Maintenance and Service Guide
Compaq Presario Series Computers

Product Description

Troubleshooting

Illustrated Parts Catalog

Removal & Replacement Procedures

Jumper & Switch Information

Specifications

See the Notice for copyright and trademark information, and the Preface for symbol conventions and Technician Notes.

Click to download ZIP file of complete MSG to hard drive.

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To report a technical problem, contact your Regional Support Center or IM Help Center.
For content comments or questions, contact the Editor.

NOTICE

The information in this guide is subject to change without notice.

Online Maintenance and Service Guide
Compaq Presario 5400 Series Personal Computers

June 1999

PREFACE

This *Maintenance and Service Guide* is a troubleshooting guide that can be used for reference when servicing the Compaq Presario **Series Personal Computers.**
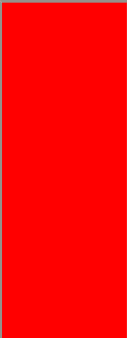
Compaq Computer Corporation reserves the right to make changes to the Compaq Presario **5400** Series Personal Computers without notice.

Symbols

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

	WARNING: Text set off in this manner indicates that failure to follow directions in the warning could result in bodily harm or loss of life.
CAU	**CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of data.

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.

Technician Notes

	WARNING: Only authorized technicians trained by Compaq should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly/module level repair. Because of the complexity of the individual boards and subassemblies, the user should not attempt to make repairs at the component level or to make modifications to any printed circuit board. Improper repairs can create a safety hazard. Any indications of component replacement or printed circuit board modifications may void any warranty.

Locating Additional Information

The following documentation is available to support this product:

- Compaq Presario documentation set
- *Introducing Windows 98 Guide*
- Service Training Guides
- Compaq Service Advisories and Bulletins
- *Compaq QuickFind*
- *Compaq Service Quick Reference Guide*
- *Compaq Help Center*

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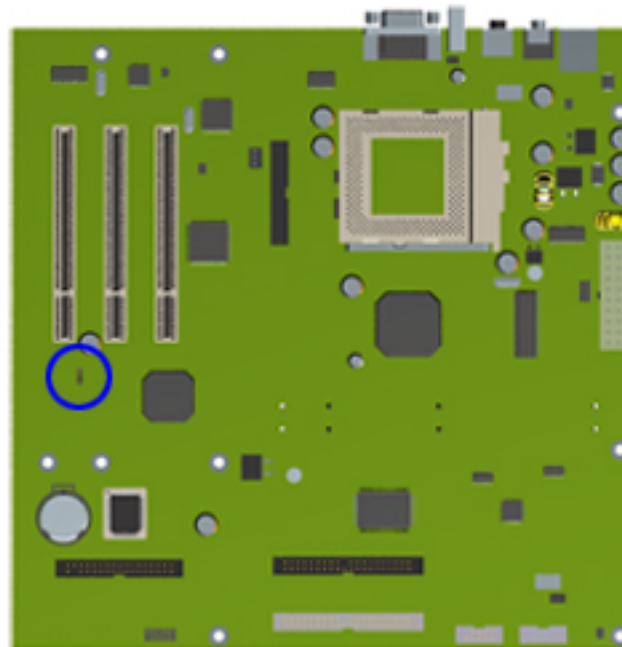
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TROUBLESHOOTING

Clearing CMOS

If the power-on password is unknown, clearing CMOS will disable the password and allow the computer to be operated.

The location of the Real-time Clock (RTC) battery is shown on the system board illustration below.

1   Complete the preparation for disassembly.

2   Remove the Left Side Easy access panel .

3   Remove the drive cage.

4   To disable the password, move the jumper (JP1) from pins 1-2 (normal) to pins 2-3 (clear CMOS) for 10 seconds, then return to pins 1-2.

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TROUBLESHOOTING

Power-On Self Test (POST)

POST is a series of diagnostic tests that run automatically when the system is turned on. After the computer is turned on, **POST** checks the following assemblies to ensure that the computer system is properly functioning:

- Keyboard
- System board
- Memory modules
- Video memory
- Diskette drives
- Hard drive
- Power supply

POST also detects the type of mass storage devices installed in the computer.

If **POST** finds an error in the system, an error condition is indicated by an audible and/or visual message. The table below gives explanations of the error codes and a recommended course of action.

NOTE:	An external speaker must be installed into the speaker output connector to hear audible beeps during **POST**.

Click a link below to find the probable cause and recommended action for a given error message.

Diskette Drive A Error	Keyboard Controller Error	System BIOS Shadowed
Extended RAM failed at offset *nnn*	Keyboard Error	System Cache Error
Failing Bits *nnn*	Operating System Not Found	System CMOS Checksum Bad
Fixed Disk 0 or 1 Failure	Parity Check 1	System RAM Failed at Offset, *nnn*
Fixed Disk Controller Failure	Parity Check 2	System Timer Error
Incorrect Drive A Type	Real Time Clock Error	UMB Upper Limit Segment Address *nnn*
Invalid NVRAM Media Type	System Battery is Dead	Video BIOS Shadowed

POST Messages

Error message	Probable Cause	Recommended Action
Diskette Drive A Error	Drive A: is present, but fails the BIOS POST diskette tests	1. Run Setup. 2. Replace the signal cables. 3. Replace the drive.
Extended RAM failed at offset *nnn*	Extended memory not working or not configured properly	1. Replace the memory modules. 2. Replace the system board.
Failing Bits *nnn*	*nnn* is a map of the bits at the RAM address which failed the memory test	1. Run Setup. 2. Replace the system board.
Fixed Disk 0 or 1 Failure	Hard drive is not working or not configured properly	1. Run Setup. 2. Replace the signal cable. 3. Replace the hard drive.
Fixed Disk Controller Failure	Hard drive is not working or not configured properly	1. Run Setup. 2. Replace the system board.
Incorrect Drive A Type	Type of diskette in drive A: not correctly identified	1. Run Setup. 2. Replace the diskette drive.
Invalid NVRAM Media Type	Problem with NVRAM (CMOS) access	Replace the system board.
Keyboard Controller Error	Keyboard, I/O keyboard controller (on system board), or mouse error	1. Replace the keyboard. 2. Replace the mouse. 3. Replace the system board.
Keyboard Error	Keyboard, I/O keyboard controller (on system board), or mouse error	1. Replace the keyboard. 2. Replace the mouse. 3. Replace the system board.
Operating System Not Found	Operating system cannot be located on either drive A: or C:	Run Setup.
Parity Check 1	Parity error found in the system bus	1. Run Setup. 2. Replace the memory modules. 3. Replace the system board.
Parity Check 2	Parity error found in the I/O bus	1. Run Setup. 2. Replace the ISA board (modem).
Real Time Clock Error	Real-time clock fails BIOS test	Replace the system board.
System Battery is Dead	RTC battery is dead	1. Replace the RTC battery. 2. Run Setup.
System BIOS Shadowed	System BIOS copied to Shadow RAM	Status message. No action required.
System Cache Error	RAM cache failed the BIOS test	Run Setup.
System CMOS Checksum Bad	CMOS is corrupted or modified incorrectly	Run Setup.
System RAM Failed at Offset, *nnn*	System RAM failed	Replace memory modules.
System Timer Error	DMA, timers, etc.	Replace the system board.
UMB Upper Limit Segment Address *nnn*	Displays the address *nnn* of the upper limit of Upper Memory Blocks, indicating released segments of the BIOS	Status message. No action required.
Video BIOS Shadowed	Video BIOS successfully copied to shadow RAM	Status message. No action required.

TROUBLESHOOTING

Configuration

This section explains how to use Setup and Compaq Utilities which should be accessed in the following instances:

- When a system configuration error is detected during the Power-On Self-Test (POST)
- To change factory default settings for some of the computer features
- To change the system configuration, which is sometimes necessary when you add or remove optional hardware
- To set system configuration features

Click a link below to go to the appropriate subsection.

Preparing the Computer

Setup

Accessing Compaq Utilities Options

View System Information (INSPECT)

Preparing the Computer

If you encounter an error condition, complete the following steps before starting problem isolation procedures:

1   Ensure proper ventilation. The computer should have a 3-inch (7.6 cm) clearance at the back of the system unit.

2   Turn off the computer and peripheral devices.

> **CAU** **CAUTION:** Always ensure that the power is off before disconnecting or reconnecting the mouse, keyboard, or any other peripheral devices. Disconnecting or connecting the keyboard or mouse while the unit power is on can damage the system board.

3   Disconnect any peripheral devices other than the monitor and keyboard. Do not disconnect the printer if you want to test it or use it to log error messages.

4   Install loop-back and terminating plugs for complete testing.

Setup

The Setup utility gives a snapshot of the computer's hardware configuration, aids in troubleshooting, and sets custom features. Setup recognizes a new internal component or an external device and automatically updates the configuration screens. Use the Setup utility to:

- Modify settings for audio, storage, power management, communications, and input devices
- Get an overall picture of the computer's hardware configuration
- Verify configuration parameters in determining problems
- Set time and date

Running Setup

To access the Setup utility, turn on the computer and press the **F10** key when the Compaq logo appears. A menu will appear on your screen.

> **NOTE:** The actual menu displayed on your computer may vary slightly, depending on your configuration.

Accessing Compaq Utilities Options

This section provides information about the menu options accessible from the **Compaq Utilities** menu.

Create a Compaq Utilities Diskette

A Compaq Utilities diskette must be created to troubleshoot the system. To create a Compaq Utilities diskette, complete the following steps:

1   Insert the *QuickRestore CD* into the CD drive.

2   From the Windows desktop, click on **Start,** then **Program,** then **Windows Explorer.**

3   Click on the CD drive icon.

4   Double-click on the **PCdiags** folder.

5   Insert a diskette in the diskette drive.

6   Double-click on the **QRST5.exe** icon.

7   Press **Enter** when the QuickRestore label appears.

8   After the CD has completed copying to the diskette, eject the *QuickRestore CD*.

Running Compaq Utilities

To run Compaq Utilities, turn on or reboot the computer with the Compaq Utilities diskette in the diskette drive. A menu will appear on your screen.

View System Information (INSPECT)

The View System Information (INSPECT) utility provides information about the system once it has been configured. INSPECT operates with MS-DOS and provides information about the system operating environment including:

- Contents of the operating system startup files
- Current memory configuration
- ROM version
- Type of processor and coprocessor
- Diskette and hard drives
- Active printer and communications interfaces
- Modem

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Diagnostic Error Codes

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Diagnostic error codes occur if the system recognizes a problem while running the Compaq Utilities program. These error codes help identify possibly defective subassemblies.

Tables listed on this page give possible error codes, descriptions of each error condition, and actions required to resolve the error condition.

IMPORTANT:	Retest the system after completing each step. If the problem has been resolved, do not proceed with the remaining steps.

For assistance in the removal and replacement of a particular subassembly, see *Removal and Replacement Procedures*.

100-xx	Processor	**1100-xx**	Serial	**3300-xx**	CD or DVD Drive
200-xx	Memory	**1200-xx**	Modem	**3300-xx**	CD-RW Drive
300-xx	Keyboard	**1700-xx**	Hard drive	**8600-xx**	Pointing device interface
400-xx	Parallel (printer)	**2400-xx**	Video		
600-xx	Diskette drive	**3200-xx**	Audio		

Keyboard error codes

Error Code	Description	Recommended Action
301-xx	Keyboard short test, 8042 self-test failed	The following steps apply to error codes 301-xx through 304-xx:
302-xx	Keyboard long test failed	1 Check the keyboard connection. If disconnected, turn the computer off and connect the keyboard.
303-xx	Keyboard LED test, 8042 self-test failed	2 Replace the keyboard and retest.
304-xx	Keyboard typematic test failed	3 Replace the system board and retest.

Modem error codes

Error Code	Description	Recommended Action
1201-xx	Modem Internal Loop-Back Test	The following steps apply to error codes 1201-xx through 1210-xx:
1202-xx	Modem Time-Out Error	1 Refer to modem documentation for correct Setup procedures.
1203-xx	Modem External Termination Test	2 Check the modem line.
1204-xx	Modem Auto Originate Test	3 Replace the modem and retest.
1206-xx	Dial Multifrequency Tone Test	
1210-xx	Modem Direct Connect Test	

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TROUBLESHOOTING

Diagnostic Error Codes (continued)

Hard drive error codes

Error Code	Description	Recommended Action
1700-xx	Hard drive ID types test failed	The following steps apply to error codes 1700-xx through 1799-xx:
1701-xx	Hard drive format test failed	1 Run Setup and verify drive type.
1702-xx	Hard drive read test failed	2 Replace the hard drive signal and power cables and retest.
1703-xx	Hard drive write/read/compare test failed	3 Replace the hard drive and retest.
1704-xx	Hard drive random seek test failed	4 Replace the system board and retest.
1705-xx	Hard drive controller test failed	
1706-xx	Hard drive ready test failed	
1707-xx	Hard drive recalibration test failed	
1708-xx	Hard drive format bad track test failed	
1709-xx	Hard drive reset controller test failed	
1710-xx	Hard drive park head test failed	
1714-xx	Hard drive file write test failed	
1715-xx	Hard drive head select test failed	
1716-xx	Hard drive conditional format test failed	
1717-xx	Hard drive ECC* test failed	
1719-xx	Hard drive power mode test failed	
1719-x	Hard drive power mode test failed	
1730-x	Fixed Disk 0 does not support DMA Mode	
1731-x	Fixed Disk 1 does not support DMA Mode	
1740-x	Fixed Disk 0 failed Set Block Mode command	
1741-x	Fixed Disk 1 failed Set Block Mode command	
1750-x	Fixed Disk 0 failed Identify command	
1751-x	Fixed Disk 1 failed Identify command	
1760-x	Fixed Disk 0 does not support Block Mode	
1761-x	Fixed Disk 1 does not support Block Mode	
1790-x	Disk 0 Configuration Error	
1792-x	Secondary Disk Controller Failure	
1799-xx	Invalid hard drive type failed	

Error Correction Code

Pointing device interface error codes

Error Code	Description	Recommended Action
8601-xx	Pointing Device Interface test failed	1. Replace with a working pointing device and retest. 2. Replace the system board and retest.

Audio error codes

Error Code	Description	Recommended Action
3206-xx	Audio System Internal Error	Replace the system board and retest.

CD-RW Drive error codes

Error Code	Description	Recommended Action
xxxx-xx	CD-RW drive	The following steps apply to error codes xxxx-xx through xxxx-xx and xxxx-xx: 1 2 3 4

CD or DVD Drive error codes

Error Code	Description	Recommended Action
3301-xx **3305-xx** **66XX-xx**	CD or DVD drive read test failed	The following steps apply to error codes 3301-xx through 3305-xx and 66XX-xx: 1 Replace the CD or DVD disk and retest.* 2 Check the jumper settings on the CD or DVD drive. 3 Check and/or replace the power and signal cables and retest. 4 Replace the CD or DVD drive and retest.

*** Boot to DOS (Command Prompt only) or Windows (Not Safe Mode). Press the CD or DVD drive eject button (located on the front bezel) to eject the CD or DVD and retest.**

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TROUBLESHOOTING

Troubleshooting Without Diagnostics

This section describes some simple, preliminary tests and guidelines for troubleshooting the computer.

Checklist For Solving Minor Problems

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

- Is the computer connected to a working power outlet?
- Is the computer turned on and the power light illuminated?
- Are all cables connected properly and seated?
- Are all of the necessary device drivers installed?
- Is the *CONFIG.SYS* file correct?
- Is the *AUTOEXEC.BAT* file (MS-DOS) or *STARTUP.CMD* file correct?
- Was a nonbootable diskette loaded in the diskette drive at power-up?
- Are all switch settings correct?
- Was Computer Setup run after installing options (memory, disk drives, etc.) and before installing industry standard architecture boards?

Quick checks and possible solutions for problems related to these topics:

Digital Dashboard	CD drive	Hard drive
Diskette drive	Hardware installation	USB ports
Power		

are provided in the tables below. The procedure for resolving hardware conflicts is also described.

CD drive		
Problem	**Probable cause(s)**	**Possible solution**
Cannot read compact disc.	CD is not properly seated in the drive.	Eject the CD, then re-insert it, pressing down on the CD firmly to correctly seat it in the drive.
	CD has been loaded upside down.	Eject the CD, turn it over, then reload.
	CD may be dirty or scratched.	Clean the CD or load another CD.
Cannot eject compact disc (tray-load only).	CD is not properly seated in the drive.	Turn off the computer, insert a straightened paper clip into the emergency eject hole, then push firmly. Slowly pull the tray out from the drive until the tray is fully extended, then remove the CD.
CD drive devices are not detected.	Power cycle delay.	After turning the computer off, wait 30 seconds before turning the computer on again.
	CD drive is not connected properly.	Open the computer and check to see that the drive cable is connected properly.
	Proper driver is not loaded	Restart the system and make sure the CD drive drivers are loaded.

DVD drive		
Problem	**Probable cause(s)**	**Possible solution**
Cannot read DVD disk	DVD or CD is not properly seated in the drive.	Eject the DVD or CD, press down on the DVD or CD firmly to correctly seat it in the drive, then reload.
	DVD or CD has been loaded upside down.	Eject the disk, turn it over, then reload.
	DVD or CD disk may be dirty or scratched.	Load another DVD disk.
DVD does not work in the DOS mode.	Proper drivers are not loaded.	Restart the system and make sure the DVD drive drivers are loaded.
Cannot eject DVD disk.	The system is in the Sleep mode.	Press the Power button to bring the system back to full power, then eject the DVD.
	The DVD, diskette, or hard drive was active when attempting to eject the DVD.	Wait until all drive activity ends (the CD/hard drive light and diskette drive light will go out), then try to eject the DVD.
	DVD disk is not properly seated in the drive.	Turn off the computer, insert a straightened paper clip into the emergency eject hole, then push firmly. Slowly pull the tray out from the drive until the tray is fully extended, then remove the DVD disk.
DVD drive devices are not detected.	DVD drive is not connected properly.	Open the computer and check to see that the drive cable is connected properly.
	Incorrect driver is installed.	Ensure the correct driver is installed in *CONFIG.SYS*.
	Drive has been changed.	Make sure the jumper setting is set for "Slave."
	Proper drivers are not loaded.	Restart the system and make sure the DVD drive drivers are loaded.

Digital Dashboard		
Problem	**Probable cause(s)**	**Possible solution**
Digital Dashboard displays component icons	Digital Dashboard has not detected system components.	When the power button is pressed, the computer will power-on. The LCD display will display the following icons: keyboard, mouse, and monitor. If any of these components are not detected, the icons will continue to be displayed. If these components are found, the icons will disappear.
Digital Dashboard display is blank	Check the power cable connection to the system board.	When the power cable is properly connected, the LCD display will display,"Push To Start."

Resolving Hardware Conflicts

Hardware conflicts occur when two or more peripheral devices attempt to use the same hardware resources. I/O addresses, interrupts, and DMA channels are the most common hardware resources used by peripheral devices.

Base I/O address	220H
Interrupt	IRQ 5
8-bit DMA	Channel 1

When different peripheral devices use the same hardware resources at the same time, the devices and/or the system may not function properly. You can resolve hardware conflicts by ensuring that no devices are configured to use the same hardware resources. These resources can either be dipswitch or jumper settings on the peripheral card or software configurable resources. The Computer Setup selection of your Compaq Utilities allows you to view and modify the settings for the peripheral devices factory installed in your system. Refer to the *User's Guide* for the particular peripheral cards you wish to install for information on how to view and select their settings.

To resolve hardware conflicts:

1 Change the hardware settings of your audio card or other peripheral card in your system if the peripheral card is using any settings used by the factory-installed devices.

2 If you are unsure of the settings of the peripheral cards, you can isolate the source of the problem by temporarily removing all cards not manufactured by Compaq, or resetting the default settings and running Compaq Utilities. After that, add the cards back one at a time until the card that is causing the conflict is found.

Also see: System

Clearing CMOS

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TROUBLESHOOTING

Troubleshooting Without Diagnostics (continued)

Hard drive		
Problem	**Probable cause(s)**	**Possible solution**
Hard drive error occurs.	Hard disk has bad sectors or has failed.	Run *Computer Setup*. Reformat the hard disk.
Drive not found.	Cable could be loose.	Check cable connections.
Disk transaction problem.	Either the directory structure is bad or there is a problem with a file.	From the desktop click on the **Start** menu. Choose *Program* ▶ *Accessories* ▶ *System Tools* ▶ *Scandisk* to check for problems. If problems exist, run Scandisk and checkmark the "Automatically fix errors" box at the bottom to correct the problems. If a large number of lost allocation units is found, click on the **Start** menu. Choose *Program* ▶ *Accessories* ▶ *System Tools* ▶ *Disk Defragmenter*.
Nonsystem disk message.	The system is trying to start from a diskette that is not bootable.	Remove the diskette from the diskette drive.
	The system is trying to start from the hard drive but the hard disk has been damaged.	Insert a bootable diskette into the diskette drive and restart the computer with **Ctrl**+**Alt**+**Del**.
	Diskette boot has been disabled in Computer Setup.	Run *Computer Setup* and enable diskette boot.
Hard drive operation seems slow **OR** **Hard drive activity light is not on, or stays on without blinking.**	The hard disk files may be fragmented.	From the desktop click on the **Start** menu. Choose *Program* ▶ *Accessories* ▶ *System Tools* ▶ *Scandisk* to check for problems. If problems exist, run Scandisk and checkmark the "Automatically fix errors" box at the bottom to correct the problems. If a large number of lost allocation units is found, click on the **Start** menu. Choose *Program* ▶ *Accessories* ▶ *System Tools* ▶ *Disk Defragmenter*.

Hardware installation		
Problem	**Probable cause(s)**	**Possible solutions**
A new device is not recognized as part of the computer system.	When the system advised you of changes to the configuration, you did not save the changes.	Reboot the computer and follow the instructions for saving the changes.
	The system may not have automatically recognized the new device.	Run *Computer Setup* and identify the new device.
	The cables for the new external device are loose, or the power cables are unplugged.	Check all cables.
	The power switch for the new external device is not turned on.	Turn off the computer, turn on the external device, and then turn on the computer to integrate the new device with the computer.

Power	
Problem	**Possible Solution**
Computer will not turn on.	Ensure that the computer is connected to a power source.
Computer does not automatically display the date and time.	The real-time clock (RTC) battery may need to be replaced. *Click here* for replacement procedures.
Computer does not beep during POST.	The speaker volume may have been turned down. Select the **Volume** option from the Control Panel and adjust the volume.
Computer powered off automatically.	The unit temperature may have been exceeded. Check the fan for function and blockage.

USB		
Problem	**Probable cause(s)**	**Possible solution**
Port 3 cannot work with any slow speed devices.	The device is plugged into the wrong port.	Check to see if the keyboard is plugged into Port 3. Ensure that the USB device is properly inserted into the port.
USB device does not work with the system.	The USB device and the system may use different USB architectures.	Ensure that the USB device and the system share the same USB architecture. (UHCI-compliant devices will only work with a UHCI-compliant system, and OHCI-compliant devices will only work with a OHCI-compliant system).

Diskette Drive		
Problem	**Probable cause(s)**	**Possible solution**
Diskette drive light stays on.	Diskette may be damaged.	From the desktop click on the **Start** menu. Choose **Program** ▶ **Accessories** ▶ **System Tools** ▶ **Scandisk** to check for problems.
	Diskette may be installed incorrectly.	Remove the diskette and reinsert.
	Software program may be damaged.	Check the program diskettes.
Diskette drive cannot write to a diskette.	Diskette is not formatted.	Format the diskette.
	Diskette is write-protected.	Either use another diskette that is not write-protected or disable the write protection on the diskette.
	Writing to the wrong drive.	Check the drive letter in your path statement.
	Not enough space is left on the diskette.	Use another diskette to write the information.
Diskette drive cannot read a diskette.	Diskette is not formatted.	Format the diskette.
	Using the wrong diskette type for the drive type.	Use a diskette that is compatible with the drive.
	Reading the wrong drive.	Check the drive letter in your path statement.
	Diskette drive has been disabled by *Computer Setup*.	Run *Computer Setup* and enable the diskette drive.

SPECIFICATIONS

System Specifications

General system specifications

System interrupts

System I/O

System memory

System DMA

General System Specifications

Dimensions	Information not Available	
Height	in	
Length	in	
Width	in	
Weight	lbs.	

Input Requirements

Nominal Line Voltage	115/230 VAC.
Range Line Voltage	90-132 VAC,180-264 VAC.
Line Frequency	47-63HZ
Input Current	4.5A RMS@Max Load

Power (watts)

Steady State	145W

Environmental Requirements

Temperature

Operating	50° to 95° F	10° to 35° C
Shipping	-4° to 140° F	-20° to 60° C

Humidity (noncondensing)

Operating	8% to 90%	8% to 90%
Nonoperating	5% to 95%	5% to 95%

Maximum Altitude (unpressurized)

Operating	10,000 ft	3048 m
Nonoperating	30,000 ft	9144 m

System Interrupts

Hardware IRQ	System Function
IRQ 0	System timer
IRQ 1	Motherboard resources
IRQ 2	Programmable interrupt controller
IRQ 3	ACPI IRQ Holder for PCI IRQ Steering
IRQ 3	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133) 4.11.01.1321
IRQ 4	Motherboard resources
IRQ 5	Intel(r) 82801AA SMBus Controller
IRQ 5	SoundMAX Integrated Digital Audio
IRQ 5	ACPI IRQ Holder for PCI IRQ Steering
IRQ 6	Standard Floppy Disk Controller
IRQ 8	System CMOS/real time clock
IRQ 9	SCI IRQ used by ACPI bus
IRQ 11	ACPI IRQ Holder for PCI IRQ Steering
IRQ 11	ACPI IRQ Holder for PCI IRQ Steering
IRQ 11	Texas Instruments OHCI IEEE 1394 Host Controller
IRQ 11	Intel(r) 82801AA USB Universal Host Controller
IRQ 12	Motherboard resources
IRQ 13	Numeric data processor
IRQ 14	Primary IDE controller (dual fifo)
IRQ 14	Intel(r) 82801AA Ultra ATA Controller
IRQ 15	Secondary IDE controller (dual fifo)
IRQ 15	Intel(r) 82801AA Ultra ATA Controller

System
Power supply/Fan Assembly
Diskette drive
Hard drives
CD or DVD and CD-RW drives
Mouse
Fax/modem

SPECIFICATIONS

System Specifications (continued)

General system specifications

Video memory

System interrupts

System I-O

System memory

System DMA

System I/O

I/O Address (Hex)	System Function (Shipping Configuration)
0000h-000Fh	Direct memory access controller
0010h-001Fh	Motherboard resources
0020h-003Fh	Programmable interrupt controller
0040h-0043h	System timer
004Eh-004Fh	Motherboard resources
0050h-0052h	Motherboard resources
0060h-0060h	Motherboard resources
0061h-0061h	System speaker
0064h-0064h	Motherboard resources
0070h-0071h	System CMOS/real time clock
0072h-0077h	Motherboard resources
0080h-008Fh	Direct memory access controller
0090h-009Fh	Motherboard resources
00A0h-00BFh	Programmable interrupt controller
00C0h-00DFh	Direct memory access controller
00F0h-00FFh	Numeric data processor
0170h-0177h	Secondary IDE controller (dual fifo)
0170h-0177h	Intel(r) 82801AA Ultra ATA Controller
01F0h-01F7h	Intel(r) 82801AA Ultra ATA Controller
01F0h-01F7h	Primary IDE controller (dual fifo)
0376h-0376h	Intel(r) 82801AA Ultra ATA Controller
0376h-0376h	Secondary IDE controller (dual fifo)
0390h-0397h	Motherboard resources
03B0h-03BBh	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133) 4.11.01.
03C0h-03DFh	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133) 4.11.01.
03F0h-03F5h	Standard Floppy Disk Controller
03F6h-03F6h	Primary IDE controller (dual fifo)
03F6h-03F6h	Intel(r) 82801AA Ultra ATA Controller
0400h-047Fh	Motherboard resources
04D0h-04D1h	Motherboard resources
0CF8h-0CFFh	PCI bus
2000h-20FFh	SoundMAX Integrated Digital Audio
2400h-243Fh	SoundMAX Integrated Digital Audio
2460h-246Fh	Intel(r) 82801AA Ultra ATA Controller
2460h-2467h	Primary IDE controller (dual fifo)
2468h-246Fh	Secondary IDE controller (dual fifo)
EE00h-EE7Fh	Motherboard resources
EE80h-EEBFh	Motherboard resources
EEC0h-EEDFh	Intel(r) 82801AA USB Universal Host Controller
EEE0h-EEEFh	Intel(r) 82801AA SMBus Controller

SPECIFICATIONS

System Specifications (continued)

General system specifications

Video memory

System interrupts

System I-O

System memory

System DMA

Memory Address	System Function
00000000h-0009FFFFh	System board extension for ACPI BIOS
000A0000h-000AFFFFh	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133)
000B0000h-000BFFFFh	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133)
000E0000h-000FFFFFh	System board extension for ACPI BIOS
00100000h-07FFFFFFh	System board extension for ACPI BIOS
40000000h-40003FFFh	Texas Instruments OHCI IEEE 1394 Host Controller
40000000h-403FFFFFh	Intel(r) 82801AA PCI Bridge
40300000h-403007FFh	Texas Instruments OHCI IEEE 1394 Host Controller
40400000h-4047FFFFh	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133)
44000000h-47FFFFFFh	Intel(R) 810e Chipset Graphics Driver (DC133 FSB133)
FFB80000h-FFBFFFFFh	System board extension for ACPI BIOS
FFF80000h-FFFFFFFFh	System board extension for ACPI BIOS

System DMA

Hardware	System Function (Default)
DMA 2	Standard Floppy Disk Controller
DMA 4	Direct memory access controller

SPECIFICATIONS

Power Supply/Fan Assembly	
	U. S.
Input Specifications	
Nominal Line Voltage	115 to 230 VAC
Range Input Line	90 to 264 VAC
Frequency Range	47 to 63 Hz AC
Input Current	115V 3.00 AMPS
Input Current	4.5A RMS@Max Load
Output Power	145 Watts
Inrush Current	80 A at 132 VAC (cold start)
Holdup Time	16 ms from zero

Environment	**Temperature Range**
Operating	10 to +50 ° C
Non-Operating	-40 to +66 ° C

Humidity	**Non Condensing**
Operating	20% to 90% RH
Storage	5% to 95% RH

SPECIFICATIONS

USB Mouse		
Dimensions	*U. S.*	*Metric*
Height		
Length		
Width		
Weight w/cable	4.59 oz	130 g
Base Resolution	400 dpi	15.8 dpmm
Tracking Speed (maximum)	10 in/sec	25 cm/sec
Temperature		
Operating	0° C to + 40° C	32° F to 104° F
Non-Operating	-20° C to + 60° C	4° F to 140° F
Lifetime		
Mechanical	Exceeds 300 miles	Exceeds 483 km
Switch	Exceeds 1 million operations	Exceeds 1 million operations
Relative Humidity	10% to 90%, noncondensing at ambient.	

System

Power Supply/Fan Assembly

Diskette drive

CD or DVD and CD-RW drive

Mouse

Fax/modem

SPECIFICATIONS

DVD Drive

Information for the DVD, CD, and CD-RW drives immediately follows.

8x DVD Drive

Dimensions	U. S.	Metric
Width	in	cm
Height	in	cm
Depth	in	cm
Weight	lb	kg
Modes Supported		
Block Size		
Center Hole		
Diameter		
Thickness		
Track Pitch		
Access Time		
Random		
Full Stroke		
Audio Output Level		
Line Out		
Headphone		
Cache Buffer		
Data Transfer Rate		
Sustained		
Burst		
Startup Time		
Stop Time		

CD Drive

Information for the 40x CD drive immediately follows.

40× CD Drive

Dimensions	U. S.	Metric
Width	in	cm
Height	in	cm
Depth	in	cm
Weight	lb	kg
Modes Supported		
CD-ROM	Mode 1 and Mode 2	
CD-DA	Audio	
CD-XA	Mode 2, Form 1 and 2	
Photo CD	Multiple Session	
Video-CDI	Multiple Session	
CD-Plus/CD-Extra/CD Enhanced	Multiple Session	
CD-RW	Multiple Session	
Block Size		
CD-ROM Mode 1 and Mode 2 Form 1 (XA)	2048 bytes 2336 bytes	
CD-ROM Mode 2	2324 bytes	
CD-DA	2324 bytes	
CD-XA		
Center Hole	1.5 mm diameter	
Diameter	120 mm / 80mm	
Thickness	1.2 mm	
Track Pitch	1.6 µm	
Access Time		
Random	< 95 ms	
Full Stroke	< 190 ms	
Audio Output Level		
Line Out	0.7 Vrms $\pm$ 20%	
Headphone	0.6 Vrms $\pm$ 20%	
Cache Buffer	256 KB	
Data Transfer Rate	Mode 1	Mode 2
Sustained	4800 KB/sec	5475 KB/sec
	KB/sec (32×)	KB/sec (32×)
Burst	MB/sec	MB/sec
Startup Time	< 5 sec	
Stop Time	< 5 sec	

CD-RW Drive

Information for the CD-RW drive immediately follows.

CD-RW Drive

Dimensions	U. S.	Metric
Width	in	cm
Height	in	cm
Depth	in	cm
Weight	lb	kg
Modes Supported		
CD-ROM	Mode 1 and Mode 2	
CD-DA	Audio	
CD-XA	Mode 2, Form 1 and 2	
Photo CD	Multiple Session	
Video-CDI	Multiple Session	
CD-Plus/CD-Extra/CD Enhanced	Multiple Session	
CD-RW	Multiple Session	
Block Size		
CD-ROM Mode 1 and Mode 2 Form 1 (XA)	2048 bytes 2336 bytes	
CD-ROM Mode 2	2324 bytes	
CD-DA	2324 bytes	
CD-XA		
Center Hole	1.5 mm diameter	
Diameter	120 mm / 80mm	
Thickness	1.2 mm	
Track Pitch	1.6 µm	
Access Time		
Random	< 95 ms	
Full Stroke	< 190 ms	
Audio Output Level		
Line Out	0.7 Vrms $\pm$ 20%	
Headphone	0.6 Vrms $\pm$ 20%	
Cache Buffer	256 KB	
Data Transfer Rate	Mode 1	Mode 2
Sustained	4800 KB/sec	5475 KB/sec
	KB/sec (32×)	KB/sec (32×)
Burst	MB/sec	MB/sec
Startup Time	< 5 sec	
Stop Time	< 5 sec	

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

SPECIFICATIONS

System

Power Supply/Fan Assembly

Diskette drive

Fax/modem

Mouse

DVD or CD and CD-RW drive

Fax/Modem	
General Description	
Support	Supports K56flex and/or ITU-T V.90 14400bps send and receive fax modem with automatic fallback to 12000, 9600, 7200, 4800, and 2400bps.
	Support fax service Class 1 (EIA/TIA 578). Support V.80 video ready modem. Built-in DTE interface with speed up to 115.2kbps or 57.6kbps, parallel 16550a UART-compatible interface. Power Management Registers to PCI Interface.
Data Mode	K56flex and/or ITU-T V.90 56kbits/s for highest Internet connection rates Ultrahigh compression throughput due to parallel access directly to the host PC. ITU-T V.34 extended rates 33600bps to 2400bps. V.32terbo, V.32bis and fallbacks. TIA/EIA 602 standard for AT command set. V.42 error correction (LAM and MNP). V.42bis and MNP Class 5 data compression.
Fax Mode	Fax modem send and receive rates up to 14400bps * V.17, V.29, V.27ter, and V.21 channel 2 * TIA/EIA 578 Class 1 FAX
Error Correction	ITU-T recommended V.42 error correction. V.42 error correction (LAM and MNP).

SPECIFICATIONS

System

Power Supply/Fan Assembly

DVD or CD and CD-RW drive

Diskette drive

Mouse

Fax/modem

Diskette Drive

Diskette

Size (in)	3.5 (8.89 cm)
High Density (MB)	1.44

Light	Green
Height	One-third
Bytes per Sector	512
Sectors per Track	
High Density	18

Tracks per Side

High Density	80
Low Density	80

Rotational Speed	300 RPM
Read/Write Heads	2
Average Seek Time (ms)	
Track-to-Track	3
Settling Time	15 (Max)

JUMPER & SWITCH INFORMATION - INDEX PAGE

System Board

CD and DVD and CD-RW Drive

Hard Drives

System board

Hard drives

CD or DVD and CD-RW drive

JUMPER & SWITCH INFORMATION

System Board Index

System Board Connectors

JUMPER & SWITCH INFORMATION

System Board Connectors

Function	Description
Video	15-pin VGA
Microphone in	Mini stereo
Audio Line out	Mini stereo
(2) DIMM sockets	168-pin DIMM
(3) PCI slots	32-bit PCI connector
Line in	Mini stereo
LCD Panel (Digital Dashboard)	10 pin header
Battery socket	2-pin socket
IDE drives	40-pin headers, key 20
Diskette drive	34-pin header
Fan with active heatsink	3-pin header
Power supply	20-pin header
USB (Used for Keyboard)	2 ports on Rear connector
	2 ports on Front 10 pin header
1394	2 ports on Front 10 pin header
Clear CMOS jumper	3 pin header

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

System board

Hard drives

CD or DVD and CD-RW drive

JUMPER & SWITCH INFORMATION

Hard Drives

Compaq Computer Corporation uses IDE hard disk drives that conform to two different device 0/device 1 implementations. These are Conner mode and ATA-compatible mode. These two modes are incompatible with one another.

IMPORTANT:	Jumper settings are shown on top of the hard drives.

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

System board

Hard drives

CD or DVD and CD-RW drive

JUMPER & SWITCH INFORMATION

CD and DVD Drive

Optical Device Type	CD
Optical Device Speed	40x
Optical Device Transfer Rate	From 2500 to 6000KB/s
Interface	ATAPI
Transport Type	Tray Load

CD-RW Drive

Optical Device Type	CD-RW
Device Recording Speed	4x Max
Device ReWrite Speed	2x Max
Device CD Read Speed	24x Max
Storage Capacity: Data	650MB
Storage Capacity: Music	74 Minutes
Interface	EIDE/ATAPI
Transport Type	Tray Load

REMOVAL & REPLACEMENT PROCEDURES - INDEX PAGE

This section provides general service information for Compaq Series Personal Computers. Adherence to the procedures and precautions described in this section is essential for safe and proper service.

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Top Access Panel

Rear Access Panel

Fax-Modem Board

Memory Module

Mass Storage Devices
Drive Cage
Hard drive
CD or DVD and CD-RW drive
Diskette drive

Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker Assembly

System Board and Components
RTC Battery
Processor/Heatsink Assembly

Chassis Base

REMOVAL & REPLACEMENT

Electrostatic Discharge (Return to Service Considerations)

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge (ESD) may not be affected at all and will work perfectly throughout a normal cycle. Or it may function normally for a while, then degrade in the internal layers, reducing its life expectancy.

Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

Generating Static

The table below shows the different amounts of static electricity generated by different activities .

	Relative Humidity		
Event	**10%**	**40%**	**55%**
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic tubes	2,000 V	700 V	400 V
Removing DIPS from vinyl trays	11,500 V	4,000 V	2,000 V
Removing DIPS from Styrofoam	14,500 V	5,000 V	3,500 V
Removing bubble pack from PCBs	26,000 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V

NOTE: 700 volts can degrade a product!

Preventing Electrostatic Damage to Equipment

Many electronic components are sensitive to ESD. Circuitry design and structure determine the degree of sensitivity. The following proper packaging and grounding precautions are necessary to prevent damage:

- Protect all electrostatic parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic sensitive parts in their containers until they arrive at static-free stations.
- Place items on a grounded surface before removing them from their container.
- Always be properly grounded when touching a sensitive component or assembly.
- Place reusable electrostatic-sensitive parts from assemblies in protective packaging or conductive foam.

Use transporters and conveyors made of antistatic belts and metal roller bushings. Mechanized equipment used for moving materials must be wired to ground and proper materials selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

Preventing Damage to Drives

To prevent static damage to hard drives, use the following precautions:

- Handle drives gently, using static-guarding techniques.
- Store drives in the original shipping containers.
- Avoid dropping drives from any height onto any surface.
- Handle drives on surfaces that have at least one inch of shock-proof foam.
- Always place drives PCB assembly side down on the foam.

Grounding Methods

The method for grounding must include a wrist strap or a foot strap at a grounded workstation. When seated, wear a wrist strap connected to a grounded system. When standing, use footstraps and a grounded floor mat.

Static-Shielding Protection Levels			
Method	Antistatic Plastic	Carbon-Loaded Plastic	Metallized Laminate
Voltages	1,500	7,500	15,000

Grounding Workstations

To prevent static damage at the workstation, use the following precautions:

- Cover the workstation with approved static-dissipative material. Provide a wrist strap connected to the work surface and properly grounded tools and equipment.
- Use static-dissipative mats, heel straps, or air ionizers to give added protection.
- Handle electrostatic sensitive components, parts, and assemblies by the case or PCB laminate. Handle them only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting and removing connectors or test equipment.
- Use fixtures made of static-safe materials when fixtures must directly contact dissipative surfaces.
- Keep work area free of nonconductive materials such as ordinary plastic assembly aids and Styrofoam.
- Use field service tools, such as cutters, screwdrivers, and vacuums, that are conductive.
- Use a portable field service kit with a static dissipative vinyl pouch that folds out of a work mat. Also use a wrist strap and a ground cord for the work surface. Ground the cord to the chassis of the equipment undergoing test or repair.

Grounding Equipment

Use the following equipment to prevent static electricity damage to the equipment:

Wrist Straps are flexible straps with a minimum of 1 megohm ±10% resistance to the ground cords. To provide proper ground, a strap must be worn snug against the skin. On grounded mats without banana-plug connectors, connect a wrist strap with alligator clips.

Heelstraps/Toestraps/Bootstraps can be used at standing workstations and are compatible with most types of boots and shoes. On conductive floors or dissipative floor mats, use them on both feet with a minimum of 1 megohm resistance between operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

Recommended Materials and Equipment

Other materials and equipment that are recommended for use in preventing static electricity include:

- Antistatic tape
- Antistatic smocks, aprons, or sleeve protectors
- Conductive bins, and other assembly or soldering aids
- Conductive foam
- Conductive tabletop workstations with ground cord of 1 megohm of resistance
- Static dissipative table or floor mats with hard tie to ground
- Field service kits
- Static awareness labels
- Wrist straps and footwear straps providing 1 megohm ±10% resistance
- Material handling packages
- Conductive plastic bags
- Conductive plastic tubes
- Conductive tote boxes
- Metal tote boxes
- Opaque shielding bags
- Transparent metallized shielding bags
- Transparent shielding tubes

REMOVAL & REPLACEMENT

Service Considerations

Tool Requirements

- Phillips screwdriver
- Needle-nose pliers
- Flathead screwdriver
- Compaq Utilities software

Screws

The screws used in these products are not interchangeable. If an incorrect screw is used during the reassembly process, it could cause damage to the unit. Compaq strongly recommends that all screws removed during the disassembly process be kept with the part that was removed, then returned to their proper locations.

IMPORTANT:	As each subassembly is removed from the computer, it should be placed away from the work area to prevent damage.

Cables and Connectors

Most cables used throughout the unit are *ribbon cables*. These must be handled with extreme care to avoid damage. Apply only the tension required to seat or unseat the cables during insertion or removal from the connector. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing the cables, and ensure that they are placed in such a way that they cannot be caught or snagged by parts being removed or replaced.

CAU	**CAUTION:** When servicing these computers, ensure that cables are placed in their proper location during the reassembly process. Improper cable placement can cause severe damage to the unit.

Ribbon Cable Positions

CD and CD-RW Drive   Hard Drive

Diskette drive   I/O Board

Power Supply/Fan Assembly

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Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

DISASSEMBLY SEQUENCE

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Memory Module

Top Access Panel

Rear Access Panel

Fax-Modem Board

Mass Storage Devices

Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker

System Board and Components

Chassis Base

REMOVAL & REPLACEMENT

Preparation for Disassembly

To prepare the computer for removal and replacement procedures, complete the following steps:

1 Remove any diskette, compact disc, or tape from the computer.

2 Turn off the computer and any peripheral devices that are connected to the computer.

> | CAU | **CAUTION:** The computer power switch should be turned off before you disconnect any cables. |
> |---|---|

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

4 Disconnect all peripheral device cables from the computer.

> | **IMPORTANT:** | During disassembly, label each cable as you remove it. Be sure to note its position and routing. |
> |---|---|

1.800.AT.COMPAQ

REMOVAL & REPLACEMENT

Serial Number

The computer serial number should be provided to Compaq whenever requesting information or ordering spare parts. The
(1) serial number is located on the back of the chassis above the voltage select switch and inside of the front door on the base directly below the Front I/O connectors.

REMOVAL & REPLACEMENT

Removing the Left Easy Access Panel
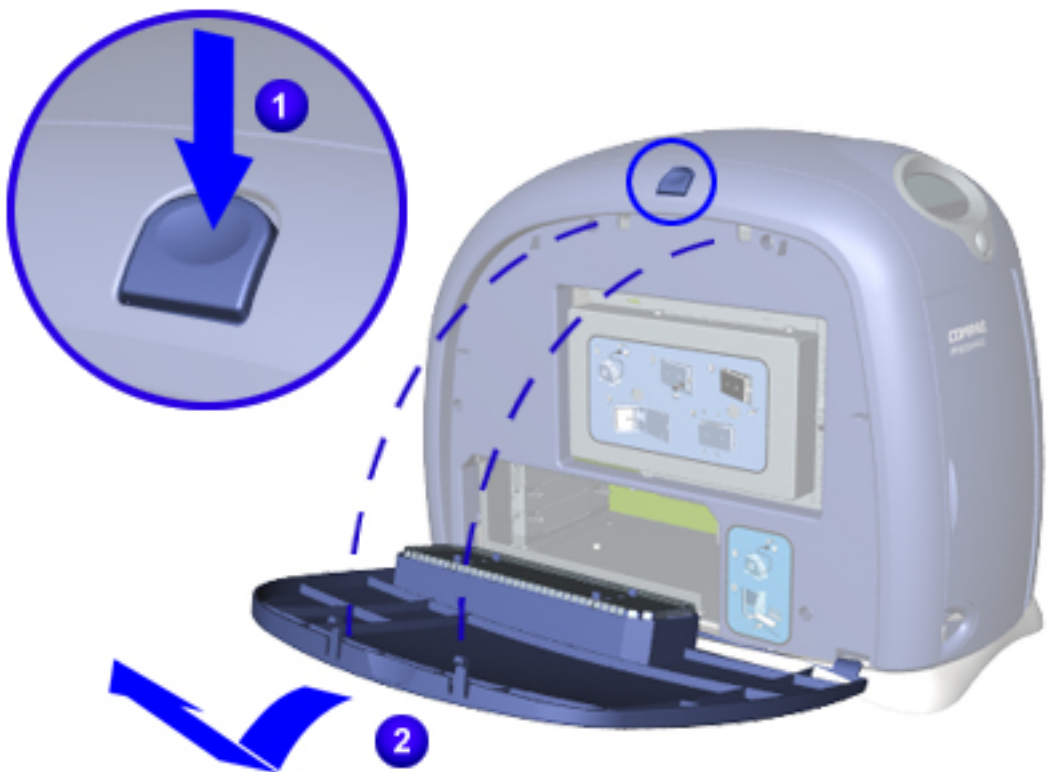
Removal

1. Perform the preparation procedures.

2. Push the (1) panel release button and open the left side access panel.

3. Lift the (2) Left Easy Access Panel off the hinges on the chassis.

Replacement

To replace the Left Easy Access Panel, reverse this procedures.

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

REMOVAL & REPLACEMENT

Removing the Right Easy Access Panel
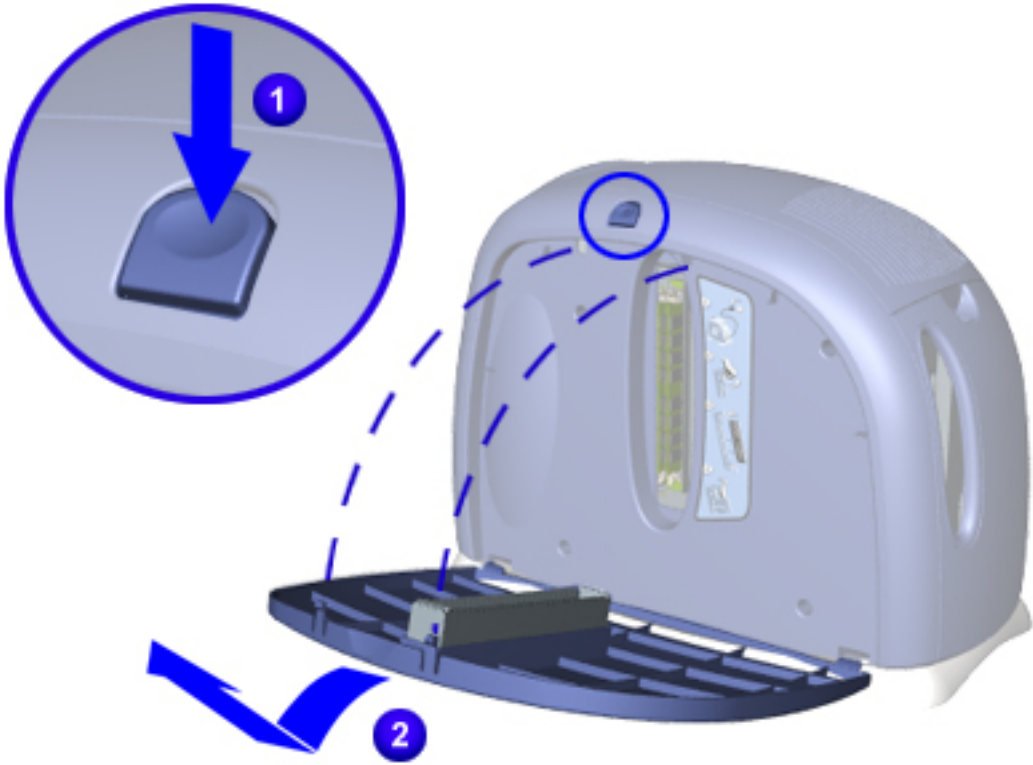
Removal

1   Perform the preparation procedures.

2   Push the (1) panel release button and open the right side access panel.

3   Lift the (2) Right Easy Access Panel off the hinges on the chassis.

Replacement

To replace the Right Easy Access Panel, reverse this procedures.

REMOVAL & REPLACEMENT

Removing the Memory Module (DIMM)
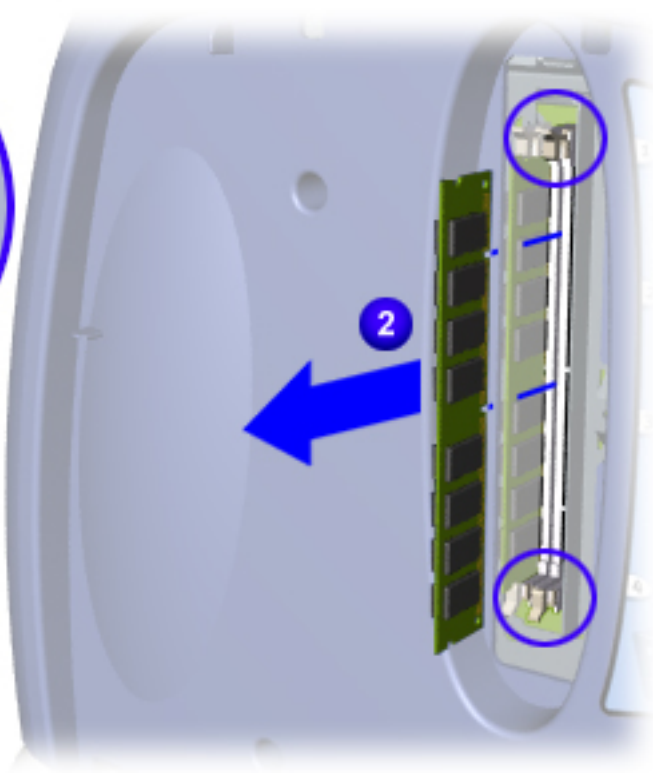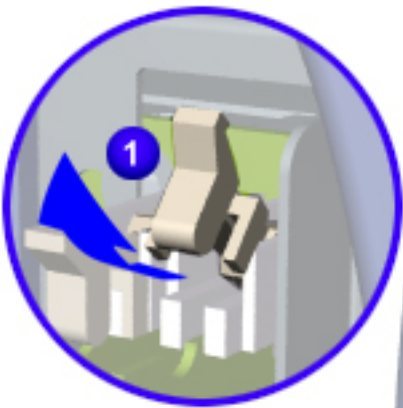
1 Perform preparation procedures.

2 Remove the Right Easy Access Panel.

3 Pull out on the (1) retention clips of the socket and (2) unplug the DIMM from the system board .

Replacing the DIMM Next Step

REMOVAL & REPLACEMENT

Replacing the Memory Module (DIMM)
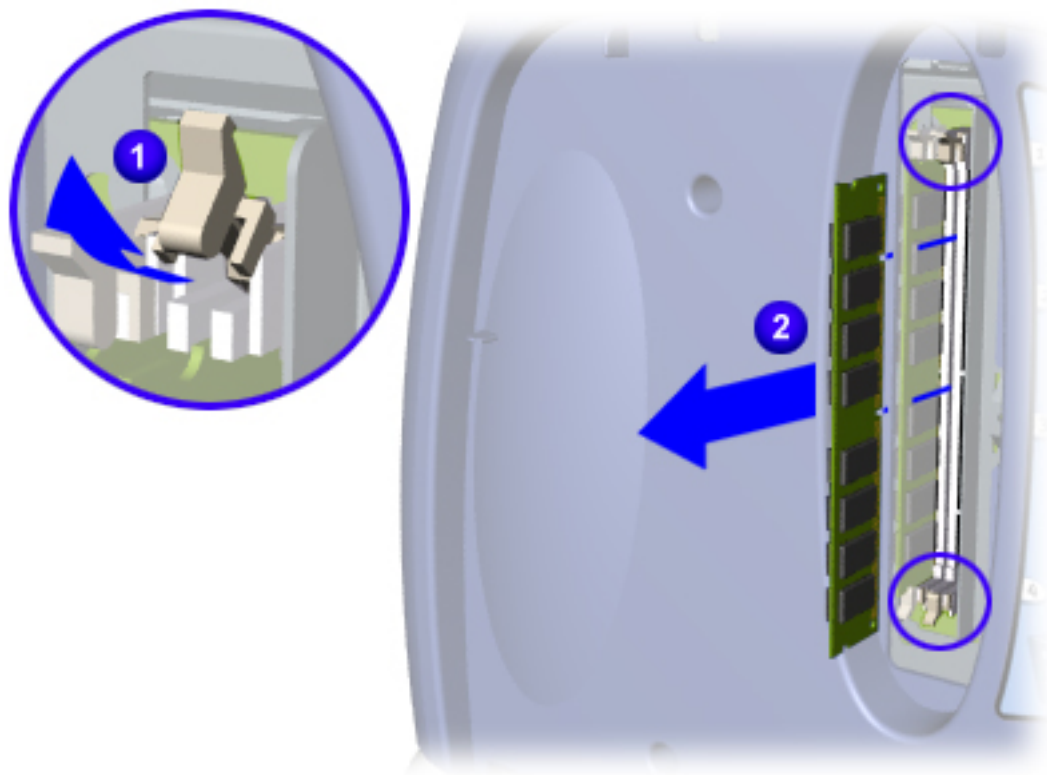
To replace the DIMM, follow the procedure below.

Push the (1) DIMM down into the system board socket and (2) close the retention clips.

CAUTION: Ensure the DIMM is properly aligned and seated in the system board socket before reassembling the computer.

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

REMOVAL & REPLACEMENT

Removing the Top Access Cover

DISASSEMBLY SEQUENCE

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Memory Module

Top Access Panel

Rear Access Panel

Fax-Modem Board

Mass Storage Devices

Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker

System Board and Components

Chassis Base
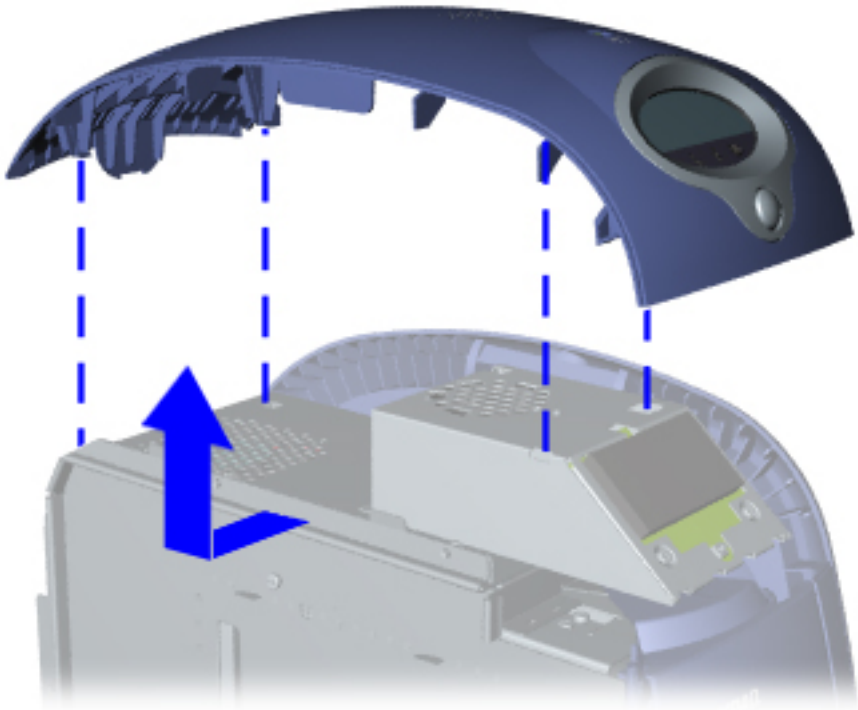
Removal

1 Perform preparation procedures.

2 Remove the Left Easy Access panel.

3 Lift the top access cover off the hinges on the chassis.

Replacement

To replace the **top access cover**, reverse this procedures.

DISASSEMBLY SEQUENCE

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Memory Module

Top Access Panel

Rear Access Panel

Fax-Modem Board

Mass Storage Devices

Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker

System Board and Components

Chassis Base

REMOVAL & REPLACEMENT

Removing the Rear Access Panel

Removal

1   Perform the preparation procedures.

2   Push the (1) panel release button and open the rear access panel.

3   Lift the (2) rear access panel off the hinges on the chassis.

Replacement

To replace the rear access panel, reverse this procedures.

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

DISASSEMBLY SEQUENCE

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Memory Module

Top Access Panel

Rear Access Panel

Fax-Modem Board

Mass Storage Devices

Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker

System Board and Components

Chassis Base

REMOVAL & REPLACEMENT

Removing the Fax/modem
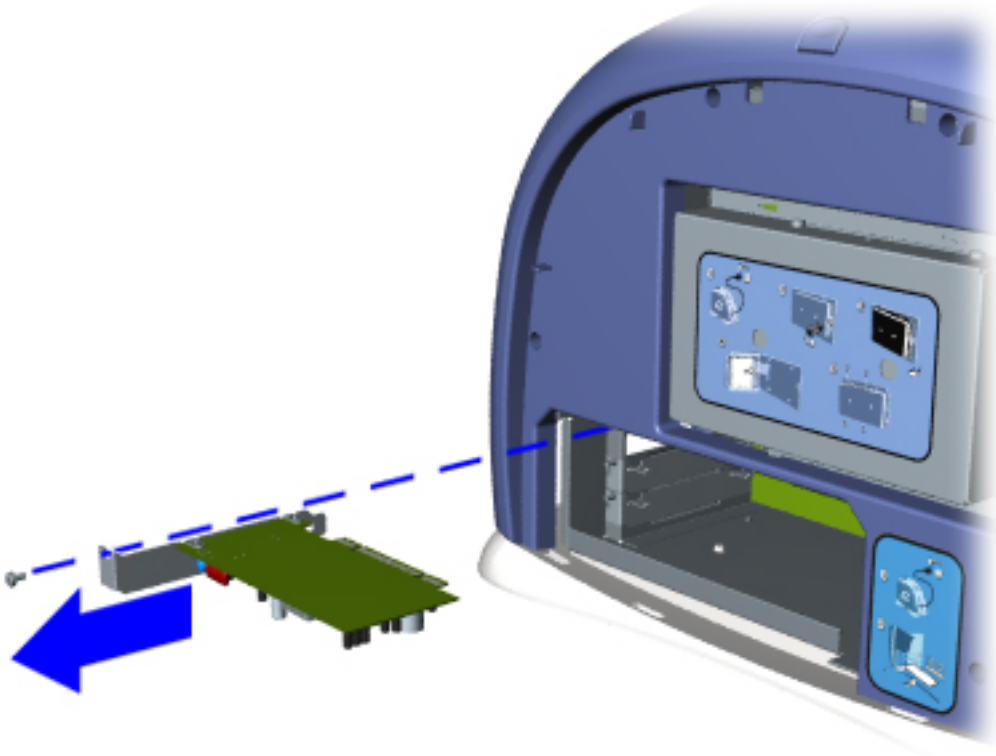
Removal

1   Perform preparation procedures.

2   Remove the Left Side Easy Access panel.

3   Remove screw securing the fax/modem to the chassis and pull the fax/modem out of the slot.

Replacement

To replace the fax/modem, reverse this procedures.

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

DISASSEMBLY SEQUENCE

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Memory Module

Top Access Panel

Rear Access Panel

Fax-Modem Board

Mass Storage Devices
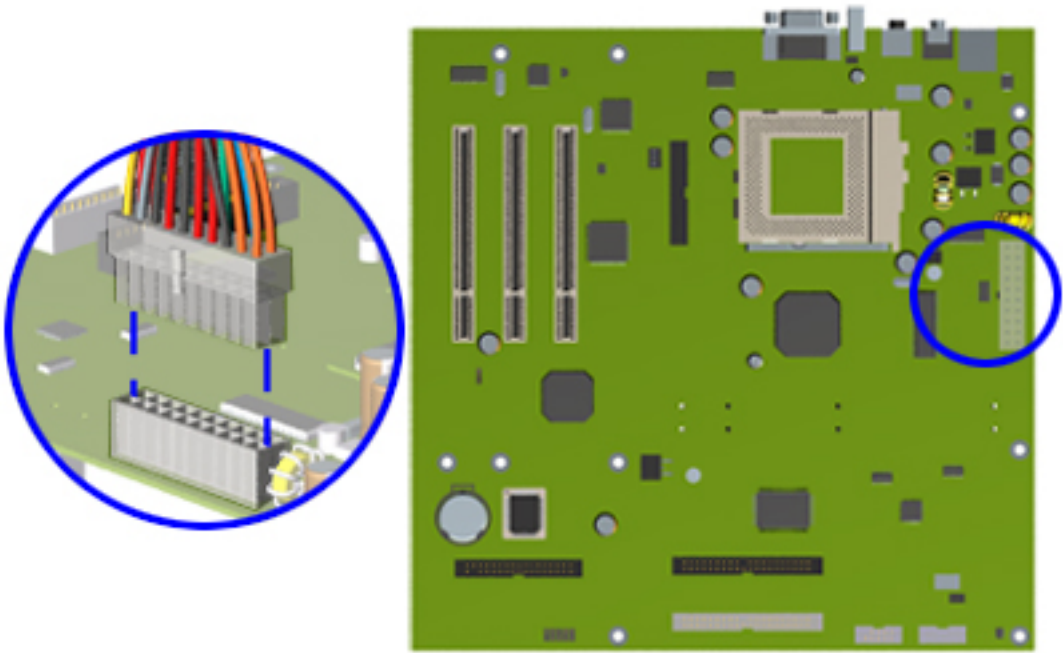
Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker

System Board and Components

Chassis Base

REMOVAL & REPLACEMENT

Removing the Mass Storage Devices - Index Page

1   **Drive Cage**

2   **CD or DVD and CD-RW Drive**

3   **Hard Drive**

4   **Diskette Drive**

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Drive Cage Assembly

Removal

1   Perform preparation procedures.

2   Remove the Left Easy Access panel.

3   Remove the left plastic subpanel.

4   Remove the Top Access Panel.

5   Open (1) and (2) remove the front door from the hooks on the chassis.

Next Step

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Drive Cage Assembly, continued
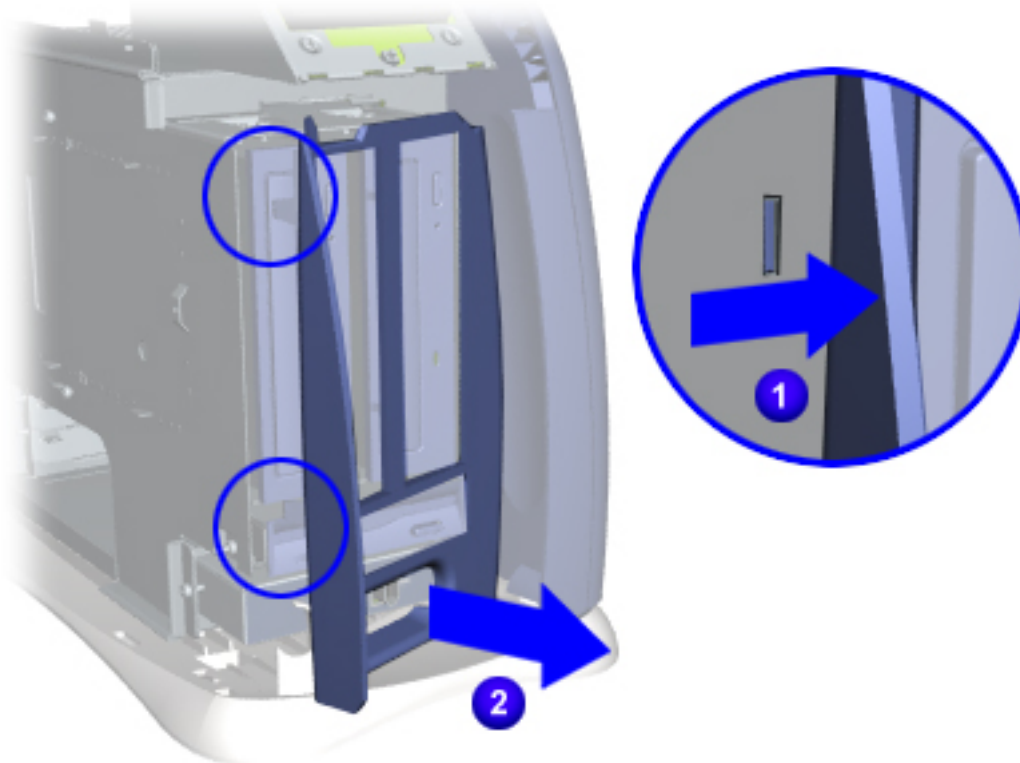
Removal

6 Lift the (1) left side of the Plastic Drive Cover and (2) pull away from the drive cage to remove the Plastic Drive Cover from the drive cage.

Next Step

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Drive Cage Assembly, continued
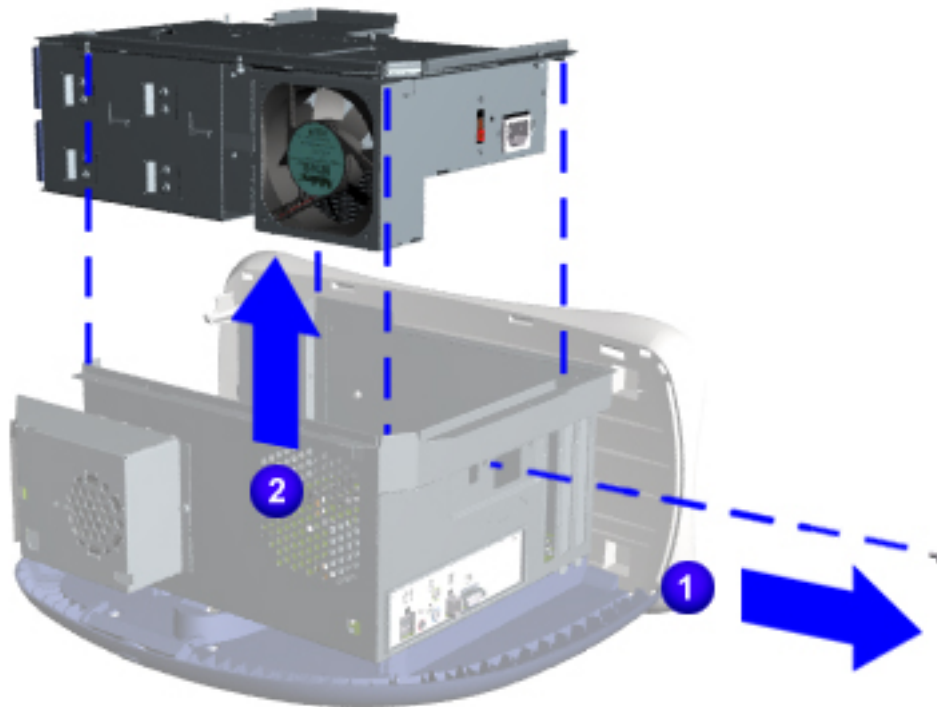
7 With the unit lying on right side, remove one screw from the (1) rear of the chassis and lift the Drive Cage Assembly upward straight out of the chassis

IMPORTANT: Before removing the drive cage from the chassis, disconnect all the drive cables from the drives.

Return to Section Index

REMOVAL & REPLACEMENT

Removing the Mass Storage Devices

Removing the CD or DVD and CD-RW Drive

To remove the CD or DVD and CD-RW drive, complete the following steps:
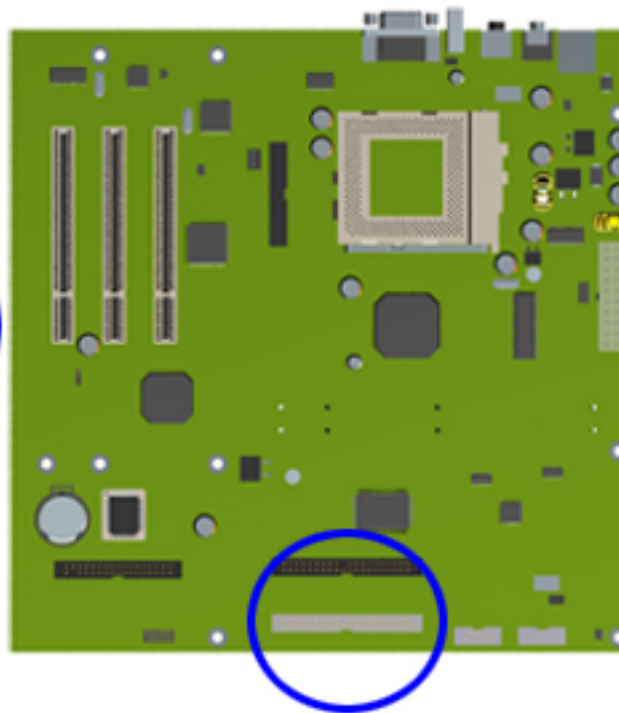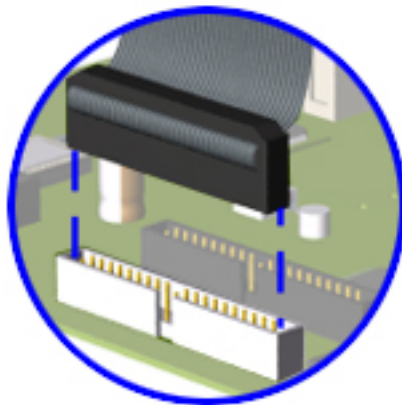
Removal

1 Perform preparation procedures.

2 Remove the Left Easy Access panel.

3 Remove the drive cage.

4 Disconnect the CD or DVD and CD-RW drive data cable from the system board.

NEXT STEP

REMOVAL & REPLACEMENT

CD or DVD and CD-RW Drive

Hard Drive

3.5" Diskette Drive

Mass storage devices index page

Mass Storage Devices

Removing the CD or DVD and CD-RW Drive, continued
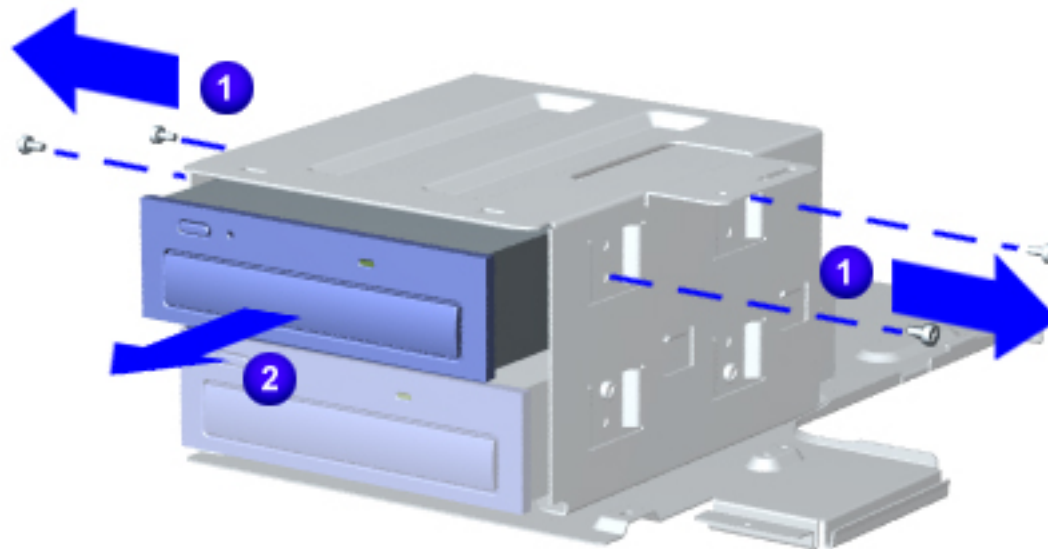
Removal

5   Remove (1) two screws from each side of the CD or DVD drive securing the drive to the drive cage and (2) pull the drive from the drive cage.

Next Step

REMOVAL & REPLACEMENT

CD or DVD and CD-RW Drive

Hard Drive

3.5" Diskette Drive

Mass storage devices index page

Mass Storage Devices

Removing the CD or DVD and CD-RW Drive, continued
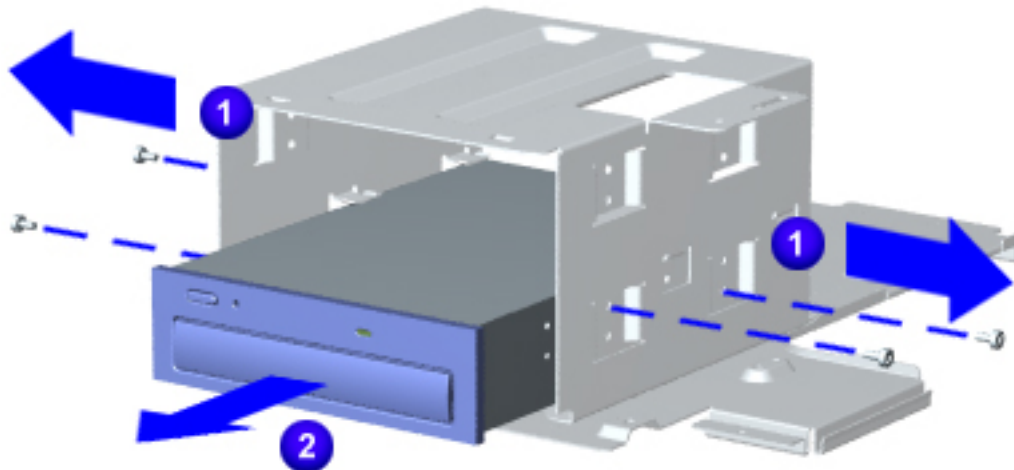
Removal

6   Remove (1) two screws from each side of the CD-RW drive securing the drive to the drive cage and (2) pull the drive from the drive cage.

To replace the CD or DVD and CD-RW drive reverse the previous procedure.

Return to Section Index

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Removing the Mass Storage Devices

Removing the Hard Drive
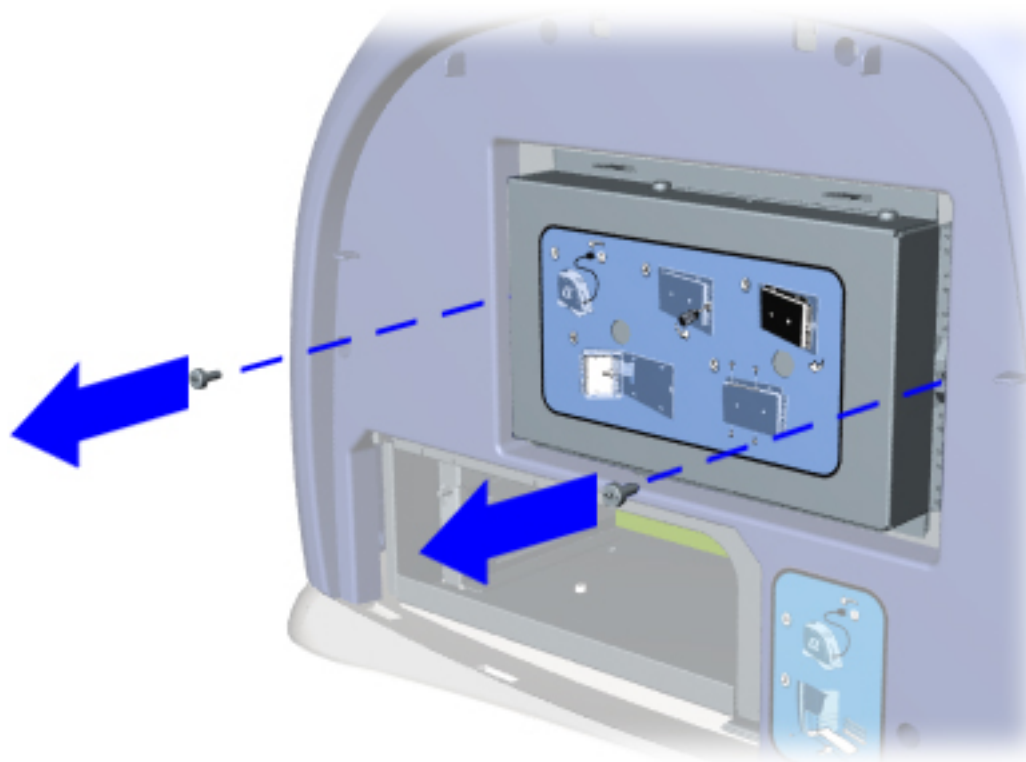
Removal

1 [Perform preparation procedures](#).

2 [Remove the Left Easy Access panel](#).

3 Remove two screws from the hard drive bracket securing the bracket to the chassis.

NEXT STEP

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Hard Drive, continued
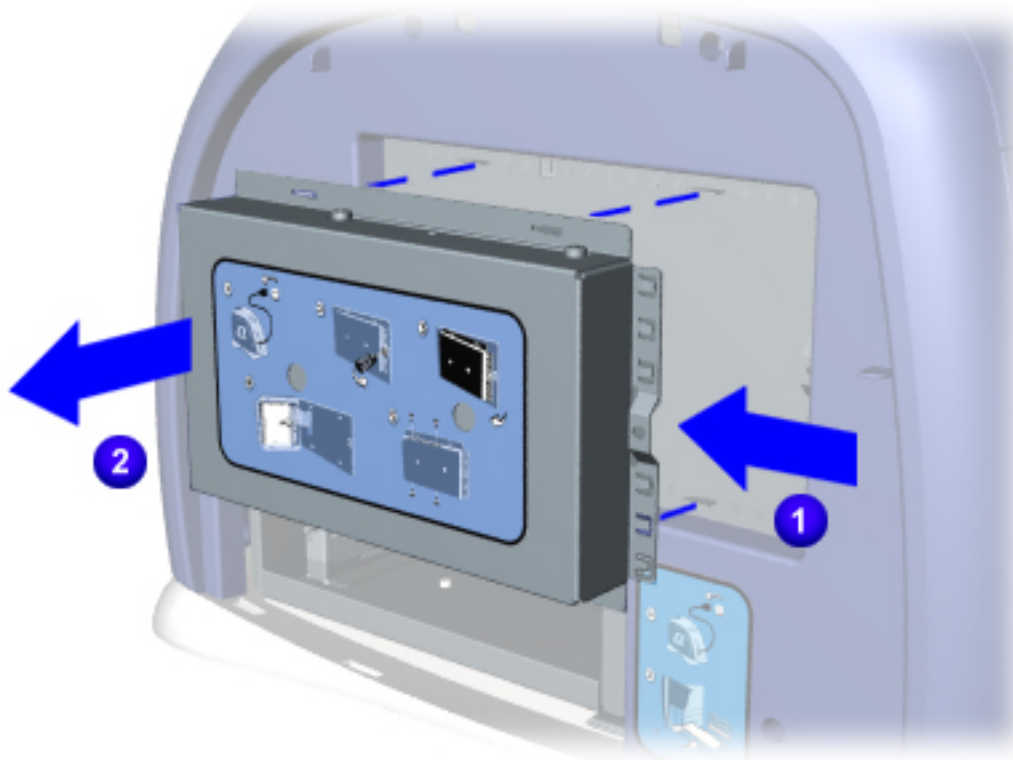
Removal

4 Slide the (1) hard drive bracket with the hard drive attached to the (2) rear of the unit.

Next Step

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Hard Drive, continued
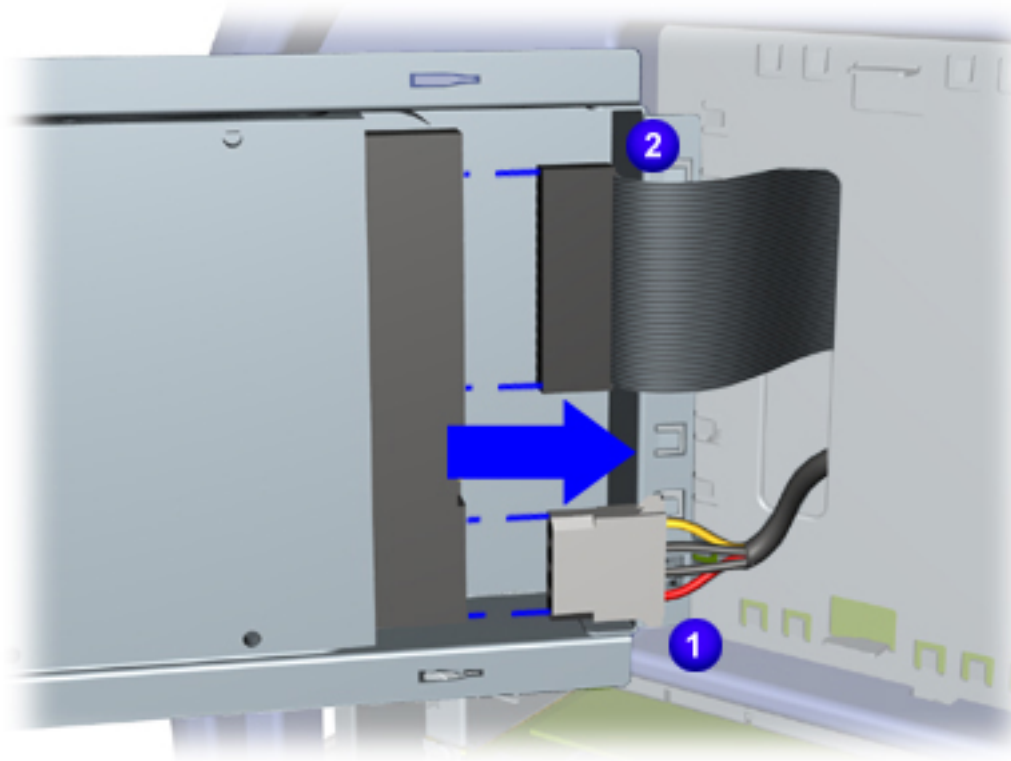
Removal

5   Lift up the hard drive bracket, disconnect the (1) power and (2) data cable from the hard drive, and remove the hard drive bracket with the hard drive attached from the chassis.

Removing the Hard Drive Bracket
NEXT STEP

Hard Drive

CD or DVD and CD-RW Drive

3.5" Diskette Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Hard Drive Bracket
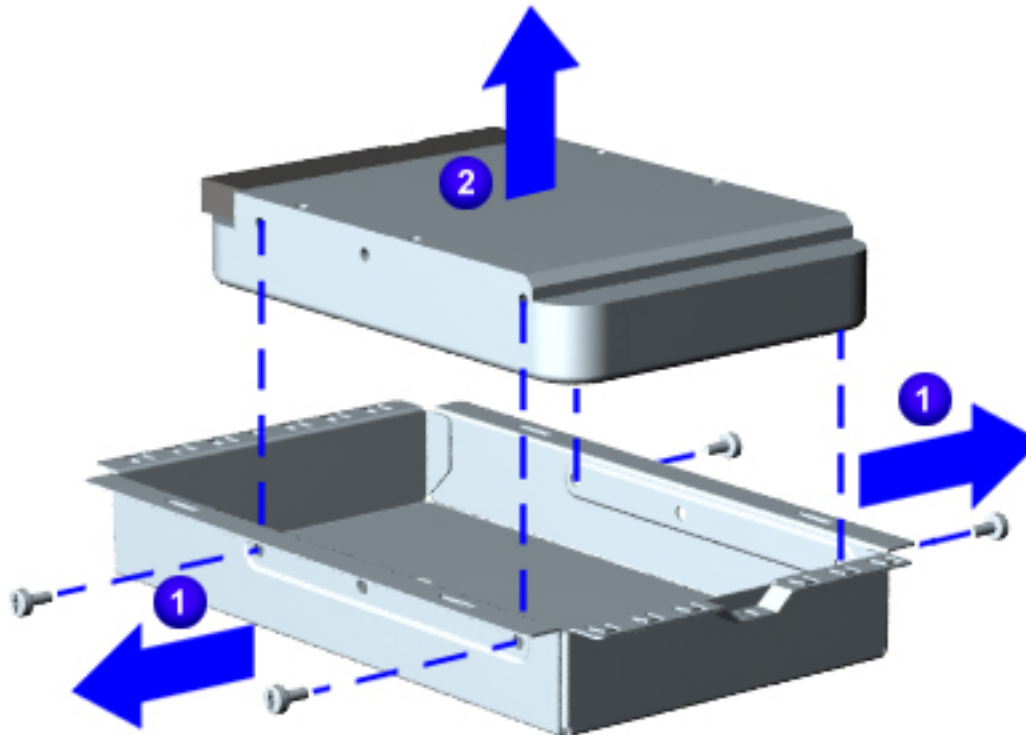
Removal

Remove (1) two screws from each side of the drive bracket. Lift the (2) hard drive from the bracket.

To replace the hard drive and bracket reverse the previous procedure.

Return to section index

3.5" Diskette Drive

Hard Drive

CD or DVD and CD-RW Drive

Mass storage devices index page

REMOVAL & REPLACEMENT

Removing the Mass Storage Devices

Removing the Diskette Drive
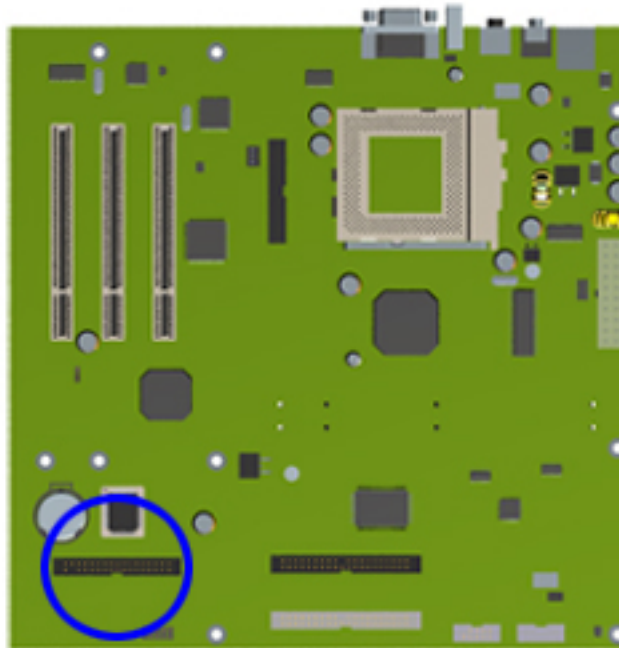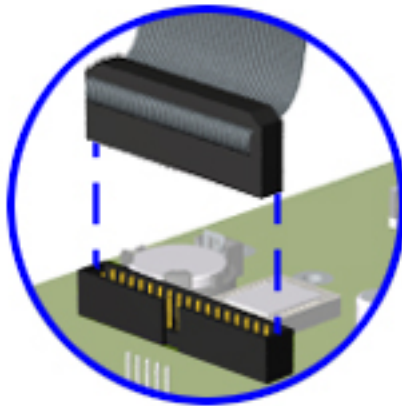
To remove the diskette drive, complete the following steps:

Removal

1   Perform preparation procedures.

2   Remove the Left Easy Access panel.

3   Remove the drive cage.

4   Disconnect the diskette drive data cable from the system board.

NEXT STEP
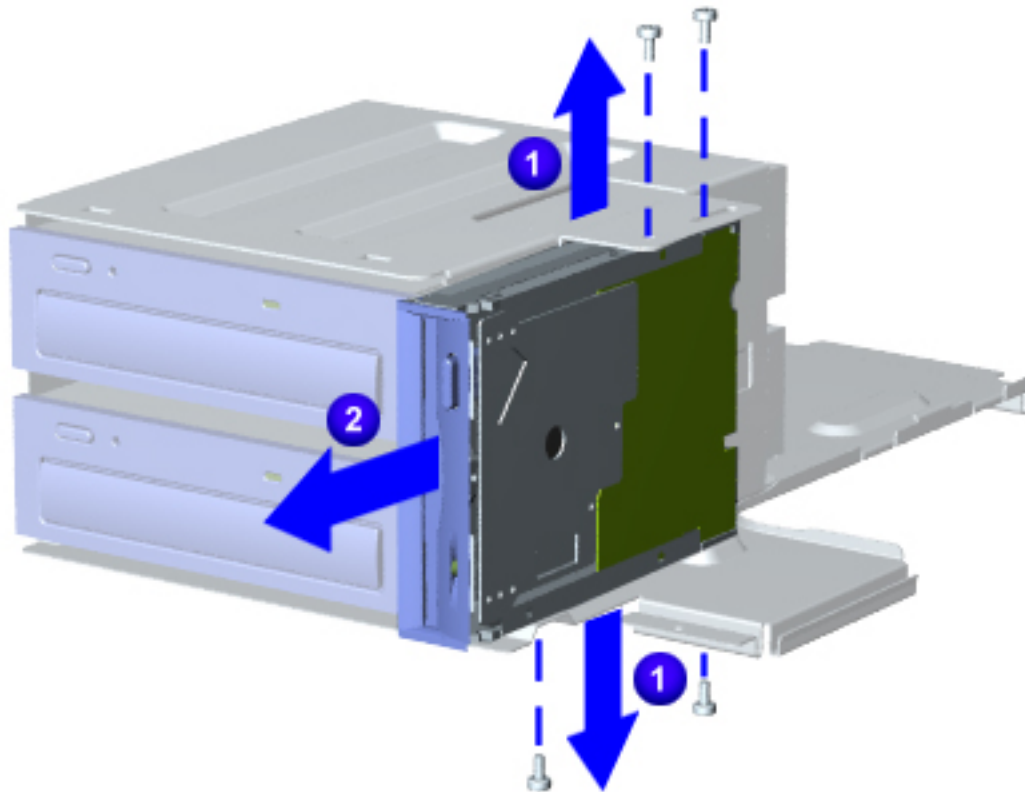
REMOVAL & REPLACEMENT

Mass Storage Devices

Removing the Diskette Drive, continued

5 Remove (1) two screws on each side of the drive cage securing diskette drive to the cage and (2) remove the diskette drive from the cage.

Replacement

To replace the diskette drive, reverse this procedure.

Return to section index

REMOVAL & REPLACEMENT

Removing the Power Supply/Fan Assembly

Removal

1 Perform preparation procedures.

2 Remove the Left Easy Access panel.

3 Remove the drive cage.

4 Disconnect the Power Supply/Fan Assembly power cable from the system board.

Next Step

REMOVAL & REPLACEMENT

Removing the Power Supply/Fan Assembly, continued
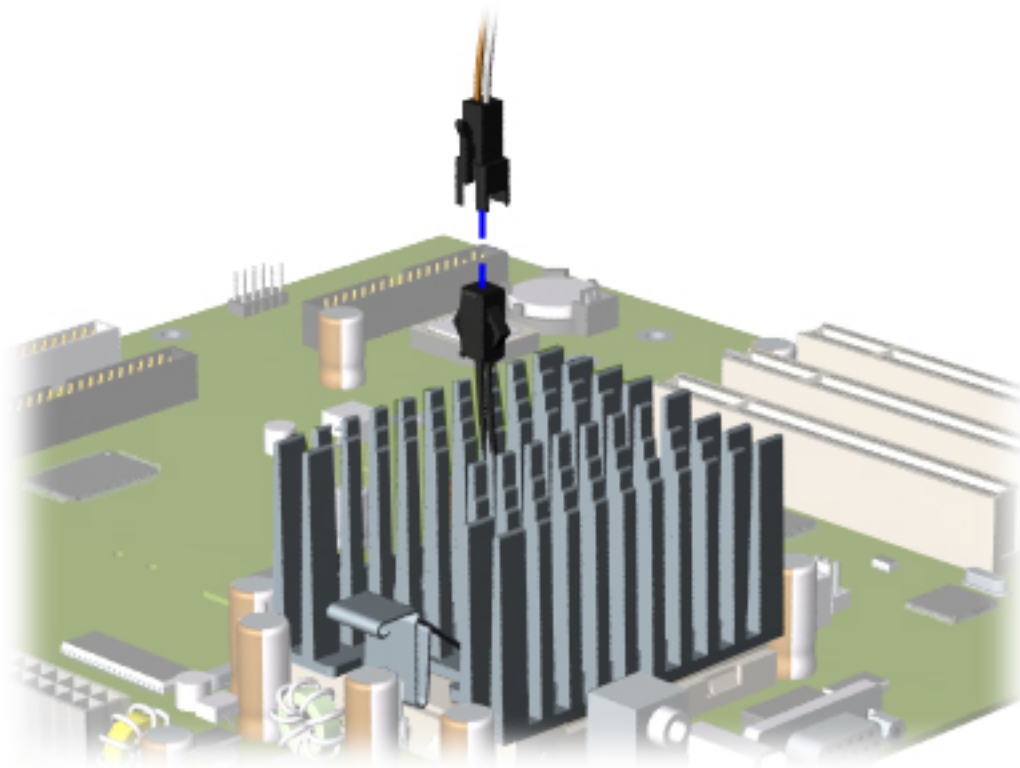
Removal

5　Disconnect the Power Supply/Fan Assembly heatsink cable from the cable connected to the heatsink.

Next Step

REMOVAL & REPLACEMENT

Removing the Power Supply/Fan Assembly, continued
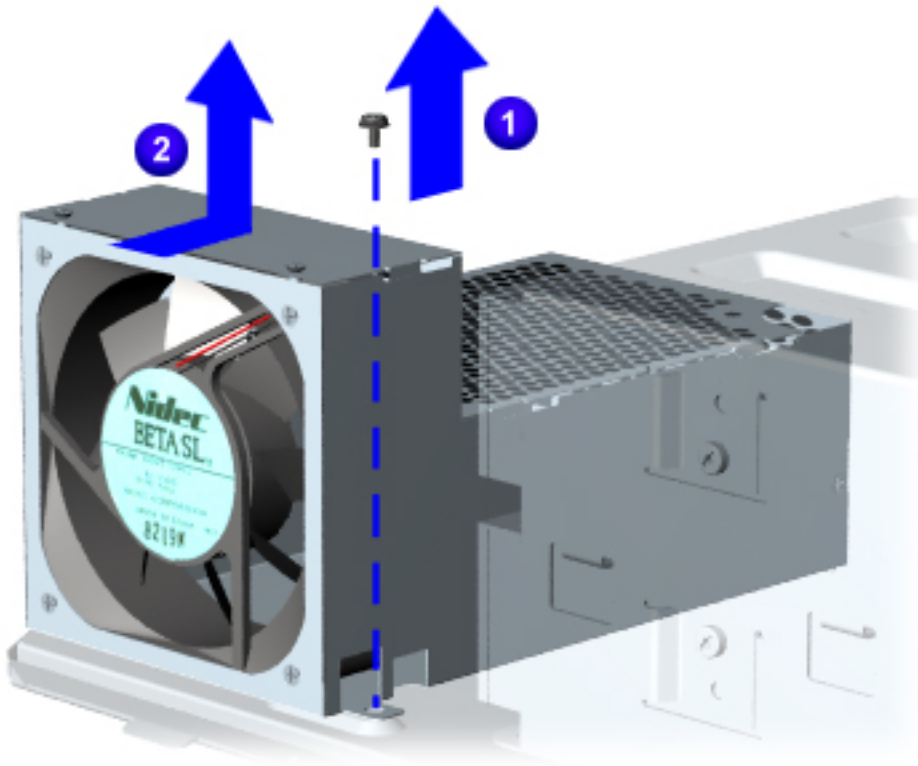
Removal

6   With the Drive Cage Assembly lying on a flat surface, (1) remove one screw located on the side of the fan, (2) slide the Power Supply/Fan Assembly upward, and pull from the drive cage slots.

Replacement

To replace the power supply/fan assembly, reverse this procedure.

REMOVAL & REPLACEMENT

Removing the I/O Board

Removal

1　Perform preparation procedures.

2　Remove the Left Easy Access panel.

3　Remove the top access cover.

4　Remove the front door.

5　Remove the plastic subpanel.

6　Disconnect the 1394 and USB cable on the I/O Bracket from the connectors on the system board.

Next Step

REMOVAL & REPLACEMENT

Removing the I/O Board, continued
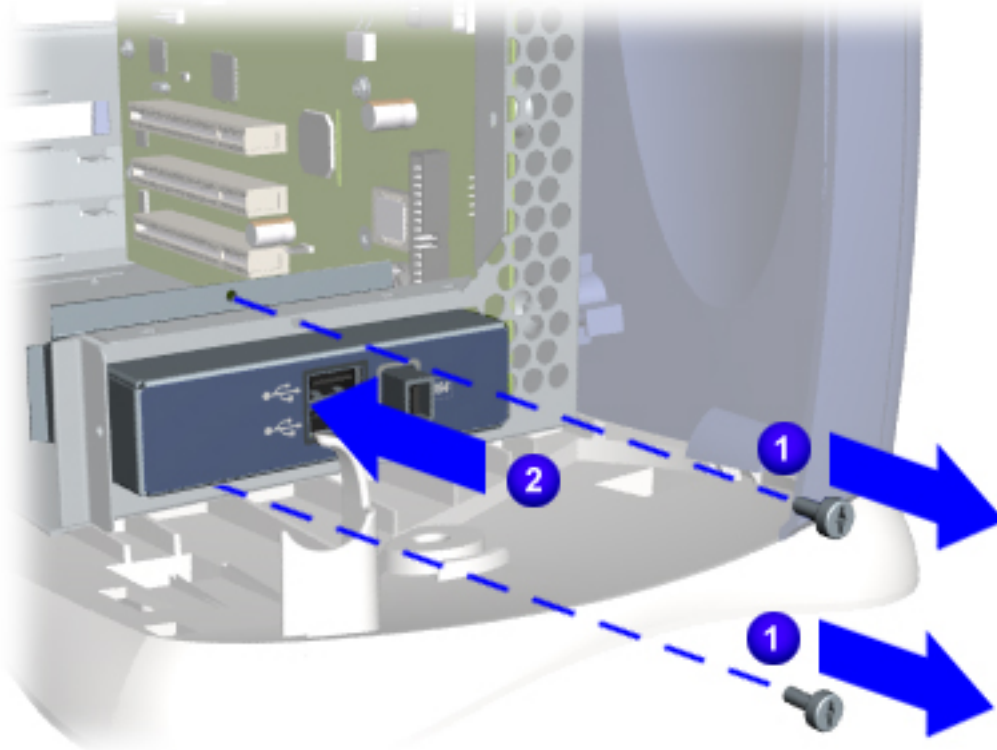
Removal

7 Remove (1) two screws from the front of the I/O Bracket and (2) push back on the I/O Bracket to remove from the chassis.

Replacement

To replace the I/O board, reverse this procedure.

DISASSEMBLY SEQUENCE

Electrostatic Discharge

Service Considerations

Preparation for Disassembly

Serial Number

Left Easy Access Panel

Right Easy Access Panel

Memory Module

Top Access Panel

Rear Access Panel

Fax-Modem Board

Mass Storage Devices

Fan/Power Supply Assembly

I/O Board

LCD Display Board

Speaker

System Board and Components

Chassis Base

REMOVAL & REPLACEMENT

Removing the LCD Display Broad

Removal

1 Perform preparation procedures.

2 Remove the Left Easy Access Panel.

3 Remove the Top Access cover.

4 Place the unit on right side, remove one screw from the top of the LCD display cage and slide the cage to the front of the unit to remove.

Next Step

REMOVAL & REPLACEMENT

Removing the LCD Display Board, continued
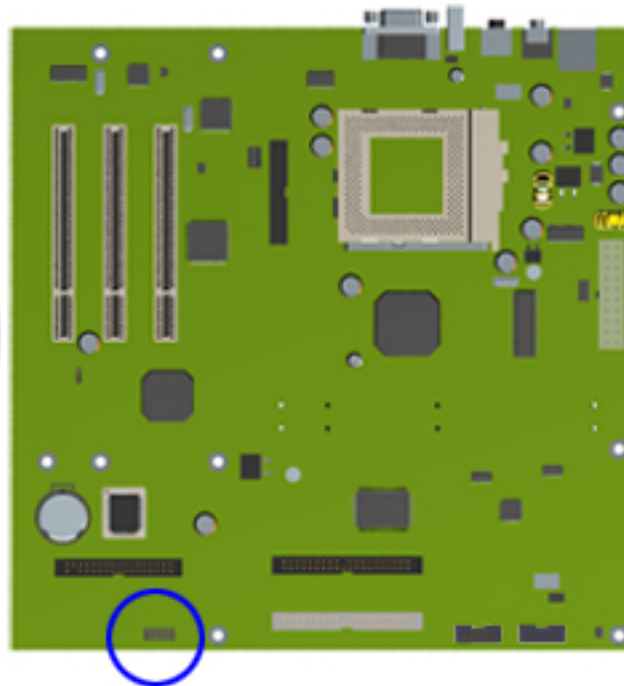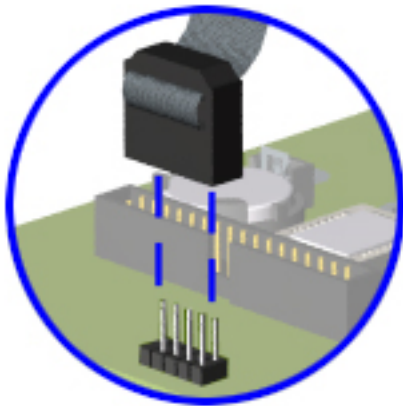
Removal

5 Disconnect the LCD Display cable from the system board.

Next Step

REMOVAL & REPLACEMENT

Removing the LCD Display Board, continued
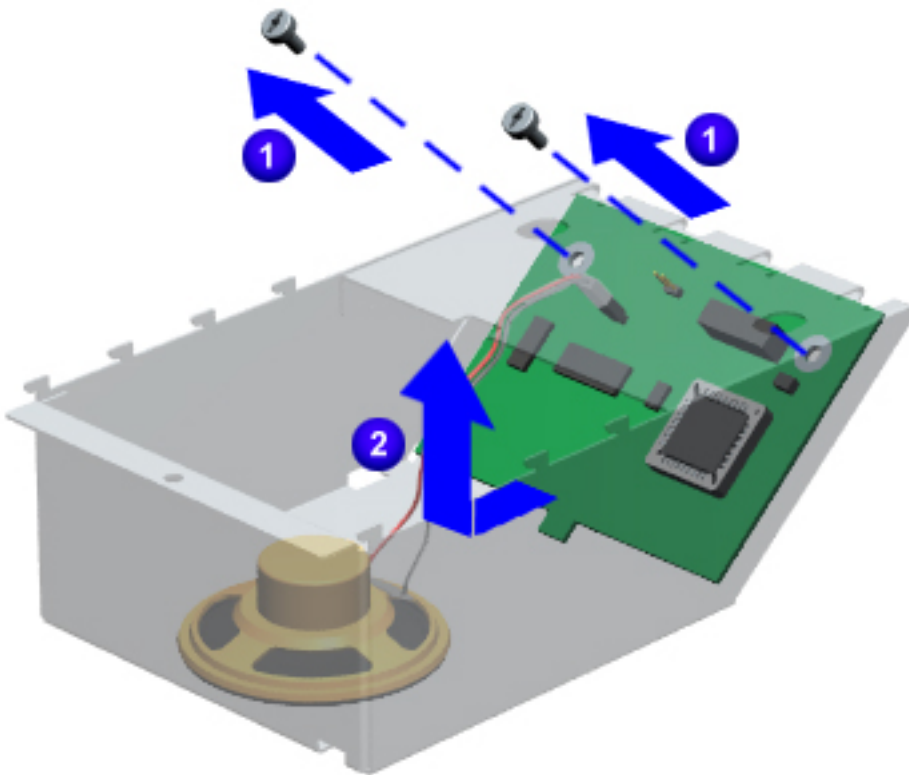
Removal

Replacement

6 Remove (1) 2 screws from LCD Display Board and (2) push back on the display and remove through the hole in the bracket.

Replacement

To replace the LCD Display Board, reverse this procedure.

REMOVAL & REPLACEMENT

Removing the Speaker Assembly

Removal

1 Perform preparation procedures.

2 Remove the Left Easy Access panel.

3 Remove the top access cover.

4 Remove the LCD display board.

5 Disconnect the Speaker Cable from the LCD Board.

Next Step

REMOVAL & REPLACEMENT

Removing the Speaker Assembly, continued
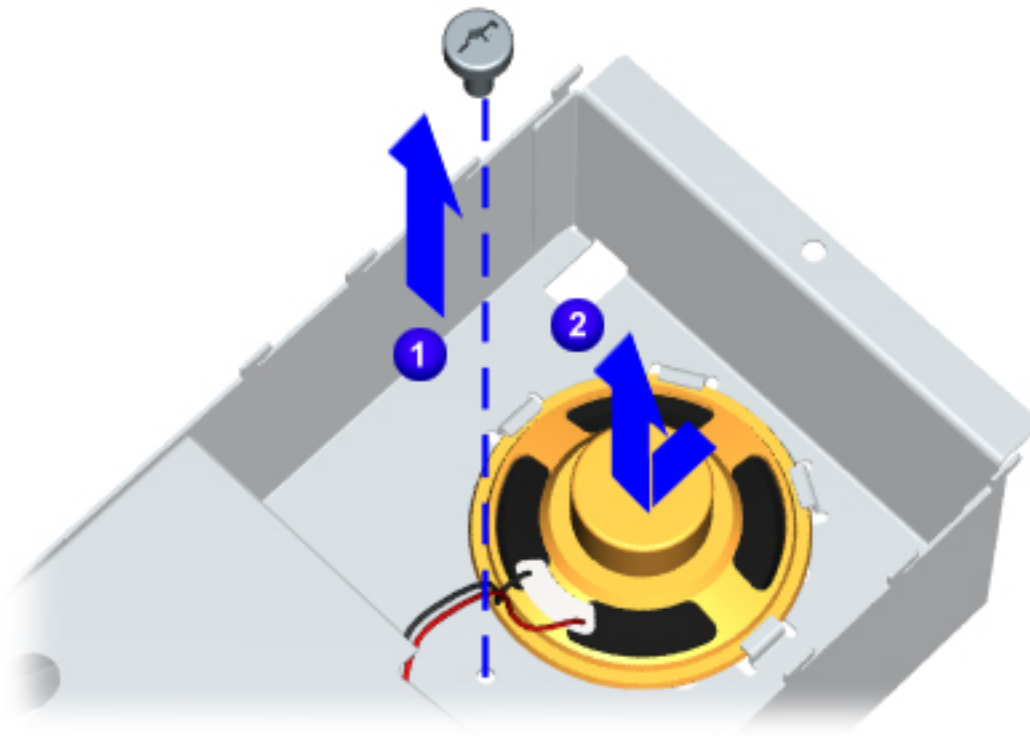
Removal

Replacement

6 Remove (1) screw securing Speaker Assembly to the top of the LCD display panel cage and (2) slide the Speaker Assembly to the front, and remove from the cage.

Replacement

To replace the Speaker Assembly, reverse this procedure.

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

REMOVAL & REPLACEMENT

Removing the System Board and Components - Index Page

System board

Heatsink/Processor Assembly

RTC battery

REMOVAL & REPLACEMENT

Removing the System Board
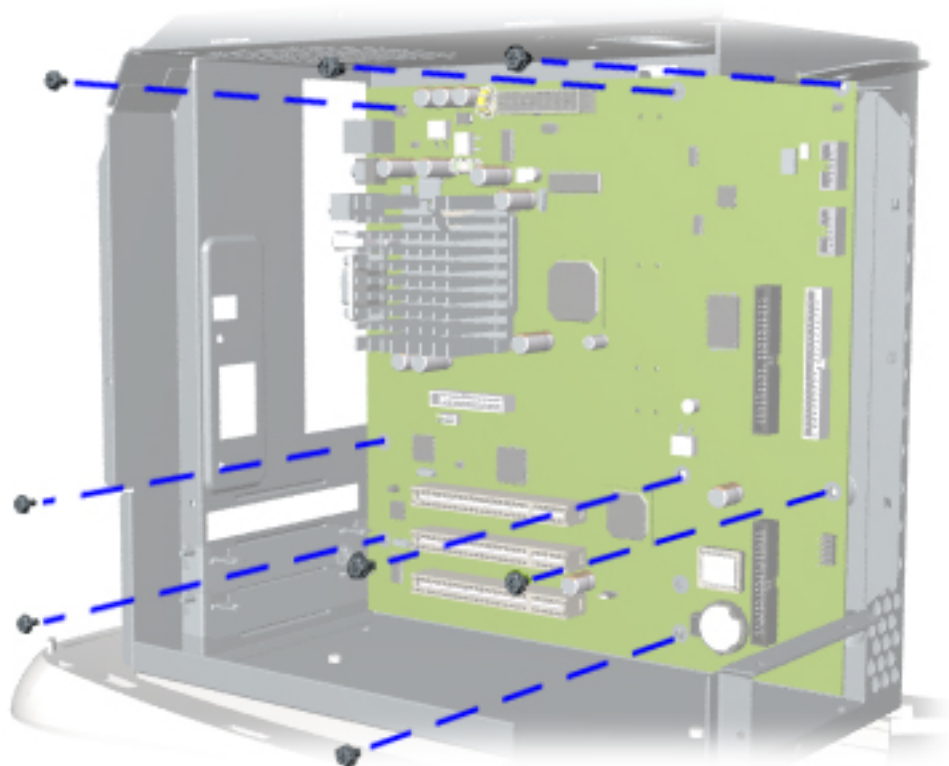
Removal

1   Perform preparation procedures.

2   Remove the Left Easy Access panel.

3   Remove the Top Access cover.

4   Remove the drive cage.

5   Remove six screws securing the system broad to the chassis and remove from the chassis.

To replace the system board reverse the previous procedure.

System board components index page

REMOVAL & REPLACEMENT

System Board Components

Removing the Heatsink/Processor Assembly
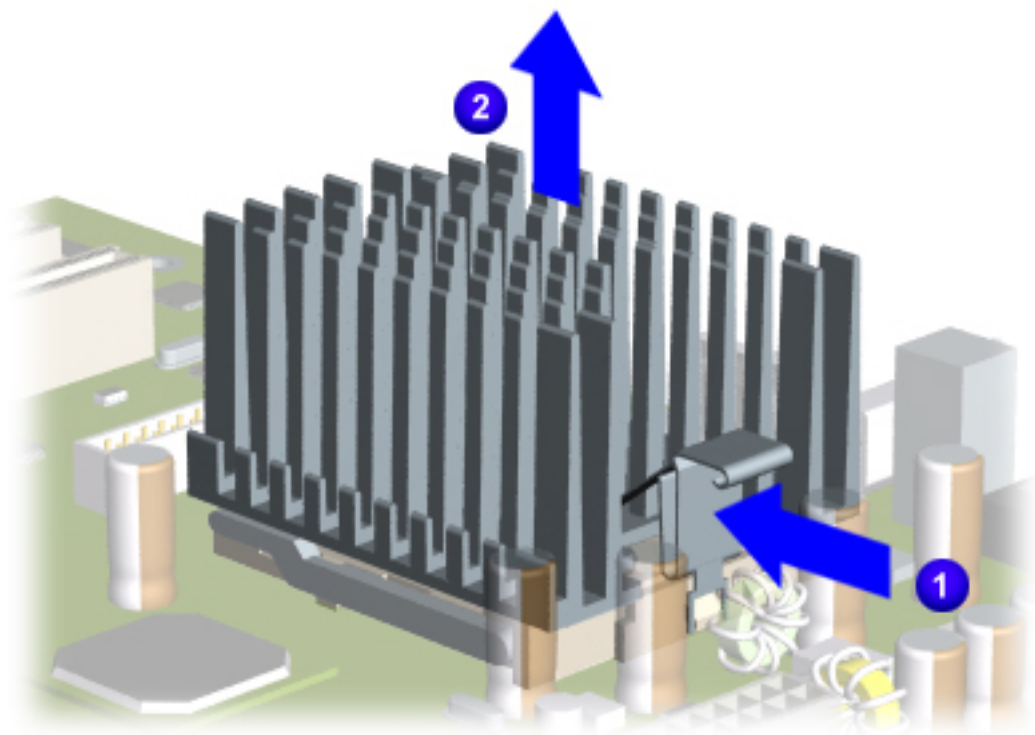
Removal

1 Perform preparation procedures.

2 Remove the Left Easy Access panel.

3 Remove the drive cage.

4 Lift up the (1) ZIF socket handle and (2) remove the heatsink with processor attached.

Next Step

REMOVAL & REPLACEMENT

System Board Components

Removing the Heatsink/Processor Assembly, continued
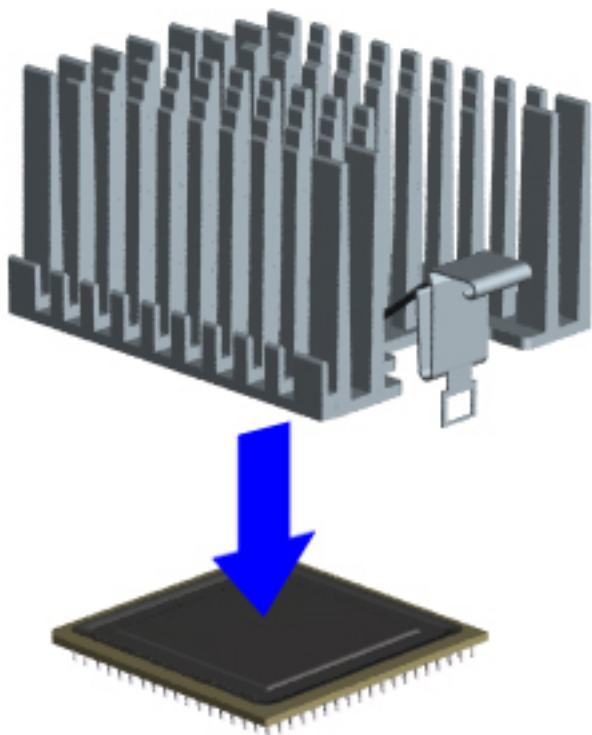
Removal

5 Twist the heatsink/processor (clockwise) to remove the processor from the heatsink.

Replacement

To replace the heatsink/processor, reverse the previous procedure.

Return to System Board and Components

REMOVAL & REPLACEMENT

System Board Components

Removing the Real Time Clock Battery (RTC)
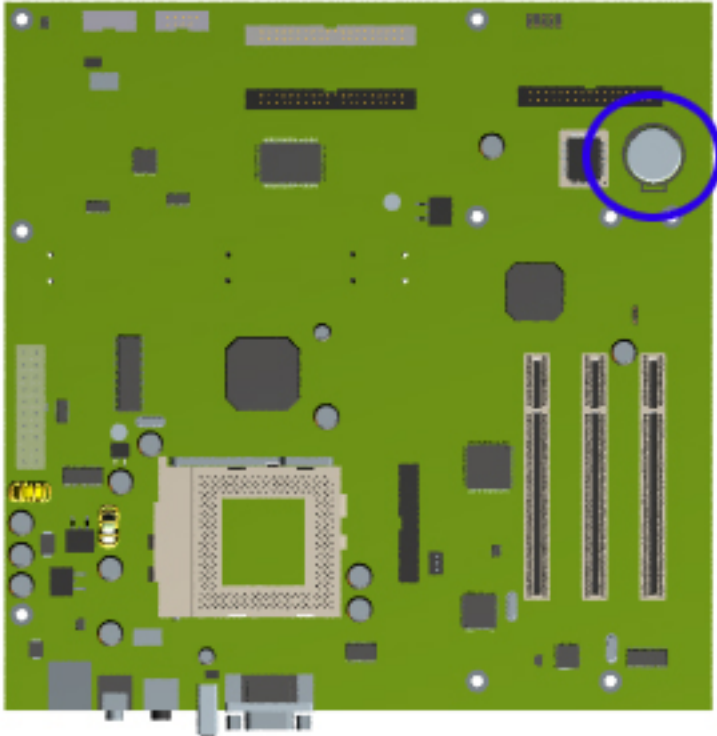
1   Perform preparation procedures.

2   Remove the Left Easy Access panel.

3   Remove the drive cage.

4   Locate the RTC battery.

Next Step

REMOVAL & REPLACEMENT

System Board Components

Removing the RTC Battery
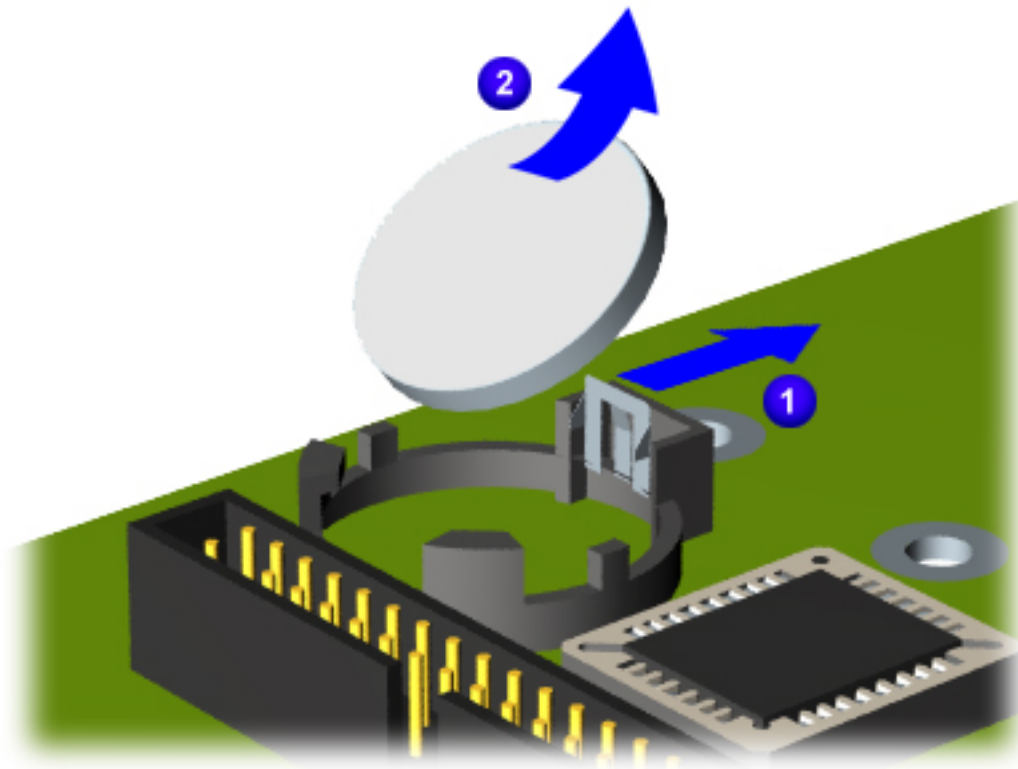
5 Pull out on the (1) socket lever and (2) lift the RTC battery out of the socket.

Replacement

To replace the RTC battery, reverse this procedure.

WARNING: The clock/CMOS lithium battery may explode if mistreated. Do not abuse. Use only replacement batteries supplied by Compaq Computer Corporation.

REMOVAL & REPLACEMENT

Removing the Chassis Base
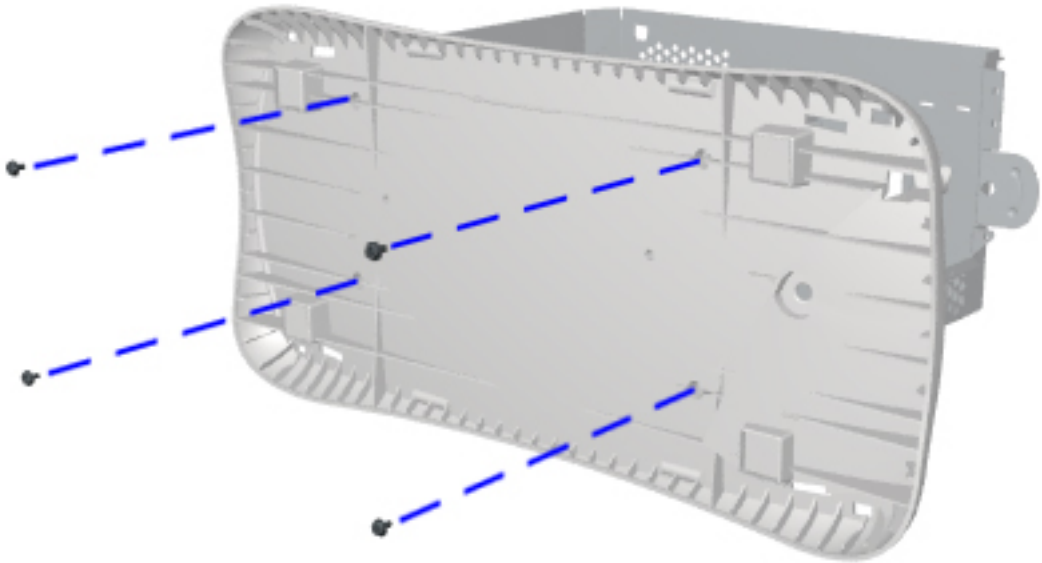
Removal

1   Perform preparation procedures.

2   Remove the Left Easy Access Panel.

3   Remove the left side plastic subpanel.

4   Remove the Right Easy Access Panel.

5   Remove the right side plastic subpanel.

6   Remove the drive cage.

7   Remove four screws from the base of the unit.

Replacement

To replace the base, reverse this procedures.

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

ILLUSTRATED PARTS CATALOG - INDEX PAGE

NOTE:	The computer serial number should be provided to Compaq whenever requesting information or ordering spare parts.

Mass storage devices   **Keyboard**

Cables   **Miscellaneous parts**

Standard & Optional Boards   **Return kit**

Fax/modem   **Documentation & software**

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

ILLUSTRATED PARTS CATALOG

Mass Storage Devices

Mass storage devices

Cables

Standard & Optional Boards

Fax/modem

Keyboard

Miscellaneous

Return kits

Documentation & software

Spare Part Description	Spare Part No.
1. 1.44-MB Diskette Drive (Models: EZ2200, EZ2207, and EZ2700)	174990-001
2. 20.0-GB Hard Drive (Models: EZ2700 and EZ2207)	168031-001
17.0-GB 5400 Hard Drive (Model: EZ2207)	168591-001
3. CD Drive 40x BAJA (Models: EZ2200 and EZ2207)	174931-001
4. CD-RW Drive 4X4X24 BLUE (Models: EZ2200, EZ2207, and EZ2700)	173392-001
CD-RW Drive 4X4X32 BLUE (Models: EZ2200, EZ2207, and EZ2700)	173393-001
CD-RW Drive 8X4X32 BLUE (Models: EZ2200, EZ2207, and EZ2700)	173394-001
5. 8x DVD Drive (Model: EZ2700)	Not Available

ILLUSTRATED PARTS CATALOG

Miscellaneous Cables

Spare Part Description	Spare Part No.
Miscellaneous Cable Kit (Content Includes)	176368-001

Information not available.

ILLUSTRATED PARTS CATALOG

Standard and Optional Boards

Mass storage devices

Cables

Standard & optional boards

Fax/modem

Keyboard

Miscellaneous

Return kits

Documentation & software

Spare Part Description	Spare Part No.
1. System Board W/1394 2000 (Models: EZ2200, EZ2207, and EZ2700)	170392-102
2. Celeron w/heatsink 500-MHz (Models: EZ2200 and EZ2207)	149267-001
Pentium III w/heatsink 500-MHz (Model: EZ2700)	170073-001
3. 64-MB 100-MHz Memory Module DIMM (Models: EZ2200 and EZ2207)	179190-001
3. 128-MB 100-MHz Memory Module DIMM (Model: EZ2700)	166966-001
4. Front I/O Board (DCIC) (Models: EZ2200, EZ2207, and EZ2700)	174930-001

ILLUSTRATED PARTS CATALOG

Fax/ Modem

Spare Part Description	Spare Part No.
56K Data/Fax Modem (Model: EZ2200)	166386-001
Combo V90, 1MG, 10BS 56K Data/Fax Modem (Models: EZ2207 and EZ2700)	157044-001

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

System unit
Mass storage devices
Cables
Standard & Optional Boards
Fax/modem
Keyboard
Miscellaneous
Return kits
Documentation & software

ILLUSTRATED PARTS CATALOG

Keyboard

Spare Part Description	Spare Part No.
USB Internet Keyboard	168102-001

ILLUSTRATED PARTS CATALOG

Miscellaneous Parts

Spare Part Description	Spare Part Number
1 Mouse	168103-001
2 Access Panel MEM/PIC	176369-001
3 Front Door Bezel	176370-001
4 Panel Side PCI	176372-001
5 Top Hood w/Button Board	176371-001
6 145 Watt Power Supply/Fan Assembly	164174-001

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

ILLUSTRATED PARTS CATALOG

Return Kit

Spare Part Description	Spare Part Number
Return Kit	176236-001

Mass storage devices

Cables

Standard & Optional Boards

Fax/modem

Keyboard

Miscellaneous

Return kit

Documentation & software

Product Description   **Troubleshooting**   **Illustrated Parts Catalog**

Home   **Removal & Replacement**   **Jumper & Switch Information**   **Specifications**

ILLUSTRATED PARTS CATALOG

Documentation & Software

System unit

Mass storage devices

Cables

Standard & Optional Boards

Fax/modem

Keyboard

Miscellaneous

Return kits

Documentation & software

Description	Spare Part Number
Compaq Presario Series - User's Guide	Available online at **www.compaq.com/athome/**
Quick Restore CD, U.S.- Model: EZ2200 and EZ2700	162948-001
Quick Restore CD, Latin America - Model: EZ2200	162948-161
Quick Restore CD, Brazil - Model: EZ2200	162948-201
Quick Restore CD, French Canada (English) - Model: EZ2207	162948-401
Quick Restore CD, French Canada (French) - Model: EZ2207	162948-121

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

ILLUSTRATED PARTS CATALOG

This section provides an illustrated parts breakdown and a reference for spare parts for the Compaq Presario EZ2000 Series Computers.

When requesting information or ordering spare parts for the Compaq Series Computers provide the computer's serial number. The (1) serial number is located on the back of the chassis above the voltage select switch and inside of the front door on the base directly below the Front I/O connectors.

SPECIFICATIONS - INDEX PAGE

This section provides physical, environmental, and performance specifications for Compaq Series Personal Computers.

CD or DVD and CD-RW drive

Mouse

Diskette drive

Power Supply/Fan Assembly

Fax-modem

System

Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

Product Description	**Troubleshooting**	**Illustrated Parts Catalog**
Home	**Removal & Replacement**	**Jumper & Switch Information**	**Specifications**

PRODUCT DESCRIPTION - INDEX PAGE

Model Specific Features

Digital Dashboard

CPU Controls and Lights

Right Easy Access Panel

Left Easy Access Panel

USB Keyboard Controls

Rear Connectors
Connector pin assignments

Power Cord Set Requirements
General requirements

Product Description	**Troubleshooting**	**Illustrated Parts Catalog**
Removal & Replacement	**Jumper & Switch Information**	**Specifications**

Home

Models and Features

Digital Dashboard

CPU Controls and Lights

Right Easy Access Panel

Left Easy Access Panel

USB Keyboard Controls

Rear CPU Connectors

Power Cord Set Requirements

PRODUCT DESCRIPTION

Compaq Presario EZ2000 Series Standard Configuration

Model	Processor	Hard Drive	CD/CD-RW/DVD Drive	Modem
EZ2200	Celeron/500-MHz (128)	17.0-GB	40x and CD-RW	Presario/PC-Tel HSP56K
EZ2207	Celeron/500-MHz (128)	20.0-GB	40x and CD-RW	Presario/Conexant V.90 HPNA
EZ2700	Pentium III/550 (256)	20.0-GB	8x DVD and CD-RW	Presario/Conexant V.90 HPNA

PRODUCT DESCRIPTION

Digital Dashboard
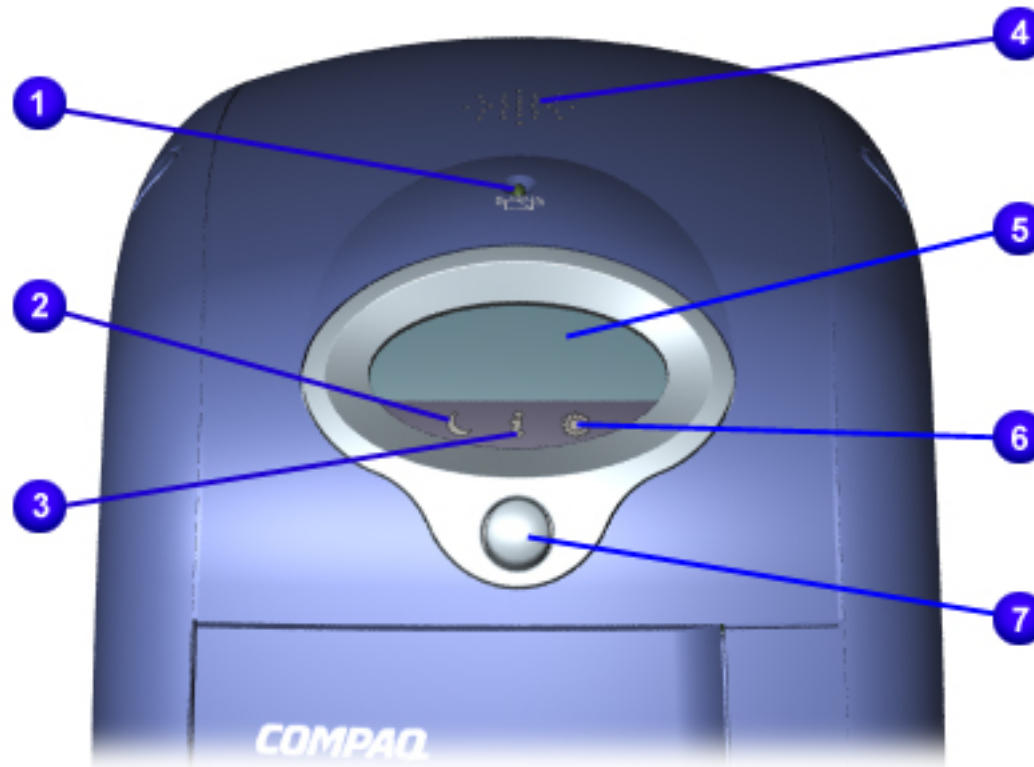
1 E-Mail Waiting Indicator

2 Sleep Mode Indicator

3 Internet Alive Indicator

4 PC Speaker

5 LCD Display Screen

6 Awake Indicator

7 Start/Reset Button

PRODUCT DESCRIPTION

CPU Controls and Lights
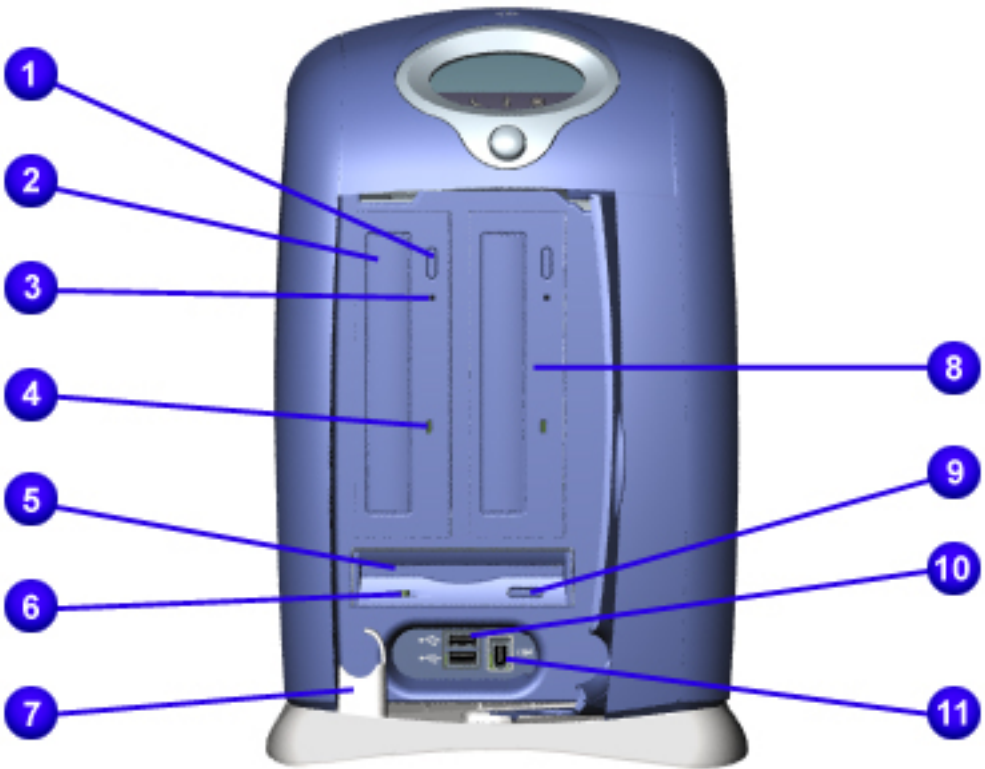
1 DVD or CD Drive Eject Button
(DVD drive available on selected models)

2 DVD or CD Drive Tray
(DVD drive available on selected models)

3 DVD or CD Drive Manual Eject Hole
(DVD drive available on selected models)

4 DVD or CD Drive Activity Light
(DVD drive available on selected models)

5 Diskette Drive

6 Diskette Drive Activity Light

7 Cable Collector

8 CD-RW Drive

9 Diskette Drive Eject Button

10 USB Connectors

11 1394 Connector

PRODUCT DESCRIPTION

Right Easy Access Panel
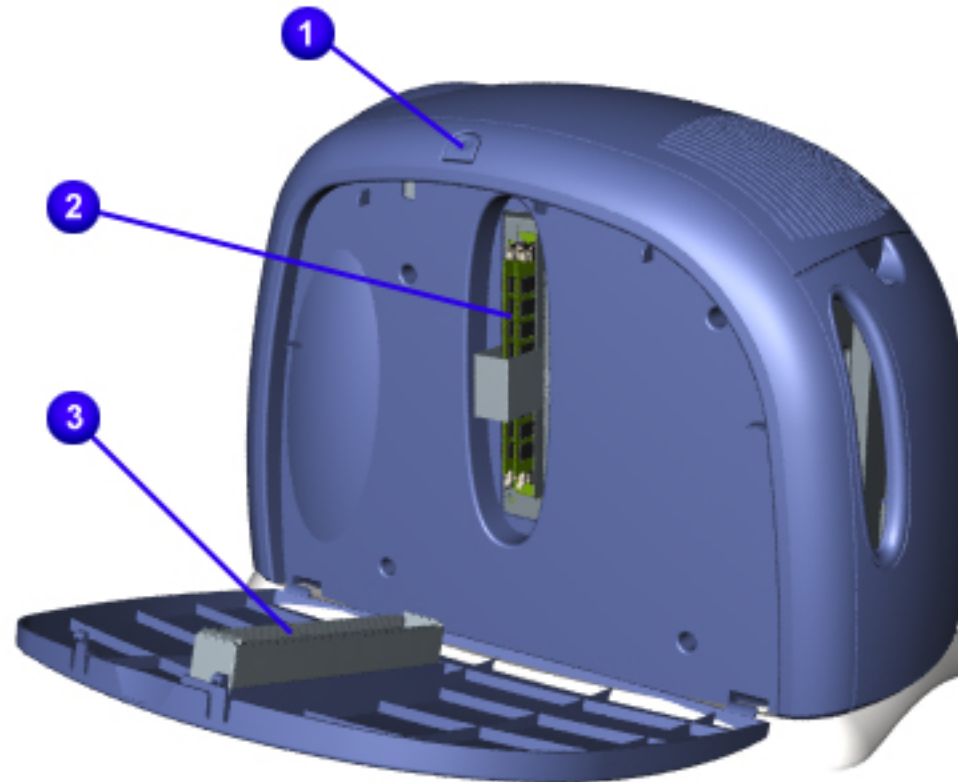
1 Right Easy Access Panel Release Button

2 DIMM Slots

3 EMI Shield

Product Description	**Troubleshooting**	**Illustrated Parts Catalog**
Home **Removal & Replacement**	**Jumper & Switch Information**	**Specifications**

PRODUCT DESCRIPTION

Models and Features

Digital Dashboard

CPU Controls and Lights

Right Easy Access Panel

Left Easy Access Panel

USB Keyboard Controls

Rear CPU Connectors

Power Cord Set Requirements

Left Easy Access Panel
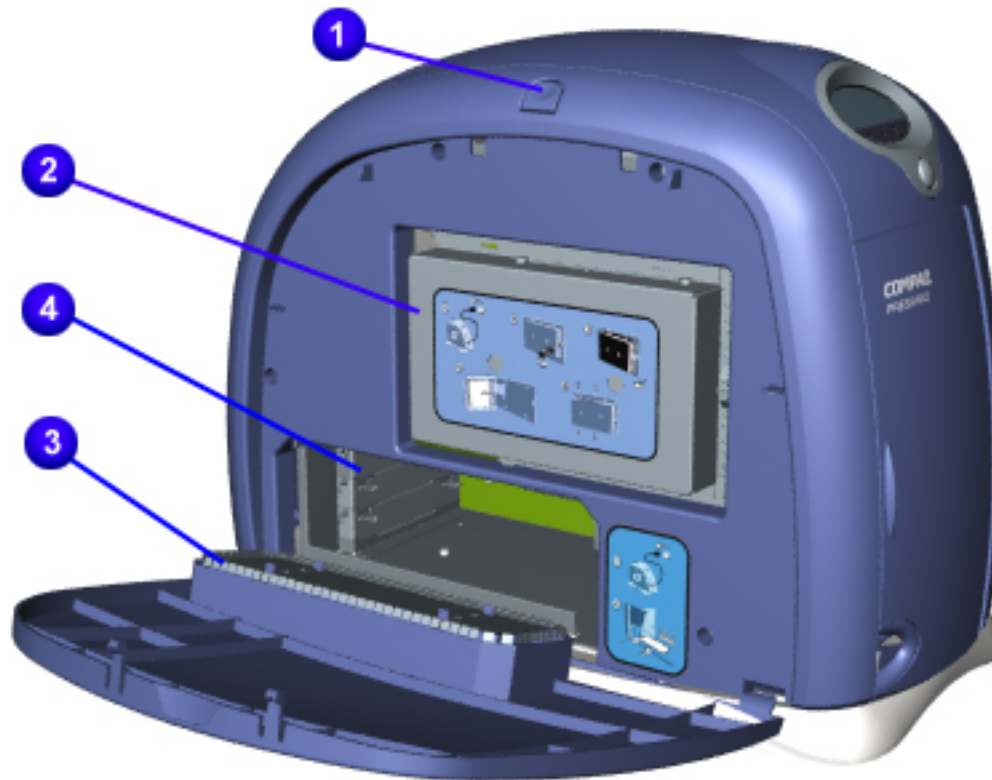
1 Left Easy Access Panel Release Button

2 Hard Drive

3 EMI Shield

4 PCI Expansion Slots

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Maintenance and Service Guide
Compaq Presario EZ2000 Series Computers

Product Description	**Troubleshooting**	**Illustrated Parts Catalog**
Home **Removal & Replacement**	**Jumper & Switch Information**	**Specifications**

Models and Features

Digital Dashboard

CPU Controls and Lights

Right Easy Access Panel

Left Easy Access Panel

USB Keyboard Controls

Rear CPU Connectors

Power Cord Set Requirements

PRODUCT DESCRIPTION

Compaq USB Internet Keyboard
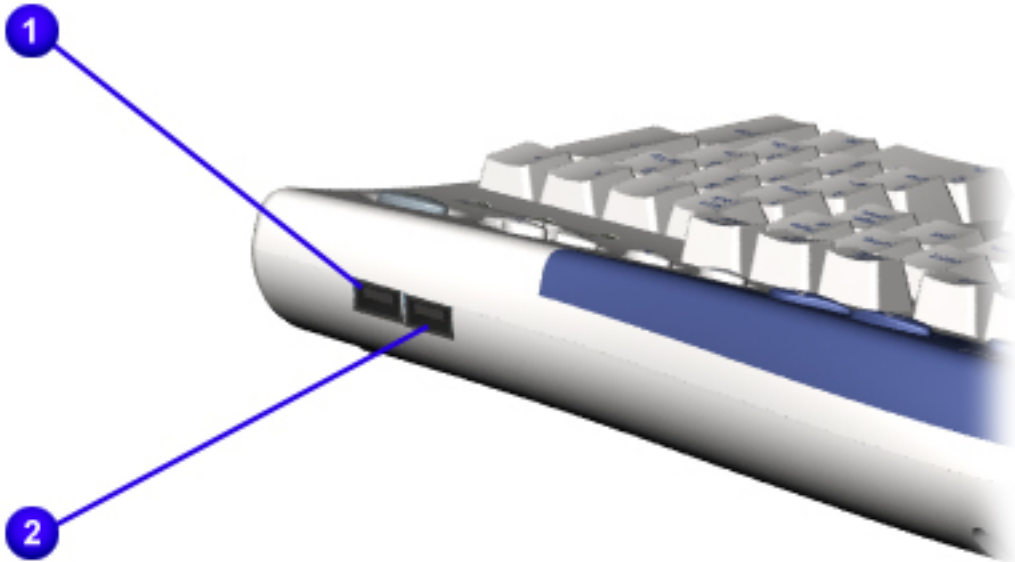
Internet Button Suite and USB Connectors
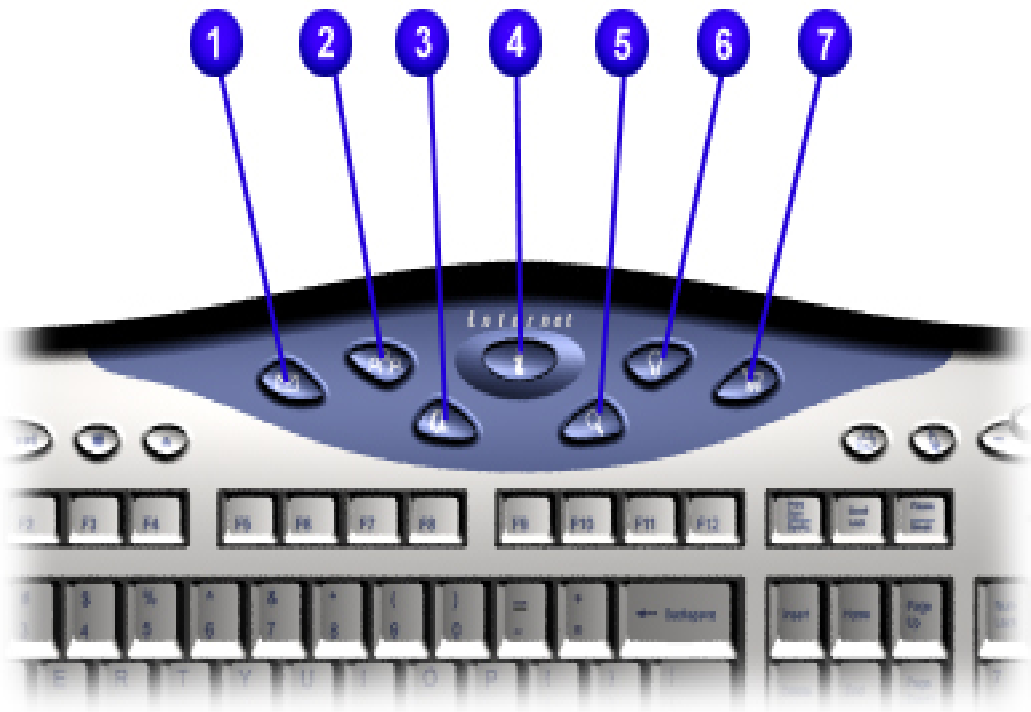
Internet Button Suite

1 Instant E-mail
2 Community
3 My Presario
4 Instant Internet
5 Instant Search
6 Entertainment Ideas
7 Retail Central

USB Connectors

1 USB Port
2 USB Port

USB Connectors

1.800.At.Compaq

Product Description	**Troubleshooting**	**Illustrated Parts Catalog**
Home	**Removal & Replacement**	**Jumper & Switch Information**	**Specifications**

PRODUCT DESCRIPTION

Models and Features

Digital Dashboard

CPU Controls and Lights

Right Easy Access Panel

Left Easy Access Panel

USB Keyboard Controls

Rear CPU Connectors

Power Cord Set Requirements

Rear CPU Connectors

1	USB Port (2)
2	Microphone In
3	Audio Line Out
4	1394 Connector
5	SVGA Monitor Port
6	*Network Interface Connector
7	Modem (line)
8	Audio Line In
9	Voltage Select Switch
10	AC Power Connector
11	Modem (phone)
*	**IMPORTANT**: Modem configuration may vary depending on the model selected.

PRODUCT DESCRIPTION

Power Cord Set Requirements

The power cord set (flexible cord and wall plug) received with the computer meets the requirements for use in the country where the computer was purchased.

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

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 10A 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 C13 connector, for mating with appliance inlet on the Switch Box.

Country-Specific Requirements

Country	Accredited Agency
United States	UL*
US/Canada	UL and CSA

* The flexible cord must be Type SJT-2 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration.