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## Maintenance & Service Guide Presario 1200 Series

Models: 1255, 1256, 1260, 1262, 1266, 1267, 1272, 1273, 1274, and 1275

| <u>Home Page</u> | <u>Notice</u> | <u>Preface</u> | <u>Product Description</u> | <u>Troubleshooting</u> | <u>Illustrated Parts Catalog</u> | <u>Removal & Replacement Procedures</u> | <u>Specifications</u> | <u>Pin Assignments</u> | <u>Battery Pack Operations</u>

## Welcome to the Maintenance & Service Guide for the Presario 1255 through 1275 series...

Notice
Preface
Product
Description
Troubleshooting
Illustrated
Parts Catalog
Removal &
Replacement
Procedures
Specifications
Connector Pin
Assignments
Battery Pack
Operations



This online guide is designed to serve the needs of those whose job it is to repair Compaq products.

Click to download a ZIP file containing the complete Maintenance & Service Guide for this product.

This Guide will be periodically maintained and updated online as needed.

For content comments or questions, contact <a href="http://www.compaq.com/athome/support/msgs/comments.html">http://www.compaq.com/athome/support/msgs/comments.html</a>.

To report a technical problem, contact your Regional Support Center or IM Help Center.

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Maintenance and Service Guide

Compaq Presario 1200 Series Portable Computers

First Edition (June 1999) Compaq Computer Corporation

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#### **Preface**

This *Maintenance and Service Guide* is a troubleshooting guide that can be used for reference when servicing the Compaq Presario 1200 Series Portable Computers.

Compaq Computer Corporation reserves the right to make changes to the Compaq Presario 1200 Series Portable 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.



**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.

#### Serial Number

When requesting information or ordering spare parts, the computer serial number should be provided to Compaq. The serial number is located on the bottom of the computer.

#### **Locating Additional Information**

The following documentation is available to support this product:

- Compaq Presario 1200 Series Portable Computer documentation set
- Introducing Windows 95 Guide
- Service Training Guides
- Compaq Service Advisories and Bulletins
- Compaq QuickFind
- Compaq Service Quick Reference Guide

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## Maintenance & Service Guide

**Presario 1200 Series** 

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## **Product Description**

Models and Features

Controls and Lights

Left Side

**Components** 

Right Side

**Components** 

**Bottom of Unit** 

Rear Connectors

Power

Management for

Windows 98



Compaq Presario Portable Computers...

are a continuation of new generation multimedia portable computers with innovative integrated designs, outstanding audio and video, advanced core features. and attractive styling.

This fullfunction, AMD-K6

portable computer allows full desktop functionality.

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## **Troubleshooting**

**Preliminary Steps** 

Clearing the Power-On

**Password** 

Power-On Self Test

(POST)

Compaq Diagnostics

**Diagnostic Error Codes** 

**Troubleshooting** 

Without Diagnostics

Solving Minor

**Problems** 

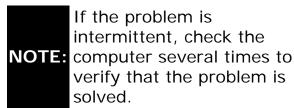
Contacting Compaq

<u>Support</u>

This section covers troubleshooting information for the Compaq Presario 1200 Series Portable Computers. The basic steps in troubleshooting include:

- 1. Follow the Preliminary Steps.
- 2. Run the <u>Power-On Self-Test</u> (POST).
- 3. If you are unable to run POST or if POST displays an error message, follow the recommended actions described in the diagnostic tables.

When following the recommended actions in the Sections on POST and Diagnostic Error Codes, perform them in the order listed. Rerun POST after each recommended action until the problem is solved and no error message occurs. Once the problem is solved, do not complete the remaining recommended actions.



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## **Illustrated Parts Catalog**

This section provides a breakdown and identifies the spare parts ordering number associated with each item for the Compaq Presario 1200 Series Portable Computers.

System Unit

Boards

Miscellaneous Hardware & Plastics Kit

Display Assembly

Miscellaneous Parts

Mass Storage Devices

Documentation & Software

Miscellaneous Cable Kit

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## **Removal and Replacement Procedures**

This section explains the removal and replacement procedures for the computer.

#### Serial Number Location

### Disassembly Sequence

Electrostatic

**Discharge** 

Service

Considerations

Cables and

**Connectors** 

Preparing the

Computer for

Disassembly

**Battery Pack** 

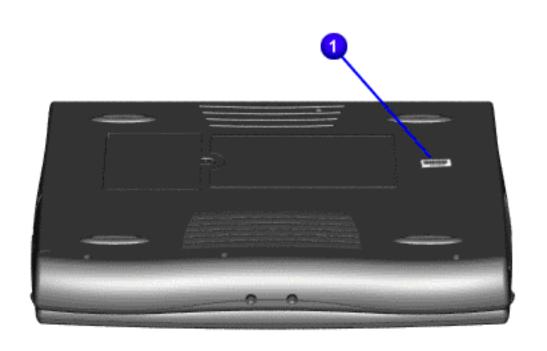
**Palmrest** 

Cover with

Touch Pad

Heatspreader

Keyboard



Processor Hard Drives CD Drive **Battery** Charger Board Modem Display Panel **Assembly** Upper CPU Cover Speaker **Assembly** Diskette Drive Fan Assembly System Board Dip Switch **Settings Memory** 

Report the computer [ 1 ] serial number to Compaq when requesting information or ordering spare parts.

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**Module** 

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### **Specifications**

This chapter covers the following specifications of Compaq Presario 1200 Series Portable Computers:

System interrupts

System DMA

System I/O Address

System memory Catalog

Physical & environmental

Display

**Memory Expansion** 

**Battery Pack** 

Diskette Drive

Hard Drive

CD Drive

#### Physical and Environmental

Computer Specifications					
	U.S. Metric				

Dimensions			
(All models with 12.1" display)	1.97 in	4.95 cm	
Height	1.37 III 12.20 in	31.00 cm	
Depth	10.08 in	25.60 cm	
Width	10.00 111	25.00 0111	
(Model 1275 with 13.0" display)			
Height	1.97 in	5.00 cm	
Depth	12.33 in	31.30 cm	
Width	10.08 in	25.60 cm	
Weight			
Model 1255	6.68 lb	3.34 kg	
Model 1256	6.68 lb	3.34 kg	
Model 1260	6.68 lb	3.34 kg	
Model 1262	6.68 lb	3.34 kg	
Model 1266	6.68 lb 6.68 lb	3.34 kg	
Model 1267	6.68 lb	3.34 kg 3.34 kg	
Model 1272 Model 1273	6.68 lb	3.34 kg	
Model 1273 Model 1274	6.68 lb	3.34 kg	
Model 1274 Model 1275	6.68 lb	3.34 kg	
Stand-Alone (Battery Pack) Power			
Requirements	NiMH	Li-ion	
Requirements			
Nominal Operating	W @ 9.6 V	W @ 14.8 V	
Maximum Average	W @ 9.6 V	W @ 14.8 V	
Peak Operating	W @ 9.6 V	W @ 14.8 V	
AC Power Requirements		,	
0 " " "	100 040 1/		
Operating Voltage	100-240 V		
Operating Current Operating Frequency	0.8/0.4 A RMS 47-63 Hz		
Operating Frequency	Meets IEC 801-4 and IEC801-5		
Maximum Transient	1kV for 50 ns		
Operating Temperature	50° to 95 °F	10° to 35 °C	
Non-operating Temperature	-4° to 140 °F	-20° to 60 °C	
Operating Relative Humidity (non-	10 to 90%	35°C to 90%	
condensing)			
Non-operating Relative Humidity	5 to 95%	60°C to 95%	
(tw = 38.7°C max)			
Operating Altitude	0 to 10,000 ft	0 to 3.15 km	
Non-operating Altitude	0 to 30,000 ft	0 to 9.14 km	
Operating Shock	10 G, 11 ms, half sine		
Non operating Shock	240 G, 2 ms, half sine		
Operating Vibration	0.5 G		
Non-operating Vibration	1.5 G		

**NOTE:** Applicable product safety standards specify thermal limits for plastic surfaces. Compaq Presario 1200 Series Portable Computers operate well within this range of temperatures.

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| Pin Assignments | Battery Pack Operations

## **Connector Pin Assignments**

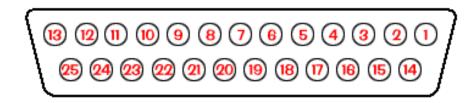
This appendix provides connector pin assignment tables for Compaq Presario 1200 Series Portable Computers. For more information on connectors, refer to the section on Rear Connectors.

**NOTE:** The signals in all tables of this appendix are considered active high unless otherwise indicated by an asterisk (\*).

#### Click on a link:

- Parallel Connector
  - Serial Connector
  - Keyboard/Mouse
- External VGA Monitor
- Universal Serial Bus
  - Modem

#### **Parallel Connector**



Pin	Signal	Pin	Signal	
1	Strobe*	10	Acknowledge*	
2	Data Bit 0	11	Busy	
3	Data Bit 1	12	Paper Out	
4	Data Bit 2	13	Select	
5	Data Bit 3	14	Auto Linefeed*	
6	Data Bit 4	15	Error*	
7	Data Bit 5	16	Initialize Printer*	
8	Data Bit 6	17	Select In*	
9	Data Bit 7	18-25	Signal Ground	
* = Act	ive low	,		

#### Return to the top.

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

### Return to the top.

Keyboard/Mouse			
Connector	Pin	Signal	
	1	Data 1	
4 6	2	Data 2	
	3	Ground	
4 Key 3 2 1 1	4	+5 V	
	5	Clock 1	
	6	Clock 2	

Return to the top.

External VGA Monitor			
Connector	Pin	Signal	
	1	Red Analog	
	2	Green Analog	
10 9 8 7 6	3	Blue Analog	
(I5 (I4 (I3 (I2 (II)	4	Not connected	
	5	Ground	
	6	Ground Analog	
	7	Ground Analog	
	8	Ground Analog	
	9	Not connected	

10	Ground
11	Monitor Detect
12	DDC2B Data
13	Horizontal Sync
14	Vertical Sync
15	DDC2B Clock

Return to the top.

Universal Serial Bus			
Connector	Pin	Signal	
	1	+5V	
	2	Data -	
1 2 3 4	3	Data +	
		Ground	
	4		

Return to the top.

Modem			
Connector	Pin	Signal	
1 <sup>2</sup> 3 <sup>4</sup> 5 <sup>6</sup>	1	Unused	
	2	Unused	
	3	Tip	
	4	Ring	
	5	Unused	
	6	Unused	

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#### **Battery Pack Operating Time**

This appendix covers the following information concerning battery pack operating time:

- Increasing battery pack operating time
- Conditioning a battery pack
- Disposing of a used battery pack

#### **Increasing Battery Pack Operating Time**

Battery pack operating time differs depending on several variables. To avoid unnecessary replacement, consider the following variables when determining how long a charged battery pack should last:

- Power management settings
- Hardware configuration
- Software applications
- Installed options
- Display brightness
- Hard drive usage
- Changes in operating temperature
- Type and number of installed PC Cards

NOTE: The power consumption requirements for PC Cards vary widely. Some cards drain the battery pack very rapidly.

Battery pack operating time can be increased by as much as 50 percent by controlling the energy required by the computer and the energy stored in the battery pack.

#### Minimizing the Energy Required

To minimize the energy required by the computer, follow these steps:

- 1. Set the power conservation levels in the Power Management utility to **Maximum**.
- 2. Customize the timeout value to work more efficiently with the applications. The amount of battery life depends on the values selected.

#### **Maximizing the Energy Stored**

#### To maximize the energy stored in the battery pack, follow these guidelines:

- Condition the battery pack at least every 30 days to improve overall battery performance.
- Keep a battery pack in the computer when using it with AC power to supply the battery pack with a constant trickle charge.
- Store the battery pack in a cool, dry place when not in use.

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#### Conditioning a Battery Pack



**CAUTION:** To avoid a loss of data, ensure that all data is saved before discharging a battery pack.

#### To condition a battery pack, complete the following steps:

- 1. Plug in the AC adapter and allow the battery to charge until the LED light on the display stops blinking. Your battery gauge may read 100 percent for a period of time before LED light on the display stops blinking. Do not unplug the AC adapter until the arrow disappears.
- 2. Unplug the AC adapter and allow the battery to drain until the computer reaches hibernation and turns itself off. **Do not plug in the AC adapter during this process or you will need to restart with Step No. 1.** You may use the computer while the battery is draining.
- 3. Your battery is re-conditioned.
- 4. Plug in the AC adapter and begin using the computer.

#### The table below shows the approximate battery pack charge times.

Approximate Battery Charge Time				
Computer	On Line	Off Line		
NiMH Battery Pack	4.0 hours	2:00 hrs		
Li ion Battery Pack	4.5 hours	2:50 hrs		

#### Disposing of a Used Battery Pack

In the interest of safeguarding our environment, Compaq Computer Corporation recommends that nickel metal hydride (NiMH) and lithium ion (Li ion) battery packs be recycled. Battery packs should be handled in accordance with country, state, province, or local regulations.



**CAUTION:** Never attempt to open or service a battery pack. Opening a battery pack not only damages the pack and makes it unusable, but also exposes potentially harmful battery components.

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### **Models & Features**

Models and Features
Controls and Lights
<u>Left Side</u> <u>Components</u>
Right Side Components
Bottom of Unit
<u>Rear</u> <u>Connectors</u>
Power Management

Compaq Presario 1200 Series Portable Computer Models							
	Model 1255	Model 1256					
Display	12. 1" HPA	12.1" HPA					
Processor	AMD-K6 333-MHz MMX	AMD-K6 333-MHz MMX					
Hard Drive	3.2-GB (or) 4.0-GB	4.3-GB					
CD Drive	24× MAX	24× MAX					
Modem	K-56.0 (or) M++56.0 Kbps Data/Fax with ITU V.90	M++56.0 Kbps Data/Fax with ITU V.90					
Battery	ES NiMH (or) sLi ion	ES NiMH					
System Memory	32 MB	32 MB					
	Model 1260	Model 1262					
Display	12. 1" TFT	12. 1" TFT					
Processor	AMD-K6 333-MHz MMX	AMD-K6 333-MHz MMX					
Hard Drive	4.0-GB (or) 6.4-GB	4.0-GB					
CD Drive	24× MAX	24× MAX					

Modem	K-56.0 (or) M++56.0 Kbps Data/Fax with ITU V.90	K-56.0 Kbps Data/Fax with ITU V.90		
Battery	sLi ion	ES NIMH		
System Memory	32 MB	32 MB		
	Model 1266	Model 1267		
Display	12. 1" TFT	12. 1" TFT		
Processor	AMD-K6 333-MHz MMX	AMD-K6 333-MHz MMX		
Hard Drive	4.0-GB (or) 6.4-GB	4.0-GB		
CD Drive	24× MAX	24× MAX		
Modem	K-56.0 (or) M++56.0 Kbps Data/Fax with ITU V.90	K-56.0 Kbps Data/Fax with ITU V.90		
Battery	sLi ion	ES NIMH		
System Memory	32 MB	32 MB		
	Model 1272	Model 1273		
Display	12. 1" HPA	12. 1" HPA		
Processor	AMD-K6II 333-MHz MMX	AMD-K6II 333-MHz MMX		
Hard Drive	4.3-GB	6.4-GB		
CD Drive	24× MAX	24× MAX		
Modem	K-56.0 Khan	K-56.0 Khan		
Battery	ES NIMH	ES NIMH		
System Memory	32 MB	32 MB		
	Model 1274	Model 1275		
Display	12. 1" HPA	13.0" HPA		
Processor	AMD-K6II 333-MHz MMX	AMD-K6II 333-MHz MMX		
Hard Drive	4.3-GB	4.3-GB		
CD Drive	24× MAX	24× MAX		
Modem	K-56.0 Khan	K-56.0 Khan		
Battery	ES NIMH	sLi ion		
System Memory	64 MB	32 MB (or) 64 MB		

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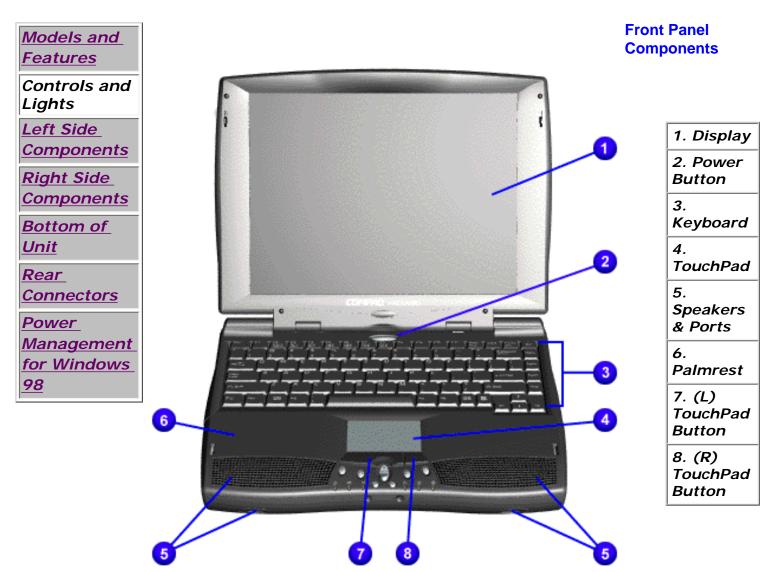
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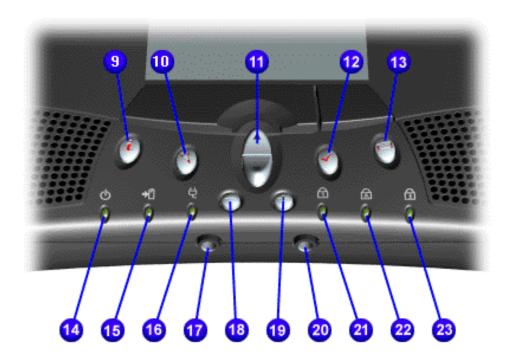
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## **Controls and Lights**





- 9. Instant Internet Access Button
- 10. Instant Search Button
- 11. Scroll up/down Button
- 12. Instant E-Commerce Button (or Retail Center)
- NOTE:
  Depending
  on the
  model, the
  icon for this
  button may
  be either a
  check mark
  or a shopping
  cart.
- 13. Instant E-mail
- 14. Power Light
- 15. Battery Charge Light
- 16. AC Adapter Light
- 17. Headphone Jack
- 18. Volume Down Button
- 19. Volume Up Button
- 20. Microphone Jack

21.
Number
Lock Light

22. Cap
Lock Light

23. Scroll
Lock Light

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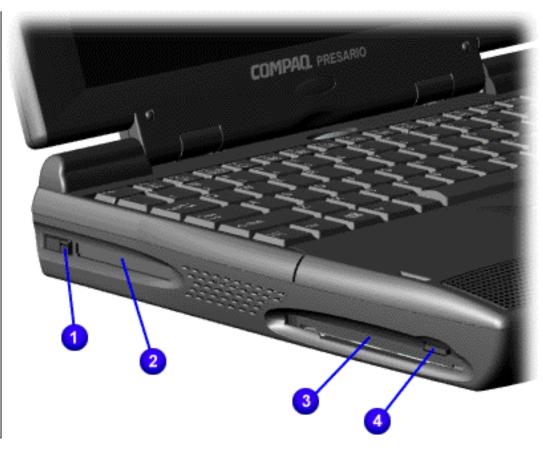
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## Left Side Components

Models and **Features** Controls and **Lights** Left Side Components Right Side Components **Bottom of** Unit Rear **Connectors** Power Management for Windows 98



- 1. PC Card Eject Lever
- 2. PC Card Slot
- 3. Diskette Drive Slot
- 4. Diskette Eject Button

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## **Right Side Components**

Models and Features

Controls and Lights

Left Side

<u>Components</u>

Right Side Components

Bottom of Unit

Rear

**Connectors** 

Power

Management for Windows

98



- 1. Battery Compartment.
- 2. CD Drive.
- 3. CD Drive Eject Button.

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### Maintenance & Service Guide Presario 1200 Series

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### **Bottom of Unit**

Models and Features

Controls and

<u>Lights</u>

<u>Left Side</u> Components

<u>Right Side</u> Components

Bottom of Unit

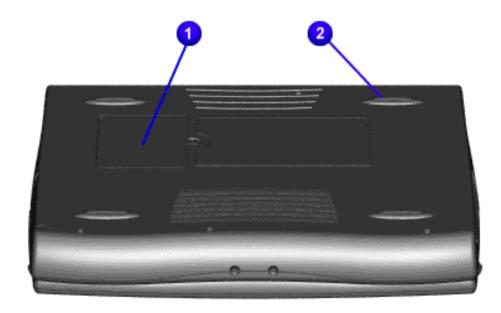
Rear

**Connectors** 

<u>Power</u>

Management for Windows

98



- 1.
  Upgradeable
  memory
  compartment.
- 2. Rubber feet.

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### Rear Connectors

Models and

Controls and Lights

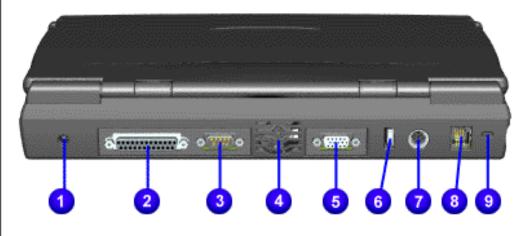
Left Side
Components

Right Side
Components

Bottom of
Unit

Rear
Connectors

Power
Management
for Windows
98



- 1. AC Adapter.
- 2. Parallel Printer Port.
- 3. Serial Port.
- 4. Fan Exhaust.
- 5. External Monitor Port.
- 6. USB.
- 7. Keyboard/ Mouse Port.
- 8. Modem Jack.

9. Security Slot.

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### **Power Management for Windows 98**

The following power management features are available for conserving AC power and extending battery operating time:

Power Management Settings

Sleep

**Hibernation** 

**Battery Operating Time** 

Rebooting After Lockup

Servicing Your Computer

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# **Preliminary Steps**

Before running <u>POST</u>, complete the following preliminary steps:

- 1. If a power-on password has been established, type the password and press the **Enter** key. If the password is not known, clear the password.
- 2. Run Computer Checkup.
- 3. Turn off the computer and its external devices.
- 4. Disconnect any external devices that you do not want to test. Do not disconnect the printer if you want to test it or use it to log error messages.



If the problem only occurs when an external device is connected to the IMPORTANT: computer, the problem may be related to the external device or its cable. Verify this by running POST with and without the external device connected.

- 5. Install loopback plugs in the serial and parallel connectors if you would like to test these ports.
- 6. Ensure that the hard drive is installed in the computer.
- 7. Ensure that the battery pack is inserted in the computer and the computer is connected to an external AC power source.

When these preliminary steps are completed, you are ready to run **POST**.

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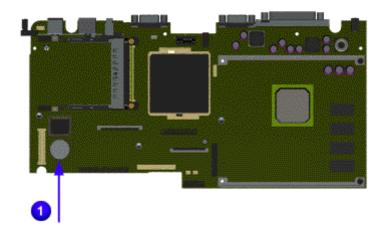


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### **Clearing the Power-on Password**



Clearing the power-on password requires removing all Setup attributes that are programmed in the CMOS. The RTC battery 1 is located on the system board.

If the password is not known, clear it by performing the following steps:

- 1. Turn off the computer.
- 2. Disconnect the power cord.
- 3. Remove the battery pack.
- 4. Remove the Palmrest Cover with Touch Pad.
- 5. Move the keyboard to allow access to the heatspreader.
- 6. Remove the heatspreader.
- 7. Remove the modem.
- 8. Remove the RTC battery for 30 seconds and replace it.
- 9. Reassemble the computer by reversing the previous steps.
- 10. Turn on the computer to verify that the power-on password has been cleared. If it has not been cleared, repeat Steps 1 through 10.

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or

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### Power-On Self Test (POST)

### **Running POST**

To run POST, complete the following steps:

- Turn off the computer; then, turn on the computer.
- If POST does not detect any errors, the computer will not beep. This indicates successful completion of POST test. POST has run successfully and boots from the hard drive (or from a bootable diskette if one is installed in the diskette drive).
- If POST detects errors, the errors are indicated by screen and/or audible messages. Refer to "Power-On Self-Test (POST) Codes" in the tables for a list of POST codes and their relevant descriptions.



If the system is not functioning well enough to run POST, or if the display is not functioning well enough to show POST error messages, refer to the Troubleshooting tables.

### **Power-On Self-Test Messages**

102-System Board Failure	
Probable Cause	Recommended Action
DMA, timers, etc.	Replace the system board.
162-System Options Not Set	
Probable Cause Recommended Action	
Configuration incorrect	Run Computer Setup.
CMOS reflects that an invalid configuration has been set.	Run Computer Setup.

RAM failure	1. Replace the memory modules.
	2. Replace the system board.
Memory test data error	1. Replace the memory modules.
	2. Replace the system board.
XX000YZZ RAM failure	Replace the system board.

XX000YZZ 201-Memory Error		
Probable Cause	Recommended Action	
RAM failure	Replace the memory modules.	
To writing e	The Replace the memory modules.	
	2. Replace the system board.	
Memory test data error	Replace the memory modules.	
	2. Replace the system board.	
XXOOOYZZ Ram failure	Replace the system board.	
301-Keyb	oard Error	
Probable Cause	Recommended Action	
Keyboard failure	Ensure that keys are not depressed during POST.	
	2. Reconnect the keyboard with the computer off.	
	3. Replace the keyboard.	
304-Keyboard or System Unit Error		
Probable Cause	Recommended Action	
Keyboard or system board error	1. Replace the keyboard.	
	2. Replace the TouchPad or mouse.	
	3. Replace the system board.	
601-Diskette 0	controller Error	
Probable Cause	Recommended Action	
Mismatch in drive type or failure in the diskette controller	1. Run Computer Checkup (TEST).	
	2. Check and/or replace cables.	
	3. Replace the system board.	

605-Diskette Drive Error		
Probable Cause Recommended Action		
Mismatch in drive type	Run Computer Setup.	
1780-P	rimary Hard Drive 0 Failure	
Probable Cause Recommended Action		
Disk 0 failed to respond	1. Run Computer Checkup (TEST).	
	2. Replace the hard drive.	
Hard drive format error	1. Run Computer Checkup (TEST).	
	2. Replace the hard drive.	
178	2-Hard Drive Controller	
Probable Cause	Recommended Action	
Hard drive controller failure	1. Run Computer Setup.	
	2. Replace the hard drive.	

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### **Compaq Diagnostics**

Compaq Diagnostics is installed on the hard drive of the computer. Run the Diagnostics utilities when you want to view or test system information and if you have installed or connected devices. If you run Compaq Diagnostics from a diskette, ensure that it is version 10.11 or later.

The Diagnostics menu includes the following utilities:

- Perform Computer Checkup (TEST)
- View System Information (INSPECT)
- Prepare Computer for a Compaq Service Call (RemotePaq)

If you have a problem you cannot solve, run the Diagnostics utilities before you call for support. Run Computer Checkup and save the device list to a file and to print, or save the error log. Run the View System Information (INSPECT) utility and print or save that information. Have the files or the printed information available when you call for support.

### Perform Computer Checkup (TEST)

Computer Checkup (TEST) determines whether the various computer components and devices are recognized by the system and are functioning properly. You can display, print, or save the information generated by Computer Checkup.

Follow these steps to run Computer Checkup:

- 1. Plug the computer into an external power source. (A low battery condition could interrupt the program.)
- 2. Turn on the external devices that you want to test. Connect the printer if you want to print a log of error messages.
- 3. Insert the Compaq Diagnostics diskette in drive A.
- 4. Turn on or restart the computer. The computer starts from drive A, and the **Diagnostics Welcome** screen appears.

- 5. Press **Enter** to continue. The **Diagnostics** menu appears.
- 6. Select Computer Checkup from the **Diagnostics** menu. A **Test Option** menu appears.
- 7. Select **View the Device List** from the **Test Option** menu. A list of the installed Compaq devices appears.
- 8. If the list of installed devices is correct, select **OK**. The **Test Option** menu appears.

**NOTE:** If the list is incorrect, ensure that any new devices are installed properly.

- 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 display when the testing is complete. You cannot print or save the error messages.
  - 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 save a log of errors.
  - Prompted Diagnostics. Allows maximum control over testing the devices. You can choose attended or unattended testing, decide to stop on errors, or choose to print or save a log of errors.
- 10. Follow the instructions on the screen as the devices are tested. When testing is complete, the **Test Option** menu appears.
- 11. Exit the **Test Option** menu.
- 12. Exit the **Diagnostics** menu.

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### **View System Information (INSPECT)**

The View System Information (INSPECT) utility provides information about the computer and installed or connected devices. You can display, print, or save the information.

Follow these steps to run View System Information (INSPECT) from the Compag Diagnostics diskette:

- 1. Turn on the external devices that you want to test. Connect the printer if you want to print the information.
- 2. Insert the Compaq Diagnostics diskette in drive A.

- 3. Turn on or restart the computer. The computer starts from drive A, and the **Diagnostics Welcome** screen appears.
- 4. Press **Enter** to continue. The Diagnostics menu appears.
- 5. Select View System Information (INSPECT) from the Diagnostics menu.
- 6. Select the item you want to view from the following list:

System Memory ROM Audio

Keyboard Operating system

System ports System files
System storage Windows files

Graphics

7. Follow the instructions on the screen to cycle through the screens, to return to the list and choose another item, or to print the information.

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# **Diagnostic Error Codes**

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

The following tables list error codes, a description of the error condition, and the action 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 the removal and replacement of a particular subassembly, see **Removal and** Replacement Procedures.

### Select error codes by number or type:

<u>101 through 114</u>	
200 through 215	<b>Processor Test</b>
300 through 304	<b>Memory Test</b>
401 through 403	<b>Keyboard Test</b>
600 through 699	<b>Parallel Printer Test</b>
<u>1101</u>	<b>Diskette Drive Tes</b> t
1701 through 1736	Serial Test

501 through 516 2402 through 2456 2458 through 2480 3206 8601 through 8602 3301 through 6623 Hard Drive Test

Video Test

Audio Test

Touch Pad Pointing Device Test

CD Test

	Processor Test Error Codes		
Error Code	Description	Recommended Action	
101-xx	CPU test failed	Replace the processor and retest.	
102-xx	Coprocessor or Weitek Error	Run the Configuration and Diagnostics Utilities.	
		2. Replace the processor board and retest.	
103-xx	DMA page registers test failed	Replace the system board and retest.	
104-xx	Interrupt controller master test failed		
105-xx	Port 61 error		
106-xx	Keyboard controller self-test failed		
107-xx	CMOS RAM test failed		
108-xx	CMOS interrupt test failed		
109-xx	CMOS clock test failed		
110-xx	Programmable timer load data test failed		
113-xx	Protected mode test failed		
114-01	Speaker test failed	1. Check system configuration.	
		2. Verify cable connections to speaker.	
		3. Replace the system board and retest.	
	Memory Test Error Codes		
200-xx	Memory machine ID test failed	1. Flash the system ROM and retest.	
202-xx	Memory system ROM checksum failed	2. Replace the system board and retest.	

Deturn to the ton		
215-xx Random address test faile	d	
214-xx Noise test failed	retest.	
211-xx Random pattern test failed	2. Install a new memory module and	
204-xx Address test failed	retest.	
203-xx Write/Read test failed	1. Remove the memory module and	

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Keyboard Test Error Codes		
300-xx	Failed ID Test	1. Check the keyboard connection. If disconnected, turn off the computer
301-xx	Failed Selftest/Interface Test	and connect the keyboard.
302-xx	Failed Individual Key Test	2. Replace the keyboard and retest.
304-xx	Failed Keyboard Repeat Test	3. Replace the system board and retest.
Parallel Printer Test Error Codes		
401-xx	Printer failed or not connected	1. Connect the printer.
		2. Check power to the printer.
402-xx	Failed Port Test	3. Install the loop-back connector and retest.
403-xx	Printer pattern test failed	4. Check port and IRQ configuration.
		5. Replace the system board and retest.

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	Diskette Drive Test		
600-xx	Diskette ID drive types test failed	Replace the diskette media and retest.	
601-xx	Diskette format failed		
602-xx	Diskette read test failed	2. Check and/or replace the diskette power and signal cables and retest.	
603-xx	Diskette write, read, compare test failed	3. Replace the diskette drive and	

604-xx	Diskette random read test failed	retest.
605-xx	Diskette ID media failed	4. Replace the system board and
606-xx	Diskette speed test failed	retest.
609-xx	Diskette reset controller test failed	
610-xx	Diskette change line test failed	
697-xx	Diskette type error	
698-xx	Diskette drive speed not within limits	
	Diskette drive/media ID error	1. Replace media.
699-xx		2. Run the Configuration and Diagnostics Utilities.
	5	

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Serial Test Error Codes		
1101- xx	Serial port test failed	<ol> <li>Check port configuration.</li> <li>Replace the system board and retest.</li> </ol>
	Hard Drive Test E	Error Codes
1701- xx	Hard drive format test failed	1. Run the Configuration and Diagnostics Utilities and verify drive
1702- xx	Hard drive read test failed	type.
1703- xx	Hard drive write/read/compare test failed	2. Verify that all secondary drives have secondary drive capability.
1704- xx	Hard drive random seek test failed	3. Replace the hard drive and retest.
1705- xx	Hard drive controller test failed	4. Replace the system board and retest.
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
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
1724- xx	Network preparation test failed
1736- xx	Drive monitoring test failed

\* ECC = Error Correction Code

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	Video Test Erro	or Codes
501-xx	Video controller test failed	The follo
502-xx	Video memory test failed	xx throu
503-xx	Video attribute test failed	1. Discor
504-xx	Video character set test failed	test with
505-xx	Video $80 \times 25$ mode $9 \times 14$ character cell test failed	2. Replac
506-xx	Video 80 $\times$ 25 mode 8 $\times$ 8 character cell test failed	retest.
507-xx	Video 40 × 25 mode test failed	3. Replace retest.
508-xx	Video 320 × 200 mode color set 0 test failed	
509-xx	Video 320 × 200 mode color set 1 test failed	
510-xx	Video 640 × 200 mode test failed	
511-xx	Video screen memory page test failed	
512-xx	Video gray scale test failed	
514-xx	Video white screen test failed	
516-xx	Video noise pattern test failed	
1		

The following apply to error codes 501-xx through 516-xx:

- 1. Disconnect external monitor and test with internal LCD display.
- 2. Replace the display assembly and retest.
- 3. Replace the system board and retest.

2402- xx	Video memory test failed	The following steps apply to error codes 2402-xx through 2456-xx:
2403- xx	Video attribute test failed	1. Run the Configuration and
2404- xx	Video character set test failed	Diagnostics Utilities.
2405- xx	Video $80 \times 25$ mode $9 \times 14$ character cell test failed	2. Replace the display assembly and retest.
2406- xx	Video $80 \times 25$ mode $8 \times 8$ character cell test failed	3. Replace the system board and retest.
2408- xx	Video 320 × 200 mode color set 0 test failed	
2409- xx	Video 320 × 200 mode color set 1 test failed	
2410- xx	Video 640 × 200 mode test failed	
2411- xx	Video screen memory page test failed	
2412- xx	Video gray scale test failed	
2414- xx	Video white screen test failed	
2416- xx	Video noise pattern test failed	
2418- xx	ECG/VGC memory test failed	
2419- xx	ECG/VGC ROM checksum test failed	Run the Configuration and Diagnostics Utilities.
2421- xx	ECG/VGC 640 × 200 graphics mode test failed	2. Disconnect external monitor and
2422- xx	ECG/VGC 640 × 350 16 color set test failed	test with internal LCD display.
2423- xx	ECG/VGC 640 × 350 64 color set test failed	3. Replace the display assembly and retest.
2424- xx	ECG/VGC monochrome text mode test failed	4. Replace the system board and retest.
2425- xx	ECG/VGC monochrome graphics mode test failed	

2431- xx	640 × 480 graphics test failure	
2432- xx	320 × 200 graphics (256 color mode) test failure	
2448- xx	Advanced VGA Controller test failed	
2451- xx	132-column Advanced VGA test failed	
2456- xx	Advanced VGA 256 Color test failed	
2458- xx	Advanced VGA BitBLT test	The following step applies to error codes 2458-xx through 2480-xx:
2468- xx	Advanced VGA DAC test	Replace the system board and retest.
	Advanced VGA DAC test  Advanced VGA data path test	Replace the system board and retest.
2477-		Replace the system board and retest.
2477- xx 2478-	Advanced VGA data path test	Replace the system board and retest.

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Audio Test Error Codes			
3206- xx			
TouchPad/Pointing Device Interface Test Error Codes			
8601- xx	Mouse test failed	1. Replace the TouchPad and retest.	
8602- xx	Interface test failed	2. Replace the system board and retest.	
CD Drive Test Error Codes			
3301- xx	CD drive read test failed	1. Replace the CD and retest.	
3305- xx	CD drive seek test failed	2. Verify that the speakers are connected.	

6600- xx	ID test failed	3. Verify that drivers are loaded and properly installed.
6605- xx	Read test failed	4. Replace the CD drive and retest.
6608- xx	Controller test failed	5. Replace the system board and retest.
6623- xx	Random read test failed	

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### **Troubleshooting Without Diagnostics**

This section provides information about how to identify and correct some common hardware, memory, and software problems. It also explains several types of common messages that may be displayed on the screen. The following pages contain troubleshooting information on:

AudioMemoryBattery/Battery gaugePC CardCD drivePowerDiskette/Diskette drivePrinterDisplayTouch Pad

<u>Hard drive</u> <u>Keyboard/Numeric keypad</u>

**Hardware Installation** 

Since symptoms can be similar, carefully match the symptoms of the computer malfunction against the problem description in the Troubleshooting tables to avoid a misdiagnosis.



**WARNING:** To avoid a potential shock hazard during troubleshooting procedures, disconnect all power sources before removing the keyboard cover or the display bezel.

### **Before Replacing Parts**

Verify that cables are connected properly to the suspected defective parts.

- Run Computer Setup after connecting external devices.
- Verify that all required device drivers are installed.
- Verify that all required changes have been made to the CONFIG.SYS file.
- Verify that all required changes have been made to the AUTOEXEC.BAT file.
- Verify that all printer drivers have been installed for each application.

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### **Solving Minor Problems**

Some minor problems and possible solutions are outlined in the following tables. If the problem appears related to a software application, check the documentation provided with the software.

The following problems and possible solutions are addressed:

- Audio Problems
- Battery Pack and Battery Gauge Problems
- CD Drive Problems
- Diskette and Diskette Drive Problems
- Display Problems
- Hard Drive Problems
- Hardware Installation Problems
- Keyboard/Numeric Keypad Problems
- Memory Problems

### Solving Audio Problems

Some common audio problems and solutions are listed in the following table.

Solving Audio Problems			
Problem	Probable Cause	Solution(s)	
Computer does not beep after the Power- On Self-Test (POST).	This is typical; it indicates successful completion of the Power-On Self-Test (POST).	No action is required.	

### Solving Battery Pack and Battery Gauge Problems

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

Solving Battery Pack and Battery Gauge Problems			
Problem	Probable Cause	Solution(s)	
Computer won't turn on when battery pack is inserted and power cord is unplugged.	Battery pack is discharged.	Connect the computer to an external power source and charge the battery pack.  Replace the battery pack with a fully charged battery pack.	
		Check the battery connectors on the system board to verify that they are evenly spaced and are not bent or broken.	
Computer is beeping and battery LED icon is blinking.	Battery charge is low.	<ul> <li>Immediately save any open file(s). Then do any one of the following:</li> <li>Connect the computer to an external power source to charge the battery pack.</li> <li>Turn off the computer or initiate Hibernation until you can find another power source or charge the battery pack.</li> </ul>	
Computer battery LED icon (front on the unit) blinks to indicate low battery condition, but computer does not beep.	Volume is turned down too low.	Adjust the volume.	
Battery LED icon doesn't light and battery pack won't fast charge.	Battery pack is already charged.	No action is necessary.	
	Battery pack was exposed to temperature extremes.	Allow time for the battery pack to return to room temperature.	
	Battery pack is at end of its life.	Replace battery pack.	
You have to set the date and time every time you turn on the computer.	RTC battery is dead.	Replace the RTC battery.	
Battery charge does not last as long as expected.	Battery is being exposed to high temperatures or extremely cold temperatures.	Keep the battery pack within the recommended operating temperature range 50° F to 104° F (10° C to 40° C) or recommended storage range -4° F to 86° F (-20° C to 30° C). Recharge the battery pack.	
	Battery has partially self-discharged.	Recharge the battery. Discharge the battery completely and then recharge it.	

	Power management is disabled.	Set a power management level in Computer Setup.
	An external device or PC Card is draining the battery.	Turn off or disconnect external devices when not using them.
Battery pack is warm to the touch after charging.	Normal warming has occurred due to charging.	No action is required.
Battery pack operating time is far less than the documented average operating time.	Power management is turned off or disabled.	Enable power management in Computer Setup and in Windows Power Properties.
	An external device or PC Card is draining the battery.	Turn off or disconnect external devices when not using them.
	Battery pack has partially self-discharged.	Condition the battery pack by fully charging, fully discharging, then fully recharging it.
		To maintain the charge, leave battery packs in the computer when it is connected to external power.
		If the computer is disconnected from external power for more than two weeks, remove battery packs from the computer to reduce the discharge rate.
	Battery pack is being exposed to high temperatures or extremely cold temperatures.	Keep the battery pack within the recommended temperature ranges. Operating: 50° F to 104° F (10° C to 40° C) Storage: -4° F to 86° F (-20° C to 30° C)
		Recharge the battery pack.

### **Solving CD Drive Problems**

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

Solving CD Drive Problems			
Problem	Probable Cause	Solution(s)	
CD drive cannot read a compact disc.	improperly inserted in the CD drive.	Open the CD loading tray, lay the compact disc in it (label side up), then close the tray.	
		Cannot read these type CDs in 24x. Remove the CD.	

### Solving Diskette and Diskette Drive Problems

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

Solving Diskette and Diskette Drive Problems			
Problem	Probable Cause	Solution(s)	
Diskette drive cannot write to a diskette.	Diskette is write-protected.	Disable the diskette's 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 another diskette.	
	Drive error has occurred.	Run Computer Checkup from the Compaq Diagnostics diskette.	
	Diskette is not formatted.	Format the diskette. At the system prompt, enter	
		FORMAT A:	
Diskette drive cannot read a diskette.	The 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 bad floppy.	
	Drive error has occurred.	Run Computer Checkup from the Compaq Diagnostics diskette.	
	Diskette is not formatted.	Format the diskette. At the system prompt, enter	
		FORMAT A:	
Cannot boot from diskette.	Bootable diskette is not in drive A.	Put the bootable diskette in drive A.	
	Diskette Boot has incorrect setting in Computer Setup.	Run Computer Setup and set diskette as first to boot.	

### **Solving Display Problems**

This section lists some common causes and solutions for computer display and external monitor problems.

You can perform a monitor 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.

The display should be white. A narrow black border may also appear on the left and right sides of the display. Either of these displays indicates that the monitor is working properly.

Solving Display Problems			
Problem	Probable Cause	Solution(s)	

Screen is dim.	Control for brightness or contrast (if applicable) is not set properly.	Adjust the Brightness of the display by using <b>Fn</b> + <b>F7</b> or <b>Fn</b> + <b>F8</b> .  Adjust the Contrast of the display by using <b>Fn</b> + <b>F5</b> or <b>Fn</b> + <b>F6</b> .
		1
	Computer screen is in direct light.	Tilt display or move computer.
Screen is blank.	Screen save was initiated by Power Management due to lack of user activity.	Press any key or touch the Touch Pad.
	Display has overheated.	If computer is in direct sunlight, move it and allow it to cool off.
Display is blank and the Power icon is flashing, or the Suspend icon is present.	System is in Suspend mode.	Press any key or touch the Touch Pad.
Internal display is blank and the screen on an external monitor displays information.	Display function was switched to the external monitor.	Use Fn + F3 to switch between LCD or CRT.
Internal display flashes or has garbled characters when computer is connected to external monitor.	Using 1024 × 768 or higher resolution on external monitor and have toggled back to internal display, which supports up to 800 × 600.	Restart the computer.
The light tube-s on the edge of the display panel do not light up at all and Power-On Self-Test (POST) completes when the unit is powered up.**	Improper backlight or display cable connections	Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective display cable.	Replace the display assembly.
	Defective display panel.	Replace the display assembly.
	Defective system board.	Replace the system board.
The light tubes on the edge of the display panel do not light up at all and Power-On Self-Test (POST) does not complete when the unit is powered up.**	Defective system board.	Replace the system board.
Backlight (brightness) cannot be adjusted with <b>Fn</b> + <b>F7</b> or <b>Fn</b> + <b>F8</b> .	Improper display cable connections.	1. Reseat the display cable to the system board.
		2. Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective display cable.	Replace the display assembly.
	Defective system board.	Replace the system board.
Contrast cannot be adjusted with Fn + F5 or Fn + F6.	System may have a TFT display (which is always at maximum contrast)	No adjustment is possible.
	Improper display-cable connections.	1. Reseat the display cable to the system board.
		2. Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective display cable.	Replace the display assembly.

	Defective system board.	Replace the system board.
--	-------------------------	---------------------------

\*\* This problem indicates that the backlight or its power circuitry has failed. Since you cannot observe the POST result on the display panel when the backlight is not functioning, connect the unit to an external monitor before powering the unit up. If an external monitor is not available, verify that POST completes by opening and closing the display, listening for the single or double beep, and watching for the LEDs to turn on at the front of the computer.

Problem	Probable Cause	Solution(s)
This display panel has a continuous pattern across it (e.g., a "jailbars" pattern), has a single color on it, or has garbled graphics across the entire panel. This failure is for patterns across the entire panel (not just on one section).	Improper display cable connections	Reseat the display cable to the following until the problem is solved:  1. System board  2. Display assembly
	Defective display cable.	Replace the display assembly.
	Defective inverter board.	Replace the display assembly.
	Defective system board.	Replace the system board.
Ghost bars extending from graphics on the display.	Common characteristic of STN displays.	Change the background colors.      Adjust the Contrast of the display by using <b>Fn</b> + <b>F5</b> or <b>Fn</b> + <b>F6</b> .
A single line, a small group of lines, or a block appears on the display panel. This failure occurs in only a section of the display panel.	Defective display panel.	Replace the display assembly.



To perform a "self-test" on an external VGA color or monochrome monitor, complete the following steps: NOTE: The screen should be white. A narrow black border may also appear on the left and right sides of the display. Either of these displays indicates that the monitor is working properly.

### Solving Hard Drive Problems

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



**CAUTION:** To prevent loss of information, always maintain an up-to-date backup of your hard drive at all times, in case of errors or failures.

Solving Hard Drive Problems		
Problem	Probable Cause	Solution(s)
Reading 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 Computer Checkup.
Hard drive does not work.	Hard drive is not seated properly.	Turn off and unplug the computer, remove the battery pack, and remove and then reinstall the hard drive.

### **Solving Hardware Installation Problems**

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

Solving Hardware Installation Problems		
Problem	Probable Cause	Solutions(s)
A new device is not recognized as part of the computer system.	Cable(s) 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.	Turn off the computer, turn on the external device, then turn on the computer to integrate the device with the computer system.
	Device is not seated properly.	Turn off the computer and reinsert the device.

### Solving Keyboard/Numeric Keypad Problems

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

Solving Keyboard/Numeric Keypad Problems			
Problem	Probable Cause	Solution(s)	
Embedded numeric keypad on computer keyboard is disabled.	Num Lock function is not enabled.	Press the <b>Shift+NumLk</b> keys to enable the Num Lock function and embedded numeric keypad. The Num Lock icon on the status panel turns on.	
Embedded numeric keypad is disabled and Num Lock function is on.	External numeric keypad is connected to the computer.	Disconnect the external numeric keypad from the computer.	

### **Solving Memory Problems**

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

Solving Memory Problems		
Problem	Probable Cause	Solution(s)
Memory count during Power-On Self-Test (POST) is incorrect.	Optional memory expansion card is installed incorrectly, is incompatible with the computer, or is defective.	Ensure that the optional memory expansion card is 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.  Install additional memory.
	Too many TSR (terminate-and stay-resident) applications are running.	Remove from memory any TSR applications that you do not need.

Solving Minor Problems (continued)

or return to the <u>Troubleshooting</u> index page.

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# **Contacting Compaq Support**

Obtain the following information before contacting Compaq Reseller Support:

- Product name
- Product serial number
- Purchase date
- Conditions under which the problem occurred
- Any error messages that have occurred
- Hardware configuration
- Type of printer connected
- Hardware/software being used
- Printed result of Computer Checkup (TEST)
- Printed copies of CONFIG.SYS and AUTOEXEC.BAT files, if possible

### **Shipping Preparation**

To ship the computer, complete the following steps:

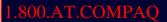
- 1. Back up the critical hard drive files. Ensure that backup tapes/diskette are not exposed to electrical or magnetic fields while stored in transit.
- 2. Turn off the computer and external devices.
- 3. Disconnect the external devices from their power sources, then from the computer.



IMPORTANT: Ensure that there is no diskette in the diskette drive, no PC Cards in the PC slots, and no CD in the CD-ROM drive.

- 4. Close the display and all exterior doors of the computer.
- 5. Pack the computer with sufficient packing material to protect it. Use the original packing box or similar packaging.

Return to Compaq Diagnostics page or Troubleshooting Index page.



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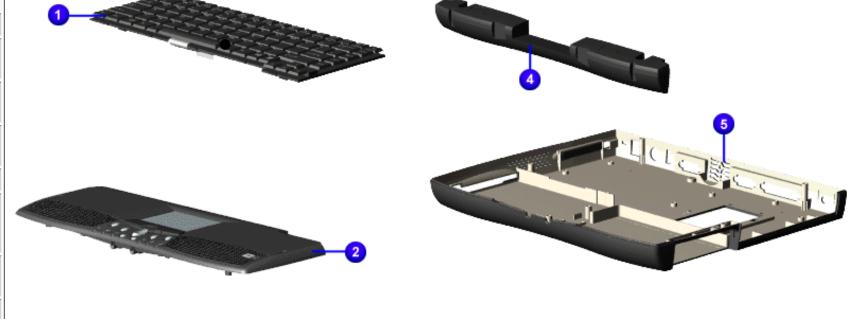
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### **System Unit**

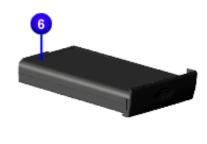
Place cursor over each device to obtain its part number.

# System Unit Boards Display Assembly Mass Storage Devices Miscellaneous Cable Kit Cables Miscellaneous Hardware and Plastics Kit Miscellaneous Parts

Documentation and Software







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### **Boards**

System Unit

Boards

<u>Display</u> Assembly

Mass Storage

<u>Devices</u>

Miscellaneous Cable Kit

<u>Cables</u>

Miscellaneous
Hardware and

Plastics Kit

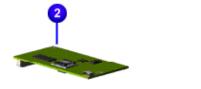
Miscellaneous

**Parts** 

Documentation and Software

Place cursor over each device to obtain its part number.

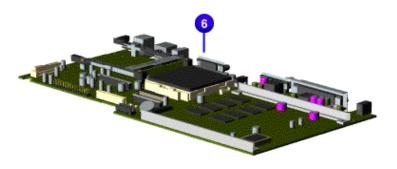












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## **Display Assembly**

System Unit

**Boards** 

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## **Mass Storage Devices**

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**Boards** 

<u>Display</u> Assembly

Mass Storage Devices

Miscellaneous

Cable Kit

Cables

Miscellaneous

Hardware and

**Plastics Kit** 

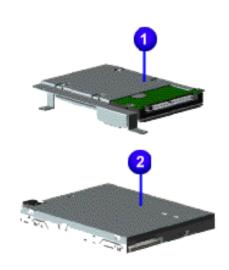
<u>Miscellaneous</u>

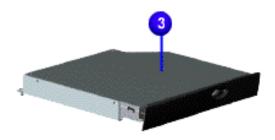
<u>Parts</u>

**Documentation** 

and Software

Place cursor over each device to obtain its part number.





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### Miscellaneous Cables Kit

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Place cursor over each device for a description of that item.

Spare Part Number: 330946-001









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### **Cables**

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Miscellaneous Cable Kit
Cables
Miscellaneous Hardware and Plastics Kit
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**Parts** 

Description	Spare Part Number
Power Cord	[FrontPage Save Results Component]

Description	Spare Part Number
Modem Cables	

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### Miscellaneous Hardware and Plastics Kit

S	yst	em	U	nit

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## **Miscellaneous Hardware and Plastics Kit**

Hardware Spare Part Number: 346853-001

Plastics Kit Spare Part Number (Models 1255-1267): 330949-001; (Models 1272-1275): 142657-001

Description	Quantity
1. Door, Battery Pack	1 each
2. Cover, Memory Module	1 each
3. Door, PCMCIA	2 each
4. Hinge (Clutch) Cover, Left	1 each
5. Hinge (Clutch) Cover, Right	1 each
6. Rubber Foot	10 each
7. Hard Drive Mounting Bracket	1 each

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Use the scroll down menu for the description and spare part number of spare parts Not Shown.

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and Software

NOTE: The following information applies only to Models 1255-1267.					
Description	Spare Part Number				
Quick Restore CD					
Australia China (PRC)	388205-371 388205-AA1				
Quick Reference Guide (single issue) Quick Reference Guide (quarterly subscription)	162212-001 184960-001				
QuickFind for Windows*, Asia Pacific Edition	137906-xxx				

\*QuickFind is updated monthly. To complete the QuickFind part number, add the suffix from the table below for the desired month. If you do not specify the 3-digit suffix, the default is the current month in which the order is placed.

QuickFind Part Number Suffix						
Suffix	Month	Suffix	Month			
-001	January	-007	July			
-002	February	-008	August			

-003	March	-009	September
-004	April	-010	October
-005	May	-011	November
-006	June	-012	December

# NOTE: The following information applies only to Models 1272-1275.

Description	Spare Part Number
Reference Guide (All countries except French Canada, Latin America, and Mexico)	117894-001
French Canada Latin America, Mexico	117894-121 117894-161
Quick Restore CD (All countries except French Canada, Latin America, Mexico, and the Caribbean)	122315-001
French Canada Latin America, Mexico Caribbean	122315-121 122315-161 140472-001
Feature Guide (All countries except French Canada, Latin America, and Mexico)	120231-001
French Canada Latin America, Mexico	120231-121 120231-161

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## **Electrostatic Discharge**



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 an electrostatic discharge (ESD) may not be affected at
  all and will work perfectly throughout a normal cycle. Although it may
  function normally for a while, it is possible for the exposed device's
  internal layers to degrade, reducing its life expectancy considerably.
- Networks built into multiple integrated circuits provide some protection, but in many cases, the discharge can contain enough power to alter device parameters and melt silicon junctions.

## **Generating Static**

This table shows the different electrostatic voltage levels generated by various activities.

NOTE: 700 volts can degrade a

product.

Typical Electrostatic Voltages							
	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				

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### Service Considerations

Listed below are some of the considerations that you should keep in mind during the disassembly and reassembly of the computer.

### **Tool and Software Requirements**

To service the computer, you need the following:

- Compaq screwdriver kit (Spare Part No. 161946-001)
- Torx T-9 screwdriver
- 3/16-inch and 5mm nut drivers (for screwlocks and standoffs)
- Small, standard screwdriver
- Small, Phillips screwdriver
- Diagnostics software

### **Screws**

The screws used in the computer are not interchangeable. If an incorrect screw is used during the reassembly process it can damage the unit.

**Compaq** strongly recommends that each screw removed during disassembly be kept with the part from which it was removed, then returned to the original location.

IMPORTANT:

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

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### **Cables and Connectors**

Most cables used throughout the units are ribbon cables; they must be handled with extreme care to avoid damage.

Use the following precautions when handling cables to prevent damage to the cable or computer:

- Apply only the required tension to seat or unseat the cables during insertion and removal from the connector.
- Handle cables by the connector whenever possible.
- In all cases, avoid bending, twisting, or tearing the cables, and ensure that the cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; they can tear easily.



**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.

### Select the desired illustration.

- Removing a Cable from a <u>ZIF Connector</u>.
- The ribbon cable position for the 3.2-GB, 4.0-GB, 4.3-GB, and 6.4-GB hard drive.
- The ribbon cable position for the **CD drive**.
- The ribbon cable position for the diskette drive.
- The cable position for the **speaker assembly**.

### Plastic Parts

Plastic parts can be damaged if excessive force is used during disassembly and reassembly. When handling the plastic parts, use care. Apply pressure only at the points designated in the maintenance instructions.

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Models: 1255, 1256, 1260, 1262, 1266, 1267, 1272, 1273, 1274, and 1275

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<u>Pin Assignments</u> | <u>Battery Pack Operations</u>

### Preparing the Computer for Disassembly

Electrostatic Discharge

<u>Service</u> Considerations

Cables and Connectors

Preparing the Computer for Disassembly

**Battery Pack** 

<u>Palmrest</u> <u>Cover with</u> Touch Pad

Heatspreader

**Keyboard** 

Processor

Hard Drives

**CD Drive** 

<u>Battery</u> Charger Board

Modem

Display Panel
Assembly

Upper CPU

Speaker

Cover

Assembly

Diskette Drive

Fan Assembly

System Board

<u>Dip Switch</u> Settings Before beginning removal and replacement procedures, complete the following procedures:

- 1. Disconnect AC power and any external devices.
- 2. Remove the battery pack.
- 3. Remove any PC Cards.



**WARNING:** Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Presario 1200 Series Portable Computers into the battery compartment. Do not force the battery pack into the bay if insertion does not occur easily.



**CAUTION:** Do not crush, puncture, or incinerate the battery pack. Do not open a battery pack, as this damages the pack, makes it unusable, and exposes potentially harmful battery components. There are no field-serviceable parts located inside the battery pack.

NOTE:

The Compaq Presario 1200 Series Portable Computers have several screws of various sizes which are **not** interchangeable. Care must be taken during reassembly to ensure that the correct screws are used in their correct location. During removal please keep respective screws with their associated sub-assembly.



Return to Removal & Replacement Procedures.

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## **Removing the Battery Pack**

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**Discharge** 

Service

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**Connectors** 

Preparing the

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<u>Disassembly</u>

Battery Pack

**Palmrest** 

Cover with

**Touch Pad** 

<u>Heatspreader</u>

Keyboard

Processor

**Hard Drives** 

**CD Drive** 

Battery

Charger Board

<u>Modem</u>



To remove the battery pack, complete the following steps:

1. Slide the battery pack compartment door down and remove it from the battery pack.

Next Step

Display Panel
Assembly
Upper CPU
<u>Cover</u>
<u>Speaker</u>
<u>Assembly</u>
Diskette Drive
Fan Assembly
System Board
Dip Switch
<u>Settings</u>
<u>Memory</u>
Module

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## Removing the Palmrest Cover with Touch Pad

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<u>Discharge</u>

**Service** 

**Considerations** 

Cables and

Connectors

Preparing the

Computer for

<u>Disassembly</u>

**Battery Pack** 

Palmrest Cover with Touch Pad

Heatspreader

Keyboard

Processor

Hard Drives

**CD Drive** 

**Battery** 

Charger Board

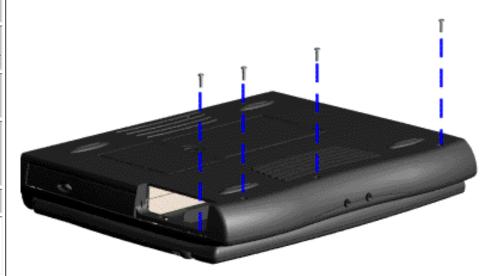
Modem

**Display Panel** 

**Assembly** 

Upper CPU

Cover



The palmrest cover with touch pad must be removed to gain access to any of the interior components of the computer, and it is the first component that has to be removed to gain access to the interior components.

It is not necessary to remove the display panel

NOTE: assembly to access the interior components of the computer.

To remove the palmrest cover with touch pad, complete the following steps:

1. <u>Prepare the computer for disassembly.</u>

Speaker
Assembly

Diskette Drive
Fan Assembly

System Board

Dip Switch
Settings

Memory
Module

- 2. Close the computer and turn the computer upside down.
- 3. Remove four screws from the bottom of the computer.

Next Step

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## Removing the Heatspreader

Electrostatic
Discharge

<u>Service</u>

**Considerations** 

Cables and Connectors

Preparing the

Computer for

Disassembly

**Battery Pack** 

**Palmrest** 

Cover with

Touch Pad

Heatspreader

**Keyboard** 

<u>Processor</u>

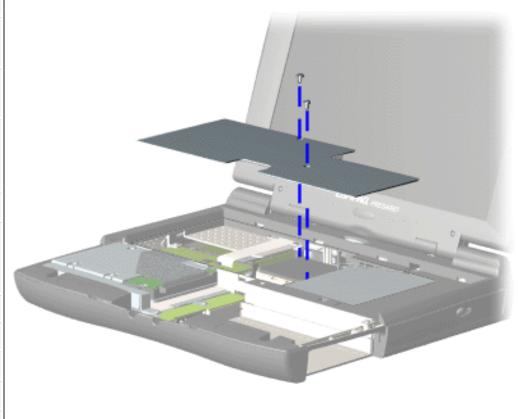
Hard Drives

CD Drive

<u>Battery</u>

Charger Board

<u>Modem</u>



To remove the heatspreader, complete the following steps:

- 1. <u>Prepare</u> the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove Keyboard.
- 4. Remove two screws from the heatspreader and lift out of the chassis.

To replace

Display Panel
Assembly
Upper CPU
Cover
Speaker
Assembly
Diskette Drive
Fan Assembly
System Board
Dip Switch
Settings
Memory
Module

the heatspeader, reverse the previous procedures.

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## Removing the Keyboard

**Electrostatic** 

<u>Discharge</u>

<u>Service</u> Considerations

Cables and Connectors

Preparing the Computer for Disassembly

**Battery Pack** 

<u>Palmrest</u> <u>Cover with</u> Touch Pad

Heatspreader

Keyboard

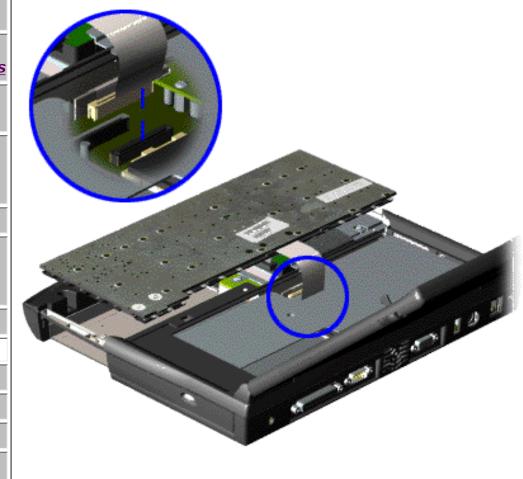
Processor

**Hard Drives** 

**CD** Drive

<u>Battery</u> <u>Charger Board</u>

**Modem** 



To remove the keyboard, complete the following steps:

- 1. <u>Prepare the computer for disassembly.</u>
- 2. Remove the palmrest cover with touch pad.
- 3. Turn the keyboard over, and allow it to rest on top of the palmrest cover with touchpad slot opening.
- 4. Remove the <a href="heatspreader">heatspreader</a> .

Display Panel
Assembly
Upper CPU
Cover
Speaker
Assembly
Diskette Drive
Fan Assembly
System Board
Dip Switch
Settings
Memory
Module

5. Disconnect the flex cable from the ZIF connector on the system board.

To replace the keyboard, reverse the previous procedures.

Return to

Removal & Replacement Procedures

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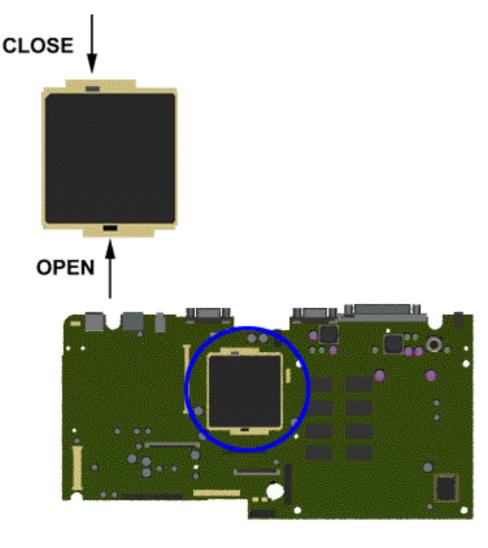
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## Removing the Processor





To remove the processor, complete the following steps:

- 1. <u>Prepare</u>
  <u>the</u>
  <u>computer for</u>
  <u>disassembly</u>.
- 2. Remove palmrest cover with touch pad.
- 3. Remove the <u>heatspreader</u>.
- 4. Remove the <u>keyboard</u>.
- 5. Insert a

**Battery** <u>Charger</u> **Board** Modem Display **Panel** Assembly Upper CPU Cover Speaker **Assembly** Diskette **Drive** Fan Assembly **System Board** Dip Switch **Settings** Memory **Module** 

small-blade screwdriver into the bottom slot opening on the processor and push toward the display to release the processor from the chassis slot.

6. Lift the processor out of the processor chassis slot.

Next Step

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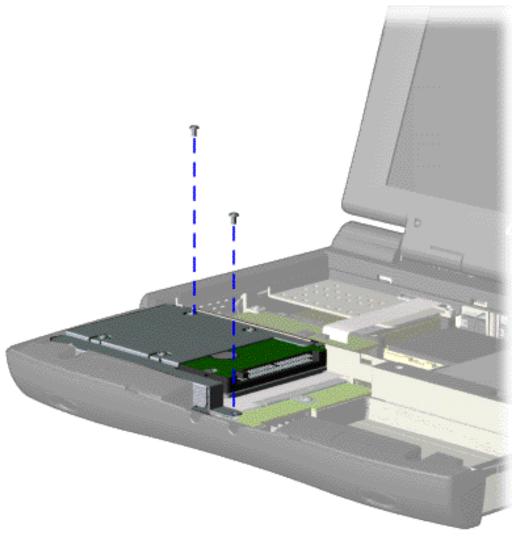
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## Removing the Hard Drive

**Electrostatic** Discharge Service Consideration Cables and **Connectors Preparing** the Computer for Disassembly **Battery Pack Palmrest** Cover with **Touch Pad** Heatspreader Keyboard Processor Hard Drives **CD Drive** 



To remove the hard drive, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the <u>keyboard</u>.
- 4. Remove

**Battery** Charger **Board** Modem Display Panel **Assembly** Upper CPU Cover Speaker **Assembly Diskette Drive** Fan Assembly **System Board** Dip Switch **Settings Memory** 

two screws from the hard drive mounting bracket and lift up the hard drive.

Next Step

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Module

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## Removing the CD Drive

Electrostatic Discharge

<u>Service</u> <u>Consideration</u>

Cables and Connectors

Preparing

the

-

<u>Computer</u>

for

Disassembly

**Battery Pack** 

<u>Palmrest</u>

<u>Cover with</u>

Touch Pad

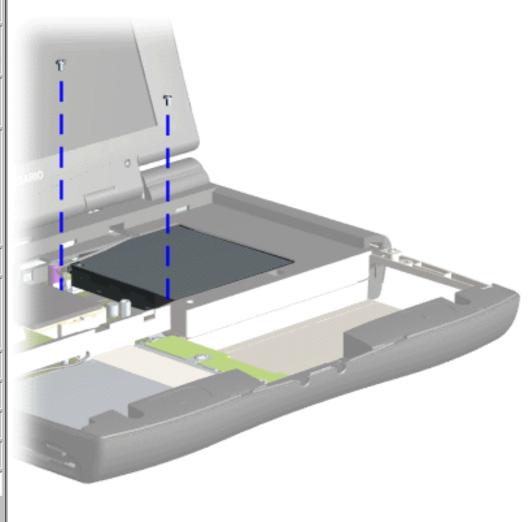
<u>Heatspreader</u>

Keyboard

**Processor** 

Hard Drives

CD Drive



To remove the CD drive, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the <u>heatspreader</u>.
- 4. Remove the <u>keyboard</u>.
- 5. Remove the two screws

**Battery** Charger **Board Modem** Display Panel Assembly Upper CPU Cover **Speaker Assembly Diskette Drive** Fan Assembly **System Board** Dip Switch **Settings** Memory

located at the back of the CD drive.

Next Step

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**Module** 

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## Removing the Battery Charger Board

Electrostatic Discharge

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<u>Cables and</u> <u>Connectors</u>

Preparing the Computer for Disassembly

**Battery Pack** 

<u>Palmrest</u> <u>Cover with</u> Touch Pad

Heatspreader

Keyboard

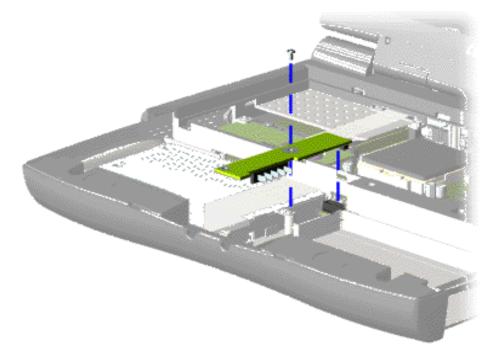
**Processor** 

**Hard Drives** 

**CD Drive** 

Battery Charger Board

Modem



To remove the battery charger board, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the hard drive.
- 4. Remove one screw from the battery charger board, unplug the board from the connector on the system board, and lift the battery charger board out of the chassis.

To replace the

Display Panel
Assembly

Upper CPU
Cover

Speaker
Assembly

Diskette Drive
Fan Assembly

System Board
Dip Switch
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Module

battery charger board, reverse the previous procedures.

When replacing the battery charger board, ensure

NOTE: that the pins are aligned with the connector on the system board.

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## Removing the Modem

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<u>Connectors</u>

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Computer for

<u>Disassembly</u>

**Battery Pack** 

**Palmrest** 

Cover with

Touch Pad

**Heatspreader** 

Keyboard

Processor

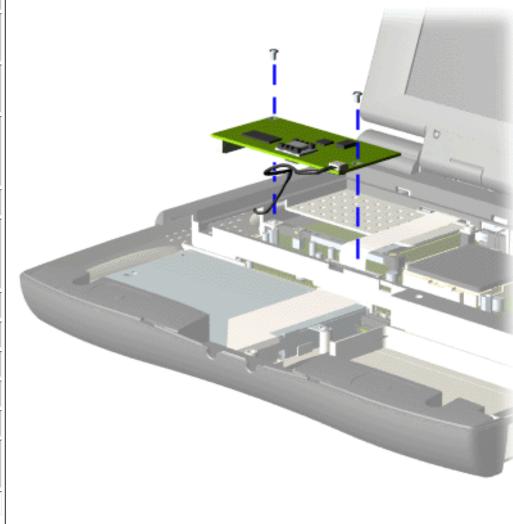
Hard Drives

**CD Drive** 

Battery

Charger Board

Modem



To remove the modem, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the heatspreader.
- 4. Remove the <u>keyboard</u>.
- 5. Remove two screws securing modem and pull the

Display Panel
Assembly

Upper CPU
Cover

Speaker
Assembly

Diskette Drive
Fan Assembly

System Board

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Module

modem off the connector on the system board.

Next Step

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## **Removing the Display Panel Assembly**

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Discharge

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Preparing the Computer for Disassembly

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**Palmrest** 

Cover with
Touch Pad

**Heatspreader** 

\_\_\_\_

**Keyboard** 

**Processor** 

**Hard Drives** 

CD Drive

**Battery** 

Charger Board

Modem

Display Panel Assembly

Upper CPU

Cover

<u>Speaker</u> Assembly



To remove the display panel assembly, complete the following steps:

- 1. <u>Prepare the computer</u> for disassembly.
- 2. Remove the <u>palmrest</u> cover with touch pad.
- 3. Remove the heatspreader.
- 4. Remove the keyboard.
- 5. Remove the modem.
- 6. Pull up the hinge covers and lift the covers off the chassis.



Next Step

<b>Diskette Drive</b>
Fan Assembly
System Board
Dip Switch
<u>Settings</u>
Memory
<u>Module</u>

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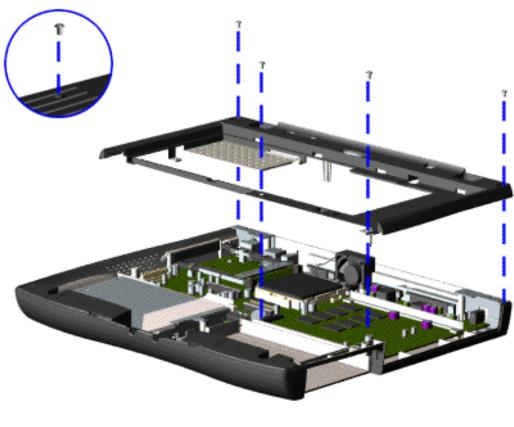
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## Removing the Upper CPU Cover



To remove the Upper CPU cover complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the heatspreader.
- 4. Remove the <u>keyboard</u>.
- 5. Remove the <u>hard</u> <u>drive</u>.

Electrostatic
Discharge

<u>Service</u>

**Considerations** 

<u>Cables and</u> <u>Connectors</u>

Preparing the Computer for

Disassembly

**Battery Pack** 

Palmrest
Cover with
Touch Pad

Heatspreader
Keyboard
Processor
Hard Drives
CD Drive

<u>Battery</u> Charger Board

<u>Modem</u>

<u>Display Panel</u> <u>Assembly</u>

Upper CPU Cover

<u>Speaker</u> Assembly

**Diskette Drive** 

Fan Assembly

System Board

Dip Switch
Settings

<u>Memory</u> <u>Module</u> 6. Remove the display panel assembly.

7. Remove the screw located under the bottom of the unit (rear) which secures the Upper CPU cover to the chassis and remove four screws located on the top.

8. Lift the Upper CPU cover off the snaps on the chassis. This disconnects the power switch from the connector on the system board.

To replace the Upper CPU cover, reverse the previous procedures.

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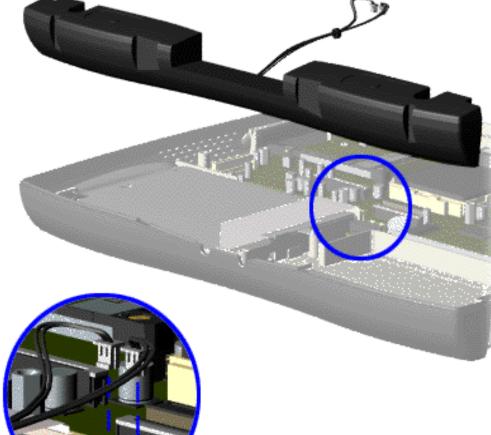
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## Removing the Speaker Assembly



To remove the speaker assembly, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the heatspreader.
- 4. Remove the <u>keyboard</u>.
- 5. Remove the <u>hard</u>

Service
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**Electrostatic** 

**Discharge** 

Preparing the Computer for Disassembly

**Battery Pack** 

<u>Palmrest</u> <u>Cover with</u> Touch Pad

Heatspreader

Keyboard
Processor
Hard Drives
CD Drive
Battery
Charger Board
Modem
Display Panel

Assembly
Upper CPU
Cover

Speaker Assembly

**Diskette Drive** 

Fan Assembly

System Board

Dip Switch
Settings

<u>Memory</u> <u>Module</u> drive.

- 6. Remove the <u>display</u> <u>panel</u> assembly.
- 7. Remove the <u>Upper</u> CPU cover.
- 8. Remove the <u>battery</u> <u>charger</u> <u>board</u>.
- 9. Disconnect the speaker cables from the system board and remove the speaker assembly from the chassis.

To replace the speaker assembly, reverse the previous procedures.

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## Removing the Diskette Drive

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<u>Preparing</u>

<u>the</u>

<u>Computer</u>

for

Disassembly

**Battery Pack** 

**Palmrest** 

Cover with

Touch Pad

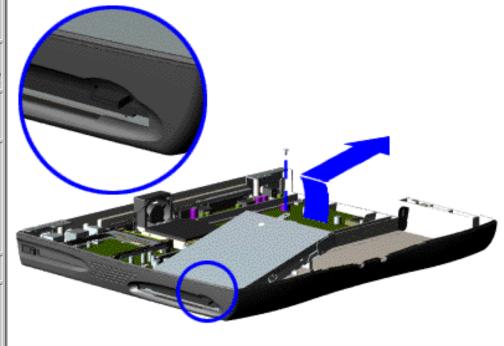
Heatspreader

Keyboard

**Processor** 

**Hard Drives** 

**CD Drive** 



To remove the diskette drive, complete the following steps:

- 1. <u>Prepare the computer for disassembly.</u>
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the heatspreader.
- 4. Remove the keyboard.
- 5. Remove the hard drive.
- 6. Remove the display panel assembly.
- 7. Remove the <u>Upper CPU cover</u>.

**Battery** Charger **Board** Modem Display Panel Assembly Upper CPU Cover Speaker **Assembly** Diskette Drive Fan Assembly **System Board** Dip Switch **Settings** Memory Module

- 8. Remove battery charger board.
- 9. Remove the diskette drive.

Next Step

When replacing the diskette drive, ensure that the diskette NOTE: drive eject lever is properly inserted in the chassis slot.

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## Removing the Fan Assembly

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Discharge

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Preparing the Computer for

Disassembly

**Battery Pack** 

<u>Palmrest</u>

Cover with

Touch Pad

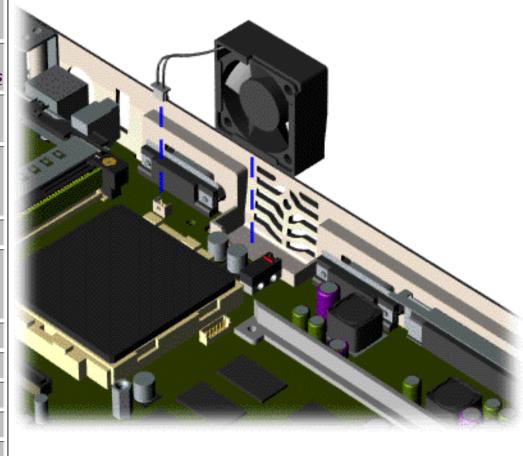
Heatspreader

**Keyboard** 

**Processor** 

**Hard Drives** 

**CD Drive** 



To remove the fan assembly, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Remove the palmrest cover with touch pad.
- 3. Remove the heatspreader.
- 4. Remove the keyboard.
- 5. Remove the <u>display</u> panel

**Battery** Charger Board Modem Display Panel **Assembly** Upper CPU Cover Speaker **Assembly Diskette Drive** Fan Assembly System Board Dip Switch **Settings** Memory **Module** 

assembly.

- 6. Remove the <u>hard</u> drive.
- 7. Remove the <u>Upper</u> <u>CPU cover</u>.
- 8. Lift the fan assembly from the chassis slot and disconnect the fan cable from the connector on the system board.

Next Step

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United States June 28, 2004

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## **Removing the System Board**

<b>Electrostatic</b>	
<u>Discharge</u>	
<u>Service</u>	To remove the existent board, complete the
<b>Considerations</b>	To remove the system board, complete the following steps:
Cables and	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
<u>Connectors</u>	1. Prepare the computer for disassembly.
Preparing the	
Computer for	2. Remove the palmrest cover with touch pad.
<u>Disassembly</u>	2. Danas va tha haataanaadan
Battery Pack	3. Remove the <u>heatspreader</u> .
Palmrest Cover	4. Remove the keyboard.
with Touch Pad	1. Remove the <u>Reysouru</u> .
<u>Heatspreader</u>	5. Remove the <u>processor</u> .
<u>Keyboard</u>	
<u>Processor</u>	6. Remove the modem.
Hard Drives	7. Remove the hard drive.
<u>CD Drive</u>	
<u>Battery</u>	8. Remove the display panel assembly.
Charger Board	
<u>Modem</u>	9. Remove the <u>Upper CPU Cover</u> .

Display Panel
<u>Assembly</u>
Upper CPU
<u>Cover</u>
<u>Speaker</u>
<u>Assembly</u>
<u>Diskette Drive</u>
Fan Assembly
System Board
Dip Switch
<u>Settings</u>
Memory Module

- 10. Remove the battery charger board.
- 11. Remove the diskette drive.
- 12. Remove the CD drive.
- 13. Remove the fan.
- 14. Disconnect the speaker assembly cables.

Next Step

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**United States** 

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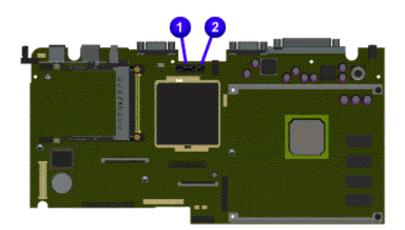


CAUTION: When replacing the system board, ensure the dip switch voltage settings on the system board are correct for the computer model and processor voltage marked on the processor chip. If the system board

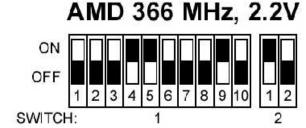
dip switch voltage settings are not correct, damage may occur to the computer and/or system board.

NOTE:

The **black area on the dip switch** indicates the position of the switch.



For Models 1272, 1273, 1274, 1275:



For Models 1255, 1256, 1260, 1262, 1266, 1267:

## AMD 333 MHz, 2.2V



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## Removing the Memory Module

**Electrostatic** 

<u>Discharge</u>

<u>Service</u>

Considerations

Cables and

<u>Connectors</u>

Preparing the Computer for

<u>Disassembly</u>

**Battery Pack** 

**Palmrest** 

Cover with

Touch Pad

<u>Heatspreader</u>

**Keyboard** 

**Processor** 

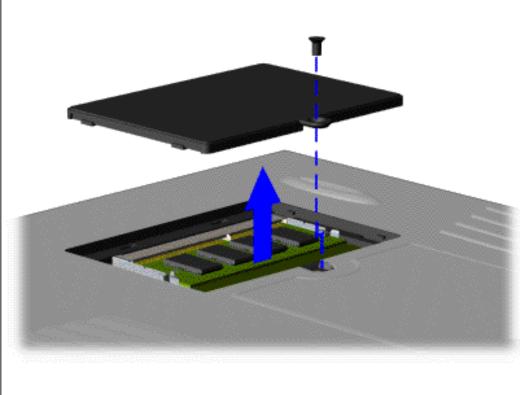
**Hard Drives** 

CD Drive

**Battery** 

Charger Board

<u>Modem</u>



To remove the memory module, complete the following steps:

- 1. Prepare the computer for disassembly.
- 2. Close the computer and turn the computer upside down.
  - 3. Remove the screw from the memory module

Display Panel
Assembly

Upper CPU
Cover

Speaker
Assembly

Diskette Drive
Fan Assembly

System Board

Dip Switch
Settings

Memory
Module

door, and slide the memory module door to the right.

Next Step

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## **Specifications**

## System Interrupts

System Interrupts				
Hardware IRQ	System Function			
IRQ00	Timer Interrupt			
IRQ01	Standard 101/102-Key or Microsoft Natural Keyboard			
IRQ02	Programmable interrupt controller			
IRQ03	Compaq Presario 56K-DF			
IRQ04	Communications Port (COM1)			
IRQ05	ES1869 Plug and Play AudioDrive			
IRQ06	Standard Floppy Disk Controller			
IRQ07	Printer Port (LPT1)			
IRQ08	System CMOS/real time clock			
IRQ09	(free)			
IRQ10	OPTi 82C861 PCI to USB Open Host Controller			
IRQ11	IRQ Holder for PCI Steering			
IRQ11	NeoMagic MagicGraph 128XD			
IRQ12	Synaptics PS/2 TouchPad			
IRQ13	Numeric data processor			
IRQ14	Primary IDE controller (dual fifo)			
IRQ14	Opti Viper Max Dual PCI IDE Controller			
IRQ15	Secondary IDE controller (dual fifo)			
IRQ15	Opti Viper Max Dual PCI IDE Controller			

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## **Specifications**

### System DMA

System DMA				
Hardware DMA	System Function			
0	ES1869 Plug and Play AudioDrive			
1	ES1869 Plug and Play AudioDrive			
2	Standard Floppy Disk Controller			
3	(free)			
4	Direct memory access controller			
5	(free)			
6	(free)			
7	(free)			

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## **Specifications**

## System I/O Address

Syster	m I/O Address
I/O Address (Hex)	System Function (Shipping Configuration)
0000H - 000FH	Direct memory access controller
0020H - 0021H	Programmable interrupt controller
0022H - 0024H	Motherboard resources
0040H - 0043H	System timer
0060Н - 0060Н	Standard 101/102-Key or Microsof Natural Keyboard
0061H - 0061H	System speaker
0064H - 0064H	Standard 101/102-Key or Microsof Natural Keyboard
0070H - 0071H	System CMOS/real time clock
0080H - 0080H	Motherboard resources
0081H - 008FH	Direct memory access controller
0092H - 0092H	Motherboard resources
00A0H - 00A1H	Programmable interrupt controller
00C0H - 00DFH	Direct memory access controller
00ECH - 00EFH	Motherboard resources
00F0H - 00FFH	Numeric data processor
0170H - 0177H	Opti Viper Max Dual PCI IDE Controller
0170H - 0177H	Secondary IDE controller (dual fife

01F0H - 01F7H	Opti Viper Max Dual PCI IDE Controller
01F0H - 01F7H	Primary IDE controller (dual fifo)
0220H - 022FH	ES1869 Plug and Play AudioDrive
02F8H - 02FFH	Compaq Presario 56K-DF
0330H - 0331H	ES1869 Plug and Play AudioDrive
0370H - 0371H	Motherboard resources
0376H - 0376H	Opti Viper Max Dual PCI IDE Controller
0376H - 0376H	Secondary IDE controller (dual fifo)
0378H - 037FH	Printer Port (LPT1)
0388H - 038BH	ES1869 Plug and Play AudioDrive
03B0H - 03BBH	NeoMagic MagicGraph 128XD
03C0H - 03DFH	NeoMagic MagicGraph 128XD
03F0H - 03F5H	Standard Floppy Disk Controller
03F6H - 03F6H	Opti Viper Max Dual PCI IDE Controller
03F6H - 03F6H	Primary IDE controller (dual fifo)
03F7H - 03F7H	Standard Floppy Disk Controller
03F8H - 03FFH	Communications Port (COM1)
040BH - 040BH	Motherboard resources
0480H - 048FH	Motherboard resources
04D6H - 04D6H	Motherboard resources
0800H - 0807H	ES1869 Control Interface
OCF8H - OCFFH	PCI bus
FCF0H - FCF7H	Primary IDE Controller (dual fifo)
FCF0H - FCFFH	Opti Viper Max Dual PCI IDE Controller
FCF8H - FCFFH	Secondary IDE Controller (dual fifo)

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## **Specifications**

### System Memory Catalog

System Memory Catalog				
Memory Address	System Function			
00000000Н - 00000000Н	Texas Instruments PCI-1131 Card Bus Controller			
0000000H - 0009FFFFH	System board extension for PnP BIOS			
000A0000H - 000AFFFFH	NeoMagic MagicGraph 128XD			
000B0000H - 000BFFFFH	NeoMagic MagicGraph 128XD			
000C0000H - 000CBFFFH	NeoMagic MagicGraph 128XD			
000E0000H - 000FFFFFH	System board extension for PnP BIOS			
00100000H - 01FFFFFFH	System board extension for PnP BIOS			
FD000000H - FDFFFFFH	NeoMagic MagicGraph 128XD			
FEA00000H - FEBFFFFFH	NeoMagic MagicGraph 128XD			
FECFF000H - FECFFFFH	OPTi 82C861 PCI to USB Open Host Controller			
FED00000H - FEDFFFFH	NeoMagic MagicGraph 128XD			
FFFC0000H - FFFFFFFH	Motherboard resources			

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## **Specifications**

## **Display**

12.1" (Diagonal) TFT Display				
	U.S.	Metric		
Active Area Height Width  Overall Dimensions Width Height Depth	9.6" 7.2" 7.35" 10.7" .27"	246 mm 184.5 mm 188.5 mm 275 mm 6.8 mm		
Weight	16.24 oz.	464 g		
Contrast Ratio	40:1	40:1		
Brightness	70 nits. Avg.	70 nits. Avg.		
Total Power Consumption	3.5 - 4.0 W (max)	3.5 - 4.0 W (max)		

12.1" (Diagonal) HPA Display					
U.S. Metric					
Active Area Height	9.56"	245 mm			
Width	7.17"	183.8 mm			

Overall Dimensions Width Height Depth	7.9" 10.7" .31"	202.5 mm 275.0 mm 8.0 mm	
Weight	18.2 oz.	520 g	
Contrast Ratio	40:1	40:1	
Brightness	70 nits. Avg.	70 nits. Avg.	
Total Power Consumption	4.0 - 4.5 W (max)	4.0 - 4.5 W (max)	

13.0" ([	13.0" (Diagonal) HPA Display					
	U.S.	Metric				
Active Area Height Width	10.39" 7.79"	263.98 mm 197.98 mm				
Overall  Dimensions  Width  Height  Depth	11.6" 8.58" .31"	295.0 mm 218.0 mm 8.0 mm				
Weight	20.3 oz.	580 g				
Contrast Ratio	50:1	50:1				
Brightness	100 nits. Avg.	100 nits. Avg.				
Total Power Consumption	5 W (max)	5 W (max)				

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## **Specifications**

## **Memory Expansion**

Memory Expansion					
System Memory Expansion Board Memory Total Memory					
32-MB	16-MB	48-MB			
32-MB	32-MB	64-MB			
32-MB	64-MB	96-MB			
32-MB	128-MB	160-MB			

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## **Specifications**

#### **Battery Pack**

	Battery Pack				
	Nickel Metal Hydride (NiMH)	Lithium Ion (Li ion)			
<b>Dimensions</b> Height Length Width	0.8 in (20.3 mm) 5.7 in (145 mm) 3.1 in (78.7 mm)	0.8 in (20.3 mm) 5.7 in (145 mm) 3.1 in (78.7 mm)			
Weight	1.01 lb (458.1 g)	0.90 lb (408.2 g)			
Energy Nominal Open Circuit Voltage Capacity Power	9.6 V 4.5 Ah 43.2 Wh	14.8 V 3.0 Ah 44.4 Wh			
Environmental Requirements Operating Temperature Non-operating Temperature Charging Temperature	32° F (0-50° C) -20° C -60° C 5° C-45° C	32° F (0-50° C) -20° C -60° C 5° C-45° C			

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## **Specifications**

#### **Diskette Drive**

Diskette Drive				
Capacity per Diskette (High/Low)	1,474 KB / 738 KB			
Diskette Size	2HD / 2DD			
Number of LED Indicators (Read/ Write)	NONE			
Number of Drives Supported	ONE			
Drive Rotation (rpm)	300			
Transfer Rate (Kbps)	500 / 250			
Bytes per Sector	512			
Sectors per Track (High/Low)	18 / 9			
Tracks per Disk (High/Low)	160			
Access Times:				
Track-to-Track (ms)	3			
Average (ms)	94			
Setting Time (ms)	15 (Max)			
Latency Average (ms)	100			
Cylinders (High/Low)	80			
Number of Read/Write Heads	2			

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## **Specifications**

#### **Hard Drives**

Hard Drives			
	3.2-GB	4.3-GB	4.8-GB
Capacity Per Drive (Formatted)	3.2 GB	4.3 GB	4.8 GB
Drive Type	2.5"	2.5"	2.5"
Logical Configuration Cylinders	7470	6568	11648
Heads	4	6	4
Sectors per track			330 (max.)
Bytes per sector	512	512	512
Seek Times (Typical, Including settling in ms) Single track			5.5 max (read) 6.5 max (write)
Average	12	12	16 max (read) 17 max (write)
Full stroke			30 max (read) 31 max (write)
Transfer Rate At interface	33.3 MB/S	33.3 MB/S	33.3 MB/S

Hard I	Drives
	6.4-GB
Capacity Per Drive	6.49 GB
Drive Type	2.5"
Logical Configuration Cylinders	8955
Heads	6
Sectors per track	
Bytes per sector	512
Seek Times (Typical, Including settling in ms) Single track Average Full stroke	 12 
Transfer Rate At interface	33.3 MB/S

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### **Specifications**

### **CD Drive**

24× CD	Drive
Dimensions	128 x 12.7 x 129 mm
Weight	0.5 lbs
Rotational Speed	5120 rpm
<b>Typical Transfer Rate</b> Sustained Data Transfer Rate	3600 KB/s
Access Time Average Random Access Time	110 ms
Spin Up time	2.7 s
Data Buffer Capacity	128 KB

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#### Personal information

is information that is associated with your name or personal identity. HP uses personal information to understand better your needs and interests and to provide you with better service. Once you choose to provide us with personal information, you can be assured it will be used only to support your customer relationship with HP. We take seriously the trust you place in us. HP will not sell, rent or lease your personal information to others.

On some HP websites, you can order products or services, apply for instant credit, request information, subscribe to marketing or support materials, register yourself or your HP products, or apply for a job at HP. The types of personal information you provide to us on these pages may include name, address, phone number, e-mail address, user IDs and passwords, billing and transaction information, credit card information, contact preferences, educational and employment background, and job interest data. If you apply for instant credit, we will ask you to provide additional information such as salary, social security number and banking information. This information will be used by our financial services providers in determining whether to extend you credit.

To personalize our websites, services or communications and improve our products and services, we may also ask you to provide us with information regarding your personal or professional interests, demographics, and experiences with our products or services. Providing this additional information is optional.

HP also provides a Web-based business card e-service, <u>ecardfile.com</u>. If you choose to use it, you supply the personal and business contact information of your choice and can set each element as public or private. Information you designate as public is available to any viewer who looks up your card. Ecardfile.com is not a customer registration service.

#### . Non-personal information

is data about usage and service operation that is not associated with a specific personal identity. HP collects and analyzes non-personal information to evaluate how visitors use the HP websites.

Non-personal data we collect may include the pages visited on the HP websites, unique URLs¹ visited within HP.com, browser type and IP² address. Most non-personal data is collected via cookies or other analysis technologies. HP.com Web pages use cookies, Web beacons and other technologies for data analysis and personalization services. HP also places ads on other websites that may use cookies. To learn more, read HP use of cookies and Web beacons.

#### 3. Children's privacy

HP is committed to protecting the privacy needs of children and we encourage parents and guardians to take an active role in their children's online activities and interests. HP does not knowingly collect information from children under the age of 13 and HP does not target its websites to children under 13.

#### 4. How we use your information

HP uses your personal information to provide you with services and to help us better understand your needs and interests. Specifically, we use your information to help you complete a transaction or order, to communicate with you, to provide service and support, to update you on services and benefits, to personalize promotional offers and to personalize some HP websites. Occasionally we may also use your information to contact you for market research regarding HP products or services. We will give you the opportunity to choose your privacy preferences regarding such communications (see section 7, "Your privacy preferences and opting out"). Credit card information is used only for payment processing and fraud prevention. Sensitive personal information is collected only to facilitate our financial service providers' credit decisions and will be shared with them only with your permission. Credit card information and sensitive personal data are not used for any other purpose by our financial services providers or HP and will not be kept longer than necessary for providing the services, unless you ask us to retain your credit card information for future purchases.

Personal data collected online may also be combined with information you provide HP through other sources such as product registration, call centers or public events such as trade shows or seminars.

Personal data given to HP may be transferred across state and country borders for the purposes of data consolidation, storage and simplified customer information management.

Non-personal data is aggregated for reporting about HP website usability, performance and effectiveness. It is used to improve the customer experience, usability and site content.

#### 5. Who we share your information with

HP will not sell, rent or lease your personal information to others. HP will not share your personal information with third parties except in responding to your requests for products or services. Your permission will be requested when you submit your information. HP shares customer information across HP-owned business entities and companies working on our behalf, but only as described above in "How we use your information."

HP contracts with third-party service providers and suppliers to deliver complete products, services and customer solutions described in "How we use your information." Suppliers and service providers are required to keep confidential the information received on behalf of HP and may not use it for any purpose other than to carry out the services they are performing for HP. These service providers may change or we may contract with additional service providers to better accommodate our customers. HP will not share personal information with any other third parties without your permission, unless required by law enforcement action, subpoena, or local law.

HP or its related entities could merge with or be acquired by another business entity or some or all of their respective assets could be acquired. If such a combination or acquisition occurs, HP will make every reasonable effort to notify you in the event we share with the merging or acquiring entity some or all of your personal information to continue serving you.

#### 6. Your choices

HP gives you the choice of receiving a variety of information that complements our products and services. You can subscribe to receive certain product- and service-specific information and HP-wide marketing communications. HP-wide communications may include new product information, special offers, or an invitation to participate in market research. We give you a choice regarding delivery of HP-wide communications by postal mail, e-mail and telephone. You can make or change your choices at the data collection point or through HP Passport (HP's proprietary online customer registration tool, available only in the United States). Please refer to section 7 for further instructions. We will make every effort to honor your preferences. This option does not apply to communications for the purpose of administering order completion, contracts, support, product safety warnings or driver updates.

#### 7. Your privacy preferences and opting out

#### Non-subscription services

HP will not use your personal information for a different purpose than the one stated when you provided your data. Examples of unrelated uses include sending communications about special offers, product information, and marketing messages. You can, however, choose to receive these types of non-subscription communications by following the instructions below.

#### In the U.S.:

You can make your choice regarding these communications by using HP Passport to set your privacy preferences, which are applicable across all HP websites.

- If you have never registered with HP Passport, create your privacy preferences
- If you have registered with HP Passport in the past, edit your privacy preferences (requires a user ID and password)

#### Outside the U.S.:

Please specify your privacy preferences by writing to the <u>HP Privacy Office</u> - be sure to provide your name, e-mail and postal address in all correspondence.

#### Subscription services

To opt-out of receiving communications you have expressly requested (such as e-mail newsletters, software updates, etc.), use any of the following methods:

- Select the e-mail "opt-out" or "unsubscribe" link, or follow the opt-out instructions included in each subscription communication
- . Return to the Web page(s) where you originally registered your preferences and follow the opt-out instructions
- Write to the <u>HP Privacy Office</u> be sure to provide your name, e-mail and postal address, and relevant information about your HP subscriptions and registrations

#### 8. Your information and third-party companies

Certain HP services are linked with those from unrelated third-party companies, some which offer you the option to share with both HP and the third party personal data you provide. Examples include the ability to register software products from multiple vendors from a single HP Web page, to request communications from HP marketing or solution partners, or to enable order completion through a reseller. We will not share your personal information with those third-party companies unless you make that choice.

#### 9. Access to and accuracy of your information

HP strives to keep your personal information accurate. We have implemented technology, management processes and policies to maintain customer data accuracy. We will provide you with access to your information, including making reasonable effort to provide you with online access and the opportunity to change your information. To protect your privacy and security, we will also take reasonable steps to verify your identity, such as a password and user ID, before granting access to your data. Certain areas of HP's websites may limit access to specific individuals through the use of passwords and other personal identifiers.

The most effective way to view and change your personal information is to return to the Web page where you originally submitted your data and follow the instructions on that Web page or use HP Passport.

### 10. Keeping your information secure

HP is committed to protecting the information you provide us. To prevent unauthorized access or disclosure, to maintain data accuracy, and to ensure the appropriate use of the information, HP has in place appropriate physical and managerial procedures to safeguard the information we collect

We use Secure Sockets Layer (SSL) encryption when collecting or transferring sensitive data such as credit card information. SSL encryption is designed to make the information unreadable by anyone but us. This security measure is working when you see either the symbol of an unbroken key or closed lock (depending on your browser) on the bottom of your browser window.

Credit card numbers are used only for processing payment and are not used for other purposes. As part of real-time payment processing, HP subscribes to a fraud management service. This service gives you and HP an extra level of security to guard against credit card fraud to protect your financial data.

#### 11. Changes to this Statement

If there are updates to the terms of HP's Online Privacy Statement, we will post those changes and update the revision date in this document, so you will always know what information we collect online, how we use it, and what choices you have. For material changes to this Statement, HP will provide notification to affected customers.

#### 12. Contacting us

We value your opinions. If you have comments or questions about our privacy policy, please send them to the <u>HP Privacy Office</u> or write to us at the following address:

HP Privacy Mailbox 20555 SH 249 MS 040307 Houston, Texas 77070

Rev. December 2003

1A URL (Uniform Resource Locator) is the global address of documents and other resources on the World Wide Web. For example, http://www.HP.com is the URL for HP's U.S. home page.

<sup>2</sup>An IP address is an identifier for a computer or device on a Transmission Control Protocol/Internet Protocol (TCP/IP) network, such as the World Wide Web. Networks use the TCP/IP protocol to route information based on the IP address of the destination. In other words, an IP address is a number that is automatically assigned to your computer whenever you are surfing the Web, allowing Web servers to locate and identify your computer. Computers require IP addresses in order for users to communicate on the Internet, browse and shop.



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#### 13. Revised December 2003

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- Should not imply that HP is endorsing it or its products
- o Should not misrepresent its relationship with HP
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- $_{\odot}\,$  Should not use the HP logo without permission from HP
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