



## **Hardware Guide**

### **Compaq Evo™ Notebook N400c Series**

Part Number: 231967-001

**April 2001**

This guide provides comprehensive information on setting up the computer's hardware and software, identifying computer components, using the battery pack, connecting external devices, and adding upgrades and accessories.

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Hardware Guide

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# Contents

## 1 Hardware and Software Setup

Setting up the Hardware. . . . .	1-1
Setting Up the Software. . . . .	1-6
After Software Setup. . . . .	1-7

## 2 A Look at the Computer

Front Panel Components . . . . .	2-1
Top Components . . . . .	2-2
Top Components (continued). . . . .	2-4
Right Side Components . . . . .	2-6
Left Side Components . . . . .	2-8
Bottom Components. . . . .	2-10
Rear Panel Components. . . . .	2-12
Additional Standard Components . . . . .	2-13

## 3 Keyboard and Pointing Devices

Using the TouchPad (TouchPad Models) . . . . .	3-1
Using the Pointing Stick (Pointing Stick Models). . . . .	3-2
Using Hotkeys and Shortcut Keys . . . . .	3-3
Fn Key . . . . .	3-3
Hotkeys . . . . .	3-4
Shortcut Keys . . . . .	3-5
Hotkey and Shortcut Key Procedures . . . . .	3-5
Using the Embedded Numeric Keypad . . . . .	3-9
Enabling the Numeric Keypad . . . . .	3-9
Disabling the Numeric Keypad . . . . .	3-10
Converting the Numeric Keypad Keys to	

Standard Keys . . . . . 3–10  
Enabling the Numeric Keypad at Startup . . . . . 3–10  
Using the Easy Access Buttons . . . . . 3–11

**4 Battery Packs**

Charging Battery Packs . . . . . 4–1  
Using a New Battery Pack . . . . . 4–2  
Replacing a Battery Pack . . . . . 4–3  
    Replacing the Primary Battery Pack . . . . . 4–3  
    Replacing an Optional External Battery Pack . . . . . 4–6  
Storing a Battery Pack . . . . . 4–10  
Recycling a Used Battery Pack . . . . . 4–10

**5 Drives**

Caring for Drives . . . . . 5–1  
Removing a Hard Drive . . . . . 5–1  
Inserting a Hard Drive . . . . . 5–6  
Changing the Startup Sequence with MultiBoot . . . . . 5–6  
    Enabling Bootable Media and Devices for  
    MultiBoot. . . . . 5–7  
    Using the Default Search Sequence. . . . . 5–8  
    Planning Changes to the Startup Sequence . . . . . 5–10  
    Selecting a MultiBoot Utility . . . . . 5–10  
    Changing the Startup Sequence in  
    Computer Setup . . . . . 5–11  
    Setting a Continuing Startup Sequence . . . . . 5–11  
    Setting the MultiBoot Express Prompt . . . . . 5–12  
    Responding to the Express Boot Menu . . . . . 5–12  
    Changing the Startup Sequence in  
    Compaq Computer Security . . . . . 5–13

**6 Audio and Video**

Using Audio Features. . . . . 6–1  
    Connecting a Stereo Speaker/Headphone . . . . . 6–2  
    Connecting a Microphone . . . . . 6–3

Adjusting Volume . . . . .	6-3
Using Video Features . . . . .	6-4
Connecting a Device to the Composite Video-Out Jack . . . . .	6-5
Changing the Video Mode . . . . .	6-6

## 7 External Device Connections

Connecting an External Monitor . . . . .	7-1
Connecting a Video Device . . . . .	7-2
Connecting a Serial Printer . . . . .	7-2
Connecting a Parallel Printer . . . . .	7-3
Connecting Infrared Equipment . . . . .	7-3
Infrared Connection Guidelines . . . . .	7-4
Infrared Configuration Guidelines . . . . .	7-5
Enabling the Infrared Port . . . . .	7-5
Connecting USB Equipment . . . . .	7-6
Attaching a Mobile Expansion Unit . . . . .	7-6
Connecting a Docking Base . . . . .	7-6
Connecting a Modem or NIC . . . . .	7-7
Connecting to Wireless Devices . . . . .	7-7

## 8 Computer Upgrades and Add-ons

Before Removing or Installing Components . . . . .	8-1
Upgrading Memory . . . . .	8-2
Removing and Inserting a Memory Expansion Board . . . . .	8-3
Removing A Memory Expansion Board . . . . .	8-10
Upgrading or Adding a Modem or NIC . . . . .	8-11
Adding and Using PC Cards . . . . .	8-16
Configuring a PC Card . . . . .	8-16
Inserting a PC Card . . . . .	8-17
Removing a PC Card . . . . .	8-18
Conserving Energy . . . . .	8-19
Installing Additional Device Drivers . . . . .	8-20
Attaching the Mobile Expansion Unit . . . . .	8-20

Docking Bases . . . . . 8–20

Using an External Diskette Drive . . . . . 8–21

    Connecting the External Diskette Drive . . . . . 8–21

    Disconnecting the External Diskette Drive . . . . . 8–22

Upgrading the Hard Drive . . . . . 8–22

Adding a Second Battery Pack. . . . . 8–22

Adding Wireless Devices. . . . . 8–22

**9 Specifications**

Regulatory Agency Series Numbers . . . . . 9–1

**Index**

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# Hardware and Software Setup

## Setting up the Hardware

1. Record the Product Key for your operating system. It is essential for the software setup. When you start the computer for the first time, you may be prompted to enter the product key. You also may need to enter it to update or troubleshoot your operating system. The Product Key is located on the Certificate of Authenticity label on the bottom of the computer.



2. Place the computer on a flat surface near an electrical outlet.



**WARNING:** This is a Class B digital device, pursuant to Part 15 of the FCC Rules. For more Class B information, refer to the *Regulatory and Safety Notices Guide* on the *Notebook Products Reference Library CD*, included with the computer.

To reduce the risk of personal injury, electric shock, fire, or damage to the equipment:

- Do not set up the computer while it is docked in an optional docking base.
  - Do not disable the power cord grounding plug. It is an important safety feature.
  - Plug the equipment into a grounded (earthed) electrical outlet that is easily accessible at all times.
-



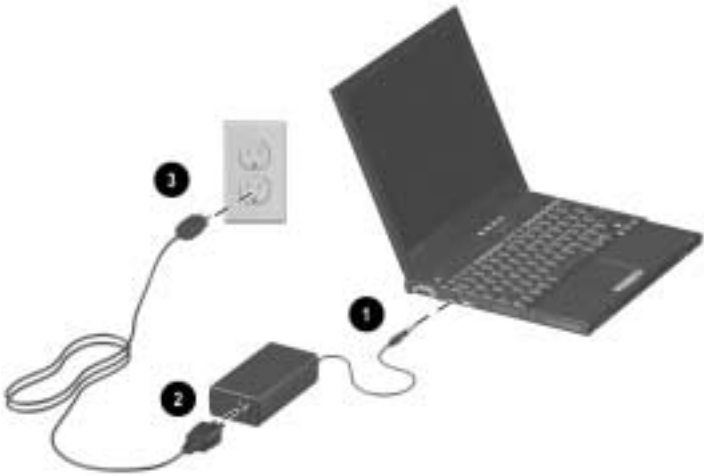
3. Connect the computer to an external outlet.

Plug the AC Adapter cable into the power connector **1**. Plug the power cord into the AC Adapter **2** and into an electrical outlet **3**.

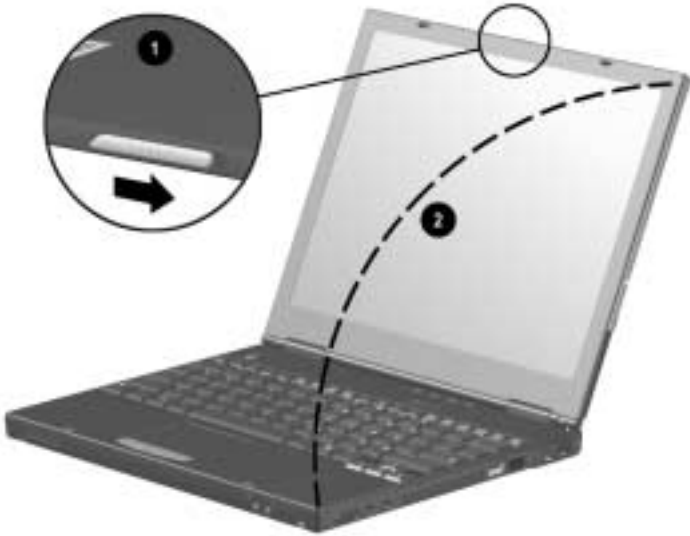


Power cords and electrical outlets vary by country.

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4. Open the computer by sliding the display latch to the right ❶ and raising the display ❷.



5. Turn on the computer by sliding and momentarily holding, then releasing, the power switch ❶.



When power is turned on:

- The power/suspend light ❷ turns on.
- The battery pack in the primary battery bay and the external battery pack (if attached) begin to charge and the battery light ❸ turns on. The battery light:
  - Remains on while the battery packs are charging.
  - Turns off when the battery packs are fully charged.
- You are prompted to begin software setup.

## Setting Up the Software

Read the following guidelines, then set up the software:



**CAUTION:** To prevent file corruption and ensure that the correct drivers install during initial setup:

- Do not unplug the computer from the electrical outlet
  - Do not shut down the computer.
  - Do not remove or insert a drive.
- 
- When you begin software setup, online instructions guide you through the setup process.
  - After you have begun software setup, you must complete the entire process. Setup time varies by computer configuration.
  - If you are prompted to select a language or operating system, choose carefully.

The languages and operating systems that you do not choose will be deleted from the system and cannot be restored during initial setup. An operating system available during initial setup is enhanced by Compaq. When an operating system is deleted, the enhancements are also deleted.

- You may be prompted to accept the Product Key.

## After Software Setup

After the initial setup is complete, you may want to:

- Install any optional applications.

You can install third-party applications or preloaded Compaq utilities at any time after initial setup is complete. To install a third-party application, refer to the documentation included with the application.

To install a preloaded Compaq utility, select the Setup Compaq Software icon on the Desktop, then follow the instructions on the screen.

If the icon does not display on the Desktop after initial setup is complete, select Start > Run. On the command line, type:

```
C:\cpqapps\setup.exe preload /s
```



To view the descriptions and space requirements of preloaded Compaq utilities without installing the utilities, select the Setup Compaq Software icon on the Desktop, then select Next. After viewing the utility information, select Cancel.

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- Calibrate the battery pack.

Although you can use a new battery pack that has been fully charged to run the computer, the computer cannot accurately report the amount of charge in the battery pack until the battery pack has been calibrated. For calibration information and instructions, refer to the "Power Management" section in the *Compaq Utilities* guide on the *Notebook Products Reference Library* CD included with the computer.

For information about choosing a workspace and creating a safe and comfortable work environment, refer to the *Safety & Comfort Guide* on the *Notebook Products Reference Library* CD included with the computer.



**WARNING:** To reduce the risk of personal injury, electric shock, fire, or damage to the equipment:

- Disconnect power from the equipment by unplugging the power cord from the electrical outlet.
  - Do not place anything on power cords or cables. Arrange all cords and cables so no one may accidentally step on or trip over them.
  - Do not pull on a cord or cable. When unplugging a cord from an electrical outlet, grasp the cord by the plug.
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## A Look at the Computer

### Front Panel Components



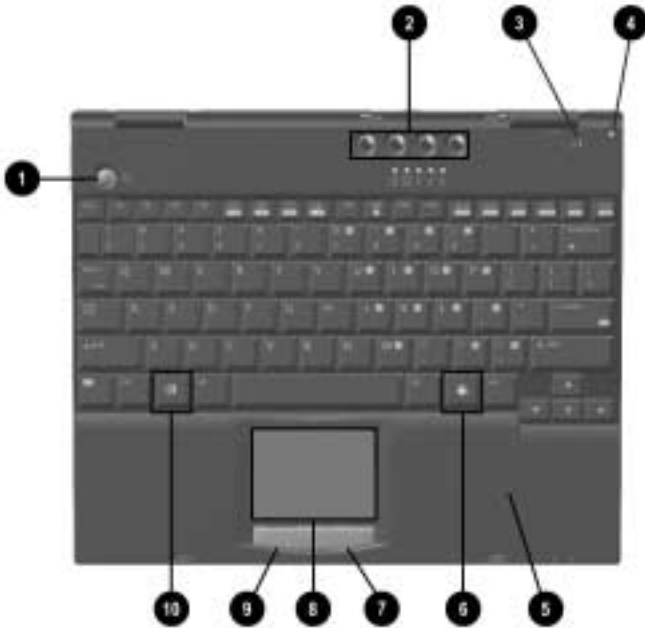
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#### Front Panel Components

	Display	Function
❶	Vents	Allow airflow to cool internal components.
❷	Display release latch	Releases the display to open the computer.
❸	Volume buttons (2)	Adjust or mute the system volume.
❹	MultiPort	Connects wireless communication devices, such as a Bluetooth or 802.11b MultiPort Module, and other options.

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# Top Components



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## Top Components

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	Light, Button, or Component	Function
❶	Suspend button*	<ul style="list-style-type: none"><li>■ Turns on the computer if it is off.</li><li>■ Initiates and exits Suspend.**</li><li>■ When pressed with the <b>Fn</b> key, initiates Hibernation.</li></ul>

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**Top Components (Continued)**


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	<b>Light, Button, or Component</b>	<b>Function</b>
②	Easy Access buttons (4)	Four buttons that provide quick access to the Internet. Refer to Chapter 3, "Keyboard and Pointing Devices," for information about these buttons.
③	Display switch	Turns off the computer display if the computer is closed while on.
④	Microphone	Inputs single-channel sound to the computer; can be used whether the computer is open or closed.
⑤	Palm rest	Provides TouchPad and TouchPad buttons or the pointing stick buttons. Also protects the internal hard drive, internal memory expansion slot, and modem/NIC mini PCI slot connector.
⑥	Windows Application key	Displays a menu when using a Microsoft application. The menu is the same that is displayed by pressing the right mouse button.
⑦	Right TouchPad button (TouchPad models only)	Functions like the right mouse button on an external mouse.
⑧	TouchPad (TouchPad models only)	Moves the mouse cursor, selects, and activates.
⑨	Left TouchPad button (TouchPad models only)	Functions like the left mouse button on an external mouse.
⑩	Microsoft logo key	Displays the Windows Start menu.

\* In Windows 98, the term *sleep button* replaces the term *suspend button*.

\*\* In Windows 98, the term *Standby* replaces the term *Suspend*.

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## Top Components (continued)



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### Top Components

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	Light, Button, or Component	Function
❶	Pointing stick (pointing stick models only)	Moves the mouse cursor, selects, and activates.
❷	Hard drive light	On: The primary hard drive is being accessed.
❸	MultiBay light	On: A drive in a MultiBay in the optional Mobile Expansion Unit or an external diskette drive connected to the computer is being accessed.

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**Top Components (Continued)**


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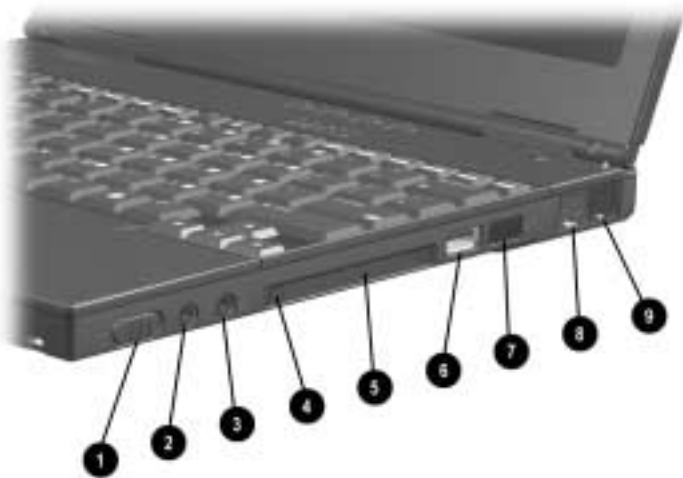
	<b>Light, Button, or Component</b>	<b>Function</b>
④	Num lock light	On: Num lock is on and the embedded numeric keypad is enabled.
⑤	Caps lock light	On: Caps lock is on.
⑥	Scroll lock light	On: Scroll lock is on.
⑦	Left pointing-stick button (pointing stick models only)	Functions like the left mouse button on an external mouse.
⑧	Scroll pointing-stick button (pointing stick models only)	Can be set to scroll, magnify, or function like the third button on an external mouse.
⑨	Right pointing-stick button (pointing stick models only)	Functions like the right mouse button on an external mouse.
⑩	Power/suspend light	On: Power is turned on. Blinking: Computer is in Suspend.*  ✎ The power/suspend light also blinks if a battery pack that is the only available power source reaches a critical low-battery condition while Hibernation is ydisabled.
⑪	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.

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\* In Windows 98, the term *sleep button* replaces the term *suspend button*.

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## Right Side Components



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### Right Side Components

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	Component	Function
❶	Power switch	Turns the computer on or off or exits Suspend.*
❷	Stereo speaker/headphone jack	Connects stereo speakers, headphones, headset, or television audio.
❸	Microphone jack	Connects a single sound channel microphone.
❹	PC Card eject button	Ejects a PC Card from the PC Card slot.
❺	PC Card slot	Supports 32-bit (CardBus) and 16-bit PC Cards.

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**Right Side Components (Continued)**

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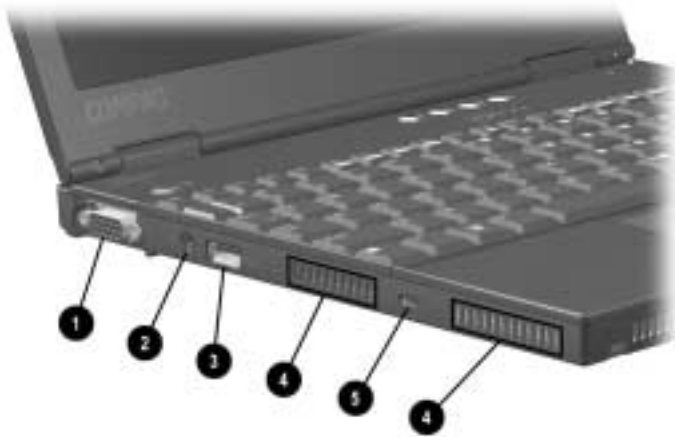
	Component	Function
⑥	Universal Serial Bus (USB) connector	Connects USB devices.
⑦	Infrared port	Links another IrDA-compliant device for wireless communication.
⑧	RJ-45 jack (network models only)	Connects the network cable.  A network cable is included with network models.
⑨	RJ-11 jack (internal modem models only)	Connects the modem cable to an internal modem.  A modem cable is included with internal modem models.

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\* In Windows 98, the term *sleep button* replaces the term *suspend button*.

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## Left Side Components



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### Left Side Components

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Component	Function
❶ External monitor connector	Connects an external monitor or overhead projector.
❷ AC power connector	Connects any one of the following: <ul style="list-style-type: none"><li data-bbox="583 1052 756 1076">■ AC Adapter</li><li data-bbox="583 1089 923 1143">■ Optional Automobile Power Adapter/Charger</li><li data-bbox="583 1156 880 1209">■ Optional Aircraft Power Adapter</li></ul>

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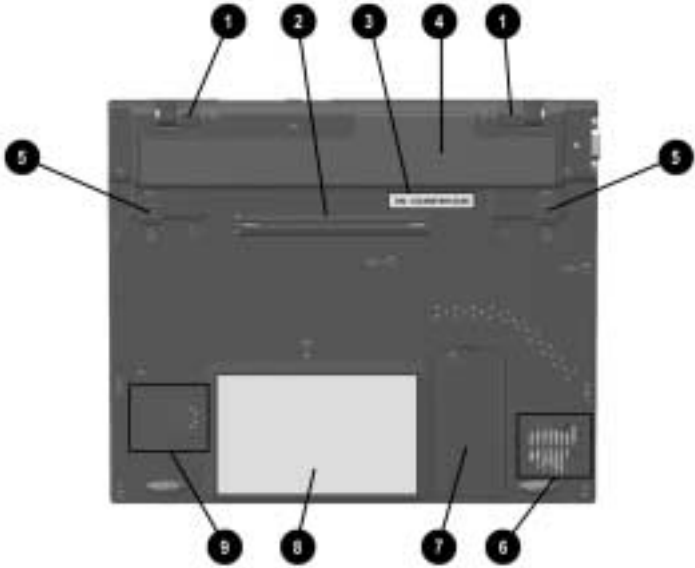
### Left Side Components (*Continued*)

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	<b>Component</b>	<b>Function</b>
③	Universal Serial Bus (USB) connector	Connects USB devices.
④	Vents	Allow airflow to cool internal components.
⑤	Security cable slot	Allows an optional security cable to be attached to the computer.

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## Bottom Components



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### Bottom Components

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Component	Function
❶ External battery release latches (2)	Release the optional external battery pack.
❷ Docking connector	Connects the computer to an optional Mobile Expansion Unit.
❸ Serial number	Identifies the computer; needed when you call Compaq customer support.
❹ Battery bay	Holds the primary battery pack.
❺ Primary battery release latches (2)	Release the primary battery pack from the primary battery bay.

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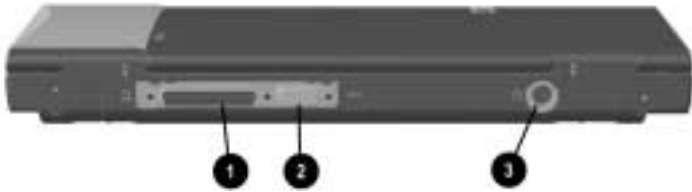
### Bottom Components (*Continued*)

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	<b>Component</b>	<b>Function</b>
⑥	Fan	Provides airflow to cool internal components.
⑦	Memory expansion compartment cover	Covers the memory expansion compartment that contains one memory expansion slot for a memory expansion board.
⑧	Certificate of Authenticity label	Contains the Product Key, which may need to be entered before using some Windows operating systems.
⑨	Speaker	Produces sound.

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## Rear Panel Components



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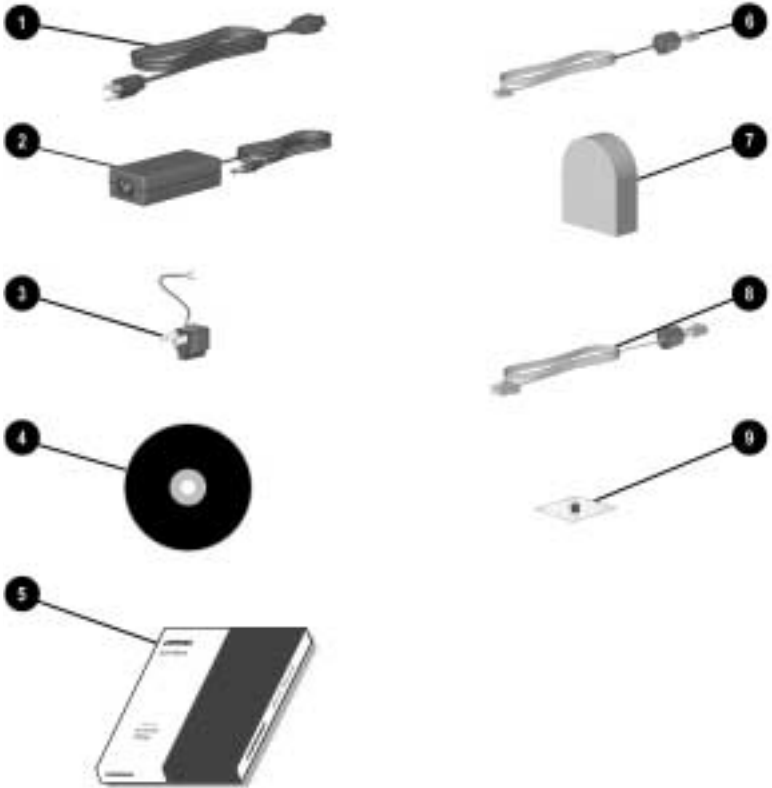
### Rear Panel Components

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	Component	Function
❶	Parallel connector	Connects a parallel device.
❷	Serial connector	Connects a serial device. The computer serial port is disabled when the computer is connected to an optional Mobile Expansion Unit
❸	Composite video-out jack	Connects a television, VCR, camcorder, overhead projector, or video capture card.  ✎ The connection requires the purchase of a video-out adapter and an optional video cable.

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## Additional Standard Components



The components included with the computer vary by geographic region and the computer hardware configuration ordered.



Some components, such as the hard drive and the primary battery pack, ship inside computer bays identified in previous sections and are not included in this illustration.

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## Additional Standard Components

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	<b>Component</b>	<b>Function</b>
❶	Power cord	Connects the AC Adapter to an AC electrical outlet.
❷	AC Adapter	Converts AC power to DC power.
❸	3-to-2-prong plug adapter (Japan only)	Adapts the U.S. power cord to a two-prong electrical outlet in Japan.
❹	<i>Notebook Products Reference Library CD</i>	Contains the following guides: <ul style="list-style-type: none"><li>■ <i>Hardware Guide</i></li><li>■ <i>Compaq Utilities</i></li><li>■ <i>Modem and Networking</i></li><li>■ <i>Modem Commands</i></li><li>■ <i>Maintenance, Shipping, and Travel</i></li><li>■ <i>Troubleshooting</i></li><li>■ <i>Regulatory and Safety Notices</i></li><li>■ <i>Safety &amp; Comfort Guide</i></li></ul>
❺	QuickRestore kit	Contains the software preinstalled on the computer.
❻	Modem cable (internal modem models only)*	Connects the modem to an RJ-11 telephone jack or to a country-specific adapter.
❼	Country-specific modem adapter (included with internal modem models by region as required)	Adapts the modem cable to a non-RJ-11 telephone jack.

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### Additional Standard Components (*Continued*)

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	Component	Function
Ⓔ	Network cable (network models only)**	Connects the computer to an Ethernet network jack.
Ⓕ	Bag containing spare pointing stick caps (pointing stick models only)	To replace a worn pointing stick cap: <ol style="list-style-type: none"><li data-bbox="580 472 852 500">1. Turn off the computer.</li><li data-bbox="580 509 948 565">2. Gently pull off the used rubber pointing-stick cap.</li><li data-bbox="580 574 948 630">3. Push the replacement cap into place.</li></ol>

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\* The modem cable has a 6-pin RJ-11 connector at each end.

\*\* The network cable has an 8-pin RJ-45 connector at each end.

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## Keyboard and Pointing Devices

### Using the TouchPad (TouchPad Models)

The TouchPad performs the same basic operations as a mouse. It functions with any software that supports a Microsoft-compatible mouse. The TouchPad ❶ includes left ❷ and right ❸ TouchPad buttons for function or application selection. To operate the TouchPad, slide your finger across its surface in the direction you want to move the cursor, and click the left or right button to make a selection or complete an activity.



## Using the Pointing Stick (Pointing Stick Models)

The pointing stick performs the same basic operations as a mouse. It functions with any software that supports a Microsoft-compatible mouse.

The pointing stick keyboard includes the pointing stick ❶, left pointing-stick button ❷, scroll pointing-stick button ❸, and right pointing-stick button ❹. To operate the pointing stick, press on the pointing stick with your index finger in the direction you want to move the cursor and click the left or right button to make a selection or complete an activity. You can also use the pointing stick to scroll. While pressing on the pointing stick in the direction you want to scroll, hold down the scroll button.





## Using Hotkeys and Shortcut Keys

### Hotkey and Shortcut Key Quick Reference

Function	Hotkey	Return to Original State
Turn on or off the wireless device connected to the MultiPort	<b>Fn+F2</b>	<b>Fn+F2</b>
Switch display and image	<b>Fn+F4</b>	<b>Fn+F4</b>
Adjust system volume	<b>Fn+F5</b>	<b>Fn+F5</b>
Initiate Quick Controls	<b>Fn+F6</b>	Enter power-on password
Set power conservation level	<b>Fn+F7</b>	<b>Fn+F7</b>
View battery charge	<b>Fn+F8</b>	<b>Fn+F8</b>
Adjust screen brightness	<b>Fn+F10</b>	<b>Fn+F10</b>
Display system information	<b>Fn+esc</b>	<b>Fn+esc</b>
Stretch text	<b>Fn+T</b>	<b>Fn+T</b>

## Fn Key

Many commands are entered by simultaneously pressing the **Fn** key and a function key.

If you enable sequential **Fn** commands, all commands that can be entered by simultaneously pressing the **Fn** key and another key can also be entered by sequentially pressing **Fn** then the other key.

To enable the sequential feature, press the **Fn** key 5 times. A beep following the fifth pressing confirms that the feature is enabled. The feature remains enabled until you disable it.

To disable this feature, press the **Fn** key five times. To indicate that the feature has been disabled, rather than enabled, no beep sounds.

While this feature is enabled:

- Whenever you press the **Fn** key, the computer beeps to indicate that the next key you press will be interpreted as the other key of an **Fn** command.
- **Fn** commands can still be entered by simultaneously pressing the **Fn** key and the other key of the **Fn** command.

## Hotkeys

Hotkeys are preset combinations of the **Fn** key ❶ and another key that access or execute frequently used system functions. The icons on the function keys **F2** to **F10** ❷ represent these functions.

Hotkeys can be used at anytime and from within any application.



To use hotkeys on an external keyboard, which does not have an **Fn** key, press the scroll lock key twice, then the other key only of the hotkey combination. For example, to use the **Fn+F10** hotkeys, press scroll lock+scroll lock+F10.

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The **Fn+F6** hotkeys cannot be used on an external keyboard connected through a USB connector.

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## Shortcut Keys

Shortcut keys are preset combinations of the **Fn** key and another key other than a function key.

## Hotkey and Shortcut Key Procedures

### Turning Wireless Devices On or Off (Fn+F2)

When a wireless device is connect to the MultiPort, press **Fn+F2** to turn the device on or off. The status light on the wireless device indicates whether power is on (light is on) or off (light is off).

### Switch Display and Image (Fn+F4)

- **Windows 2000 Professional or Windows NT 4.0**—Toggle **Fn+F4** to switch the image among:
  - Computer display
  - External display
  - Simultaneous display (computer and external displays)

The external monitor can be connected through the external monitor connector or the composite video-out jack.

■ **Windows 98 with MultiMonitor Disabled**—Toggle **Fn+F4** to switch the image among:

- Computer display
- External display
- Simultaneous display (computer and external displays)

The external monitor can be connected through the external monitor connector or the composite video-out jack.

■ **Windows 98 with MultiMonitor enabled**—Press **Fn+F4** to turn off an external display connected to the external monitor connector and disable MultiMonitor.

## Adjust System Volume (Fn+F5)

Press **Fn+F5** to display the system volume level slide bar. Click and drag the slide bar upward to increase volume or downward to decrease volume. You also can adjust the volume with the left and right arrow keys.

To mute volume, press **Fn+F5+M**. To restore volume, press **Fn+F5**, then clear the Mute checkbox.

## Initiate Quick Controls (Fn+F6)

Quick Controls security features disable the keyboard and pointing device and clear the display.

Before you can use the Quick Controls, you must set a power-on password and enable the Quick Control preferences. For instructions, refer to the *Compaq Utilities* guide, "Security Management" section, on this CD.

To initiate Quick Controls manually, press **Fn+F6**. To exit Quick Controls, enter your power-on password.

The **Fn+F6** hotkeys cannot be used on an external keyboard connected through a USB connector on the computer or an optional docking base.

## Set Power Conservation Level (Fn+F7)

- **Windows 2000 Professional or Windows 98**—Press **Fn+F7** to open the Power Schemes window.
- **Windows NT 4.0**—Press **Fn+F7** to open the Battery Conservation Settings window.

To select a preset battery conservation level, choose among

- **High**—Maximizes running time from a single charge.
- **Medium**—Balances system performance with running time.
- **None (Drain)**—Runs the computer at full power.

For information about the custom level, refer to the *Compaq Utilities* guide, "Security Management" section, on this CD.

## View Battery Charge (Fn+F8)

Battery pack locations are indicated by number: (1) computer primary battery bay, (2) computer external battery pack, (3) Mobile Expansion Unit right MultiBay, and (4) Mobile Expansion Unit left MultiBay.

Press **Fn+F8** to display the status of all installed battery packs.

## Adjust Screen Brightness (Fn+10)

Press **Fn+F10** to display the screen brightness control slide bar. Click and drag upward on the slide bar to increase screen brightness or downward to decrease screen brightness. You also can adjust the brightness with the left and right arrow keys.

## Display System Information (Fn+esc)

Press **Fn+esc** to display information about system hardware components and software version numbers.

Press **Fn+esc** a second time to remove the system information from the screen.



In some operating systems, the System BIOS date, which may display in a decimal format, is the version number of the system ROM.

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## Stretch Text (Fn+T)

Text stretch expands the text to fill more of the screen. When MS-DOS is running under Windows and the resolution of the desktop is set lower than the display resolution, press **Fn+T** to stretch the text. Press **Fn+T** a second time to return the text to normal.

---



Stretching the text may cause character distortion.

---

## Using the Embedded Numeric Keypad

The embedded numeric keypad consists of a cluster of 16 keys **1**. The character in the upper right corner of each of the keys indicates the keypad function of that key.

The standard keyboard functions of the keys in the keypad are disabled when the keypad is enabled.

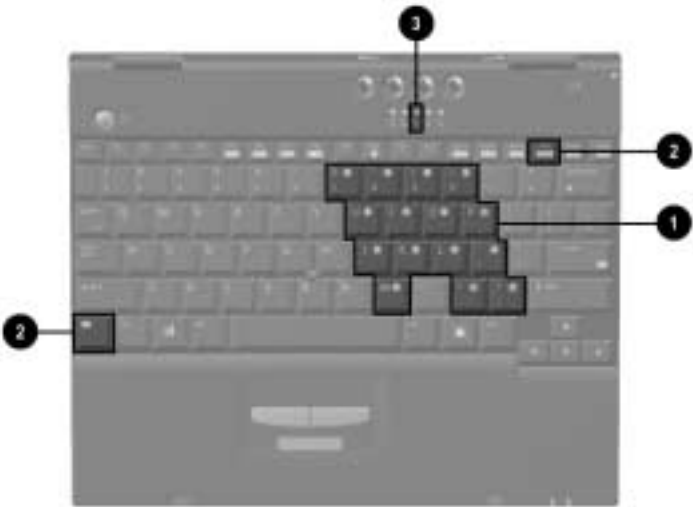
## Enabling the Numeric Keypad

To enable the keypad, press **Fn+num lk** **2**. The Num Lock light **3** turns on when the keypad is enabled.



The keypad cannot be enabled while an optional external keyboard or numeric keypad is connected to the computer.

---



## Disabling the Numeric Keypad

To disable the keypad and return the keys to their standard keyboard functions, press **Fn+Num Lk**.

## Converting the Numeric Keypad Keys to Standard Keys

To use the keypad keys temporarily as standard keys while the keypad is enabled:

- Press and hold **Fn** to type in lowercase.
- Press and hold **Fn+shift** to type in uppercase.

When the **Fn** key is released, the keypad function returns.

## Enabling the Numeric Keypad at Startup

To set the computer to start up with the keypad enabled:

1. Turn on or restart the computer, then press **F10** when the F10 = ROM Based Setup message is displayed in the lower-left corner of the screen.
2. To change the language, press **F2**.
3. For navigation instructions, press **F1**.
4. Select Advanced > Device Options and press **enter**.
5. Toggle on the Num Lock State at Boot field, then press **F10**.
6. To save your selections, select File > Save Changes and Exit, then press **enter**.
7. When prompted to confirm your action, press **F10**.

To disable the embedded numeric keypad at startup, repeat the above procedure, toggling off the Num Lock State at Boot field.





The embedded numeric keypad can be enabled or disabled with **Fn+numlk** in either startup state.

---

## Using the Easy Access Buttons

The Easy Access buttons software, preinstalled on the computer, lets you program the Easy Access buttons on the computer keyboard to access any Internet addresses or to open any software application or data file on your hard drive. Each of the four Easy Access buttons is identified by an icon.

You can use the Easy Access buttons software to:

- Create and assign button schemes, which are a collection of button assignments that you define, and that are unique to your Windows user profile.
- Change a button name or assignment within a scheme.
- Delete or add button schemes.

The default assignments for the Easy Access buttons are:

- ① **Information**—Informational Web site
- ② **Home**—Personal Web page
- ③ **Search**—Search engine
- ④ **Email**—Email application



For procedures on programming the Easy Access buttons, refer to the online help file. Select Start > Settings > Control Panel > Easy Access Keyboard icon. From the Easy Access Buttons window, select Help.

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## Battery Packs

### Charging Battery Packs

The computer supports up to two battery packs: a primary battery pack located in the battery bay, and an optional external battery pack that can be attached to the computer.

When the computer is attached to an optional Mobile Expansion Unit (MEU), the system supports up to four battery packs: the primary and optional external battery packs on the computer and one battery pack in each of the MultiBays on the MEU.

If the computer and MEU are docked in an optional docking base, the system supports up to five battery packs: the primary and optional external battery packs on the computer, one battery pack in each of the MultiBays on the MEU, and one battery pack in the MultiBay on the docking base.

Multiple battery packs in the system charge and discharge in a preset sequence determined by location.

■ Charge sequence:

- 1—Computer battery bay
- 2—Optional computer external battery pack
- 3—Battery pack in the MultiBay of the optional docking base
- 4—Battery pack in the left MultiBay of the optional Mobile Expansion Unit
- 5—Battery pack in the right MultiBay of the optional Mobile Expansion Unit

■ Discharge sequence:

- 1—Battery pack in the right MultiBay of the optional Mobile Expansion Unit
- 2—Battery pack in the left MultiBay of the optional Mobile Expansion Unit
- 3—Optional computer external battery pack
- 4—Computer battery bay



A battery pack inserted into the MultiBay of the optional docking base can be charged but cannot be used to provide battery power to the system.

---

## Using a New Battery Pack

Charge the battery pack in the computer's battery bay while connected to an external power source or while attached to the Mobile Expansion Unit.

A new battery pack should be fully charged before it is used for the first time. The battery pack will work without being fully charged, but the battery gauge will not show an accurate charge until the battery pack receives its first full charge.

## Replacing a Battery Pack

You can resolve a low battery condition by replacing a discharged battery pack.



**CAUTION:** If you are removing a battery pack that is the only power source available to the system while the computer is on, initiate Hibernation before removing the battery pack. Failure to do so will result in loss of information. If the computer is on and connected to more than one power source, you can remove a battery pack without initiating Hibernation.

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## Replacing the Primary Battery Pack

1. If the battery pack in the battery bay is the only power source, initiate Hibernation.
- 



Drive activity may delay Hibernation.

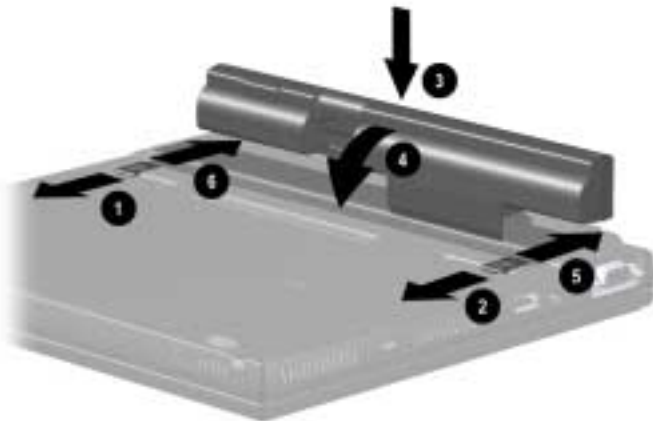
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2. Close the display.
3. Insert or remove the battery pack:

- To remove the battery pack, turn the computer bottom side up.
  - a. Slide the left primary battery release latch forward ❶.
  - b. Slide the right primary battery release latch forward and hold it in place ❷.
  - c. Swing the front edge of the primary battery pack up and back ❸.
  - d. Lift the primary battery pack out of the battery bay ❹.



- To insert the battery pack, turn the computer bottom side up.
  - a. Slide the left primary battery release latch forward ❶
  - b. Slide the right primary battery release latch forward and hold it in place ❷.
  - c. Insert the back edge of the battery pack into the battery bay ❸.
  - d. Swing the front edge of the battery pack forward and down into the battery bay ❹.
  - e. Release the right primary battery release latch ❺
  - f. Slide the left primary battery release latch toward the back of the computer ❻.



4. Open the display.
5. If the computer is in Hibernation, slide the power switch to resume operation.

## Replacing an Optional External Battery Pack

1. If the optional external battery pack is the only power source, initiate Hibernation.



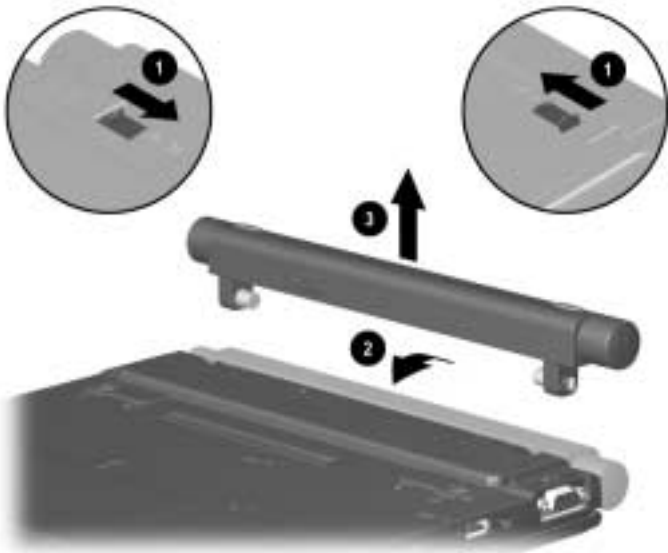
Drive activity may delay Hibernation.

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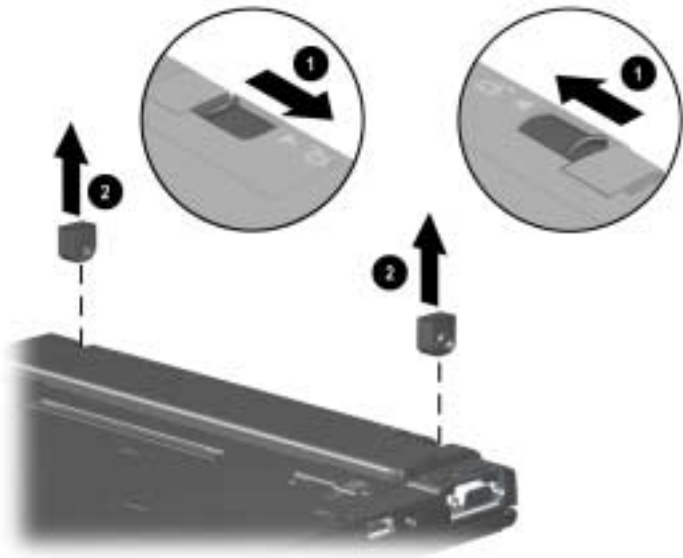
2. Close the display.
3. Insert or remove the external battery pack:
  - To remove the optional external battery pack, turn the computer bottom side up.



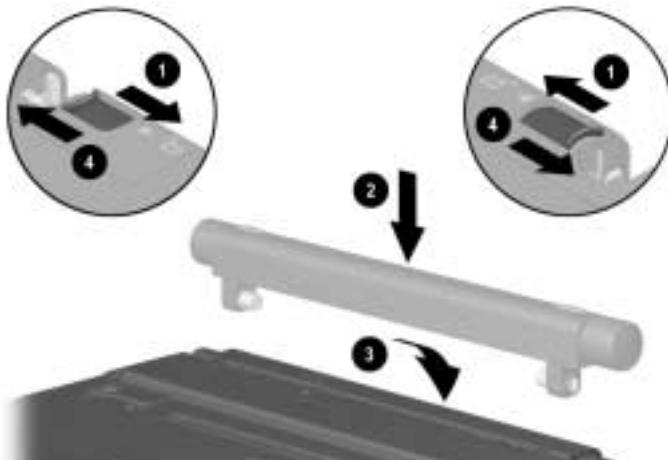
- a. Make sure the external battery pack is located behind the computer rear panel, then slide the external battery release latches toward the inside of the computer ❶.
- b. Rotate the external battery pack 90 degrees toward the computer ❷.
- c. Lift up the battery pack from the computer ❸.



- If the optional external battery pack is being inserted for the first time, make sure the external battery pack plugs are removed. To remove the plugs, turn the computer bottom side up.
  - a. Slide the external battery release latches toward the inside of the computer ❶.
  - b. Remove the plugs from the computer ❷.



- To insert the external battery pack, turn the computer bottom side up.
  - a. Slide the external battery release latches toward the inside of the computer ❶.
  - b. Insert the external battery pack onto the computer until the contacts connect ❷.
  - c. Rotate the battery pack 90 degrees toward the back of the computer ❸.
  - d. Slide the external battery release latches toward the outside of the computer ❹.



## Storing a Battery Pack

If a computer will be unused and unplugged for more than two weeks, remove and store the battery pack.



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

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To prolong the charge of a stored battery pack, place it in a cool, dry place. High temperatures cause a battery pack to lose its charge more quickly, thus reducing battery life.

The recommended storage temperature range is from 32°F to 86°F (0°C to 30°C).

## Recycling a Used Battery Pack

To determine if the battery pack program is available in your geographical region, refer to the *Regulatory and Safety Notices* guide on this CD. If your region is not covered, refer to the *Worldwide Telephone Numbers* guide included with the computer and contact your Compaq authorized dealer, reseller, or service provider.

The computer contains a hard drive compartment that supports only the hard drive and allows you to store and access data.

## Caring for Drives

Drives are fragile computer components that must be handled with care.



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**CAUTION:** To prevent damage to the computer and drive and loss of information, ensure that you are discharged of static electricity before handling a drive. Refer to the *Maintenance, Travel and Shipping* guide on this CD for more cautions on handling drives. Refer to the *Regulatory and Safety Notices* guide on this CD for more information on preventing electrostatic discharge damage.

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## Removing a Hard Drive



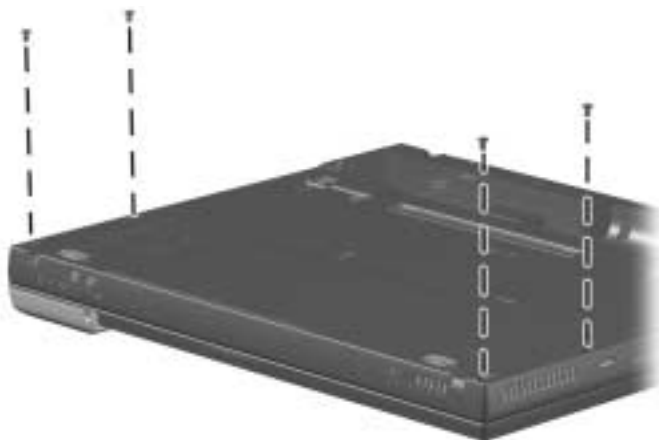
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**CAUTION:** To prevent damage to the computer and hard drive and loss of information, shut down the computer before removing the hard drive from the hard drive compartment. Do not remove the hard drive while the computer is on, in Suspend (Standby), or in Hibernation. If you are not sure whether the computer is in Hibernation, turn the computer on, then shut it down. If the computer is running a retail version of a Windows operating system, shut down the computer before removing any drive.

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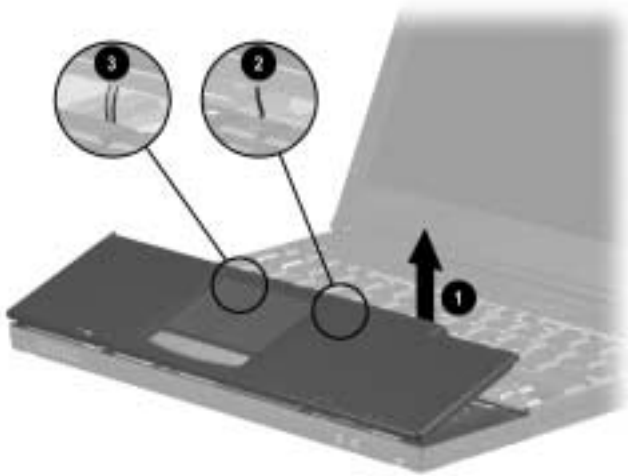
1. Save your work.
2. Shut down the computer and close the display.

3. Turn the computer bottom side up.
4. Remove the T8 screws securing the palm rest.

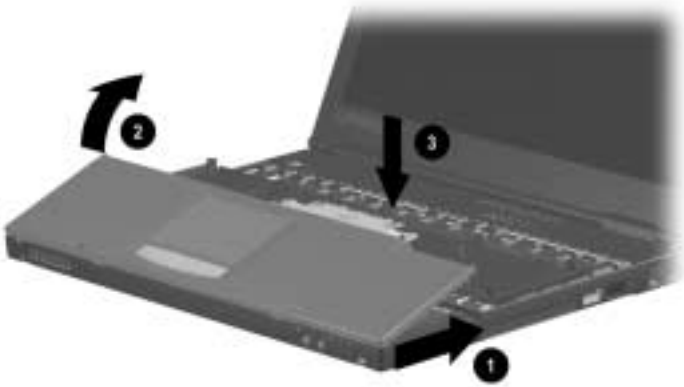


5. Turn the computer top side up with the front facing forward.
6. Open the computer.

7. Slowly lift up the back edge of the palm rest **1** until the RTC battery **2** and pointing device cables **3** prevent it from lifting any farther.

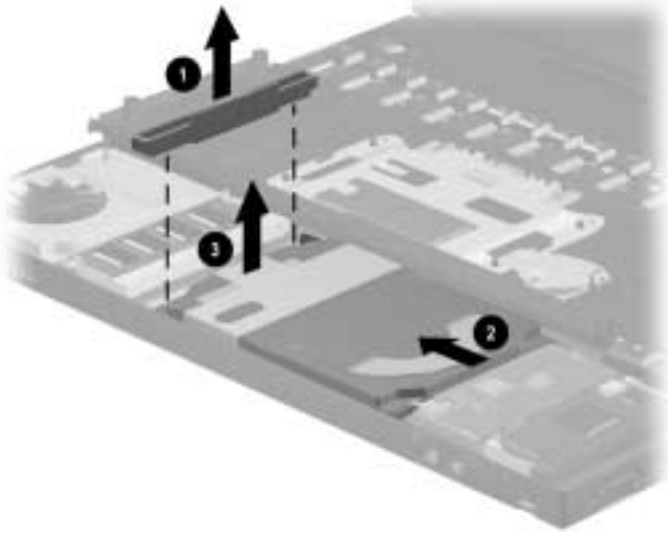


8. While holding the palm rest at a 45-degree angle, slide the front edge of the palm rest away from the base assembly ❶.
9. After the front edge of the palm rest clears the base assembly, swing the front edge of the palm rest up and back ❷, and rest the palm rest on the keyboard ❸.





10. Remove the hard drive spacer ❶ from the base assembly.
11. Grasp the hard drive tab and slide the hard drive to the left ❷.
12. Remove the hard drive ❸.



13. Place the removed hard drive in an electrostatic-safe container.

## Inserting a Hard Drive



**CAUTION:** To prevent damage to the computer and hard drive and loss of information, shut down the computer before inserting the hard drive into the hard drive compartment. Do not insert the hard drive while the computer is on, in Suspend (Standby), or in Hibernation. If you are not sure whether the computer is in Hibernation, turn the computer on, then shut it down. If the computer is running a retail Windows operating system version, shut down the computer before inserting any drive.

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1. Shut down the computer and close the display.
2. Place the hard drive in the hard drive compartment, then slide it into the connector until firmly seated.
3. Replace the hard drive spacer.
4. Replace the palm rest and reinstall the screws.

## Changing the Startup Sequence with MultiBoot

The computer can start up from most bootable media or devices. A bootable medium or device contains files needed by the computer to start up and operate properly.

When more than one bootable medium or device is in the system, the computer selects the medium or device to start from by searching sequenced locations for, first, a bootable CD or DVD medium; second, a bootable diskette; third, a bootable hard drive, and fourth, an internal network interface card (NIC).

You can change the sequence in which the computer searches for a startup medium or device by enabling MultiBoot and entering a new startup sequence. You can also use MultiBoot Express to set the computer to prompt you for a startup location each time the computer is started or restarted.

Some devices must be enabled in Computer Setup before they can be included in a MultiBoot sequence.

## Enabling Bootable Media and Devices for MultiBoot

The computer can start by default from the following media and devices:

- Any bootable hard drive
- Any bootable diskette in the external diskette drive
- Any bootable diskette (but not a SuperDisk LS-120 or ZIP disk) in an optional docking base
- Any bootable peripheral interconnect (PCI) NIC in an optional docking base

The computer can start from the following media and devices only if the devices are enabled for inclusion in MultiBoot:

- Any bootable diskette or CD in an optional diskette drive or CD drive connected by USB to the computer or to an optional docking base
- Any internal NIC

To enable bootable media in USB drives or an internal NIC for inclusion in MultiBoot:

1. Turn on or restart the computer, then press **F10** while the F10 = ROM Based Setup message is displayed in the lower-left corner of the screen.
  - To change the language, press **F2**.
  - For navigation instructions, press **F1**.

2. Select the Advanced menu > Device Options.
  - To enable bootable media in USB drives, select Enable USB legacy support.
  - To enable an internal NIC, select Internal Network adapter boot.
3. To save your preferences and exit Device Options, press **F10**.
4. To close Computer Setup and restart the computer, select File > Save Changes and Exit, then press **F10**.



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To connect a computer with an internal NIC to a PXE or RPL server during startup without using MultiBoot (whether or not MultiBoot or USB legacy support are enabled), press **F12** when the Network Service Boot message appears briefly in the lower-right corner of the screen.

---

## Using the Default Search Sequence

By default, MultiBoot is disabled and the computer selects the startup medium or device by searching enabled locations in the following sequence.

The following list describes the order in which drive numbers are assigned. The actual startup sequence will vary by configuration. For example, the computer searches only once for a device containing a medium that can boot as drive A. If the first device it searches does not contain a medium that can boot as drive A, the computer begins a single search for a device containing a medium that can boot as drive C.

In addition, the availability and location of drive bays in the system varies by model and configuration, and the availability, location, and sequencing of PCI slots in a docking base also varies by model and configuration.

1. CD drive connected by USB that contains a CD that boots as drive A
2. CD drive in system MultiBay that contains a CD that boots as drive A
3. Diskette drive connected by USB
4. External diskette drive
5. Diskette drive in system MultiBay
6. Diskette drive in docking base MultiBay
7. SuperDisk LS-120 drive or ZIP drive in system MultiBay
8. CD drive connected by USB that contains a CD that boots as drive C
9. CD drive in system MultiBay that contains a CD that boots as drive C
10. Hard drive in computer hard drive compartment
11. Hard drive in system MultiBay
12. Internal NIC in computer
13. Network board in docking base PCI slot

## Planning Changes to the Startup Sequence

Before changing the startup sequence, consider the following:

- When the computer restarts after your changes and searches for a startup drive, it will consider only the first drive of each type. For example, in the default boot order, the computer will not start from a bootable diskette in a docking base if a non-bootable diskette is in a system MultiBay.
- Changing the boot order also changes the logical drive designations. For example, if you start up from a hard drive in the system MultiBay, that hard drive becomes drive C, and a hard drive in the hard drive compartment becomes drive D. If you start up from a diskette drive in an external diskette drive, that diskette drive becomes drive A. Starting up from a NIC does not affect logical drive designations.
- When an external diskette drive is connected to the computer, the computer searches for a bootable diskette in the external diskette drive *after* searching for a bootable diskette in a USB diskette drive and *before* searching for a bootable diskette in any other diskette drive.

## Selecting a MultiBoot Utility

You can enable MultiBoot and change the sequence of the startup media and devices that the computer searches during startup by using Computer Setup or Compaq Computer Security.

- Computer Setup can be used even when your operating system is not working or will not load.
- Computer Setup includes Express Boot, which can enable you to choose a startup location each time you start the computer.

- In Computer Setup, the list of bootable devices includes only the bootable devices currently in the computer or an optional docking base. It does not list USB drives or an external diskette drive.
- In Compaq Computer Security, the list of bootable devices includes all bootable devices supported by the BIOS, except USB drives and an external diskette drive. If you set a startup sequence for a bootable device that is not currently in the system, the device will be included in the startup sequence when it is present and ignored when it not present.

## Changing the Startup Sequence in Computer Setup

In Computer Setup, you can set a startup sequence that the computer uses each time it starts up, or you can use MultiBoot Express to set the computer to prompt you for a startup location each time it is started or restarted.

If you set up the MultiBoot Express prompt and do not press a key or select a startup medium within a time interval you specify, the computer continues startup according to the current MultiBoot sequence.

## Setting a Continuing Startup Sequence

To set the computer to start up using the startup sequence you specify each time it is started or restarted:

1. Restart the computer, then press **F10** while the F10 = ROM Based Setup message is displayed in the lower-left corner of the screen.
  - To change the language, press **F2**.
  - For navigation instructions, press **F1**.
2. Select Advanced > Boot Options, then press **enter**.
3. Toggle the MultiBoot field to Enable.

4. Toggle the Boot Order fields to the boot sequence you prefer.
5. To save your preferences and exit Boot Options, press **F10**.
6. To close Computer Setup and restart the computer, select File > Save Changes and Exit, then press **F10**.

## Setting the MultiBoot Express Prompt

To set the computer to display the MultiBoot startup location menu each time it is started or restarted:

1. Restart the computer, then press **F10** while the F10 = ROM Based Setup message is displayed in the lower-left corner of the screen.
  - To change the language, press **F2**.
  - For navigation instructions, press **F1**.
2. Select Advanced > Boot Options, then press **enter**.
3. In the Express Boot Popup Delay (Sec) field, select the amount of time in seconds that you want the computer to display the startup location menu before it defaults to the current MultiBoot setting. (When zero is selected, the Express Boot startup location menu does not display.)
4. To save your preferences and exit Boot Options, press **F10**.
5. To close Computer Setup and restart the computer, select File > Save Changes and Exit, then press **F10**.

## Responding to the Express Boot Menu

When the Express Boot Menu displays during startup, perform one of the following steps during the time interval you set when you enabled MultiBoot Express:

- To specify a startup location from the Express Boot menu, select your preference, then press **enter**.



- To prevent the computer from defaulting to the current MultiBoot setting, press any key. The computer will not start up until you select a startup location, then press **enter**.
- To allow the computer to start up according to the current MultiBoot setting, do not press any key.

## Changing the Startup Sequence in Compaq Computer Security

1. Access the Compaq Computer Security window:
  - Select Start > Settings > Control Panel. Select the Compaq Computer Security icon.

or

  - Right-click the Compaq Computer Security icon in the Windows taskbar, then select Security Properties.
2. Select the Boot Security tab.
3. Select the Enable Multi-Boot checkbox.
4. Use the Move Up and Move Down buttons to display your preferences in the Boot Order list.

Both buttons are inactive until the Enable MultiBoot box is selected. The Move Up button is inactive if the selected item is at the top of the Boot Order List. The Move Down button is inactive if the selected item is at the bottom of the Boot Order List.

5. Select the OK button.



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## Audio and Video

### Using Audio Features

The computer provides the following internal and external audio features:



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## Audio Components

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	Feature	Function
❶	Speaker	Provides audio playback of multimedia applications. When using the computer in a Mobile Expansion Unit (MEU), the speaker may be disabled and system sounds played through the speakers on the MEU. Consult the documentation included with the MEU for additional information.
❷	Volume buttons (2)	Adjust or mute the system volume.
❸	Stereo speaker/headphone jack	Connects stereo speakers, headphones, or a headset to the computer
❹	Microphone jack	Supports a single sound channel (monaural) microphone with a 3.5-mm plug
❺	Microphone	Supports audio input when the display is open and has a standard sensitivity of -50dB

---

## Connecting a Stereo Speaker/Headphone

When connecting a device to the stereo speaker/headphone jack:

- Use only a 3.5-mm stereo plug.
- Use 32-ohm headphones and at least 8-ohm external speakers for best sound quality.
- The stereo speaker/headphone jack disables the computer speaker when an external audio device is plugged into the jack.



**WARNING:** To reduce the risk of personal injury, turn down the volume control before putting on headphones.

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**CAUTION:** To prevent possible damage to an external device, do not plug a single-sound channel (monaural) connector into the stereo speaker/headphone jack.

---

## Connecting a Microphone

When connecting a device to the microphone jack:

- Use a single sound channel (monaural) microphone with a 3.5-mm plug.
- A powered, single sound channel, electret condenser microphone is recommended.
- Only the left channel will be recorded if you use a stereo microphone.
- The recommended sensitivity will not be achieved if you use a dynamic microphone.

When an external microphone is connected to the computer, the computer microphone is disabled.

## Adjusting Volume

To increase, decrease, or mute the system volume, use the following methods:

- Computer volume buttons
  - ❑ To decrease volume, press the left button.
  - ❑ To increase volume, press the right button.
  - ❑ To mute or restore volume, press both buttons simultaneously.

- Keyboard **Fn+F5** hotkeys
  - ❑ To raise or lower the volume, press **Fn+F5**, then move the onscreen slide rule or press the keyboard arrow keys.
  - ❑ To mute or restore volume, press **Fn+F5+M** or press **Fn+F5**, then select or clear the Mute check box.
- Windows Volume Control window
  - ❑ Double-click the volume icon on the taskbar, then make your adjustment.
  - ❑ To activate the Windows Volume Control window while it is open but inactive, press the **Fn+F5** hotkeys.



Volume can also be adjusted within some applications.

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## Using Video Features

The composite video-out jack supports any device that accepts video-in through a composite video connector, such as a television, VCR, camcorder, overhead projector, or video capture card.

It also supports video signals only. If you are setting up a configuration that combines audio and video functions, such as playing a DVD movie to a television, connect the device audio to the computer's stereo speaker/headphone jack.

When a composite video device is connected to the video-out jack, the computer can simultaneously support an image on the display and on any other supported external displays.

## Connecting a Device to the Composite Video-Out Jack

You will need:

- An optional video-out adapter  
and
- A standard composite video cable available from most television, VCR, or electronics retailers.

To connect a video device to the composite video-out jack:

1. Plug the video-out adapter into the composite video-out jack on the computer.
2. Connect the composite video cable to the video-out adapter.
3. Connect the composite video cable to the video device as instructed in the device documentation.

## Changing the Video Mode

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Color television standard modes vary even within regions. However, NTSC is common in North America; PAL, in Europe, Africa, and the Middle East; NTSC-J, in Japan; and PAL-M, in Brazil. Other South and Central American regions may use NTSC, PAL, or PAL-M.

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To change the color television standard mode from NTSC (default):

1. Turn on or restart the computer, then press **F10** while the F10=ROM Based Setup message is displayed in the lower-left corner of the screen.
  - To change the language, press **F2**.
  - For navigation instructions, press **F1**.
2. Select Advanced > Device Options, then press **enter**.
3. Enter your preference, then press **F10**.
4. To save your preference, close Computer Setup and restart the computer, select File > Save Changes and Exit, then press **enter**.
5. When prompted to confirm your action, press **F10**.



---

## External Device Connections

External devices can be physically connected to the computer or to a docking base. In addition, some computer models can provide connections between infrared-equipped devices or wireless communication equipment. Refer to the "A Look at the Computer" section in this guide to locate the connectors on your computer or to the guide included with your docking base. This chapter provides procedures for connecting external devices to the computer.

### Connecting an External Monitor



**CAUTION:** To prevent damage to the computer, turn off the monitor before connecting it to the computer or disconnecting it from the computer. To prevent damage to the computer display, do not place an external monitor or any other object on top of the computer when the computer is closed.

---

To connect an external monitor:

1. Turn off the monitor.
2. Plug the monitor signal cable into the external monitor connector on the rear panel of the computer.
3. Plug the monitor power cord into a properly grounded electrical outlet.
4. Turn on the monitor.

5. To ensure that the computer recognizes your monitor type, refer to the operating system documentation and select the appropriate manufacturer and model.

If the external monitor does not immediately show an image, try using the **Fn+F4** hotkeys. Refer to the documentation included with the monitor for additional setup information.

## Connecting a Video Device

Refer to the "Audio and Video" section in this guide for instructions about connecting a device such as a television, VCR, camcorder, overhead projector, or video capture card to the video-out jack.

## Connecting a Serial Printer

1. Turn off the printer.
2. Plug the printer end of the printer signal cable into the printer.
3. Connect the serial printer signal cable to the serial connector on the rear panel of the computer.
4. Plug the printer power cord into a properly grounded electrical outlet.
5. Turn on the printer.

The Microsoft Windows operating system should prompt you to set up the printer before printing for the first time. If setup fails, consult the printer documentation for device driver configuration information and instructions.

## Connecting a Parallel Printer

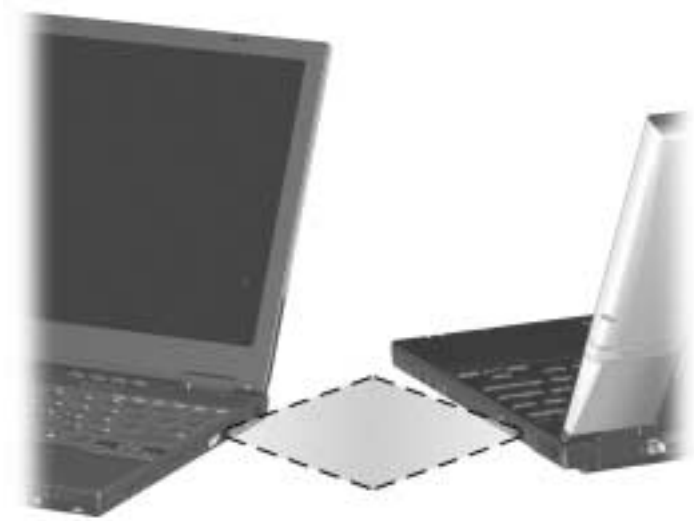
1. Turn off the printer.
2. Plug the printer end of the printer signal cable into the printer.
3. Connect the signal cable to the parallel connector on the rear panel of the computer.
4. Plug the printer power cord into a properly grounded electrical outlet.
5. Turn on the printer.

The Microsoft Windows operating system should prompt you to set up the printer before printing for the first time. If setup fails, consult the printer documentation for device driver configuration information and instructions.

## Connecting Infrared Equipment

The infrared port allows communication between the computer and another infrared-equipped device by producing an invisible beam of infrared light between the devices. Infrared performance varies depending on equipment, distance between infrared devices, and applications being used. The infrared port is IrDA-compliant and supports both low-speed connections up to 115 kilobits per second (Kbps) and high-speed connections up to 4 megabits per second (Mbps).

Operating system support for infrared communication is currently available with Windows 98, Windows Me, and Windows 2000 Professional, but not for Windows NT 4.0. To use the infrared feature on computers running Windows NT 4.0, you need to purchase optional software.



## Infrared Connection Guidelines

- Be sure the infrared ports on both devices are turned on and facing each other at a distance no greater than 1.5 feet (about 0.5 meter).
- Avoid moving the infrared ports away from each other during data transmission.
- Avoid interference from remote control units, such as wireless headphones or audio devices, pointed at the infrared ports.
- Avoid direct sunlight, fluorescent light, or flashing incandescent light close to the infrared ports.
- Keep the path between the infrared ports free of any objects that might interfere with data transmission.

- Do not point one of the ports more than 30 degrees (plus or minus 15 degrees off the center line) away from the infrared port of the device you are connecting with.

## Infrared Configuration Guidelines

- The infrared port default settings are as follows:
  - Port—COM3
  - Address—3
  - Interrupt request (IRQ)—3
- If you use Direct Cable Connection, and the utility prompts you to choose a port for the infrared connection, you can select Serial Cable on COM5 or, if the computer is running a preinstalled Windows 98, Windows Me, or Windows 2000 Professional operating system, select Parallel Cable on LPT3.

## Enabling the Infrared Port

The infrared port is enabled by default each time the computer starts up.

- When the infrared port is enabled, the infrared icon appears on the taskbar and Infrared Monitor Search is enabled by default.
- While the Infrared Monitor Search is enabled:
  - You can establish an infrared link.
  - The system cannot initiate Suspend (Standby). User-initiated Suspend is not affected.
- When the Infrared Monitor Search is disabled:
  - Power is conserved.
  - You cannot establish an infrared link.
  - The system can initiate Suspend.

## Connecting USB Equipment

The computer comes equipped with a port that connects Universal Serial Bus (USB) devices to the computer.

The computer supports certain USB devices without special drivers. These devices include hubs and keyboards. To connect USB devices for which the device manufacturer does not provide special drivers, you need an operating system with USB support, such as Windows 98 or Windows 2000, preinstalled by Compaq.

A USB keyboard and mouse, optionally connected through a hub, offer the same functionality as a standard keyboard and mouse connected through the keyboard, mouse, or single keyboard/mouse connector.

## Attaching a Mobile Expansion Unit

To attach the computer to an optional Mobile Expansion Unit, refer to the documentation included with the Mobile Expansion Unit.

## Connecting a Docking Base

The computer must be attached to the optional Mobile Expansion Unit before it can be connected to a docking base. The docking connector connects the system (computer and Mobile Expansion Unit) to one of several compatible Compaq docking bases. When the system is docked, most external devices can be connected to the docking base, eliminating the need to disconnect external devices when the system is removed from the workstation. To connect the computer to a port replicator, Mobile Expansion Unit, or docking base, refer to the documentation included with the docking device.

## Connecting a Modem or NIC

The RJ-11 jack and the RJ-45 jack allow computer models with an internal modem, internal NIC (network interface card), or both to connect to a networked interface. You will need to purchase the modem and network cables if they are not provided with the computer.

Modem models will need an RJ-11 cable. To connect the cable:

1. Plug one end of the RJ-11 cable into the RJ-11 jack on the computer. If the RJ-11 cable contains a noise suppression circuit, which prevents interference with TV and radio reception, orient the cable so that the noise suppression circuitry is closest to the computer.
2. Plug the opposite end of the cable into a standard telephone wall jack. Or, if applicable, plug the opposite end of the cable into the phone plug adapter, which then plugs into the wall jack. Some countries may require an adapter to connect the modem to the telephone wall jack.

The NIC models will need an RJ-45 cable. To connect the cable:

1. Plug one end of the RJ-45 cable into the RJ-45 jack on the computer.
2. Connect the other end of the cable into the network jack.

For information about configuring communication software or drivers, refer to the *Modem and Networking* guide.

## Connecting to Wireless Devices

The MultiPort allows connection of a wireless device to the computer. The wireless device provides connection between the computer and a networked access point. Refer to the documentation included with the wireless device for hardware and software installation procedures.





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## Computer Upgrades and Add-ons

The computer supports several notebook accessories for you to upgrade and add on to your system.

To order accessories, visit the Compaq Web site at <http://www.compaq.com>, or refer to the *Worldwide Telephone Numbers* guide included with your computer to contact a Compaq authorized dealer, reseller, or service provider.

### Before Removing or Installing Components



**CAUTION:** Electrostatic discharge (ESD) can damage electronic components. Before beginning any procedure, ensure that you are discharged of static electricity by touching a grounded metal object. For more information, refer to the *Regulatory and Safety Notices* guide.

---



**WARNING:** The procedures provided in this section are only for user-accessible internal compartments on the computer. All other areas that require a tool to access should only be opened by a Compaq authorized service provider.

---

1. Shut down the computer.
- 



To ensure that the computer is not in Hibernation, turn the computer on, then shut it down.

---

2. Disconnect all external devices connected to the computer.

3. Disconnect the AC Adapter and remove all battery packs from the computer.
4. Use a T8 screwdriver to remove screws. As you remove screws from the computer, place them away from the work area to prevent loss.

## Upgrading Memory

Your computer comes with random access memory (RAM) preinstalled in a memory expansion slot under the palm rest. You can increase the RAM in your computer with optional memory expansion boards or PC Cards. Memory expansion boards can be installed in the memory expansion slots on the bottom of your computer or under the palm rest.

To view the amount of RAM in the system:

- **Windows 98 and Windows Me**—Select Start > Settings > Control Panel > Compaq Diagnostics.
- **Windows NT 4.0 and Windows 2000**—Select Start > Programs > Administrative Tools > Compaq Diagnostics.

When RAM increases, the hard drive space reserved for the hibernation file also increases. Windows 98 manages this increase. If the computer is running Windows NT 4.0 or Windows 2000 and you experience problems with Hibernation after increasing RAM, verify that your hard drive has enough free space for the larger hibernation file.

- To view the amount of space required by the hibernation file:
  - ❑ **Windows 98 and Windows Me**—Select Start > Settings > Control Panel > Power > Hibernation tab.
  - ❑ **Windows NT 4.0 and Windows 2000**—Select Start > Settings > Control Panel > Compaq Power > Hibernation tab.
- To view the amount of free space on your hard drive, select My Computer. Right-click your hard drive, then select Properties.

## Removing and Inserting a Memory Expansion Board



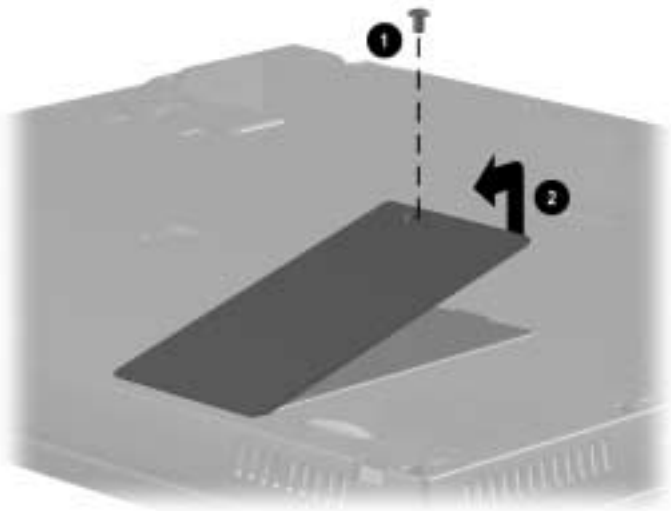
**WARNING:** Failure to unplug the power cord and remove all battery packs before installing a memory expansion board can damage the equipment and expose you to the risk of electrical shock.

---

### Installing a Memory Expansion Board in the Memory Expansion Compartment

1. Shut down the computer.
2. Close the display.

3. Turn the computer bottom side up and remove the screw ❶ securing the memory expansion compartment cover to the base assembly.
4. Lift the back edge of the memory expansion compartment cover and swing it up and forward ❷.



5. To add a memory board, insert the memory expansion board into the empty memory expansion slot at a 45-degree angle **1**, then slide it gently into place until it is seated while tilted. If a memory board is already installed, remove it. Refer to “Removing a Memory Board” in this chapter.

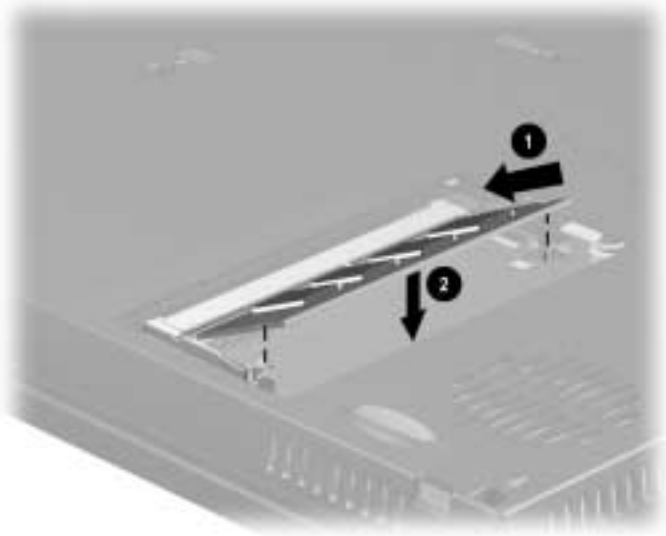


---

All memory expansion boards supported by the computer are keyed (notched) to ensure correct positioning.

---

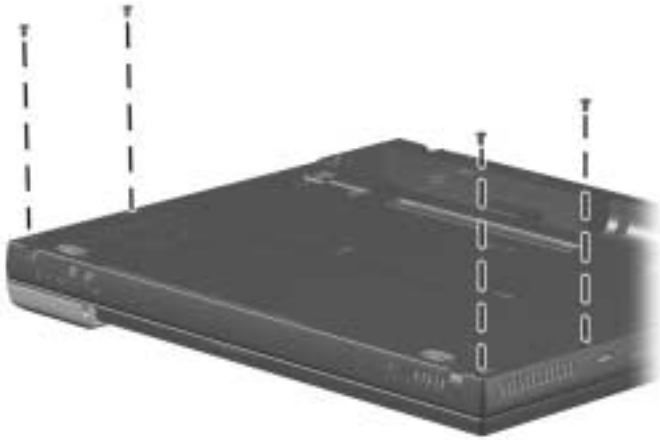
6. Push the memory expansion board down until the plastic retention clips **2** snap into place.



7. Replace the memory expansion compartment cover and install the screw.

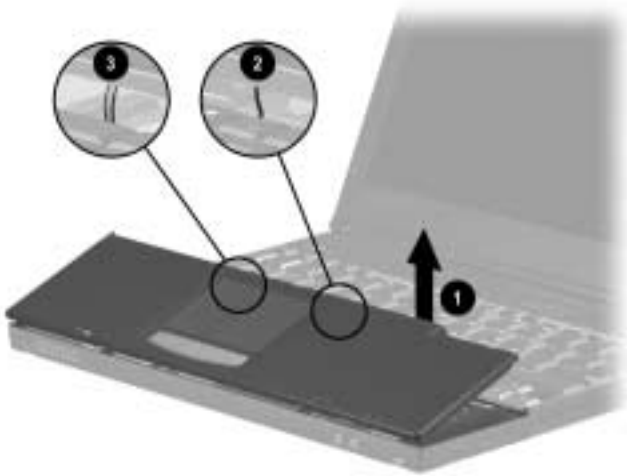
## Installing a Memory Expansion Board on the System Board

1. Shut down the computer.
2. Close the display.
3. Turn the computer bottom side up and remove the four screws securing the palm rest to the base assembly.

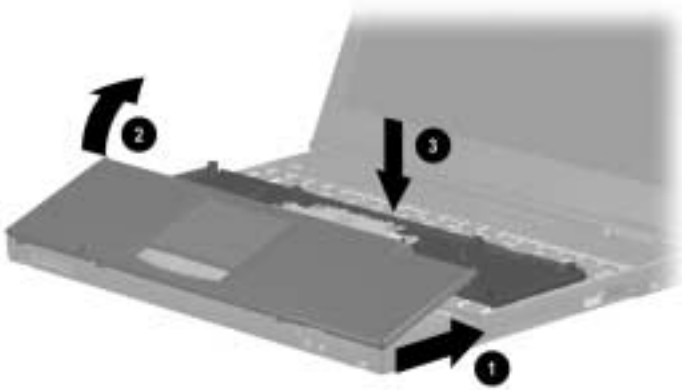


4. Turn the computer top side up.
5. Open the computer.

6. Slowly lift up the back edge of the palm rest **1** until the RTC battery **2** and pointing device cables **3** prevent it from lifting any farther.



7. While holding the palm rest at a 45-degree angle, slide the front edge of the palm rest away from the base assembly ❶.
8. After the front edge of the palm rest clears the base assembly, swing the front edge of the palm rest up and back ❷, and rest the palm rest on the keyboard ❸.





9. To add a memory board, insert the memory expansion board into the empty memory expansion slot at a 45-degree angle ❶, then slide it gently into place until it is seated while tilted. If a memory board is already installed, remove it. Refer to “Removing a Memory Board” in this chapter.

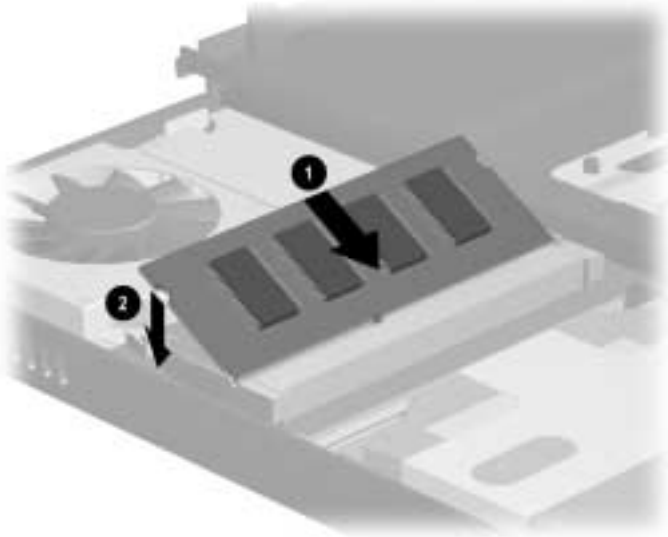


---

All memory expansion boards supported by the computer are keyed (notched) to ensure correct positioning.

---

10. Push the memory expansion board down until the plastic retention clips ❷ snap into place.

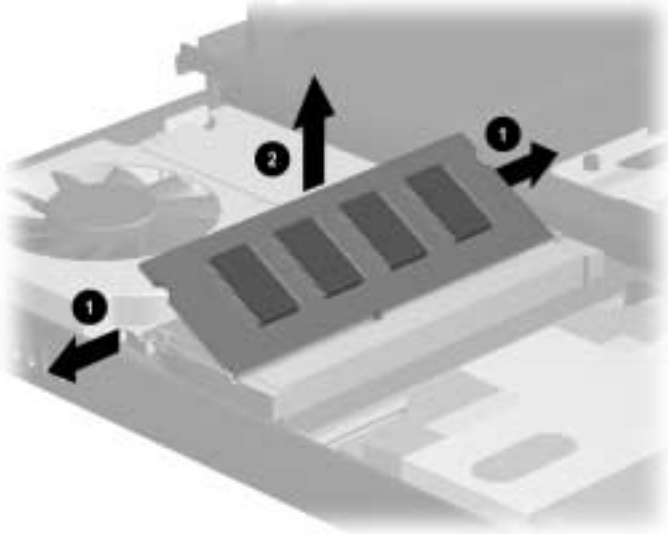


11. Replace the palm rest reinstall all screws.

## Removing A Memory Expansion Board

To remove a memory expansion board from the memory slot in the memory compartment or system board, follow the instructions to access the memory slot, then:

1. Pull away the plastic retention clips on each side of the memory expansion board ❶. The memory expansion board tilts upward.
2. Lift the edge of the memory expansion board and slide it gently out of the memory expansion slot at a 45-degree angle ❷.



3. Place the removed memory expansion board in an electrostatic-safe container.



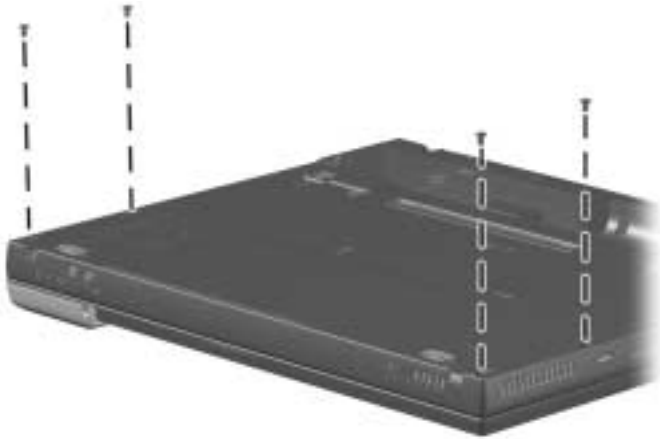
**CAUTION:** If memory is not working correctly, try the following:

- Reseat the memory module.
  - Memory module may be faulty. Contact the manufacturer of the memory module.
- 

## Upgrading or Adding a Modem or NIC

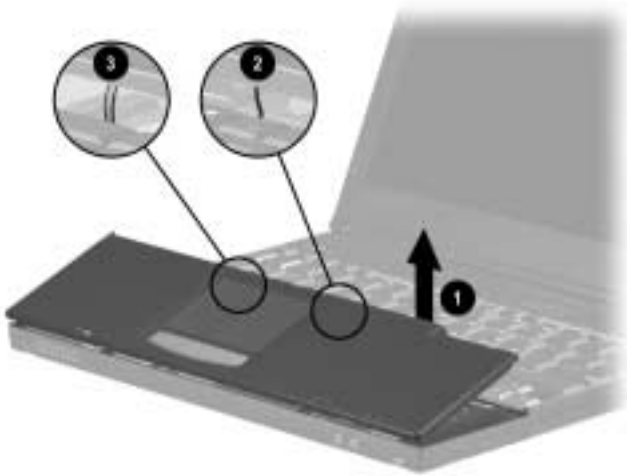
To remove or install a modem or network interface card (NIC):

1. Turn the computer bottom side up and remove the screws securing the palm rest.

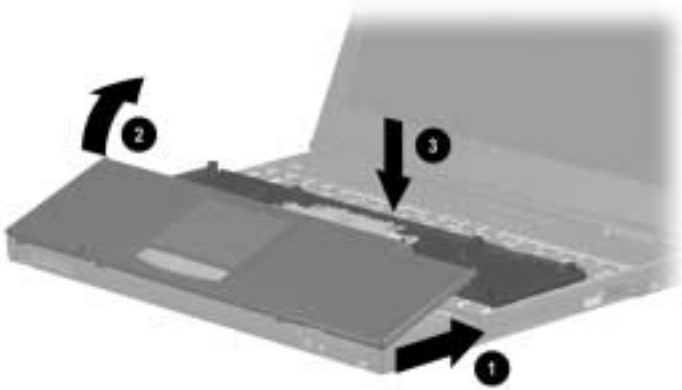


2. Turn the computer top side up.
3. Open the computer.

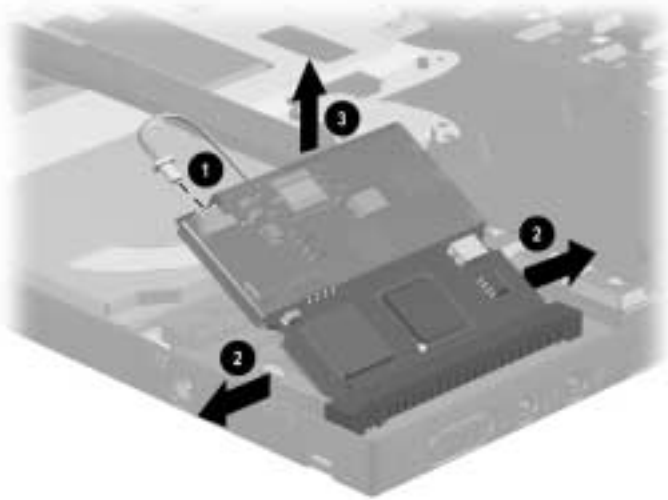
4. Slowly lift up the back edge of the palm rest **1** until the RTC battery **2** and pointing device cables **3** prevent it from lifting any farther.



5. While holding the palm rest at a 45-degree angle, slide the front edge of the palm rest away from the base assembly ❶.
6. After the front edge of the palm rest clears the base assembly, swing the front edge of the palm rest up and back ❷, and rest the palm rest on the keyboard ❸.



7. If a modem/NIC board is already installed, disconnect the modem/NIC cable from the board ❶.
8. Remove the board by pulling away the plastic retention clips on each side of the board ❷. The board tilts upward.
9. Lift the edge of the board and gently slide it out of the connector at a 45-degree angle ❸.



10. Place the removed board in an electrostatic-safe container.

11. To add a new modem/NIC board, align the keyed end of the board with the keyed area of the modem slot. Carefully insert the board into the modem slot ❶ at a 45-degree angle and press down on the board ❷. When properly seated, the retainer latches snap into place.

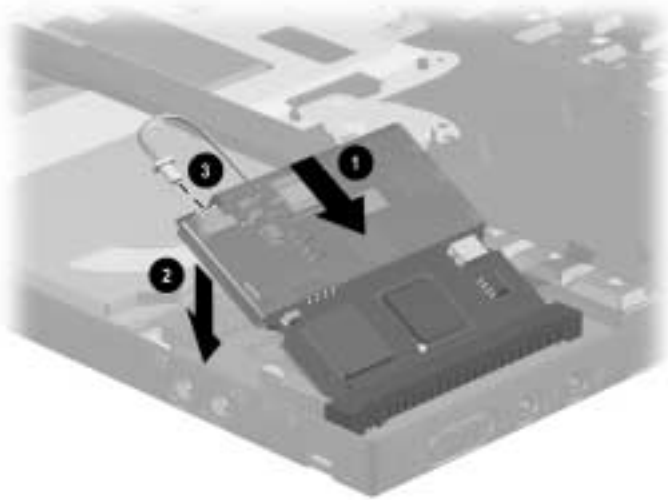


---

The board connectors are keyed (notched) to ensure correct positioning.

---

12. Plug the internal modem-to-RJ11 cable ❸ (located inside the computer) into the connector on the modem/NIC board.
13. Replace the palm rest and reinstall the screws.



14. Connect the modem or network cable to the appropriate jack on the computer and to the wall. Refer to “Connecting a Modem or NIC” in Chapter 7.

To find additional modem and NIC information, refer to the following documents:

- The installation and operation guide included with your new modem or NIC accessory kit.
- Modem and Networking guide, for configuring the modem and installing software.
- *Modem Commands*, for AT Commands, including dial modifiers and instructions.

## Adding and 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 computer supports both 32-bit CardBus cards and 16-bit PC Cards.

PC Cards are classified as Type I, Type II, or Type III. The three types are about the same length and width, but vary in thickness.

## Configuring a PC Card

---



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

- Install only the device drives for your operating system.
  - Do not install card services, socket services, or enablers.
- 

In Windows 98, Windows Me, and Windows 2000 Professional, the operating system configures plug-and-play PC Cards.

In Windows NT 4.0 with CardWare provided by Compaq, you can configure a PC Card in the CardWare window:

1. Insert the PC Card.
2. Open the CardWare window by selecting Start > Programs > CardWare.



For additional instructions, refer to the Help contents within CardWare.

## Inserting a PC Card



**CAUTION:** To prevent damage to the connectors, use minimal pressure as you insert a PC Card into a PC Card slot.

---

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



3. In Windows NT 4.0 with CardWare provided by Compaq, restart the computer if you are instructed to do so by the PC Card documentation or an on-screen prompt.
  - If you are inserting a LAN, SCSI, or multifunction PC Card, you must restart the computer.
  - If you are inserting a modem, ATA, flash, or SRAM PC Card, it is usually not necessary to restart the computer.

## Removing a PC Card



**CAUTION:** Failure to remove a PC Card that extends beyond the computer before transporting the computer may cause permanent damage to the PC Card connectors.

---

1. Prepare the system for the PC Card removal by completing one of the following steps:



**CAUTION:** If the computer is on and running Windows 98, failure to click the command to stop a PC Card before removing it may result in loss of work or a system lockup.

---

- ❑ **In Windows 98, Windows Me, and Windows 2000 Professional**—If the computer is on, click the command to stop the PC Card before you remove it. To stop a PC Card, select the PC Card icon in the taskbar, then select the PC Card you want to stop, then select Stop Card. A message displays when the PC Card can be safely removed.
- ❑ **In Windows NT 4.0 with CardWare provided by Compaq**—If the computer is on, you must shut it down before removing some PC Cards. Refer to the PC Card documentation for removal requirements.



You must shut down the computer before removing a LAN, SCSI, or multifunction PC Card. It is usually not necessary to shut down the computer before removing a modem, ATA, flash, or SRAM PC Card.

---

2. Remove the PC Card by following these steps:
  - a. To release the PC Card eject button, press the button once ❶. To eject the PC Card, press the button a second time.
  - b. Gently grasp the card and pull it out ❷.



## Conserving Energy

When PC Cards are installed in your computer, they draw power from the system even when they are not in use. To conserve power:

- **Windows 98 or Windows Me**—Select the command to stop PC Cards or remove PC Cards when they are not in use.
- **Windows NT 4.0 or Windows 2000**—Remove PC Cards when they are not being used.

## Installing Additional Device Drivers

Device drivers are programs or data files containing information needed to run a particular PC Card. Most of the device drivers you need are preinstalled by Compaq.



---

To save available memory, some device drivers are not turned on.

---

Some types of PC Cards, such as network cards, Global Positioning System (GPS) cards, SCSI cards, audio cards, and multifunction cards, require an additional software device driver to function properly. The device driver is provided by the PC Card manufacturer and should be installed according to the manufacturer's instructions. Do not install other PC Card software that is provided by the manufacturer, even if prompted to do so. The other software may prevent the computer from working properly with all of your PC Cards.

## Attaching the Mobile Expansion Unit

The Mobile Expansion Unit provides storage expansion and multimedia capabilities with two MultiBays and connectors for external devices.

To attach the Mobile Expansion Unit to the computer, refer to the documentation included with the expansion unit accessory kit.

## Docking Bases

When docked in the Mobile Expansion Unit, the computer supports several Compaq docking bases. Consult an authorized Compaq dealer for information on bases that will accommodate your specific expansion needs and work environment. Refer to the documentation included with the docking base for information on installing and operating a base with your computer.

## Using an External Diskette Drive

### Connecting the External Diskette Drive

1. Attach the small end of the drive cable to the external diskette drive ❶.
2. Attach the large end of the drive cable to the parallel port on the rear panel of the computer ❷.



## Disconnecting the External Diskette Drive

1. Remove the diskette from the diskette drive.
2. Unscrew the small end of the drive cable from the external diskette drive.
3. Unscrew the large end of the drive cable from the parallel port on the rear of the computer.

## Upgrading the Hard Drive

Depending on your model, the primary hard drive can be upgraded to a larger capacity. Contact your authorized Compaq dealer for optional hard drives available for your computer. Refer to Chapter 5, "Drives," for instructions on removing and installing a hard drive.

## Adding a Second Battery Pack

A second battery can be used as a spare or, on some model configurations, can be used to provide additional battery power to the primary battery pack.

Consult an authorized Compaq dealer for information on additional or replacement battery packs for your computer. Refer to the section on "Battery Packs" in this guide or to the documentation included with the battery pack accessory for information on installation.

## Adding Wireless Devices

The computer supports a Compaq wireless device, such as the 802.11b MultiPort Module or Bluetooth MultiPort Module.

Consult an authorized Compaq dealer for information on using wireless connectivity with your computer.

---

## Specifications

This product is a Class B digital device, pursuant to Part 15 of the FCC Rules. For more Class B information, refer to the *Regulatory and Safety Notices* guide on the *Notebook Products Reference Library* CD included with your computer.

### 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 computer only with the products listed below:

---

#### Agency Series Numbers

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Product	Agency Series Number
Computer	PP2070
Battery Pack	
Primary battery pack	PP2071B
Optional external battery pack	PP2051A and PP2051B
MultiBay battery pack in Mobile Expansion Base	PP1001C
AC Adapter	PPP005D, PPP005L, and PPP005N
Mobile Expansion Unit	PP2075
Automobile Adapter	401043

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### Agency Series Numbers (Continued)

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Product	Agency Series Number
Aircraft Adapter	386504
Modem	J07M040.00
Network Interface Card (NIC)	U98M010 and U98M008

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### Computer Dimensions

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Dimension	U.S.	Metric
Height	1.00 to 1.27 in	25.0 to 31.7 mm
Width	10.84 in	275.0 mm
Depth	8.97 in	228.0 mm

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### Operating Environment

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Factor	U.S.	Metric
<b>Temperature</b>		
Operating	50° to 95°F	10° to 35°C
Nonoperating	-4° to 140°F	-20° to 60°C
<b>Relative Humidity (noncondensing)</b>		
Operating	10 to 90%	10 to 90%
Nonoperating	5 to 95%	5 to 95%

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**Operating Environment (Continued)**


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Factor	U.S.	Metric
<b>Maximum Altitude (nonpressurized)</b>		
Operating	10,000 ft	3,048 m
Nonoperating	30,000 ft	9,144 m

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**Rated Power Input**


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Input Power	Rating
Operating voltage	100–120/220–240 VAC RMS
Operating current	2.7/0.6 A RMS
Operating frequency range	50–60 Hz AC
When powered by a DC source	18.5V MAX

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

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**Port and COM Port Settings**


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Port	Port	Address	IRQ	DMA
Serial port		3F8h–3FFh	4	
USB connector		2400–241Fh	11	
Parallel port		378–3FFh	7	3
Serial I/O connector	COM1	3F8h–3FFh	4	


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### Port and COM Port Settings (Continued)

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Port	Port	Address	IRQ	DMA
Infrared port	COM3	3E8h–3Efh	3	5
Internal modem	COM2	2F8h–2FFh	11	3

 If the computer is running Windows NT 4.0, the internal modem can also be set at COM4 and can also use IRQ 5 or 10.

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### Modem Specifications

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#### Temperatures

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Operating 32° to 167°F (0° to 75°C)

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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
  - Telephone, central office network
  - Standard RJ-11 telephone connector
  - Internal DAA
- 

#### Power Requirements

+3.3 volts +/-5%, +3.3 vaux  
+/-5%, +5 volts +/-5%

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# Index

3-to-2-prong plug adapter 2–14

## A

AC Adapter 2–14

AC power connector 2–8

agency series numbers 9–1

audio components 6–2

## B

battery

    adding second 8–22

    bay 2–10

    calibration 1–7

    charge, viewing 3–3, 3–7

    charging of 1–5

    external, replacing 4–6

    light 2–5

    primary, replacing 4–3

    recycling 4–10

    release latches 2–10

    storing 4–10

bootable media and devices,  
    enabling 5–7

bottom components 2–10

## C

calibration of battery pack 1–7

caps lock light 2–5

cautions

battery pack safety 4–10

computer damage 7–1

electrostatic discharge 8–1

external device damage 6–3

file corruption 1–6

hard drive damage 5–1, 5–6

initiate Hibernation 4–3

loss of information 5–6

memory troubleshooting 8–11

PC Card

    connector damage 8–17

    removal 8–18

    software 8–16

Certificate of Authenticity label  
    1–1, 2–11

COM port settings 9–3

components 2–1

composite video-out jack

    connecting a device 6–5

    location 2–12

computer

    add-ons 8–1

    connecting procedures 1–3

    dimensions 9–2

    opening 1–4

    turning on 1–5

    upgrades 8–1

- configuration
  - infrared devices 7–5
  - PC Card 8–16
- connectors
  - docking 2–10
  - parallel 2–12
  - power 2–8
  - serial 2–12
  - USB 2–7, 2–9
- D**
- default search sequence,  
MultiBoot 5–8
- diskette drive
  - connecting 8–21
  - disconnecting 8–22
- display
  - brightness adjustment 3–3
  - connecting 7–1
  - release latch 2–1
  - switch 2–3
- docking base, connecting 7–6
- docking connector 2–10
- drivers, installing 8–20
- drives 5–1
- E**
- Easy Access buttons 2–3, 3–11,  
3–12
- electrical safety 1–2
- embedded numeric keypad
  - disabling 3–10
  - using 3–9
- energy, conserving 8–19
- Express Boot Menu 5–12
- external device connections 7–1
- external diskette drive

- connecting 8–21
- disconnecting 8–22
- external monitor
  - connector 2–8
- F**
- fan 2–11
- Fn key 3–3
- front panel components 2–1
- function key 3–3

- H**
- hard drive
  - inserting 5–6
  - installing 8–22
  - light 2–4
  - removing 5–1
  - spacer, removing 5–5
- hardware setup 1–1
- headphone
  - connecting 6–2
  - jack 2–6, 6–2
- hotkeys 3–3, 3–4

- I**
- infrared devices
  - configuration 7–5
  - connecting 7–3, 7–4
- infrared port 2–7
- installation
  - drivers 8–20
  - memory 8–11
  - NIC 8–11
  - PC Cards 8–16

- K**
- keyboard devices 3–1

**L**

left side components 2–8  
lights 2–4, 2–5

**M**

memory  
    compartment cover 2–11  
    expansion board  
        installation 8–3, 8–6  
        removing 8–10  
    upgrading 8–2  
microphone 6–2  
    connecting 6–3  
    jack 2–6, 6–2  
    location 2–3  
Microsoft logo key 2–3  
Mobile Expansion Unit (MEU),  
    attaching 7–6, 8–20  
modem  
    adapter 2–14  
    cable 2–14  
    connecting 7–7  
    installing 8–11  
    specifications 9–4  
monitor, connecting 7–1  
MultiBay light 2–4  
MultiBoot  
    Express Prompt, setting 5–12  
    Utility selecting 5–10  
MultiPort  
    location 2–1  
    turning on/off 3–3, 3–5

**N**

network cable 2–15  
network interface card (NIC)  
    connecting 7–7

    installing 8–11

Notebook Products Reference  
    Library CD 2–14  
num lock light 2–5  
numeric keypad  
    disabling 3–10  
    using 3–9

**O**

operating environment  
    specifications 9–2  
optional applications, installing  
    1–7

**P**

palm rest  
    location 2–3  
    removing 5–2, 8–6, 8–11  
parallel connector 2–12  
    connecting a printer 7–3  
PC Card  
    configuring 8–16  
    eject button 2–6  
    inserting 8–17  
    removing 8–18  
    slot 2–6  
pointing devices 3–1  
pointing stick 2–4, 3–2  
    buttons 2–5, 3–2  
    caps 2–15  
port settings 9–3  
power  
    conservation level  
        setting 3–3, 3–7  
power components  
    cord 2–14  
    switch 2–6

power/suspend light 2–5

Product Key 1–1

## Q

Quick Controls, initiating 3–3, 3–6

QuickRestore kit 2–14

## R

rated power input 9–3

rear panel components 2–12

right side components 2–6

RJ-11 jack 2–7

RJ-45 jack 2–7

## S

scroll lock light 2–5

scroll pointing-stick button 2–5

search sequence, MultiBoot 5–8

security cable slot 2–9

serial connector 2–12

    connecting a printer 7–2

serial number 2–10

setup procedures

    hardware 1–1

    software 1–6

shortcut keys 3–3, 3–5

software setup 1–6

speaker 2–11, 6–2

specifications 9–1

startup sequence

    changing 5–6, 5–11, 5–13

    planning changes 5–10

    setting continuing 5–11

stereo speaker

    connecting 6–2

    jack 2–6, 6–2

Suspend button 2–2

## T

text stretching 3–3, 3–8

top components 2–2, 2–4

TouchPad 2–3, 3–1

    buttons 2–3, 3–1

## U

universal serial bus

    connecting equipment 7–6

    connector 2–7, 2–9

upgrades 8–1

USB

    connecting equipment 7–6

    connector 2–7, 2–9

## V

vents 2–1, 2–9

video device, connecting 7–1, 7–2

video mode, changing 6–6

video-out jack

    connecting a device 6–5

    location 2–12

volume

    adjusting 3–3, 3–6, 6–3

    buttons 2–1, 6–2

## W

warnings

    electrical safety 1–2, 1–8, 8–3

    user accessibility 8–1

    volume control 6–3

Windows application key 2–3

wireless device

    adding 8–22

    connecting 7–7

    turning on/off 3–5