



# **Maintenance and Service Guide**

HP Special Edition L2000 Notebook PC  
Compaq Presario V2000 Notebook PC

Document Part Number: 393671-001



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The information and procedures included in this *Maintenance and Service Guide* apply to all HP Special Edition L2000 Notebook PC models and Compaq Presario V2000 Notebook PC models equipped with AMD processors.

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July 2005

This guide is a troubleshooting reference used for maintaining and servicing the notebook. It provides comprehensive information on identifying notebook features, components, and spare parts; troubleshooting notebook problems; and performing notebook disassembly procedures.

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Maintenance and Service Guide  
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## Product Description

The HP Special Edition L2000 Notebook PC and the Compaq Presario V2000 Notebook PC offer advanced modularity, AMD Turion™ 64 Mobile Technology and Mobile AMD Sempron™ processors, and extensive multimedia support.



*HP Special Edition L2000 and Compaq Presario V2000*

## 1.1 Features



Numerous references are made throughout this *Maintenance and Service Guide* to “full-featured” and “defeatured” units. A notebook model is considered to be full-featured if it has 3 Universal Serial Bus ports and the following components:

- 6-in-1 digital card reader
- Expansion port 2
- Bluetooth wireless communications support
- IEEE 1394 digital port

A notebook model is considered to be defeatured if it has only 2 Universal Serial Bus ports and none of the components in the preceding list.

- 
- The following processors are available, varying by notebook model:
    - ❑ AMD Turion 64 ML-37 (2.0-GHz), ML-34 and ML-32 (1.8-GHz), and ML-30 and ML-28 (1.6-GHz) processors
    - ❑ Mobile AMD Sempron 3300+ (2.0-GHz), 3000+ (1.8-GHz), and 2800+ (1.6-GHz) processors
  - 14.0-inch WXGA (1280 × 768) TFT display with over 16.7 million colors, varying by notebook model
  - 100-, 80-, 60-, or 40-GB high-capacity hard drive, varying by notebook model
  - 256-MB DDR synchronous DRAM (SDRAM) at 333 MHz, expandable to 2.0 GB on select models
  - Microsoft® Windows® XP Home Edition or Windows XP Professional, varying by notebook model
  - Full-size Windows keyboard with embedded numeric keypad
  - TouchPad pointing device with on/off button and dedicated two-way scroll region

- Integrated 10/100 BASE-T Ethernet local area network (LAN) network interface card (NIC) with RJ-45 jack
- Integrated high-speed 56K modem with RJ-11 jack
- Integrated wireless support for Mini PCI IEEE 802.11b/g wireless local area network (WLAN) device
- Support for one Type II PC Card slot, with support for both 32-bit (CardBus) and 16-bit PC Cards
- External 65-watt AC adapter with 3-wire power cord
- 6-cell or 12-cell Li-Ion battery pack
- Stereo speakers with volume up and down buttons
- Support for the following optical drives:
  - ❑ 8X Max DVD-ROM drive
  - ❑ 24X DVD/CD-RW Combo Drive
  - ❑ 8X DVD±RW/R and CD-RW Combo Drive
  - ❑ 8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe
- Connectors:
  - ❑ Audio-in (microphone)
  - ❑ Audio-out (headphone)
  - ❑ Memory card reader (select models only)
  - ❑ Universal Serial Bus (USB) v. 2.0
  - ❑ IEEE 1394 digital (select models only)
  - ❑ S-Video-out (select models only)
  - ❑ Power
  - ❑ External monitor
  - ❑ Docking (select models only)
  - ❑ RJ-45 (network)
  - ❑ RJ-11 (modem)
  - ❑ PC Card

## 1.2 Resetting the Notebook

If the notebook you are servicing has an unknown password, follow these steps to clear the password. These steps also clear CMOS:

1. Prepare the notebook for disassembly (refer to [Section 5.3, “Preparing the Notebook for Disassembly,”](#) for more information).
2. Remove the real-time clock (RTC) battery (refer to [Section 5.16, “RTC Battery,”](#) for more information).
3. Wait approximately 5 minutes.
4. Replace the RTC battery and reassemble the notebook.
5. Connect AC power to the notebook. Do not reinsert any battery packs at this time.
6. Turn on the notebook.

All passwords and all CMOS settings have been cleared.



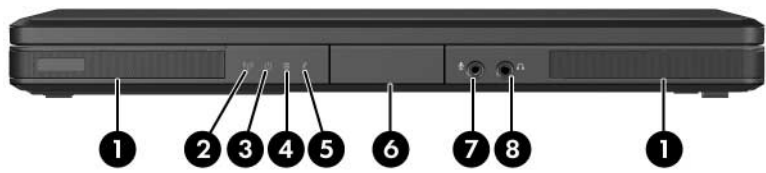
## 1.3 Power Management

The notebook comes with power management features that extend battery operating time and conserve power. The notebook supports the following power management features:

- Standby
- Hibernation
- Setting customization by the user
- Hotkeys for setting the level of performance
- Battery calibration
- Lid switch standby/resume
- Power/standby button
- Advanced Configuration and Power Management (ACPM) compliance

# 1.4 External Components

The external components on the front of the notebook are shown below and described in Table 1-1.

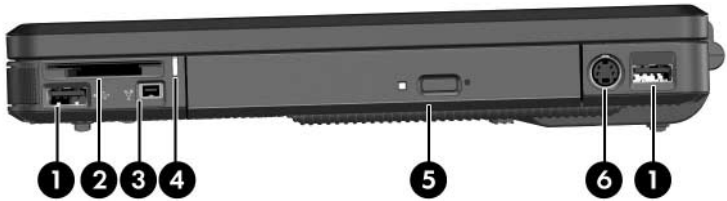


Front Components

**Table 1-1**  
**Front Components**

<b>Item</b>	<b>Component</b>	<b>Function</b>
1	Speakers (2)	Produce stereo sound.
2	Wireless light (select models only)	On: An integrated wireless device is hardware enabled.
3	Power/standby light	<ul style="list-style-type: none"> <li>■ On: Notebook is turned on.</li> <li>■ Blinking: Notebook is in standby.</li> <li>■ Off: Notebook is off or in hibernation.</li> </ul>
4	IDE (Integrated Drive Electronics) drive light	■ On or blinking: The internal hard drive or an optical drive is being accessed.
5	Battery light	<ul style="list-style-type: none"> <li>■ Amber: The battery pack is charging.</li> <li>■ Green: The battery pack is fully charged.</li> <li>■ Off: The battery pack is discharging or not inserted.</li> </ul>
6	Display release latch	Opens the notebook.
7	Audio-in (microphone) jack	Connects an optional monaural (single sound channel) microphone.
8	Audio-out (headphone) jack	Connect optional headphones or powered stereo speakers. Also connect the audio function of an audio/video device such as a television or VCR.

The external components on the right side of the notebook are shown below and described in Table 1-2.



*Right-Side Components*

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**Table 1-2**  
**Right-Side Components**

<b>Item</b>	<b>Component</b>	<b>Function</b>
1	USB connectors (2)	Connect an optional USB device.
2	6-in-1 Memory Reader (select models only)	In Windows, supports digital memory cards.
3	1394 port (select models only)	Connects an optional 1394 device such as a scanner, digital camera, or digital camcorder.
4	6-in-1 Memory Reader light (select models only)	On: A digital memory card is being accessed.
5	Optical drive	Supports an optical disc.
6	S-Video-out jack (select models only)	Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card.


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The external components on the notebook rear panel are shown below and described in Table 1-3.

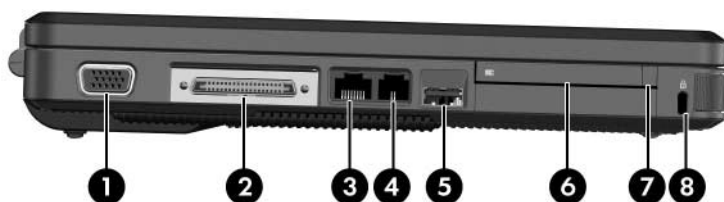


Rear Panel Components

**Table 1-3**  
**Rear Panel Components**


Item	Component	Function
1	Exhaust vent	Provide airflow to cool internal components. <div> To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.</div>
2	Power connector	Connects an AC adapter cable.

The external components on the left side of the notebook are shown below and described in Table 1-4.

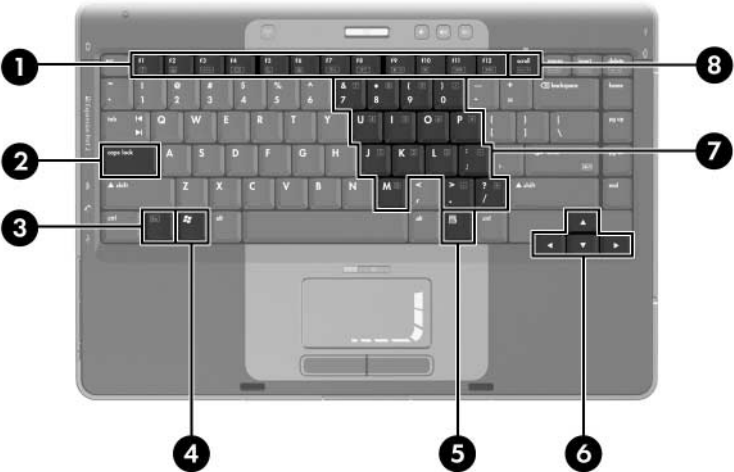


*Left-Side Components*

**Table 1-4**  
**Left-Side Components**

Item	Component	Function
1	External monitor port	Connects an optional VGA external monitor or projector.
2	Expansion port 2 (select models only)	Connects the notebook to an optional expansion base.   The notebook has only one expansion port. The term expansion port 2 describes the type of expansion port.
3	RJ-45 (network) jack	Connects an optional network cable.
4	RJ-11 (modem) jack	Connects the modem cable.
5	USB connector (select models only)	Connects an optional USB device.
6	PC Card slot	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
7	PC Card eject button	Ejects an optional PC Card from the PC Card slot.
8	Security cable slot	Attaches an optional security cable to the notebook.

The notebook keyboard components are shown below and described in Table 1-5.



*Keyboard Components*



**Table 1-5**  
**Keyboard Components**

<b>Item</b>	<b>Component</b>	<b>Function</b>
1	<b>F1 to F12</b> keys (12)	Perform system and application tasks. When combined with the <b>fn</b> key, several keys and buttons perform additional tasks as hotkeys.
2	<b>caps lock</b> key	Enables caps lock and turns on the caps lock light.
3	<b>Fn</b> key	Combines with other keys to perform system tasks. For example, pressing <b>fn+f7</b> decreases screen brightness.
4	Windows logo key	In Windows, displays the Windows Start menu.
5	Windows applications key	In Windows, displays a shortcut menu for items beneath the pointer.
6	Arrow keys	Move the cursor around the screen.
7	Keypad keys (15)	In Windows, can be used like the keys on an external numeric keypad.
8	<b>num lock</b> key	Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light.

The notebook top components are shown below and described in Table 1-6.



*Top Components*

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**Table 1-6**  
**Top Components**

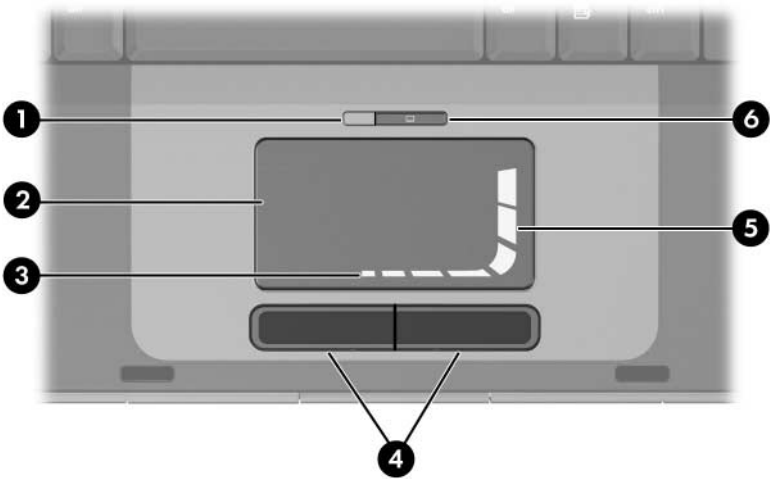
Item	Component	Function
1	Caps lock light	On: Caps lock is on.
2	Display switch	If the notebook is closed while on, turns off the display.

---

**Table 1-6**  
**Top Components (*Continued*)**

Item	Component	Function
3	Wireless button	Enables/disables an internal wireless device.
4	Wireless light	On: an integrated wireless device is hardware enabled.
5	Power button	When the notebook is ■ Off, press to turn on the notebook. ■ On, briefly press to initiate hibernation. ■ In standby, briefly press to resume from standby. ■ In hibernation, briefly press to restore from hibernation.
6	Power/standby light	■ On: Notebook is turned on. ■ Blinking: Notebook is in standby. ■ Off: Notebook is off or in hibernation.
7	Volume down button	Decreases system volume.
8	Volume up button	Increases system volume.
9	Volume mute button	Mutes or restores volume.
	Mute light	On: Volume is muted.
10	Num lock light	On: Num lock or the internal keypad is on.

The notebook TouchPad components are shown below and described in Table 1-7.



*TouchPad Components*

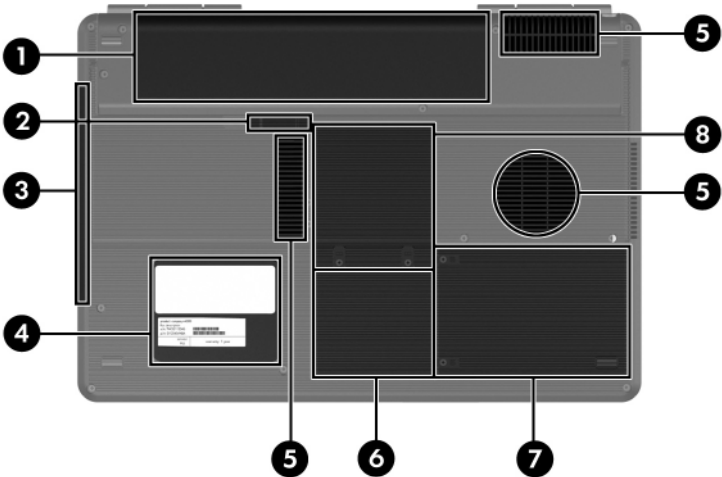
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**Table 1-7**  
**TouchPad Components**

<b>Item</b>	<b>Component</b>	<b>Function</b>
1	TouchPad light	On: TouchPad is enabled.
2	TouchPad	Moves the pointer.
3	TouchPad horizontal scrolling region	Scrolls toward left side or right side.
4	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
5	TouchPad vertical scrolling region	Scrolls upward or downward.
6	TouchPad on/off button	Enables/disables the TouchPad.

---

The external components on the bottom of the notebook are shown below and described in Table 1-8.





Bottom Components

**Table 1-8**  
**Bottom Components**

Item	Component	Function
1	Battery pack	Holds a battery pack.
2	Battery pack release latch	Releases a battery pack from the battery bay.
3	Optical drive	Supports an optical disc.

**Table 1-8**  
**Bottom Components (Continued)**

Item	Component	Function
4	Label areas (2)	Contain the notebook serial number and other applicable regulatory labels.
5	Exhaust vents (3)	<p>Provide airflow to cool internal components.</p> <p> To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.</p>
6	Mini PCI compartment	<p>Holds an optional wireless LAN device.</p> <p> To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care.</p>
7	Hard drive bay	Holds the internal hard drive.
8	Memory module compartment	Contains 2 memory slots that support replaceable memory modules. The number of preinstalled memory modules varies by notebook model.

## 1.5 Design Overview

This section presents a design overview of key parts and features of the notebook. Refer to [Chapter 3, “Illustrated Parts Catalog,”](#) to identify replacement parts, and [Chapter 5, “Removal and Replacement Procedures,”](#) for disassembly steps.

The system board provides the following device connections:

- AMD Turion 64 and Mobile AMD Sempron processors
- Audio
- Display assembly
- Fan
- Hard drive
- Keyboard and TouchPad
- Memory module
- Mini PCI communications devices
- PC Card



**CAUTION:** To properly ventilate the notebook, allow at least a 7.6-cm (3-inch) clearance on the left and right sides of the notebook.

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The notebook uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to be turned on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software applications. Exhaust air is displaced through the ventilation grill located on the left side of the notebook.



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# Troubleshooting



**WARNING:** Only authorized technicians trained by HP 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, do not attempt to make repairs at the component level or modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modification may void any warranty or exchange allowances.

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## 2.1 Computer Setup

Computer Setup is a preinstalled, ROM-based utility that can be used even when the operating system is not working or will not load. If the operating system is working, the notebook restarts the operating system after you exit Computer Setup.



Pointing devices are not supported in Computer Setup; you must use the keyboard to navigate and make selections.

---

The menu tables later in this chapter provide an overview of Computer Setup options.

## Accessing Computer Setup

The information and settings in Computer Setup are accessed from the **Main**, **Security**, **Advanced**, **Tools**, and **Exit** menus.

1. Open Computer Setup by turning on or restarting the notebook. Press **F10** while the “Press <F10> to enter Setup” message is displayed in the lower-left corner of the screen.
  - ❑ To change the language, use the arrow keys to select the **Advanced** menu, select **Language Support**, and then press **F5** or **F6** until the appropriate language is highlighted. Press **F10** to save your selection and exit the **Advanced** menu.
  - ❑ To view navigation information, press **F1**.
  - ❑ To return to the Computer Setup menu, press **Esc**.
2. Select the **Main**, **Security**, **Advanced**, **Tools**, and **Exit** menus.
3. To exit Computer Setup, choose one of the following:
  - ❑ To exit without saving any changes, use the arrow keys to select **Exit > Exit Discarding Changes**, and then follow the instructions on the screen.
  - ❑ To exit and save all the settings you have entered, use the arrow keys to select **Exit > Exit Saving Changes**, and then follow the instructions on the screen.

Your preferences are set when you exit Computer Setup and take effect when the notebook restarts.

## Computer Setup Defaults

To return all settings in Computer Setup to the values that were set at the factory:

1. Open Computer Setup by turning on or restarting the notebook. Press **F10** while the “Press <F10> to enter Setup” message is displayed in the lower-left corner of the screen.
  - ❑ To change the language, use the arrow keys to select the **Advanced** menu, select **Language Support**, and then press **F5** or **F6** until the appropriate language is highlighted. Press **F10** to save your selection and exit the **Advanced** menu.
  - ❑ To view navigation information, press **F1**.
2. Use the arrow keys to select **Exit > Load Setup Defaults**.
3. Press **F9**.
4. Press enter to confirm the return to default configuration.
5. To confirm the restoration, press **F10**.
6. Select **Exit > Exit Saving Changes**, and then follow the instructions on the screen.

When the computer restarts, the factory settings are restored, and any identification information you have entered is saved.

## Selecting from the Main Menu

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**Table 2-1**  
**Main Menu**


Select	To Do This
System Information	<ul style="list-style-type: none"><li>■ View identification information about the notebook.</li><li>■ View specification information about the processor, memory and cache size, keyboard controller version, and system BIOS.</li></ul>

---

## Selecting from the Security Menu

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**Table 2-2**  
**Security Menu**

Select	To Do This
Administrator password	Enter, change, or delete an HP Administrator password.
Power-on password	Enter, change, or delete a power-on password.
DriveLock password	Enable/disable DriveLock; change a DriveLock user or master password.   DriveLock Settings are accessible only when you enter Computer Setup by turning on (not restarting) the notebook.
Device security	Enable diskette drive or optical drive for inclusion in MultiBoot.

---

## Selecting from the Advanced Menu

**Table 2-3**  
**Advanced Menu**

Select	To Do This
Video Graphic Mode	Select UMA, SidePort, or UMA+SidePort video memory modes.
Dedicated Video Memory	View the size of the on-board video memory.
Total Video Memory	View the size of the total system video memory.
Language Support	Change the Computer Setup language.
Boot Order	Set the boot order.
Accessibility Options	Provides access to electronic and information technology to a wide range of people with disabilities.
Embedded WLAN device	Enable/disable a wireless local area network device.
Embedded Bluetooth device	Enable/disable a Bluetooth device.

## Selecting from the Tools Menu

**Table 2-4**  
**Tools Menu**

Select	To Do This
HDD Self-test	Run a quick or comprehensive self-test on any hard drive in the system.

---

**Table 2-5**  
**Exit Menu**

Select	To Do This
Exit Saving Changes	Save changes entered during the current session. Then exit and restart the notebook. The changes you save are in effect when the notebook restarts.
Exit Discarding Changes	Cancel changes entered during the current session. Then exit and restart the notebook.
Load Setup Defaults	Replace configuration settings in Computer Setup with factory default settings. (Identification information is retained.)

---

## 2.2 Troubleshooting Flowcharts

**Table 2-6**  
**Troubleshooting Flowcharts Overview**

Flowchart	Description
2.1	"Flowchart 2.1—Initial Troubleshooting"
2.2	"Flowchart 2.2—No Power, Part 1"
2.3	"Flowchart 2.3—No Power, Part 2"
2.4	"Flowchart 2.4—No Power, Part 3"
2.5	"Flowchart 2.5—No Power, Part 4"
2.6	"Flowchart 2.6—No Video, Part 1"
2.7	"Flowchart 2.7—No Video, Part 2"
2.8	"Flowchart 2.8—Nonfunctioning Docking Device (if applicable)"
2.9	"Flowchart 2.9—No Operating System (OS) Loading"
2.10	"Flowchart 2.10—No OS Loading, Hard Drive, Part 1"
2.11	"Flowchart 2.11—No OS Loading, Hard Drive, Part 2"
2.12	"Flowchart 2.12—No OS Loading, Hard Drive, Part 3"
2.13	"Flowchart 2.13—No OS Loading, Diskette Drive"

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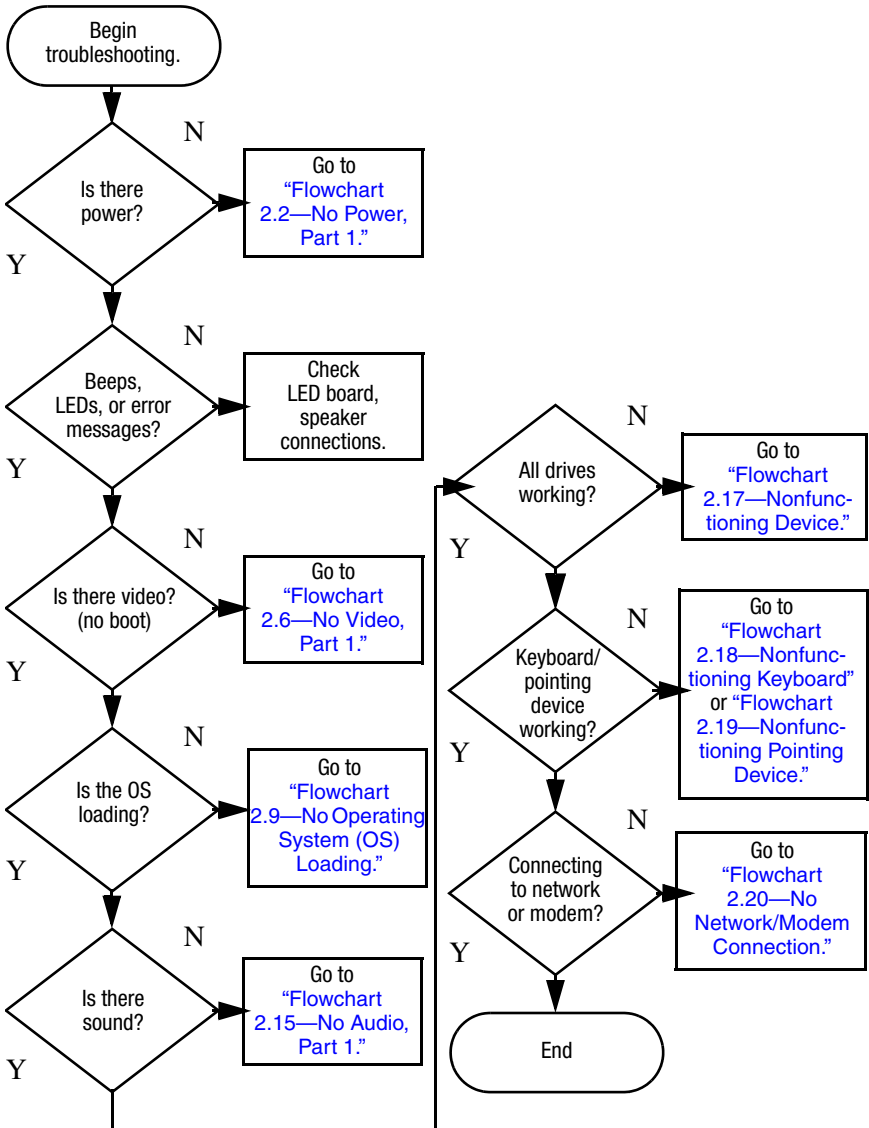
**Table 2-6**  
**Troubleshooting Flowcharts Overview (*Continued*)**

Flowchart	Description
2.14	"Flowchart 2.14—No OS Loading, Optical Drive"
2.15	"Flowchart 2.15—No Audio, Part 1"
2.16	"Flowchart 2.16—No Audio, Part 2"
2.17	"Flowchart 2.17—Nonfunctioning Device"
2.18	"Flowchart 2.18—Nonfunctioning Keyboard"
2.19	"Flowchart 2.19—Nonfunctioning Pointing Device"
2.20	"Flowchart 2.20—No Network/Modem Connection"

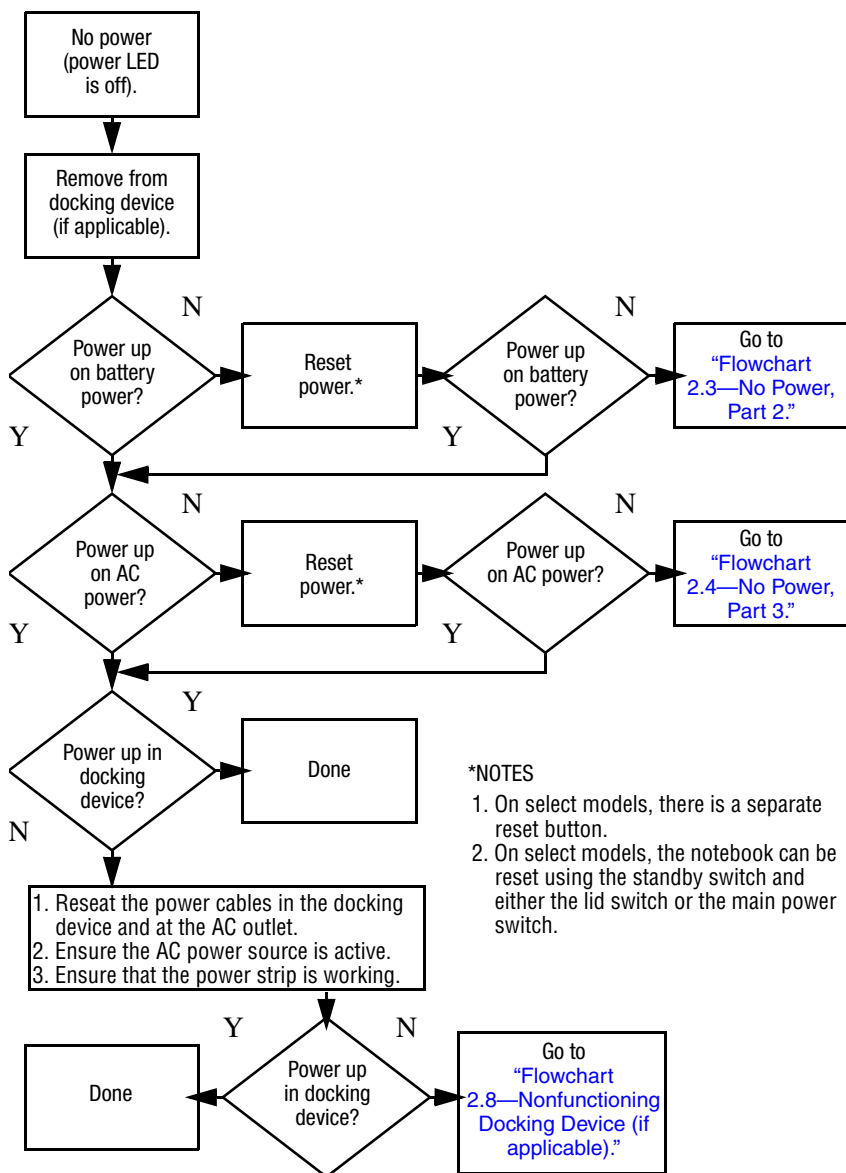
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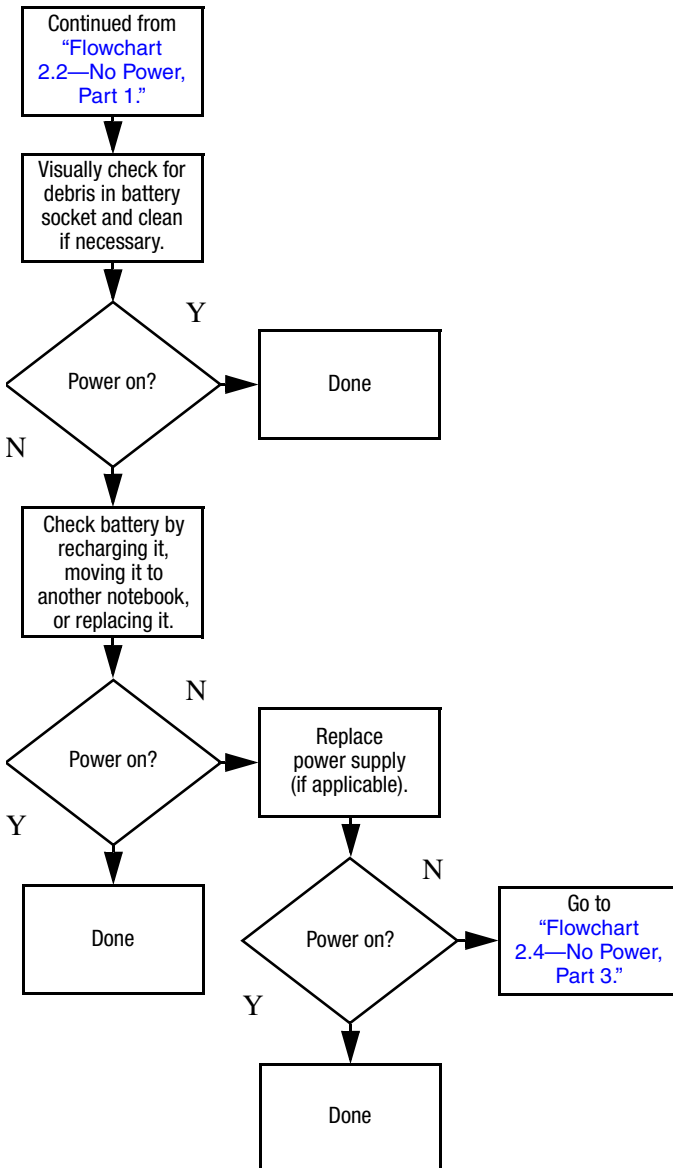
## Flowchart 2.1 —Initial Troubleshooting



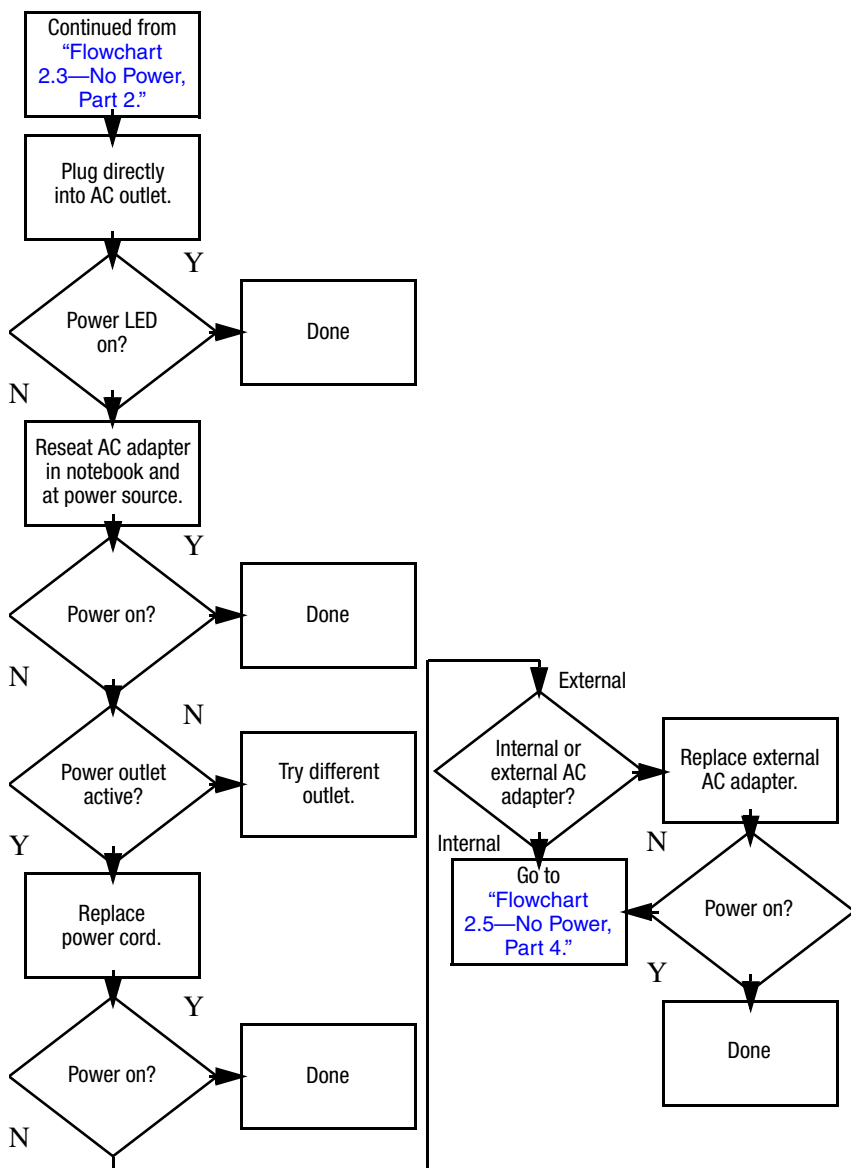
## Flowchart 2.2—No Power, Part 1



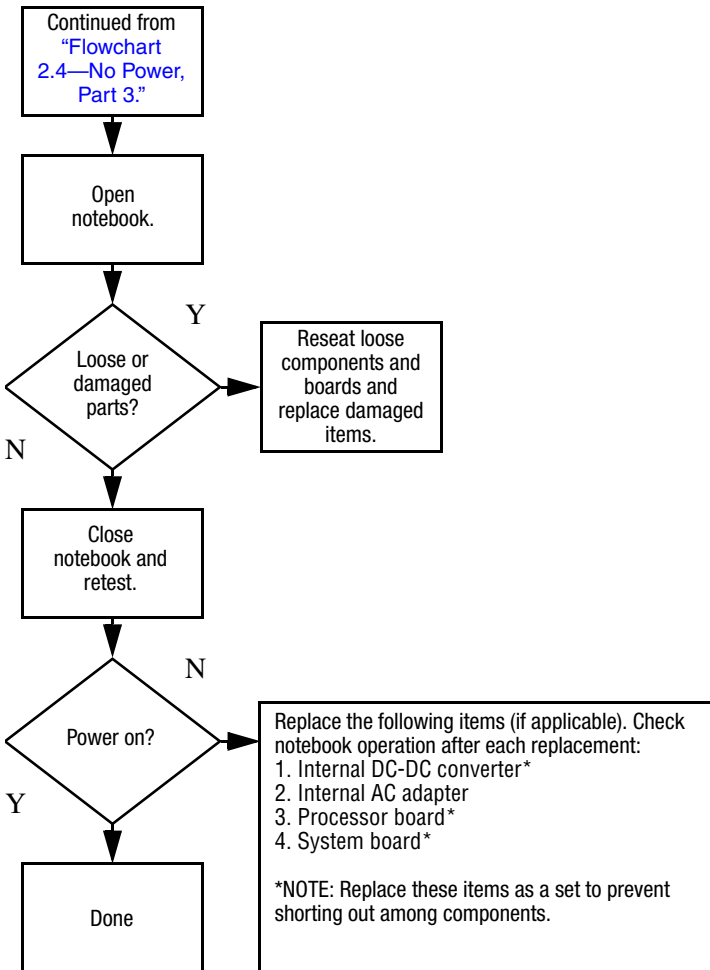
## Flowchart 2.3—No Power, Part 2



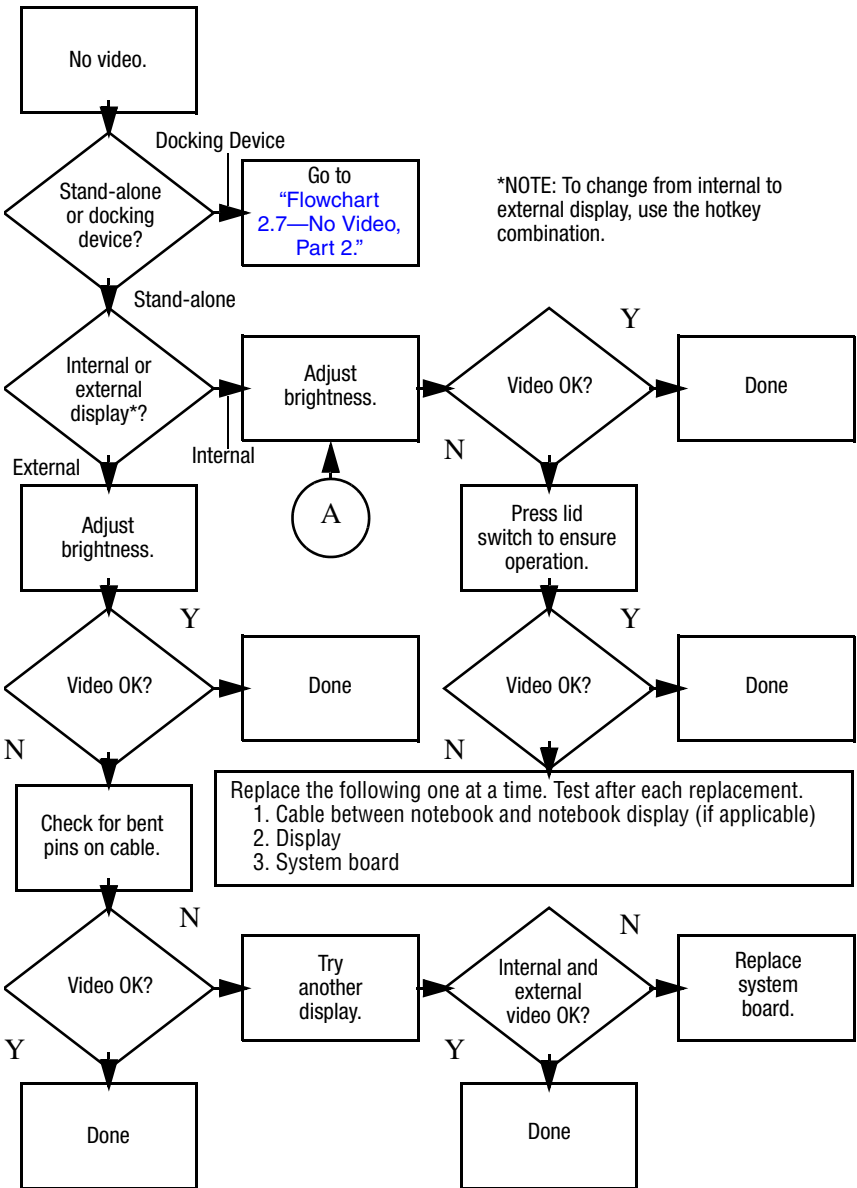
## Flowchart 2.4—No Power, Part 3



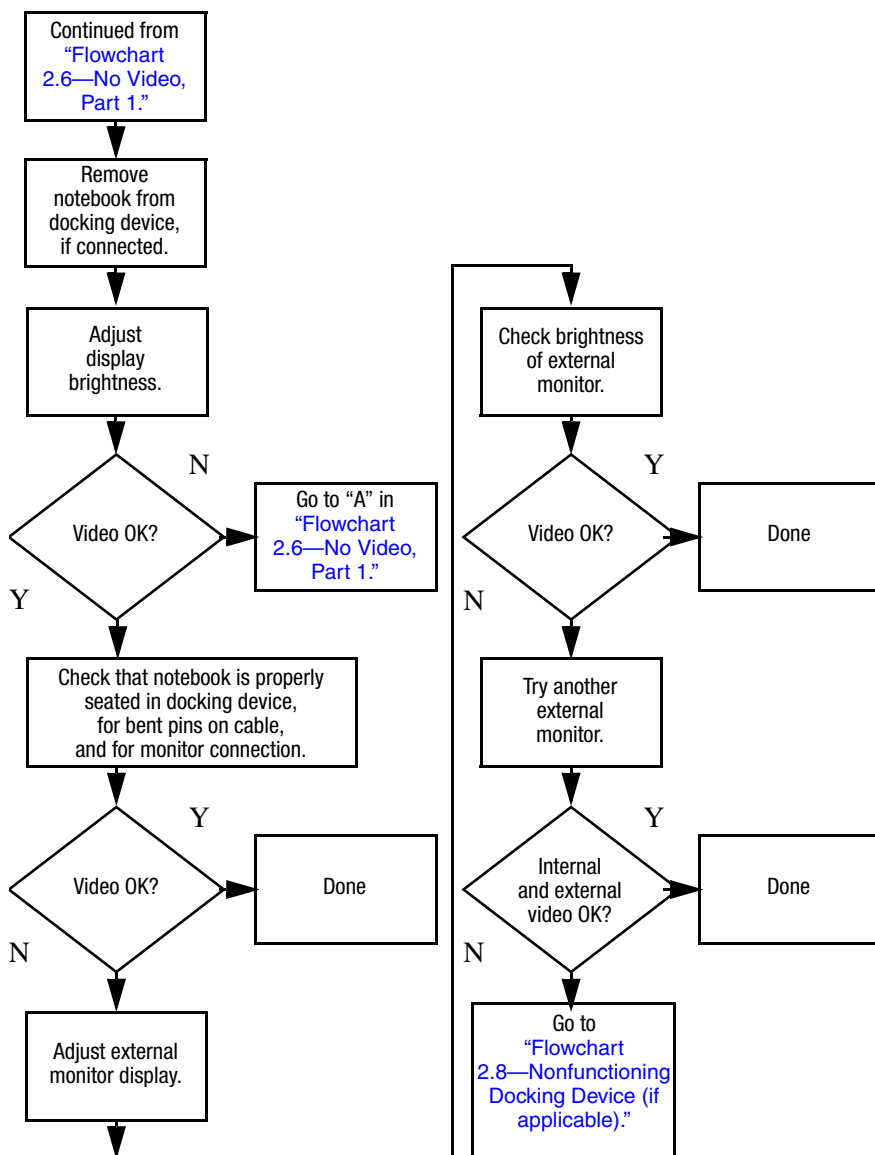
## Flowchart 2.5—No Power, Part 4



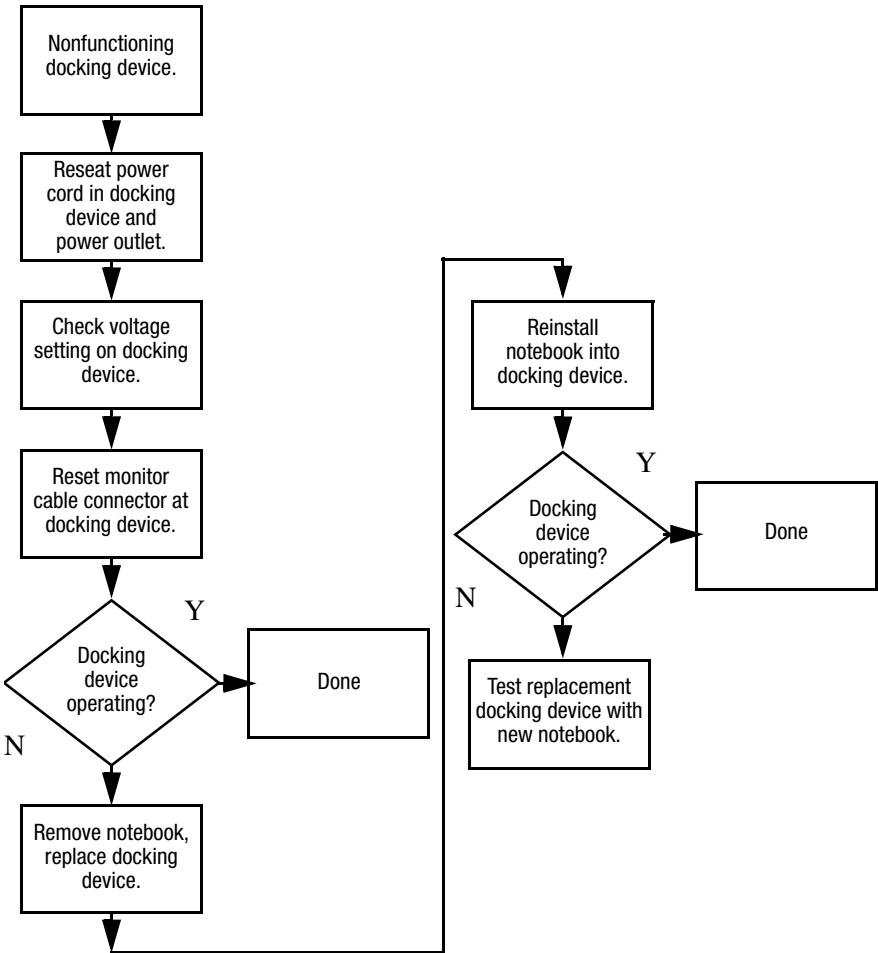
## Flowchart 2.6—No Video, Part 1



## Flowchart 2.7—No Video, Part 2

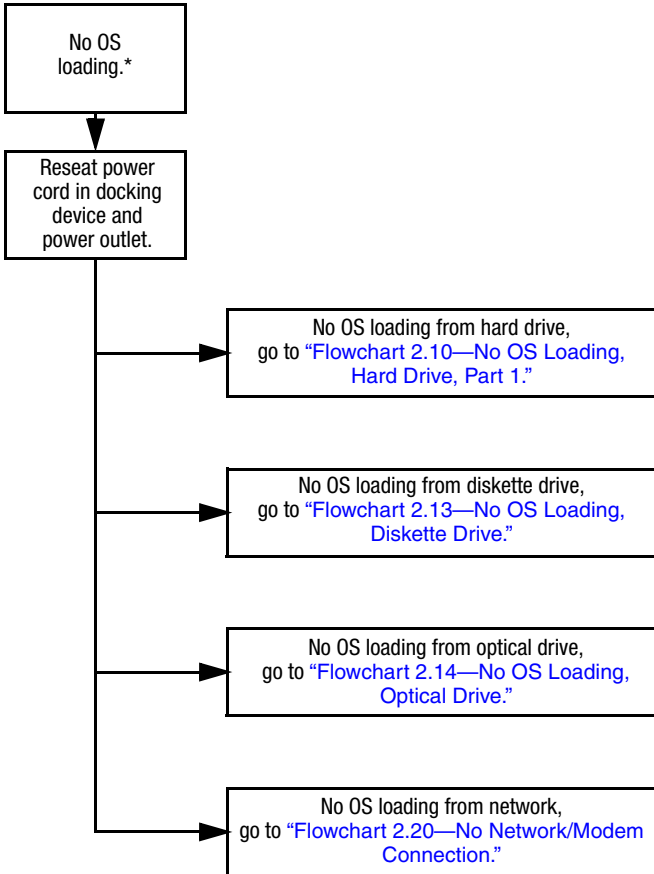


## Flowchart 2.8—Nonfunctioning Docking Device (if applicable)



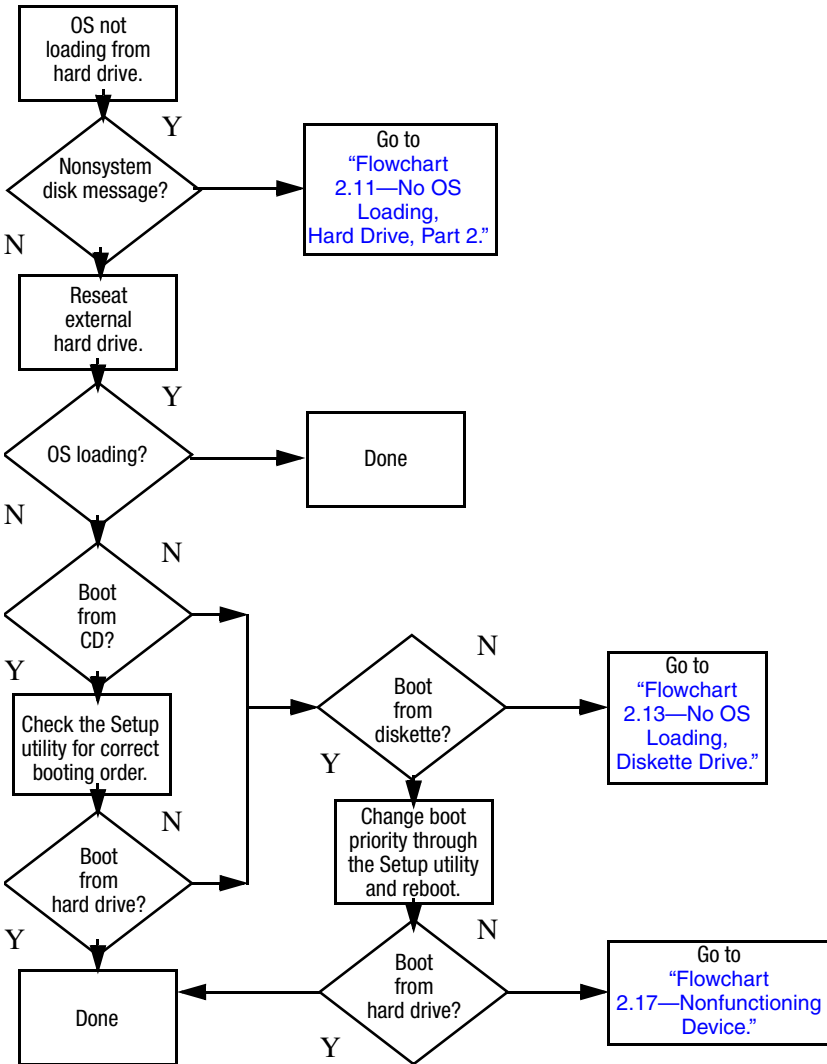


## Flowchart 2.9—No Operating System (OS) Loading

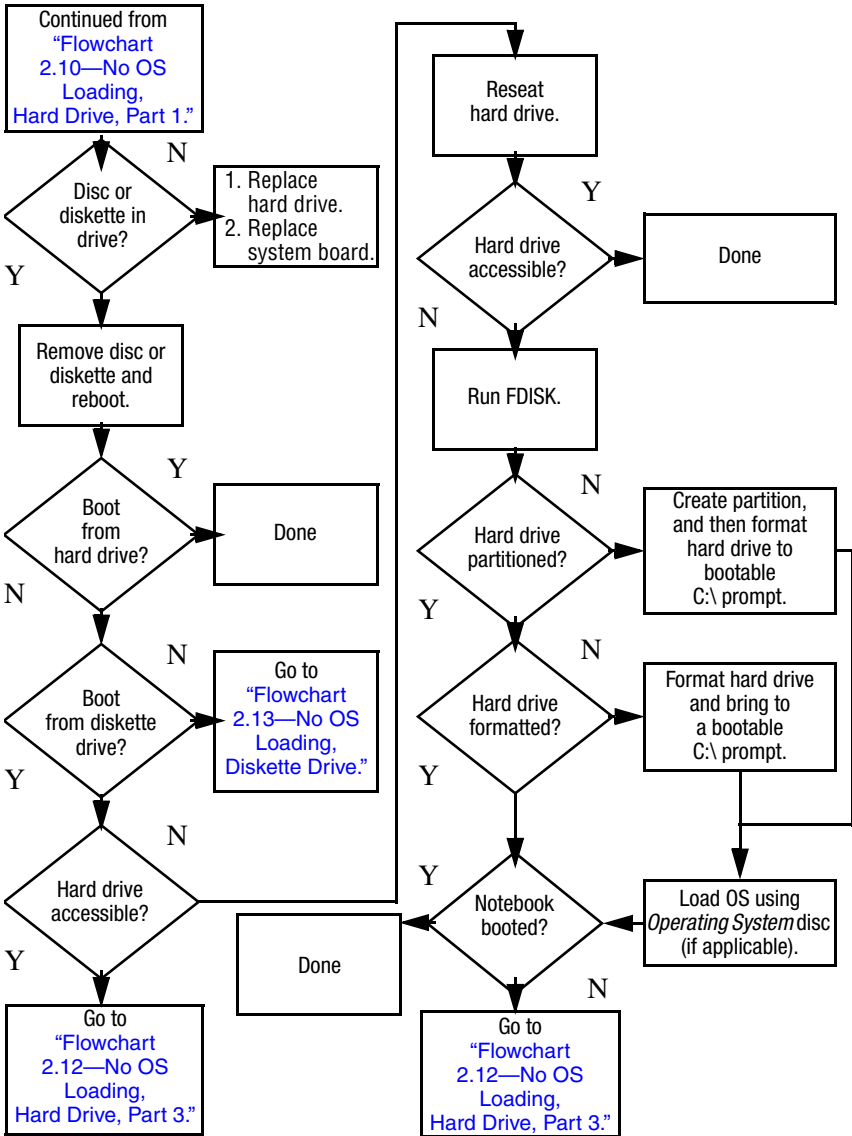


\*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

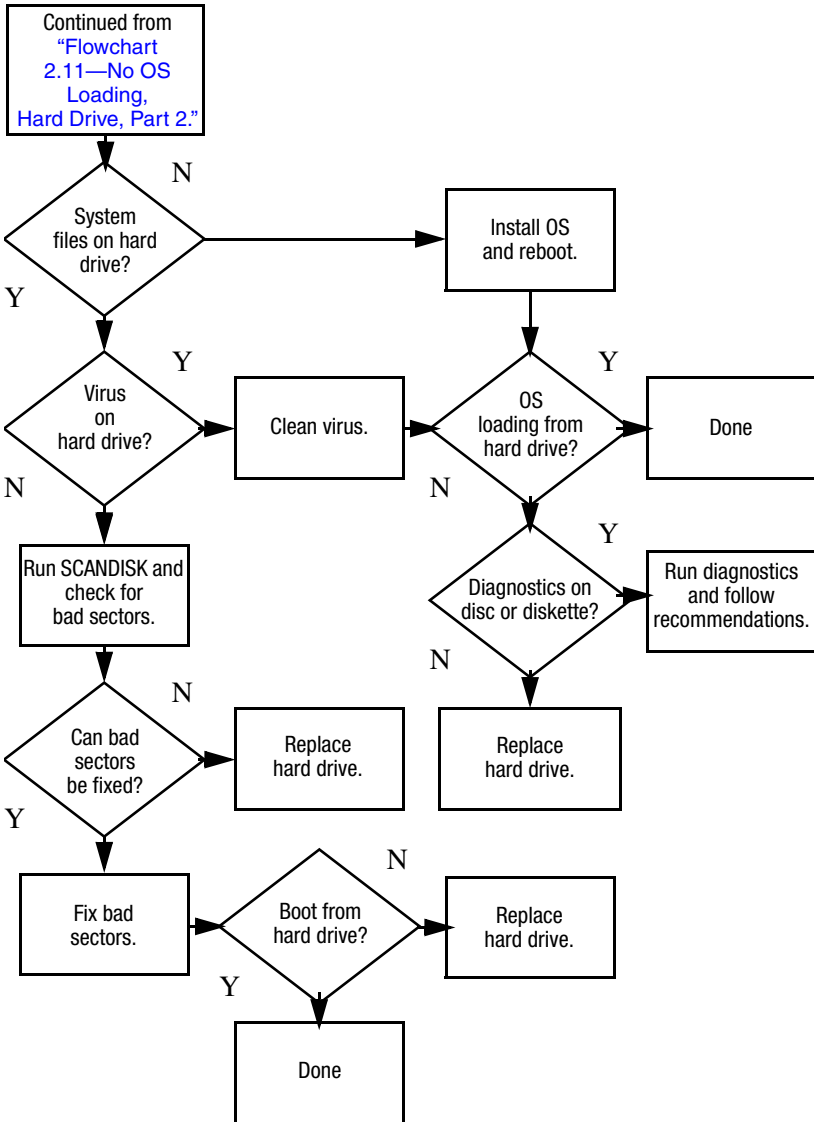
## Flowchart 2.10—No OS Loading, Hard Drive, Part 1



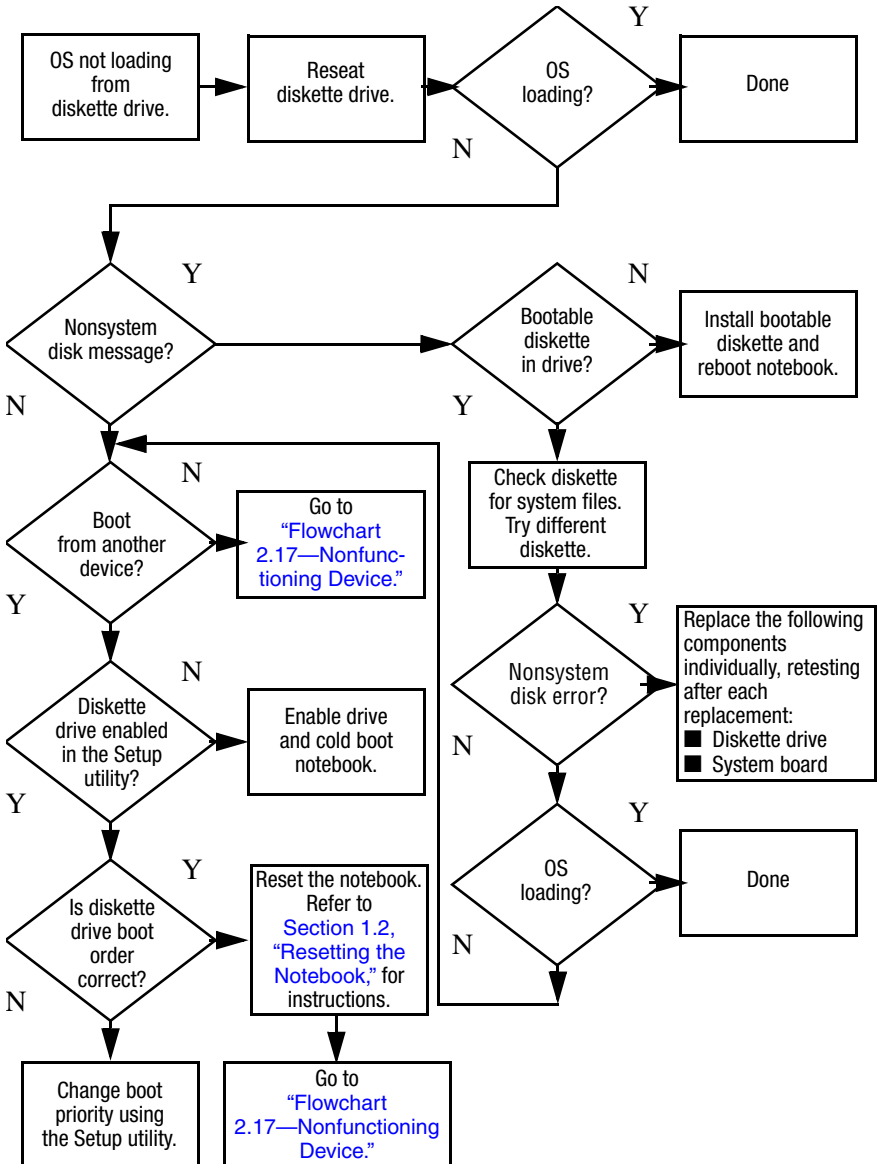
## Flowchart 2.11 —No OS Loading, Hard Drive, Part 2



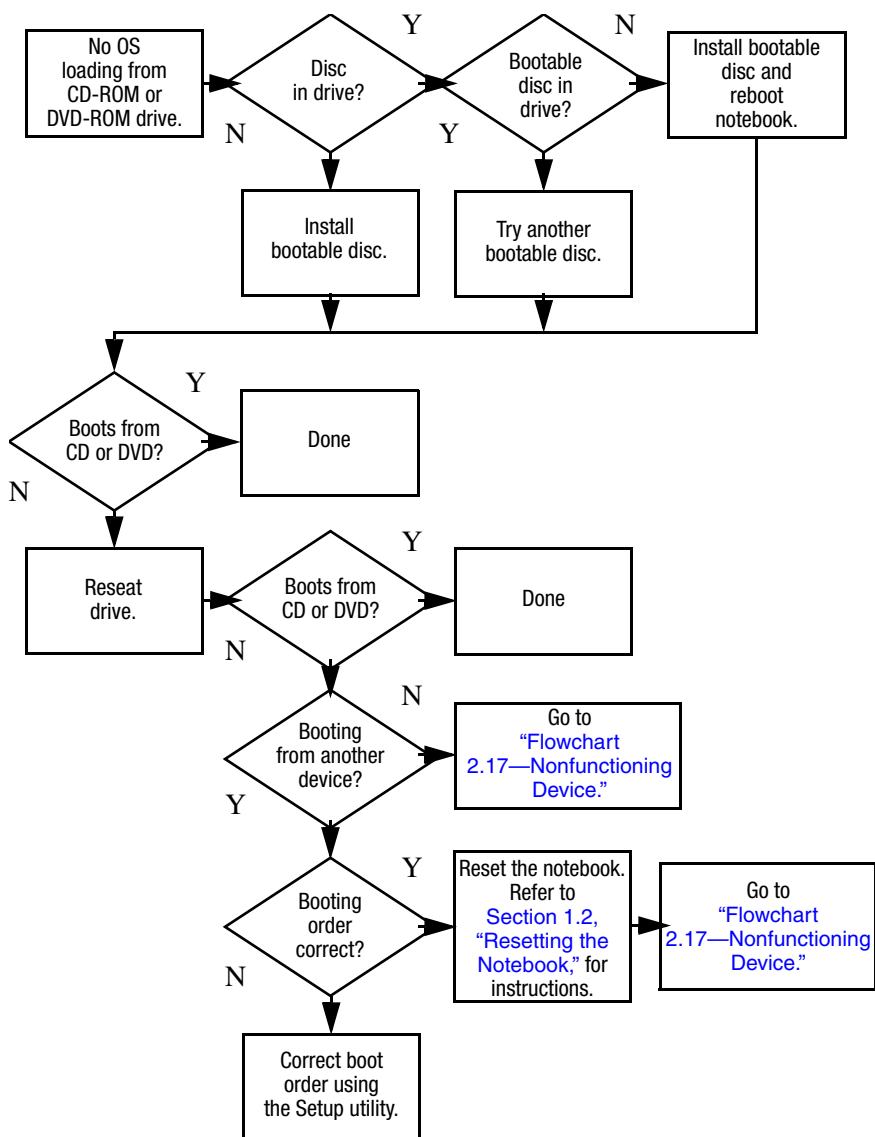
## Flowchart 2.12—No OS Loading, Hard Drive, Part 3



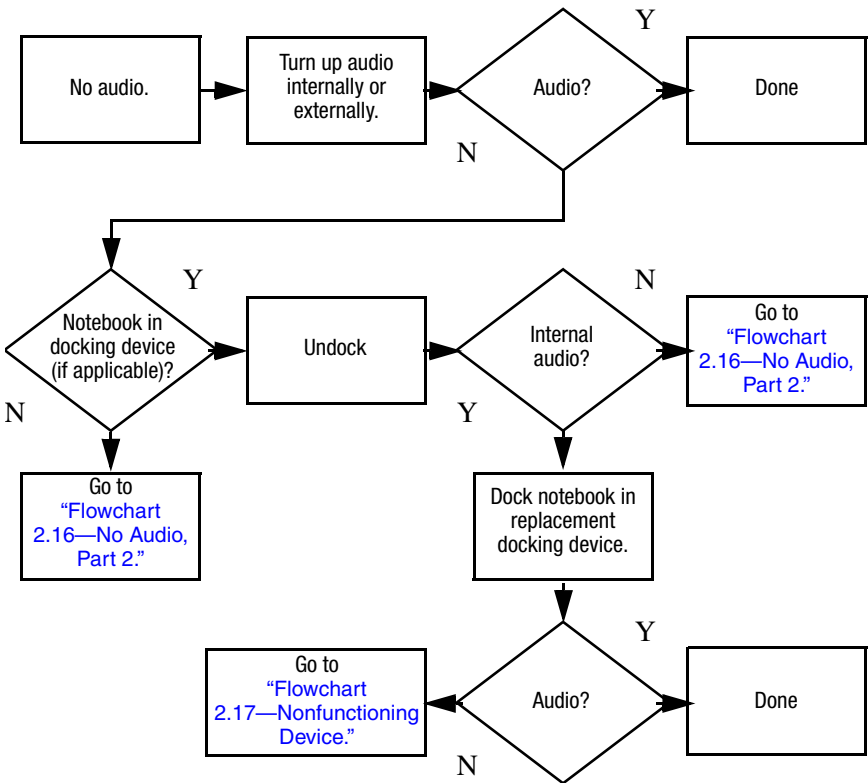
## Flowchart 2.13—No OS Loading, Diskette Drive



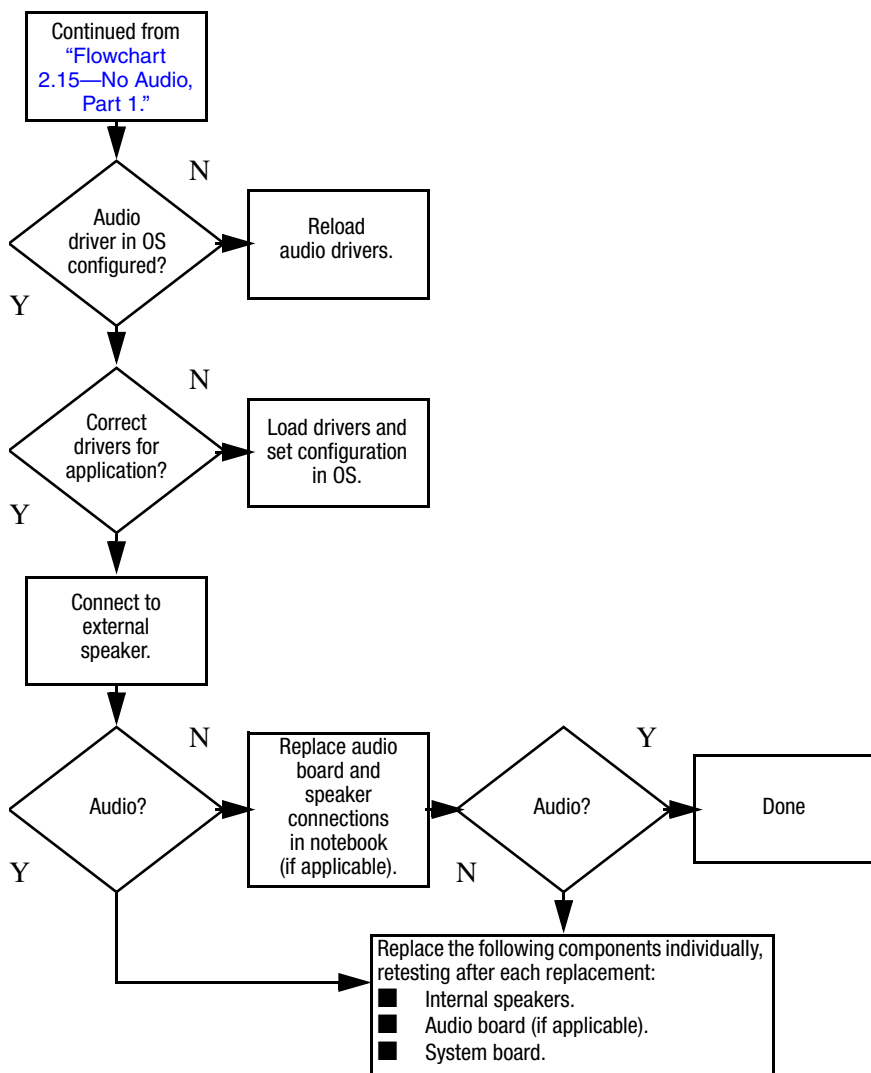
## Flowchart 2.14—No OS Loading, Optical Drive



## Flowchart 2.15—No Audio, Part 1

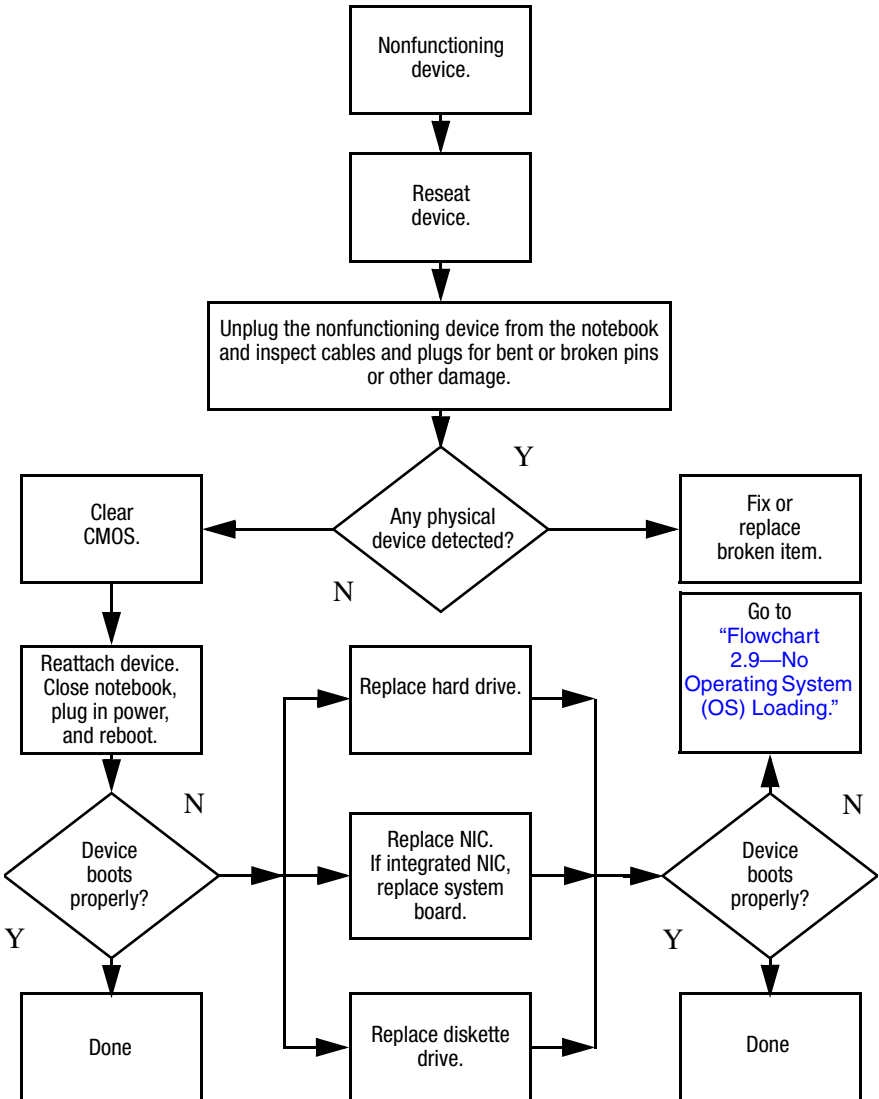


## Flowchart 2.16—No Audio, Part 2

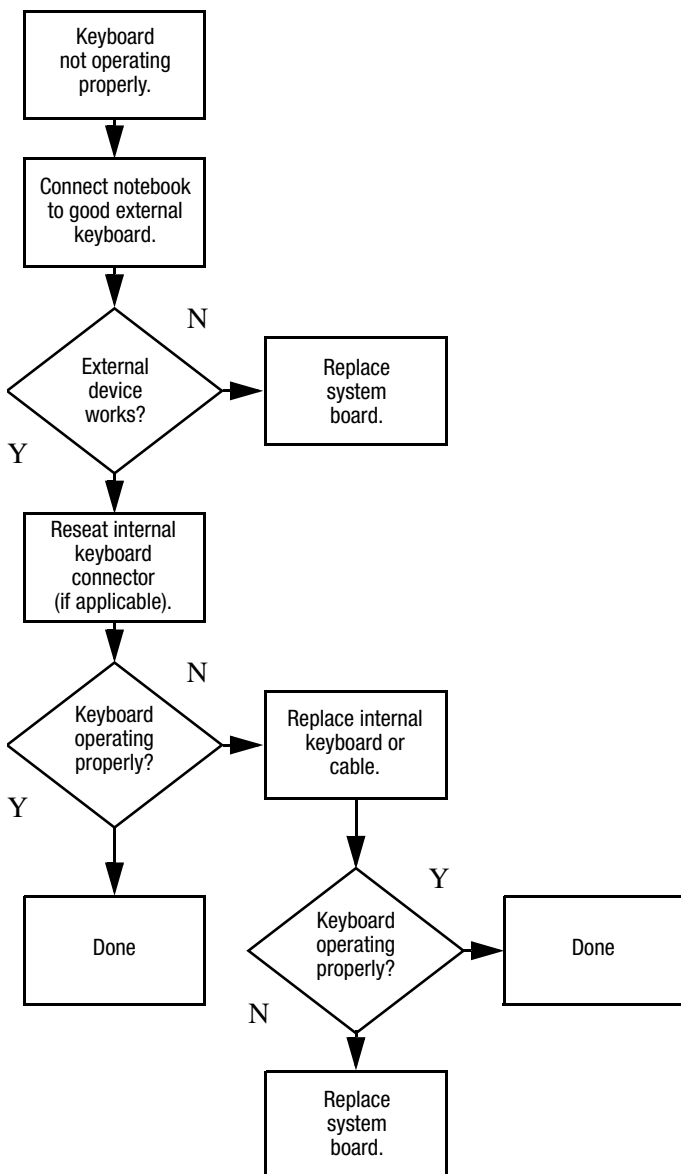




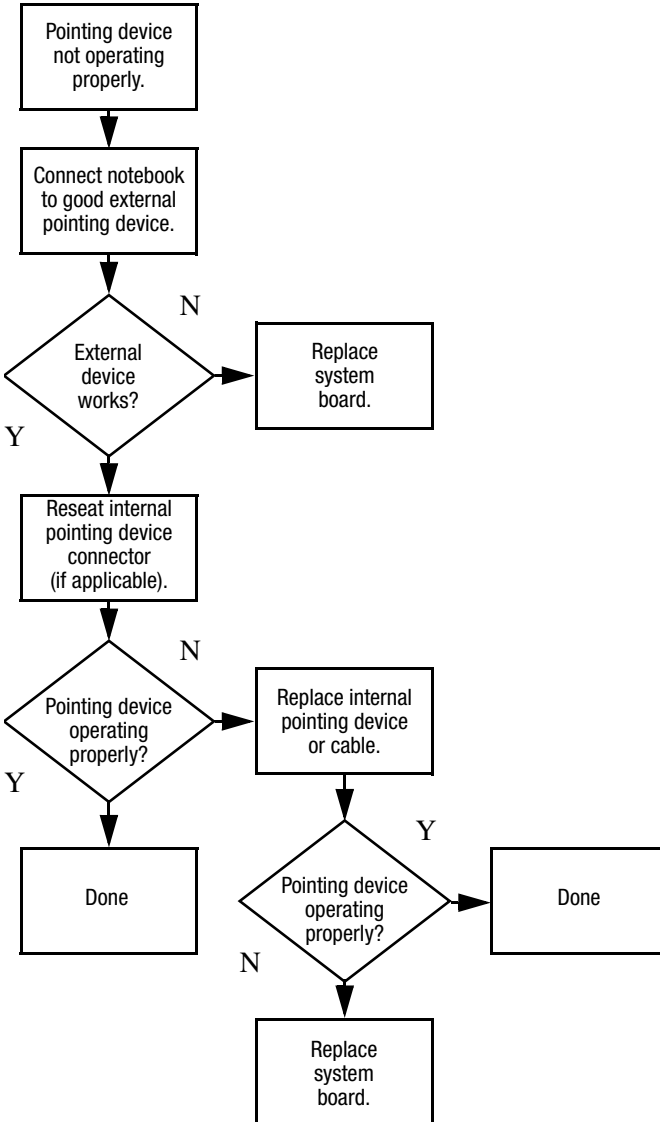
## Flowchart 2.17—Nonfunctioning Device



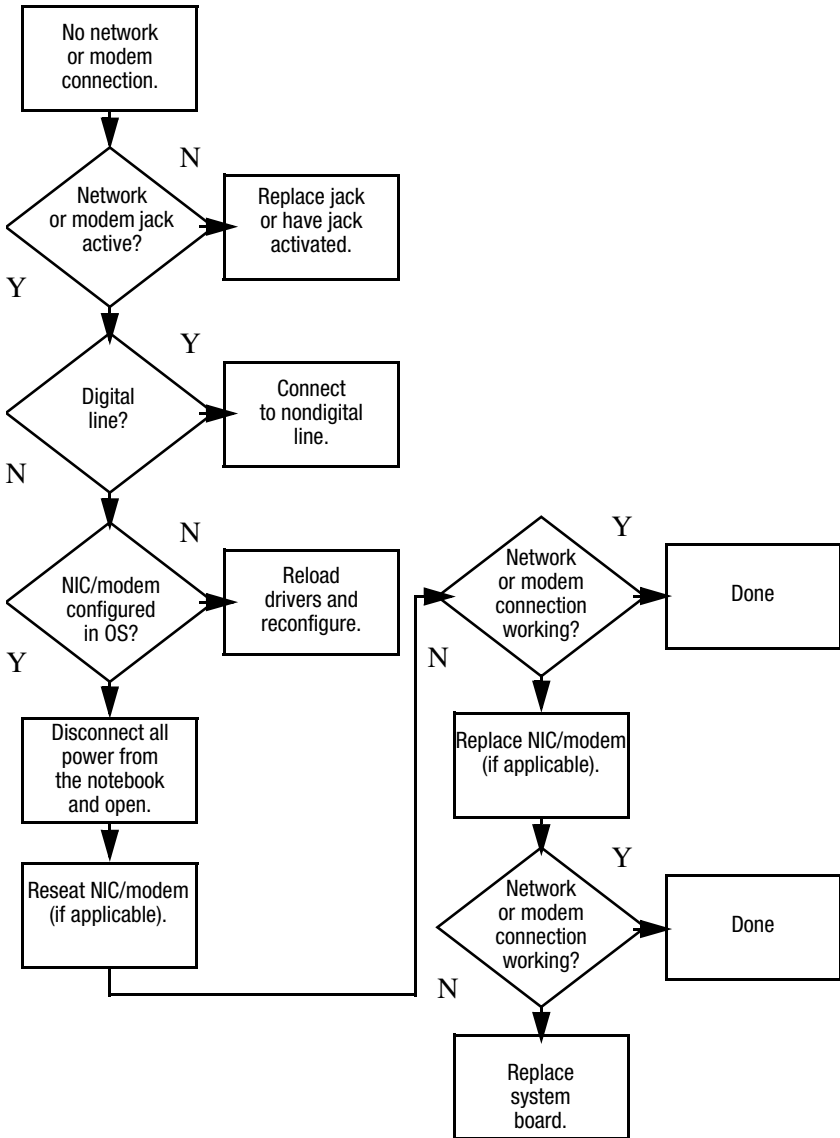
## Flowchart 2.18—Nonfunctioning Keyboard



## Flowchart 2.19—Nonfunctioning Pointing Device



## Flowchart 2.20—No Network/Modem Connection



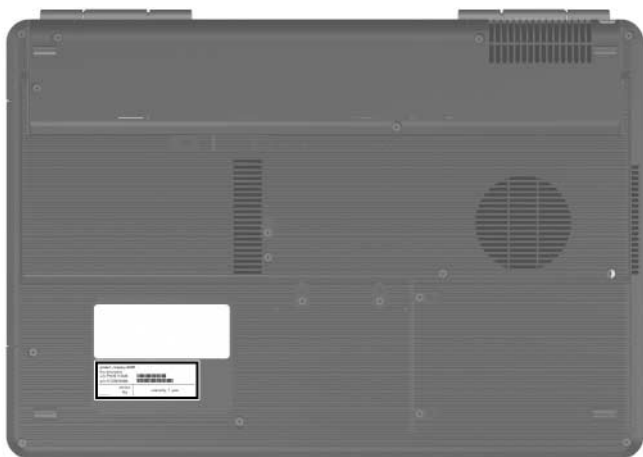
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## Illustrated Parts Catalog

This chapter provides an illustrated parts breakdown and a reference for spare part numbers and option part numbers.

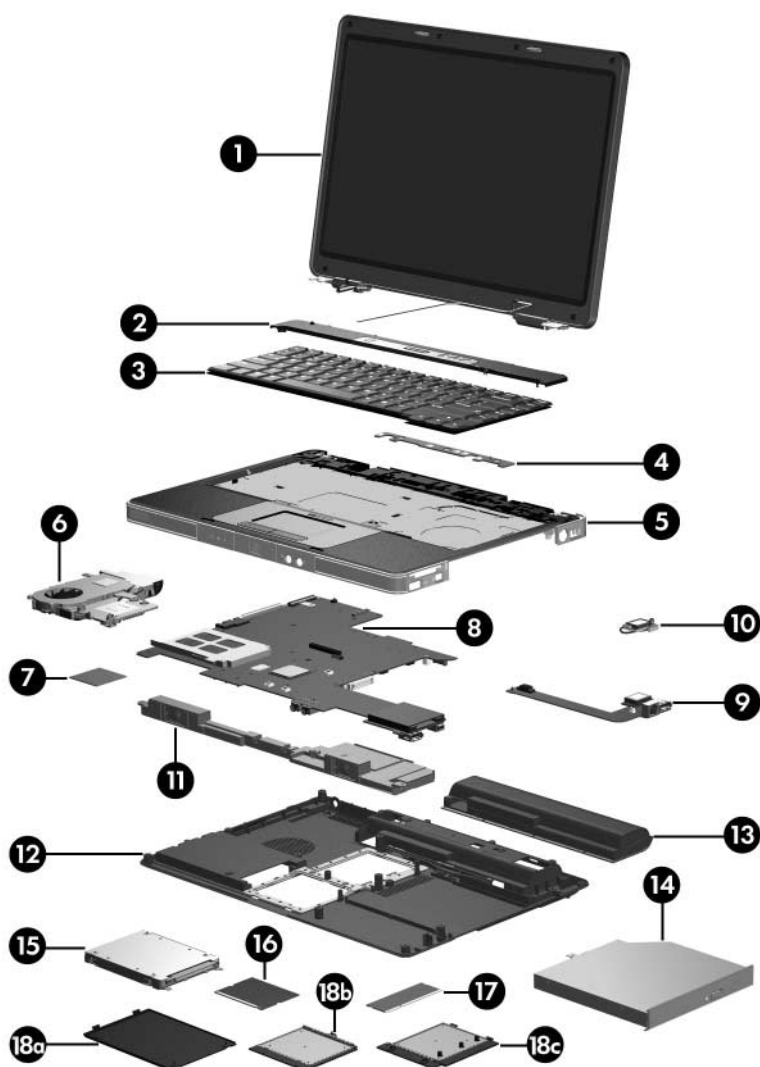
### 3.1 Serial Number Location

When ordering parts or requesting information, provide the notebook serial number and model number located on the bottom of the notebook.



*Serial Number Location*

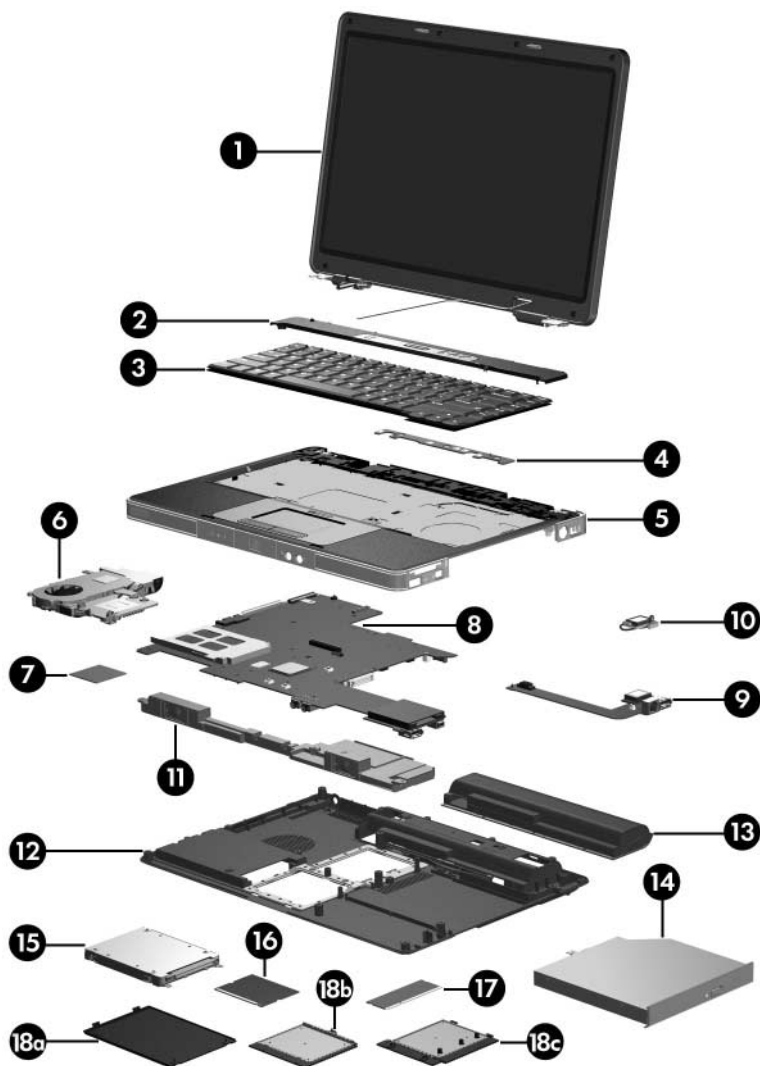
## 3.2 Notebook Major Components



*Notebook Major Components*

**Table 3-1**  
**Spare Parts: Notebook Major Components**

<b>Item</b>	<b>Description</b>	<b>Spare Part Number</b>
1	<b>Display assemblies</b> (include wireless antenna boards and cables)	
	For use on HP Special Edition L2000 models	
	14.0-inch, WXGA, SVA with Brightview	395365-001
	14.0-inch, WXGA	395364-001
	For use on Compaq Presario V2000 models	
	14.0-inch, WXGA, SVA with Brightview	394349-001
	14.0-inch, WXGA	394348-001
2	<b>Switch covers</b> (include wireless button and light)	
	For use on HP Special Edition L2000 models	395371-001
	For use on Compaq Presario V2000 models with wireless capability	394371-001
	For use on Compaq Presario V2000 models without wireless capability	394372-001
3	<b>Keyboards</b>	
	For use on HP Special Edition L2000 models in the United States	395366-001
	For use on Compaq Presario V2000 models in French Canada	394363-121
	For use on Compaq Presario V2000 models in the United States	394363-001
4	<b>LED board</b> (includes cable, not illustrated)	394374-001

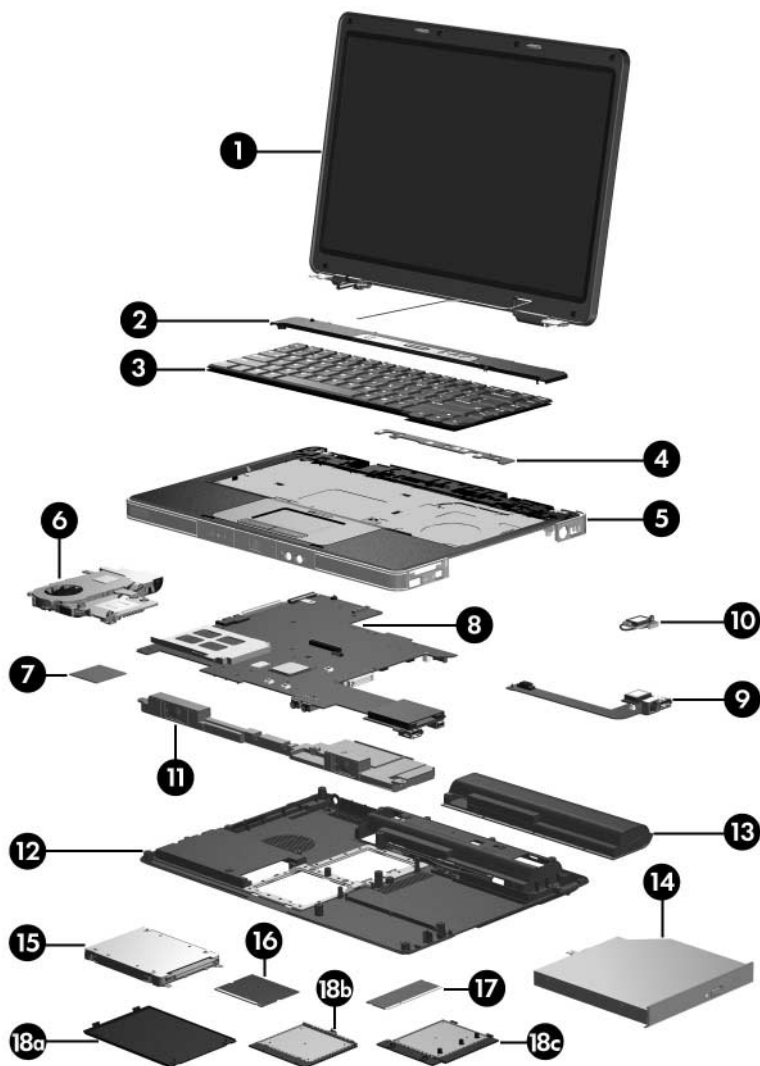


*Notebook Major Components*



**Table 3-1****Spare Parts: Notebook Major Components (Continued)**

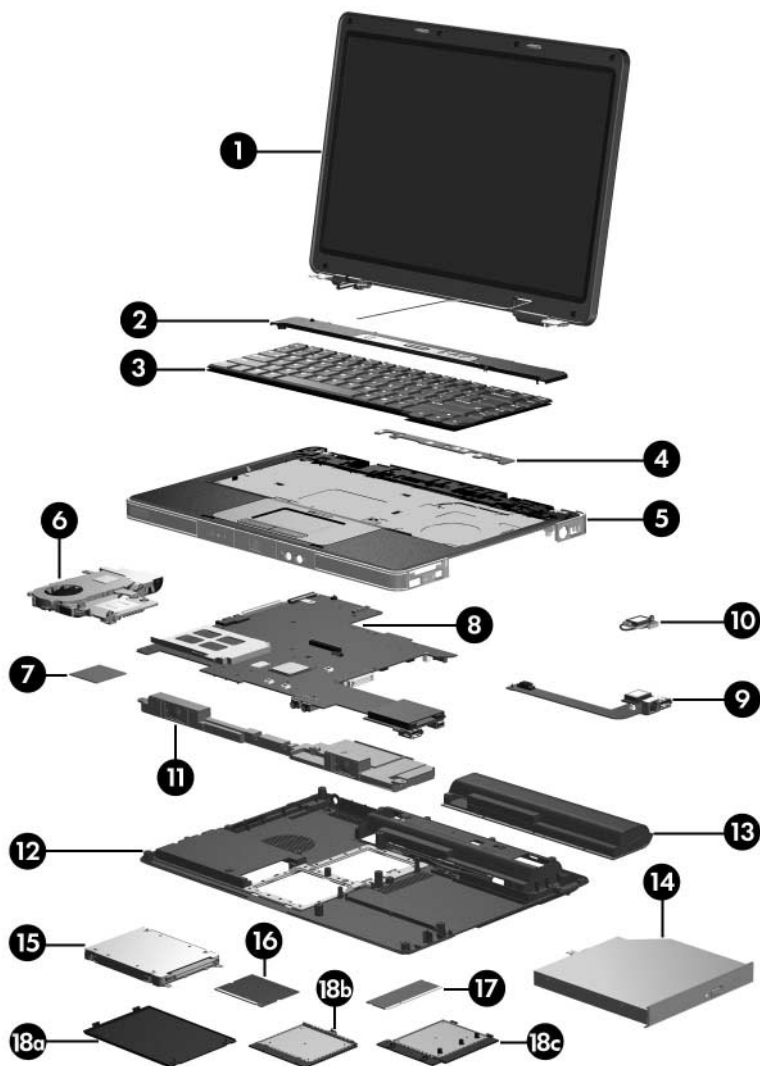
<b>Item</b>	<b>Description</b>	<b>Spare Part Number</b>
5	<b>Top covers</b> (include TouchPad)	
	For use on HP Special Edition L2000 models	395368-001
	For use on full-featured Compaq Presario V2000 models	394366-001
	For use on defeatured Compaq Presario V2000 models	394365-001
6	<b>Fan assembly</b> (includes heat sink and thermal pad)	394298-001
7	<b>Processors</b> (include thermal pad)	
	AMD Turion 64 ML-37 (2.0-GHz) processor	394347-001
	AMD Turion 64 ML-34 (1.8-GHz) processor	394259-001
	AMD Turion 64 ML-32 (1.8-GHz) processor	397346-001
	AMD Turion 64 ML-30 (1.6-GHz) processor	394258-001
	AMD Turion 64 ML-28 (1.6-GHz) processor	394257-001
	Mobile AMD Sempron 3300+ (2.0-GHz) processor	397345-001
	Mobile AMD Sempron 3000+ (1.8-GHz) processor	394256-001
	Mobile AMD Sempron 2800+ (1.6-GHz) processor	394255-001
8	<b>System boards</b> (include disk cell RTC battery)	
	ATI RS480M, for use on full-featured models	394253-001
	ATI RS480M, for use on defeatured models	394252-001
9	<b>USB/S-Video controller board</b> (for use on full-featured models)	394303-001
	<b>S-Video controller board</b> (for use on defeatured models)	395373-001



*Notebook Major Components*

**Table 3-1****Spare Parts: Notebook Major Components (Continued)**

<b>Item</b>	<b>Description</b>	<b>Spare Part Number</b>
10	<b>Broadcomm Bluetooth® WLAN module</b>	394254-001
11	<b>Speaker assembly</b>	394373-001
12	<b>Base enclosure</b>	394367-001
13	<b>Battery packs</b>	
	12-cell, 8.8-AHr	394275-001
	6-cell, 4.0-AHr	391883-001
14	<b>Optical drives (include bezel)</b>	
	For use on HP Special Edition L2000 models	
	8X Max DVD-ROM drive	395728-001
	24X DVD/CD-RW Combo Drive	395729-001
	8X DVD±RW/R and CD-RW Combo Drive	395730-001
	8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe	395731-001
	For use on Compaq Presario V2000 models	
	8X Max DVD-ROM drive	394359-001
	24X DVD/CD-RW Combo Drive	394360-001
	8X DVD±RW/R and CD-RW Combo Drive	394362-001
	8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe	394361-001



*Notebook Major Components*

**Table 3-1****Spare Parts: Notebook Major Components (Continued)**

<b>Item</b>	<b>Description</b>	<b>Spare Part Number</b>
15	<b>Hard drives</b> (include frame and connector)	
	5400-rpm	
	80-GB	394358-001
	60-GB	394357-001
	4200-rpm	
	100-GB	394355-001
	80-GB	394354-001
	60-GB	394353-001
	40-GB	394356-001
16	<b>Mini PCI 802.11b/g WLAN communications card</b>	394462-001
17	<b>Memory modules</b> (333-MHz, DDR1, PC2700)	
	1024-MB	394352-001
	512-MB	394351-001
	256-MB	394350-001
	<b>Miscellaneous Plastics Kit</b>	394368-001
	Includes:	
18a	Hard drive cover (includes 2 captive screws)	
18b	Memory module compartment cover (includes 2 captive screws)	
18c	Mini PCI compartment cover (includes 1 captive screw)	
	Notebook feet (not illustrated)	

### 3.3 Mass Storage Devices



*Mass Storage Devices*

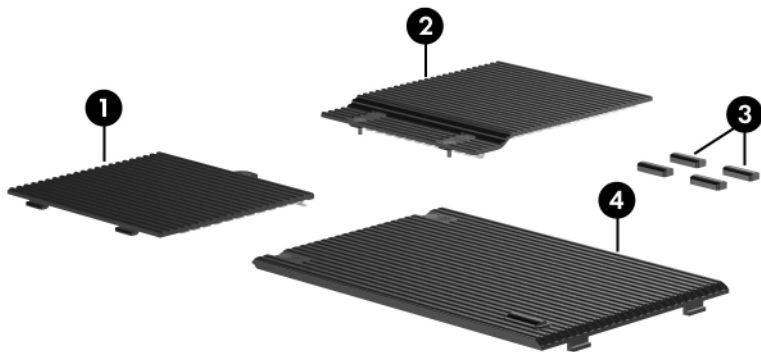
**Table 3-2**  
**Mass Storage Devices**  
**Spare Part Number Information**

Item	Description	Spare Part Number
1	<b>Hard drives</b> (include frame and connector)	
	5400-rpm	
	80-GB	394358-001
	60-GB	394357-001
	4200-rpm	
	100-GB	394355-001
	80-GB	394354-001
	60-GB	394353-001
	40-GB	394356-001

**Table 3-2**  
**Mass Storage Devices**  
**Spare Part Number Information (*Continued*)**

<b>Item</b>	<b>Description</b>	<b>Spare Part Number</b>
<b>2</b>	<b>Optical drives</b>	
	For use on HP Special Edition L2000 models	
	8X Max DVD-ROM drive	395728-001
	24X DVD/CD-RW Combo Drive	395729-001
	8X DVD±RW/R and CD-RW Combo Drive	395730-001
	8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe	395731-001
	For use on Compaq Presario V2000 models	
	8X Max DVD-ROM drive	394359-001
	24X DVD/CD-RW Combo Drive	394360-001
	8X DVD±RW/R and CD-RW Combo Drive	394362-001
	8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe	394361-001
	<b>USB digital drive (not illustrated)</b>	364727-001

### 3.4 Miscellaneous Plastics Kit



Miscellaneous Plastics Kit

Table 3-3

Miscellaneous Plastics Kit

Spare Part Number 394368-001

Item	Description
	Includes:
1	Mini PCI compartment cover
2	Memory module compartment cover
3	Notebook feet (4)
4	Hard drive cover



## 3.5 Miscellaneous

**Table 3-4**  
**Spare Parts: Miscellaneous (not illustrated)**

<b>Description</b>	<b>Spare Part Number</b>
<b>Logo Kits</b>	
For use on HP Special Edition L2000 models	395370-001
For use on Compaq Presario V2000 models	394370-001
<b>Wired headset with volume control</b>	
For use on HP Special Edition L2000 models	371693-002
For use on Compaq Presario V2000 models	371693-001
<b>All-in-one media cable</b>	375759-001
<b>HP remote control</b>	371694-001
<b>USB travel mouse</b>	309674-001
<b>Notebook entertainment cable and Y-cable</b>	379452-001
<b>65-watt AC adapter</b>	394278-001
<b>Power cord</b>	394279-001
<b>Screw Kit</b> (includes the following screws; refer to <a href="#">Appendix C, "Screw Listing,"</a> for more information on screw specifications and usage)	
For use on HP Special Edition L2000 models	395369-001
For use on Compaq Presario V2000 models	394369-001
■ Phillips PM3.0×4.0 screw	■ Phillips PM2.0×5.0 screw
■ Phillips PM2.0×6.0 captive screw (includes C-clips)	■ Phillips PM2.0×4.0 screw
■ Phillips PM2.0×6.0 screw	■ Phillips PM1.5×3.5 screw
■ Phillips PM2.0×8.0 screw	■ Phillips PM2.0×9.0 captive spring-loaded, shoulder screw (includes C-clips)

## 3.6 Sequential Part Number Listing

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**Table 3-5****Spare Parts: Sequential Part Number Listing**

<b>Spare Part Number</b>	<b>Description</b>
309674-001	USB travel mouse
364727-001	USB digital drive
371693-001	Wired headset with volume control for use on Compaq Presario V2000 models
371693-002	Wired headset with volume control for use on HP Special Edition L2000 models
371694-001	HP remote control
375759-001	All-in-one media cable
379452-001	Notebook entertainment cable and Y-cable
391883-001	6-cell, 4.0-AHr battery pack
394252-001	ATI RS480M system board, for use on defeatured models (includes disk cell RTC battery)
394253-001	ATI RS480M system board, for use on full-featured models (includes disk cell RTC battery)
394254-001	Broadcomm Bluetooth WLAN module
394255-001	Mobile AMD Sempron 2800+ (1.6-GHz) processor (includes thermal pad)
394256-001	Mobile AMD Sempron 3000+ (1.8-GHz) processor (includes thermal pad)
394257-001	AMD Turion 64 ML-28 (1.6-GHz) processor (includes thermal pad)
394258-001	AMD Turion 64 ML-30 (1.6-GHz) processor (includes thermal pad)

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**Table 3-5****Spare Parts: Sequential Part Number Listing (*Continued*)**

<b>Spare Part Number</b>	<b>Description</b>
394259-001	AMD Turion 64 ML-34 (1.8-GHz) processor (includes thermal pad)
394275-001	12-cell, 8.8-AHr battery pack
394278-001	65-watt AC adapter
394279-001	Power cord
394298-001	Fan (includes heat sink and thermal pad)
394303-001	USB/S-Video controller board (for use on full-featured models)
394347-001	AMD Turion 64 ML-37 (2.0-GHz) processor (includes thermal pad)
394348-001	14.0-inch, WXGA display assembly for use on Compaq Presario V2000 models (includes wireless antenna boards and cables)
394349-001	14.0-inch, WXGA, SVA with Brightview display assembly for use on Compaq Presario V2000 models (includes wireless antenna boards and cables)
394350-001	256-MB memory module (333-MHz, DDR1, PC2700)
394351-001	512-MB memory module (333-MHz, DDR1, PC2700)
394352-001	1024-MB memory module (333-MHz, DDR1, PC2700)
394353-001	4200-rpm, 60-GB hard drive (includes frame and connector)
394354-001	4200-rpm, 80-GB hard drive (includes frame and connector)
394355-001	4200-rpm, 100-GB hard drive (includes frame and connector)
394356-001	4200-rpm, 40-GB hard drive (includes frame and connector)
394357-001	5400-rpm, 60-GB hard drive (includes frame and connector)
394358-001	5400-rpm, 80-GB hard drive (includes frame and connector)

**Table 3-5****Spare Parts: Sequential Part Number Listing (*Continued*)**

<b>Spare Part Number</b>	<b>Description</b>
394359-001	8X Max DVD-ROM drive for use on Compaq Presario V2000 models
394360-001	24X DVD/CD-RW Combo Drive for use on Compaq Presario V2000 models
394361-001	8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe, for use on Compaq Presario V2000 models
394362-001	8X DVD±RW/R and CD-RW Combo Drive for use on Compaq Presario V2000 models
394363-001	Keyboard for use on Compaq Presario V2000 models in the United States
394363-121	Keyboard for use on Compaq Presario V2000 models in French Canada
394365-001	Top cover for use on defeatured Compaq Presario V2000 models (includes TouchPad)
394366-001	Top cover for use on full-featured Compaq Presario V2000 models (includes TouchPad)
394367-001	Base enclosure
394368-001	Miscellaneous Plastics Kit
394369-001	Screw Kit for use on Compaq Presario V2000 models
394370-001	Logo Kit for use on Compaq Presario V2000 models
394371-001	Switch cover for use on Compaq Presario V2000 models with wireless capability (includes wireless button and light)
394372-001	Switch cover for use on Compaq Presario V2000 models without wireless capability (includes wireless button and light)
394373-001	Speaker assembly
394374-001	LED board (includes cable)

**Table 3-5****Spare Parts: Sequential Part Number Listing (*Continued*)**

<b>Spare Part Number</b>	<b>Description</b>
394462-001	Mini PCI 802.11b/g WLAN communications module
395364-001	14.0-inch, WXGA display assembly for use on HP Special Edition L2000 models (includes wireless antenna boards and cables)
395365-001	14.0-inch, WXGA, SVA with Brightview display assembly for use on HP Special Edition L2000 models (includes wireless antenna boards and cables)
395366-001	Keyboard for use on HP Special Edition L2000 models in the United States
395368-001	Top cover for use on full-featured HP Special Edition L2000 models (includes TouchPad)
395369-001	Screw Kit for use on HP Special Edition L2000 models
395370-001	Logo Kit for use on HP Special Edition L2000 models
395371-001	Switch cover for use on HP Special Edition L2000 models
395373-001	S-Video controller board (for use on defeatured models)
395728-001	8X Max DVD-ROM drive for use on HP Special Edition L2000 models
395729-001	24X DVD/CD-RW Combo Drive for use on HP Special Edition L2000 models
395730-001	8X DVD±RW/R and CD-RW Combo Drive for use on HP Special Edition L2000 models
395731-001	8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe, for use on HP Special Edition L2000 models

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**Table 3-5**

**Spare Parts: Sequential Part Number Listing (*Continued*)**

<b>Spare Part Number</b>	<b>Description</b>
397345-001	Mobile AMD Sempron 3300+ (2.0-GHz) processor (includes thermal pad)
397346-001	AMD Turion 64 ML-32 (1.8-GHz) processor (includes thermal pad)

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# Removal and Replacement Preliminaries

This chapter provides essential information for proper and safe removal and replacement service.

## 4.1 Tools Required

You will need the following tools to complete the removal and replacement procedures:

- Magnetic screwdriver
- Phillips P0 screwdriver
- 2.0-mm hex wrench for processor socket locking screw
- Flat-bladed screwdriver
- Tool kit—includes connector removal tool, loopback plugs, and case utility tool

## 4.2 Service Considerations

The following sections include some of the considerations that you should keep in mind during disassembly and assembly procedures.



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As you remove each subassembly from the notebook, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

---

## Plastic Parts

Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

## Cables and Connectors



**CAUTION:** When servicing the notebook, ensure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the notebook.

---

Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Ensure that 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; these cables tear easily.

## 4.3 Preventing Damage to Removable Drives

Removable drives are fragile components that must be handled with care. To prevent damage to the notebook, damage to a removable drive, or loss of information, observe the following precautions:

- Before removing or inserting a hard drive, shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the notebook on, and then shut it down through the operating system.
- Before removing a diskette drive or optical drive, ensure that a diskette or disc is not in the drive and ensure that the optical drive tray is closed.



- Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
- Handle drives on surfaces covered with at least one inch of shock-proof foam.
- Avoid dropping drives from any height onto any surface.
- After removing a hard drive, CD-ROM drive, or a diskette drive, place it in a static-proof bag.
- Avoid exposing a hard drive to products that have magnetic fields, such as monitors or speakers.
- Avoid exposing a drive to temperature extremes or liquids.
- If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package, "Fragile: Handle With Care."

## **4.4 Preventing Electrostatic Damage**

Many electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs.

An electronic device exposed to electrostatic discharge might not be affected at all and can work perfectly throughout a normal cycle. Or the device might function normally for a while, then degrade in the internal layers, reducing its life expectancy.

## **4.5 Packaging and Transporting Precautions**

Use the following grounding precautions when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe containers, such as tubes, bags, or boxes.
- Protect all electrostatic-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a sensitive component or assembly.
- Store reusable electrostatic-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Ensure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

## 4.6 Workstation Precautions

Use the following grounding precautions at workstations:

- Cover the workstation with approved static-shielding material (refer to [Table 4-2, “Static-Shielding Materials”](#)).
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When using fixtures that must directly contact dissipative surfaces, only use fixtures made of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle electrostatic-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

## 4.7 Grounding Equipment and Methods

Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm  $\pm 10\%$  resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

Other grounding equipment recommended for use in preventing electrostatic damage includes:

- Antistatic tape
- Antistatic smocks, aprons, and sleeve protectors
- Conductive bins and other assembly or soldering aids
- Nonconductive foam
- Conductive tabletop workstations with ground cords of one megohm resistance
- Static-dissipative tables or floor mats with hard ties to the ground
- Field service kits
- Static awareness labels
- Material-handling packages
- Nonconductive plastic bags, tubes, or boxes
- Metal tote boxes
- Electrostatic voltage levels and protective materials

Table 4-1 shows how humidity affects the electrostatic voltage levels generated by different activities.

**Table 4-1**  
**Typical Electrostatic Voltage Levels**


Event	Relative Humidity		
	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 tube	2,000 V	700 V	400 V
Removing DIPS from vinyl tray	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 PCB	26,500 V	20,000 V	7,000 V
Packing PCBs in foam-lined box	21,000 V	11,000 V	5,000 V
 A product can be degraded by as little as 700 V.			

Table 4-2 lists the shielding protection provided by antistatic bags and floor mats.

**Table 4-2**  
**Static-Shielding Materials**

Material	Use	Voltage Protection Level
Antistatic plastic	Bags	1,500 V
Carbon-loaded plastic	Floor mats	7,500 V
Metallized laminate	Floor mats	5,000 V

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## Removal and Replacement Procedures

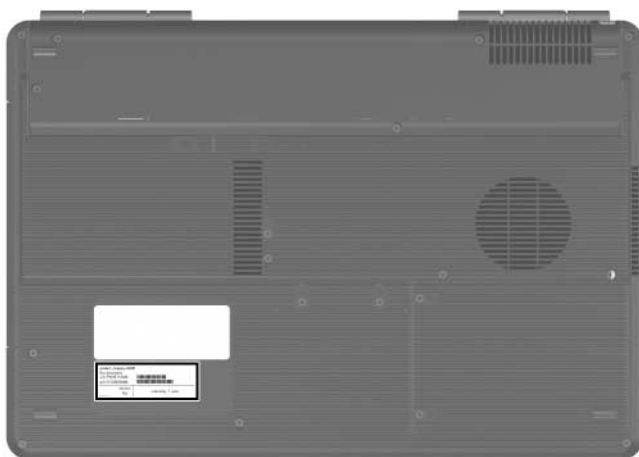
This chapter provides removal and replacement procedures.

There are as many as 54 screws, in 8 different sizes and types, that may need to be removed, replaced, or loosened when servicing the notebook. Make special note of each screw size and location during removal and replacement.

Refer to [Appendix C, “Screw Listing,”](#) for detailed information on screw sizes, locations, and usage.

## **5.1 Serial Number**

Report the notebook serial number to HP when requesting information or ordering spare parts. The serial number is located on the bottom of the notebook.




*Serial Number Location*



## 5.2 Disassembly Sequence Chart

Use the chart below to determine the section number to be referenced when removing notebook components.

**Disassembly Sequence Chart**

Section	Description	# of Screws Removed
5.3	<a href="#">Preparing the Notebook for Disassembly</a>	
	Battery pack	0
5.4	<a href="#">Hard Drive</a>	2 loosened to remove the hard drive cover 4 removed to disassemble the hard drive
5.5	<a href="#">Notebook Feet</a>	0
5.6	<a href="#">Memory Module</a>	2 loosened to remove the memory module compartment cover
5.7	<a href="#">Mini PCI Communications Module</a>	1 loosened to remove the Mini PCI compartment cover
	 To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care.	
5.8	<a href="#">Optical Drive</a>	1
5.9	<a href="#">Switch Cover</a>	2
5.10	<a href="#">Keyboard</a>	4

---

**Disassembly Sequence Chart (*Continued*)**

Section	Description	# of Screws Removed
5.11	Display Assembly	4
5.12	Base Enclosure	18
5.13	USB/S-Video Controller Board	2
5.14	Bluetooth Module	2
5.15	Speaker Assembly	0
5.16	RTC Battery	0
5.17	Fan Assembly	1 removed, 4 loosened
5.18	Processor	1 loosened
5.19	System Board	4
5.20	LED Board	2

---

**5.3 Preparing the Notebook  
for Disassembly**

Before you begin any removal or installation procedures:

1. Shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the notebook.
3. Disconnect the power cord.

---

**Battery Pack Spare Part Number Information**

12-cell, 8.8-AHr	394275-001
6-cell, 4.4-AHr	391883-001

---

4. Remove the battery pack by following these steps:
  - a. Turn the notebook upside down with the front toward you.
  - b. Slide and hold the battery release latch **1** to the left. (The front edge of the battery pack disengages from the notebook.)
  - c. Lift the front edge of the battery pack **2** and swing it back.
  - d. Remove the battery pack.



#### *Removing the Battery Pack*

Reverse the above procedure to install the battery pack.

# 5.4 Hard Drive

- 1. Prepare the notebook for disassembly (refer to [Section 5.3](#)).

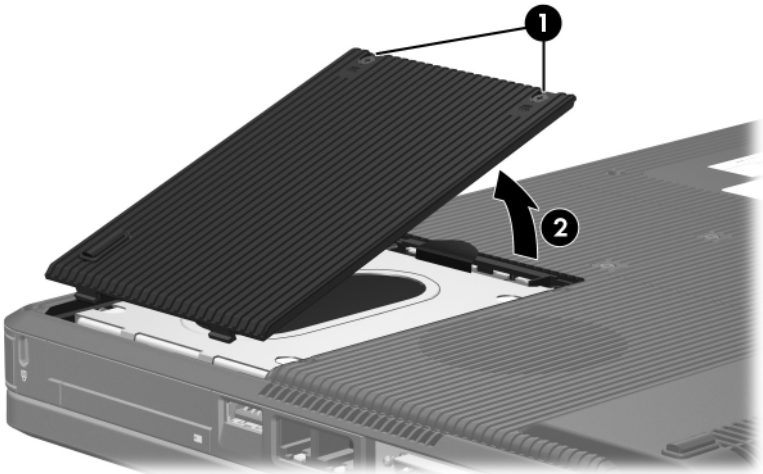
Hard Drive Spare Part Number Information			
Include frame and connector.			
5400-rpm		4200-rpm	
80-GB	394358-001	100-GB	394355-001
60-GB	394357-001	80-GB	394354-001
		60-GB	394353-001
		40-GB	394356-001

2. Loosen the two PM2.0×6.0 captive screws ❶ that secure the hard drive cover to the notebook.
3. Lift the right side of the cover ❷ and swing it to the left.
4. Remove the hard drive cover.



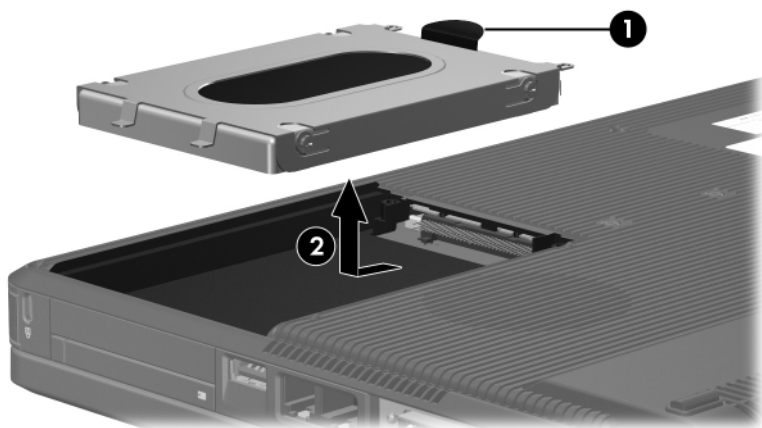
The hard drive cover is included in the Miscellaneous Plastics Kit, spare part number 394368-001.

---



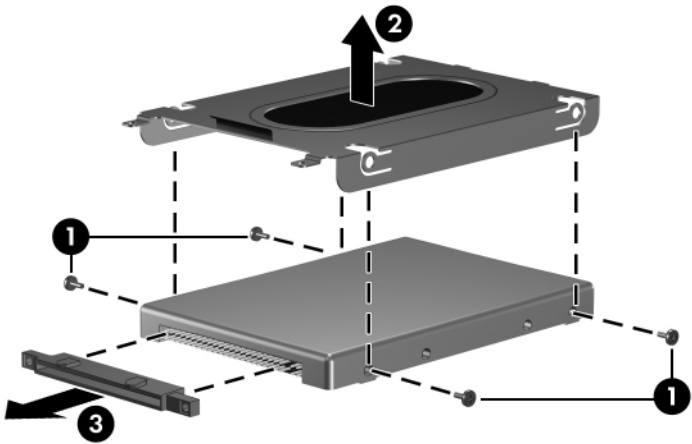
*Removing the Hard Drive Cover*

5. Grasp the mylar tab **1** on the hard drive and lift the hard drive until it disconnects from the notebook.
6. Slide the hard drive **2** to the left and remove it from the hard drive bay.



*Removing the Hard Drive*

7. Remove the four PM3.0×4.0 screws ❶ that secure the hard drive frame to the hard drive.
8. Lift the frame ❷ straight up to remove it from the hard drive.
9. Slide the hard drive connector ❸ off the hard drive.

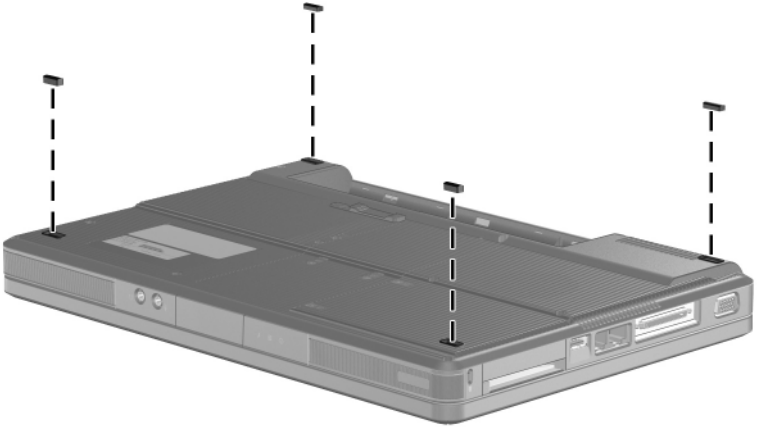


*Removing the Hard Drive Frame and Connector*

Reverse the above procedure to install and reassemble the hard drive.

## **5.5 Notebook Feet**

The notebook feet are adhesive-backed rubber pads. The feet are included in the Miscellaneous Plastics Kit, spare part 394368-001. The feet attach to the base enclosure as illustrated below.



*Replacing the Notebook Feet*



## 5.6 Memory Module

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**Memory Module Spare Part Number Information**

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1024-MB	394352-001
512-MB	394351-001
256-MB	394350-001

---

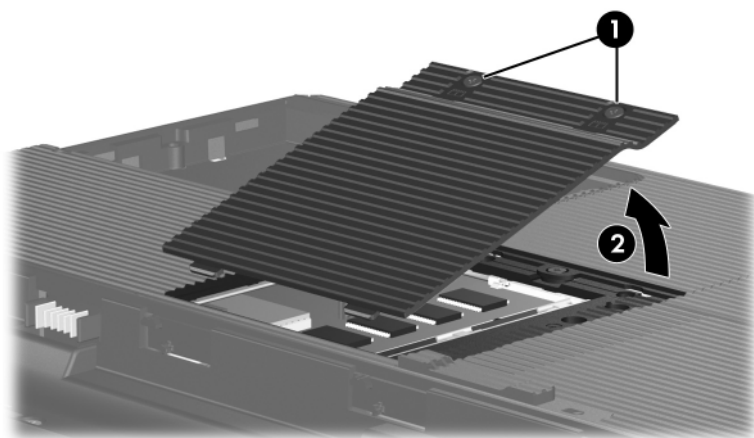
1. Prepare the notebook for disassembly (refer to [Section 5.3](#)).
2. Position the notebook with the rear panel toward you.

3. Loosen the two PM2.0×6.0 captive screws ❶ that secure the memory module compartment cover to the notebook.
4. Lift the rear edge of the memory module compartment cover ❷ up, and then swing it forward.
5. Remove the memory module compartment cover.



The memory module compartment cover is included in the Miscellaneous Plastics Kit, spare part number 394368-001.

---



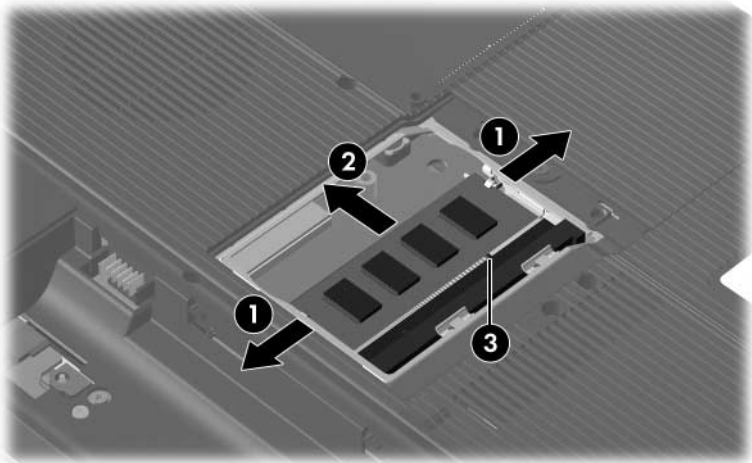
*Removing the Memory Module Compartment Cover*

6. Spread the retaining tabs **❶** on each side of the memory module socket to release the memory module. (The side of the module opposite the socket rises away from the notebook.)
7. Slide the module **❷** away from the socket at an angle.



Memory modules are designed with a notch **❸** to prevent incorrect installation into the memory module socket.

---



#### *Removing the Memory Module*

Reverse the above procedure to install a memory module.

## 5.7 Mini PCI Communications Module

---

### Mini PCI Communications Module

#### Spare Part Number Information

---

Mini PCI 802.11b/g WLAN communications module	394462-001
-----------------------------------------------	------------

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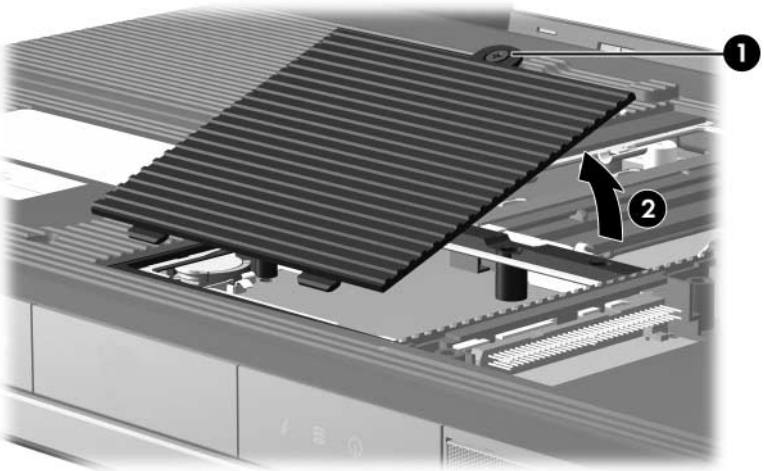
1. Prepare the notebook for disassembly ([Section 5.3](#)).

2. Loosen the PM2.0×6.0 captive screw ❶ that secures the Mini PCI compartment cover to the notebook.
3. Lift the rear edge of the Mini PCI compartment cover ❷, and then swing it forward.
4. Remove the Mini PCI compartment cover.



The Mini PCI compartment cover is included in the Miscellaneous Plastics Kit, spare part number 394368-001.

---



*Removing the Mini PCI Compartment Cover*



Make note of which wireless antenna cable is attached to which antenna clip on the Mini PCI communications module before disconnecting the cables.

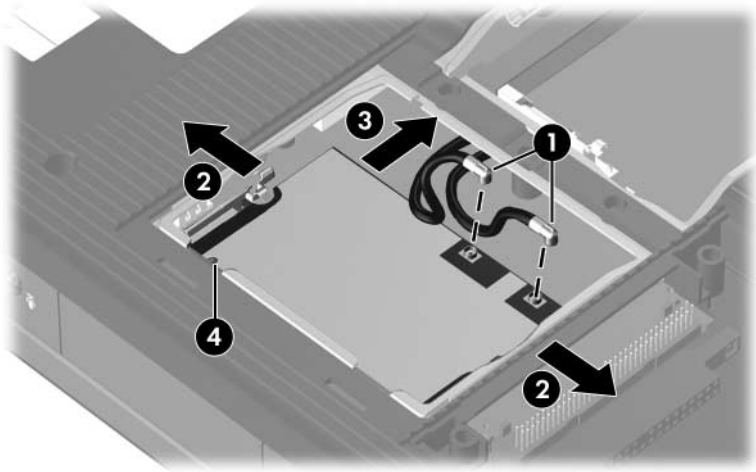
---

5. Disconnect the wireless antenna cables **❶** from the Mini PCI communications module.
  6. Spread the two retaining tabs **❷** that secure the Mini PCI communications module to the communications compartment socket. (The side of the module opposite the socket rises up).
  7. Remove the wireless communications module **❸** by pulling the module away from the socket at a 45-degree angle.
- 



Wireless communication modules are designed with a notch **❹** to prevent incorrect installation into the Mini PCI socket.

---



*Removing a Mini PCI Communications Module*

Reverse the above procedure to install a Mini PCI communications module.

## 5.8 Optical Drive

---

### Optical Drive Spare Part Number Information

---

For use on HP Special Edition L2000 models

8X Max DVD-ROM drive	395728-001
24X DVD/CD-RW Combo Drive	395729-001
8X DVD±RW/R and CD-RW Combo Drive	395730-001
8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe	395731-001

---

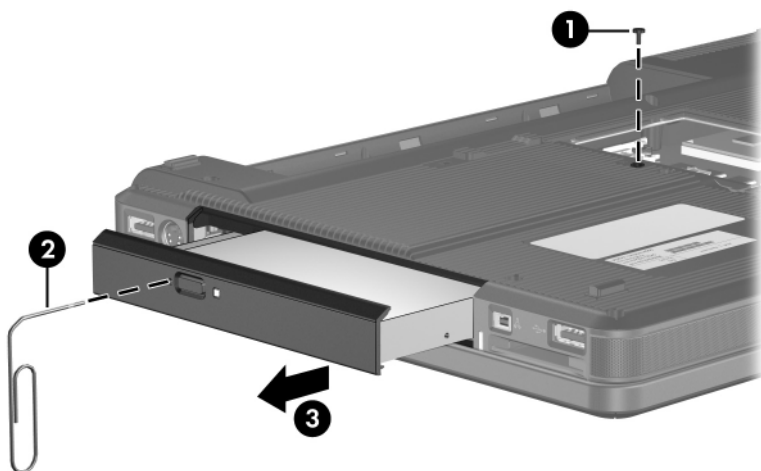
For use on Compaq Presario V2000 models

8X Max DVD-ROM drive	394359-001
24X DVD/CD-RW Combo Drive	394360-001
8X DVD±RW/R and CD-RW Combo Drive	394362-001
8X DVD±RW/R and CD-RW Dual Layer Combo Drive, LightScribe	394361-001

---

1. Prepare the notebook for disassembly ([Section 5.3](#)).

2. Remove the PM2.0x8.0 screw ❶ that secures the optical drive to the notebook.
3. Insert a thin tool, such as a paper clip ❷, into the media tray release hole. (The optical drive media tray releases from the optical drive.)
4. Use the media tray frame to slide the optical drive ❸ to the left.
5. Remove the optical drive.



*Removing the Optical Drive*

Reverse the above procedure to install an optical drive.



## 5.9 Switch Cover

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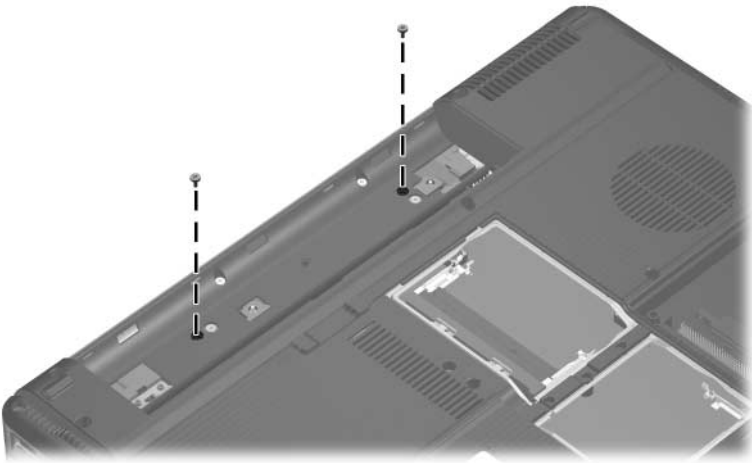
### Switch Cover Spare Part Number Information

---

For use on HP Special Edition L2000 models with wireless capability	395371-001
For use on HP Special Edition L2000 models without wireless capability	395372-001
For use on Compaq Presario V2000 models with wireless capability	394371-001
For use on Compaq Presario V2000 models without wireless capability	394372-001

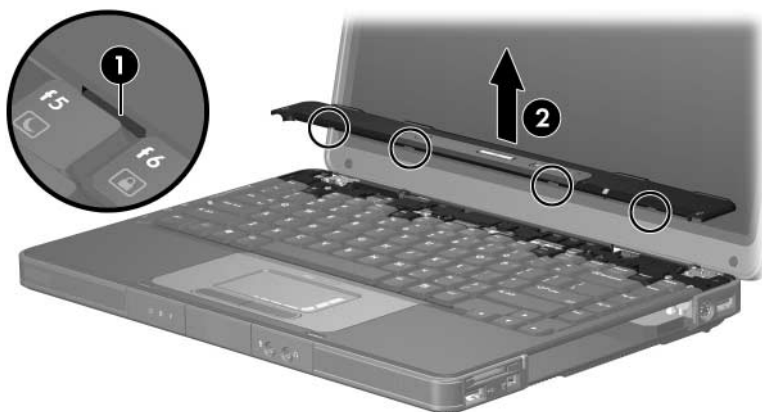
---

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the two PM2.0×5.0 screws that secure the switch cover to the notebook.



*Removing the Switch Cover Screws*

3. Turn the notebook display-side up with the front toward you.
4. Open the notebook as far as possible.
5. Insert a flat-blade screwdriver into the slots located behind the **F1**, **F5**, **F11**, and **insert** keys ❶ and lift up on the front edge of the switch cover ❷ until it disengages from the notebook.
6. Remove the switch cover.



#### *Removing the Switch Cover*

Reverse the above procedure to install the switch cover.

## 5.10 Keyboard

### Keyboard Spare Part Number Information

For use on HP Special Edition L2000 models in the United States	395366-001
For use on Compaq Presario V2000 models in French Canada	394363-121
For use on Compaq Presario V2000 models in the United States	394363-001

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the switch cover ([Section 5.9](#)).
3. Remove the four PM2.0×4.0 screws that secure the keyboard to the notebook.



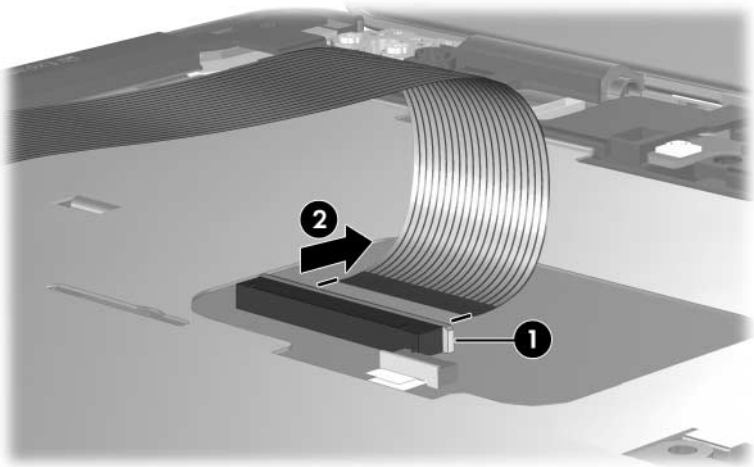
#### *Releasing the Keyboard*

4. Swing the rear edge of the keyboard up and forward until it rests on the palm rest.



*Releasing the Keyboard*

5. Release the ZIF connector ❶ to which the keyboard cable is connected and disconnect the keyboard cable ❷ from the system board.



*Disconnecting the Keyboard Cable*

6. Remove the keyboard.

Reverse the above procedure to install the keyboard.

# 5.11 Display Assembly

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## Display Assembly Spare Part Number Information

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For use on HP Special Edition L2000 models

14.0-inch, WXGA, SVA with Brightview	395365-001
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14.0-inch, WXGA	395364-001
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For use on Compaq Presario V2000 models

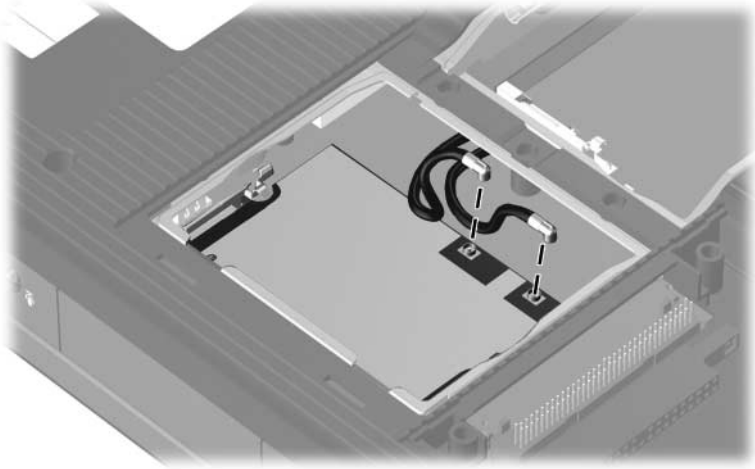
14.0-inch, WXGA, SVA with Brightview	394349-001
--------------------------------------	------------

14.0-inch, WXGA	394348-001
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---

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the memory module compartment ([Section 5.6](#)) and Mini PCI compartment covers ([Section 5.7](#)).

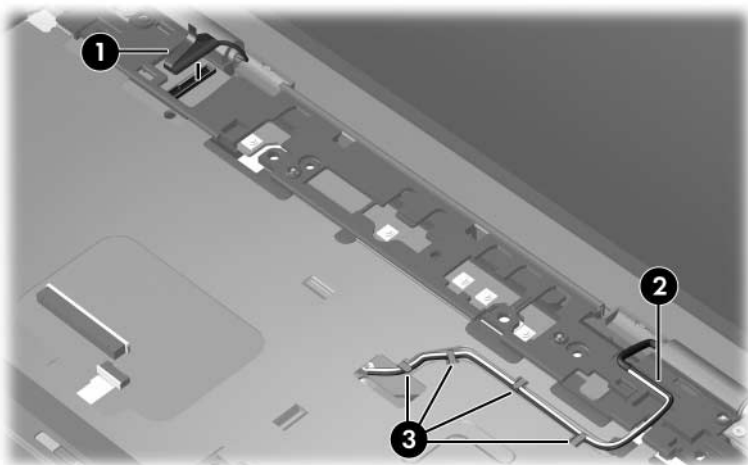
3. Disconnect the wireless antenna cables from the Mini PCI communications module.



*Disconnecting the Wireless Antenna Cables*

4. Remove the switch cover ([Section 5.9](#)).
5. Remove the keyboard ([Section 5.10](#)).
6. Turn the notebook display-side up with the front toward you.
7. Open the display as far as possible.

8. Disconnect the display cable from the system board ❶.
9. Remove the tape ❷ that secures the wireless antenna cables to the top cover.
10. Remove the cables from the clips ❸ in the top cover.



*Disconnecting the Display Cable and Removing the Wireless Antenna Cables*

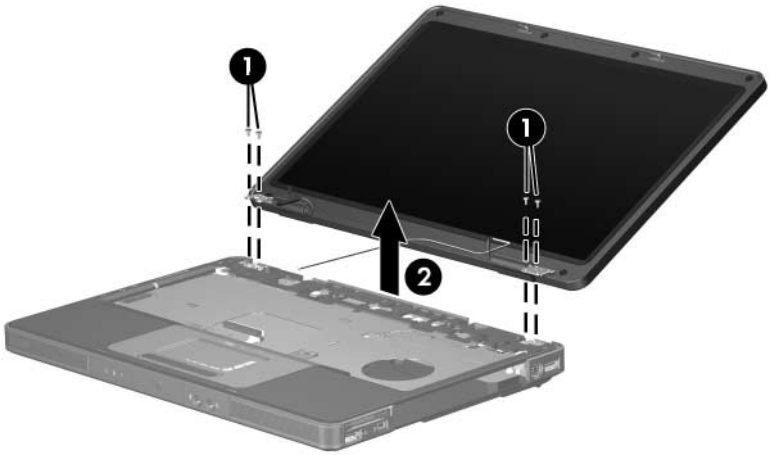




**CAUTION:** Support the display assembly when removing the following screws. Failure to support the display assembly can result in damage to the display assembly and other notebook components.

---

11. Remove the four PM2.0x6.0 screws ❶ that secure the display assembly to the notebook.
12. Remove the display assembly ❷.



#### *Removing the Display Assembly*

Reverse the above procedure to install the display assembly

## 5.12 Base Enclosure

---

### Base Enclosure Spare Part Number Information

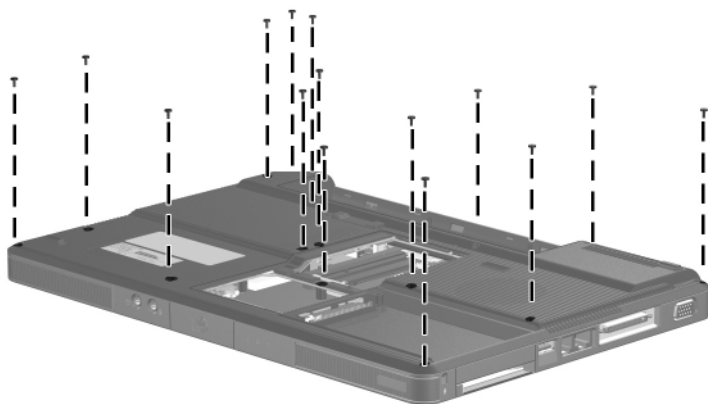
---

Base enclosure

394367-001

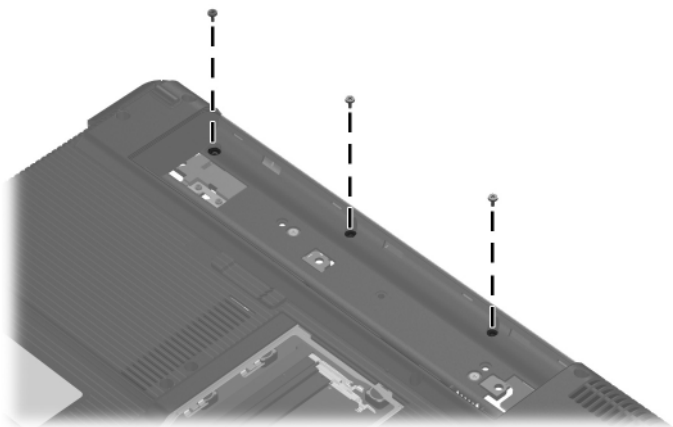
---

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
2. Remove the fifteen PM2.0×8.0 screws that secure the base enclosure to the notebook.



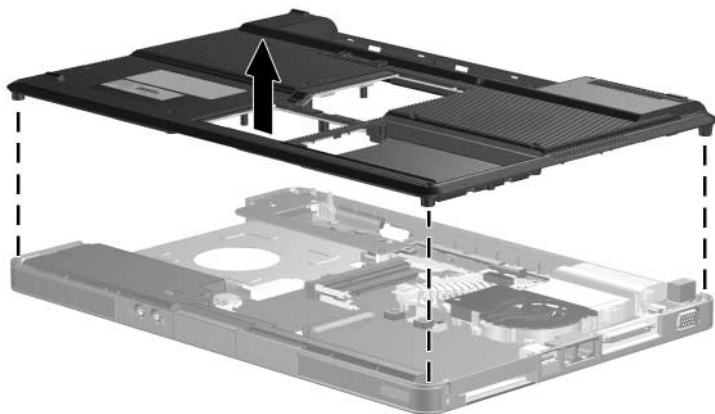
*Removing the Base Enclosure Screws, Part 1*

3. Remove the three PM2.0×5.0 screws that secure the base enclosure to the notebook.



*Removing the Base Enclosure Screws, Part 2*

4. Lift the base enclosure straight up and remove it.



*Removing the Base Enclosure*

Reverse the above procedure to install the base enclosure.

## 5.13 USB/S-Video Controller Board

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### USB/S-Video Controller Board

#### Spare Part Number Information

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USB/S-Video controller board (for use on full-featured models)	394303-001
S-Video controller board (for use on defeatured models)	395373-001

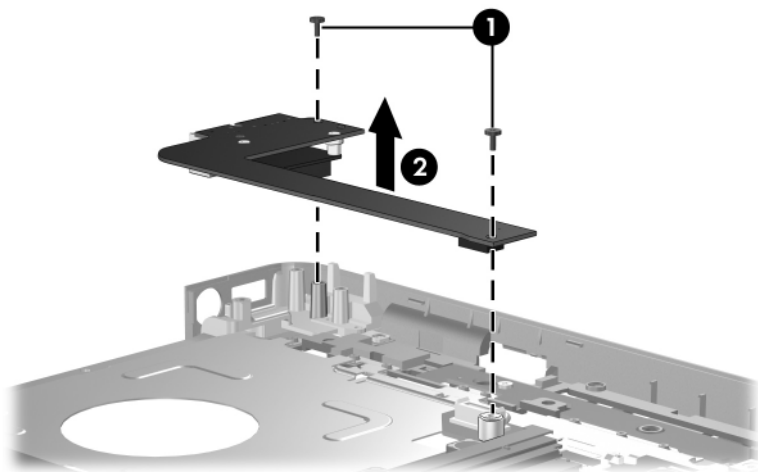
---



When replacing the USB/S-Video controller board, be sure to remove the Bluetooth module from the defective USB/S-Video controller board and replace it on the replacement USB/S-Video controller board. See [Section 5.14, “Bluetooth Module,”](#) for Bluetooth module replacement instructions.

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ☐ Hard drive ([Section 5.4](#))
  - ☐ Switch cover ([Section 5.9](#))
  - ☐ Keyboard ([Section 5.10](#))
  - ☐ Display assembly ([Section 5.11](#))
  - ☐ Base enclosure ([Section 5.12](#))

2. Remove the two PM2.0×5.0 screws ❶ that secure the USB/S-Video controller board to the top cover.
3. Lift up on the right side of the board ❷ to disconnect it from the system board.
4. Remove the USB/S-Video controller board.



*Removing the USB/S-Video Controller Board*

Reverse the above procedure to install the USB/S-Video controller board.

## 5.14 Bluetooth Module

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### Bluetooth Module Spare Part Number Information

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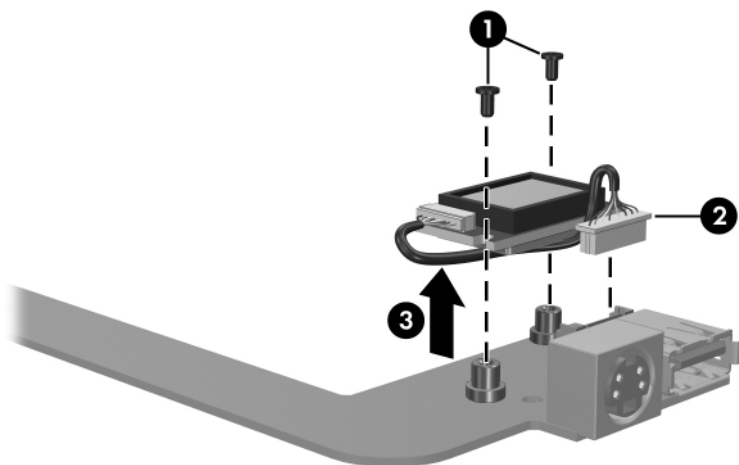
Broadcomm Bluetooth WLAN module

394254-001

---

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
  - ❑ Base enclosure ([Section 5.12](#))
  - ❑ USB/S-Video controller board ([Section 5.13](#))

2. Turn the USB/S-Video controller board upside down with the USB port facing you.
3. Remove the two PM1.5×3.5 screws **①** that secure the Bluetooth module to the USB/S-Video controller board.
4. Disconnect the Bluetooth module cable **②** from the USB/S-Video controller board.
5. Remove the Bluetooth module **③**.



#### *Removing the Bluetooth Module*

Reverse the above procedure to install the Bluetooth module.



## 5.15 Speaker Assembly

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### Speaker Assembly Spare Part Number Information

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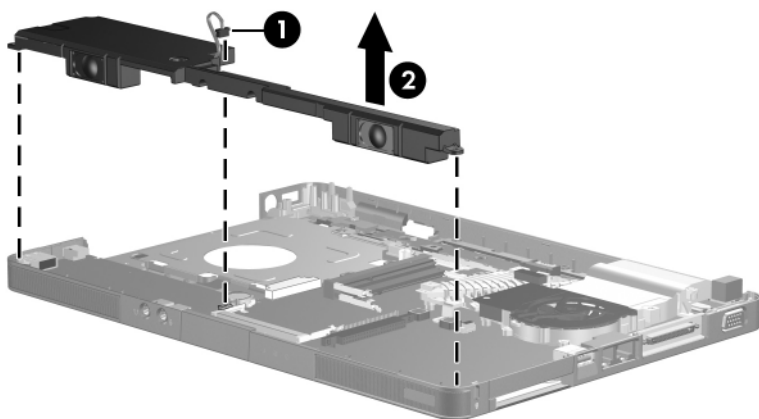
Speaker assembly

394373-001

---

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
  - ❑ Base enclosure ([Section 5.12](#))

2. Disconnect the speaker cable ❶ from the system board.
3. Lift the speaker ❷ straight up to remove it from the top cover.



*Removing the Speaker Assembly*

Reverse the above procedure to install the speaker assembly.

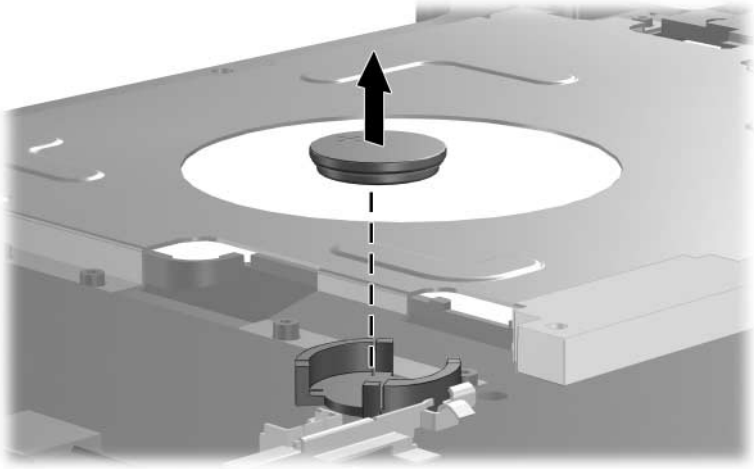
## 5.16 RTC Battery



The RTC battery is included with all system board spare part kits. Refer to [Section 5.19, “System Board,”](#) for spare part number information.

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
  - ❑ Base enclosure ([Section 5.12](#))

2. Remove the RTC battery from the socket on the system board.



*Removing the RTC Battery*

Reverse the above procedure to install the RTC battery. Make sure the battery is installed with the “+” side facing up.

## 5.17 Fan Assembly

---

### Fan Assembly Spare Part Number Information

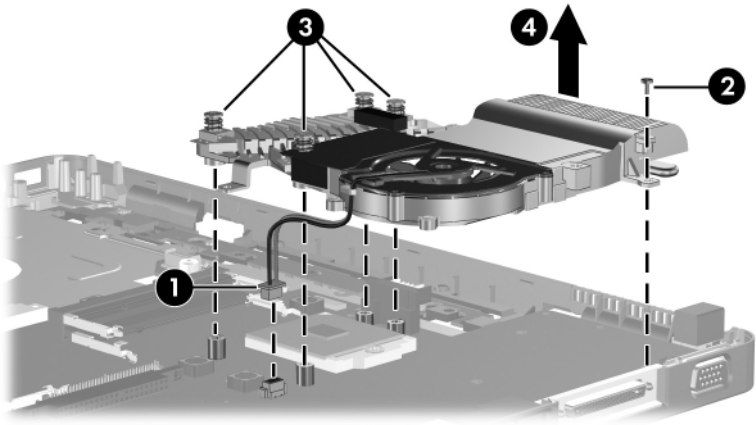
---

Fan assembly (includes heat sink and thermal pad)	394298-001
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---

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
  - ❑ Base enclosure ([Section 5.12](#))

2. Disconnect the fan cable ❶ from the system board.
3. Remove the PM2.0×5.0 screw ❷ that secures the fan assembly to the system board.
4. Loosen the four PM1.5×9.0 captive spring-loaded shoulder screws ❸ that secure the fan assembly to the system board.
5. Remove the fan assembly ❹.



#### *Removing the Fan Assembly*

Reverse the above procedure to install the fan assembly.

## 5.18 Processor

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### Processor Spare Part Number Information

---

AMD Turion 64 ML-37 (2.0-GHz) processor	394347-001
AMD Turion 64 ML-34 (1.8-GHz) processor	394259-001
AMD Turion 64 ML-32 (1.8-GHz) processor	397346-001
AMD Turion 64 ML-30 (1.6-GHz) processor	394258-001
AMD Turion 64 ML-28 (1.6-GHz) processor	394257-001
Mobile AMD Sempron 3300+ (2.0-GHz) processor	397345-001
Mobile AMD Sempron 3000+ (1.8-GHz) processor	394256-001
Mobile AMD Sempron 2800+ (1.6-GHz) processor	394255-001

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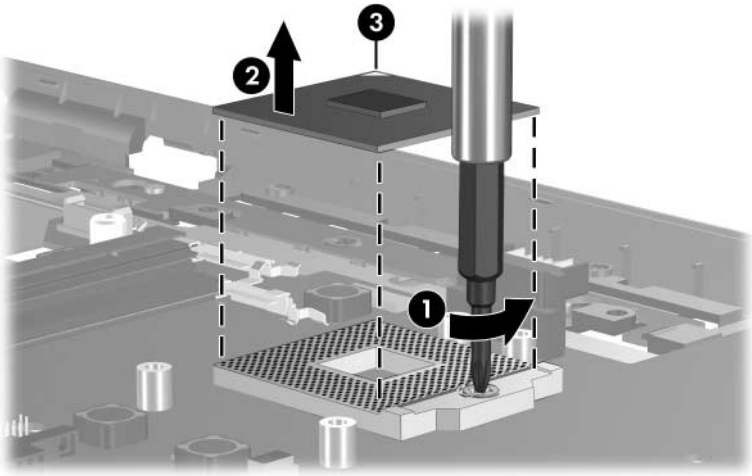
1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
  - ❑ Base enclosure ([Section 5.12](#))
  - ❑ Fan assembly ([Section 5.17](#))

2. Use a 2.0-mm hex wrench to turn the processor locking screw **1** one-half turn counterclockwise until you feel a click.
3. Lift the processor **2** straight up and remove it.



The gold triangle **3** on the processor should be aligned in the left-rear corner when you install the processor.

---



#### *Removing the Processor*

Reverse the above procedure to install a processor.

## 5.19 System Board

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### System Board Spare Part Number Information

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ATI RS480M, for use on full-featured models	394253-001
ATI RS480M, for use on defeatured models	394252-001

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All system board spares kits include a disk cell RTC battery.

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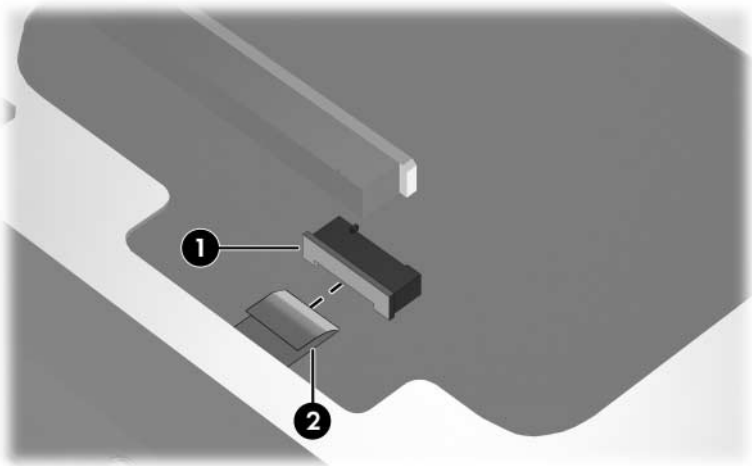


When replacing the system board, ensure that the following components are removed from the defective system board and installed on the replacement system board:

- Memory modules ([Section 5.6](#))
  - Mini PCI communications module ([Section 5.7](#))
  - RTC battery ([Section 5.16](#))
  - Fan assembly ([Section 5.17](#))
  - Processor ([Section 5.18](#))
-

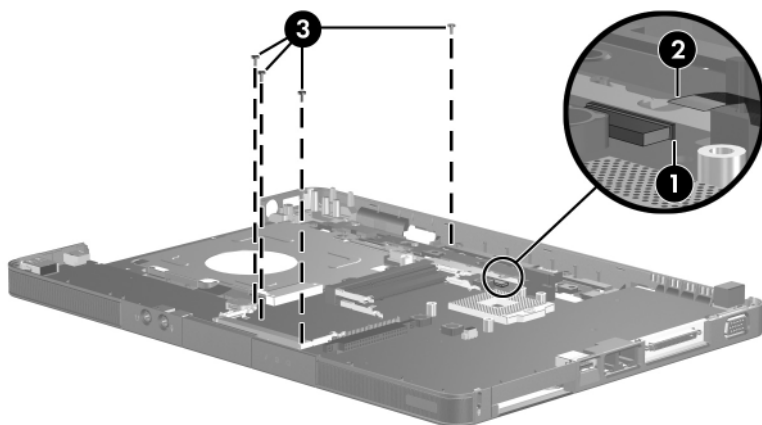


1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
  - ❑ Hard drive ([Section 5.4](#))
  - ❑ Optical drive ([Section 5.8](#))
  - ❑ Switch cover ([Section 5.9](#))
  - ❑ Keyboard ([Section 5.10](#))
  - ❑ Display assembly ([Section 5.11](#))
  - ❑ Base enclosure ([Section 5.12](#))
  - ❑ USB/S-Video controller board ([Section 5.13](#))
  - ❑ Speaker assembly ([Section 5.15](#))
2. Turn the top cover right-side up with the front toward you.
3. Release the ZIF connector ❶ to which the TouchPad cable is connected and disconnect the cable ❷ from the system board.



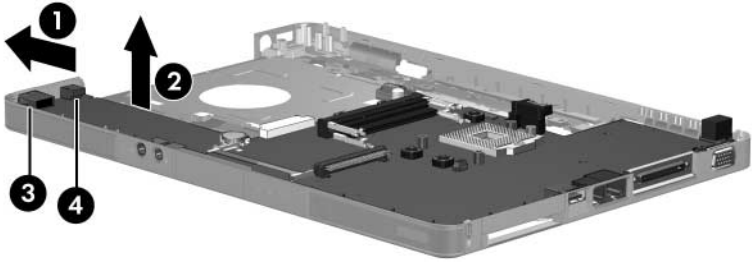
*Disconnecting the TouchPad Cable*

4. Turn the top cover upside down with the front toward you.
5. Release the ZIF connector ❶ to which the LED board cable is connected and disconnect the cable ❷ from the system board.
6. Remove the four PM2.0x5.0 screws ❸ that secure the system board to the top cover.



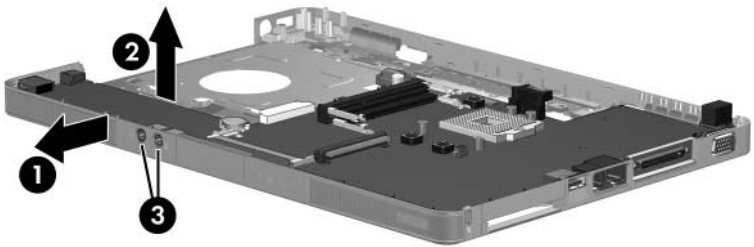
*Disconnecting the LED Board Cable and Removing the System Board Screws*

7. Flex and hold the left edge of the top cover **1** to the left.
8. Lift the left side of the system board **2** until the USB **3** and 1394 connectors **4** are clear.



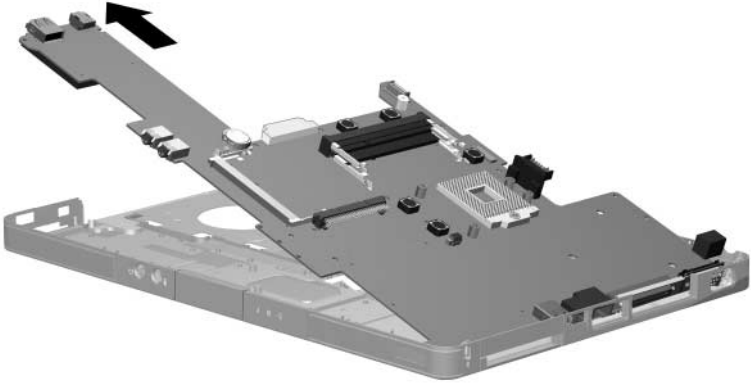
*Releasing the System Board, Part 1*

9. Release the left edge of the top cover.
10. Flex and hold the front edge of the top cover **1** forward.
11. Lift the front of the system board **2** until the audio connectors **3** are clear.



*Releasing the System Board, Part 2*

12. Release the front edge of the top cover.
13. Slide the system board to the left at an angle and remove it from the top cover.



#### *Removing the System Board*

Reverse the above procedure to install the system board.

## 5.20 LED Board

---

### LED Board Spare Part Number Information

---

LED board (includes cable)

394374-001

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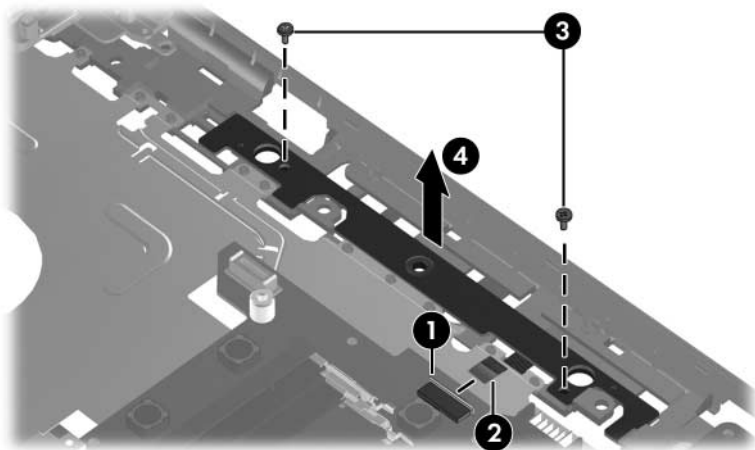


1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:

- ☐ Optical drive ([Section 5.8](#))
- ☐ Switch cover ([Section 5.9](#))
- ☐ Keyboard ([Section 5.10](#))
- ☐ Display assembly ([Section 5.11](#))
- ☐ Base enclosure ([Section 5.12](#))
- ☐ USB/S-Video controller board ([Section 5.13](#))
- ☐ Speaker assembly ([Section 5.15](#))
- ☐ System board ([Section 5.19](#))

2. Turn the notebook upside down with the front toward you.

3. Release the ZIF connector ❶ to which the LED board cable is connected and disconnect the cable ❷ from the system board.
4. Remove the two PM2.0×5.0 screws ❸ that secure the LED board to the top cover.
5. Remove the LED board ❹.




*Removing the LED Board Screws*

Reverse the above procedure to install the LED board.

## Specifications

This chapter provides physical and performance specifications.

**Table 6-1**  
**Notebook**

Dimensions		
Height (varies from front to back)	3.29 cm to 3.89 cm	1.30 in to 1.53 in
Width	23.06 cm	9.08 in
Depth	33.40 cm	13.15 in
<b>Weight</b> (varies by configuration)	2.39 kg	5.26 lb
Stand-alone power requirements		
Nominal operating voltage	18.5 V DC at 3.5 A - 65 W	
Peak operating power	3.5 A	
Temperature		
Operating	10°C to 35°C	50°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%, 38.7°C (101.6°F) maximum wet bulb temperature	
	Applicable product safety standards specify thermal limits for plastic surfaces. The notebook operates well within this range of temperatures.	


---

**Table 6-1**  
**Notebook (Continued)**

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Maximum altitude (unpressurized)		
Operating (14.7 to 10.1 psia)	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating (14.7 to 4.4 psia)	-15 m to 12,192 m	-50 ft to 40,000 ft
Shock		
Operating	125 g, 2 ms, half-sine	
Nonoperating	200 g, 2 ms, half-sine	
Random Vibration		
Operating	0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate	
Nonoperating	1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.5 oct/min sweep rate	

---

 Applicable product safety standards specify thermal limits for plastic surfaces. The notebook operates well within this range of temperatures.


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**Table 6-2**  
**14.0-inch, WXGA, SVA Display**

Dimensions		
Height	27.94 cm	11.0 in
Width	20.83 cm	8.2 in
Diagonal	35.56 cm	14.0 in
Number of colors	Up to 16.8 million	
Contrast ratio	250:1	
Brightness	180 nits typical	
Pixel resolution		
Pitch	0.279 × 0.279 mm	
Format	1280 × 768	
Configuration	RGB vertical stripe	
Backlight	Edge lit	
Character display	80 × 25	
Total power consumption	4 W	
Viewing angle	+/-40° horizontal, +20/-40° vertical typical	

**Table 6-3**  
**Hard Drives**

	80-GB	60-GB	60-GB	40-GB
<b>Dimensions</b>				
Height	9.5 mm	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm	70 mm
Weight	99 g	102 g	99 g	99 g
<b>Interface type</b>	ATA-5	ATA-5	ATA-5	ATA-5
<b>Transfer rate</b>				
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security	ATA security
<b>Seek times</b> (typical read, including setting)				
Single track	3 ms	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms	24 ms
<b>Logical blocks</b> <sup>†</sup>	156,301,488	117,210,240	117,210,240	78,140,160
<b>Disc rotational speed</b>	5400 rpm	5400 rpm	4200 rpm	4200 rpm
<b>Operating temperature</b>	5°C to 55°C (41°F to 131°F)			
 Certain restrictions and exclusions apply. Consult Customer Care for details.				
*1 GB = 1 billion bytes when referring to hard drive storage capacity. Accessible capacity is less.				
<sup>†</sup> Actual drive specifications may differ slightly.				

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**Table 6-4**  
**Primary 6-cell, Li-Ion Battery Pack**

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**Dimensions**

Height	2.00 cm	0.79 in
Width	9.40 cm	3.70 in
Depth	13.40 cm	5.28 in
Weight	0.34 kg	0.75 lb

---

**Energy**

Voltage	11.1 V
Amp-hour capacity	4.4 Ah
Watt-hour capacity	48 Wh

---

**Temperature**

Operating	5°C to 45°C	41°F to 113°F
Nonoperating	0°C to 60°C	32°F to 140°F

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**Table 6-5**  
**DVD/CD-RW Combo Drive**

<b>Applicable disc</b>	<b>Read:</b> DVD-R, DVD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R, CD-RW Photo CD (single and multisession) CD-Bridge	<b>Write:</b> CD-R and CD-RW
<b>Center hole diameter</b>	1.5 cm (0.59 in)	
<b>Disc diameter</b>		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	

---

**Table 6-5**  
**DVD/CD-RW Combo Drive (Continued)**

<b>Disc thickness</b>	1.2 mm (0.047 in)	
<b>Track pitch</b>	0.74 $\mu$ m	
<b>Access time</b>	CD media	DVD media
Random	< 110 ms	< 130 ms
Full stroke	< 210 ms	< 225 ms
<b>Audio output level</b>	Line-out, 0.7 V rms	
<b>Cache buffer</b>	2 MB	
<b>Data transfer rate</b>		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
CD-RW (10X)	1500 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
<b>Startup time</b>	< 15 seconds	
<b>Stop time</b>	< 6 seconds	

---

**Table 6-6**  
**DVD±RW/R and CD-RW Combo Drive**

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<b>Applicable disc</b>	<b>Read:</b>	<b>Write:</b>
	DVD-R, DVD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R, CD-RW Photo CD (single and multisession) CD-Bridge	CD-R and CD-RW DVD-R and DVD-RW
<b>Center hole diameter</b>	1.5 cm (0.59 in)	
<b>Disc diameter</b>		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	

---

**Table 6-6**  
**DVD±RW/R and CD-RW Combo Drive (Continued)**

<b>Disc thickness</b>	1.2 mm (0.047 in)	
<b>Track pitch</b>	0.74 µm	
<b>Access time</b>	CD	DVD
Random	< 175 ms	< 230 ms
Full stroke	< 285 ms	< 335 ms
<b>Audio output level</b>	Audio-out, 0.7 Vrms	
<b>Cache buffer</b>	2 MB	
<b>Data transfer rate</b>		
CD-R (16X)	2,400 KB/s (150 KB/s at 1X CD rate)	
CD-RW (8X)	1,200 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3,600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1,352 KB/s at 1X DVD rate)	
DVD-R (4X)	5,400 KB/s (1,352 KB/s at 1X DVD rate)	
DVD-RW (2X)	2,700 KB/s (1,352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
<b>Startup time</b>	< 15 seconds	
<b>Stop time</b>	< 6 seconds	

---

**Table 6-7**  
**Max DVD-ROM Drive**

<b>Applicable disc</b>	DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18) CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R CD-RW Photo CD (single and multisession) CD-Bridge
<b>Center hole diameter</b>	1.5 cm (0.59 in)
<b>Disc diameter</b>	
Standard disc	12 cm (4.72 in)
Mini disc	8 cm (3.15 in)
<b>Disc thickness</b>	1.2 mm (0.047 in)

---



**Table 6-7**  
**Max DVD-ROM Drive (*Continued*)**

<b>Track pitch</b>	0.74 $\mu$ m	
<b>Access time</b>	CD media	DVD media
Random	< 100 ms	< 125 ms
Full stroke	< 175 ms	< 225 ms
<b>Audio output level</b>	Line-out, 0.7 V rms	
<b>Cache buffer</b>	512 KB	
<b>Data transfer rate</b>		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
CD-RW (10X)	1500 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
<b>Startup time</b>	< 10 seconds	
<b>Stop time</b>	< 3 seconds	

---

**Table 6-8**  
**System DMA**

<b>Hardware DMA</b>	<b>System Function</b>
DMA0	Not applicable
DMA1	Not applicable
DMA2	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller
DMA5	Available for PC Card
DMA6	Not assigned
DMA7	Not assigned

---

**Table 6-9**  
**System Interrupts**


<b>Hardware IRQ</b>	<b>System Function</b>
IRQ0	System timer
IRQ1	Quick Launch buttons
IRQ2	Cascaded
IRQ3	USB2 Enhanced Host Controller—24CD
IRQ4	COM1
IRQ5*	Conexant AC—Link Audio SMBus Controller—24C3 Data Fax Modem with SmartCP
IRQ6	Diskette drive
IRQ7*	Parallel port
IRQ8	System CMOS/real-time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ10*	USB UHCI controller—24C2 GM/GME Graphic Controller Realtek RTL8139 Family PCI fast Ethernet Controller
IRQ11	USB EHCI controller—24CD USB UHCI controller—24C4 USB UHCI controller—24C7 Pro/Wireless 2200BG TI OHCI 1394 host controller TI PCI1410 CardBus controller

\*Default configuration



PC Card may assert IRQ3, IRQ4, IRQ5, IRQ7, or IRQ20.

**Table 6-9**  
**System Interrupts (Continued)**

Hardware IRQ	System Function
IRQ12	Synaptics PS/2 port pointing device
IRQ13	Numeric data processor
IRQ14	Primary IDE channel
IRQ15	Secondary IDE channel
IRQ17	Conexant AC -Link Audio
IRQ17	Soft V90 Data Fax Modem with SmartCP
IRQ17	ATi Mobility Radeon Xpress 200 Series
IRQ19	Standard Enhanced PCI to USB Host Controller
IRQ19	Standard OpenHCD USB Host Controller
IRQ19	Standard OpenHCD USB Host Controller
IRQ20	TI 6411 PC1xx21/x515 Cardbus Controller
IRQ20	TI OHCI Compliant IEEE 1394 Host Controller
IRQ21	TI Integrated PC1xx21 FlashMedia Controller
IRQ21	Broadcom 802.11b/g WLAN
IRQ21	Microsoft ACPI-compliant system
IRQ22	Realtek RTL8100CL Family PCI fast Ethernet Controller
IRQ23	SDA Standard Compliant SD Host Controller
*Default configuration	
 PC Card may assert IRQ3, IRQ4, IRQ5, IRQ7, or IRQ20.	

**Table 6-10**  
**System I/O Addresses**

<b>I/O Address (hex)</b>	<b>System Function (shipping configuration)</b>
0x00000000-0x00000CF7	PCI bus
0x00000000-0x00000CF7	Direct memory access controller
0x00000020-0x00000021	Programmable interrupt controller
0x0000002E-0x0000002F	System board resources
0x00000040-0x00000043	System timer
0x00000060-0x00000060	Quick Launch Buttons
0x00000061-0x00000061	System speaker
0x00000062-0x00000062	Microsoft ACPI-Compliant Embedded Controller
0x00000064-0x00000064	Quick Launch Buttons
0x00000066-0x00000066	Microsoft ACPI-Compliant Embedded Controller
0x00000070-0x00000071	System CMOS/real-time clock
0x00000072-0x00000073	System board resources
0x00000080-0x0000008F	Direct memory access controller
0x00000092-0x00000092	System board resources
0x000000A0-0x000000A1	Programmable interrupt controller
0x000000B0-0x000000B1	System board resources
0x000000C0-0x000000DF	Direct memory access controller
0x000000F0-0x000000FE	Numeric data processor
0x00000170-0x00000177	Secondary IDE Channel

**Table 6-10**  
**System I/O Addresses (Continued)**

<b>I/O Address (hex)</b>	<b>System Function (shipping configuration)</b>
0x000001F0-0x000001F7	Primary IDE Channel
0x00000220-0x0000022F	System board resources
0x00000274-0x00000277	ISAPNP Read Data Port
0x00000279-0x00000279	ISAPNP Read Data Port
0x00000280-0x00000293	System board resources
0x00000376-0x00000376	Secondary IDE Channel
0x000003B0-0x000003BB	PCI standard PCI-to-PCI bridge
0x000003B0-0x000003BB	ATI MOBILITY RADEON Xpress 200 Series
0x000003C0-0x000003DF	PCI standard PCI-to-PCI bridge
0x000003C0-0x000003DF	ATI MOBILITY RADEON Xpress 200 Series
0x000003F6-0x000003F6	Primary IDE Channel
0x0000040B-0x0000040B	System board resources
0x000004D0-0x000004D1	System board resources
0x000004D6-0x000004D6	System board resources
0x00000530-0x00000537	System board resources
0x00000870-0x0000087F	System board resources
0x00000A79-0x00000A79	ISAPNP Read Data Port
0x00000C00-0x00000C01	System board resources
0x00000C14-0x00000C14	System board resources
0x00000C50-0x00000C52	System board resources
0x00000C6C-0x00000C6C	System board resources

**Table 6-10**  
**System I/O Addresses (Continued)**

<b>I/O Address (hex)</b>	<b>System Function (shipping configuration)</b>
0x00000C6F-0x00000C6F	System board resources
0x00000CD4-0x00000CD5	System board resources
0x00000CD6-0x00000CD7	System board resources
0x00000CD8-0x00000CDF	System board resources
0x00000D00-0x0000FFFF	PCI bus
0x00000F40-0x00000F47	System board resources
0x00001080-0x00001080	System board resources
0x00008000-0x0000805F	System board resources
0x00008100-0x000081FF	System board resources
0x00008400-0x0000840F	ATI SMBus
0x00008410-0x0000841F	Standard Dual Channel PCI IDE Controller
0x00009000-0x00009FFF	PCI standard PCI-to-PCI bridge
0x00009000-0x00009FFF	ATI MOBILITY RADEON Xpress 200 Series
0x0000A000-0x0000A0FF	Realtek RTL8139/810x Family Fast Ethernet NIC
0x0000F000-0x0000FFFF	PCI standard PCI-to-PCI bridge
0x0000FD00-0x0000FDFF	Texas Instruments PC1xx21/x515 Cardbus Controller
0x0000FE00-0x0000FEFF	Texas Instruments PC1xx21/x515 Cardbus Controller

**Table 6-11**  
**System Memory Map**

<b>Memory Map Address (hex)</b>	<b>System Function (shipping configuration)</b>
0xD4100000-0xD41FFFFFF	PCI standard PCI-to-PCI bridge
0xD4100000-0xD41FFFFFF	ATI MOBILITY RADEON Xpress 200 Series
0xD8000000-0xDBFFFFFFF	PCI standard PCI-to-PCI bridge
0xD8000000-0xDBFFFFFFF	ATI MOBILITY RADEON Xpress 200 Series
0xFAC00000-0xFEBFFFFFF	PCI standard PCI-to-PCI bridge
0xF6C00000-0xFABFFFFFF	PCI standard PCI-to-PCI bridge
0xD4000000-0xD400FFF	Standard OpenHCD USB Host Controller
0xD4001000-0xD4001FFF	Standard OpenHCD USB Host Controller
0xD4002000-0xD4002FFF	Standard Enhanced PCI to USB Host Controller
0xD4003000-0xD40033FF	ATI SMBus
0xFFFF80000-0xFFFFFFFF	System board
0xE0000000-0xE03FFFFFF	System board
0xE0000000-0xE03FFFFFF	System board resources
0x0000-0x0FFF	System board



**Table 6-11**  
**System Memory Map (Continued)**

<b>Memory Map Address (hex)</b>	<b>System Function (shipping configuration)</b>
0xD4208000-0xD42087FF	Texas Instruments OHCI Compliant IEEE 1394 Host Controller
0xD4200000-0xD4203FFF	Texas Instruments OHCI Compliant IEEE 1394 Host Controller
0xD4204000-0xD4205FFF	Broadcom 802.11b/g WLAN
0xFFE00000-0xFFE00000	Texas Instruments PCIE21/x515 Cardbus Controller
0xFFE00000-0xFFE00000	Texas Instruments PCIE21/x515 Cardbus Controller
0xF2C00000-0xF6BFFFFF	Texas Instruments PCIE21/x515 Cardbus Controller
0xD4206000-0xD4207FFF	Texas Instruments PCIE21 Integrated FlashMedia Controller
0xD4209000-0xD42090FF	SDA Standard Compliant SD Host Controller
0xD4208C00-0xD4208CFF	SDA Standard Compliant SD Host Controller
0xD4208800-0xD42088FF	SDA Standard Compliant SD Host Controller

**Table 6-11**  
**System Memory Map (Continued)**

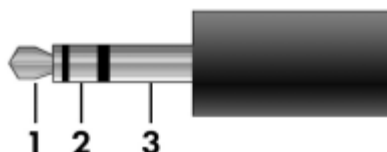
<b>Memory Map Address (hex)</b>	<b>System Function (shipping configuration)</b>
0xD4209400-0xD42094FF	Realtek RTL8139/810x Family Fast Ethernet NIC
0xD4003400-0xD40034FF	Conexant AC-Link Audio
0xD4003800-0xD40038FF	SoftV90 Data Fax Modem with SmartCP
0xFEC00000-0xFEC00FFF	System board resources
0xFEE00000-0xFEE00FFF	System board resources
0xA0000-0xBFFFF	PCI bus
0xA0000-0xBFFFF	PCI standard PCI-to-PCI bridge
0xA0000-0xBFFFF	ATI MOBILITY RADEON Xpress 200 Series
0xD6000-0xD7FFF	PCI bus
0xDC000-0xDDFFF	PCI bus
0xDD000-0xDDFFF	Texas Instruments PCIxx21/x515 Cardbus Controller
0xE0000-0xFFFFF	System board
0x40000000-0xFFFFFFFF	PCI bus

---

## Connector Pin Assignments

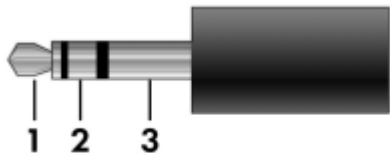
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**Table A-1**  
**Audio-In (Microphone)**



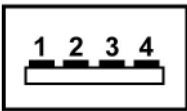
Pin	Signal	Pin	Signal
1	Audio signal in	3	Ground
2	Audio signal in		

**Table A-2**  
**Audio-Out (Headphone)**



Pin	Signal	Pin	Signal
1	Audio out, left channel	3	Ground
2	Audio out, right channel		

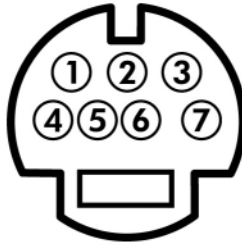
**Table A-3**  
**Universal Serial Bus**



Pin	Signal	Pin	Signal
1	+5 VDC	3	Data +
2	Data -	4	Ground

---

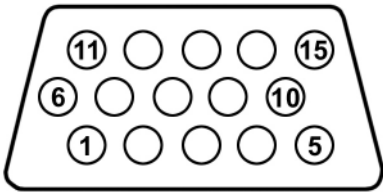
**Table A-4**  
**S-Video-Out**



Pin	Signal	Pin	Signal
1	TV-Ground	5	TV-CD
2	TV-CVBS	6	TV-Ground
3	TV-Ground	7	TV-YD
4	TV-Ground		

---

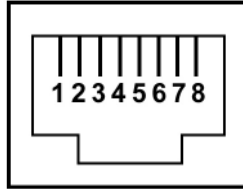
**Table A-5**  
**External Monitor**



Pin	Signal	Pin	Signal
1	Red analog	9	+5 VDC
2	Green analog	10	Ground
3	Blue analog	11	Monitor detect
4	Not connected	12	DDC 2B data
5	Ground	13	Horizontal sync
6	Ground analog	14	Vertical sync
7	Ground analog	15	DDC 2B clock
8	Ground analog		

---

**Table A-6**  
**RJ-45 (Network)**

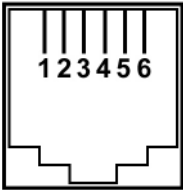


Pin	Signal	Pin	Signal
1	Transmit +	5	Unused
2	Transmit –	6	Receive –
3	Receive +	7	Unused
4	Unused	8	Unused

---

---

**Table A-7**  
**RJ-11 (Modem)**



Pin	Signal	Pin	Signal
1	Unused	4	Unused
2	Tip	5	Unused
3	Ring	6	Unused



---

## Power Cord Set Requirements

### 3-Conductor Power Cord Set

The wide range input feature of the notebook permits it to operate from any line voltage from 100 to 120 or 220 to 240 volts AC.

The power cord set included with the notebook meets the requirements for use in the country where the equipment is purchased.

Power cord sets for use in other countries must meet the requirements of the country where the notebook is used.

## General Requirements

The requirements listed below are applicable to all countries.

- The length of the power cord set must be at least 1.5 m (5.0 ft) and a maximum of 2.0 m (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by each country's power system.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the notebook.

# Country-Specific Requirements

## 3-Conductor Power Cord Set Requirements

Country	Accredited Agency	Applicable Note Number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3



### NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm<sup>2</sup> conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

**3-Conductor Power Cord Set Requirements (Continued)**

Country	Accredited Agency	Applicable Note Number
Korea	EK	4
The Netherlands	KEMA	1
Norway	NEMKO	1
People's Republic of China	CCC	5
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
United Kingdom	BSI	1
United States	UL	2

**NOTES:**


1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm<sup>2</sup> conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.
4. The flexible cord must be Type VCTF, 3-conductor, 0.75 mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.
5. The flexible cord must be Type RVV, 3-conductor, 0.75 mm<sup>2</sup> conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.

## Screw Listing

This appendix provides specification and reference information for the screws used in the notebook. All screws listed in this appendix are available in the Miscellaneous Screw Kit, spare part numbers 395369-001 (for use with HP Special Edition L2000 models) and 394369-001 (for use with Compaq V2000 models).

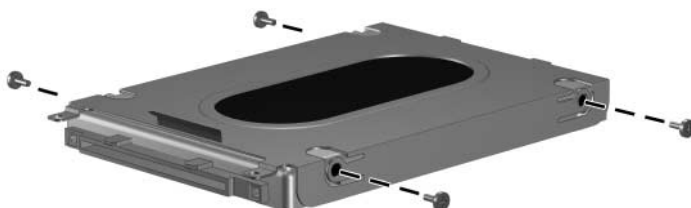
**Table C-1**

**Phillips PM3.0×4.0 Screw**

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	4	4.0 mm	3.0 mm	5.0 mm

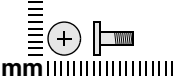
**Where used:**

4 screws that secure the hard drive frame to the hard drive (documented in [Section 5.4](#))



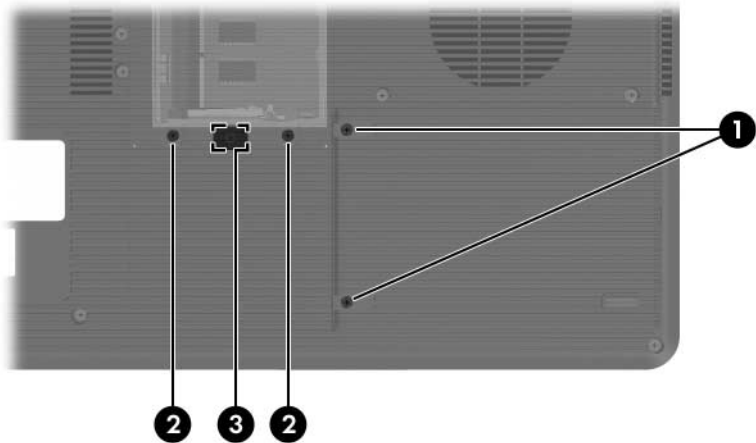
*Phillips PM3.0×4.0 Screw Locations*

Table C-2  
Phillips PM2.0x6.0 Captive Screw

	Color	Qty.	Length	Thread	Head Width
	Black	5	6.0 mm	2.0 mm	5.0 mm

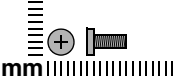
**Where used:**

- ❶ Two screws that secure the hard drive cover to the notebook (screws are captured on the cover by C clips; documented in [Section 5.4](#))
- ❷ Two screws that secure the memory module compartment cover to the notebook (screws are captured on the cover by C clips; documented in [Section 5.6](#))
- ❸ One screw that secures the Mini PCI compartment cover to the notebook (screw is captured on the cover by C clips; documented in [Section 5.7](#))



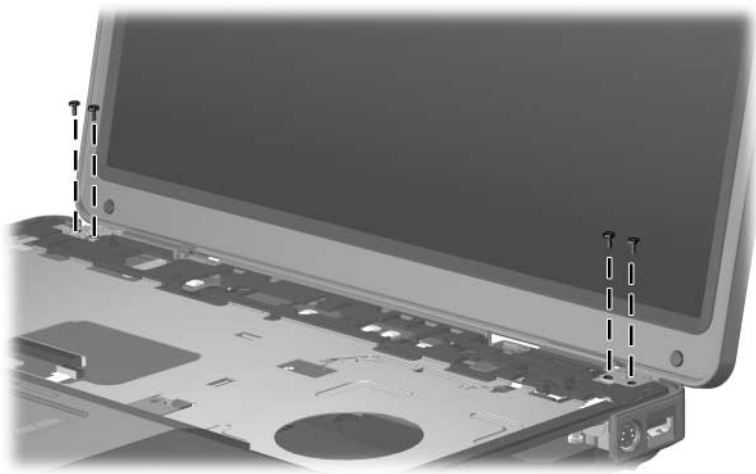
Phillips PM2.0x6.0 Captive Screw Locations

Table C-3  
Phillips PM2.0×6.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	4	6.0 mm	2.0 mm	4.0 mm

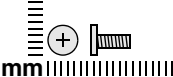
**Where used:**

4 screws that secure the display assembly to the notebook (documented in [Section 5.11](#))



Phillips PM2.0×6.0 Screw Locations

Table C-4  
Phillips PM2.0x8.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	16	8.0 mm	2.0 mm	4.5 mm

**Where used:**

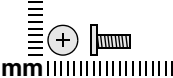
One screw that secures the optical drive to the notebook (documented in [Section 5.8](#))



*Phillips PM2.0x8.0 Screw Location*

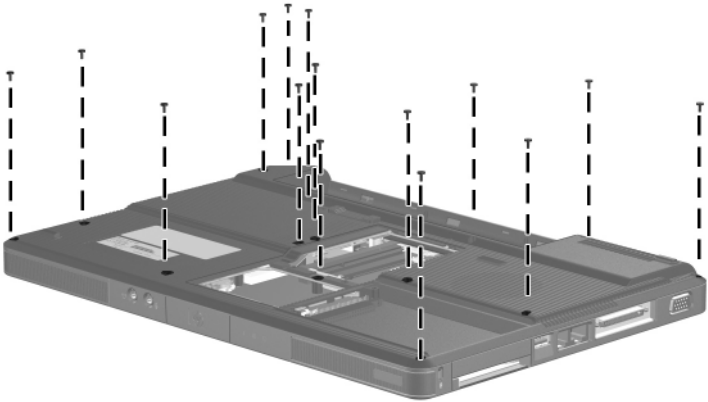


**Table C-4**  
**Phillips PM2.0×8.0 Screw (Continued)**

	Color	Qty.	Length	Thread	Head Width
	Black	16	8.0 mm	2.0 mm	4.5 mm


**Where used:**

15 screws that secure the base enclosure to the notebook (documented in [Section 5.12](#))



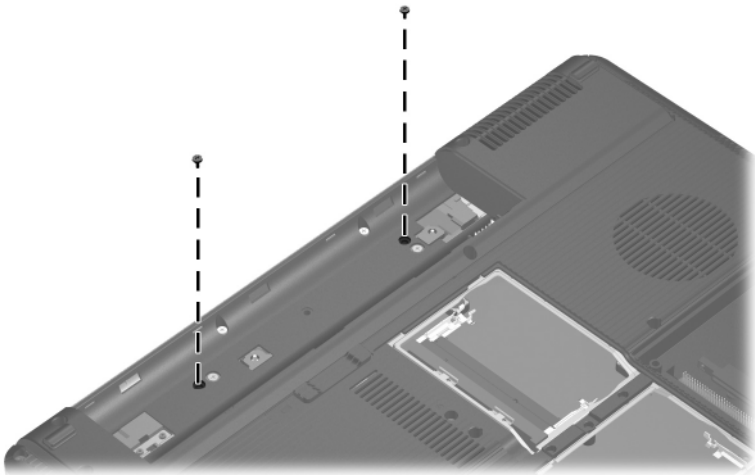
*Phillips PM2.0×8.0 Screw Locations*

Table C-5  
Phillips PM2.0x5.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	14	5.0 mm	2.0 mm	4.5 mm


**Where used:**

2 screws that secure the switch cover to notebook (documented in [Section 5.9](#))



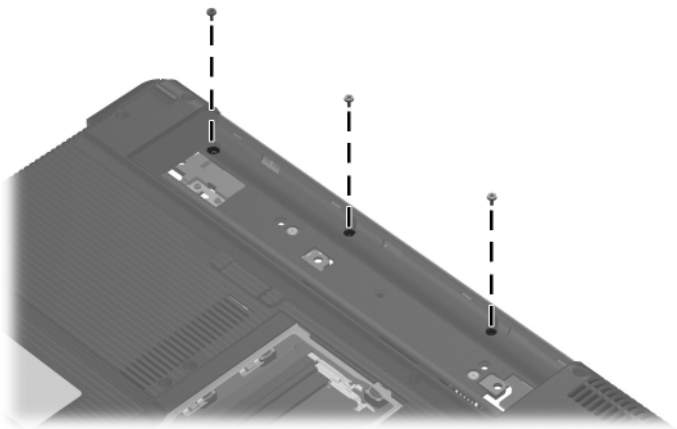
Phillips PM2.0x5.0 Screw Locations

Table C-5  
Phillips PM2.0×5.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	14	5.0 mm	2.0 mm	4.5 mm

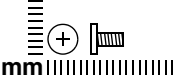
**Where used:**

3 screws that secure the base enclosure to notebook (documented in [Section 5.12](#))



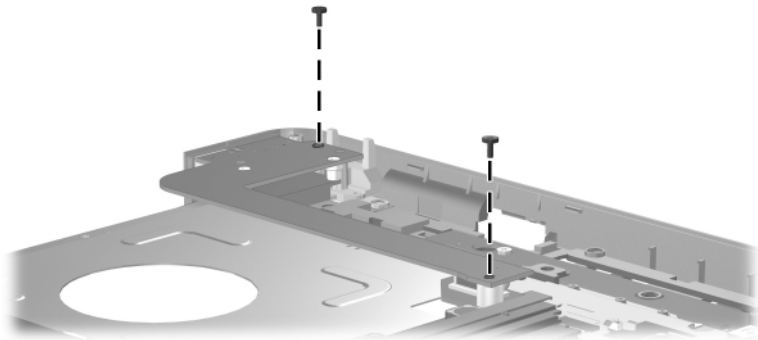
Phillips PM2.0×5.0 Screw Locations

Table C-5  
Phillips PM2.0×5.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	14	5.0 mm	2.0 mm	4.5 mm


**Where used:**

2 screws that secure the USB/S-Video controller board to the notebook  
(documented in [Section 5.13](#))



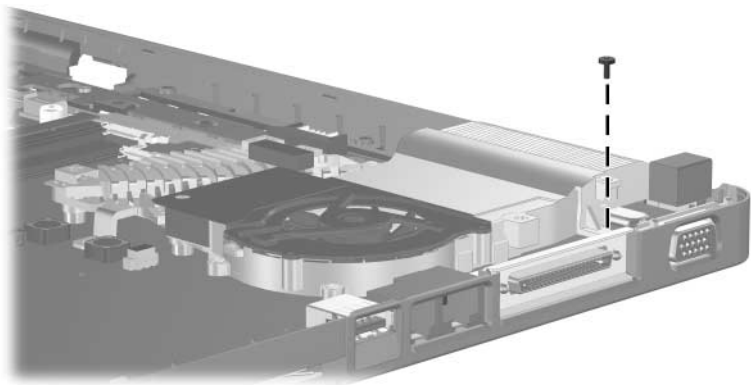
Phillips PM2.0×5.0 Screw Locations

**Table C-5**  
**Phillips PM2.0×5.0 Screw (Continued)**

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	14	5.0 mm	2.0 mm	4.5 mm

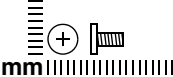
**Where used:**

One screw that secures the fan assembly to the notebook (documented in [Section 5.17](#))



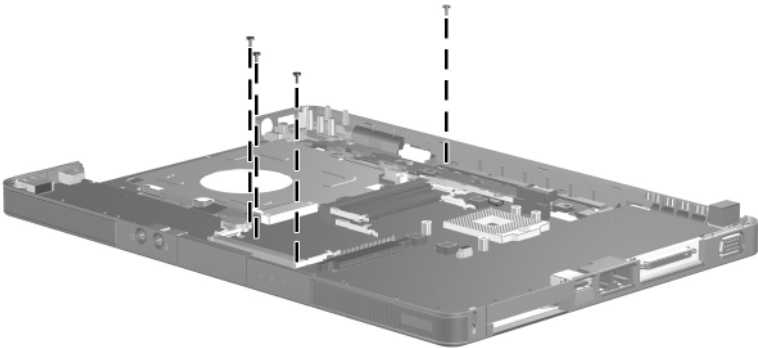
*Phillips PM2.0×5.0 Screw Location*

Table C-5  
Phillips PM2.0x5.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	14	5.0 mm	2.0 mm	4.5 mm


Where used:

4 screws that secure the system board to notebook (documented in [Section 5.19](#))



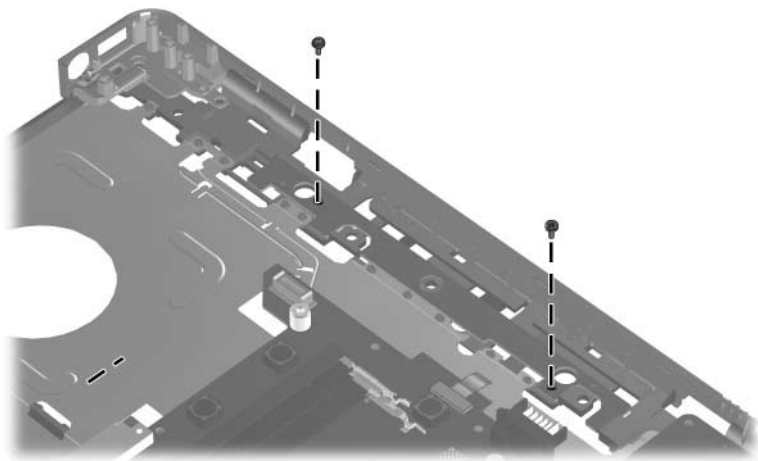
Phillips PM2.0x5.0 Screw Locations

Table C-5  
Phillips PM2.0×5.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	14	5.0 mm	2.0 mm	4.5 mm

**Where used:**

2 screws that secure the LED board to the notebook (documented in [Section 5.20](#))



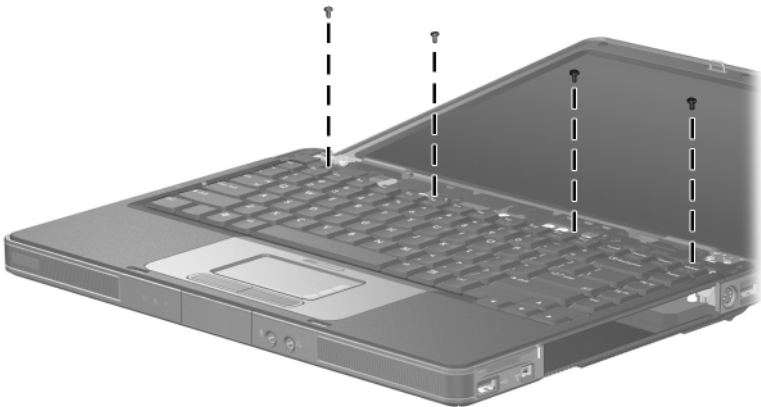
Phillips PM2.0×5.0 Screw Locations

Table C-6  
Phillips PM2.0x4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	4	4.0 mm	2.0 mm	4.5 mm

**Where used:**

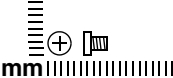
4 screws that secure the keyboard to the notebook (documented in [Section 5.10](#))



Phillips PM2.0x4.0 Screw Locations

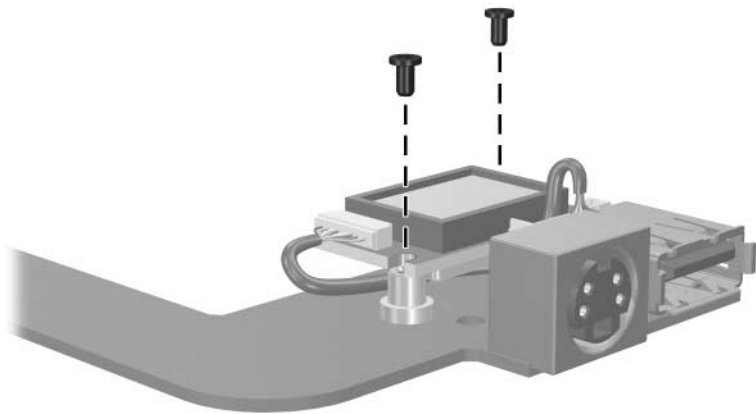


**Table C-7**  
**Phillips PM1.5×3.5 Screw**

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	2	3.5 mm	1.5 mm	3.0 mm

**Where used:**

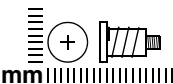
2 screws that secure the Bluetooth module to the USB/S-Video controller board (documented in [Section 5.14](#))



*Phillips PM1.5×3.5 Screw Locations*

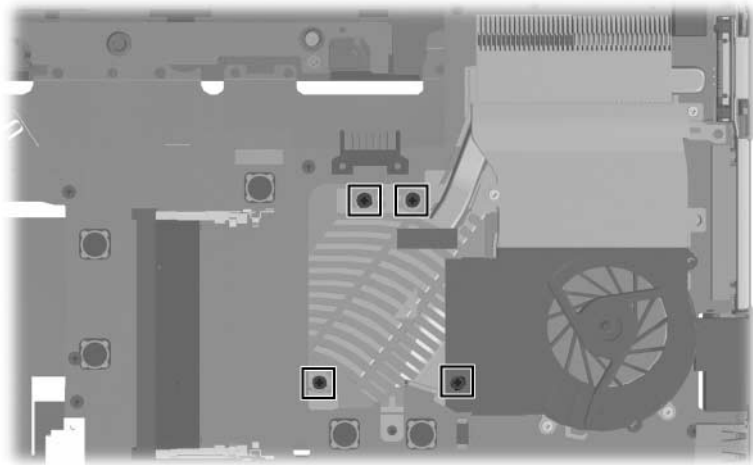
Table C-8

Phillips PM1.5×9.0 Captive Spring-Loaded Shoulder Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	4	9.0 mm	1.5 mm	6.0 mm

Where used:

4 screws that secure the fan assembly to the notebook (documented in [Section 5.17](#))



Phillips PM1.5×9.0 Captive Spring-Loaded Shoulder  
Screw Locations

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