

COMPAQ

Reference Guide

Compaq Armada 4100 Family of Personal Computers

- Components and Features
- Maximizing Battery Life
- Computer Upgrades
- Diagnostics
- Troubleshooting





Notice

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Reference Guide

Compaq Armada 4100 Family of Personal Computers

Third Edition (November 1996)
First Edition (May 1996)
Part Number 228988-003

Compaq Computer Corporation

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Agency

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Declaration of Conformity - United States Only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding this declaration, contact:

Compaq Computer Corporation
P.O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000
Or call 514-3333

To identify this product, refer to the Series number found on the product.

Cables

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Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Airline Travel Notice

Use of electronic equipment aboard commercial aircraft is at the discretion of the airline.

European Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

- EN55022 (CISPR 22)-Radio Frequency Interference
- EN50082-1 (IEC801-2, IEC801-3, IEC801-4)-Electromagnetic Immunity
- EN60950 (IEC950)-Product Safety

Canadian Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Avis Canadien

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Japanese Notice

Title: NOTICE.EPS Creator: CoreIDRAW! CreationDate: Thu May 12 13:24:40 1994
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Battery Notice



WARNING: Your computer is provided with a Lithium battery-powered Real-Time Clock circuit. There is a danger of explosion and risk of personal injury if the battery is incorrectly replaced or not handled properly. Do not attempt to recharge the battery, disassemble it, immerse it in water, or dispose of it in fire. Replacement is to be done by a Compaq authorized service provider using the Compaq spare designated for this product.



WARNING: Your computer contains an internal Nickel Metal Hydride or Lithium Ion Battery Pack. There is risk of fire and chemical burns if the battery pack is not handled properly. Do not disassemble, crush, puncture, short external contacts, or dispose of in fire or water. Do not expose to temperatures higher than 60° C.

Battery packs and the Real Time Clock Battery should be recycled or disposed of according to local regulations.



Energy Star Compliance

Compaq notebook computers are compliant with the U.S. Environmental Protection Agency's (EPA) Energy Star Computers Program. The Energy Star Computers Program was created by the EPA to promote energy efficiency and reduce air pollution through more energy-efficient equipment in homes, offices and factories. Compaq products achieve this by reducing the power consumption when not being used. Using the power-saving features will reduce energy use and maximize battery life.

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Using This Guide

The following format conventions distinguish elements of the text throughout this guide:

- Key names appear in a boldfaced type looking very much the way they appear on the keyboard; for example, **Home**, **End**, **Backspace**, **Tab**.
- When keys must be pressed at the same time, the action is represented by the key names and the plus (+) symbol; for example, **Ctrl+Alt+Delete**.
- Drive letters that are not in command lines are presented in uppercase type as shown here: drive A.
- Directory names that are not in command lines are presented in uppercase type as shown here: DIRECTORY.
- The file names are presented in uppercase italic type as shown here: *FILENAME*.
- The names of commands are presented in lowercase, bold type as shown here: **install**, or **a:\install**. Commands that are to be entered at the system prompt may be shown on a separate line.
- When you need to type information without pressing the **Enter** key, you are directed to "type" the information.
- When you need to type information *and* press the **Enter** key, you are directed to "enter" the information.

The following words and symbols mark special messages throughout this guide:



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



CAUTION: Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.



IMPORTANT: Text set off in this manner presents clarifying information or specific instructions.

NOTE: Text set off in this manner presents commentary, sidelights, or interesting points of information.

Finding Information About Your Computer

In this chapter you will learn about the references that come with your computer and where to find them.

References are provided for you in two ways:

- As printed materials
- As online information accessible from the computer screen

NOTE: The printed and online references that come with the computer vary by model.

Printed and Online References

The following printed references come with your computer:

- *Quick Setup*
- *Reference Guide*
- *Introducing Microsoft Windows 95*
- *Safety & Comfort Guide*
- *Compaq Answers Your PC Card Questions*
- Backup Diskettes Card
- Kensington Security Card
- Warranty and service information

The following Compaq online references are preinstalled on your computer:

- *Compaq Reference Guide*
- Microsoft Windows 95
- *Safety & Comfort Guide*
- Compaq Dictionary
- Product Tutorial
- Options Catalog

The online references installed on the computer include tutorials, user's guides, application help, software utilities help, and customer support information. Many are accessible from the Compaq Information Center folder on the Start menu. Others can be accessed from the application or utility screens.



CAUTION: Most online references are available only through the Windows interface. If you delete Windows, those references will also be deleted. Therefore, Compaq recommends that you not delete Windows software.

Ordering Backup Diskettes

Compaq recommends that you create a backup of the software preinstalled on the computer. Or, for an additional cost, you can order a backup CD or diskettes from Compaq for all software preinstalled on this computer.

To order backup diskettes or CDs, refer to the *Worldwide Telephone Numbers* listed in this chapter. If an order form is included with your computer, complete the form and return it. Or call one of the numbers listed on the order form.

IMPORTANT: Before calling Compaq to place your order, find the serial number on the bottom of your computer. This number is necessary for all backup diskette or CD purchases.

Customer Registration Material

In North America Compaq provides a fast, toll-free number to register your new product: Call 1-800-AT-COMPAQ to register with one of our representatives. Our convenient toll-free number has operators standing by to take your registration.

Online Options Guide

To learn more about the many Compaq options designed to enhance your computer, go to Compaq Information Center on the Windows Start menu.

Worldwide Telephone Numbers

Locate your geographical area from the following table and use one of the telephone numbers for Compaq assistance.

General Information Numbers—Product information, technical assistance, and the location of your nearest Compaq authorized dealer, reseller, or service provider.

Technical Support Numbers—Hardware technical support in analyzing system configuration and diagnostic problems or troubleshooting.

Customer Support Numbers—Information on service and support programs including warranty, product catalogs, and white papers.

PaqFax Numbers—Automatic facsimile response system for technical and product specific information that is transmitted to any fax machine. PaqFax is available 24 hours a day.

NOTE: Telephone numbers are subject to change without notice.

Worldwide Telephone Numbers	
Location	Telephone Number
Argentina	
General Information	54-1-796-1616
Technical Support	54-1-796-1717
Australia	
General Information	61-2-911-1999
Technical Support	61-2-911-1955
PaqFax	61-2-911-1982
Austria	
General Information	0222/8 78-16 16
Technical Support	0222/8 78-16-16
Ordering backup diskettes	0031/55/38 43 39
Bahrain	
General Information	973-210-214

Continued

Worldwide Telephone Numbers *Continued*

Location	Telephone Number
Belgium	
General Information	32-2-725-1690
Technical Support	02-716-96-96
Brazil	
General Information	55-11-246-7866
Canada	
General Information	416-733-7876
Technical Support	1-800-OKCOMPAQ (1-800-652-6672)
Customer Support	1-800-263-5868
Ordering backup diskettes	1-800-952-7689
Battery pack recycling	1-800-263-5868
Caribbean	
General Information	011-713-374-4220
Technical Support	011-713-378-2200
Chile	
General Information	56-2-274-1911
Technical Support	56-2-274-3007
China	
General Information	861-849-2928
Technical Support	861-849-2913
Colombia	
General Information	57-1-312-0201
Technical Support	57-1-345-0266
Czech Republic	
General Information	42-2-232-8772
Technical Support	42-2-232-8772
Denmark	
General Information	45-45-90-45-90
Technical Support	45-45-90-45-45

Continued

Worldwide Telephone Numbers *Continued*

Location	Telephone Number
Finland	
General Information	358-0-615-599
Technical Support	9800-206-720
France	
General Information	33-1-41-33-4100
Technical Support	33-1-41334455
Germany	
InfoLine (General Information)	0130/68 68
Technical Support	0180/5 21 21 11
QuickLine	089/99 33-13 80
Ordering backup diskettes	0130/81 10 81
Hong Kong	
General Information	852-28681382
Technical Support	852-90116633
PaqFax	852-28671648
Hungary	
General Information	36-1-201-8776
Technical Support	36-1-201-8776
India	
General Information	91-80-559-6023 91-80-559-6024
Italy	
General Information	39-2-57-59-03-61
Technical Support	02-575-90300
Customer Support	01-6782-5012
Japan	
General Information	81-3-5402-5700
Technical Support	81-0120-101589
PaqFax	81-3-5402-0991

Continued

Worldwide Telephone Numbers *Continued*

Location	Telephone Number
Korea	
General Information	82-2-523-3571
Technical Support	82-2-523-3571 82-2-3272-7304
Malaysia	
General Information	603-717-1188
Technical Support	603-718-1636
Mexico	
General Information	525-229-7900
Technical Support	525-229-7910
PaqFax	525-229-7920
Netherlands	
General Information	0182-565805
Presario	
Customer Support	06-32023091 (75 ct/min)
Fax	06-8212391 (40 ct/min)
All other products	
Customer Support	06-91681616 (75 ct/min)
Fax	06-89911116 (40 ct/min)
QuickLine Bulletin Board	0182-572366
Customer Support	01820-65805
QuickLine Bulletin Board	01820-72366
PaqFax	01820-65805
New Zealand	
General Information	64-9-307-3969
Norway	
General Information	47-22-07-20-00
Technical Support	47-22-07-20-20
Poland	
General Information	48-2-630-3535
Technical Support	48-2-630-3535
Portugal	
General Information	351-1-4120132
Technical Support	351-1-4120132

Continued

Worldwide Telephone Numbers *Continued*

Location	Telephone Number
Singapore	
General Information	65-7536688
Technical Support	65-7503030
PaqFax	65-7504514
South Africa	
General Information	27-11-728-6999
Technical Support	27-11-728-6999
Spain	
General Information	34-1-640-1500
Technical Support	34-1-640-1302
Sweden	
General Information	46-8-703-5200
Technical Support	46-8-703-5240
PaqFax	46-8-703-5225
Switzerland	
Technical Support	01/8 38-22 22
QuickLine	01/8 38-24 21
Ordering backup diskettes	155/62-06
PaqFax	01/8 38-22 38
Taiwan	
General Information	886-2-7351000
Technical Support	886-2-3761170
Bulletin Board Service	886-2-3761175
Thailand	
General Information	62-2-679-6222
United Kingdom	
General Information	44-181-332-3000
Technical Support	44-181-332-3888
PaqFax	44-181-332-3550

Continued

Worldwide Telephone Numbers *Continued*

Location	Telephone Number
United States	
General Information	1-713-374-6864
Technical Support	1-800-OKCOMPAQ (1-800-652-6672)
Customer Support	1-800-345-1518
PaqFax	1-800-345-1518, Option 1
Download Facility (modem access only, 2400/9600/14400 bps)	1-713-378-1418
Ordering backup diskettes	1-800-952-7689
Battery pack recycling	1-800-524-9859
Venezuela	
General Information	58-2-953-6944

Taking a Look at the Computer

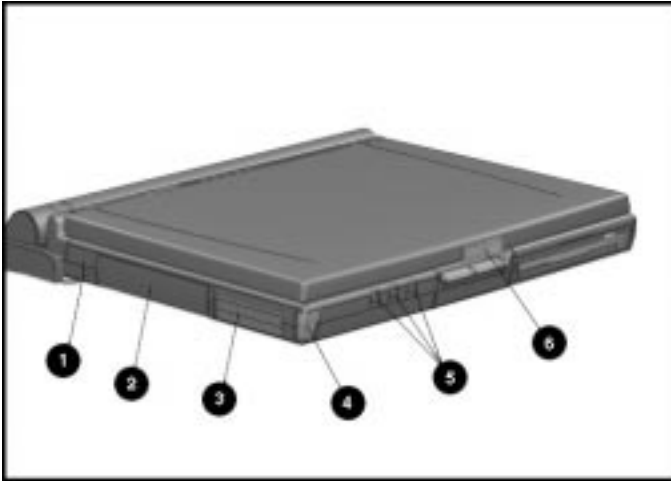
Your computer is equipped with many features, including hotkeys, programmable keys, light indicators, and connectors. This chapter familiarizes you with the components on the computer and how to use them.

External devices such as a printer, portable expansion unit, monitor, keyboard, or mouse can be connected to your computer to enhance its functionality. See Chapter 9, *Connecting External Equipment*, for more details.

Illustrations and tables on the following pages identify the computer's primary components, including:

- Front and left side components
- Front and right side components
- Keyboard components
- Status panel lights
- Rear components
- Bottom components
- Versatile handle

Front and Left Side Components

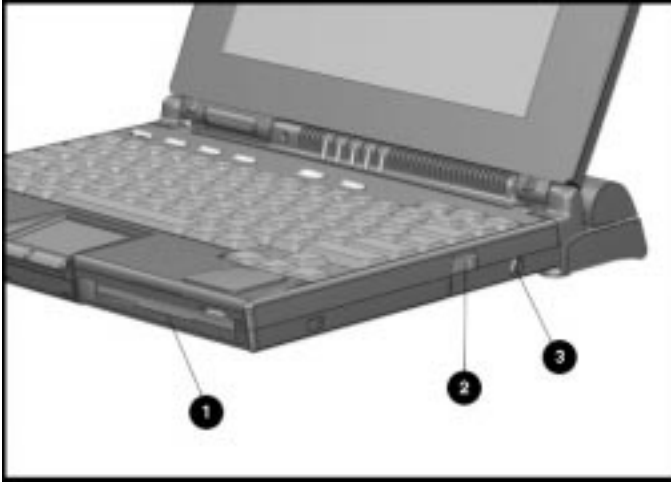


Front and Left Side Components

Front and Left Side of the Computer

Ref.	Component	Function
①	Cable lock provision	Protects your computer from theft.
②	Hard drive	Drive inside your computer that stores data.
③	PC Card slots	Accept one Type III, or two Type II, or two Type I PC Cards.
④	PC Card eject buttons	Release PC Cards
⑤	Audio connectors	Allow you to connect a microphone, stereo, or headphone to your computer. (See Chapter 8, <i>Enjoying Compaq Audio</i> for details.)
⑥	Display latch	Opens the computer.

Front and Right Side Components

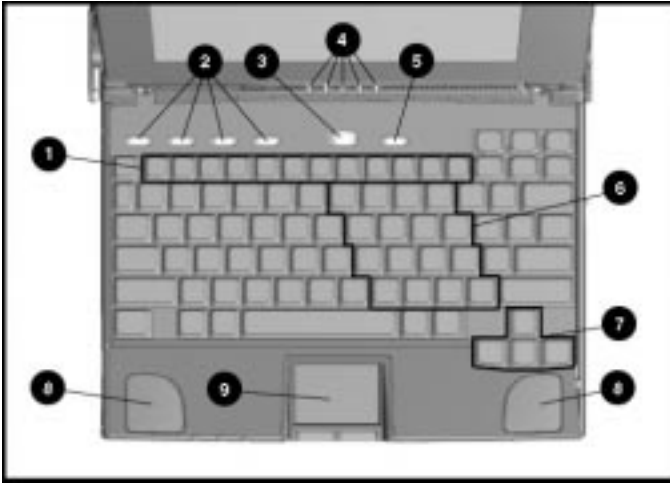


Front and Right Side Components

Front and Right Side of the Computer

Ref.	Component	Function
❶	DualBay	Accepts an internal diskette drive (3.5-inch diskettes) or optional modular battery pack.
❷	DualBay Eject Button	Ejects the diskette drive or optional modular battery pack.
❸	AC power connector	Connects the AC Adapter cable.

Keyboard Components

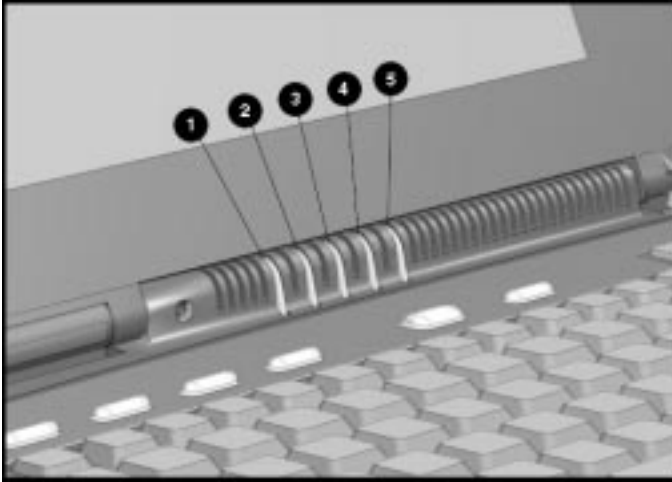


Keyboard

Keyboard Components

Ref.	Component	Function
❶	Function keys Fn+F4 - Fn+F10	Used for specific functions in applications and operating systems.
❷	User-programmable keys	Assign and launch applications and emulate Windows and Application Logo Keys.
❸	Suspend button	When pressed once, initiates Suspend; when pressed the second time, exits Suspend.
❹	Status panel lights	Display computer status indicators.
❺	Power button	When pressed the first time, turns on the computer. (See chapter 5, <i>Managing Power</i> , for details.) NOTE: To turn off the computer, use Shut Down from the Windows Start menu. In case of a system lock-up, when the mouse doesn't work and Ctrl+Alt+Del is not recognized by the unit, press the power button to turn off the unit.
❻	Embedded numeric keypad	Allows two operating modes, numeric (if Fn+NumLk key is on) and edit (if Fn+NumLk key is off).
❼	Arrow keys	Allow cursor to move up, down, right, left.
❽	Stereo speakers	Produce high-quality stereo sound.
❾	Pointing Device	The modular touchpad or trackball move the pointer around the screen and function as a portable mouse.

Status Panel Lights

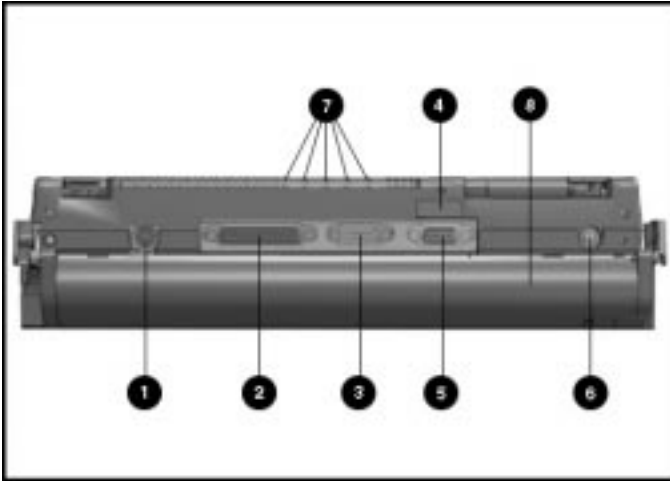


Status Panel Lights

Status Panel Lights

Ref.	Indicator	Function
❶	Power/ Suspend	Turns on (solid) when power to the computer is turned on; blinks in Suspend mode; turns off when computer is in Hibernation or powered off.
❷	Battery charge	Turns on (solid) when computer is turned on and when battery is fast charging. If a low-battery point is reached, light will flash 6 times and you'll hear a beep. If a critical low-battery state is reached, you'll hear a beep and the light will flash constantly. If you do not attach an AC Adapter within 20 seconds of this warning, the unit will initiate Hibernation (unless Hibernation has been disabled).
❸	Caps Lock	Turns on when Caps Lock function is on.
❹	Scroll Lock	Turns on when the Scroll key is pressed.
❺	Num Lock	Turns on when the NumLk function is on.

Rear Components

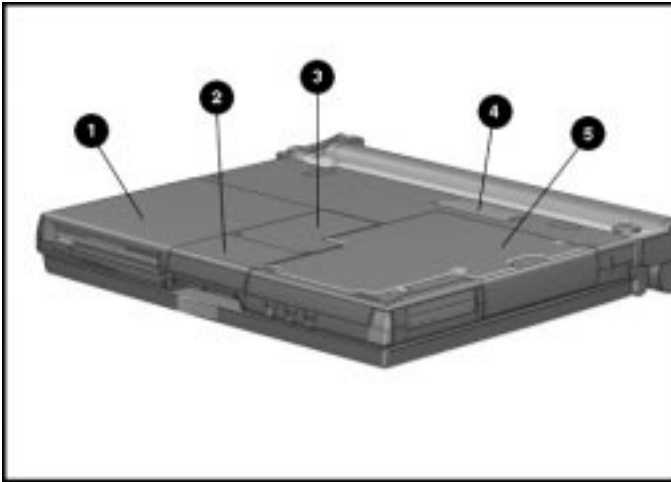


Rear Components

Rear of the Computer

Ref	Component	Function
①	Keyboard/mouse connector	Connects an external keyboard, mouse, or other pointing device.
②	Parallel connector	Connects optional parallel devices, such as a printer. Also connects the diskette drive as an external feature.
③	Serial connector	Connects optional serial devices, such as a mouse.
④	Infrared lens (IrDA compliant)	Sets up wireless data transfer for printing.
⑤	External monitor connector	Connects external monitor to computer.
⑥	NTSC/PAL Video	Connects the computer to TV, VCR, and camcorder using the NTSC (U.S.) and PAL (Europe) formats.
⑦	Status panel indicator lights	Status panel lights visible when the computer is closed.
⑧	Handle	Accepts main battery pack. Can be used as carrying handle, tilt for keyboard, and cover for rear connectors.

Bottom Components

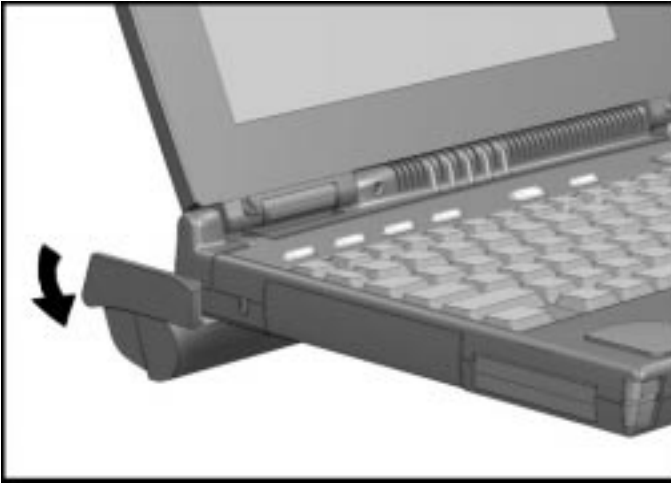


Bottom Components

Bottom of the Computer

Ref	Component	Function
❶	DualBay	Accepts an internal diskette drive (3.5-inch diskettes) or modular battery pack.
❷	Pointing device	The modular touchpad or trackball moves the pointer around the screen; functions as a mouse.
❸	Memory compartment	Compartment for the optional memory expansion boards.
❹	Expansion slot	120-pin connector interface for the Mobile CD Expansion Unit (MCD) or convenience base.
❺	Hard drive compartment	Contains the hard drive.

Versatile Handle



Tilting the Keyboard with the Handle

The handle is a multifunctional feature of your computer. To provide more portable power, the handle houses the main battery pack. In addition, the handle moves to three convenient positions:

- Creates a comfortable tilt for working at the keyboard. Fold the handle back and under the computer.
- Provides a cover for the rear connectors. Place the handle in a straight position while the computer is lying flat.
- Enables you to carry the computer like a briefcase.

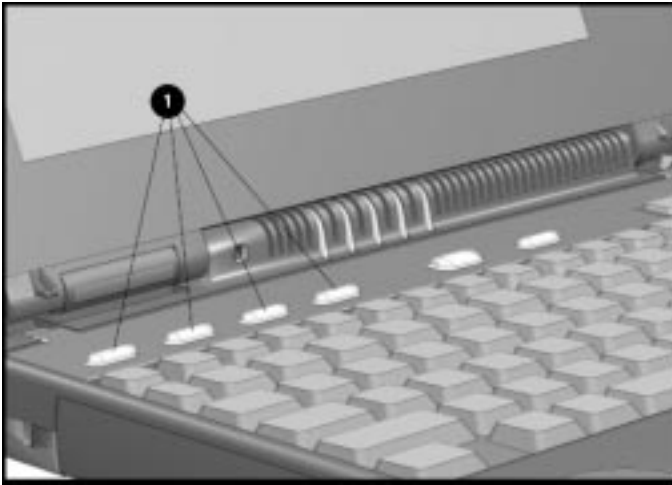
Using Keyboard Shortcuts

Keyboard shortcuts help you customize the keyboard. You can use designated keys to change and select computer settings, such as speaker volume, battery conservation, and popup windows. This chapter familiarizes you with the following keyboard and shortcut features:

- User-Programmable keys
- Hotkeys
- Special Function Keys
- Embedded numeric keypad

User-Programmable Keys

The four user-programmable keys ❶ at the top of the keyboard allow you to quickly open an application on your computer, bring up a document, or emulate one of the Microsoft Windows and Application Logo Keys.



User Programmable Keys

By assigning the programmed keys to schemes, you can create multiple sets of key assignments that will allow you to open almost any application or document on your computer.

Assigning Programmable Keys

To assign user-programmable keys, follow these steps:

1. Access the Programmable Keys utility in the Control Panel on the Windows Start button.
2. Select the programmable key you want to assign or reassign in the current scheme by clicking the appropriate radio button in the Key assignments group box.

Adding Schemes

To add a new scheme, do the following:

1. Access the Programmable Keys utility in the Control Panel.
2. Click the Show advanced options checkbox.
3. Click the Add button.
4. Type the name of your new scheme in the popup dialog box that appears.
5. Make your programmable key assignments.
6. When the assignments have been made, click OK to exit the utility.

Removing Schemes

To remove a new scheme, do the following:

1. Access the Programmable Keys utility in the Control Panel.
2. Place a check in the Show advanced options checkbox if one is not already there.
3. Be sure the scheme in the Scheme box is the one you want to delete. To view a different scheme, select a scheme from the drop-down list.

NOTE: The Default scheme is not removable.

4. Click the Remove button.
5. Click OK to exit the utility.

Key Assignments on the Taskbar

One convenient way to see your user-programmable key assignments is to view them in a popup window that you activate from an icon in the system tray (taskbar). To enable the icon:

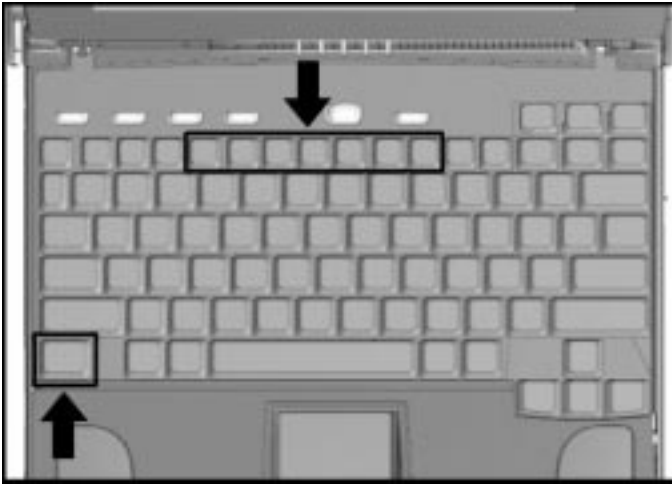
1. Access the Programmable Keys utility in the Control Panel.
2. Place a check in the Show key assignments in the System Tray checkbox.
3. Click OK to exit the utility.

An icon appears in the taskbar. To view the popup window, click the icon.

NOTE: The icon remains in the system tray (taskbar) until you disable it by unchecking Show key assignments in the System Tray checkbox.

Using the Hotkeys

The hotkey combinations (**Fn+F4 - F10**) allow you to quickly adjust computer settings using the **Fn** plus hotkeys **F4** through **F10**.



Hotkeys

Hotkey Assignments and Functions

Feature	Hotkeys	Function
Hibernation	Fn+ suspend	Initiates Hibernation
Switching to the external monitor	Fn+F4	Toggles three ways between computer display, external monitor display, or (on some models) simultaneous display.
Speaker volume	Fn+F5	Adjusts speaker volume up or down.
Quick Lock/ QuickBlank	Fn+F6	Initiates QuickLock, which disables the keyboard and mouse, and QuickBlank, which clears the screen. Enter power-on password to disable QuickLock and QuickBlank and reactivate keyboard, mouse, and screen.

Continued

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Hotkey Functions and Assignments *Continued*

Feature	Hotkeys	Function
Battery Conservation	Fn+F7	Displays the battery conservation settings in a popup window. Use the left and right arrow keys to select a different setting. NOTE: See Chapter 5, <i>Managing Power</i> , for more information.
Battery Gauge	Fn+F8	Press the right or down arrow keys to select the next battery to be displayed. If a battery is not present, its selection will be skipped. Pressing left or up arrow keys will select the previous battery. If the user does not depress any arrow keys for 5-7 seconds, the popup will display the average remaining capacity of all installed batteries. NOTE: See Chapter 5, <i>Managing Power</i> , for more information.
Contrast Control	Fn+F9	Adjusts the display contrast. Press the right arrow key to increase contrast; press the left arrow key to decrease contrast. NOTE: On models with color TFT displays, contrast control is not applicable.
Brightness Control	Fn+F10	Adjusts the display brightness. Press the right arrow key to increase light intensity; press the left arrow key to decrease light intensity.

Customizing the Popup Window

Your computer includes a feature that allows you to set or change the location of popup windows. To access this feature, follow these steps:

1. Double-click the tab labeled Hotkey Popup Utility under the Display icon in the Control Panel.
2. Click the tab that sets the location of the popup window.
3. Make the desired changes.
4. Click OK to save your changes.

IMPORTANT: Popup windows associated with hotkeys display correctly only from within applications that support the popup video mode. If a popup does not display correctly, exit the application and press the hotkeys again to invoke the popup window.

Using Special Function Keys

Some keys on the keyboard provide special functions, depending on the application you are using. These keys are described in the following table:

Special Function Keys	
Key	Function
Alt	Application dependent, used in combination with another key for a specific function. Refer to the documentation for the application you are using.
Backspace	Moves the cursor left and deletes characters as it moves left.
Caps Lock	When the CapsLock indicator is on, all letters typed are capitalized.
Ctrl	Application dependent; used in combination with other keys for specific functions. Refer to the documentation for the application software you are using.
Esc	Often assigned a specific task by the application. Frequently used as an exit key.
F1 – F12	Used for a specific function in applications and operating systems. Check the documentation for the application software you are using.

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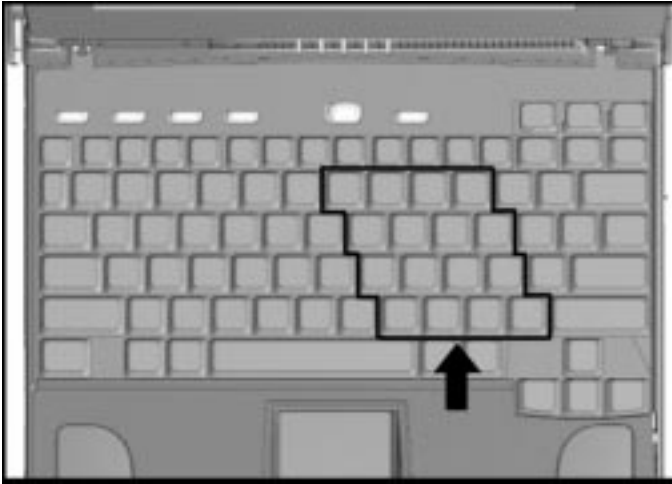
Special Function Keys *Continued*

Key	Function
NumLk	Activate this function by pressing Fn+NumLk . When the NumLk indicator light is on, the embedded numeric keypad is activated. Use this toggle key feature to enable and disable the numeric keypad.
Pause	Temporarily suspends screen scrolling. Activate this function by pressing Fn+Pause . Deactivate Pause by pressing any key.
PrtSc	Prints the information on the screen line-by-line to a local printer. Using this key will print only the information on the screen. Activate this function by pressing Fn+PrtSc .
Scroll	When the Scroll Lock indicator light is on, prevents the screen from scrolling. Access this function by pressing Fn+Scroll .
Ctrl+Alt+Delete	Restarts the system after the computer has been turned on and is locked up while in MS-DOS mode. NOTE: Shut Down on the Windows Start menu is the recommended way to restart the computer while in Windows.
Fn + suspend	Initiates Hibernation.

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Using the Numeric Keypad

The embedded numeric keypad is a section of the keyboard that converts to a numeric keypad when the **NumLk** function is activated. This is done by pressing **Fn+NumLk**. Use this toggle key function to enable and disable the embedded numeric keypad.



Embedded Numeric Keypad

Working with Pointing Devices

The modular pointing device on your computer is a versatile feature that eliminates the need to carry a mouse when traveling. It moves the cursor around the screen and can be used with either hand.

This computer can use either a modular touchpad or trackball pointing device. Depending on the model, one will come standard, and the other will be available as an option.

This chapter familiarizes you with trackball and touchpad features, including:

- Accessing the Mouse utility
- Identifying touchpad components
- Identifying trackball components
- Removing the pointing device
- Installing a pointing device

Mouse Utility

Button functions and other touchpad/trackball features can be customized using the Mouse utility located in the Control Panel on the Windows Start menu. To access this utility using the touchpad or trackball, follow these steps.

Using the trackball:

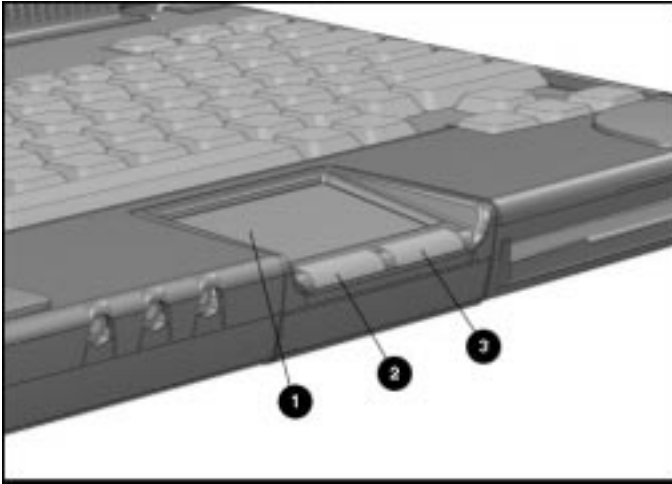
1. Roll the ball down to move the cursor to Start. With the top button, click Start.
2. Roll the ball up to highlight Settings, then Control Panel.
3. Roll the ball to the Mouse icon. Press the top button twice to double click. Click the General tab, then Options, and follow the instructions on the screen. Refer to the online *Compaq Reference Guide* for more information.

Using the touchpad:

1. Move your finger across the active surface of the touchpad to move the cursor to Start. With the left button, click Start or tap the touchpad on the Start button.
2. Move your finger up to highlight Settings, then Control Panel.
3. Move your finger across the touchpad to the Mouse icon on the Control Panel. Press the left button twice or double tap the touchpad. Click with the left button (or tap) on General tab, then Options, and follow the instructions on the screen. Refer to the online *Compaq Reference Guide* for more information.

Touchpad Components

The modular touchpad features a flat active pad surface ❶, and your fingertip acts as the pointing device. The left button ❷ functions like the left mouse button. The right button ❸ works like the right mouse button.



Touchpad Components

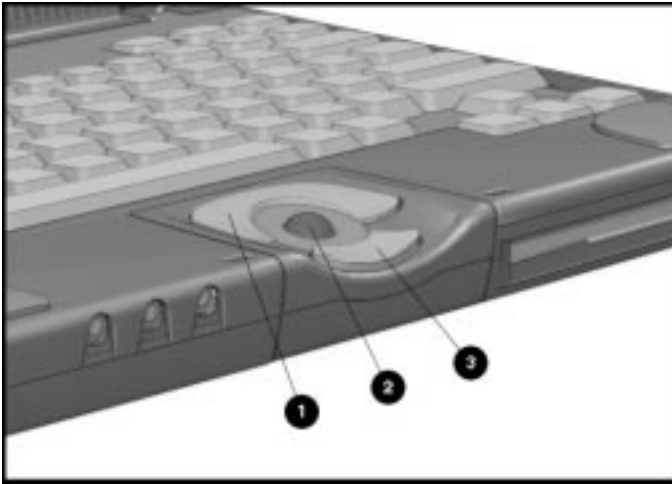
For more information on customizing touchpad settings, refer to the Help in the Mouse utility or to the online Compaq *Reference Guide*.

To clean the touchpad, spray a lint-free cloth with a non-abrasive cleaner and wipe the surface of the touchpad. To remove a more serious stain or mark, use a damp (not wet) cloth and a small amount of dishwashing detergent.

NOTE: To prevent damage to the electrical system, do not spray cleaner directly on the touchpad or keyboard.

Trackball Components

The modular trackball is similar to the touchpad but uses a ball to control the cursor. The top button **1** functions as a left mouse button, and the bottom button **3** acts as a right mouse button. The ball **2**, rolled with the thumb, controls the cursor and can be used with either hand.



Modular Trackball Components

See Chapter 14, *Troubleshooting*, for information on cleaning the trackball. Refer to the Mouse utility in the Control Panel to configure button settings and double-click speed, to customize the pointer and control pointer motion. For further information, refer to the Help in the online *Compaq Reference Guide*.

Removing a Pointing Device

If you prefer a different pointing device, you can replace the pointing device easily. Before removing the pointing device from the computer, remove the device in the DualBay. Follow these steps to remove a device from the DualBay.

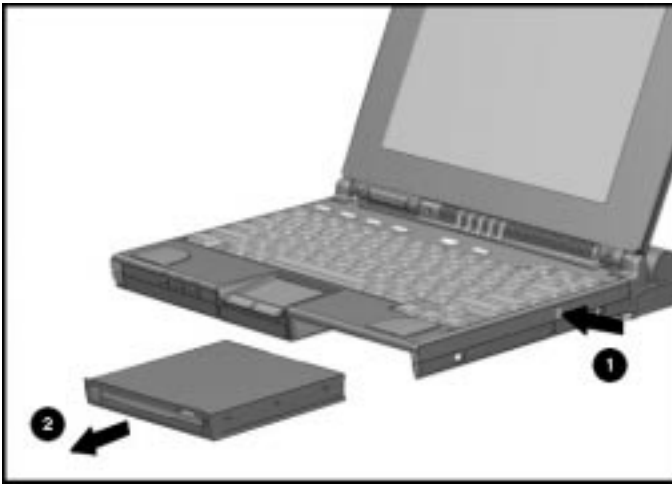
1. Initiate Suspend.

NOTE: If you are removing a battery from the DualBay, and it is the only power source, connect external power.

2. Press the DualBay eject button ❶ on the right side of the computer.

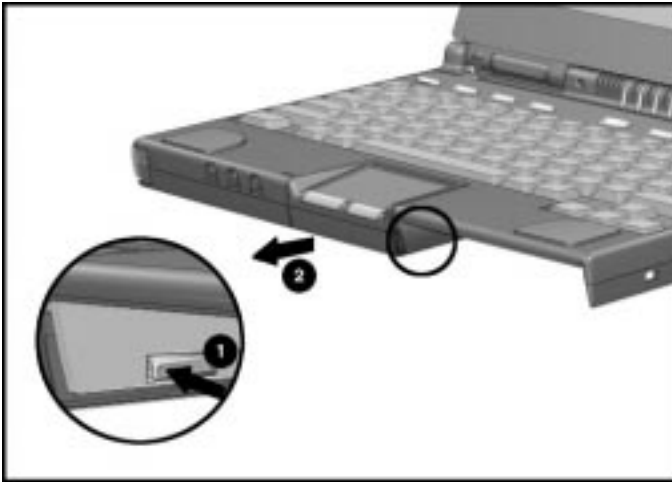
NOTE: The DualBay can accommodate either a modular battery pack or a diskette drive.

3. Pull the DualBay device out of the DualBay ❷.



Removing a DualBay Device (Diskette Drive)

-
4. Press in the metal retaining clip ❶ located in the wall between the DualBay and the pointing device bay, to release the pointing device. Pull the pointing device ❷ and remove it.



Removing the Pointing Device (Touchpad)

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Installing a Pointing Device

1. With the computer in Suspend and the DualBay empty, align the slots in the sides of the pointing device with the guide rails in the pointing device bay.
2. Slide the pointing device forward into the bay until it snaps into place.



Installing the Pointing Device (Trackball)

3. Replace the DualBay device.
4. Press the suspend button again to exit Suspend, and resume your work.

Managing Power

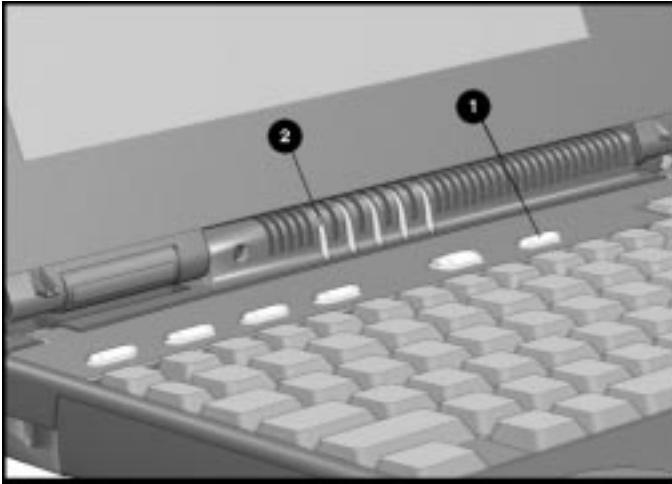
This computer has convenient features that allow you to manage power consumption and maximize battery operating time. The Power Properties icon in the Control Panel includes the power settings for your computer.

This chapter describes the following power management features:

- Power button
- Suspend button
- Hibernation
- AC power
- Battery power
- Power Properties utility

Using the Power Button

Press the power button ❶ once to turn on the computer. When the power/suspend light ❷ turns on, the computer is on. To turn off or restart the computer while working in Windows, click Shut Down on the Windows Start menu and follow the directions on the screen. If you are using a non-Windows application or experience a system lockup in Windows, press the power button to turn off the computer. When the power/suspend light goes off, the computer is off.



Power Button and Power/Suspend Indicator Light

Power Choices

To decide when to turn off the computer or initiate Suspend, consider:

- If you use the computer frequently and want "instant-on" convenience, *you do not have to turn off the computer*. Simply initiate Suspend when you're not using it.
- If external power is not connected, the batteries continue to drain while the computer is in Suspend, but at a much slower rate. If you want to charge the batteries while you're not using the computer, connect to external power. The battery packs charge whether the computer is on or off. But they charge faster when the computer is off.
- If you plan to store the computer for six months or more, turn off the computer and remove the battery packs. This reduces a battery's discharge rate and extends its operating life.

Using the Suspend Button

When you finish working, or if you want to pause in the middle of your applications, initiate Suspend.

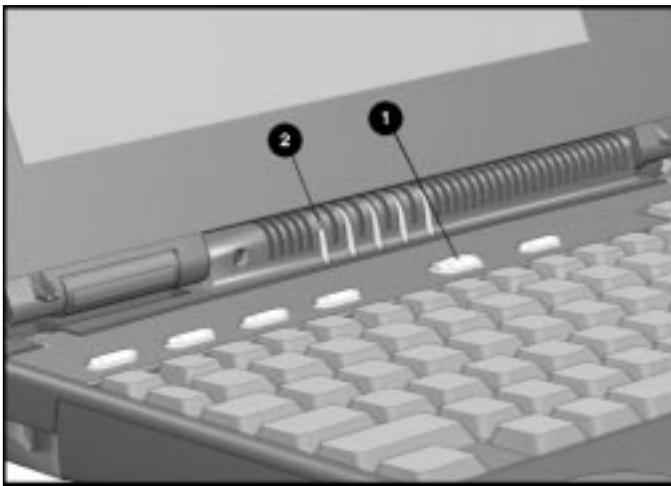
Suspend has the following benefits:

- This feature puts the computer to sleep (for up to 100 hours with fully charged Nickel Metal Hydride battery packs; up to 168 hours with Lithium Ion battery packs), uses very little power, and saves your place in your applications.
- During Suspend, most of the major components (hard drive, processor, and display) shut down.

How Suspend Is Initiated

Suspend is initiated in one of three ways:

- Manually, at any time, by pressing the suspend button ❶ once. The power/suspend indicator light ❷ will blink slowly.



Suspend Button and Power/Suspend Indicator Light

- Automatically, when a predefined timeout has been reached. You can set the Suspend timeout period in Power Properties. Or refer to *Setting a Timeout* in this chapter.
- Manually, by clicking suspend from the Windows Start menu.

Initiating Suspend

When Suspend is initiated, the following occurs:

- The computer beeps twice.
NOTE: If speakers are turned off, beeps are not audible.
- The screen blanks.
- The power/suspend indicator light blinks.

Exiting Suspend

Exit suspend by pressing the suspend button once. When you exit Suspend, the following occurs:

- The computer beeps twice.
- The power/suspend indicator turns on (continuous).
- The "instant-on" feature lets you pick up your work right where you left off. No information is lost.

IMPORTANT: The computer will not exit Suspend if the battery is low and external power is not connected. In this case, you must find a new power source for the computer. When a new power source is connected, press the suspend button once to return your information to the screen.

If the computer is in Suspend, and a low-battery condition occurs, the computer automatically initiates Hibernation (unless Hibernation has been disabled), saves your information to the hard disk, and turns off the computer. When you install a fully charged battery or connect to an external power source, your information returns to the screen at the point where Suspend was initiated. No information is lost.

Using Hibernation

Hibernation is a safeguard condition during which all information in system memory is saved to the hard drive and power to the computer is turned off. When you resume work, your information is returned to the screen exactly where you left off. No information is lost.

Hibernation has the following benefits:

- Since the computer is turned off and there is no drain on battery packs, your computer can stay in Hibernation for an unlimited time.
- You can manually save your place in any application or when making a presentation.
- Information is automatically saved when the computer reaches a critical low-battery condition (*as long as Hibernation has not been turned off*).

Initiating Hibernation

To initiate Hibernation:

- Press **Fn+** suspend to initiate Hibernation manually. Hibernation marks your place in your applications *and turns power off completely to your computer*.
- System-initiated Hibernation occurs when the computer reaches a critical low-battery condition. To protect against loss of information, the computer automatically saves all information in system memory to the hard drive and then turns off. Press the power button once to resume work.

NOTE: Batteries that have not been fully charged may not have enough power to support a system-initiated Hibernation at critical low battery.

NOTE: If the Hibernation timeout has been set to the Suspend timeout, the computer will go into Hibernation after a specified time in Suspend. (Click the Conservation Settings tab in the Power Properties icon on the Control Panel to set both Suspend and Hibernation timeouts.)

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Exiting Hibernation

To resume work after Hibernation is initiated, do the following:

1. While the computer is still in Hibernation, install a fully charged battery pack or connect to an external power source, if installed batteries aren't sufficiently charged.
2. Turn on the computer by pressing the power button once. The computer exits Hibernation. Information saved to the hard drive returns to the screen at the point where Hibernation was initiated.

NOTE: To stop the restoration of information, press **Fn+Ctrl+Break**.

Using AC Power



CAUTION: Ensure that the electrical outlet you plug the power cord into is easily accessible to you at all times. When you want to disconnect power from the computer or Mobile CD Expansion Unit, unplug the power cord from the electrical outlet.



WARNING: To reduce the risk of electric shock or damage to your equipment, do not disable the power cord grounding feature. This computer is designed to be connected to a grounded (earthed) outlet that is easily accessible. The grounding plug is an important safety feature.

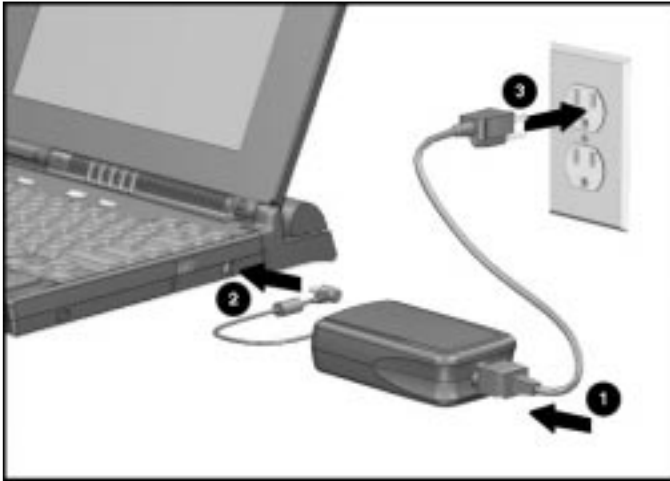
You can connect your computer to an electrical outlet with the AC Adapter that came with your computer. To connect the AC Adapter:

1. Connect the small end ❶ of the AC power cord into the AC Adapter.
2. Connect the AC Adapter to the AC power connector ❷.

NOTE: If the computer is attached to a Mobile CD Expansion Unit (MCD), connect the AC Adapter to the MCD. If the computer (either alone or with the MCD) is docked in the convenience base, connect the AC Adapter to the convenience base.

3. Plug the power cord into a wall outlet ❸.
4. Turn on the computer.

NOTE: Do not place anything on power cords or cables. Arrange them so that no one may accidentally trip on them. Do not pull on a cord or cable. When unplugging from the electrical outlet, grasp the cord by the plug.



Connecting an AC Adapter to the Computer

NOTE: Keep the battery packs in the computer while you're using AC power. This supplies the battery packs with a constant charge. When the battery indicator light turns off, the battery packs are charged.

Using Battery Power

Your computer can accommodate from one to three battery packs. The three battery power sources are:

1. Handle battery pack
2. Modular battery pack in the DualBay
3. Modular battery pack in the Mobile CD Expansion Unit (MCD) on some models.



WARNING: To reduce the risk of injury or damage to the battery pack, do not crush, puncture, or incinerate the battery pack or short the metal contacts. In addition, do not attempt to open or service the battery pack.

NOTE: Actual run time of each battery pack will vary according to how you use your computer and the power conservation options you select. On average, since each battery pack delivers the same capacity, users can expect to double their battery life with two battery packs and triple their battery life with three installed.

Battery Charging/Discharging

The handle battery pack is the primary power source. Batteries charge (if all three batteries are installed) beginning with battery in the handle, then the modular battery in the DualBay, and last the modular battery in the Mobile CD Expansion Unit (MCD).

Battery power is depleted (if all three batteries are installed) beginning with the modular battery pack in the MCD, then the modular battery in the DualBay, and last the battery in the handle.

Removing and Inserting Battery Packs

Removing/Inserting the Handle Battery

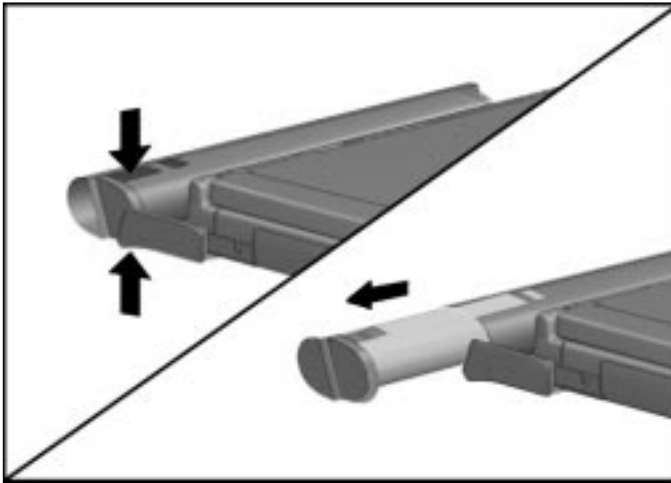


CAUTION: If no other battery is installed and computer is not attached to external power, save your work, exit all applications, turn off the computer, and disconnect external devices.

To remove the battery pack from the handle:

1. Lay the computer flat with the handle in the carry position.
2. Grasp the handle battery cap on the top and bottom and pull the battery out of the handle.

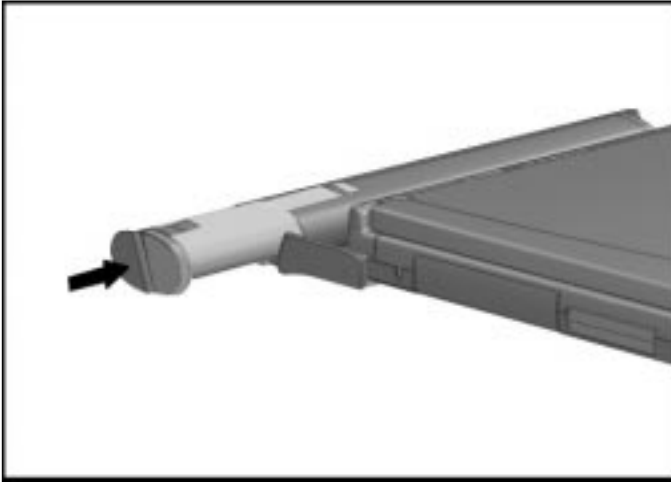
NOTE: For details on detaching or attaching the handle, see Chapter 6, *Working with Removable Devices*.



Removing the Battery from the Handle

IMPORTANT: Battery components are considered environmentally harmful. Disposal of used battery packs should comply with country, state, province, or local regulations. Refer to *Recycling Used Battery Packs* later in this chapter for more details.

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3. With the battery contacts facing in toward the computer, insert a fully charged battery pack into the handle until it clicks into place.



Inserting a Battery Pack in the Handle

4. Turn on the computer, attach external devices, and resume your work.

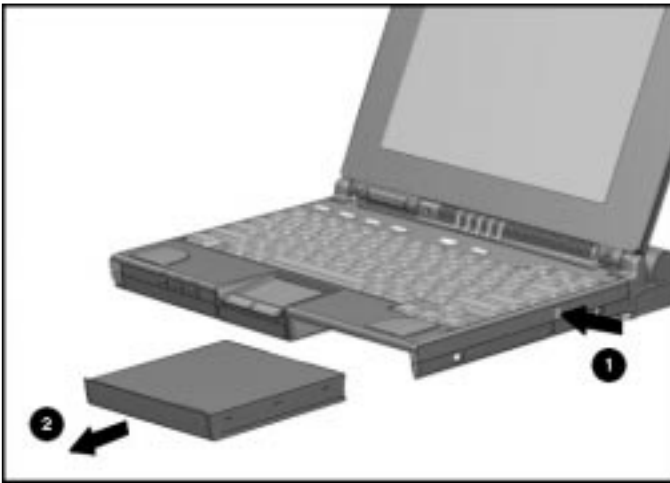
Removing the DualBay Battery

The optional modular battery can be used in the DualBay of your computer or in the Mobile CD Expansion Unit (MCD), depending on the model. To remove the modular battery from the DualBay, follow these steps:



CAUTION: If no other battery is installed and computer is not attached to external power, save your work, exit all applications, turn off the computer, and disconnect external devices.

1. Press the DualBay eject button **1** on the right side of the computer.
2. Pull the modular battery **2** out of the DualBay.



Removing the DualBay Battery

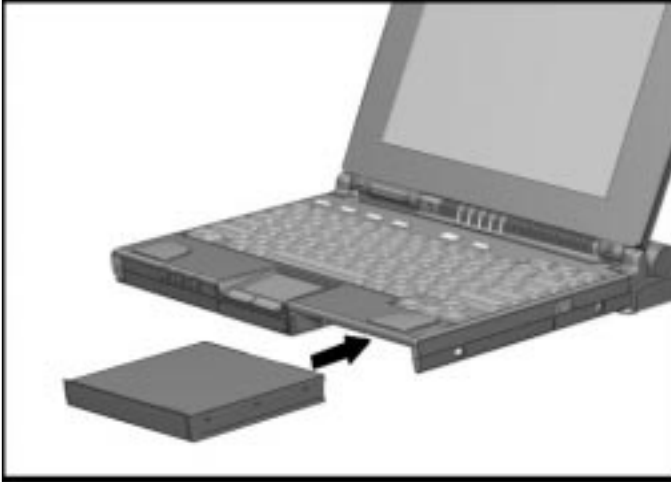
3. Insert a fully charged battery pack, turn the computer on, connect external devices, and resume your work.

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Inserting a DualBay Battery

To insert a modular battery in the DualBay:

1. Lay the computer flat with the label on the battery pack facing up and the battery contacts facing the computer:
2. Align the battery pack with the metal rails in the DualBay and push the battery pack into the computer until it clicks into place.



Inserting the Modular Battery into the DualBay

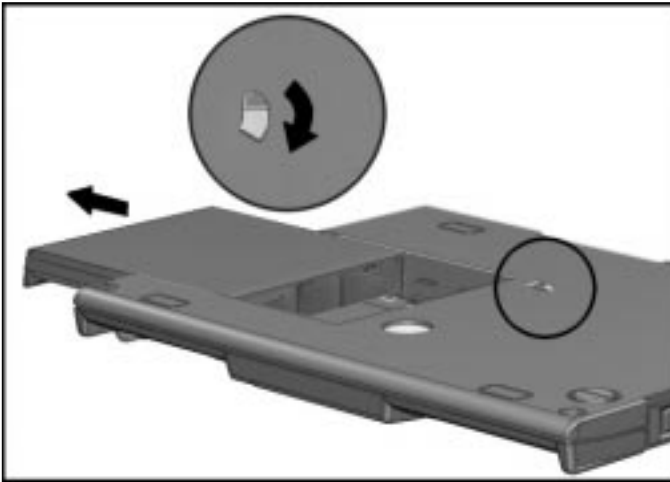
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Removing the MCD Weight Saver Module

Your Mobile CD Expansion Unit (MCD) comes with a weight saver module that protects the battery bay until a battery is inserted. To remove this module, follow these steps:

1. Turn the computer and MCD over, bottom side up.
2. Slide the battery bay latch on the bottom of the MCD to the open position.
3. Carefully remove the weight saver module from the MCD battery bay.

NOTE: Follow the same procedure to remove a modular battery pack from the MCD.



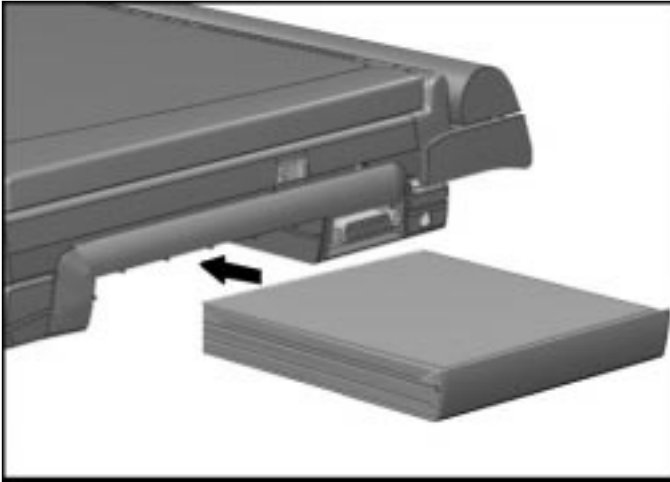
Removing the Weight Saver Module from the MCD

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Inserting a Modular Battery in the MCD

To insert a modular battery pack in the Mobile CD Expansion Unit (MCD), follow these steps:

1. With the label on the battery pack facing up and the battery contacts facing in, slide the modular battery pack into the MCD battery bay until it clicks into place.



Inserting the Modular Battery into the MCD

Resolving a Low-Battery Condition

When you operate the computer on battery power and the battery charge runs low, the computer beeps (unless speakers have been turned off or disabled) and the battery charge indicator on the status panel begins to blink. These signs indicate a low-battery condition. When this occurs, save all work immediately and initiate Hibernation. Resolve the low-battery condition with a fully charged battery pack or external power.

Resolving a low-battery condition with external power

If you are near a power source, connect the AC Adapter or the auto adapter to the computer until a fully charged battery can be installed.

Resolving a low-battery condition with a charged battery pack

If a fully charged battery pack is available, do the following:

1. To avoid interrupting work, initiate Hibernation by pressing **Fn+** the suspend button. Hibernation is complete when the battery charge indicator and power/suspend lights turn off.
2. Remove the discharged battery pack.
3. Insert a fully charged battery pack in the computer or portable expansion unit.
4. Exit Hibernation by pressing the power button once. The power/suspend light turns on to indicate that full power is restored.

Resolving a low-battery condition when a battery pack is unavailable

If a fully charged battery pack is not available, do the following:

1. Save your information.
2. Exit your applications.
3. Turn off the computer by clicking Shut Down from the Windows Start menu or initiate Hibernation until external power or a fully charged battery pack is available.

Extending Battery Pack Operating Time

Battery pack operating time can be extended by following these guidelines:

- Select the High level of power conservation. See *Selecting a Battery Conservation Level* in this chapter.
- Initiate Suspend or Hibernation or turn off the computer when not in use for several hours.
- Reduce the brightness of the display.
- Select a shorter screen save timeout.
- Avoid unnecessary fast-charge cycles, which reduce the cycle life of the battery.
- Keep a battery pack in the computer when using it with external power to supply it with a constant charge.
- When not in use, disconnect any external equipment without its own power source to avoid draining the battery pack.
- Exit modem programs when not in use.
- Remove the PC Card when not in use or turn off power to the PC Card slots. See Chapter 9, *Connecting External Devices*, for more information about PC Cards.
- Store the battery pack in a cool, dry place when not in use. High temperatures reduce the life of the battery pack and cause it to lose its charge more quickly. If you are storing the battery for less than one month, the recommended storage temperature is 32°F to 122°F (0°C to 50°C); for no more than three months, the recommended temperature is 32°F to 104°F (0°C to 40°C); for an unlimited time, the recommended temperature is 32°F to 86°F (0°C to 30°C).
- Use the AC Adapter when possible.

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Charging the Battery Pack(s)

Follow these steps to fully charge the battery packs:

1. Connect the AC Adapter to the computer and plug it into an electrical outlet.
2. Turn on the computer if you want to use it while the battery packs are charging.
3. If more than one battery is installed in the system, only one battery will charge at a time, beginning with the battery pack in the handle, then the battery pack in the computer DualBay, and finally the battery pack in the Mobile CD Expansion Unit (MCD).

When the battery charge indicator turns off, the battery packs are no longer being fast-charged, but may not be fully charged. It takes up to 3.5 hours to fast-charge a battery pack when the computer is turned off. It takes up to 6 hours to charge a battery pack when the computer is turned on.

NOTE: Battery packs should be recycled or disposed of according to local regulations. Refer to the *Recycling Used Battery Packs* section that follows for more information.

Recycling Used Batteries in North America

Disposal of Nickel Metal Hydride or Lithium Ion battery packs should comply with country, state, province, or local regulations.

The battery recycling program provides a safe and easy method for disposing of used batteries. Check the worldwide telephone numbers in Chapter 1, *Finding Information About Your Computer*, to take advantage of the battery recycling program. You will be provided with a postage-paid battery pack mailer that is preaddressed to a reclamation facility where the metals are recycled.



WARNING: To reduce the risk of injury or damage to the battery pack, do not crush, puncture, or incinerate the battery pack or short the metal contacts. In addition, do not attempt to open or service the battery pack.

Recycling Used Batteries in Europe

Disposal of Nickel Metal Hydride or Lithium Ion battery packs should comply with the country, state, province, or local regulations.

The battery recycling program provides a safe and easy method for disposing of used batteries. Check with your Compaq authorized service provider to take advantage of the battery take-back program.

Power Properties Utility

The Power icon includes features that allow you to monitor how AC and battery power are used in your computer. It controls most of the computer components, including hard drive, processor, and display.

To conserve the battery, the computer can be preset to shut down power to a component after a specified period of inactivity (called a timeout). In addition to other features, Power Properties allows you to preset timeouts.

To get to Power Properties:

1. Click Start.
2. Click Settings.
3. Click Control Panel.
4. Double-click the Power icon.

Power contains several tabs that allow you to view or set the following:

If You Want To:	Click This Tab:
Set battery conservation levels and enable/disable warning beeps	Battery Conservation Settings
Select Hibernation Settings	Hibernation
Show suspend on the Start menu or power status on the taskbar	Power
Enable and disable the AC Energy Saver and customize Energy Save monitor values	AC Energy Saver
Display the status of installed batteries	Battery Status

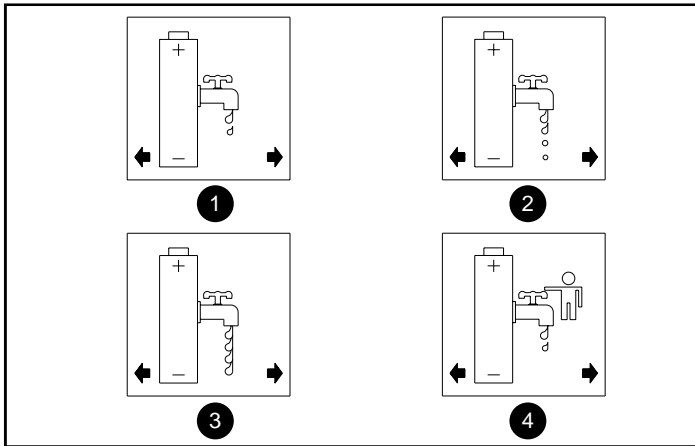
Battery Status Tab

The Battery Status Tab on the Power icon is a Compaq application for Windows that provides information on the status of each installed battery. The utility includes: an illustration of each battery, showing where it's installed in the computer; the life remaining in each battery; and which battery (if any) is currently charging.

Setting Battery Conservation Levels

To extend the life of your battery, customize the level of battery conservation or click one of three preset conservation levels. Medium is the factory setting, in effect until you change it.

You can change the default levels of battery conservation by pressing **Fn+F7** to display a popup window indicating the current level. Use the left or right arrow keys to select a different level.



- **High Conservation:** Saves the most battery power. This level supplies the most battery life from a single charge.
- **Medium Conservation:** Provides a balance between system performance and battery life. This is the factory setting.
- **None (Drain):** Turns off battery conservation features, and the system runs at full speed. Hibernation is the factory setting on your computer, and your system also initiates Hibernation automatically when it reaches a low-battery condition. *However, in the None (Drain) setting, the computer will not initiate Hibernation automatically if it has been manually disabled.*



CAUTION: Before setting your battery conservation level to None (Drain), make sure the Hibernation feature has not been disabled.

- **Custom:** Saves battery power according to your specifications by setting timeouts. This setting remains in effect until you change it. (*See the following section for more information on timeouts.*)

NOTE: High, Medium, Drain, or Custom settings remain in effect until you change them.

Setting a Timeout

Timeouts are specified periods of system or component inactivity designed to conserve power. When a timeout period has expired, battery conservation shuts down the system or the specified components to save power.

For example, the hard disk idle default timeout is two minutes. If an application does not access information on the hard disk for two minutes, the hard disk shuts down until it is accessed again.

Timeouts are set through the Conservation Settings or Hibernation tabs in Power Properties. Use timeouts in the following ways:

1. Use a preset timeout provided with the medium (default) or high level of battery conservation.
2. Set your own timeouts through the custom level of battery conservation so that the computer works more efficiently with your applications.

NOTE: Programs with the autosave feature, or those that automatically write data to the hard disk, can cause the hard disk timer to reset when data is written to the hard disk.

Turning Hibernation On or Off

Hibernation is automatically turned on when you first set up your computer. In order for Hibernation to work, it must allocate space on your hard drive equal to the amount of RAM installed. To free up this disk space, you can click the Hibernation tab in Power Properties and turn off Hibernation. However, Compaq does not recommend this, because it could result in lost data.



CAUTION: Turning off Hibernation is not recommended. If the computer reaches a low-battery condition and Hibernation is turned off, unsaved information is lost.

When you restart the computer, the system first upgrades your memory, then should automatically allocate or update your computer's disk space to adjust to the new amount of memory. However, if you experience problems with Hibernation after upgrading your memory, run the Power Conservation utility and click the Hibernation tab to reset the system memory.

Using the AC Energy Saver

You can turn on or off the Energy Saver feature through the AC Energy Saver tab in Power Properties. The Energy Saver feature is supported in MS-DOS, Windows 3.1, and Windows 95 operating systems.

The energy saver feature is network compatible when used in conjunction with the Compaq Convenience Base with Ethernet model, meaning that you will not be logged off the network when the Energy Saver features are enabled. The Energy Saver feature is network compatible when using network PC Cards, when the PC Card power setting is set to the "on" position.

The Energy Saver feature when used in conjunction with an external Energy Star compliant monitor will support the power down features of the monitor. Enabling the Energy Save Monitor feature allows the external monitor to go into low-power mode when the screen Save timeout occurs.

To take advantage of this energy savings, the external monitor feature has been preset to power down after 10 minutes. This setting can be modified or disabled by accessing the AC Energy Saver tab in Power Properties.

The AC Energy Saver feature allows the hard disk idle and screen save timeouts to initiate after a period of computer inactivity while the computer is connected to AC power. Enabling this feature saves money on your electric bill.



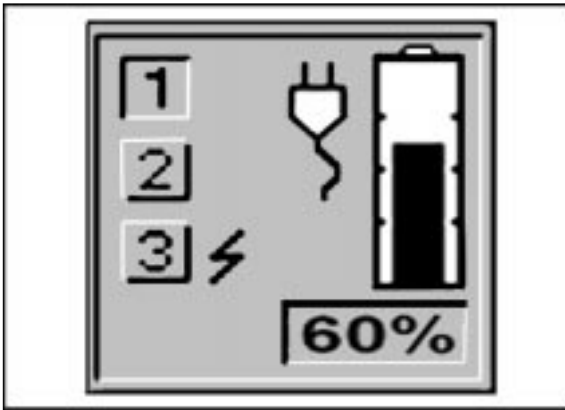
CAUTION: Using the Energy Save Monitor feature with non-Energy Star compliant monitors may cause video distortion when the Screen Save timeout occurs.

The Battery Gauge Popup

The Battery Gauge popup is a hotkey (press **Fn+F8**) with functions similar to the Battery Status tab in the Power icon on the Control Panel. It also provides the status of installed batteries, but, unlike a Windows utility, the Battery Gauge popup is accessible from any application or operating system. (Press **Fn+F8** to exit the Battery Gauge popup.)

The Battery Gauge Popup displays three numbered boxes:

- Box 1, the primary battery in handle
- Box 2, the modular battery in the DualBay
- Box 3, the modular battery in the Mobile CD Expansion Unit (MCD)



Battery Gauge Popup

Press the right or down arrow key to view the status of the next battery. (Batteries not present in the system cannot be selected.) Press the left or up arrow key to select the previous battery.

The box representing the selected battery will be depressed, and the number inside the box will be black. Numbers in other boxes will be grayed out. If the selected battery is charging, a lightning bolt appears to the right of the box. The percentage of remaining battery capacity is shown at the bottom. In the popup above, the battery in the handle has 60 percent remaining capacity. The modular battery in the MCD is charging.

NOTE: If you do not depress any arrow keys for five to seven seconds, the Battery Gauge popup will display the average remaining capacity of all installed batteries.

Working with Removable Devices

Removable devices give your computer an added degree of functionality and more flexibility in the way you work. This chapter provides guidelines for working with removable devices in the computer and (depending on the model) the Mobile CD Expansion Unit (MCD). These devices include:

- Handle
- DualBay Devices

NOTE: For procedures on removing and inserting the modular battery pack in the DualBay or the MCD, see Chapter 5, *Managing Power*.

Working with the Handle

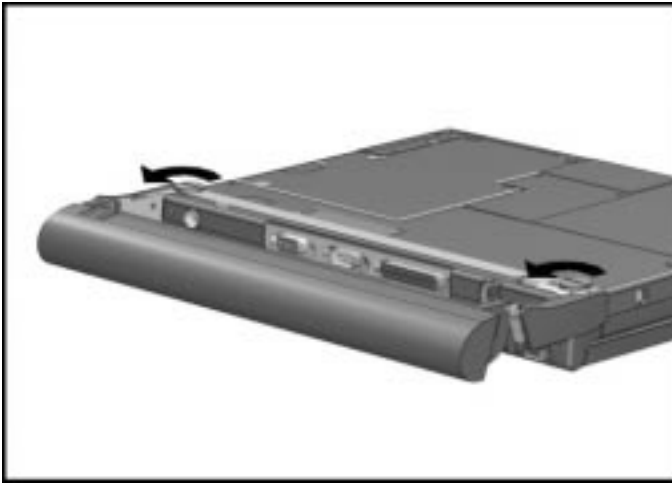
Detaching the Handle



CAUTION: If no other battery is installed and computer is not attached to external power, save your work, exit all applications, turn off the computer, and disconnect external devices.

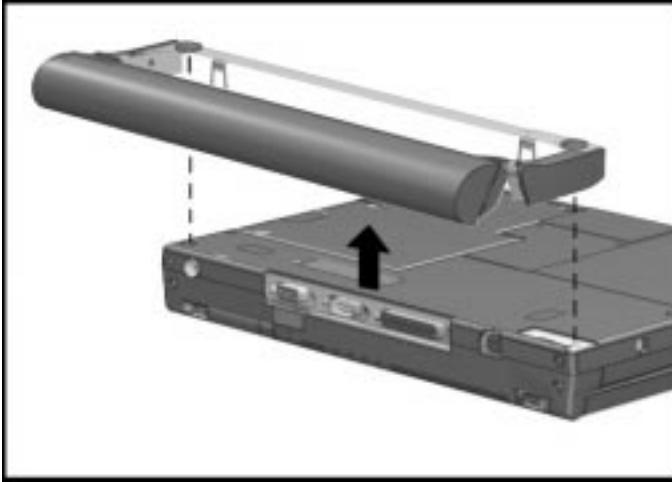
To remove the handle from the computer, follow these steps:

1. Close the computer and turn it over, bottom side up, with the handle in the carry position.
2. Remove the battery from the handle. (See Chapter 5, *Managing Power*, for instructions.)
3. Loosen the thumbscrews on the metal strip along the back of the computer by turning them counterclockwise.



Turning Thumbscrews to Loosen Handle

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4. Lift the handle and remove.
 5. Turn the computer over, open the display, turn on the computer, and attach external devices.

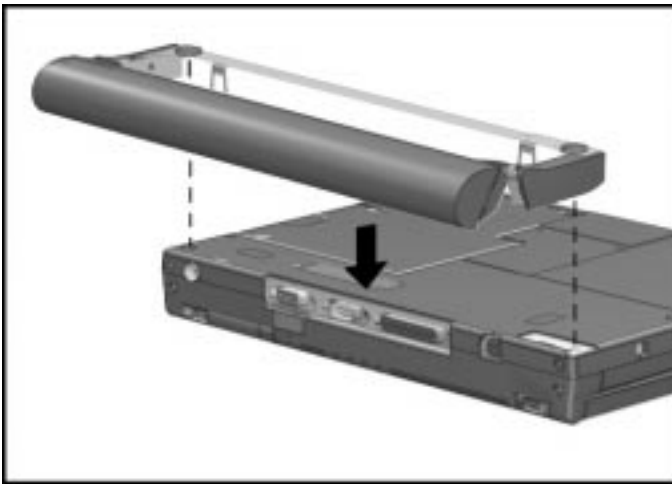


Removing the Handle

Attaching the Handle

To attach the handle to the computer, follow these steps:

1. If a charged battery is installed in the DualBay, initiate Suspend. (If not, initiate Hibernation by pressing **Fn+** suspend.) Close the computer, detach external devices, and turn it over, bottom side up.
2. Line up the metal tabs on the handle with the slots on the back of the computer.
3. Attach the handle to the computer and insert the battery. (See Chapter 5, *Managing Power*, for instructions on inserting the battery.)



Attaching the Handle to the Computer

-
4. Tighten the thumbscrews on the handle by turning them clockwise.
 5. Turn the computer over, open the display, attach external devices, and press the suspend button to exit Suspend (or press the power button to exit Hibernation).



Turning Thumbscrews to Tighten Handle

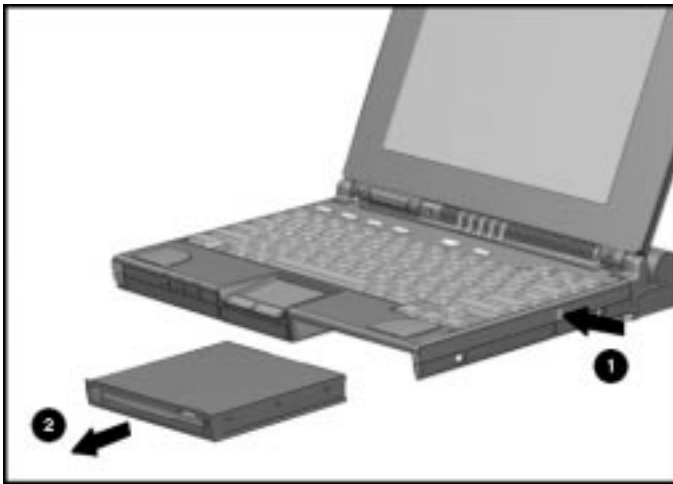
DualBay Devices

The DualBay on your computer can accommodate either the diskette drive that came with the computer or an optional modular battery pack. (See Chapter 5, *Managing Power*, for information on inserting a modular battery pack in the DualBay.)

Removing the Diskette Drive from the DualBay

To remove the diskette drive from the DualBay, follow these steps:

1. Initiate Suspend by pressing the suspend button once.
2. Press the DualBay eject button ❶ on the right side of the computer.
3. Pull the diskette drive ❷ from the DualBay.



Removing the Diskette Drive from the DualBay

4. Exit Suspend by pressing the suspend button to return your information to the screen.

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Inserting the Diskette Drive into the DualBay

To insert the diskette drive into the DualBay:

1. Initiate Suspend by pressing the suspend button.
2. Align the diskette drive with the metal rails in the DualBay
3. Push diskette drive into the computer until it clicks into place.
4. Exit Suspend by pressing the suspend button.



Inserting the Diskette Drive into the DualBay

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Using the Diskette Drive Externally

When you want to place a modular battery pack in the DualBay but also need the diskette drive, you can use the diskette drive as an external device by connecting it to the parallel port. Contact your Compaq authorized dealer, reseller, or service provider for information about the option that allows you to use your diskette drive externally.

Maximizing Your Mobile CD Expansion Unit (MCD)

Create interactive presentations, play full motion video games, or listen to your favorite music CDs on the versatile, powerful Mobile CD Expansion Unit (MCD). This unit adds CD multimedia capabilities to your computer and supports most popular software.

A CD-ROM, integrated stereo speakers, a game/MIDI port, dedicated battery bay, and connections to the convenience base are among the features on the MCD. This chapter familiarizes you with the MCD, including:

- MCD components
- Attaching the computer to the MCD
- Detaching the computer from the MCD

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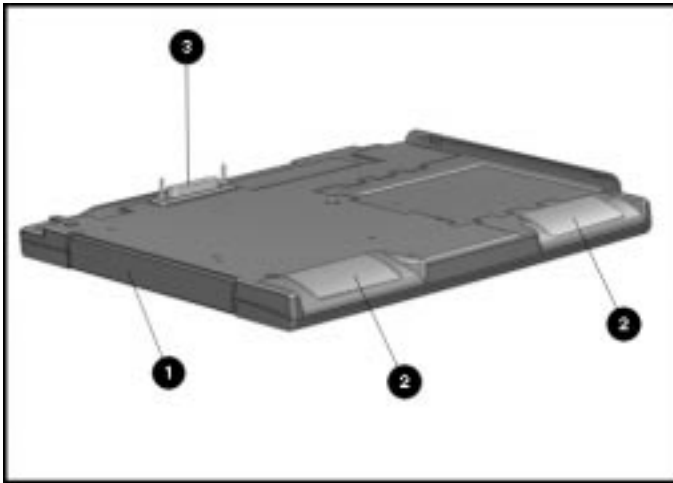
MCD Components

The Mobile CD Expansion Unit (MCD) provides additional functionality to your computer, including a CD-ROM, integrated stereo speakers, and connections to the convenience base.

Front and Left Side Components

Front and left side components of the MCD include:

- ❶ CD-ROM drive
- ❷ Integrated stereo speakers
- ❸ Computer expansion posts



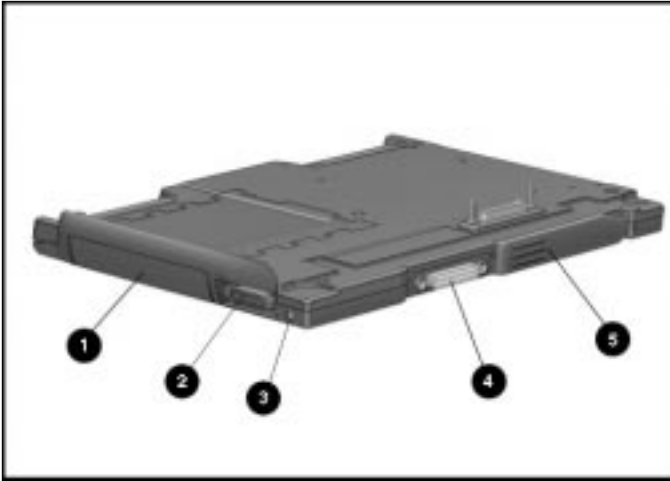
Components on Front and Left Side of the MCD

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Right and Back Side Components

Components on the right and back side of the MCD include:

- ❶ Dedicated battery bay
 - NOTE:** Remove the weight saver module from the battery bay before inserting the battery pack
- ❷ Game/MIDI port (joystick connection)
- ❸ AC power connector
- ❹ Expansion connector to attach the unit to the convenience base
- ❺ Eject lever to release the computer from the MCD



Components on Right Side and Back of the MCD

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Attaching the Computer to the MCD

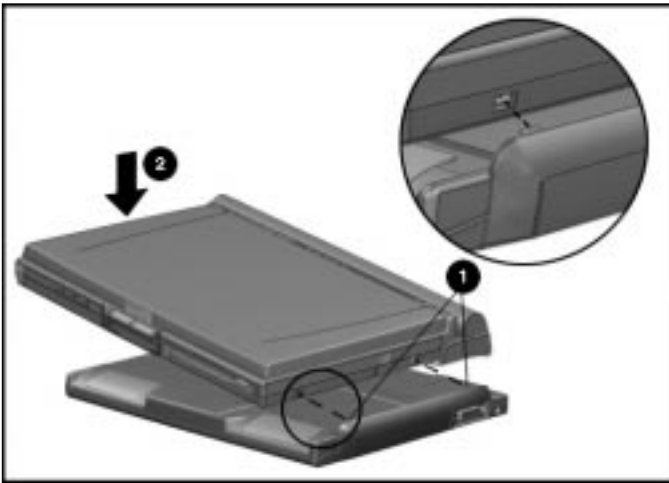
To attach the computer to the MCD, follow these steps:

1. Turn off the computer and disconnect external devices.
2. Close the computer and ensure that the handle is in the carry position.
3. Turn the computer over, bottom side up.
4. Slide open the expansion slot cover on the bottom of the computer.



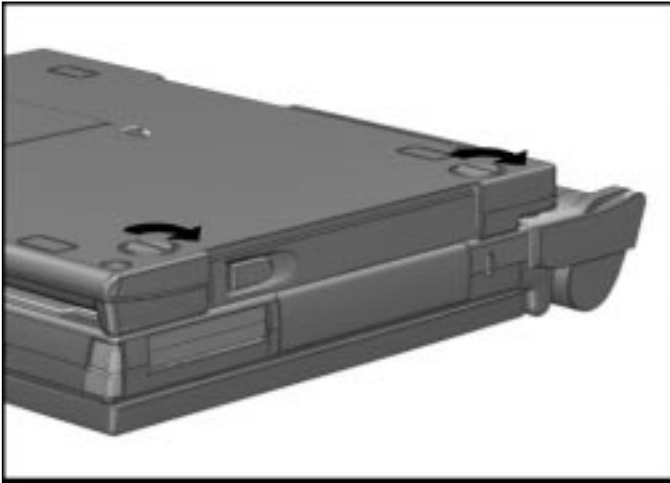
Opening the Expansion Slot Cover

-
5. Turn the computer over, right side up.
 6. Tilt the computer at an angle to line up the two notches on the computer ❶ with the guide hooks on the right side of the MCD.
 7. Lower the computer ❷ onto the MCD. Be sure that the expansion connector slot on the bottom of the computer is aligned with the connector posts on top of the MCD.



Attaching the Computer to the MCD

-
8. Turn the computer and MCD over, bottom side up.
 9. Tighten the two thumbscrews on the bottom of the MCD by turning them clockwise to securely attach the MCD to the computer.
 10. Turn the computer back over, right side up. Attach external devices. Open the display.
 11. Turn on the computer.

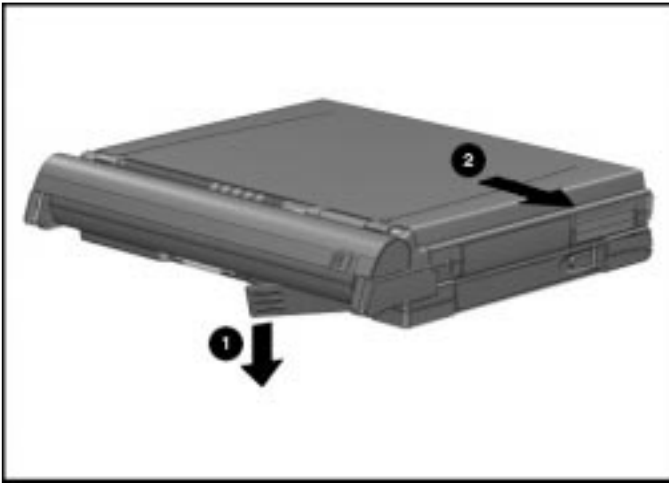


Tightening the Thumbscrews on the Bottom of the MCD

Detaching the Computer from the MCD

Detach the computer from the MCD according to these steps:

1. Turn off the computer and disconnect external devices.
2. Close the computer and ensure that the handle is in the up position.
3. Turn the computer and MCD over, bottom side up. Turn the two thumbscrews on the bottom of the MCD counterclockwise to loosen the MCD from the computer.
4. Turn the computer and MCD over again, right side up.
5. Rotate the eject lever on the back of the MCD ❶ down. Remove the computer from the guide hooks on the MCD by sliding the computer ❷ up and away from the right side of the MCD.
6. Reach underneath the computer and close the expansion slot on the bottom of the computer.
7. Open the display and turn on the computer. Connect external devices.



Detaching the Computer from the MCD

Enjoying Compaq Audio

Your computer has both internal and external audio capabilities that allow you to record, play back, and edit voice, music, and other sounds in digital audio files.

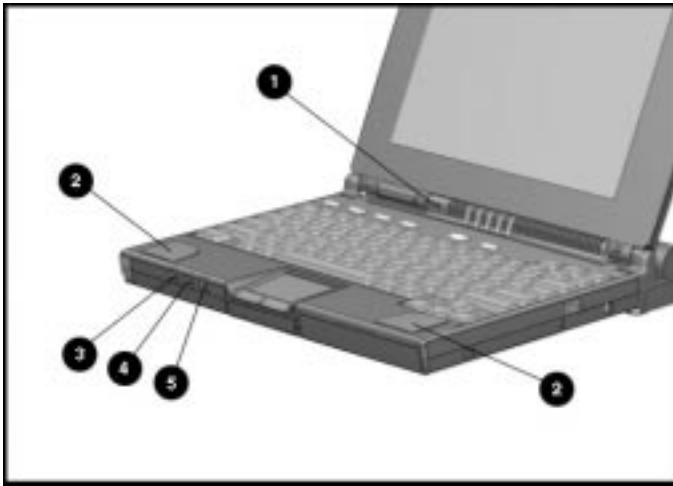
These capabilities allow you to take advantage of the newest business programs, presentation software, and multimedia educational and entertainment software. This chapter familiarizes you with the audio features on the computer, including:

- Audio components
- Internal/external microphones
- Audio volume/audio software
- Stereo speakers

Identifying Built-in Audio Components

The computer features the following audio components:

- ❶ Internal electric condenser microphone with standard sensitivity of 67 dB.
- ❷ Internal stereo speakers on the computer (and on the Mobile CD Expansion Unit (MCD)).
- ❸ Output jacks for external stereo headphones or speakers that have a 3.5-mm, 3-conductor plug.
- ❹ External microphone input jack that accepts a 2-conductor, 3.5-mm plug from an electret condenser microphone.
- ❺ External audio input jack that accepts a 3-conductor, 3.5-mm plug.

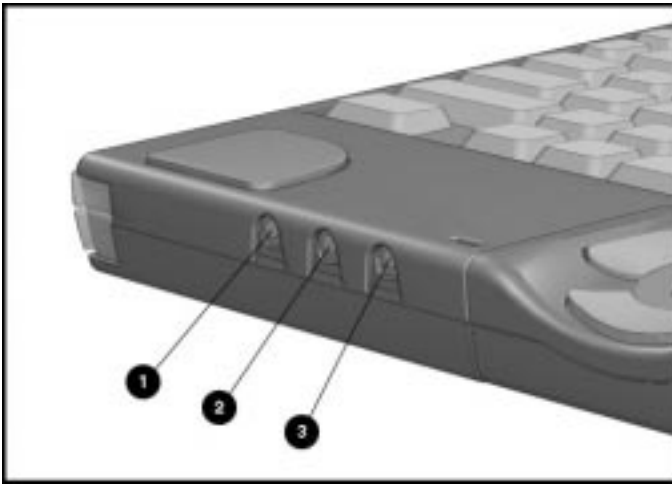


Audio Components

External Audio Jacks

The computer allows you to connect external equipment to enhance a multimedia presentation or quietly enjoy your favorite CDs using the following connectors:

- ❶ Mono microphone jack can also be used to record voice or sound through an external electret condenser microphone.
- ❷ Stereo speaker/headphone jack supports stereo headphones or external stereo speakers.
- ❸ Stereo line-in jack accepts sounds from external audio devices such as a CD player, tape deck, or tuner.



Audio Jacks

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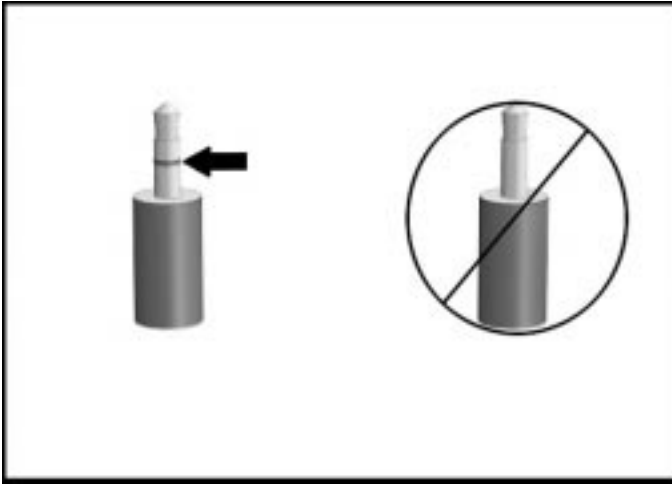
Stereo Line-In Jack

The stereo line-in jack is the input line for devices such as a CD player, tape player, or tuner. The input device must supply levels compliant with the line input level specification of 0.5 to 4.25 volts. The line output of most devices meets this specification.

Make sure you plug in a stereo component only to your computer. A stereo connector has a colored band. The mono plug does not.



CAUTION: Use only a 3.5-mm stereo plug in the stereo line-in jack, which has a colored band around the connector post. A mono plug used in the stereo line-in jack may damage the input device.

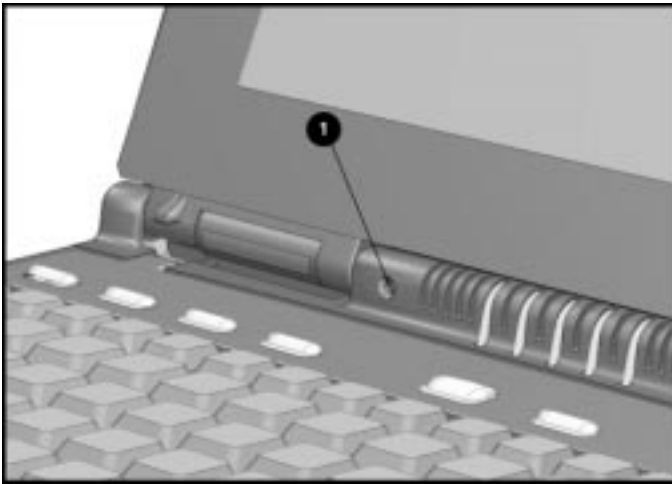


Stereo Plug Versus Mono Plug

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Internal Microphone

You can record voice or sound through the internal mono microphone ❶ or by plugging an external electret condenser microphone into the mono microphone jack. The internal microphone also supports speakerphone features. (See Chapter 9, *Connecting External Devices*, for more information on speakerphone capabilities.)



Internal Microphone

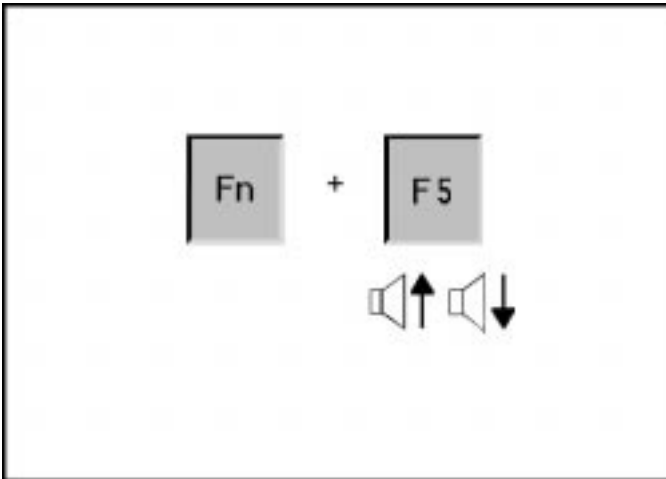
Volume Control

The volume control hotkeys, **Fn+F5**, adjust the computer volume up or down (using the arrow keys), and are the master volume control for your computer. Volume is also controlled by a Windows utility, the Audio icon, in the Control Panel on the Windows Start menu.

NOTE: There is no manual volume control on the computer. Volume can only be controlled by the software.



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



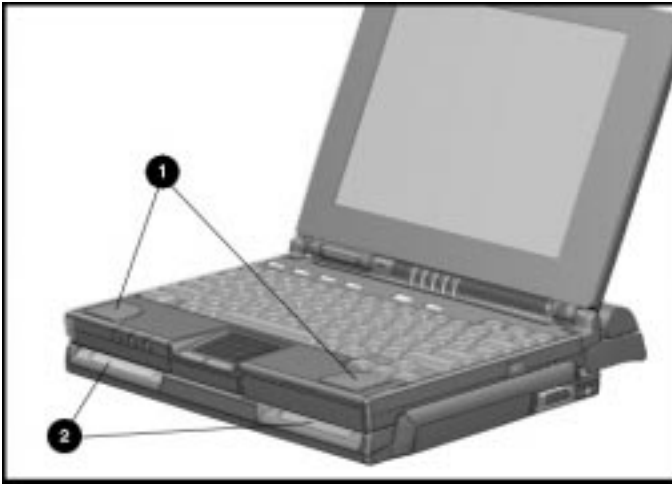
Volume Control with Hotkeys

Using the Stereo Speakers

The integrated stereo speakers ❶ support playback of recorded sounds, audio for games and business programs, and line-out devices such as a CD player, tape deck, or stereo tuner.

The speakers are disabled when you connect external speakers or headphones to the stereo speaker/headphone jack. Speakers are also disabled when you attach the computer to the Mobile CD Expansion Unit (MCD).

If the computer is attached to the MCD, the system audio is played through the MCD speakers ❷.



Speakers on the Computer and MCD

NOTE: Some software applications, such as game programs, include their own volume controls. You may need to make adjustments within these applications to get the desired sound levels.

IMPORTANT: If volume is turned down, low-battery beeps may not be audible.

Connecting External Equipment

To enhance the functionality of your computer, connectors on the rear of the computer support numerous external devices. This chapter familiarizes you with the utilities and procedures needed for connecting or configuring external equipment to your computer, using the following:

- Device Manager utility
- Add New Hardware icon
- PC Cards
- Telephony features

NOTE: For more complete information about the optional equipment compatible with your computer, see the online Compaq Options Catalog.

Device Manager Utility

Device Manager is the primary tool for viewing and manipulating your system configuration. It allows you to view your external equipment and internal devices, including keyboard, modem, disk drives, and monitor. To get to the Device Manager, click the Control Panel on the Start menu and double-click the System icon.

The Device Manager allows you to view and change your system configuration in the following ways:

If You Want To:	Click This Tab:
Look at system resources or print out a system summary.	View Devices by Type
Change drivers; install drivers; learn the status and compatibility of installed devices.	View Devices by Connection

Add New Hardware Icon

Add New Hardware helps you install a new piece of hardware quickly. Also, it will automatically detect installed hardware. To get to Add New Hardware, go to the Control Panel, double-click the Add New Hardware icon, and follow the instructions on the screen.

Using PC Cards

Your computer is equipped with a versatile feature that allows you to connect portable external devices, such as modem, memory, or network PC Cards. The PC Card slots on your computer can accommodate (at the same time) two Type I, two Type II, or one Type III PC Card.

NOTE: A Type III PC Card fits only in the bottom slot, slot 1.

IMPORTANT: Before buying a non-Compaq PC Card, be sure it conforms to standards set by the Personal Computer Memory Card International Association (PCMCIA). For a list of PC Cards supported on this computer, contact your Compaq authorized reseller or service provider.

Also, look for this Compaq PC Card Solution seal. Cards with this logo on their packaging and advertising are supported on most Compaq computers.



Compaq PC Card Solution Logo

Inserting a PC Card

To insert a PC Card, follow these steps:

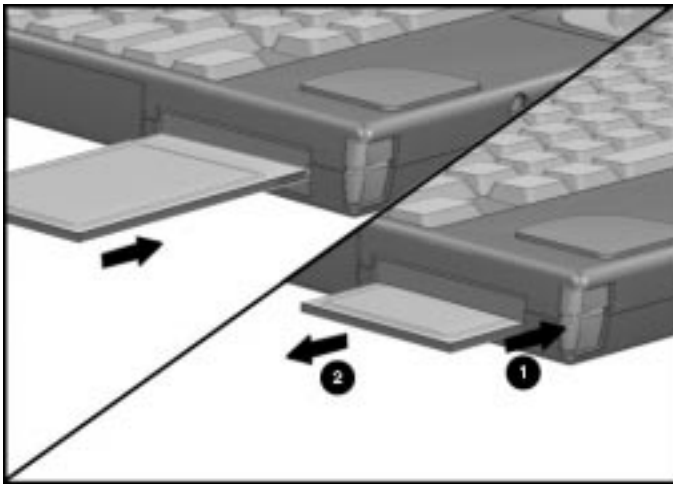
1. Insert the PC Card into the PC Card slot (front left side of computer).
2. Gently push the card into the top slot, label side up. (Forcing a card into the slot can damage the connector pins.)

Removing a PC Card

To remove a PC Card, follow these steps:

1. Press the top or bottom PC Card release button ❶. (The release buttons are located on the front left corner of the computer.)
2. Gently grasp the card and pull it out ❷. The computer beeps to indicate card removal.

NOTE: If the speakers are turned off, system beeps are not audible.



Inserting and Removing a PC Card

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PC Card Software

To manage and configure PC Cards effectively, your computer provides PC Card software. This software includes drivers for the most popular PC Cards and other features designed to make PC Cards simple to use. For information about this software, refer to the online *Compaq Reference Guide*.

Using Telephony Features

Using software preinstalled on your computer, in conjunction with a Compaq SpeedPaq 288 Telephony Modem or a Compaq Global 28.8 Telephony Modem, you can take advantage of the following advanced telephony features:

- Data transmission: send and receive text and other data
- Fax transmission: send and receive facsimiles
- Address book: create and store addresses and phone numbers
- Answering machine: record telephone messages
- Speakerphone: hands-free telephone communication
- VoiceView: automatic switching between voice and data transmission when you are talking and using the modem on the computer at the same time

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Connecting a TV or VCR

To connect a TV or VCR to your computer, follow these steps:

1. Turn off the video equipment you wish to connect.
2. Connect the NTSC/PAL cable that came with your computer to the video connector on the back of the computer.
3. Connect the other end of the NTSC/PAL cable to the TV or VCR you wish to connect.
4. Go to the Display icon on the Control Panel in the Windows Start menu. Choose the Refresh tab to select whether you want the picture to display on the computer, TV, or VCR.

NOTE: The **Fn+F4** hotkeys, which toggle the display between the computer and an external monitor do not provide simultaneous display when video equipment is connected.

Connecting Infrared Equipment

The infrared lens on the back of your computer uses an invisible beam of infrared light to communicate with other infrared-equipped devices, such as printers or other computers.

The Microsoft Windows Infrared (IR) communications driver enables your computer to send and receive data over these IR communications links.

The infrared monitor can be accessed by selecting the Infrared icon located on the Control Panel. The infrared monitor displays the status of any IR communication links, settings, and properties of the IR Port. For additional information, select the Help in the Infrared Monitor.

To establish an infrared link:

- Be sure that the infrared ports on both devices are turned on and facing each other at a distance no greater than one meter (3.28 feet).
- Avoid moving the infrared ports during data transmission.
- Avoid interference from remote control units (e.g., wireless headphones or audio devices) by pointing them away from 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 objects (to avoid interference with data transmission).
- Do not point one port more than 30 degrees away from another port.

The computer's infrared lens can be used when the computer is attached to the Compaq Mobile CD Expansion Unit (MCD), but it cannot be used when the computer is docked in the convenience base.

Adding Software and Upgrades

Upgrading your computer increases its functionality and performance. Contact your Compaq authorized reseller to determine which upgrades are available for your model. For detailed installation procedures, refer to the installation documentation included with the equipment or contact your Compaq authorized reseller.

This chapter will familiarize you with:

- Supporting other operating systems
- Installing software
- Adding memory
- Upgrading the hard drive
- Upgrading the processor
- Upgrading the display

Installing Software

An application software program performs a specific task, such as database management, word processing, financial management, or graphic illustration.

Application software is different than system software or operating systems, which maintain and organize the system. Each application program usually includes its own installation program and documented installation procedures.

Before installation, read the documentation that came with the application to ensure that your computer meets the disk space, memory, operating system, and monitor requirements of the application.

Operating System Support

Contact your authorized Compaq service provider to obtain Compaq supplemental software and drivers if you are replacing your preinstalled operating system with another operating system.

Adding Memory

Depending on the model, your computer comes with 8 or 16 megabytes of random access memory (RAM). Memory can be increased to as much as 40 or 48 megabytes by installing expansion boards. Memory expansion boards are sold in matched pairs: two two-MB boards or 4 MB; two four-MB boards or 8 MB; two eight-MB boards or 16 MB; and two sixteen-MB boards or 32 MB.



CAUTION: Electrostatic discharge can damage electronic components. Before touching a memory expansion board, ensure that you are discharged of static electricity by touching a grounded metal object.

To upgrade memory, follow these steps:

1. Save your work. Exit all applications and turn off the computer. Remove all external devices, including battery packs and the AC Adapter.
2. Remove the device from the DualBay (see *Working with Removable Devices* in this guide).
3. Close the computer and turn it over, bottom side up.

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4. Pry up the memory compartment cover by pulling up the wide end of the cover.
 5. Slide the first of two memory boards into the lower memory slot. Then slide the second board into the top slot. The connectors snap into place when boards are correctly seated.
 6. Replace the memory compartment cover.
 7. Turn the computer over again, right side up. Replace the DualBay device, battery pack(s) and reconnect external devices.
 8. The computer automatically recognizes the new memory and reconfigures the system.



CAUTION: If you need to remove the memory expansion boards, be sure to release the locking tabs that secure the memory boards in the slots. If the tabs are not released, the connectors may break and cause irreparable damage to the system board.

Upgrading

Depending on your computer model, you can upgrade the hard drive, processor, and display. To upgrade, contact your Compaq authorized dealer, reseller, or service provider for more information.

Setting Security Features

The security features installed on your computer allow you to customize the security measures you prefer. The computer provides security features to set passwords, lock the pointing device and keyboard, and blank the screen.

This chapter describes how to set and modify the following security features:

- Passwords properties
- Power-on password
- Setup password
- Quick controls
- Cable lock

Setting Passwords Properties

The Passwords icon allows you to protect your computer against unauthorized use. To ensure privacy and security, you can set or change passwords, disable the keyboard and pointing device, or blank the screen while you are away from your computer.

To get to the Passwords icon:

1. Click Start.
2. Click Settings.
3. Click Control Panel.
4. Double-click the Passwords icon.

Passwords Properties lets you set the following:

If you want to:	Click this tab:
Initial setting of power-on password; enabling of QuickLock and QuickBlank	Computer Security

Power-On Password

Power-on password is a security feature that prevents use of the computer when it is turned on until a secret word or code is entered. This prevents unauthorized access to your information.

Once you establish a power-on password, you must enter it each time you turn on the computer.

IMPORTANT: You cannot use the computer if you forget your power-on password. Therefore, Compaq recommends that you record your password and put it in a safe place.

Establishing a Power-On Password

To establish your power-on password, follow these steps:

1. Click the Computer Security tab in Passwords Properties.
2. Click the Set button.
3. Enter your password twice, then click OK.

Establishing a Setup Password

A setup password allows you to protect your system configuration. Once this password is established, you cannot change the configuration until you enter the password. The setup password should be used by network administrators or anyone who needs to protect the system configuration from unauthorized use.

The setup password can only be set, changed, or deleted from the **F10 Setup** utility. To establish the setup password for the first time follow these steps:

1. Restart the computer by clicking Shut Down from the Windows Start menu.
2. When the Configuration and Diagnostics menu appears, click the Compaq Security option.
3. Click the Advanced option, then click the Password Protect Computer setup option.
4. In the window that appears, type the password in the New Password field. Type it again in the Retype Password field and exit the utility by clicking OK.

IMPORTANT: Type carefully, because the password does not display as you type.



CAUTION: If you forget your setup password, you will need to clear the password from memory before you can reconfigure the system. Call your Compaq authorized dealer, reseller, or service provider for assistance if needed.

Deleting/Changing a Setup Password

To delete/change a Setup Password, follow these steps:

1. Restart the computer by clicking Shut Down from the Windows Start menu.
2. The password prompt is displayed.

IMPORTANT: Type carefully, for security reasons, the characters you type do not appear on the screen.

To delete your password, enter your current password, followed by the appropriate syntax for your computer keyboard. For example, if you have a Belgian keyboard, type the following to delete the password:

current password=

To change your password, enter your current password, then enter the new password twice, typing the appropriate syntax for your computer keyboard between the passwords. For example, if you have a Belgian keyboard, you will type the following:
current password=new password=new password. The new password takes effect the next time you turn on the computer.

NOTE: The syntax for changing the password varies according to the keyboard purchased with your computer. Refer to the online *Compaq Reference Guide* to find the syntax for your computer.

Identifying Quick Controls

- **QuickLock**—Locks the keyboard and pointing device while the computer is running. It leaves your data on the screen, but prevents it from being accessed by the keyboard until a power-on password is entered.
- **QuickBlank**—Used in conjunction with QuickLock, clears the screen when the keyboard and pointing device are disabled.
- **QuickLock on Standby**—Locks the keyboard when the machine enters Suspend.
- **QuickBoot**—Enables the computer to start up quickly, minimizing POST. To disable QuickBoot, and let the computer complete all power-on tests, restart the computer. Then press **F10** as soon as the cursor appears in the upper-right corner of the screen. Select Process from the menu, then QuickBoot, disable.



Initiating Quick Controls

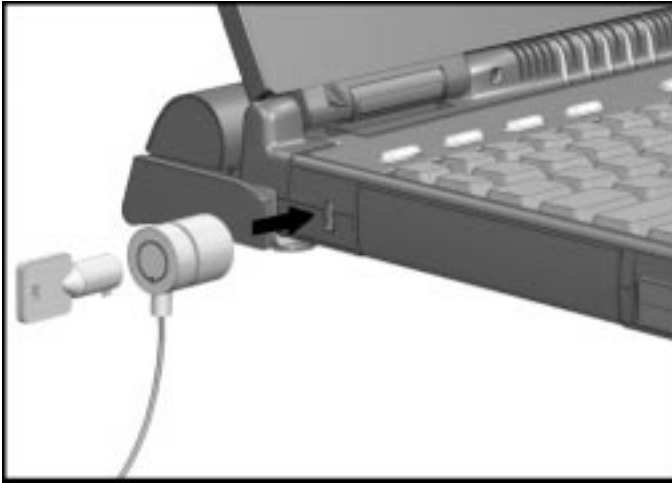
Quick Controls establish security measures when your computer is turned on but not in use. After setting the power-on password in Passwords Properties, Quick Controls can be initiated in two ways:

1. With **Fn+F6** hotkeys, which work only on the computer keyboard.
2. With the key combination **Ctrl+Alt+L**, which works on both the computer and external keyboards.

NOTE: To exit QuickLock/QuickBlank once it has been activated, enter your power-on password.

Using a Cable Lock

In order to secure your computer and prevent it from being stolen or accidentally disconnected, you may want to use a cable lock. A cable lock can be purchased from Kensington Microware Limited and major dealers worldwide. Ask for the Kensington MicroSaver Security System Model 64068.



Using a Cable Lock

To attach the cable lock:

1. Loop the cable around a fixed object to which you want to secure the computer.
2. Insert the lock end of the cable through the loop end of the cable.
3. Insert the key into the lock and turn it.

Caring for the Computer

This chapter provides Compaq recommended guidelines for taking care of your computer. These guidelines, aimed at ensuring your computer's longevity and reducing the risk of damage, include:

- Routine care
- Travel guidelines
- Shipping guidelines

Routine Care

You can keep the computer in good condition and working properly by following these guidelines:

- Operate the computer with a battery pack installed, even when you're using external power. This supplies the battery with a constant trickle charge and ensures a fully charged battery pack the next time you turn on the computer.
- Keep the computer away from excessive moisture and temperature extremes. Do not expose the computer to liquids or precipitation.
- Remove the battery pack from the computer if the computer will not be used for an extended period (more than two weeks). Store the battery pack in a cool, dry place when it is not in use.
- To prevent possible damage to the display, do not place anything on top of the computer when it is closed. Store the computer in the slipcase, but do not store any other items inside the case on top of the computer.
- Occasionally wipe the exterior of the computer and the screen with a soft, damp cloth moistened only with water.
- Avoid exposing the computer to direct sunlight or strong ultraviolet light for extended periods of time. Also avoid scratching the surface of the screen and banging it against hard objects.



CAUTION: Using soap or other cleaning products on the screen may discolor the finish and damage the screen. Do not spray liquid directly on the computer screen. Excess liquid may drip down inside the computer and cause damage to the components or result in electrical shock.

Travel Guidelines

For safety and convenience when traveling, follow these guidelines:

- Safeguard your data before you leave on a trip by backing it up onto diskettes, tape media, or another computer.
- Take an extra backup copy of the data with you.
- Remove the diskette from the diskette drive.
- Disconnect the AC Adapter from the computer. Take the AC Adapter or an extra fully charged battery pack with you.
- Disconnect external equipment, including cables, from the computer.
- Hand-carry the computer in the slipcase. Do not check it with your luggage.
- Do not close objects between the keyboard and display.

IMPORTANT: There are three types of airport security devices: X-ray machines (the device you set your bags on), magnetic detectors (the device you walk through), and security magnetic wands (the hand-held device used by security personnel). You can send your computer and diskettes through airport X-ray machines. However, Compaq recommends that you do not send your computer and diskettes through airport magnetic detectors or expose them to security magnetic wands.

- Check with the airline if you plan to use the computer on the plane. In-flight computer use is at the discretion of the airline.

Before traveling internationally with the computer:

- Check local customs regulations.
- In accordance with the guidelines outlines in Appendix D of this guide, purchase a power cord from a Compaq authorized dealer, reseller, or service provider in the country where you will be using the computer. These power cords are designed to meet the voltage and frequency requirements of each country.



WARNING: To reduce the risk of electrical shock, fire, or damage to the equipment, do not use the converter kits sold for appliances to power the computer.

- Make sure you have the correct modem and cable for the country you'll be visiting. Telephone line standards and modem protocols differ from country to country.

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Shipping Guidelines

Should you need to ship the computer, follow these guidelines:

- Safeguard your data before shipping by backing it up onto diskettes or tape media. Be sure that diskettes or tapes are not exposed to electrical or magnetic impulses while stored or in transit.
- Remove the diskette from the diskette drive.
- Remove all PC Cards from the PC Card slots.
- Turn off the computer and external devices.
- Close the computer.
- Disconnect external equipment from the computer.
- Pack the computer and external devices in their original packing boxes or similar packaging with sufficient packing material to protect them.

Diagnostics

The configuration and diagnostic utilities described in this chapter should be used in the following instances:

- To change factory default settings and to set or change the system configuration, which is sometimes necessary when you add or remove optional equipment.
- When a system configuration error is detected during the Power-On Self-Test (POST).
- To determine information about the operating environment of the system.

Accessing Diagnostics

1. Restart the computer by clicking Shut Down from the Windows Start menu. (Or turn on power.)
2. Press **F10** as soon as the cursor (white box) appears in the upper right hand corner of the screen.
3. The Configuration and Diagnostics menu will appear immediately after the computer has been turned on and the Power-On Self-Test (POST) has been completed. Because this menu is accessed before the operating system takes effect, it is available to all computer users, no matter which operating system they typically use (for example, MS-DOS, Windows, or OS/2).

Accessing Diagnostics from Windows

You can also access configuration and diagnostics information from the desktop by following these steps:

1. Click Start.
2. Click Settings.
3. Click Control Panel.
4. Double-click the Compaq Diagnostics icon.

Running Computer Checkup (TEST)

Computer Checkup (TEST) is a utility that determines if the various computer devices are recognized by the system and functioning properly. Running Computer Checkup is optional, but advisable, after installing or connecting a new device

You can display, print, or save the information generated by Computer Checkup. Your Compaq authorized dealer, reseller, or service provider may ask you to run this utility to assist in analyzing the system. This information allows the service provider to reproduce the same environment on another computer for testing.

It is also recommended that you run Computer Checkup and have the printed report available before placing a call to Compaq Customer Support.

To run Computer Checkup, follow these steps:

1. Connect the AC Adapter and use it with the computer during these procedures. (A low-battery condition could initiate Hibernation and interrupt the program.)
2. Turn on only the external devices that you want to test. Connect the printer if you want to use it to log error messages.
3. Turn on or restart the computer by pressing Shut Down on the Windows Start menu.
4. As soon as the cursor (a white box) is displayed in the upper-right corner of the screen, press **F10**.

IMPORTANT: The cursor is displayed on the screen for about two seconds. If you do not press **F10** during this time, you must restart the computer and try again.

5. If prompted, select a language.

The Configuration and Diagnostics menu is displayed.

6. Select Computer Checkup (TEST). A test option menu is displayed.
7. Select the View Device List option. A list of the installed Compaq devices is displayed.

8. Verify that Computer Checkup correctly detected the devices installed.

NOTE: Devices from other manufacturers may not be detected or may be reported inaccurately.

- If the list is correct, select OK. The test option menu is displayed again. Go to step 9.
- If the list is incorrect, ensure that any new devices are installed properly. If you do not find an installation problem, call your Compaq authorized service provider.

9. Select one of the following from the test option menu:

■ **Quick Check Diagnostics**

Runs a quick, general test on each device with a minimal number of prompts. If errors occur, they are displayed when the testing is complete.

■ **Automatic Diagnostics**

Runs unattended, maximum testing of each device with minimal prompts. You can choose how many times to run the tests, to stop on errors, or to print or file a log of errors.

■ **Prompted Diagnostics**

Allows maximum control over the device testing process. You can choose attended or unattended testing, decide to stop on errors, or choose to print or file a log of errors.

10. Follow the instructions on the screen as the devices are tested. When the testing is complete, the test option menu is displayed again.

NOTE: When you run Computer Checkup, record any error message numbers and have them available when you contact your Compaq authorized reseller or service provider for assistance.

11. Exit to the Configuration and Diagnostics menu.

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Running The View System Information (Inspect Utility)

The View System Information (INSPECT) utility provides information about the system once it has been configured. This utility provides the following information about the system operating environment:

- Contents of the operating system startup files
- Current memory configuration
- ROM versions
- Type of processor
- Diskette and hard drives
- Active printer and communications interfaces
- Modem
- Graphics/Video
- Windows *WIN.INI* file
- Windows *SYSTEM.INI* file

You can display, print, or save the information. Your Compaq authorized reseller or service provider may ask you to run this utility to assist in analyzing the system. This information allows the service provider to reproduce the same environment on another computer for testing. It is recommended that you run View System Information and have the printed results available before placing a call to Compaq Customer Support.

NOTE: This utility is not available from Windows. It must be accessed from the Configuration and Diagnostics menu. However, in Windows, the Compaq Diagnostics for Windows utility provides similar information about the computer. To run Compaq Diagnostics for Windows, click the Windows Start menu, then click Settings, then click Control Panel, then double-click the Compaq Diagnostics icon.

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To run View System Information (INSPECT), follow these steps:

1. Turn on or restart the computer by pressing the power button.
2. As soon as the cursor is displayed in the upper-right corner of the screen, press **F10**.

IMPORTANT: The cursor is displayed on the screen for about two seconds. If you do not press **F10** during this time, you must restart the computer and try again.

3. If prompted, select the desired language. The Configuration and Diagnostics menu is displayed.
4. Select View System Information (INSPECT).

Troubleshooting

This chapter provides information on how to identify and correct some common hardware, memory, and software problems. It also explains several types of common messages that can be displayed on the screen. Troubleshooting information is provided on the following pages for:

- Battery
- Diskettes/Diskette drive
- Hard Drive
- Hardware Installation
- Keyboard/Numeric Keypad
- Memory
- Monitor
- PC Cards
- Pointing Device
- Power
- Printer
- Screen
- Software applications
- Sound problems

Checklist

If you encounter some minor problem with your computer or software application, go through the following checklist for possible solutions before running the diagnostic utilities:

- Is the computer connected to an external power source, or does it have a fully charged battery pack installed?
- Is the computer turned on and the power/suspend indicator light on?
- Are all cables connected properly and securely?
- Have you installed printer drivers for each application?
- Did the diskette drive contain a non-bootable diskette when you turned on the computer?

If correcting the items on this checklist does not solve the problem, you may wish to run the Computer Checkup utility. Refer to Chapter 13, *Diagnostics*, for more information.

Interpreting Messages on the Screen

Many times a message or prompt is displayed on the screen. However, a message does not necessarily mean that an error condition exists. It may be nothing more than an information message about what the computer is doing or a prompt reminding you to enter information or press a key. The following list shows typical examples of information messages:

- A number might be displayed.

The number indicates the amount of memory in the computer.

- Backing up files to drive A:

This message indicates that MS-DOS is backing up a file to the diskette in drive A.

- Exit this utility.

This message prompts you to exit a utility by following the additional instructions on the screen.

- A:> or A:

This prompt indicates that you are working from drive A.

- C:> or C:

This prompt indicates that you are working from the hard drive.

For error messages during the Power-On Self-Test (POST), see Appendix B, "POST Error Messages."

Solving Minor Problems

While your computer is configured just for you, problems you encounter while working may not be unique. Eliminating the typical problems described in this section may save you time and money. If you have a problem with your computer, consider the causes and possible solutions outlined in the following tables.

If the problem appears related to a software application, also check the documentation provided with the software. You may discover something you can resolve easily yourself. If the condition persists, contact your Compaq authorized service provider or Compaq Customer Support.⁹

Solving Battery Problems

Some common causes and solutions for battery problems are listed in the following table. The "Solving Power Problems" section in this chapter also may be helpful to you.

Battery Problems and Solutions		
Problem	Possible Cause	Solution
Computer won't turn on when battery packs are inserted and AC Adapter is unplugged.	Battery packs are discharged.	Connect the computer to an external power source and charge the battery pack(s). Replace the battery pack(s) with a fully charged battery pack(s).
Computer beeped and battery indicator is blinking.	Battery charge is low or computer has entered a low-battery condition.	Save any open files and do one of the following: <ul style="list-style-type: none">■ Connect the computer to an external power source, then charge the battery pack(s).■ Initiate Hibernation (press Fn+ Suspend button) to halt the battery drain until you can find another power source or charge the battery pack(s).

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Battery Problems and Solutions *Continued*

Problem	Possible Cause	Solution
Battery charge indicator blinks for low-battery condition, but computer didn't beep.	Low-battery beeps are turned off.	Click the Battery Conservation tab on the Power icon in the Control Panel and enable low-battery warning beeps.
	Speaker volume is turned down.	Press Fn+F5 (using arrow keys) to increase speaker volume.
Battery charge indicator doesn't turn on.	Battery packs are already charged.	No action is necessary.
Battery pack won't fast charge.	Battery packs were exposed to temperature extremes.	Allow time for the battery pack(s) to return to room temperature.
	Battery packs are at the end of their life.	Replace the battery pack(s).
	Battery packs are already fully charged.	Use the battery pack(s) without attempting to fast charge.
Every time the computer is turned on, I have to set the date and time.	Real-time clock battery is at the end of its life.	Call your Compaq authorized service provider to replace the real-time clock battery.

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Battery Problems and Solutions *Continued*

Problem	Possible Cause	Solution
Battery charge doesn't last as long as expected.	Battery packs are being exposed to high temperatures.	Keep computer at a cooler temperature and recharge battery pack(s).
	Battery packs are being exposed to cold temperatures.	Put computer in a warmer place and recharge battery pack(s).
	Battery packs have partially self-discharged.	Recharge the battery pack(s).
	Battery conservation is disabled or set to "None."	Press Fn+F7 to set a new battery conservation level.
	An external device (such as a CD-ROM or PC Card) is draining the battery.	Turn off or remove the external device when it is not in use.
Battery packs are warm to the touch after charging.	Warming occurs due to charging.	No action is required.

NOTE: Store the battery pack in a cool, dry place when not in use. High temperatures reduce the life of the battery pack and cause it to lose its charge more quickly. If you are storing the battery for less than one month, the recommended storage temperature is 32°F to 122°F (0°C to 50°C); for no more than three months, the recommended temperature is 32°F to 104°F (0°C to 40°C); for an unlimited time, the recommended temperature is 32°F to 86°F (0°C to 30°C).

Solving Diskette/Diskette Drive Problems

Some common causes and solutions for diskette/diskette drive problems are listed in the following table:

Diskette/Diskette Drive Problems and Solutions		
Problem	Possible Cause	Solution
Diskette drive cannot write to a diskette.	Diskette is write-protected.	Disable the write-protect feature or use a diskette that is not write-protected.
	Computer is writing to the wrong drive.	Check the drive letter in the path statement.
	Not enough space is left on the diskette.	Use a larger diskette.
	Diskette drive has been disabled.	Enable diskette drive through the Device Manager in the Systems icon on the Control Panel or through F10 setup. See the online Compaq <i>Reference Guide</i> .
	Diskette is not formatted.	Format the diskette.
Diskette drive cannot read a diskette.	Wrong type of diskette is being used.	Use the type of diskette required by the drive.
	Diskette has a bad sector.	Copy files to hard drive or another diskette. Reformat the bad diskette.
	Diskette has been disabled.	Enable diskette via the Device Manager in the Systems icon on the Control Panel or through F10 setup.
	Diskette is not formatted.	Format the diskette.

Solving Hard Drive Problems

Some common causes and solutions for hard drive problems are listed in the following table. Chapter 13, *Diagnostics*, also may help you solve hard drive problems.



CAUTION: Remove or install the hard drive only when the computer is off, unplugged, and the battery pack is removed. Do not remove or install a hard drive while the computer is on, in Suspend, or in Hibernation.

Hard Drive Problems and Solutions

Problem	Possible Cause	Solution
Reading the hard drive takes an unusually long time after restarting the computer.	System entered Hibernation due to low-battery condition and is now exiting from it.	Give the system time to restore the previously saved data to its exact state before Hibernation.
Hard drive error occurs.	Hard drive has bad sectors or has failed.	Run ScanDisk utility; check the box "Automatically fix." Reformat the hard drive. Contact your Compaq authorized service provider.
Newly installed hard drive does not work.	Hard drive is not seated properly.	Turn off and unplug the computer. Remove the battery pack. Remove and reinstall the hard drive.
	Hard drive was removed and replaced while computer was on, in Suspend, or in Hibernation.	Turn off the computer; then turn it on again. Before removing the hard drive, make sure computer is off, unplugged, and the battery pack is removed.



CAUTION: You should maintain an up-to-date backup of your hard drive at all times in case of errors or failures.

Solving Hardware Installation Problems

Some common causes and solutions for hardware installation problems are listed in the following table.

Hardware Installation Problems and Solutions		
Problem	Possible Cause	Solution
New device is not recognized as part of the computer system.	Suspend was not initiated before device was connected.	Initiate Suspend, connect the device, and then exit Suspend.
	The system did not automatically configure the new device.	Check the documentation that came with the new device to determine if any device drivers are necessary. If so, install the correct device drivers. To view the status, change drivers, or change the configuration, go to the Device Manager in the Systems icon on the Control Panel. Click the plus sign next to the type of hardware, then double-click the hardware to view the device configuration.
	Cables of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected.
	Power switch of new external device is not turned on.	Place the computer in Suspend by pressing the suspend button. Turn on the new external device. Press the suspend button again to exit Suspend. This enables the system to recognize the device.
	Device is not seated properly.	Turn off the computer and reinsert the device.

Solving Keyboard and Embedded Numeric Keypad Problems

Some common causes and solutions for keyboard and embedded numeric keypad problems are listed in the following table.

NOTE: Consult the online *Compaq Reference Guide* on the use of the **NumLk** key and the embedded numeric keypad.

Solving Keyboard and Numeric Keypad Problems		
Problem	Probable Cause	Solution
Embedded numeric keypad on the computer keyboard is disabled.	Num Lock function is not turned on.	Press Fn+End/NumLk to enable the Num Lock function and embedded numeric keypad.
External keyboard does not work.	Keyboard may not be securely connected or may be connected to the wrong external connector.	Ensure that the external keyboard is securely connected to the external keyboard connector.
Keyboard and pointing device are locked.	You initiated QuickLock.	Enter your power-on password to exit QuickLock. NOTE: If Num Lock is on (the embedded numeric keypad is active), hold down the Fn key while typing to enter a non-numeric password; pressing Fn temporarily toggles Num Lock off. Press Fn+Shift to type any uppercase characters.

Solving Memory Problems

Some common causes and solutions for memory problems are listed in the following table.

Memory Problems and Solutions		
Problem	Possible Cause	Solution
Memory count during Power-On Self-Test (POST) is incorrect.	Optional memory expansion boards are installed incorrectly.	Ensure that the memory expansion boards have been installed correctly.
"Out of Memory" message is displayed on the screen, or insufficient memory error occurs during operation.	System ran out of memory for the application.	Check the application documentation for memory requirements and add more memory if needed. Install additional memory.
	Too many terminate-and-stay resident (TSR) applications are running at the same time.	Disable any TSR applications you do not need.

Running the Monitor Self-Test

You can perform a "self-test" on an external VGA color or monochrome monitor by disconnecting the monitor from the computer. To do so, complete the following steps:

1. Turn off the monitor.
2. Turn off the computer.
3. Disconnect the monitor signal cable from the computer.
4. Turn on the monitor and allow it to warm up for one minute.
5. The screen should be white. A narrow black border may also appear on the left and right sides of the monitor screen. Either condition indicates that the monitor is working properly.

Solving PC Card Problems

Some common causes and solutions for PC Card problems are listed in the following table.

PC Card Problems and Solutions		
Problem	Possible Cause	Solution
The computer does not beep when a PC Card is inserted.	Card is not inserted properly.	Ensure the card is inserted correctly. Remove and reinsert the card. Insert the card gently to avoid damaging the pins.
	Card or card driver is not compatible with your computer.	Refer to the documentation that came with your PC Card. Contact your Compaq authorized dealer, reseller, or service provider for a list of PC Cards supported by Compaq. See Chapter 10, <i>Understanding Software and Upgrades</i> , to see the Compaq PC Card logo designed for Compaq-supported cards.
PC Card does not work.	Card is not fully inserted into the slot or is not inserted properly.	Ensure the card is inserted in the correct orientation, or remove and reinsert.

Continued

PC Card Problems and Solutions *Continued*

Problem	Possible Cause	Solution
Fax/modem PC Card does not work.	You are trying to access the card using the wrong COM port.	Right click My Computer on the Windows desktop. Left click Properties, then Device Manager, and double-click Port Settings to view the COM port settings.
	Telephone cord is not plugged in all the way.	Check and secure telephone cord connection.
Network PC Card does not work.	Network driver is not set up properly or resources are not available for this configuration.	Refer to the documentation that came with your network PC Card. Refer to the online Compaq <i>Reference Guide</i> .
Storage memory card does not work.	Card is not compatible.	Contact Compaq Customer Support or a Compaq authorized service provider for a list of PC Cards tested successfully in Compaq computers. Look for the Compaq PC Card Solution Logo on PC Cards.

Solving Power Problems

Some common causes and solutions for power problems are listed in the following table. The *Solving Battery Problems* section in this chapter also may be helpful.

Power Problems and Solutions		
Problem	Possible Cause	Solution
Computer won't turn on when battery packs are not inserted.	Computer is not connected to a power source.	Insert battery pack(s) or connect to AC Adapter, Automobile Adapter, or convenience base.
	Cables to the external power source are unplugged.	Ensure that cables connecting computer and external power source are plugged in properly.
Computer won't turn on when plugged in and battery packs are inserted.	Battery pack(s) may be defective.	Remove battery pack(s), insert another battery pack, and turn on computer again.
Computer beeped and battery charge indicator is blinking.	Computer has entered a low-battery condition.	Immediately save any open files. Then do one of the following: <ul style="list-style-type: none">■ Connect the computer to an external power source to charge the battery pack(s).■ Initiate Hibernation to completely halt the drain on the battery until you can charge the battery pack(s) or find another power source.
Computer turned off while it was left unattended and power indicator is off.	System initiated Hibernation due to a low-battery condition.	Replace the battery pack(s) with fully charged batteries or connect the computer to an external power source. Then turn on the computer.
	System initiated Hibernation due to user's power specifications.	Click the Hibernation tab on the Power icon to adjust settings.

Solving Printer Problems

Some common causes and solutions for printer problems are listed in the following table.

Printer Problems and Solutions		
Problem	Possible Cause	Solution
Printer won't turn on.	The cables may not be connected properly, or the printer is unplugged.	Ensure that the cables are properly connected and that the AC Adapter is connected to the electrical outlet.
Printer won't print.	Printing device is not selected.	Select the printer in Windows Printer Setup.
	Printer is not turned on.	Turn on the printer.
	Printer is not online.	Set the printer to online.
	Printer driver for your application is not installed.	Double-click the Printers icon on the Control Panel on the Start menu. Double-click Add Printer and follow the instructions on the screen.
	Printer that is set up for a network is not connected to the network.	Connect the printer to the network.
Printer cable is too long, unshielded, or defective.		Replace the cable.
Printer is offline.	Paper tray is empty.	Fill the paper tray with paper. Set the printer to online.
Printer prints garbled information.	Correct printer driver is not installed.	Double-click the Printers icon on the Control Panel on the Start menu. Follow the instructions on the screen.
	Cable is not connected properly.	Ensure that the printer cable is connected properly to the computer or Mobile CD Expansion Unit (MCD).

If you experience problems printing, run a printer self-test. Refer to the documentation provided with your printer for instructions. If the self-test fails, it is a printer-specific problem. The printing section of your application software documentation may also be helpful.

Solving Display Screen Problems

Some common causes and solutions for display screen problems are listed in the following table.

Display Screen Problems and Solutions		
Problem	Possible Cause	Solution
Characters are dim.	Brightness/Contrast controls not properly set.	Press hotkeys Fn+F9 to adjust contrast. On models with a passive matrix display, you can also press Fn+F10 to adjust brightness.
	Computer screen is in direct light.	Tilt display or move computer.
Screen is blank.	You may have a screen blanking utility installed.	Press any key and/or enter your password.
	Brightness/contrast needs adjusting.	Use the hotkeys to adjust the brightness/contrast. NOTE: On models with color TFT displays, contrast is not applicable.
	Screen has overheated.	If computer is in direct sunlight, move it and allow it to cool off.
Screen is blank and the power/suspend indicator is blinking.	System is in Suspend.	Press the suspend button to exit Suspend.
	System is in Suspend and QuickLock/QuickBlank has initiated.	Exit Suspend and enter your power-on password.

Continued

Solving Software Application Problems

Most software application or installation problems occur because of one or more of the following conditions:

- Application was not installed correctly.
- Memory was not allocated correctly.
- Conflict exists between applications.

Software Application Problems and Solutions

Problem	Probable Cause	Solution
Cannot use an application.	The application has not been added to the PATH statement.	Using Windows Notepad, add the application directory with the full path name to the <i>AUTOEXEC.BAT</i> file.
Insufficient memory to run application.	System ran out of memory for the application.	Check the application documentation for memory requirements. Install additional memory.

Solving Sound Problems

Some common causes and solutions for sound problems are listed in the following table.

Sound Problems and Solutions

Problem	Possible Cause	Solution
Computer beeps after you turn it on.	This is normal; it indicates successful completion of the POST.	No action is required.
Computer does not beep after the Power-On Self-Test (POST).	Computer volume is turned down.	Use the Fn+F5 hotkeys and the arrow keys to turn up the volume.

Solving Pointing Device Problems

Some common causes and solutions for trackball and mouse problems are listed in the following table.

Pointing Device Problems and Solutions		
Problem	Possible Cause	Solution
External serial mouse does not work	The computer was not shut down before connecting the device.	Shut down the computer. Connect the device. Reboot.
	Incorrect or no device driver is installed.	To view the pointing device driver, access the Start menu via the keyboard by pressing Ctrl+Esc . Use the arrow keys to get to Settings, then Control Panel, and press Enter . Use arrow keys to select the System icon and press Enter . Use the arrow keys to access Device Manager. Use the Tab key to get to the computer icon and the arrow keys to select the mouse. Press the right arrow to access the hardware. Tab to the Properties button and press the Space bar. Use the right arrow to get to the Driver tab and follow the instructions on the screen.

Continued

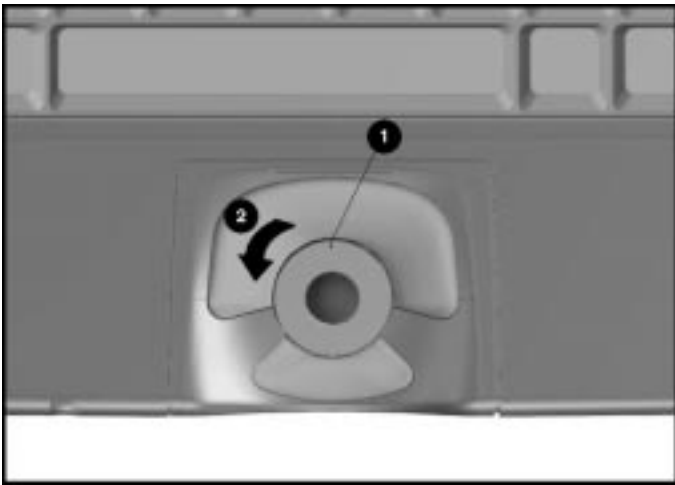
Pointing Device Problems and Solutions *Continued*

Problem	Possible Cause	Solution
Touchpad or trackball does not work.	An external PS/2 mouse or other pointing device is connected to the computer, and the system disabled the touchpad or trackball.	Press the suspend button to place the computer in Suspend. Disconnect the mouse or other pointing device, then press the suspend button again to exit Suspend. Press Shut Down on the Start menu to turn off the computer. Disconnect the mouse or other pointing device, then press the power button again to reboot.
Device driver is loaded but pointing device doesn't work.	Wrong pointing device is selected.	To select the right pointing device, access the Start menu via the keyboard by pressing Ctrl+Esc . Use the arrow keys to get to Settings, then Control Panel, and press Enter . Use arrow keys to select the Mouse utility. Double-click the icon and follow the directions on the screen.
Cursor skips or moves abnormally when using a pointing device.	The pointing device needs cleaning.	Clean the pointing device. Refer to Chapter 4, <i>Working with Pointing Devices</i> for instructions on cleaning the touchpad. Or see <i>Cleaning the Trackball</i> in this chapter.

Cleaning the Trackball

Operate the trackball with clean hands. Under normal conditions, you only need to wipe the computer case and trackball with a dry soft cloth. If the cursor begins to skip or move abnormally when using the trackball, follow these steps to remove and clean it:

1. Turn off the computer by pressing Shut Down from the Start menu.
2. Remove the battery packs and disconnect the AC Adapter if it is plugged in.
3. Loosen the retaining ring by placing a pen in the hole ❶ on the ring and turning it ❷ about 20 degrees counterclockwise.



Removing the Retaining Ring and the Trackball

4. Remove the retaining ring and ball from the housing.
5. Gently clean the ball with tap water or isopropyl alcohol. Then rinse with water and dry it with a lint-free cloth.



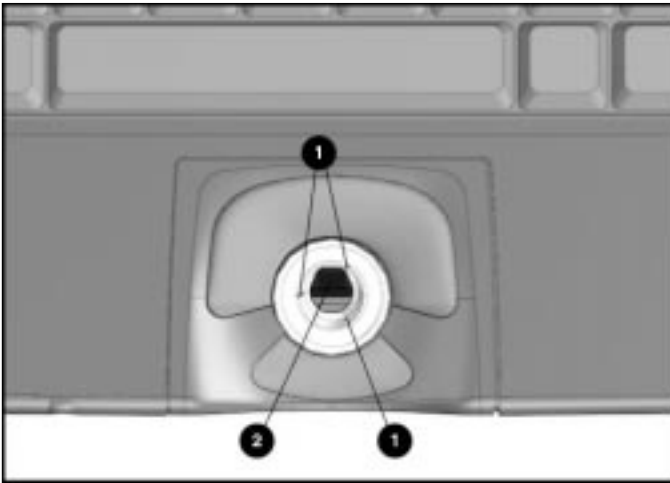
CAUTION: To avoid damage to the trackball, do not use an abrasive cleaner on it.

6. Before replacing the ball, clean the trackball assembly. Refer to *Cleaning Inside the Trackball Assembly*.

Cleaning Inside the Trackball Assembly

To remove dust and buildup on the inside surfaces of the trackball:

1. Turn off the computer. Remove battery packs. Disconnect external devices. Remove the trackball.
2. Remove any large particles of debris that have fallen into the trackball housing.
3. Dip a cotton swab in isopropyl alcohol and squeeze off the excess liquid.
4. Carefully wipe inside the cage to remove residue from the surfaces. Clean the ball bearings ❶ by rubbing with the swab. Do not attempt to remove the bearings. Do not use alcohol on the sensor window ❷. Instead, gently wipe the sensor window with a soft, dry, lint-free cloth until all debris is removed.



Cleaning Inside the Trackball



CAUTION: To avoid damage to the computer, do not use alcohol on the sensor window.

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Preparing for a Call to Customer Support

If you tried to solve the problem yourself and have not been successful, a call to Compaq Customer Support or a Compaq authorized reseller or service provider may be necessary. (To get help from Compaq Customer Support or to find a Compaq authorized reseller or service provider location, call one of the numbers in the *Worldwide Telephone Numbers* in Chapter 1.)

Before you place a call, run Compaq Diagnostics and print out the hard copy results for reference, if possible.

You should have the following information ready so that the customer support representative can provide you with the fastest possible solution when you call.

- Product name
- Product model number
- Product serial number (located on the bottom of the computer)
- Purchase date
- Conditions under which the problem occurred
- Any error messages that have occurred
- Hardware configuration
- Type of printer connected
- Hardware/software you are using
- Printed results from running Compaq Diagnostics for Windows

POST Error Messages

The following table lists selected error codes that you may encounter during the Power-On Self-Test (POST). The POST occurs after you first turn on the computer. A successful POST is followed by one or two short beeps.

If one of the error codes listed below is displayed on the screen during POST, follow the instructions in the recommended action. If you receive an error code not listed here, contact your Compaq authorized service provider. You also may wish to run Computer Checkup; see Chapter 13, *Diagnostics*, for information about this utility.

NOTE: If QuickBoot is enabled, the POST is minimized to hasten your start-up time.

POST Error Codes			
Error Code	Beeps	Probable Cause	Action
162-System Options Error	2S	Configuration error	Run Computer Checkup (See Chapter 13.)
162-System Options Not Set	2S	Configuration incorrect	Run Computer Checkup (See Chapter 13.)
162-System Options Not Set (Run SETUP)	2S	CMOS reflects that an invalid configuration has been set	Run Computer Checkup (See Chapter 13.)
163-Time & Date Not Set	2S	Invalid time	Run Computer Checkup (See Chapter 13.)
164-Memory Increase Detected	2S	Discrepancy in the memory size found compared to the one stored in CMOS	No action is required

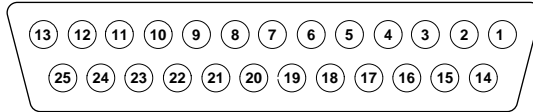
Continued

Post Error Codes *Continued*

Error Code	Beeps*	Probable Cause	Action
164-Memory Decrease Detected	2S	Discrepancy in the memory size found compared to the one stored in CMOS	If you removed a memory expansion board prior to turning on the computer, no action is required. Otherwise, contact a Compaq authorized service provider.
208-Invalid Memory Expansion Board	None	The memory expansion board is an invalid type	Replace memory expansion board.
605-Diskette Drive Error	None	Mismatch in drive type	Run Computer Checkup. (See Chapter 13.)
605-Diskette Drive Type Error (Run SETUP)	2S	Disk type does not match the drive	Run Computer Checkup. (See Chapter 13.)
1150-COMM Port Configuration Error	2S	Added or removed modem, or serial interface board	Run Computer Checkup. (See Chapter 13.)
Audible	1S	Power-on successful	None.
Audible	2S	Power-on successful	None.
(Resume="F1" Key)	None	As indicated to continue	Press F1 key.

Connector Pin Assignments

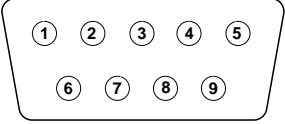
Parallel Connector




Pin	Signal
1	Strobe*
2	Data Bit 0
3	Data Bit 1
4	Data Bit 2
5	Data Bit 3
6	Data Bit 4
7	Data Bit 5
8	Data Bit 6
9	Data Bit 7
10	Acknowledge*
11	Busy
12	Paper Out
13	Select
14	Auto Linefeed*
15	Error*
16	Initialize Printer*
17	Select In*
18	Ground
19	Ground
20	Ground
21	Ground
22	Ground
23	Ground
24	Ground
25	Ground

* = Active low

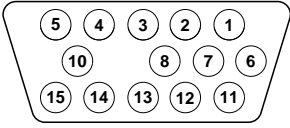
Serial Connector

Connector	Pin	Signal
	1	Carrier Detect
	2	Receive Data
	3	Transmit Data
	4	Data Terminal Ready
	5	Ground
	6	Data Set Ready
	7	Ready to Send
	8	Clear to Send
	9	Ring Indicator

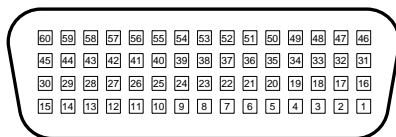
Keyboard/Mouse Connector

Connector	Pin	Signal
	1	Data
	2	Reserved
	3	Ground
	4	+ 5V
	5	Clock
	6	Reserved

External VGA Monitor Connector

Connector	Pin	Signal
	1	Red Analog
	2	Green Analog
	3	Blue Analog
	4	Not Connected
	5	Ground
	6	Ground Analog
	7	Ground Analog
	8	Ground Analog
	9	Not Connected
	10	Ground
	11	Not Connected
	12	Not Connected
	13	Horizontal Synch
	14	Vertical Synch
	15	Not Connected

Docking Base Connector



Pin	Signal	Pin	Signal
1	Standby Switch	31	Ground
2	Ground	32	Ground
3	Ground	33	Ground
4	EICARD	34	EIDRT
5	EIARI	35	Ground
6	EIADSR	36	EIACTS
7	Keyboard Data	37	Ground
8	Keyboard Clock	38	Ground
9	Mouse Clock	39	Ground
10	Printer Busy	40	Printer Data 7
11	Printer PE	41	Ground
12	Printer Autofeed	42	Printer Data 4
13	Printer Error	43	Ground
14	Printer Data 1	44	Printer Data 1
15	+DCIN	45	+DCIN
16	BATLED	46	CRT Blue
17	CRT-VSYNC	47	CRT Green
18	CRT-HSYNC	48	CRT Red
19	Ground	49	EIATXDAT
20	EIARTS	50	EIARXDAT
21	Ground	51	Ground
22	Ground	52	Ground
23	Ground	53	Mouse Data
24	Printer Strobe	54	Printer ACK
25	Ground	55	Printer Data 6
26	Printer Select	56	Printer Data 5
27	Ground	57	Printer Data 3
28	Printer Initialize	58	Printer Data 2
29	Ground	59	Printer Data 0
30	+DCIN	60	+DCIN

PC Card (PCMCIA) Connector

Pin	Signal	Pin	Signal
1	Ground	24	Address bit 5
2	Data bit 3	25	Address bit 4
3	Data bit 4	26	Address bit 3
4	Data bit 5	27	Address bit 2
5	Data bit 6	28	Address bit 1
6	Data bit 7	29	Address bit 0
7	Card enable 1	30	Data bit 0
8	Address bit 10	31	Data bit 1
9	Output enable	32	Data bit 2
10	Address bit 11	33	Write protect/IO Port is 16-bit
11	Address bit 9	34	Ground
12	Address bit 8	35	Ground
13	Address bit 13	36	Card detect 1
14	Address bit 14	37	Data bit 11
15	Program/Write enable	38	Data bit 12
16	Ready or busy/ Interrupt request	39	Data bit 13
17	Power	40	Data bit 14
18	Programming and peripheral supply 1	41	Data bit 15
19	Address bit 16	42	Card enable 2
20	Address bit 15	43	Refresh
21	Address bit 12	44	IO Read
22	Address bit 7	45	IO Write
23	Address bit 6	46	Address bit 17

Continued

PC Card (PCMCIA) Connector *Continued*

Pin	Signal	Pin	Signal
47	Address bit 18	58	Card reset
48	Address bit 19	59	Extend bus cycle
49	Address bit 20	60	Input port acknowledge
50	Address bit 21	61	Register select and IO enable
51	Power	62	Battery voltage detect 2/Audio digital waveform
52	Programming and peripheral supply 2	63	Battery voltage detect 1/Card status changed
53	Address bit 22	64	Data bit 8
54	Address bit 23	65	Data bit 9
55	Address bit 24	66	Data bit 10
56	Address bit 25	67	Card detect 2
57	Reserved	68	Ground

Power Cord Set Requirements

The wide-range input feature of your AC Adapter permits it to operate from any line voltage between 100 to 240 volts AC.

The power plug or power cord set (appliance coupler, flexible cord, and wall plug) you received with your AC Adapter meets the requirements for use in the country where you purchased your computer.

Power cord sets for use in other countries must meet the requirements of the country where you use the AC Adapter. For more information on power cord set requirements, contact your Compaq authorized dealer.

General Requirements

The requirements listed below are applicable to all countries:

1. The length of the power cord set must be at least 6.00 feet (1.8 m) and a maximum of 9.75 feet (3.0 m).
2. All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
3. The power cord set must have a minimum current capacity of 2.5A and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system.
4. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C5 connector, for mating with appliance inlet on the AC Adapter.

Country-Specific Requirements

Power Cord Set Requirements		
Country	Accredited Agency	Applicable Note Numbers
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	JIS	3
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2

Electrostatic Discharge

A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

Preventing Electrostatic Discharge

To prevent electrostatic damage, observe the following precautions:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding Methods

There are several methods for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts.

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper ground, wear the strap directly against the skin.
- Use heelstraps, toestraps, or bootstraps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.

Regulatory Agency Identification Numbers

The following options have been evaluated for use with your computer. These Compaq approved options can be identified by their assigned series numbers that are listed below. To ensure continued reliable and safe operation of your computer, only these options should be used.

Regulatory Agency Identification Numbers	
Options	Series Numbers
Notebook CPUs	2870, 2870A, 2870B, 2870C
Notebook CPU with Display Upgrade	2870B UD, 2870C UD
Convenience Base	2875A
Convenience Base - Ethernet	2875
Extended Life NiMH Battery Pack	2831A
Automobile Adapter	2874
Display Upgrade	2870 D-Conv
AC Adapter	2872, 2872A
Mobile CD Expansion Unit	2876
External Battery Charger	2873
Modular Battery Pack	2871B, 2871C, 2871E
Handle Battery Pack	2871, 2871A, 2871D

Specifications

This appendix provides physical and performance specifications for subassemblies of the computer:

- Computer
- Displays (Color STN and TFT)
- Diskette Drive
- Hard Drives
- AC Adapter
- Auto Adapter
- Battery Pack

Computer		
	U.S.	Metric
Dimensions		
Height	1.49 in	37.85 mm
Depth	10.20 in	259.48 mm
Width	11.40 in	289.56 mm
Weight (w/o battery Handle)		
	4.94 lbs	2.24 kg
Weight (w/battery Handle)		
	5.95 lbs	2.70 kg
Stand-Alone (Battery)		
Power Requirements		
Operating Voltage	100 to 240 VAC RMS	100 to 240 VAC RMS
Operating Current	1.10 A RMS	1.10 A RMS
Operating Frequency Range	50 to 60 Hz AC	50 to 60 Hz AC
Maximum Transient	4/50 kV	4/50 kV
Environmental Requirements		
Temperatures		
Operating	5 to 95 °F	10° to 35°C
Nonoperating	-4° to 140°F	-20° to 60°C
Relative Humidity		
Operating	10% to 90%	10% to 90%
Nonoperating	5% to 95%	5% to 95%

Color STN Display		
	U.S.	Metric
Dimensions (display size)		
Height	6.3 in	16.0 cm
Width	8.4 in	21.3 cm
Number of Colors	256	
Color Palette	256 K	
Contrast Ratio	20:1	
Brightness	70 CD/M ² @ 4.0mA	
Pixel Resolution		
Pitch	0.264 x 0.264 mm	
Format	800 x 600	
Configuration	RGB Stripe	
Backlight	Edge-Lit	
Character Display	80 x 25	
Total Power Consumption	3.4 W (Maximum)	

Color TFT Display		
	U.S.	Metric
Dimensions (display size)		
Height	6.3 in	16.0 cm
Width	8.4 in	21.3 cm
Number of Colors	256	
Color Palette	256 K	
Contrast Ratio	100:1	
Brightness	70 CD/M ² @ 4.0 mA	
Pixel Resolution		
Pitch	0.264 x 0.264 mm	
Format	800 x 600	
Configuration	RGB Stripe	
Backlight	Edge-Lit	
Character Display	80 x 25	
Total Power Consumption	3.2 W (Maximum)	

Diskette Drive

Diskettes

Size	3.5 in (8.9 cm)
High Density (MB)	1.44
Low Density (KB)	720

Light None

Height 0.43 in (11 mm)

Bytes per Sector 512

Sectors per Track

High Density	18
Low Density	9

Tracks per Side

High Density	80
Low Density	80

Read/Write Heads 2

Average Access Time (ms)

Track-to-Track (high/low)	3/6
Average (high/low)	94/174
Settling Time (ms)	15
Latency Average (ms)	100

Hard Drives			
Model Standard Configurations	810 MB	1.08 GB	1.4 GB
Formatted Capacity			
Per Drive)			
Physical	815.9 MB	1.08 GB	1.044 GB
Logical	815.9	1.08	1.44
Drive Type	65	65	65
Drive Size			
Inches	4.0 x 2.740 x .5	4.0 x 2.740 x .5	4.0 x 2.740 x .5
Centimeters	100 x 70 x 12.7	100 x 70 x 12.7	100 x 70 x 12.7
Transfer Rate			
Media (MB/s)	27.4 to 54	27.4 to 54	39.5 to 61.8
Interface (MB/s)	16.6	16.6	16.6
Sector Interleave	1:1	1:1	1:1
Typical Seek Time (including settling)			
Single Track (ms)	4	4	4
Average (ms)	15	15	13
Full Stroke (ms)	24	24	23
Disk Rotational Speed (RPM)	3634	3634	4009
Physical Configuration			
Cylinders	3915	3915	4975
Data Heads	3	4	4
Sectors/Track	90-180	90-180	110-180
Bytes/Sector	512	512	512
Logical Configuration			
Cylinders	1581	2108	2796
Data Heads	16	16	16
Sectors/Track	63	63	63
Bytes/Sector	512	512	512
Buffer Size (KB)	128	128	96



AC Adapter		
	U.S.	Metric
Dimensions	5.0 x 3.0 x 1.3 in.	12.7 x 7.6 x 3.3 cm
Power Supply Ratings		
Rated Voltage Range	90 - 256 V AC	
Rated Input Current	<1.11 Amp	
Rated Input Frequency	47 to 63 Hz	
Maximum Output Voltage	+18.5 +/-0.25 V DC	
Maximum Output Current	40 to 42 W	

Lithium Ion Modular Battery Pack

	U.S.	Metric
Dimensions		
Height	0.77 in	19.6 mm
Length	5.34 in	135.6 mm
Width	4.35 in	110.0 cm
Weight		
	0.88 lb	399 g
Energy		
Voltage	14.4 V dc	
Amp-hour Capacity	2.8 Ah	
Watt-hour Capacity	40.0 Wh	
Environmental Requirements		
Operating temperatures	50°F to 104°F	10°C to 40°C
Nonoperating temperature	-12°F to 140°F	-30°C to 60°C

Lithium Ion Handle Battery Pack

	U.S.	Metric
Dimensions		
Height	0.89 in	15.2 mm
Length	11.00 in	279.0 mm
Width	1.53 in	38.8 cm
Weight		
	0.88 lb	399 g
Energy		
Voltage	14.4 V dc	
Amp-hour Capacity	2.8 Ah	
Watt-hour Capacity	40.0 Wh	
Environmental Requirements		
Operating temperatures	50°F to 104°F	10°C to 40°C
Nonoperating temperature	-12°F to 140°F	-30°C to 60°C

Nickel Metal Hydride Handle Battery Pack

	U.S.	Metric
Dimensions		
Height	0.89 in	15.2 mm
Length	11.00 in	279.0 mm
Width	1.53 in	38.8 mm
Weight		
	1.05 lb	457 g
Energy		
Voltage	12.0 V dc	
Amp-hour Capacity	2.1 Ah	
Watt-hour Capacity	25.0 Wh	
Environmental Requirements		
Operating temperatures	50°F to 104°F	10°C to 40°C
Nonoperating temperature	-4°F to 86°F	-20°C to 30°C

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