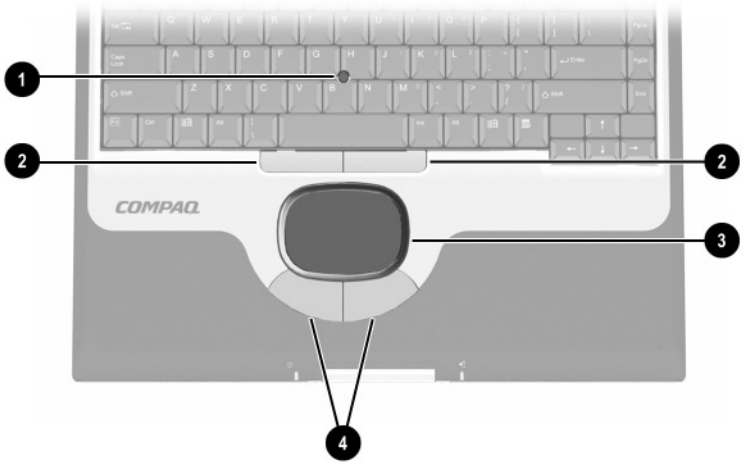
TouchPad Models



Pointing Device Components: TouchPad Models		
❶	TouchPad	Moves the cursor. Can be set to perform additional mouse functions such as scroll, select, and double-click.*
❷	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
❸	Scroll button	Scrolls up, down, left, or right through most application and Internet browser windows.

*For information about modifying pointing device functions, refer in this guide to the “Pointing Devices and Keyboard” section, “Setting Pointing Device Preferences.”

Dual Device Models



Pointing Device Components: Dual Device Models		
❶	Pointing stick	Moves the cursor and selects and activates items on the screen.
❷	Left and right pointing-stick buttons	Function like the left and right buttons on an external mouse.
❸	TouchPad	Moves the pointer. Can be set to perform additional mouse functions such as scroll, select, and double-click.*
❹	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.

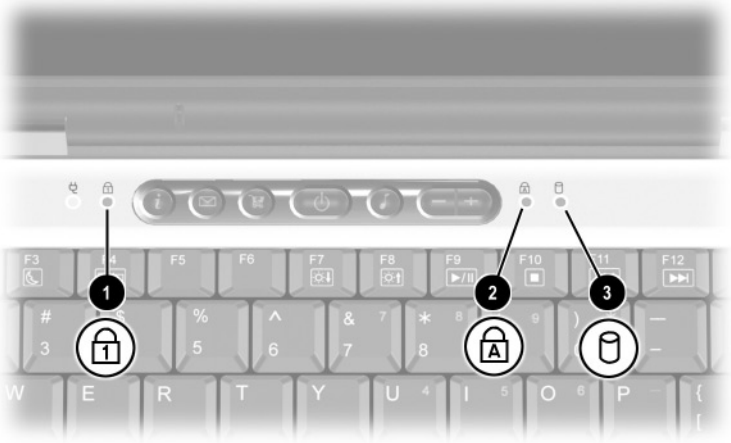
*For information about modifying pointing device functions, refer in this guide to the “Pointing Devices and Keyboard” section, “Setting Pointing Device Preferences.”

Top Components

Power Lights

Top Components: Power Lights		
❶	AC Adapter light	On: AC power is being supplied through the AC Adapter.
❷	Power/standby light	On: Power is turned on. Blinking: Notebook is in Standby.
❸	Battery light	On: A battery pack is charging. Blinking: A battery pack that is the only available power source has reached a low-battery condition.

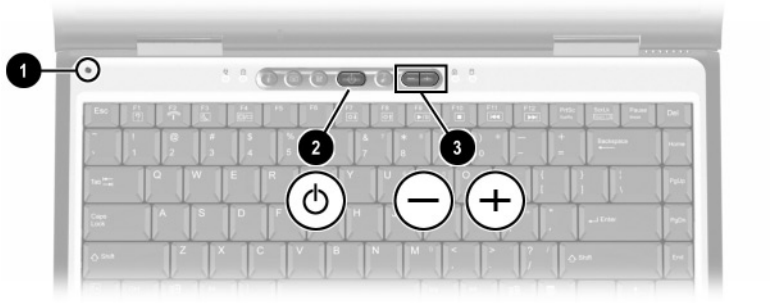
Keyboard and Drive Lights



Top Components: Keyboard and Drive Lights		
❶	Num lock light	On: Num lock is on or the internal keypad is on.*
❷	Caps lock light	On: Caps lock is on.
❸	IDE (Integrated Drive Electronics) drive light	On: One of the following drives is being accessed: ■ Hard drive in the hard drive bay. ■ Optional hard drive, Zip drive, SuperDisk drive, or any type of CD or DVD drive in the MultiBay.

*For more information about using num lock, the internal keypad, or an external keypad, refer in this guide to the “Pointing Devices and Keyboard” section, “Keypads.”

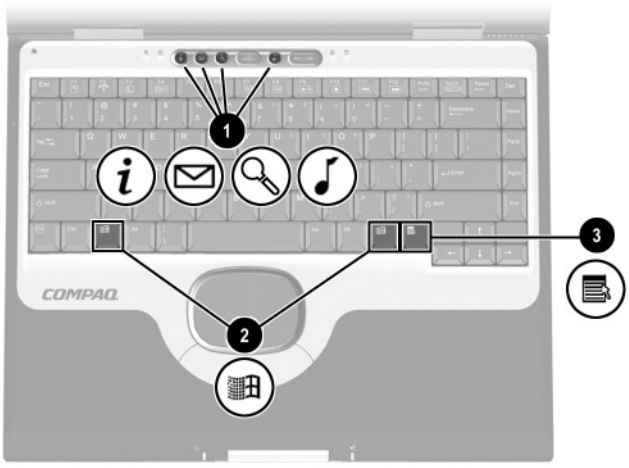
Power and Volume Controls



Top Components: Power and Volume Controls		
❶	Display switch*	Turns off the notebook display if the notebook is closed while it is on.
❷	Power button*	When the notebook is: ■ Off, briefly press to turn on the notebook. ■ On, briefly press to initiate Hibernation. ■ In Standby, briefly press to exit Standby. ■ In Hibernation, briefly press to exit Hibernation. If the system has stopped responding and Windows shut down procedures cannot be used, press and hold for 4 seconds to turn off the notebook.
❸	Volume buttons (2)	Adjust, mute, or restore system volume. To mute or restore volume, press both volume buttons at the same time.

*This table describes default settings. For information about changing the function of the power button, display switch, or **Fn+F3** hotkeys, refer on this CD to the *Software Guide,* "Power" section.

Easy Access Buttons and Keyboard Keys



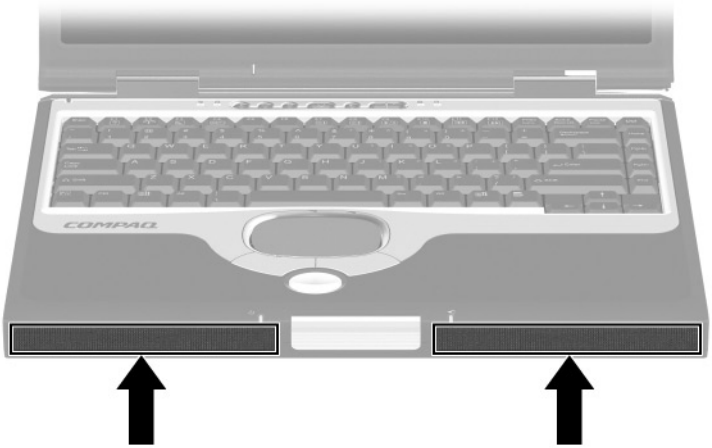
Top Components: Easy Access Buttons and Keyboard Keys		
❶	Easy Access Buttons (4)	Provide quick access to Internet or network destinations, or to software applications or data files on a drive. The icon on each button represents the default destination. Buttons can be programmed to different destinations.
❷	Microsoft logo keys (2)	Display Windows Start menu.
❸	Applications key	Displays shortcut menu for item beneath the pointer.

Function and Keypad Keys

Top Components: Function and Keypad Keys		
❶	Function keys (12)	Perform system and application tasks. For example, in Windows and many applications, pressing **F1** opens a Help file. When combined with the **Fn** key, the function keys **F2** through **F4** and **F7** through **F12** perform additional tasks as hotkeys.*
❷	**Fn** key	Combines with other keys to perform system tasks. For example, pressing the **Fn+F7** hotkeys decreases screen brightness and pressing the **Fn+F8** hotkeys increases screen brightness.
❸	Keypad keys (15)*	Can be used like the keys on an external numeric keypad.

*For more information about using hotkeys or keypad keys, refer in this guide to the “Pointing Devices and Keyboard” section.

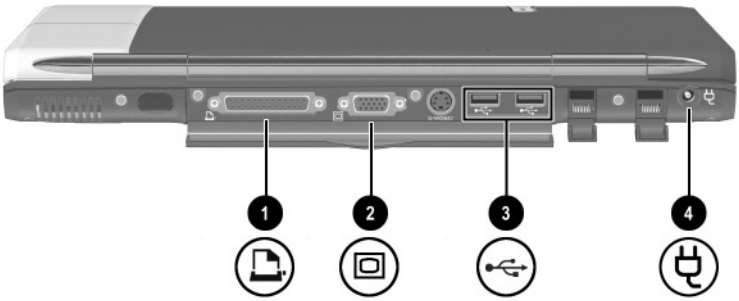
Front Panel Components



Front Panel Components	
Stereo speakers (2)	Produce stereo sound.

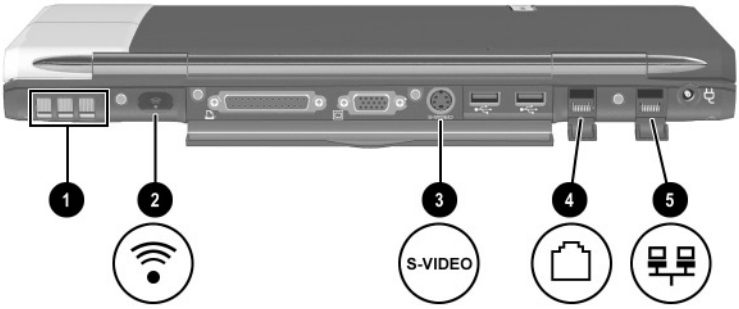
Rear Panel Components

Connectors



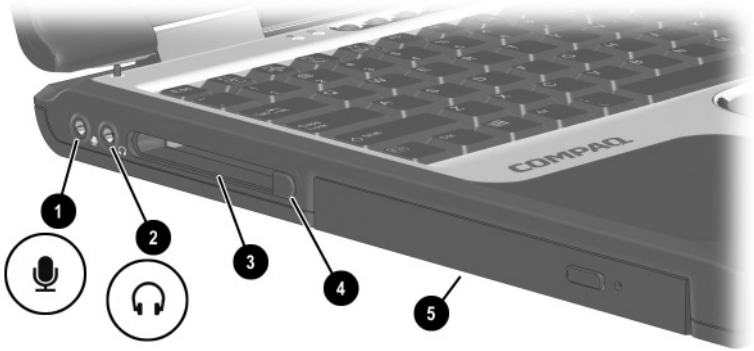
Rear Panel Components: Connectors		
❶	Parallel connector	Connects an optional parallel device such as a printer.
❷	External monitor connector	Connects an optional external monitor or overhead projector.
❸	USB connectors (2)	Connect optional USB devices.
❹	DC power connector	Connects an AC Adapter or an optional DC Cable, Aircraft Power Adapter, or Automobile Power Adapter/Charger.

Vent, Port and Jacks



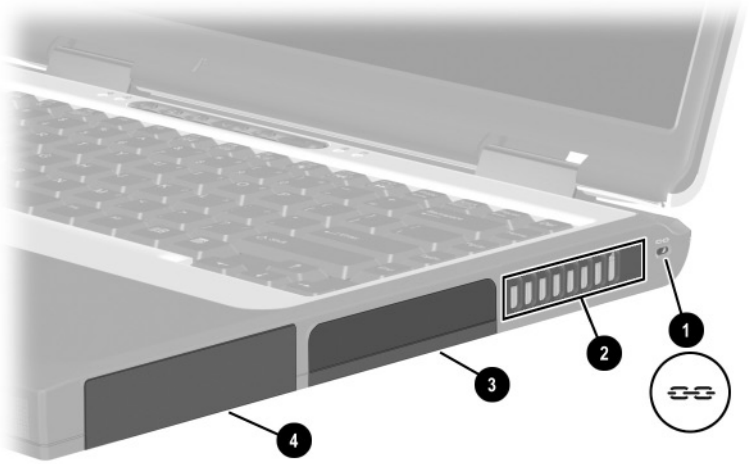
Rear Panel Components: Vent, Port and Jacks		
❶	Vent (1 of 3)	Allows airflow to cool internal components. △ To prevent overheating, do not obstruct the vent. Do not allow a hard surface, such as an adjoining optional printer, or a fabric, such as bedding or clothing, to block airflow.
❷	Infrared port	Provides wireless communication between the notebook and an optional IrDA-compliant device.
❸	S-video-out jack	Connects an optional S-video device such as a television, VCR, or camcorder.
❹	RJ-11 telephone jack	Connects the modem cable.
❺	RJ-45 network jack	Connects a network cable. A network cable is included with select models.

Left Side Components



Left Side Components		
❶	Microphone jack	Connects an optional single-sound channel microphone.
❷	Audio-out jack	Connects optional headphones, a headset, or powered stereo speakers. Also connects the audio function of an audio/video device such as a television or VCR.
❸	PC Card slot	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
❹	PC Card eject button	Ejects an optional PC Card from the PC Card slot.
❺	MultiBay	Supports an optional MultiBay device such as a drive or a battery pack. ■ If a MultiBay drive is included with your notebook, the drive may ship inside the MultiBay. ■ If your notebook did not ship with a drive inside the MultiBay, the MultiBay contains a weight saver. The weight saver protects the MultiBay and reduces notebook weight.

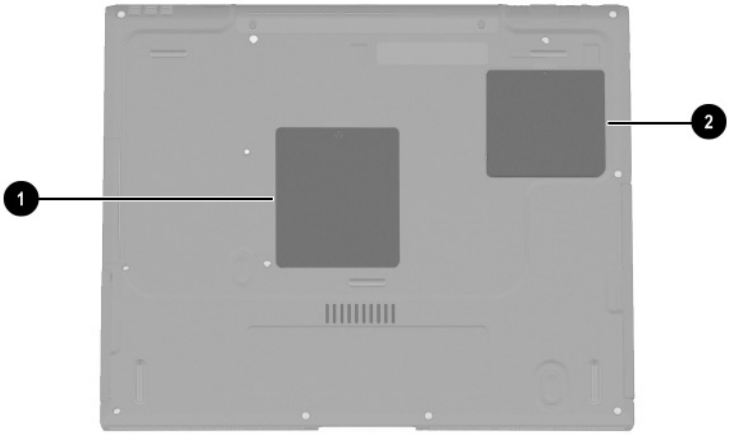
Right Side Components



Right Side Components		
❶	Security cable slot	Attaches an optional security cable to the notebook.
❷	Vent (1 of 3)	Allows airflow to cool internal components. △ To prevent overheating, do not obstruct the vent. Do not allow a hard surface, such as an adjoining optional printer, or a fabric, such as bedding or clothing, to block airflow.
❸	Hard drive bay	Holds the primary hard drive.
❹	Battery bay	Holds the primary battery pack.

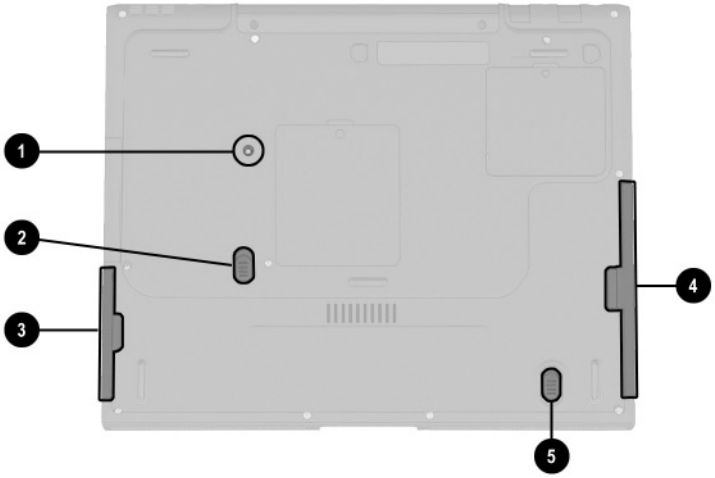
Underside Components

Memory and Mini PCI Compartments



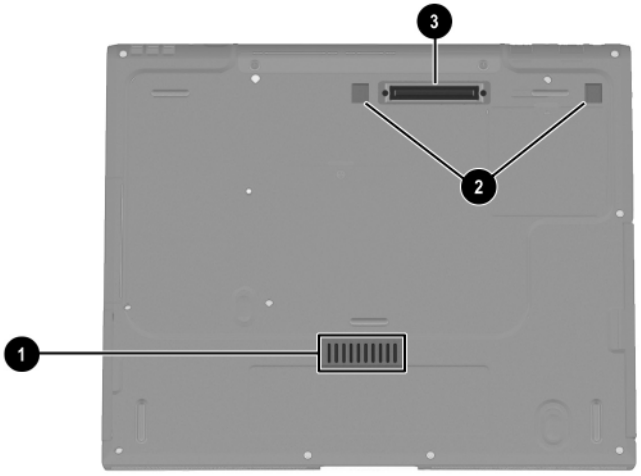
Underside Components: Memory and Mini PCI Compartments		
❶	Memory compartment	Contains 2 memory slots for PC21000-compliant memory boards. As shipped, the memory compartment may contain 1 or 2 memory boards.
❷	Mini PCI (peripheral component interconnect) compartment	Supports an optional mini PCI board such as a modem board. (A modem board is included with some notebook models.)

Bay Components



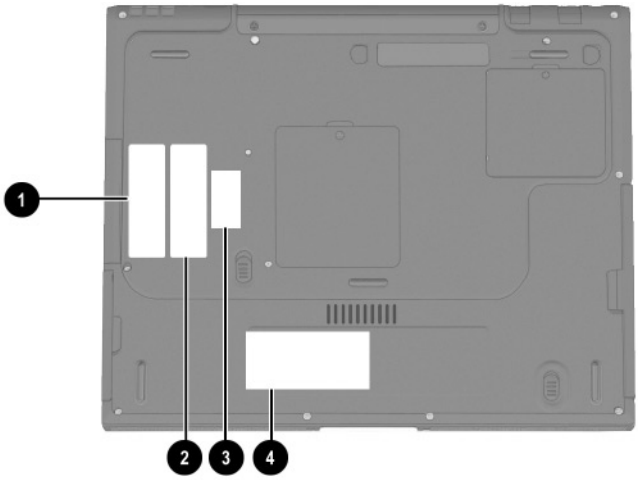
Underside Components: Bay Components		
❶	Hard drive bay retaining screw	Secures the primary hard drive in the hard drive bay.
❷	Battery release latch	Releases the primary battery pack from the battery bay.
❸	Battery bay recess	Provides a grip area for removing a primary battery pack from the battery bay.
❹	MultiBay recess	Provides a grip area for removing an optional MultiBay device from the MultiBay.
❺	MultiBay release latch	Releases an optional MultiBay device from the MultiBay.

Vent and Docking Components



Underside Components: Vent and Docking Components		
❶	Vent (1 of 3)	Provides airflow to cool internal components. ⚠ To prevent overheating, do not obstruct the vent. Using the notebook on a soft surface, such as a pillow, blanket, rug, or thick clothing, may block airflow.
❷	Docking latch recesses (2)	Help secure the notebook to a port replicator.
❸	Docking connector	Connects the notebook to an optional port replicator.

Labels



Underside Components: Labels		
❶	Microsoft Certificate of Authenticity label*	Contains your Product Key number. You may need this information to update or troubleshoot the operating system.
❷	Product Information Label*	Identifies the notebook. You will need this number if you call Compaq customer support or download software from the Compaq Web site.
❸	90W label	Indicates the requirement for a 90-watt adapter instead of the 65-watt adapter.
❹	System label*	Provides regulatory information about the notebook.

*The appearance and position of labels varies by model.

Additional Standard Components

The components included with the notebook vary by geographical region and the notebook hardware ordered. The following illustrations and tables identify the standard external components included with most notebook models.

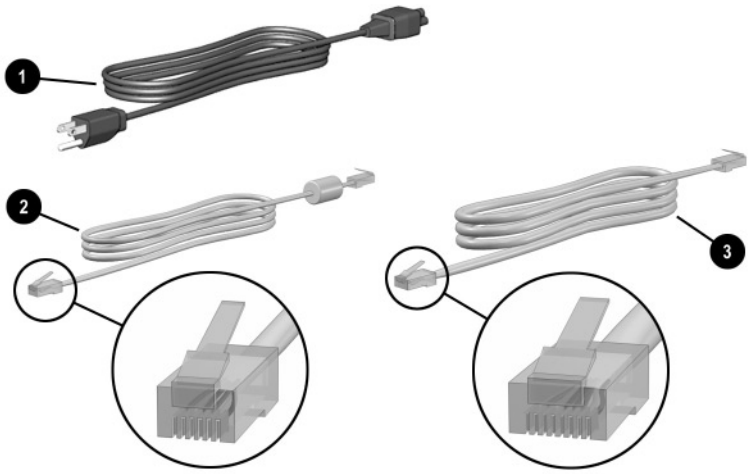
These illustrations do not include printed documentation, supplementary software, or drives. The primary hard drive ships inside the hard drive bay. An optional MultiBay drive may ship inside the MultiBay.

Documentation and Restore CDs

Additional Standard Components: Documentation and Restore CDs

❶	*Documentation Library* CD	Includes the following guides: ■ *Hardware Guide* ■ *Software Guide* ■ *Modem and Networking* ■ *Modem Command Guidelines (Advanced Users Only)* ■ *Maintenance, Shipping and Travel* ■ *Troubleshooting* ■ *Regulatory and Safety Notices*
❷	Restore CDs	Contain the software preinstalled on the notebook.

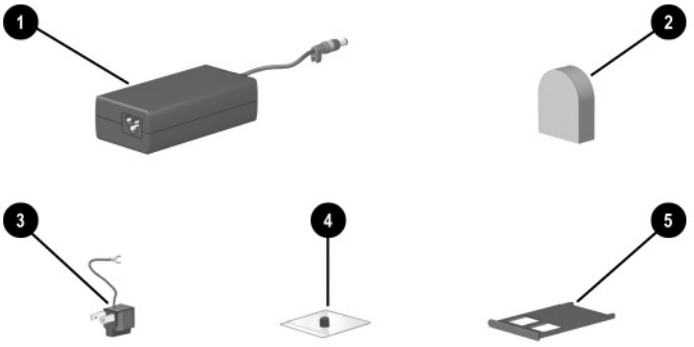
Cord and Cables



Additional Standard Components: Cord and Cables		
❶	Power cord*	Connects the AC Adapter to an AC electrical outlet.
❷	Modem cable	Connects the modem to an RJ-11 telephone jack or to a country-specific modem adapter. ✎ The modem cable has a *6-pin* RJ-11 telephone connector at each end.
❸	Network cable (select models only)	Connects the notebook to an Ethernet network jack. ✎ The network cable has an *8-pin* RJ-45 network connector at each end.

*Power cords vary in appearance by region.

Adapters and Accessories



Additional Standard Components: Adapters and Accessories		
❶	AC Adapter*	Converts AC power to DC power.
❷	Country-specific modem adapter (included by region as required)	Adapts the modem cable to a non-RJ-11 telephone jack.
❸	Japan-specific outlet adapter (Japan only)	Connects the AC Adapter to a 2-prong electrical outlet.
❹	Spare pointing stick cap (dual device models only)	Replaces a worn pointing stick cap.
❺	Weight saver (may ship in MultiBay)	Can replace an optional MultiBay device to protect the MultiBay and reduce notebook weight

*AC Adapters vary in appearance by region.

2

Pointing Devices and Keyboard

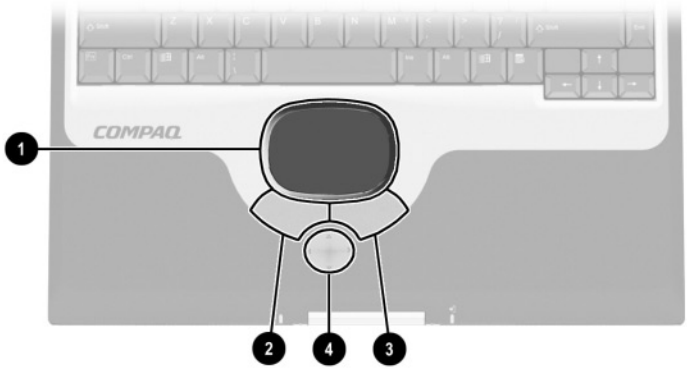
Pointing Devices

Pointing Devices on TouchPad Models Only

To move the cursor, sometimes called the *pointer,* slide your finger across the TouchPad surface ❶ in the direction you want to move the cursor. If the cursor continues to move after you release the TouchPad, wait a few seconds and the cursor will stop moving.

Use the left ❷ and right ❸ TouchPad buttons as you would the left and right buttons on an external mouse.

Use the arrows on the scroll button ❹ as you would the arrows on the scroll bars on the edges of windows. The scroll button moves the viewing area up, down, right, and left in Internet browser windows as well as most application windows.



Identifying TouchPad components

Pointing Devices on Dual Device Models Only

The notebook is set at the factory to enable you to use the pointing stick and TouchPad components interchangeably. For information about disabling some or all dual device components, refer to "Enabling or Disabling Dual Device Components," next in this section.

Using the Pointing Stick Components

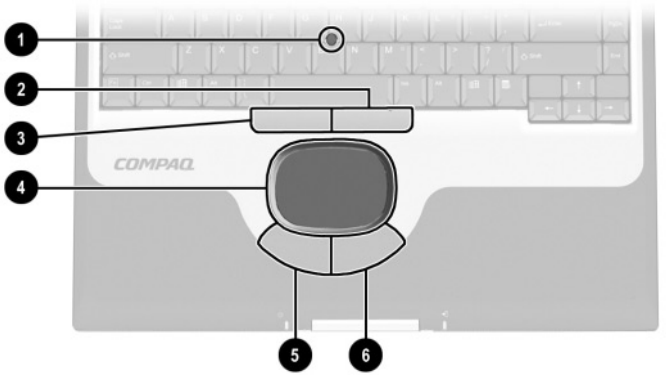
To move the cursor, sometimes called the *pointer,* press the pointing stick ❶ in the direction you want to move the cursor. To increase or decrease cursor speed, increase or decrease the directional (not downward) pressure on the pointing stick. If the cursor continues to move after you release the pointing stick, wait a few seconds and the cursor will stop moving.

Use the right ❷ and left ❸ pointing-stick buttons as you would the right and left buttons on an external mouse.

Using the TouchPad Components

To move the cursor, slide your finger across the TouchPad surface ❹ in the direction you want to move the cursor.

Use the left ❺ and right ❻ TouchPad buttons as you would the left and right buttons on an external mouse.



Identifying dual device components

Enabling or Disabling Dual Device Components

All dual device components are set at the factory to work interchangeably. For example, you can move the cursor with either the pointing-stick or the TouchPad.

You can set the notebook to respond to some, none, or all dual device components through the operating system.

To enable or disable dual device components:

1. Access the Mouse Properties window:
   - ❏ In Windows 2000 Professional, select Start > Settings > Control Panel > Mouse icon.
   - ❏ In Windows XP Home or Windows XP Professional, select Start > Control Panel > Printers and Other Hardware > Mouse icon.
2. Select the Advanced Features tab.
3. In the Devices list, select the device you want to enable or disable. Then:
   - ❏ To enable the device, select the Enable button.
   - ❏ To disable the device, select the Disable button.
4. Select the OK button.

Setting Pointing Device Preferences

The TouchPad and the dual pointing device are supported by the mouse software in the operating system. To access the custom mouse settings available through the operating system:

- In Windows 2000 Professional, select Start > Settings > Control Panel > Mouse.
- In Windows XP Home or Windows XP Professional, select Start > Control Panel > Printers and Other Hardware > Mouse icon.

Among the settings you can select are:

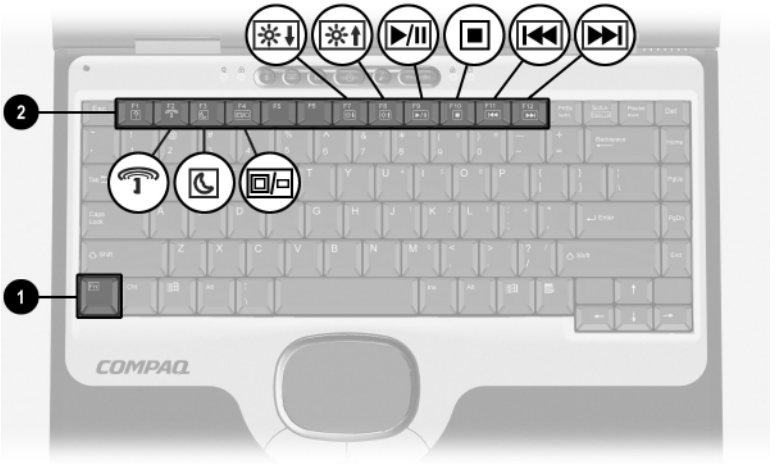
- TouchPad tapping, which enables you to tap the TouchPad once to select an object or twice to double-click an object.
- Edge motion, which enables you to continue to scroll even though your finger has reached the edge of the TouchPad.
- Palm Check, which helps prevent moving the cursor unintentionally if your palms contact the TouchPad as you type.

Other features, such as mouse trails and mouse speed preferences, are available. To discover them, look through the tabs in the Mouse Properties window. To learn more about a feature, select the question mark in the upper right corner of the window, then select the feature. To select a setting, follow the instructions on the screen, then select the OK button.

Hotkeys

Identifying Hotkeys

Hotkeys are preset combinations of the **Fn** key ❶ and one of the function keys ❷. The icons on the function keys **F2** through **F4** and **F7** through **F12** represent the hotkey functions available on your notebook.



Identifying hotkeys

Hotkey Quick Reference

The following table identifies the hotkey functions set at the factory. For information about changing the functions of the **Fn+F2** or **Fn+F3** hotkeys, refer to "Hotkey Commands," later in this section.

Default Function	Hotkey
Turn a device in the MultiPort on or off.	**Fn+F2**
Initiate Standby.	**Fn+F3**
Switch display and image.	**Fn+F4**
Decrease screen brightness.	**Fn+F7**
Increase screen brightness.	**Fn+F8**
Play or pause an audio CD.	**Fn+F9**
Stop an audio CD.	**Fn+F10**
Play the previous track on an audio CD.	**Fn+F11**
Play the next track on an audio CD.	**Fn+F12**

Hotkey Procedures

To use a hotkey command on the notebook keyboard:

- Briefly press the **Fn** key, then briefly press the second key of the command.

  or

- Press and hold down the **Fn** key, briefly press the second key of the command, then release both keys simultaneously.

To use hotkeys on an external keyboard, press the **scroll lock** key twice, then the second key only of the hotkey combination. For example, to use the **Fn+F8** hotkeys to increase screen brightness, press **scroll lock+scroll lock+F8.**

Hotkey Commands

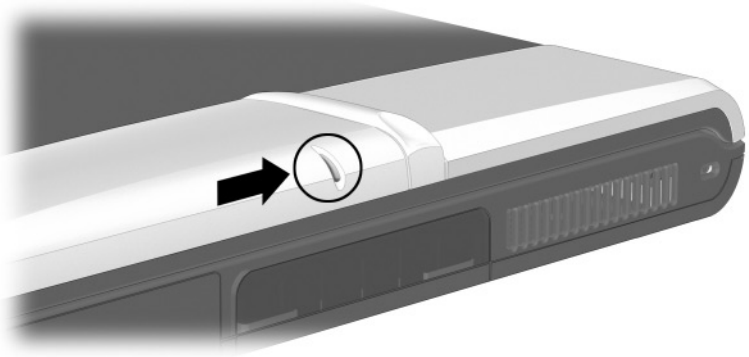
Turn a MultiPort Device On or Off (Fn+F2)

The **Fn+F2** hotkeys are set at the factory to turn a device in the MultiPort on or off.

When a device in the MultiPort is off, press the **Fn+F2** hotkeys to turn the device on. When a device in the MultiPort is on, press the **Fn+F2** hotkeys to turn the device off.

- To send or receive messages, turn the device on.
- To conserve power, turn the device off.

The status light on the MultiPort device is on when power is on and off when power is off.



Identifying the MultiPort status light

The **Fn+F2** hotkeys are enabled by default, but can be disabled in Computer Setup. The device in the MultiPort can be set to remain on or off while the **Fn+F2** hotkeys are disabled.

Fn+F2 hotkeys preferences are set in Computer Setup. Computer Setup is a non-Windows utility. For more information about using Computer Setup, refer on this CD to the *Software Guide,* "Setup and Diagnostic Utilities" section.

1. To open Computer Setup, turn on or restart the notebook, then press **F10** while the F10 = ROM Based Setup message is displayed in the lower left of the screen.
   - ❏ To change the language, press **F2.**
   - ❏ To view navigation information, press **F1.**
2. Use the arrow keys to select the Security menu, then press **enter.**
3. Use the arrow keys to select Device Security, then press **enter.**
4. Select MultiPort Fn+F2. The status of the device in the MultiPort is displayed at the bottom of the screen.
5. To change the status of the device in the MultiPort, press the **Fn+F2** hotkeys. (The device in the MultiPort will remain in whichever status is selected at the time that the **Fn+F2** hotkeys are disabled.)
6. To disable the **Fn+F2** hotkeys, set the status field beside MultiPort Fn+F2 to Disable. (To reenable the **Fn+F2** hotkeys, set this status field to Enable.)
7. To confirm your settings, press **F10.**
8. To exit Computer Setup, use the arrow keys to select an exit option from the File menu, then follow the instructions on the screen.

Your preference is set as you exit Computer Setup and is in effect when the notebook restarts.

Initiate Standby (Fn+F3)

The **Fn+F3** hotkeys are set at the factory to initiate Standby.

- When the notebook is on, press the **Fn+F3** hotkeys to initiate Standby. When Standby is initiated, your work is saved in random access memory (RAM), the screen is cleared, and power is conserved. While the notebook is in Standby, the power/standby light blinks.
- To exit Standby, briefly press the power button.

The function of the **Fn+F3** hotkeys, called the "sleep button" in Windows, can be changed. For example, the **Fn+F3** hotkeys can be set to initiate Hibernation instead of Standby. For more information about Standby, Hibernation, and changing the function of the **Fn+F3** hotkeys, refer on this CD to the *Software Guide,* "Power" section.

Switch Image (Fn+F4)

The **Fn+F4** hotkeys switch the image among display devices connected to the notebook. For example, if an external monitor is connected to the notebook, pressing **Fn+F4** switches the image among the notebook display, the external monitor display, and a simultaneous display on both the notebook and the external monitor.

Most external monitors receive video information from the notebook using the external VGA video standard. The **Fn+F4** hotkeys also switch images among devices receiving video information from the notebook in other ways. The following 5 video transmission types, with examples of devices that use them, are supported by the **Fn+F4** hotkeys:

- LCD (notebook display)
- External VGA (most external monitors)
- S-video (televisions, camcorders, VCRs, and video capture boards with S-video-in jacks)

- Composite video (televisions, camcorders, VCRs, and video capture boards with composite-video-in jacks)
- DVI-D (external monitors that support the DVI-D interface)

Decrease Brightness (Fn+F7)

Press the **Fn+F7** hotkeys to decrease the brightness of the notebook screen. Decreasing brightness conserves power.

Increase Brightness (Fn+F8)

Press the **Fn+F8** hotkeys to increase the brightness of the notebook screen.

Play, Pause or Resume an Audio CD (Fn+F9)

If an audio CD is inserted into the CD drive, press the **Fn+F9** hotkeys to play the CD.

If an audio CD is playing in the CD drive, press the **Fn+F9** hotkeys to pause the CD.

If you have paused an audio CD in the CD drive by pressing the **Fn+F9** hotkeys, press the **Fn+F9** hotkeys again to resume the play.

Stop an Audio CD (Fn+F10)

If an audio CD is playing in the CD drive, press the **Fn+F10** hotkeys to stop the CD.

Play Previous Track of an Audio CD (Fn+F11)

Press the **Fn+F11** hotkeys to select the previously played track of an audio CD that is playing in the CD drive.

Play Next Track of an Audio CD (Fn+F12)

Press the **Fn+F12** hotkeys to play the next track of an audio CD that is playing in the CD drive.

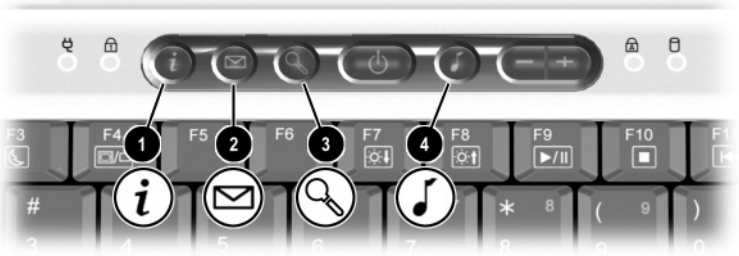
Easy Access Buttons

The 4 Easy Access buttons enable you to access an Internet or network destination or a software application or data file on a drive with a keystroke.

Using the Default Settings

Until your Internet or network services are set up, all buttons launch an Internet setup wizard.

After your Internet or network services are set up, each button opens your default Web browser and connects you to the default destination represented by the icon on the button.



Identifying the Easy Access buttons

Button Name	Default Assignment
❶ Internet	Opens your default Web browser to a personal Web page you can customize.*
❷ Email	Opens your default email application.†
❸ Search	Launches a search Web page that helps you find destinations on the Internet.
❹ Digital Audio	Launches Windows Media Player.

*The factory default Web browser is Internet Explorer.

†The factory default mail application is Outlook Express.

Changing the Default Email Application

The Easy Access Email button and the mail buttons in your Internet browser launch whatever email application has been set as the default. To change the default email application in Internet Explorer:

- In Windows 2000 Professional, select Start > Programs > Internet Explorer. In the Internet Explorer window, select Tools > Internet Options > Programs tab, then follow the instructions on the screen.
- In Windows XP Home or Windows XP Professional, select Start > All Programs > Internet Explorer. In the Internet Explorer window, select Tools > Internet Options > Programs tab, then follow the instructions on the screen.

Learning More About Windows Media Player

The Windows Media Player application is a feature of the operating system. Instructions for using Windows Media Player are provided on this CD in the *Software Guide,* "CD and DVD Software," and in the Windows Media Player Help file.

To access the Help file, open the Windows Media Player window, then select Help on the menu bar.

To open the Windows Media Player window, use any 1 of the following methods:

- Press the Digital Audio Easy Access button.
- Insert a CD into the optical drive, then close the tray.
- Select the Windows Media Player icon on the taskbar.

  or

- Select the Start button, then:
  - In Windows 2000 Professional, select Programs > Accessories > Entertainment > Windows Media Player.
  - In Windows XP Home or Windows XP Professional, select All Programs > Windows Media Player.

Using Custom Assignments and Schemes

An Easy Access button can be assigned to an Internet or network destination or to any software application or data file on a drive. For example, an Easy Access button can be assigned to open your Internet browser to a favorite Web page or to open an application, such as Microsoft Word, or a document, such as an Excel worksheet, on a notebook or network drive.

Button assignments can be grouped into schemes. When you select a scheme, only the button assignments within that scheme are active. Button assignments and schemes are set up, changed, or deleted in the Easy Access buttons window.

To access the Easy Access buttons window:

- In Windows 2000 Professional, select Start > Settings > Control Panel > Easy Access Keyboard icon.
- In Windows XP Home or Windows XP Professional, select Start > Control Panel > Printers and Other Hardware > Easy Access Buttons icon.

For more information about using button assignments and schemes, open the Easy Access button window, then use context-sensitive Help. To use context-sensitive Help, press the question mark button in the upper right corner of the window, then select an item you want to know more about. A definition, explanation, or procedure is displayed.

Keypads

The notebook has an internal numeric keypad and supports an optional external numeric keypad or an optional external keyboard that includes a numeric keypad.

Using the Internal Keypad

The notebook keyboard contains 15 keys that can be used like the keys on an external keypad.

When the internal keypad is turned on, each key on the internal keypad performs the functions indicated by the icon in the upper right corner of the key.

The standard functions of the internal keypad keys can still be accessed while the keypad is turned on.

Identifying the internal keypad keys

Turning the Internal Keypad On and Off

When the internal keypad is off, press **Fn+num lk** ❶ on the notebook to turn the internal keypad on. When the internal keypad is on, press **Fn+num lk** on the notebook (or the num lock key on an external keypad) to turn the internal keypad off.

The num lock light ❷ turns on under 2 conditions:

- The internal keypad is on,

  or

- An optional external keypad with num lock turned on is connected to the system.

The internal keypad cannot be turned on while an optional external keypad is connected to the PS/2 connector on an optional port replicator.

Identifying the* Fn *and* num lk *keys and the num lock light

Switching Key Functions on the Internal Keypad

You can temporarily switch the functions of keys on the internal keypad between their standard keyboard functions and their keypad functions by using the **Fn** key or the **Fn+shift** key combination.

- To change the functions of a keypad key to keypad functions while the keypad is off, press and hold the **Fn** key while pressing the keypad key.
- To use the keypad keys temporarily as standard keys while the keypad is on:
  - ❏ Press and hold the **Fn** key to type in lowercase.
  - ❏ Press and hold **Fn+shift** to type in uppercase.

When the **Fn** key is released, the keypad keys return to their keypad functions.

Using an External Keypad

Most keys on most external keypads function differently when num lock mode is on than when num lock mode is off. For example:

- When num lock mode is on, most keypad keys type numbers.
- When num lock mode is off, most keypad keys function like arrow, page up, or page down keys.

When num lock mode on an external keypad is turned on, the num lock light on the notebook turns on. When num lock mode on an external keypad is turned off, the num lock light on the notebook turns off. The num lock light on the notebook also turns on when the internal keypad is on.

If the external keypad is connected to the PS/2 connector on an optional port replicator, the internal keypad cannot be turned on. If the external keypad is connected through a connector other than a PS/2 connector, turning off num lock on the external keypad also turns off the internal keypad.

Turning Num Lock Mode On or Off as You Work

To turn num lock on or off on an external keypad as you work, press the **num lk** key on the external keypad (not the internal keypad).

Turning Num Lock Mode On or Off at Startup

To set the notebook to start up with a connected external keypad in num lock mode, set your preference in Computer Setup. Computer Setup is a non-Windows utility. For more information about using Computer Setup, refer on this CD to the *Software Guide,* "Setup and Diagnostic Utilities" section.

1. To open Computer Setup, turn on or restart the notebook, then press **F10** while the F10 = ROM Based Setup message is displayed in the lower left of the screen.
   - ❏ To change the language, press **F2.**
   - ❏ For navigation instructions, press **F1.**
2. Use the arrow keys to select Advanced > Device Options, then press **enter.**
3. Select or clear the Num Lock State at Boot field.
   - ❏ To start up an external keypad with num lock mode turned on, select the field.
   - ❏ To start up an external keypad with num lock mode turned off, clear the field.
4. Press **F10.**
5. To save your preference and exit Computer Setup, use the arrow keys to select File > Save Changes and Exit, then follow the instructions on the screen.

Your preference is set as you exit Computer Setup and is in effect when the notebook restarts.

3

Battery Packs

Running the Notebook on Battery Power

When the notebook is connected to external AC power, the notebook runs on AC power.

When a charged battery pack is in the notebook and the notebook is not connected to external AC power, the notebook runs on battery power.

The notebook switches between AC power and battery power according to the availability of an external AC power source. For example, if the notebook contains a charged battery pack and is running on external AC power supplied through the AC Adapter, the notebook will switch to battery power if the AC Adapter is disconnected from the notebook.

Whether to leave a battery pack in the notebook or in storage depends on how you work. Keeping a battery pack in the notebook enables the battery pack to charge whenever the notebook is connected to external AC power and also protects your work in case of a power outage.

On the other hand, a battery pack in the notebook slowly discharges when the notebook is turned off.

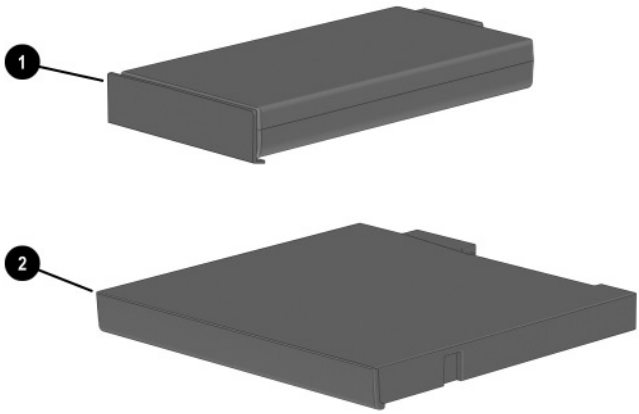
If you will not be using the notebook for 2 weeks or more, removing the battery and storing it as described in "Storing a Battery Pack," later in this section, will prolong its life. For more information about leaving your work, refer on this CD to the *Software Guide,* "Power" section.

Identifying Battery Packs

The notebook supports up to 2 battery packs:

- A *primary* battery pack ❶ is an 8-cell lithium ion battery pack that can be used only in the battery bay. One primary battery pack is included with the notebook.
- A *MultiBay* battery pack ❷ is an optional 8-cell prismatic lithium ion battery pack that can be used only in the MultiBay.

  For information about the lights and button on a MultiBay battery pack, refer to "Monitoring the Charge in a Battery Pack," later in this section.



Identifying a primary and a MultiBay battery pack

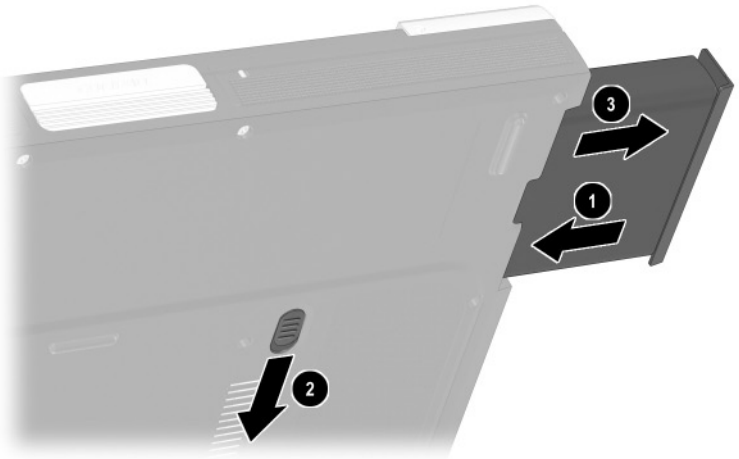
Inserting or Removing a Primary Battery Pack

CAUTION: To prevent loss of work when removing a battery pack that is the sole power source, initiate Hibernation or turn off the notebook before removing the battery pack.

To insert a battery pack, slide the battery pack into the battery bay until it is seated ❶.

To remove a battery pack, slide and hold the battery release latch ❷ toward the rear of the notebook as you pull the battery pack from the battery bay ❸.

To exit Hibernation, briefly press the power button.



Inserting or removing a primary battery pack

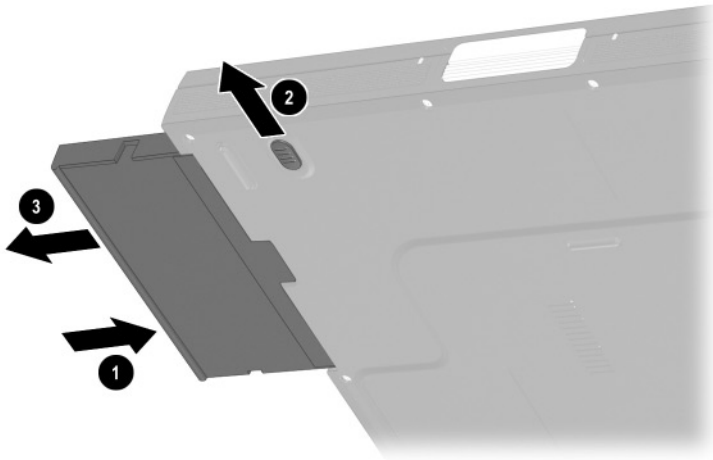
Inserting or Removing a MultiBay Battery Pack

CAUTION: To prevent loss of work when removing a battery pack that is the sole power source, initiate Hibernation or turn off the notebook before removing the battery pack.

To insert a battery pack, slide the battery pack into the MultiBay until it is seated ❶.

To remove a battery pack, slide and hold the MultiBay release latch ❷ toward the front of the notebook as you pull the battery pack from the MultiBay ❸.

To exit Hibernation, briefly press the power button.



Inserting or removing a MultiBay battery pack

CAUTION: To prevent damage to the MultiBay when no device is in the MultiBay, insert the weight saver to protect the bay opening. The weight saver can be inserted or removed while the notebook is on, off, in Standby, or in Hibernation.

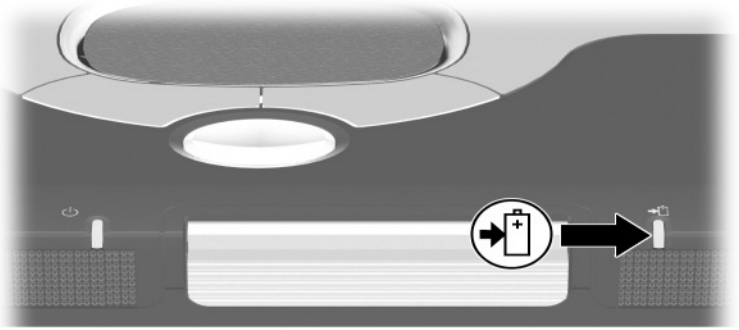
Charging a Battery Pack

All battery packs inserted into the notebook charge whenever the notebook is connected to external power. External power can be supplied through an AC Adapter or an optional Automobile Power Adapter/Charger.

An optional Aircraft Power Adapter can be used to run the notebook, but cannot be used to charge a battery pack.

Battery packs charge whether or not the notebook is in use, but charge faster when the notebook is off. Charging may be delayed if a battery pack is new, has not been used for 2 weeks or more, or is much warmer or cooler than room temperature.

While a battery pack is charging, the battery light on the notebook is on. The light turns off when all battery packs in the system are fully charged.



Identifying the battery light

Charging a New Battery Pack

Fully charge the battery pack while the notebook is connected to AC power through the AC Adapter.

A new battery pack that has been partially charged, but not fully charged, can run the notebook, but battery charge displays may be inaccurate.

Charging an In-Use Battery Pack

To prolong battery life and increase the accuracy of battery charge displays:

- Allow a battery pack to discharge to 10 percent of a full charge through normal use before charging it.
- When you charge a battery pack, charge it fully.

Charging a Primary and a MultiBay Battery Pack

If a primary battery pack is inserted into the battery bay and a MultiBay battery pack is inserted into the MultiBay, the primary battery pack is the first to charge and the MultiBay battery pack is the first to discharge.

Monitoring the Charge in a Battery Pack

Obtaining Accurate Charge Information

To increase the accuracy of all battery charge displays:

- Allow a battery pack to discharge to about 10 percent of a full charge through normal use before charging it.
- When you charge a battery pack, charge it fully.
- If a battery pack has not been used for 1 month or more, calibrate the battery pack instead of simply charging it. For calibration instructions, refer to "Calibrating a Battery Pack," later in this section.

Displaying Charge Information on the Screen

Accessing Charge Displays

To access information about the status of any battery pack in the notebook:

- Select the Power Meter icon on the taskbar,

  or

- Access the Power Meter tab. To access the Power Meter tab:
  - In Windows 2000 Professional, select Start > Settings > Control Panel > Power Options icon > Power Meter tab.
  - In Windows XP Home or Windows XP Professional, select Start > Control Panel > Performance and Maintenance > Power Options icon > Power Meter tab.

Interpreting Charge Displays

Most charge displays report battery status in both percent and time.

- The percent indicates the amount of charge remaining in the battery pack.
- The time indicates the approximate running time remaining on the battery pack *if the battery pack continues to provide power at the current level.* For example, the time remaining will decrease if you start playing a DVD and will increase if you stop playing a DVD.

Most charge displays identify battery packs by location.

- Location 1 is the battery bay.
- Location 2 is the MultiBay.

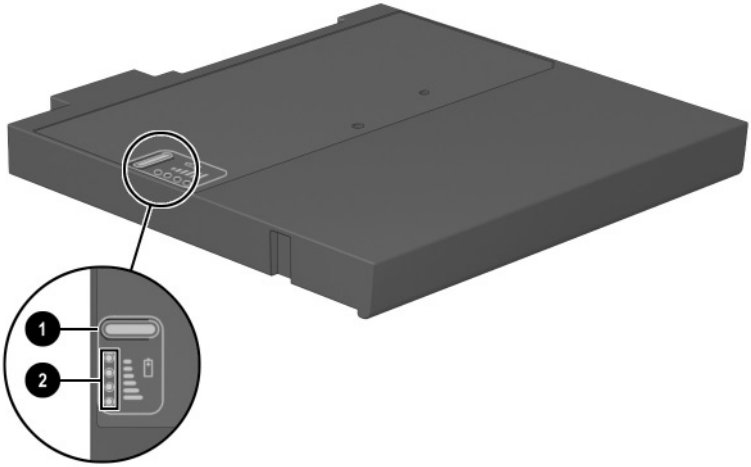
In some displays, a lightening bolt icon may be displayed beside a battery pack location. The icon indicates that the battery pack in that location is charging.

Displaying Charge Information on a Battery Pack

You can determine the percent of a full charge remaining in a battery pack that is not inserted into the notebook by using the battery Quick Check feature. MultiBay battery packs have battery Quick Check. Primary battery packs do not.

To display the percent of a full charge remaining in a MultiBay battery pack, press the Quick Check button ❶ on the battery pack.

The Quick Check lights ❷ on the battery pack indicate the charge remaining in the battery pack as shown in the following table.



Identifying the button and lights on a MultiBay battery pack

Indication	Percent of a Full Charge Remaining
4 lights on	76 to 100%
3 lights on	51 to 75%
2 lights on	26 to 50%
1 light on	11 to 25%
1 light blinking	0 to 10%

Managing Low-Battery Conditions

Some low-battery condition alerts and system responses can be changed in the Power Options window of the operating system. The information in this section describes the alerts and system responses set at the factory. Preferences set in the Power Options window do not affect lights.

Identifying Low-Battery Conditions

Low-Battery Condition

When a battery pack that is the sole power source available to the notebook reaches a low-battery condition (10 percent of a full charge), the battery light blinks.

Critical Low-Battery Condition

If a low-battery condition is not resolved, the notebook enters a critical low-battery condition (1 percent of a full charge).

In a critical low-battery condition:

- If Hibernation is enabled and the notebook is on or in Standby, the notebook initiates Hibernation.
- If Hibernation is disabled and the notebook is on or in Standby, the notebook remains briefly in Standby, then shuts down and loses your unsaved work.

Hibernation is enabled at the factory. To verify that Hibernation has not been disabled, be sure that the Enable Hibernate Support check box on the Hibernate tab is selected. To access the tab:

- In Windows 2000 Professional, select Start > Settings > Control Panel. Double-click Power Options.
- In Windows XP Home or Windows XP Professional, select Start > Control Panel > Performance and Maintenance > Power Options icon.

Resolving Low-Battery Conditions

CAUTION: If the notebook has reached a critical low-battery condition (1 percent of a full charge) and has initiated Hibernation, do not restore power until Hibernation is complete. Hibernation is complete when the power/standby light turns off.

When External Power Is Available

Select 1 of the following options:

- Connect the AC Adapter.
- Plug an optional Automobile Power Adapter/Charger into the notebook and into a vehicle cigarette lighter receptacle.
- Plug an optional Aircraft Power Adapter into the notebook and into the in-seat power supply available on some commercial aircraft. (An optional Aircraft Power Adapter can run the notebook but cannot charge a battery pack.)

When a Charged Battery Pack Is Available

Turn off the notebook or initiate Hibernation, insert a charged battery pack while the notebook is off or in Hibernation, then turn on the notebook.

When No Power Source Is Available

Initiate Hibernation. Or, save your work, then shut down the notebook.

When the Notebook Cannot Exit Hibernation

If the notebook lacks the power to exit Hibernation:

1. Insert a charged battery pack or connect external power.
2. To exit Hibernation, briefly press the power button.

Calibrating a Battery Pack

When to Calibrate

Calibrate an in-use primary or MultiBay battery pack whenever battery status displays seem inaccurate or whenever the battery pack has not been used for 1 month or more. It should not be necessary to calibrate any battery pack, even if it is heavily used, more than once a month. It is not necessary to calibrate a new battery pack before first use.

How to Calibrate

Calibration requires 3 steps:

1. Fully charge the battery pack.
2. Fully discharge the battery pack.
3. Fully recharge the battery pack.

Charging the Battery Pack

You can charge the battery pack while the notebook is in use or off, but the battery pack will charge faster while the notebook is off.

To charge the battery pack:

1. Insert the battery pack into the notebook.
2. Connect the notebook to an AC outlet or an optional Automobile Power Adapter/Charger. (The battery light turns on.)
3. Leave the notebook connected to AC power until the battery pack is fully charged. (The battery light turns off.)

Discharging the Battery Pack

The notebook must remain on while the battery pack is being discharged. The battery pack can discharge whether or not you are using the notebook, but will discharge faster while the notebook is in use.

- If you plan to leave the notebook untended during the discharge, save your work before beginning the discharge procedure.
- If you use the notebook occasionally during the discharge procedure and have set energy-saving timeouts, expect the following performance from your system during the discharge process:
  - The monitor will not turn off automatically.
  - Hard drive speed will not decrease automatically while the notebook is idle.
  - System-initiated Standby will not occur.
  - System-initiated Hibernation will not occur until the battery has discharged to a critical low-battery condition.

To fully discharge a battery pack:

1. When the battery light turns off indicating that the battery pack is fully charged, access the Power Schemes tab:
   - In Windows 2000 Professional, select Start > Settings > Control Panel > Power Management icon > Power Schemes tab.
   - In Windows XP Home or Windows XP Professional, select Start > Control Panel > Performance and Maintenance > Power Options icon > Power Schemes tab.
2. Record the 2 settings in the Plugged In column and the 2 settings in the Running on Batteries column so that you can reset them after the calibration.

3. Use the drop-down lists to set the 4 options in both columns to Never.
4. Select the OK button.
5. Disconnect the notebook from the AC power source, but do *not* turn off the notebook.
6. Run the notebook on battery power until the battery pack is fully discharged. (The battery light begins to blink when the battery pack has discharged to a low-battery condition. When the battery pack is fully discharged, the notebook initiates Hibernation.)

Recharging the Battery Pack

1. Reconnect the notebook to external AC power and retain the connection until the battery pack is fully recharged. (The battery light turns off.)

   You can use the notebook while the battery pack is recharging but the battery pack will charge faster if the notebook is off.
2. If the notebook is off, turn it on when the battery pack is fully charged and the battery light turns off.
3. Access the Power Schemes tab:
   - ❏ In Windows 2000 Professional, select Start > Settings > Control Panel > Power Management icon > Power Schemes tab.
   - ❏ In Windows XP Home or Windows XP Professional, select Start > Control Panel > Performance and Maintenance > Power Options icon > Power Schemes tab.
4. Referring to the settings you recorded earlier, re-enter your settings for the 2 options in the Plugged In column and the 2 options in the Running on Batteries column.
5. Select the OK button.

Battery Conservation Procedures and Settings

Using the battery conservation procedures and settings described below extends the time that a battery pack can run the notebook from a single charge.

Conserving Power as You Work

To conserve power as you use the notebook:

- Turn off wireless and local area network (LAN) connections and exit modem applications when you are not using them.
- Disconnect external devices you are not using that are not connected to an external power source.
- Stop or remove a PC Card you are not using.
- Remove a CD or DVD you are not using.
- Use the **Fn+F7** and **Fn+F8** hotkeys to quickly lower and raise screen brightness as you need it.
- Use optional powered speakers instead of the internal speakers, or use the volume buttons to quickly raise and lower system volume as you need it.
- Turn off a device connected to the S-video connector by using the **Fn+F4** hotkeys or by turning off support for the device in Windows.
- Run the notebook on external power while formatting a diskette.
- If you leave your work, initiate Standby or Hibernation or shut down the notebook.

Selecting Power Conservation Settings

To set the notebook to conserve power:

- Select a short wait for the screen saver and select a screen saver with minimal graphics and motion. To access screen saver settings:
  - In Windows 2000 Professional, select Start > Settings > Control Panel > Display > Screen Saver tab.
  - In Windows XP Home or Windows XP Professional, select Start > Control Panel > Appearance and Themes > Display icon > Screen Saver tab.
- Follow the instructions on this CD in the *Software Guide,* "Power" section, to:
  - In the operating system, select a Power Scheme with low power-use settings.
  - In SpeedStep, select the Battery Optimized mode or Maximum Battery Mode (Windows 2000 Professional only).

Storing a Battery Pack

If a notebook will be unused and unplugged for more than 2 weeks, remove and store any battery packs.

CAUTION: To prevent damage to a battery pack, do not expose it to high temperatures for extended periods of time.

High temperatures, which may be present in parked cars or some workplaces, accelerate the self-discharge rate of a stored battery pack. To prolong the charge of a stored battery pack, place it in a cool, dry place.

Use the following table to estimate how long you can safely store a battery pack. The storage times provided are based on a battery pack that contains 50 percent of a full charge. A fully charged battery pack can be safely stored for longer times; a battery pack containing a lower charge can be safely stored for less time.

Calibrate a battery pack that has been stored for 1 month or more before using it.

At These Temperatures		You Can Safely Store a Battery Pack for This Time
Temperature Range °F	**Temperature Range °C**	**Storage Time**
115° – 140°	46° – 60°	Less than 1 month
79° – 113°	26° – 45°	No more than 3 months
32° – 77°	0° – 25°	1 year

Disposing of a Used Battery Pack

WARNING: There is a risk of fire and chemical burn if a battery pack is handled improperly. Do not disassemble, crush, or puncture a battery pack or short the contacts on a battery pack. Do not expose a battery pack to temperatures higher than 60° C (140° F), or dispose of a battery pack in water or fire.

When a battery pack has reached the end of its useful life, do not dispose of it in general household waste.

- In North America, you can dispose of battery packs by using the Compaq battery recycling program. This program provides you with a postage-paid battery pack mailer preaddressed to a reclamation facility where the metals are recycled. For more information, call the telephone number listed for your location in the *Worldwide Telephone Numbers* booklet, included with the computer.
- In Europe, dispose of or recycle battery packs by using the public collection system or by returning them to Compaq, your authorized Compaq partners, or their agents.
- In other regions, refer to the *Worldwide Telephone Numbers* booklet, included with the notebook, to contact a Compaq authorized dealer, reseller, or service provider and request information about battery pack disposal.

For more information about battery pack precautions and disposal and the complete text of governmental agency notices, refer on this CD to the *Regulatory and Safety Notices* guide.

Finding More Power Information

For more information about using Standby and Hibernation, conserving power, setting power preferences, and using other power management features, refer on this CD to the *Software Guide,* "Power" section.

4

Drives

Adding a Drive to the System

Removable drives enable you to store and access data.

A standard removable drive can be added to the system by inserting the drive into the notebook or an optional port replicator. A USB drive can be added by connecting the drive to a USB connector on the notebook or a port replicator. Hard drive functions can also be added with a microdrive PC Card.

For information about connecting a USB drive, refer in this guide to the "External Device Connections" section, "Connecting a USB Device." For information about PC Cards, refer to the "Hardware Upgrades" section, "Using PC Cards."

The notebook contains 2 drive bays:

- The hard drive bay supports only a 9.5-mm hard drive. Any hard drive in the hard drive bay is the *primary* hard drive.
- The MultiBay supports a 9.5-mm hard drive (inserted into a MultiBay hard drive adapter) and the following 12.7-mm standard removable drives:
  - ❏ CD-ROM drive
  - ❏ CD-RW drive
  - ❏ DVD-ROM drive
  - ❏ DVD-RAM drive
  - ❏ DVD/CD-RW drive
  - ❏ Diskette drive
  - ❏ SuperDisk drive
  - ❏ Zip drive

Understanding Drive Terms

Terms for Types of Drives

A drive that can be inserted or removed from the notebook or an optional port replicator is a *standard removable drive.* A drive that can be inserted or removed from a MultiBay is a *MultiBay drive.* A drive that connects to a USB connector is a *USB drive.*

A *hard drive* is usually used for the permanent storage of data files and software such as system files, applications, and drivers. A hard drive is sometimes called a *hard disk drive* or the *HDD.*

Disk drives include diskette drives, SuperDisk drives, and Zip drives. SuperDisk and Zip drives are *high-capacity disk drives.* Disk drives are often used to store or transport data. The notebook can read or write to any MultiBay disk drive. A diskette drive is sometimes called a *floppy disk drive, floppy drive,* or *FDD.*

Optical drives include CD and DVD drives. Optical drives are used to store or transport data and to play music and movies. DVD drives have the higher capacity. The notebook can read or write to optical drives as described in the following table.

Optical Drive	Read	Write
CD-ROM drive	Yes	No
CD-RW drive	Yes	Yes
DVD-ROM drive	Yes	No
DVD-RAM drive	Yes	Yes
DVD/CD-RW drive	Yes	Yes

Terms for Drive Media

A *diskette, disk,* or *disc* that can be inserted or removed from a drive is referred to as a *drive medium.* In this guide a *diskette* is used in a diskette drive, a *disk* is used in a high-capacity disk drive, and a *disc* is used in an optical drive.

Caring for Drives

Drives are fragile notebook components that must be handled with care. The following cautions apply to all drives at all times. Cautions that concern specific procedures are included with the procedures provided later in this section.

CAUTION: To prevent damage to the notebook or a drive and loss of work:

- Do not remove the primary hard drive (the hard drive in the hard drive bay) except for repair or replacement. For information about replacing the primary hard drive, refer in this guide to the "Hardware Upgrades" section, "Replacing the Primary Hard Drive." For information about other ways to use more than 1 hard drive in the system, refer to "Adding a Drive to the System," earlier in this section.
- Electrostatic discharge can damage electronic components. To prevent electrostatic damage to the notebook or a drive, follow these 2 precautions: 1) Discharge yourself from static electricity before handling a drive by touching a grounded metal object and 2) Avoid touching the connectors on a drive. For more information about preventing electrostatic damage, refer on this CD to the *Regulatory and Safety Notices* guide.
- Excessive force can damage drive connectors. When you insert a drive, use only enough pressure to seat the drive.
- Handle a drive carefully. Do not drop it.
- Avoid exposing a hard drive to devices with magnetic fields. Products with magnetic fields include video and audio tape erasure products, monitors, and speakers. Security devices with magnetic fields include airport walk-through devices and security wands. The airport security devices that check carry-on luggage, usually while it is placed on a conveyor belt, use x-rays instead of magnetism and will not damage a hard drive.
- Do not spray a drive with cleaners.
- Avoid exposing a drive to liquids or temperature extremes.
- If you mail a drive, ship it in packaging that protects it from shock, vibration, temperature, and humidity. Label the package "FRAGILE."

Using the IDE Drive Light

The IDE (Integrated Drive Electronics) light turns on when any type of drive except a diskette drive is being accessed.

Identifying the IDE drive light

Removing and Inserting a MultiBay Drive

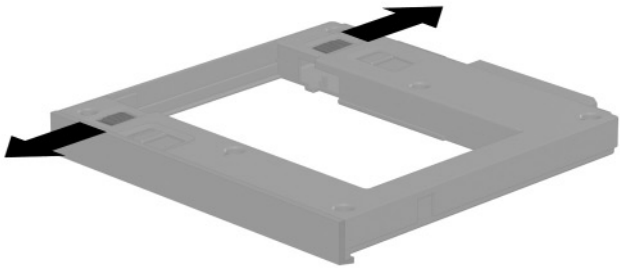
Using a MultiBay Hard Drive Adapter

A hard drive must be inserted into a MultiBay hard drive adapter before it can be used in the MultiBay.

A hard drive assembly (a hard drive inserted into a MultiBay adapter) is inserted into and removed from the MultiBay the same way as any other MultiBay drive.

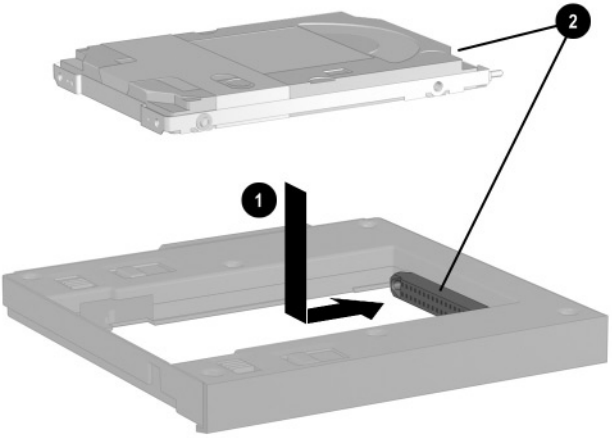
Inserting a Hard Drive into a MultiBay Hard Drive Adapter

1. To open the adapter, slide the switches on the left side of the adapter toward the front and rear of the adapter.



Sliding the selection switches on the adapter

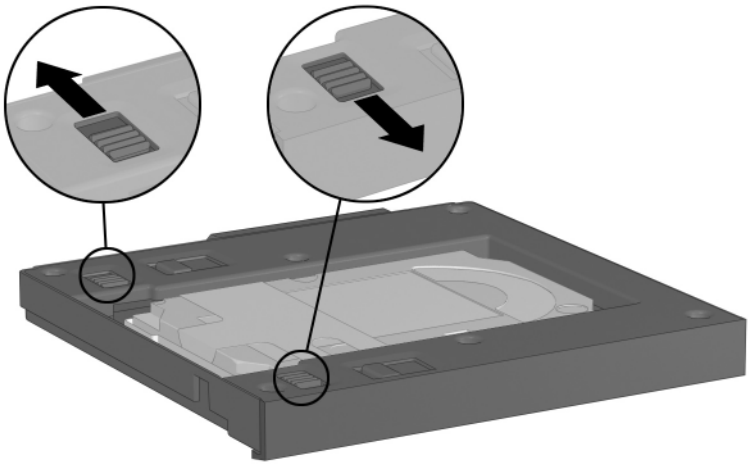
2. Lower the drive into the adapter ❶, then slide the drive connectors on the drive toward the drive connectors in the adapter ❷ until the connectors engage and the drive is seated.



Inserting a hard drive into a MultiBay hard drive adapter

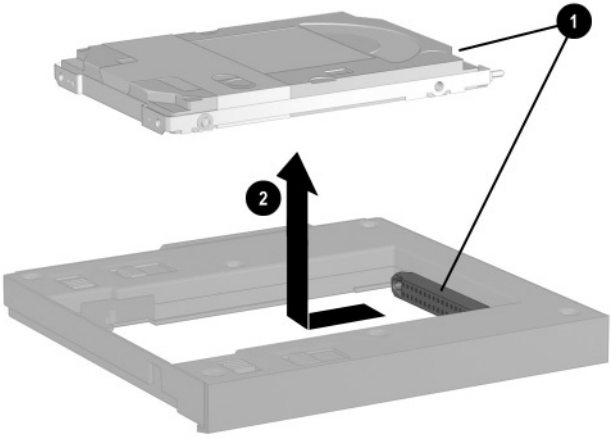
Removing a Hard Drive from a MultiBay Hard Drive Adapter

1. Slide the adapter release latches on the front and rear of the adapter toward the outside of the adapter.



Sliding the adapter release latches

2. Gently disengage the drive connectors ❶ by sliding the drive toward the front of the adapter.
3. Remove the drive from the adapter ❷.



Removing a hard drive from a MultiBay hard drive adapter

Removing a Drive from the MultiBay

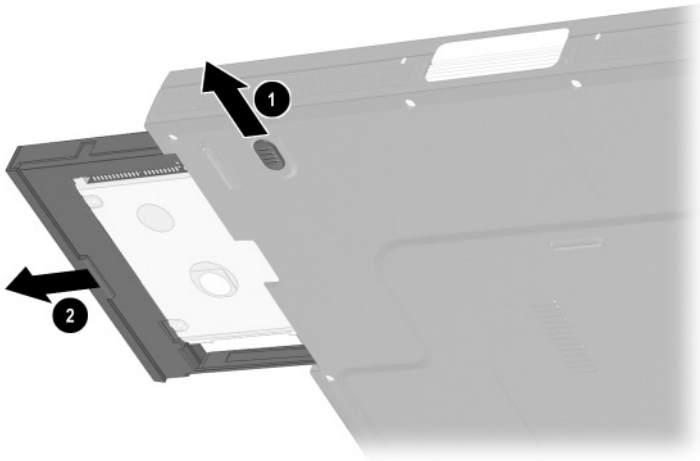
CAUTION: To prevent an unresponsive system and loss of work, stop the drive before you remove it. To stop the drive:

- In Windows 2000 Professional, select the Unplug or Eject Hardware icon on the taskbar, then select the drive you plan to remove. A message is displayed when it is safe to remove the drive.
- In Windows XP Home or Windows XP Professional, select the Safely Remove Hardware icon on the taskbar, then select the drive you plan to remove. A message is displayed when it is safe to remove the drive. (To display the Safely Remove Hardware icon, select the Show Hidden Icons icon in the system tray.)

1. If the drive has a media tray, remove the media, then close the tray.
2. Stop the drive as instructed in the preceding caution.
3. Slide and hold the MultiBay release latch ❶ toward the front of the notebook as you pull the drive or drive assembly (a hard drive inserted into a MultiBay hard drive adapter) out of the MultiBay ❷.

   When a drive or drive assembly is correctly removed from the MultiBay, the notebook beeps 3 times.

CAUTION: To prevent damage to the MultiBay when no device is in the MultiBay, insert the weight saver to protect the bay opening. The weight saver can be inserted or removed while the notebook is on, off, in Standby, or in Hibernation.

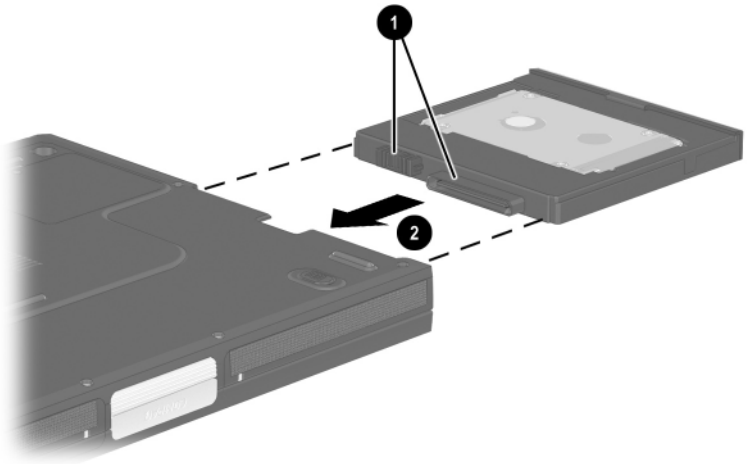


Removing a drive from the MultiBay

Inserting a Drive into the MultiBay

1. Before inserting a hard drive into the MultiBay, insert the drive into a MultiBay hard drive adapter as described earlier in this section. (No other type of drive requires an adapter.)
2. With the connectors ❶ on the drive or drive assembly (a hard drive inserted into a MultiBay hard drive adapter) facing into the MultiBay, slide the drive or drive assembly into the MultiBay until it is seated ❷.

   When a drive or drive assembly is correctly inserted into the MultiBay, the notebook beeps 3 times.

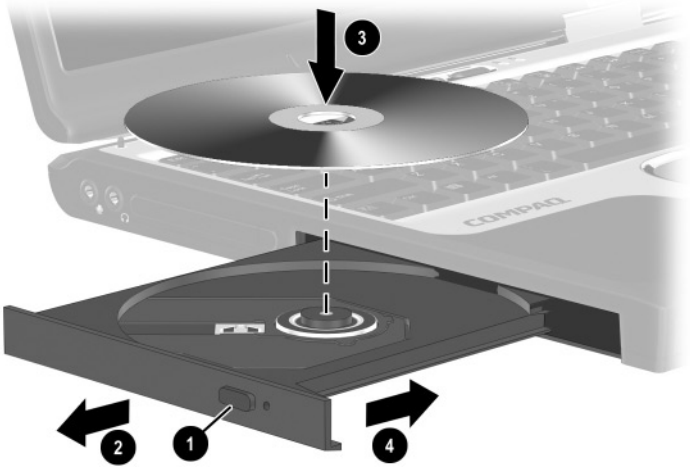


Inserting a hard drive assembly into the MultiBay

Inserting and Removing Drive Media

Inserting a CD or DVD

1. Be sure the notebook is on.
2. Press the media release button ❶ on the drive bezel to release the media tray, then pull the tray outward until it is fully extended ❷.
3. Position a CD or one-sided DVD over the tray label side up.
4. Gently press the disc onto the tray spindle ❸ until the disc snaps into place. Handle the disc by the edges, not the flat surfaces. (If the media tray is not fully extended, tilt the disc to position it over the tray spindle, then press it downward into position.)
5. Close the media tray ❹.

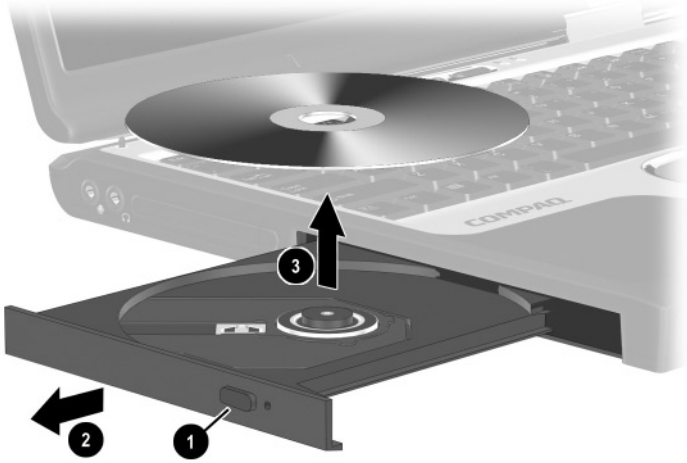


Inserting a CD or DVD into an optical drive

Removing a CD or DVD (With Power)

If power is available:

1. Be sure the notebook is on.
2. Press the release button ❶ on the drive bezel to release the media tray, then pull the tray outward until it is fully extended ❷.
3. Remove the disc from the tray ❸ by gently pushing down on the spindle while pulling up on the outer edges of the disc. If the media tray is not fully extended, tilt the disc as you remove it. Handle the disc by the edges, not the flat surfaces.
4. Close the media tray.
5. Place the disc in a protective case.

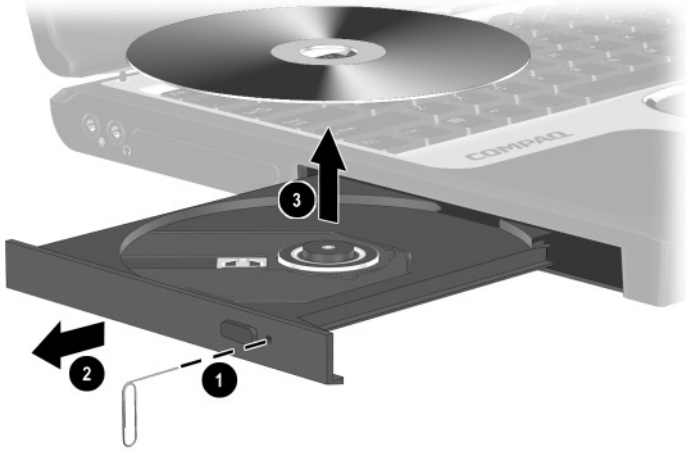


Removing a CD or DVD from an optical drive when power is available

Removing a CD or DVD (Without Power)

If the notebook is turned off or if no power is available, the release button on the drive will not work. To remove a disc from an optical drive without using the release button:

1. Insert the end of a paper clip into the release access ❶ in the front bezel of the drive.
2. Press gently on the paper clip until the media tray is released, then pull the tray outward until it is fully extended ❷.
3. Remove the disc from the tray ❸. If the media tray is not fully extended, tilt the disc as you remove it. Handle the disc by the edges, not the flat surfaces.
4. Close the media tray.
5. Place the disc in a protective case.

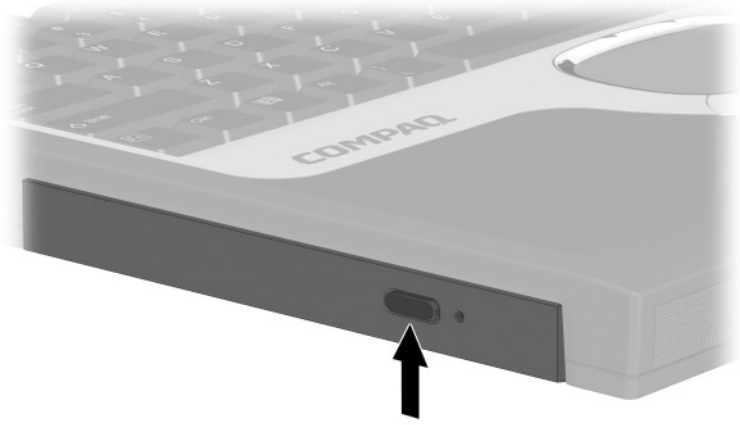


Removing a CD or DVD from an optical drive when power is not available

Inserting a Diskette or Disk

To insert a diskette or disk into a diskette, SuperDisk, or Zip drive, gently push the medium, label side up, into the drive until it clicks into place.

The media eject button extends when the medium is correctly inserted.



Identifying the media eject button on a diskette drive

Removing a Diskette or Disk

To remove a diskette or disk from a diskette, SuperDisk, or Zip drive:

1. Press the media eject button on the drive to eject the medium.
2. Pull the medium from the drive.
3. Place the medium in a protective case.

Using Drive Media

Avoiding Standby and Hibernation

CAUTION: To prevent possible video degradation and loss of audio or video playback functionality, do not initiate Standby or Hibernation while using drive media.

Turn off a drive medium before initiating Standby or Hibernation. A drive medium is any storage device that can be inserted into drive; for example, a diskette, disk, CD, or DVD.

If Standby or Hibernation is accidentally initiated while a medium is in use:

1. Briefly press the power button to exit Standby or Hibernation.
2. Restart the notebook.

For more information about Standby and Hibernation, refer on this CD to the *Software Guide,* "Power" section.

Displaying Media Contents

Autorun, sometimes called *autoplay* or *auto insert notification,* is a feature of the operating system. Autorun displays the contents of a drive medium on the screen whenever you insert the medium into a drive and, if you are using an optical drive, close the tray.

A drive medium is any storage device that can be inserted into a drive; for example, a diskette, disk, CD, or DVD.

Autorun is enabled at the factory, but can be disabled.

Setting Autorun Preferences

Autorun is enabled or disabled through the operating system:

- In Windows 2000 Professional:
  1. Double-click the My Computer icon on the Desktop.
  2. Select the Tools menu > Folder Options > File Types tab.
  3. Scroll through the list of items in the Registered File Types list, then select a file type; for example, Audio CD.
  4. Select the Advanced button.
     - If Play is displayed in boldface type (**Play**), autorun is enabled on the drive. If Play is displayed in plain type (Play), autorun is disabled.
     - To change the autorun setting, select Play (or **Play**), then select the Set Default button.
  5. Select the OK button.
- In Windows XP Home or Windows XP Professional:
  1. Double-click the My Computer icon on the Desktop.
  2. Right-click a drive.
  3. Select Properties > AutoPlay tab, then follow the instructions on the screen.

Canceling Autorun on an Audio CD

To prevent an audio CD from opening when autorun is enabled, press the **shift** key as you insert the CD.

Displaying the Contents of a Medium

If autorun is disabled and the contents of a medium are not displayed when you insert it, you can display the contents manually:

1. Select Start > Run, then type:

   explorer x:

   (where X = the drive designation of the drive containing the medium).

2. Press **enter.**

A drive designation is a letter of the alphabet that the notebook uses to identify the drive. To display the drive designation of every drive in the system, double-click the My Computer icon on the desktop.

Caring for Drive Media

CAUTION: To prevent damage to drive media:

- Do not open the metal shutter of a diskette or touch the disk within the diskette case.
- Do not expose a disk or diskette to a strong magnetic field, such as the security field used by a walk-through security device or a handheld security wand.
- Clean a CD or DVD only with a disc cleaning kit. Disc cleaning kits are available from most electronics retailers.

Finding More Drive Software Information

All the software you need to play, create, or copy to or from drive media, including all the types of CDs and DVDs supported by the notebook, is included with the notebook.

In addition, you can use security utilities to disable or partially disable most drives. A MultiBoot feature enables advanced users to set the notebook to start from a specified medium or device.

For information about using drive software, refer on this CD to the *Software Guide.*

5

Audio and Video

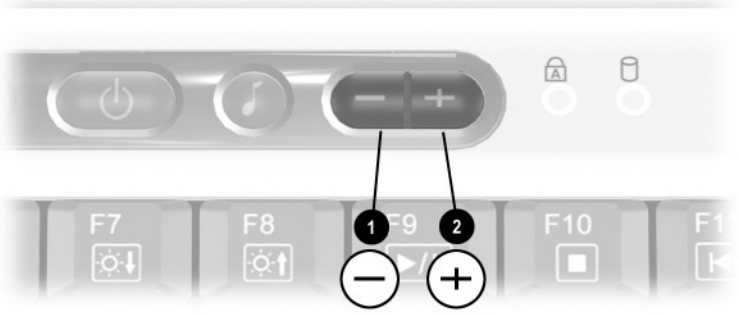
Adjusting Volume

Volume can be adjusted by using the volume buttons, the Windows volume control icon, or the volume adjustment available within some applications. For information about application volume features, refer to the application documentation.

Using the Volume Buttons

To adjust volume using the volume buttons:

- To decrease volume, press the decrease volume button ❶.
- To increase volume, press the increase volume button ❷.
- To mute or restore volume, press both buttons at the same time.



Identifying the volume buttons

Using the Volume Control Icon

In Windows 2000 Professional, the Windows volume control icon is displayed on the taskbar. To display the icon in Windows XP Home or Windows XP Professional:

1. Select Start > Control Panel > Sounds, Speech and Audio Devices > Sounds and Audio Devices.
2. Select the Volume tab.
3. Select the check box for Place Volume Icon in the Task Bar.
4. Select the OK button.

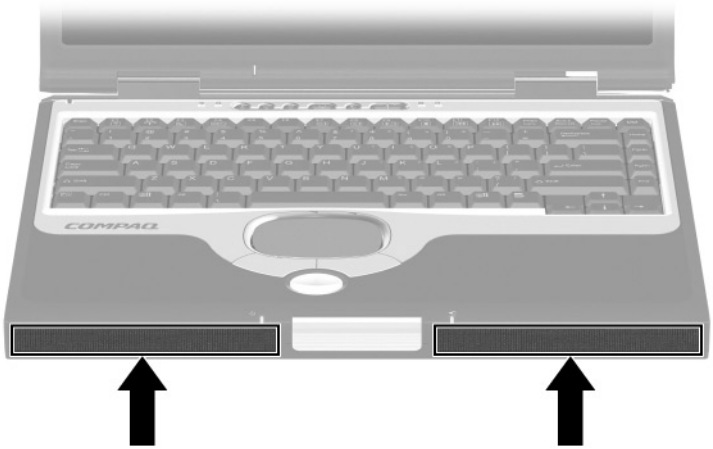
To adjust volume using the volume control icon, select the icon on the taskbar, then:

- To increase or decrease volume, click the slide bar, then drag it upward or downward.
- To mute or restore volume, select or clear the Mute check box.

Using the Internal Speakers

The internal speakers play sound in stereo from applications, the operating system, games, drive media, the Internet, and other sources.

If an external device, such as a headset, is connected to the audio-out jack, sometimes called the *line-out* jack, the internal speakers are disabled.

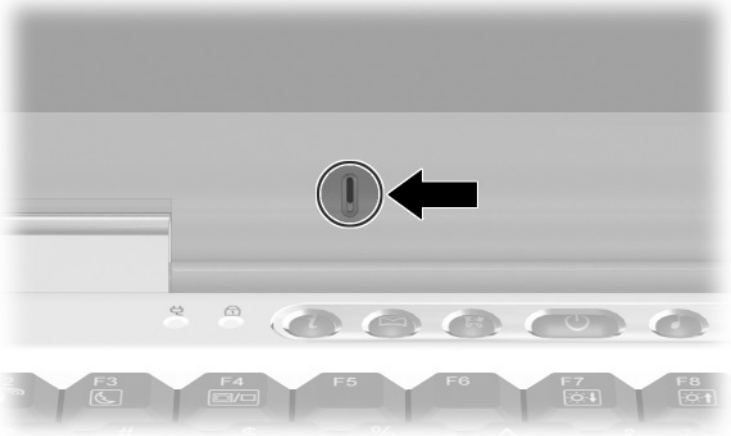


Identifying the internal speakers

Using the Internal Microphone

The internal microphone has a standard sensitivity of -45 decibels.

For best sound quality, use the internal microphone only while the notebook display is open.



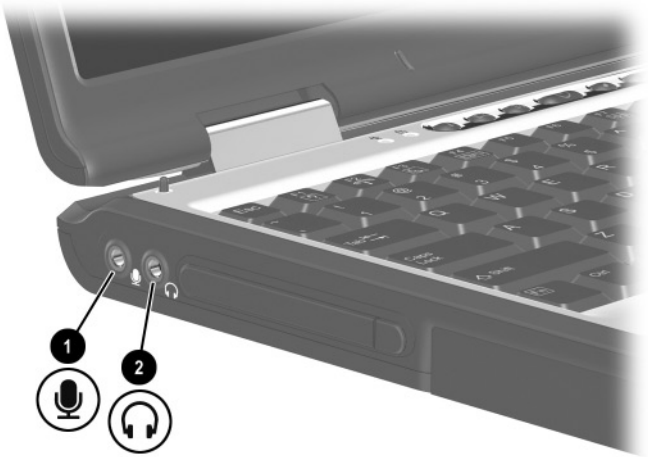
Identifying the internal microphone

Connecting an Audio Device

Identifying Audio Jacks

The notebook has 2 audio jacks:

- The microphone jack ❶ supports a single-sound channel (monaural) *external* microphone. (The microphone built into the notebook is the *internal* microphone.)
- The audio-out jack ❷, sometimes called the *line-out* jack, connects a headset, headphones, or powered stereo speakers. It is also used to connect the audio functions of an audio/video device such as a television or VCR.



Identifying audio jacks

Using the Microphone Jack

When connecting a microphone to the microphone jack, use a single-sound channel (monaural) microphone with a 3.5-mm plug. A monaural electret condenser microphone is recommended.

- If you connect a stereo microphone, left channel sound will record on both channels.
- If you connect a dynamic microphone, the recommended sensitivity may not be achieved.

When an external microphone is connected to the notebook, the internal microphone is disabled.

Using the Audio-Out Jack

WARNING: To reduce the risk of personal injury, adjust the volume before putting on headphones or a headset.

CAUTION: To prevent possible damage to an external device, do not plug a single-sound channel (monaural) plug into the audio-out jack.

When connecting a device to the audio-out jack:

- Use only a 3.5-mm stereo plug.
- For best sound quality, use 24-ohm to 32-ohm headphones.

When an external audio device is connected to the audio-out jack, the internal speakers are disabled.

Connecting a Video Device

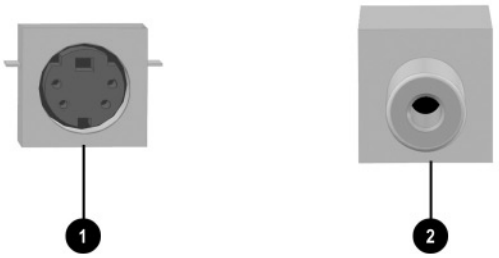
S-Video and Composite-Video Connections

A video device, such as a television, camcorder, or VCR, may have an S-video-in jack or a composite-video-in jack.

- The S-video-out jack on the notebook or on an optional port replicator supports any video device with an S-video-in jack ❶.
- The composite-video-out jack on an optional port replicator supports any video device with a composite-video-in jack ❷.

An S-video connection usually provides a higher quality image than a composite-video connection.

CAUTION: To prevent video malfunctions, do not connect external video devices to both the S-video-out jack on the notebook and the composite-video-out jack on a port replicator at the same time. If video devices are connected to both jacks while the notebook is docked, neither video device will work properly.



Identifying an S-video jack (video-in or video-out) and a composite-video jack (video-in or video-out)

Connecting an S-Video Device

Connecting the Audio

The S-video-out jack supports video signals only.

If you are setting up a configuration that combines audio and video functions, such as playing a movie from a DVD to a television, you will need a standard audio cable available from most television, computer, or electronics retailers.

Plug either end of the audio cable into the notebook audio-out jack. Plug the other end of the cable into the audio *input* (not the audio *output*) jack on the external device.

Connecting the Video

To transmit video signals through the S-video-out jack, you will need a standard S-video cable available from most television, computer, or electronics retailers.

Plug either end of the S-video cable into the notebook S-video-out jack. Plug the other end of the cable into the video *input* (not the video *output*) jack on the external device.

If the S-video-out jack on the notebook is not accessible while the notebook is docked, you can connect the device to the S-video-out jack on the optional port replicator.

Identifying the S-video-out jack on the notebook

Turning a Video Device On and Off

When an S-video or composite-video device is on, an image is displayed. When the device is off, an image is not displayed.

A device that is connected to the system can be turned on or off 3 ways:

- Start or restart the notebook.

  or

- Repeatedly press the **Fn+F4** hotkeys to switch the image among the notebook display, all connected displays, and simultaneous displays. When the image is switched to a connected video device, the device turns on.

  or

- On the ATI Displays tab in Windows, press the TV Power button, then select the OK button. To access the ATI Displays tab:

  - In Windows 2000 Professional, select Start > Settings > Control Panel. Double-click the Display icon, select the Settings tab, press the Advanced button, then select the ATI Displays tab.

  - In Windows XP Home or Windows XP Professional, select Start > Control Panel > Appearance and Themes icon > Display icon. Select the Settings tab, press the Advanced button, then select the ATI Displays tab.

The 3 methods for turning a video device on and off are interchangeable. For example, if you turned off a connected device in Windows, you can turn on the device by either restarting the notebook or pressing the **Fn+F4** hotkeys.

To conserve power, turn off the device by using one of the 3 methods described above. Disconnecting the device from the system without turning it off using one of these 3 methods will not conserve power.

Changing the Color Television Format

Color television formats are ways that television audio and video signals are sent and received. To send signals between the notebook and a television, both the notebook and the television must be using the same color television format.

The NTSC format is common in the United States, Canada, Japan, and South Korea. The PAL format is common in Europe, China, Russia, and Africa, and the PAL-M format is common in Brazil. Other South and Central American countries may use NTSC, PAL, or PAL-M.

Region-specific formats are set at the factory for most notebooks, but the region setting can be changed on any notebook.

To change the color television format:

1. Access the ATI Displays tab:
   - ❏ In Windows 2000 Professional, select Start > Settings > Control Panel. Double-click the Display icon, select the Settings tab, press the Advanced button, then select the ATI Displays tab.
   - ❏ In Windows XP Home or Windows XP Professional, select Start > Control Panel > Appearance and Themes icon > Display icon. Select the Settings tab, press the Advanced button, then select the ATI Displays tab.
2. Select the TV Header, then select the Format tab.
3. Select a television format either by name or by Country/Region:
   a. To select a format by name, select Format, select a format in the drop-down list, then select the OK button.
   b. To select the default format for a region or country, select Country/Region, select a location in the drop-down list, then select the OK button.
4. At the prompt, restart the notebook.

Finding CD and DVD Software Information

All the software you need to play, copy, or create audio and video CDs and DVDs is included with the notebook. For information about using audio and video software, refer on this CD to the *Software Guide,* "CD and DVD Software" section.

6

External Device Connections

Connecting a Standard Device

The jacks and connectors described in this guide support standard external devices.

- For information about which jack or connector to use, refer to the documentation included with the device.
- For information about installing or loading any software required by the device, refer to the device documentation, the operating system Help files, or the device manufacturer's Web site.

To connect a standard external device to the notebook:

1. If you are connecting a powered device, be sure the device is turned off.
2. Connect the device to a jack or connector on the notebook.
3. If you are connecting a powered device, plug the device power cord into a grounded electrical outlet.
4. Turn on the device.

If a properly connected external monitor or other display device does not display an image, try pressing the **Fn+F4** hotkeys to switch the image to the new device.

To disconnect a standard external device from the notebook, turn off the device (if it is powered), then disconnect the device from the notebook.

Connecting a USB Device

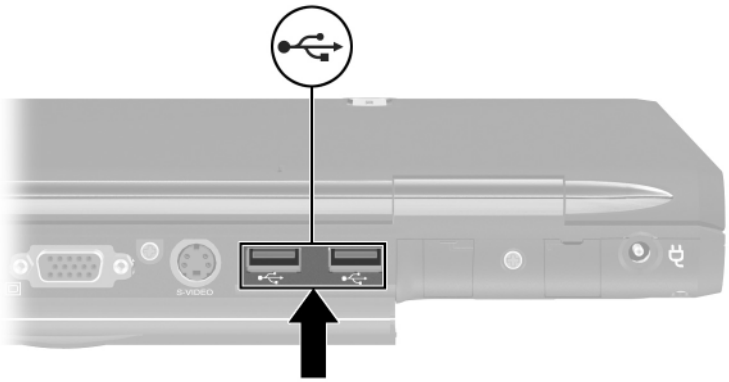
USB (Universal Serial Bus) is a hardware interface that can be used to connect external devices such as a USB keyboard, mouse, drive, printer, scanner, or hub to the notebook or an optional port replicator. A hub is a connecting device that can be powered or unpowered.

USB hubs can be connected to a USB connector on the notebook or on an optional port replicator or to other USB devices. Hubs support varying numbers of USB devices and are used to increase the number of USB devices in the system.

- Powered hubs must be connected to external power.
- Unpowered hubs must be connected either to a USB connector on the notebook or to a port on a powered hub.

The USB connectors support USB 2.0 and earlier devices.

Some USB devices may require additional support software, which is usually included with the device. For more information and software installation instructions, refer to the documentation included with the device.



Identifying the 2 USB connectors on the notebook

Using a USB Device

USB devices function in the system the same as comparable non-USB devices, with 1 exception: By default, USB devices do not function unless an operating system that supports USB is loaded. Windows 2000 Professional, Windows XP Home, and Windows XP Professional support USB.

To use a USB keyboard or hub connected to a USB connector on the notebook during startup (before Windows loads) or in a non-Windows application or utility (such as Computer Setup), enable USB legacy support.

Enabling USB Legacy Support

USB legacy support is set in Computer Setup. Computer Setup is a non-Windows utility. For more information about using Computer Setup, refer on this CD to the *Software Guide,* "Setup and Diagnostic Utilities" section.

1. To open Computer Setup, turn on or restart the notebook, then press **F10** while the F10 = ROM Based Setup message is displayed in the lower left of the screen.
   - ❏ To change the language, press **F2.**
   - ❏ For navigation instructions, press **F1.**
2. Use the arrow keys to select the Advanced menu > Device Options.
3. Use the arrow keys to select Enable USB legacy support.
4. To save your preference and exit Computer Setup, use the arrow keys to select File > Save Changes and Exit, then follow the instructions on the screen.

Your preference is set as you exit Computer Setup and is in effect when the notebook restarts.

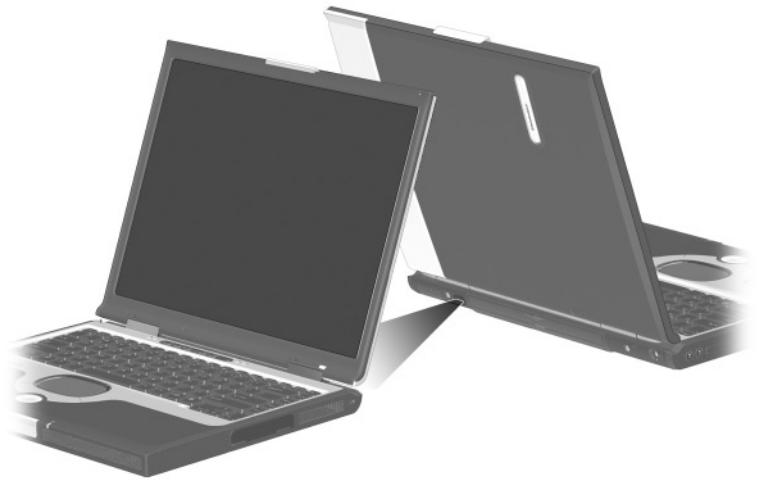
Linking to an Infrared Device

The notebook is IrDA-compliant and can communicate with another infrared-equipped device that is also IrDA-compliant. The IrDA connection speed standard is 4 megabits per second (Mbps).

The infrared port supports low-speed connections up to 115 kilobits per second (Kbps) as well as high-speed connections up to 4 Mbps.

Infrared performance may vary with the performance of infrared peripherals, the distance and angle between infrared devices, and the applications used.

Infrared signals are sent through an invisible beam of infrared light and require an unobstructed line of sight path.



Linking to an infrared device

Setting Up an Infrared Transmission

For information about using infrared software, refer to the operating system Help files.

To set up infrared devices for optimal transmission:

- Prepare the infrared ports on both devices for transmission. (The notebook infrared port is fully enabled whenever the notebook is on.)
- Position the devices so their infrared ports face each other at a distance no greater than 3.3 feet (1 meter).
- Position the ports so they face each other directly. Because the maximum capture angle is 30 degrees, the ports must be aligned no more than 15 degrees off center.
- Shield the ports from direct sunlight, flashing incandescent light, and energy-saving fluorescent light.
- Be sure that no signals from a remote control or other wireless device, such as a cell phone, aims at either port.
- During the transmission, do not move either device and do not allow objects or movement to disrupt the beam.

Avoiding Standby While Using Infrared

Standby is not compatible with infrared transmission.

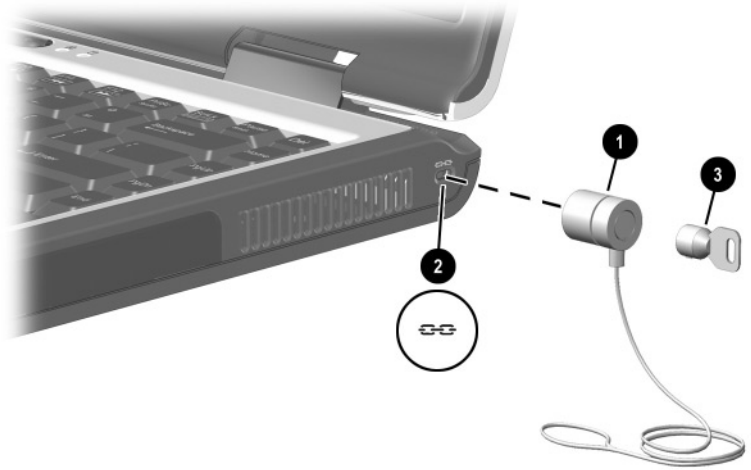
If the notebook is in Standby, an infrared transmission cannot be initiated.

If Standby is initiated during an infrared transmission, the transmission stops. The transmission resumes when the notebook exits Standby. To exit Standby, briefly press the power button.

For more information about using Standby, refer on this CD to the *Software Guide,* "Power" section.

Connecting an Optional Cable Lock

Loop the cable around a secure object, then insert the security cable lock ❶ into the security cable slot ❷ and lock it with the cable lock key ❸.



Connecting an optional cable lock

Finding Communication and Security Information

For information about modem or network connections, refer on this CD to the *Modem and Networking* guide. For information about modem commands, including instructions for using them, refer on this CD to the *Modem Command Guidelines (Advanced Users Only)* guide.

For information about using a wireless communication device, refer to the documentation included with the device.

For more information about securing the notebook, refer on this CD to the *Software Guide,* "Security" section.

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Hardware Upgrades

Obtaining Upgrades

To order or learn more about optional hardware upgrades and accessories, visit the Compaq Web site at http://www.compaq.com. The hardware upgrade area is English-only. Or, refer to the *Worldwide Telephone Numbers* booklet, included with the notebook, to contact a Compaq authorized dealer, reseller, or service provider.

For information about obtaining and installing software updates and upgrades, refer on this CD to the *Maintenance, Shipping and Travel* guide.

Using PC Cards

A PC Card is a credit card–sized accessory designed to conform to the standard specifications of the Personal Computer Memory Card International Association (PCMCIA). The notebook supports both 32-bit CardBus and 16-bit PC Cards.

PC Cards can be used to add modem, sound card, memory, storage, and digital camera functions to the notebook. PC Smart Card Reader and biometric identification PC Cards can add security.

Selecting a PC Card

A Type I or Type II PC Card can be used. A Type III PC Card will not fit into the notebook PC Card slot. (Type I, II, and III PC Cards vary by thickness, with Type III being the thickest.)

Zoomed video cards are not supported.

Configuring a PC Card

CAUTION: If you install all of the software or any of the enablers provided by a PC Card manufacturer, you may not be able to use other PC Cards. If you are instructed by the documentation included with your PC Card to install device drivers:

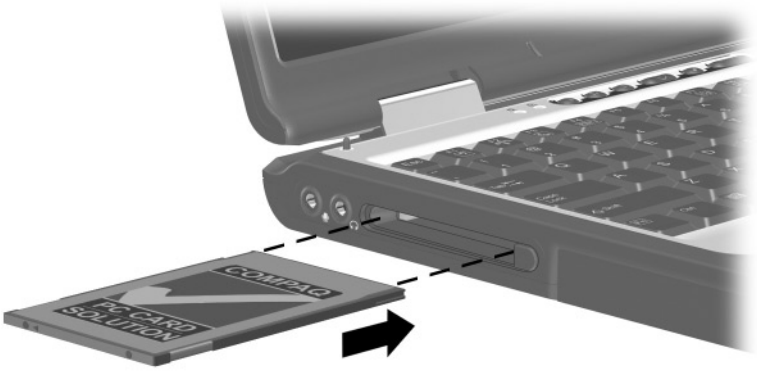
- Install only the device drivers for your operating system.
- Do not install other software, such as card services, socket services, or enablers, that may also be supplied by the PC Card manufacturer.

Inserting a PC Card

CAUTION: To prevent damage to the PC Card connectors:

- Use minimal pressure when inserting a PC Card into a PC Card slot.
- Do not move or transport the notebook while a PC Card is inserted.

1. Hold the PC Card label-side up with the connector facing the notebook.
2. Gently push the card into the slot until the card is seated.



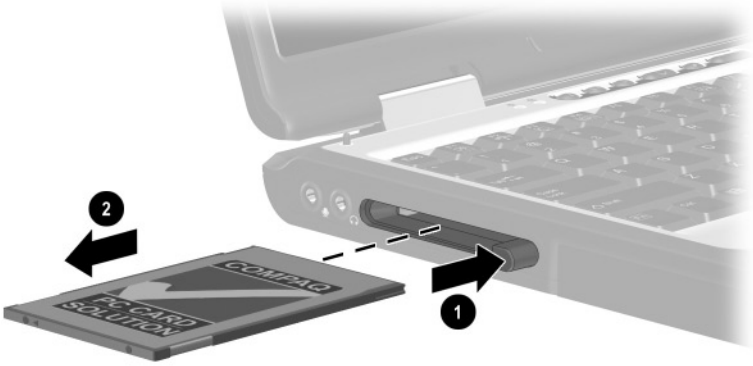
Inserting a PC Card

Stopping and Removing a PC Card

CAUTION: To prevent loss of work or an unresponsive system, stop the PC Card before removing it.

An inserted PC Card uses power even when it is not in use. To conserve power, stop a PC Card when you are not using it.

1. To stop a PC Card:
   - ❏ In Windows 2000 Professional, select the Unplug or Eject icon on the taskbar, then select the PC Card.
   - ❏ In Windows XP Home or Windows XP Professional, select the Safely Remove Hardware icon on the taskbar, then select the PC Card. (To display the Safely Remove Hardware icon, select the Show Hidden Icons icon on the taskbar.)
2. To release the PC Card, press the PC Card eject button ❶.
3. Gently pull out the card ❷.



Removing a PC Card

Increasing Memory

You can increase the amount of RAM (random access memory) in the notebook with an optional PC Card or with optional memory boards.

The notebook has two memory slots. Each slot supports a PC2100-compliant 128-Megabyte, 256-Megabyte, or 512-Megabyte memory board.

Displaying Memory Information

When RAM increases, the operating system increases the hard drive space reserved for the hibernation file.

If you experience problems with Hibernation after increasing RAM, verify that your hard drive has enough free space for the larger hibernation file.

- To display the amount of RAM in the system:
  - In Windows 2000 Professional, select Start > Settings Control Panel > System > General tab.
  - In Windows XP Home or Windows XP Professional, select Start > Control Panel > Performance and Maintenance > System > General tab.
- To display the amount of free space on your hard drive:

  Double-click the My Computer icon on the desktop, then select your hard drive. Information about the space on the drive is displayed in a status bar at the bottom of the window.
- To display the amount of space required by the hibernation file:
  - In Windows 2000 Professional, select Start > Settings > Control Panel > Compaq Power > Hibernation tab.
  - In Windows XP Home or Windows XP Professional, select Start > Control Panel > Performance and Maintenance > Power Options icon > Hibernate tab.

Removing or Inserting a Memory Board

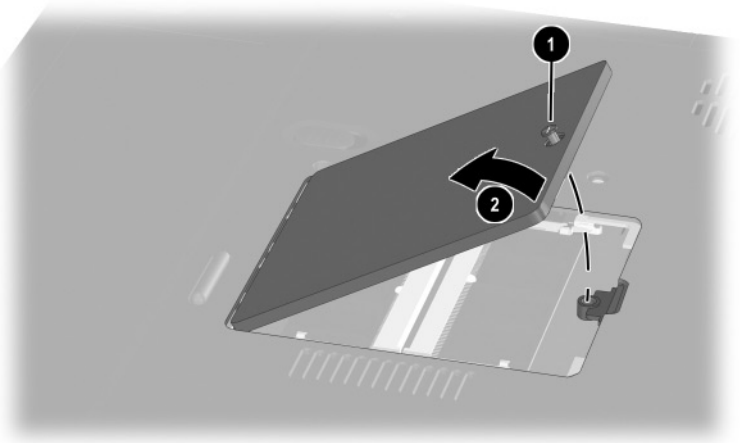
WARNING: To prevent exposure to electrical shock, work only in the memory compartment during this procedure. The hard drive bay and the memory and mini PCI compartments are the only user-accessible internal compartments on the notebook. All other areas that require a tool to access should be opened only by a Compaq authorized service provider.

WARNING: To prevent exposure to electrical shock and damage to the notebook, shut down the notebook, unplug the power cord, and remove all battery packs before installing a memory board.

CAUTION: To prevent electrostatic discharge from damaging electronic components: Before beginning this procedure, discharge yourself of static electricity by touching a grounded metal object. For more information about preventing electrostatic damage, refer on this CD to the *Regulatory and Safety Notices* guide.

1. Be sure that you have followed the instructions in the preceding warnings and caution. (If you are not sure whether the notebook is off or in Hibernation, briefly press the power button. If your work returns to the screen, save your work, exit all applications, then shut down the notebook.)
2. Disconnect all external devices connected to the notebook.
3. Disconnect the power cord.
4. Remove any battery packs in the notebook.

5. Turn the notebook underside up.
6. Loosen the screw that secures the memory compartment cover ❶, then tilt up and remove the cover ❷.



Opening the memory compartment

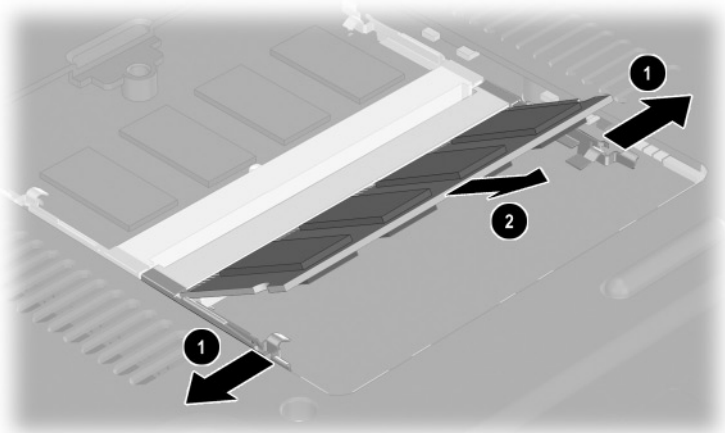
7. Remove or insert the memory board.

   To remove a memory board:

   a. Pull away the retention clips on each side of the board ❶. (The board tilts upward.)

   b. Grasp the edges of the memory board, then gently pull it out of the memory slot ❷.

   c. To protect a removed memory board, place it in an electrostatic-safe container.



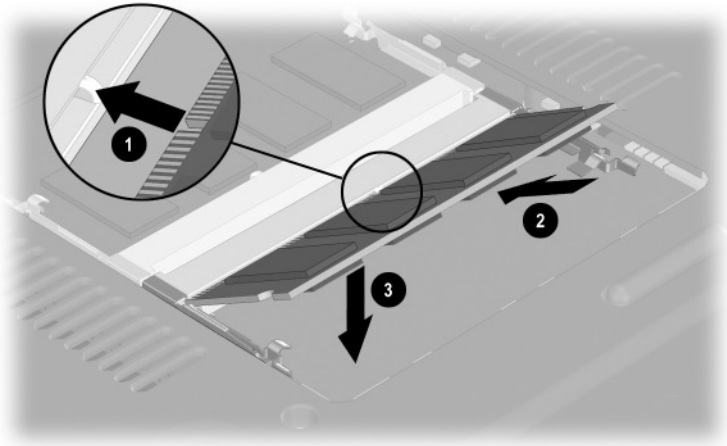
Removing a memory board

To insert a memory board:

a. Align the keyed (notched) edge of the board with the keyed area in either slot ❶.

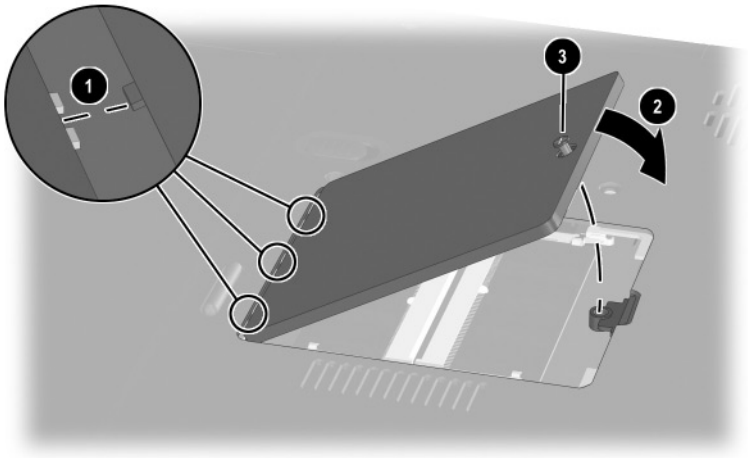
b. Press the board into the slot from a 45-degree angle until it is seated ❷.

c. Push the board downward until the retention clips snap into place ❸.



Inserting a memory board

8. Align the tabs on the memory compartment cover with the cover slots on the notebook ❶.
9. Tilt the cover downward until it is seated ❷.
10. Tighten the screw that secures the cover to the notebook ❸.



Closing the memory compartment

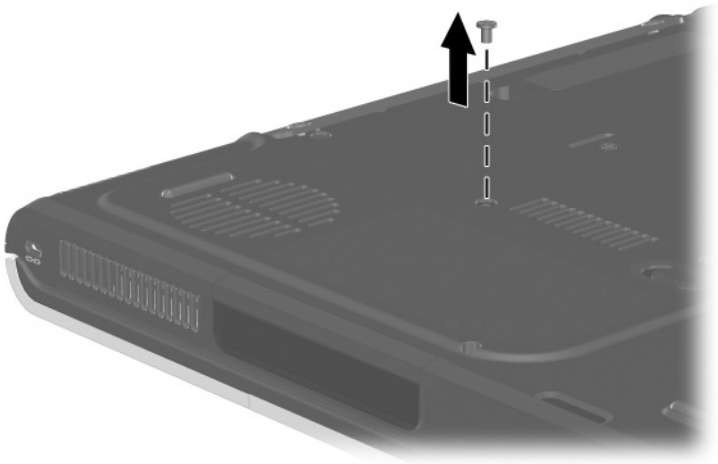
Replacing the Primary Hard Drive

Any hard drive in the hard drive bay is the *primary* hard drive. Remove the primary hard drive only for repair or replacement.

CAUTION: To prevent an unresponsive system and loss of work:

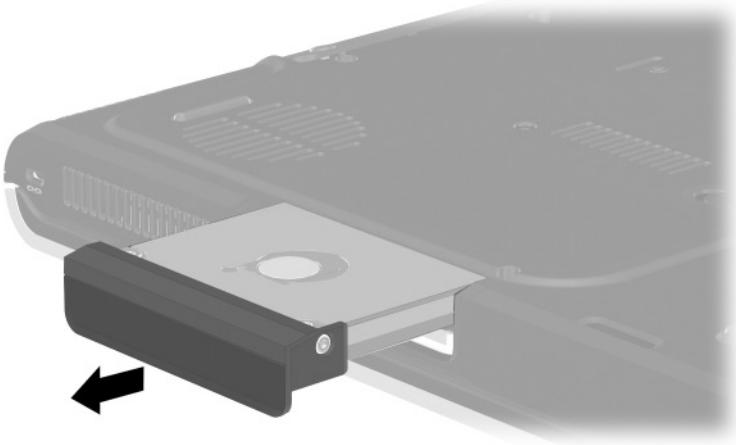
- Shut down the notebook before removing the hard drive from the hard drive bay. Do not remove the hard drive while the notebook is on, in Standby, or in Hibernation.
- To verify that the notebook is off and not in Hibernation, briefly press the power button. If your work returns to the screen, shut down the notebook.

1. Save your work.
2. Shut down the notebook and close the display.
3. Turn the notebook underside up.
4. Remove the hard drive retaining screw.



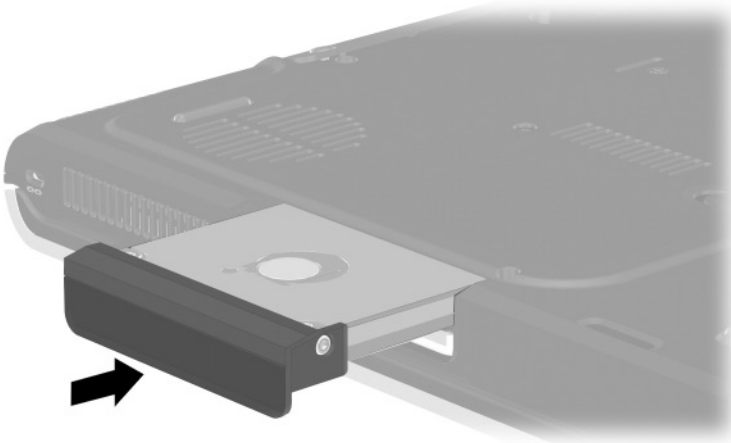
Removing the hard drive retaining screw

5. To remove a hard drive, pull the drive out of the bay.



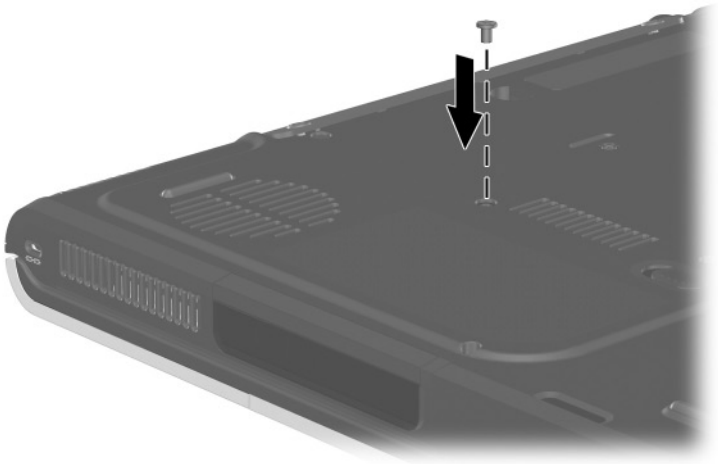
Removing a primary hard drive from the hard drive bay

6. To insert a hard drive, slide the hard drive into the bay until the drive is seated.



Inserting a primary hard drive into the hard drive bay

7. If you have inserted a hard drive, reinsert the hard drive retaining screw. (If you removed but did not replace a hard drive, put the retaining screw in a safe place.)



Replacing the hard drive retaining screw

Finding Mini PCI and MultiPort Information

For information about installing, removing, or operating a mini PCI or MultiPort device, refer to the documentation included with the device. If your notebook shipped with an installed mini PCI or MultiPort device, this documentation is included with the notebook.

For information about the light on a MultiPort device, turning a MultiPort device on and off with hotkeys, or enabling or disabling a MultiPort device in Computer Setup, refer in this guide to the "Pointing Devices and Keyboard" section, "Hotkeys."

8

Specifications

The information in this chapter may be helpful if you plan to use or transport the notebook internationally or in extreme environments.

Regulatory Agency Series Numbers

Regulatory agencies worldwide use agency series numbers for product identification. Each approved product displays the assigned agency series number. To ensure continued safe and reliable operation, use the notebook only with the products listed below:

Product	Agency Series Number
Notebook	PP2130
Port Replicator	PR1000, PR1005
Battery pack	PB2130-A, PB2130-B, PB2130-C
AC Adapter	PPP009x (where x may be any alphanumeric combination)

Notebook Dimensions

Dimension	U.S.	Metric
Height	1.5 in.	3.7 cm
Width	12.9 in.	32.7 cm
Depth	10.5 in.	26.75 cm

Operating Environment

Factor	U.S.	Metric
Temperature		
Operating	50° to 95° F	10° to 35° C
Nonoperating	14° to 140° F	–10° to 60° C
Relative humidity (noncondensing)		
Operating	10 to 90%	10 to 90%
Nonoperating	5 to 90%	5 to 95%
Maximum altitude (unpressurized)		
Operating	10,000 ft	3,048 m
Nonoperating	30,000 ft	9,144 m

Rated Input Power

Input Power	Rating
Operating voltage	100–120/220–240 VAC RMS
Operating current	1.7/0.85 A RMS
Operating frequency range	50 to 60 Hz AC
When powered by a DC source	18.5V MAX

✎ This product is designed for IT power systems in Norway with phase-to-phase voltage not exceeding 240 Vms.

Modem Specifications

This notebook has been tested and found to comply with the limits for a Class B digital device. For additional governmental agency information, refer on this CD to the *Regulatory and Safety Notices* guide.

Factor	Specification	
Temperatures		
Operating	32° to 167° F (0° to 75° C)	
Storage	-40° to 167° F (-40° to 75° C)	
Relative Humidity (noncondensing)		
Operating	-10 to 90% (-10 to 90%)	
Storage	-5 to 95%@102° F (-5 to 95%@ 39° C)	
Interfaces	Communications connector	Standard RJ-11 connector
	Telephone, central office network	Internal DAA
Power Requirements	+3.3 volts ±5%, +3.3 vaux ±5%, +5 volts ±5%	

Finding More Environmental Information

The specifications in this section contain information about exposing the notebook to environmental extremes.

For similar information about storing battery packs, refer in this guide to the “Battery Packs” section, “Storing a Battery Pack.”

For general information about traveling with the notebook, including tips for traveling with the notebook by air, refer on this CD to the *Maintenance, Shipping and Travel* guide.

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