



Maintenance and Service Guide

HP G3000 Notebook PC

Compaq Presario C300 Notebook PC

Document Part Number: 435182-001

September 2006

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

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HP G3000 Notebook PC and
Compaq Presario C300 Notebook PC
Maintenance and Service Guide
First Edition: September 2006
Document Part Number: 435182-001

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1

Product Description

The HP G3000 Notebook PC and Compaq Presario C300 Notebook PC offer advanced modularity, Intel® Celeron® and Core™ Duo processors, and extensive multimedia support.



*HP G3000 Notebook PC and
Compaq Presario C300 Notebook PC*

1.1 Features

- The following processors, varying by computer model:
 - Intel Core Duo T2250 (1.73-GHz), T2300 (1.60-GHz), or T2050 (1.60-GHz)
 - Intel Celeron 430 (1.73-GHz) or Intel Celeron 420 (1.60-GHz)
- 15.4-inch, WXGA, TFT (1280 × 800) display with antiglare or BrightView, varying by computer model
- 120-, 100-, 80-, or 60-GB high-capacity hard drive, varying by computer model
- 256-MB DDR1 synchronous DRAM (SDRAM) at 667 MHz and 533 MHz, expandable to 2.0 GB
- Windows® XP Home Edition or Windows XP Professional, varying by computer model
- Full-size Windows keyboard with embedded numeric keypad
- TouchPad pointing device, including dedicated horizontal and vertical scroll regions
- Integrated 10Base-T/100Base-TX 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 Card IEEE 802.11 a/b/g WLAN device

- External 65-watt AC adapter with 3-wire power cord
- 6-cell Li-Ion battery
- Stereo speakers
- Volume up, volume mute, and volume down buttons
- Support for the following optical drives:
 - ❑ DVD±RW and CD-RW Super Multi Double-Layer Combo Drive
 - ❑ DVD/CD-RW Combo Drive
- Connectors:
 - ❑ Audio-in (microphone)
 - ❑ Audio-out (headphone)
 - ❑ External monitor
 - ❑ Power
 - ❑ RJ-11 (modem)
 - ❑ RJ-45 (network)
 - ❑ S-Video-out
 - ❑ Universal Serial Bus (USB) v. 2.0 (2 ports)

1.2 Resetting the Computer

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

1. Prepare the computer for disassembly (refer to [Section 5.3, “Preparing the Computer for Disassembly,”](#) for more information.)
2. Remove the real-time clock (RTC) battery (refer to [Section 5.8, “RTC Battery,”](#) for more information.)
3. Wait approximately 5 minutes.
4. Replace the RTC battery and reassemble the computer.
5. Connect AC power to the computer. Do not reinsert any batteries at this time.
6. Turn on the computer.

All passwords and CMOS settings have been cleared.

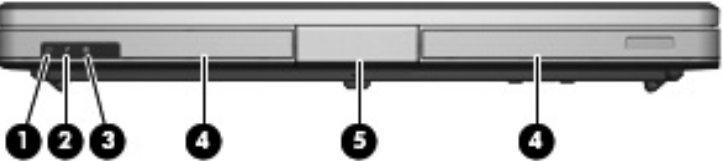
1.3 Power Management

The computer comes with power management features that extend battery operating time and conserve power. The computer 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 button
- Advanced Configuration and Power Management (ACPM) compliance

1.4 External Components

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

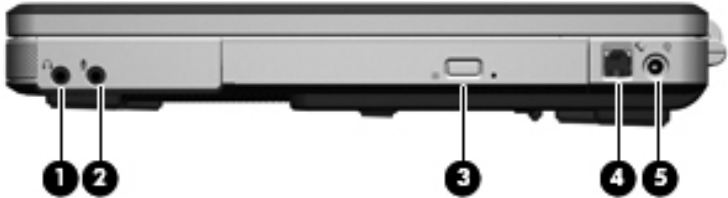


Front Components

Table 1-1
Front Components

Item	Component	Function
1	Power light	<ul style="list-style-type: none">■ On: The computer is turned on.■ Blinking: The computer is in standby.■ Off: The computer is off or in hibernation.
2	Battery light	<ul style="list-style-type: none">■ On: A battery is charging.■ Blinking: A battery that is the only available power source has reached a low-battery condition. When the battery reaches a <i>critical</i> low-battery condition, the battery light begins blinking quickly.■ Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low-battery condition.
3	Drive light	Blinks when the hard drive or optical drive is being accessed.
4	Speakers	Produce sound.
5	Display release button	Opens the computer.

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

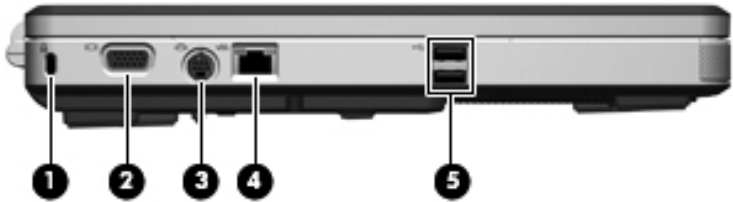


Right-Side Components

Table 1-2
Right-Side Components


Item	Component	Function
1	Audio-out (headphone) jack	Produces sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.
2	Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
3	Optical drive	Reads an optical disc.
4	RJ-11 (modem) jack	Connects a modem cable.
5	Power connector	Connects an AC adapter cable.

The external components on the left side of the computer are shown below and described in Table 1-3.

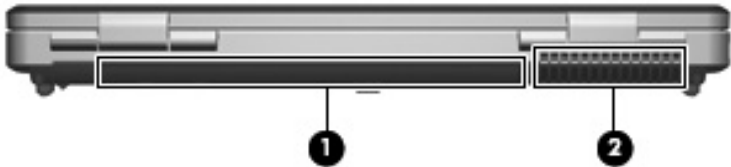


Left-Side Components

Table 1-3
Left-Side Components

Item	Component	Function
1	Security cable slot	Attaches an optional security cable to the computer.  The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
2	External monitor port	Connects an external VGA monitor or projector.
3	S-Video-out jack	Connects an optional S-Video device such as a television, VCR, camcorder, overhead projector, or video capture card.
4	RJ-45 (network) jack	Connects a network cable.
5	USB ports (2)	Connect optional USB devices.



The external components on the rear panel of the computer are shown below and described in Table 1-4.



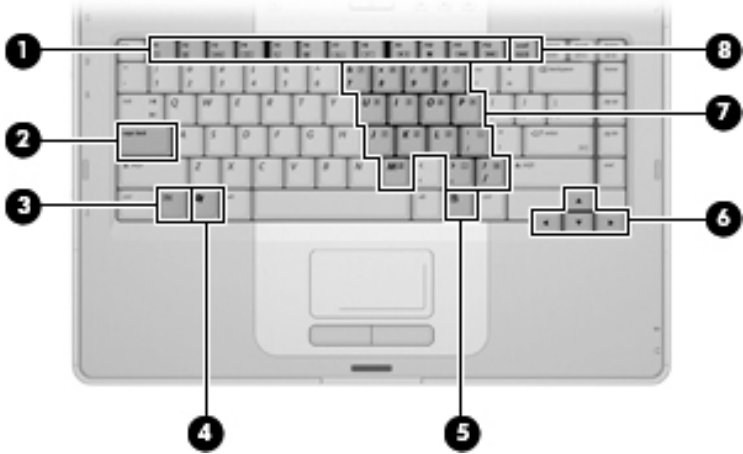
Rear Panel Components

Table 1-4

Rear Panel Components

Item	Component	Function
1	Battery bay	Holds the battery.
2	Vent	<p>Enable airflow to cool internal components.</p> <p> To prevent overheating, do not obstruct vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or thick rugs or clothing, to block airflow.</p> <p> The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.</p>

The standard keyboard components of the computer are shown below and described in Table 1-5.

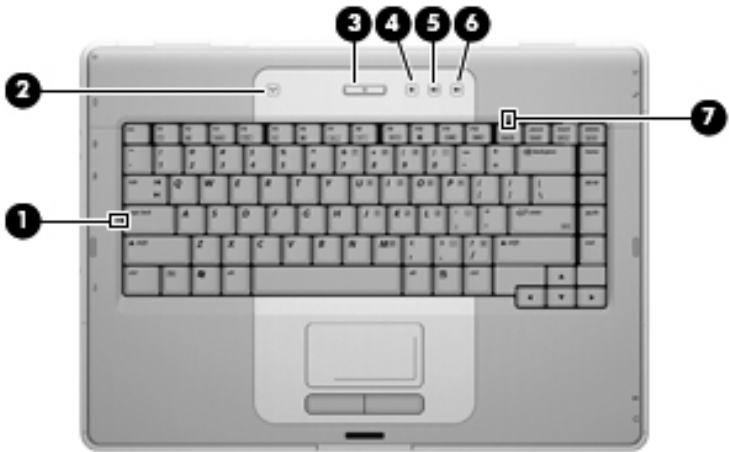


Standard Keyboard Components

Table 1-5
Standard Keyboard Components


Item	Component	Function
1	Function keys (12)	Execute frequently used system functions when pressed in combination with the fn key.
2	caps lock key	Enables caps lock and turns on the caps lock light.
3	fn key	Executes frequently used system functions when pressed in combination with a function key or the esc key.
4	Windows logo key	Displays the Windows Start menu.
5	Windows applications key	Displays a shortcut menu for items beneath the pointer.
6	Arrow keys	Move the cursor around the screen.
7	Numeric keypad keys (15)	Can be used like the keys on an external numeric keypad.
8	num lock key	Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light.

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

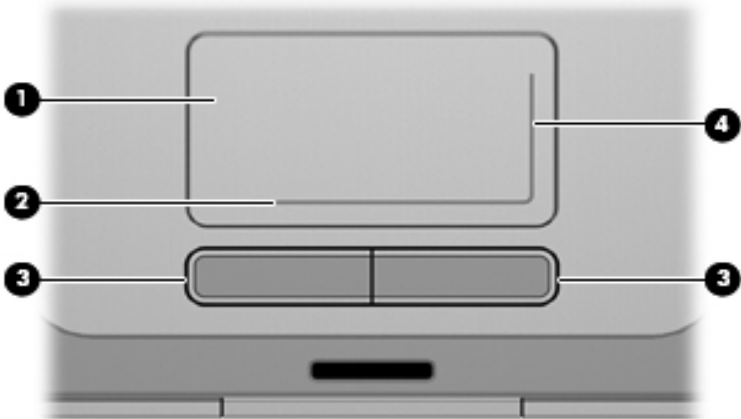


Top Components

Table 1-6
Top Components

Item	Component	Function
1	caps lock light	On: Caps lock is enabled.
2	Wireless button	<p>Turns the wireless feature on or off, but does not create a wireless connection.</p> <p> To establish a wireless connection, a wireless network must already be set up.</p>
3	Power button	<p>When the computer is</p> <ul style="list-style-type: none"> ■ Off, press to turn on the computer. ■ On, press to enter hibernation. ■ In standby, briefly press to exit standby. ■ In hibernation, briefly press to exit hibernation. <p>If the computer has stopped responding and Windows shutdown procedures cannot be used, press and hold the power button for at least 5 seconds to turn off the computer.</p>
4	Volume down button	Decreases speaker volume.
5	Volume up button	Increases speaker volume.
6	Volume mute button	Mutes and restores speaker volume.
7	num lock light	On: Num lock is enabled.

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

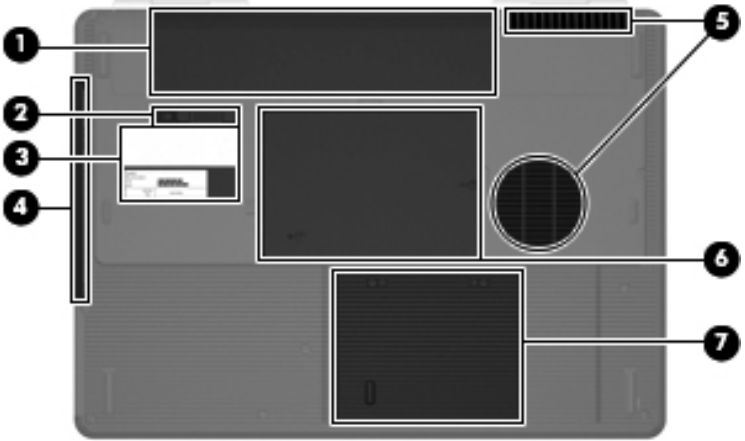


TouchPad Components

Table 1-7
TouchPad Components

Item	Component	Function
1	TouchPad	Moves the pointer and selects or activates items on the screen.
2	TouchPad horizontal scroll zone	Allows you to scroll left or right.
3	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
4	TouchPad vertical scroll zone	Allows you to scroll up or down.

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



Bottom Components

Table 1-8
Bottom Components

Item	Component	Function
1	Battery bay	Holds the battery.
2	Battery release latch	Releases a battery from the battery bay.
3	Labels area	Contains the serial number and other information labels.
4	Optical drive	Reads an optical disc.

Table 1-8
Bottom Components (*Continued*)



Item	Component	Function
5	Vents (2)	<p data-bbox="524 370 753 418">Enable airflow to cool internal components.</p> <p data-bbox="524 448 937 667"> To prevent overheating, do not obstruct vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or thick rugs or clothing, to block airflow.</p> <p data-bbox="524 695 916 857"> The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.</p>

Table 1-8
Bottom Components (*Continued*)

Item	Component	Function
6	Memory/Mini Card module compartment cover	<ul style="list-style-type: none"> <li data-bbox="524 370 948 505">■ Contains 2 memory module slots that support replaceable memory modules. The number of preinstalled memory modules varies by computer model. <li data-bbox="524 516 887 570">■ Holds an optional wireless LAN device (select models only). <li data-bbox="524 597 919 954">△ To prevent an unresponsive system and the display of a warning message, install only a Mini Card device authorized for use in your computer by the governmental agency that regulates wireless devices in your country. If you install an unauthorized device and then receive a warning message, remove the device to restore computer functionality. Then contact Customer Care.
7	Hard drive bay	Holds the hard drive.

1.5 Design Overview

This section presents a design overview of key parts and features of the computer. 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:

- Intel Core Duo and Celeron processors
- Audio
- Display
- Hard drive
- Keyboard
- Memory module
- Mini Card devices
- TouchPad



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

The computer uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to turn 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. Exhaust air is displaced through the ventilation grill located on the computer rear panel.

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.

2.1 Setup Utility

The Setup Utility is a ROM-based information and customization utility that can be used even when your Windows operating system is not working or will not load.

The utility reports information about the computer and provides settings for startup, security, and other preferences.

1. Turn on or restart the computer in Windows.
2. Before Windows opens and while the “Press <F10> to enter setup” prompt is displayed in the lower-left corner of the screen, press **f10**.

2.2 Using the Setup Utility

Changing the Language of the Setup Utility

The following procedure explains how to change the language of the Setup Utility. If the computer is not in the Setup Utility, begin at step 1. If the computer is in the Setup Utility, begin at step 2.

1. To open the Setup Utility, turn on or restart the computer in Windows, and then press **f10** while the prompt, “Press <F10> to enter setup,” is displayed in the lower-left corner of the screen.
2. Use the arrow keys to select **System Configuration > Language**, and then press **enter**.
3. Press **f5** or **f6** (or use the arrow keys) to select a language, and then press **enter** to select a language.
4. When a confirmation prompt with your preference selected is displayed, press **enter** to save your preference.
5. To set your preferences and exit the Setup Utility, press **f10** and then follow the instructions on the screen.

Your preferences go into effect when the computer restarts in Windows.

Navigating and Selecting in the Setup Utility

Because the Setup Utility is not Windows-based, it does not support the TouchPad. Navigation and selection are by keystroke.

- To choose a menu or a menu item, use the arrow keys.
- To choose an item in a drop-down list or to toggle a field, for example an Enable/Disable field, use either the arrow keys or **f5** or **f6**.
- To select an item, press **enter**.
- To close a text box or return to the menu display, press **f1**.
- To display additional navigation and selection information while the Setup Utility is open, press **f1**.

Displaying System Information

The following procedure explains how to display system information in the Setup Utility. If the Setup Utility is not open, begin at step 1. If the Setup Utility is open, begin at step 2.

1. To open the Setup Utility, turn on or restart the computer in Windows, and then press **f10** while the prompt, “Press <F10> to enter setup,” is displayed in the lower-left corner of the screen.
2. Access the system information by using the **Main** menu.
3. To close the Setup Utility without changing any settings, use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**. (The computer restarts in Windows.)

Restoring Default Settings in the Setup Utility

The following procedure explains how to restore the Setup Utility default settings. If the computer is not in the Setup Utility, begin at step 1. If the computer is in the Setup Utility, begin at step 2.

1. To open the Setup Utility, turn on or restart the computer in Windows, and then press **f10** while the prompt, “Press <F10> to enter setup,” is displayed in the lower-left corner of the screen.
2. Select **Exit > Load Setup Defaults**, and then press **f10**.
3. When the Setup Confirmation is displayed, press **enter** to save your preferences.
4. To set your preferences and exit the Setup Utility, press **f10**, and then follow the instructions on the screen.

The Setup Utility default settings are set when you exit the Setup Utility and go into effect when the computer restarts.



Your password, security, and language settings are not changed when you restore the factory default settings.

Using Advanced Setup Utility Features

This guide describes the Setup Utility features recommended for all users. For more information about the Setup Utility features recommended for advanced users only, refer to Help and Support, which is accessible only when the computer is in Windows.

The Setup Utility features available for advanced users include a hard drive self-test, a Network Service Boot, and settings for boot order preferences.

The “<F12> to boot from LAN” message that is displayed in the lower-left corner of the screen each time the computer is started or restarted in Windows or restored from hibernation is the prompt for a Network Service Boot.

The “Press <ESC> to change boot order” message that is displayed in the lower-left corner of the screen each time the computer is started or restarted in Windows or restored from hibernation is the prompt to change the boot order.

Closing the Setup Utility

You can close the Setup Utility with or without saving changes.

- To close the Setup Utility and save your changes from the current session, use either of the following procedures:
 - Press **f10**, and then follow the instructions on the screen.
 - or –
 - If the Setup Utility menus are not visible, press **esc** to return to the menu display. Then use the arrow keys to select **Exit > Exit Saving Changes**, and then press **enter**.

When you use the **f10** procedure, you are offered an option to return to the Setup Utility. When you use the Exit Saving Changes procedure, the Setup Utility closes when you press **enter**.

- To close the Setup Utility without saving your changes from the current session:

If the Setup Utility menus are not visible, press **esc** to return to the menu display. Then use the arrow keys to select **Exit > Exit Discarding Changes**, and then press **enter**.

After the Setup Utility closes, the computer restarts in Windows.

2.3 Setup Utility Menus

The menu tables in this section provide an overview of Setup Utility options.



Some of the Setup Utility menu listed in this chapter may not be supported by your computer.

Selecting from the Main Menu

Table 2-1

Main Menu

Select	To Do This
System Information	<ul style="list-style-type: none">■ View and change the system time and date.■ View identification information about the computer.■ View specification information about the processor, memory size, system BIOS, and keyboard controller version (select models only).

Selecting from the Security Menu

Table 2-2

Security Menu

Select	To Do This
Administrator password	Enter, change, or delete an administrator password.
Power-on password	Enter, change, or delete a power-on password.


Selecting from the System Configuration Menu

Table 2-3
System Configuration Menu

Select	To Do This
Language Support	Change the Setup Utility language.
Embedded WLAN Device Radio	Enable/disable an embedded wireless LAN device.
Embedded Bluetooth® Device (select models only)	Enable/disable an embedded Bluetooth device (select models only).
Enhanced SATA support (select models only)	Enable/disable enhanced SATA mode.
Boot Options	<p>Set the following boot options:</p> <ul style="list-style-type: none"> ■ f10 and f12 Delay (sec.)—Set the delay for the f10 and f12 functions of the Setup Utility in intervals of 5 seconds each (0, 5, 10, 15, 20). ■ CD-ROM boot—Enable/disable boot from CD-ROM. ■ Floppy boot—Enable/disable boot from Floppy. ■ Internal Network Adapter boot—Enable/disable boot from Internal Network Adapter. ■ Boot Order—Set the boot order for: <ul style="list-style-type: none"> □ USB Floppy □ ATAPI CD/DVD ROM Drive □ Hard drive □ USB Diskette on Key □ USB Hard drive □ Network adapter

Selecting from the Diagnostics Menu

Table 2-4
Diagnostics Menu

Select	To Do This
Hard Disk Self Test	Run a comprehensive self-test on the hard drive.  On models with two hard drives, this menu option is called the Primary Hard Disk Self Test.
Secondary Hard Disk Self Test (select models only)	Run a comprehensive self-test on a secondary hard drive.

2.4 Troubleshooting Flowcharts

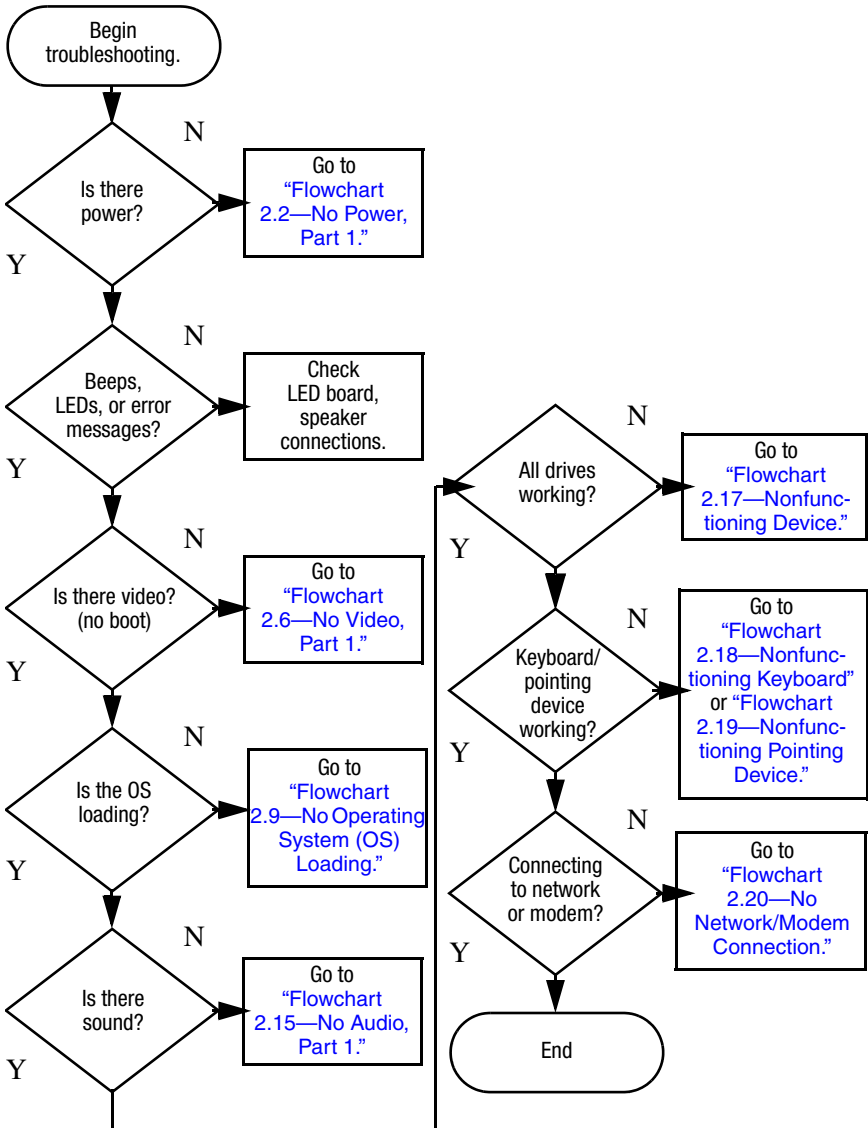
Table 2-5
Troubleshooting Flowcharts Overview

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"

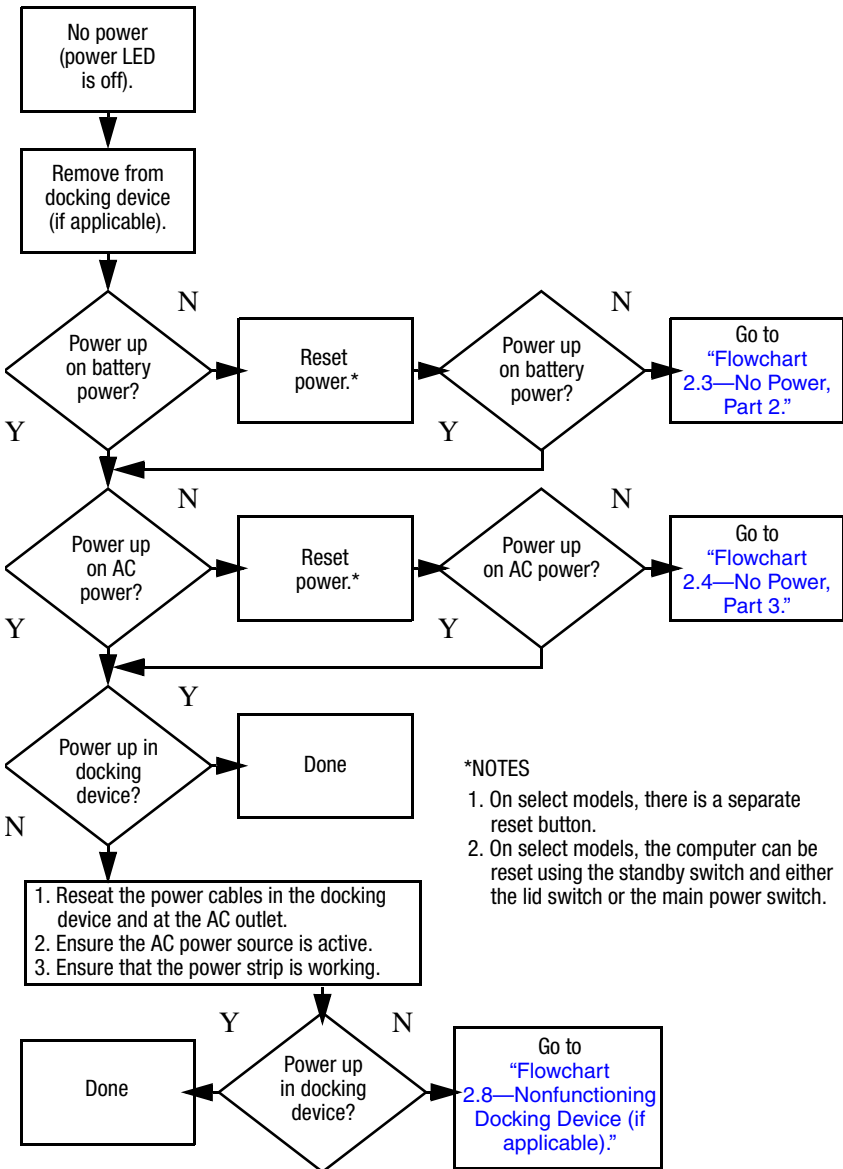
Table 2-5
Troubleshooting Flowcharts Overview (*Continued*)

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"

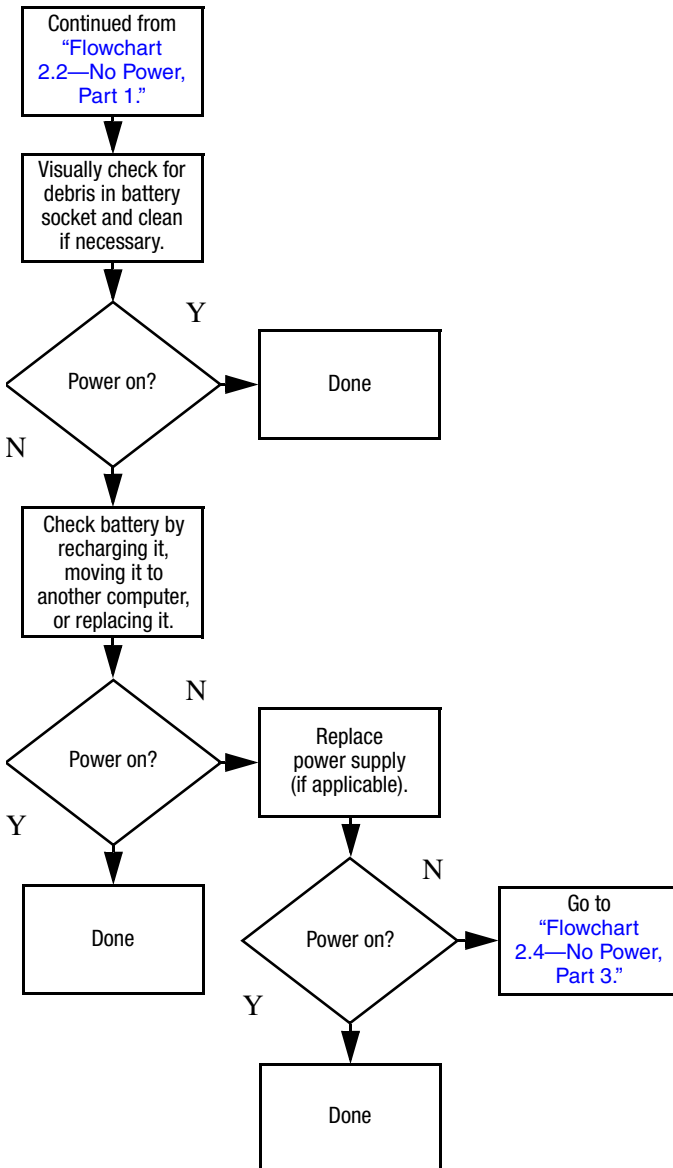
Flowchart 2.1 – Initial Troubleshooting



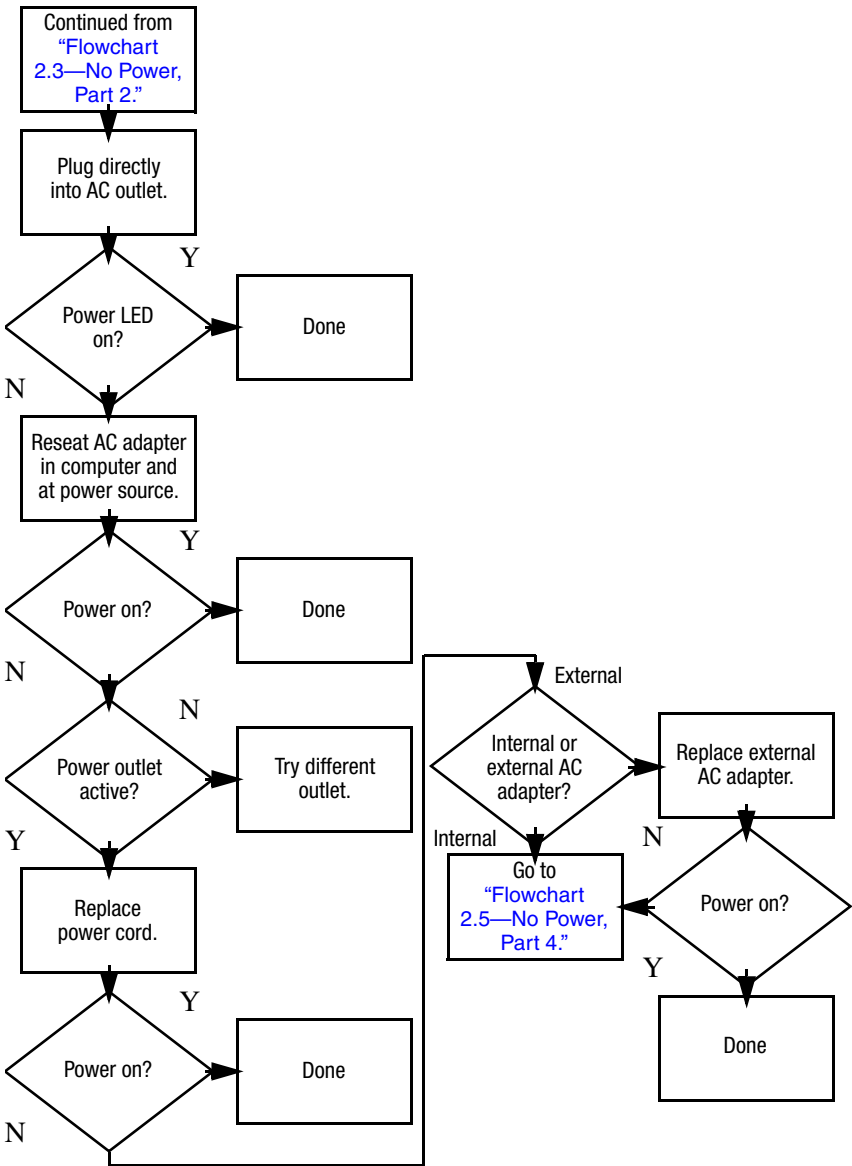
Flowchart 2.2—No Power, Part 1



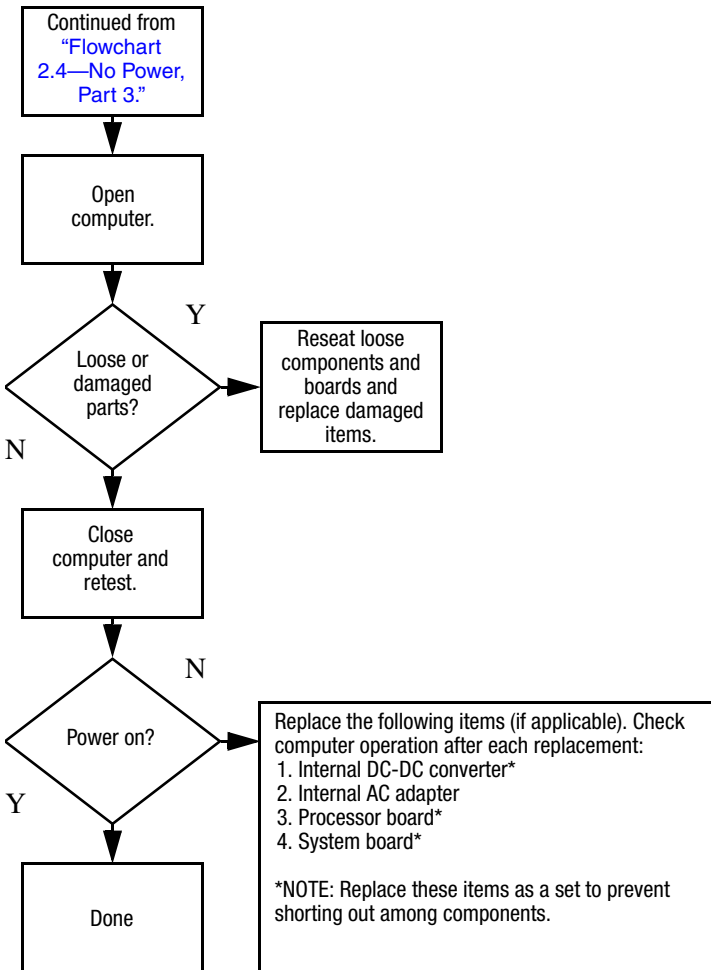
Flowchart 2.3—No Power, Part 2



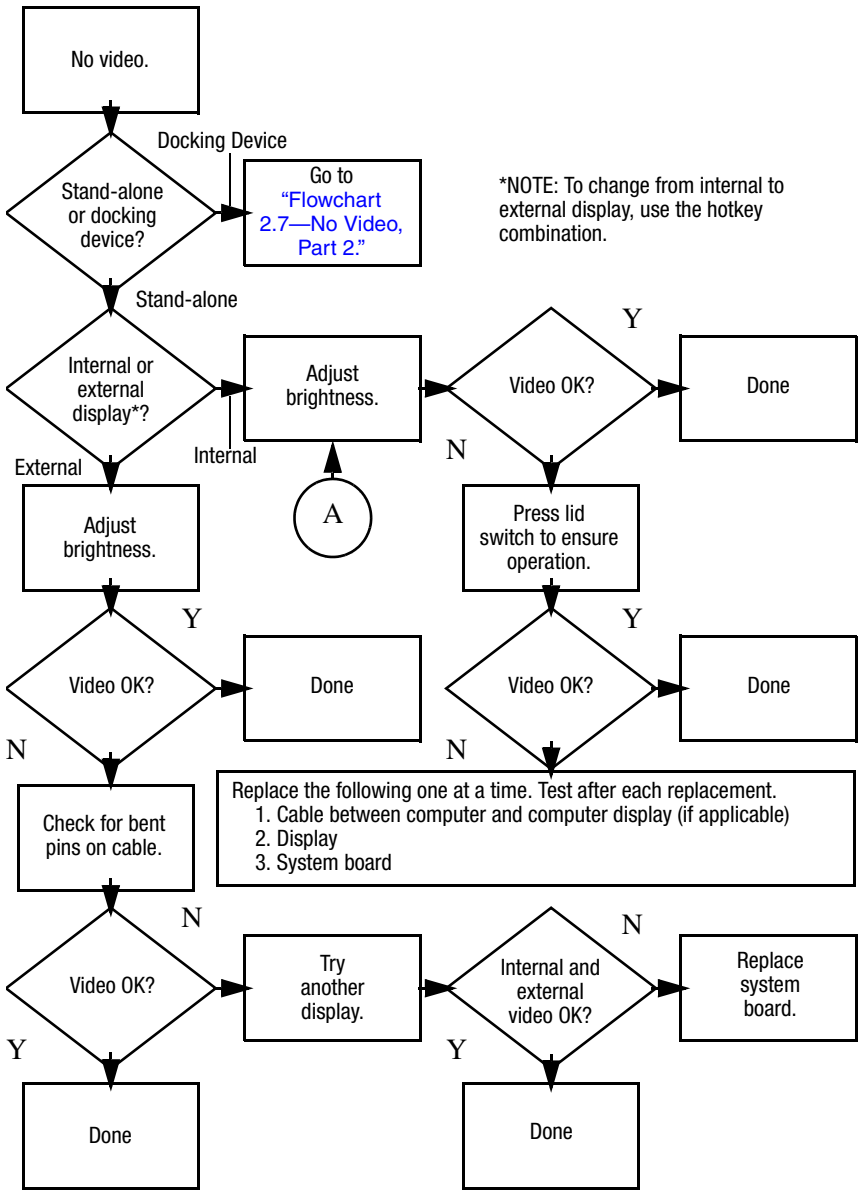
Flowchart 2.4—No Power, Part 3



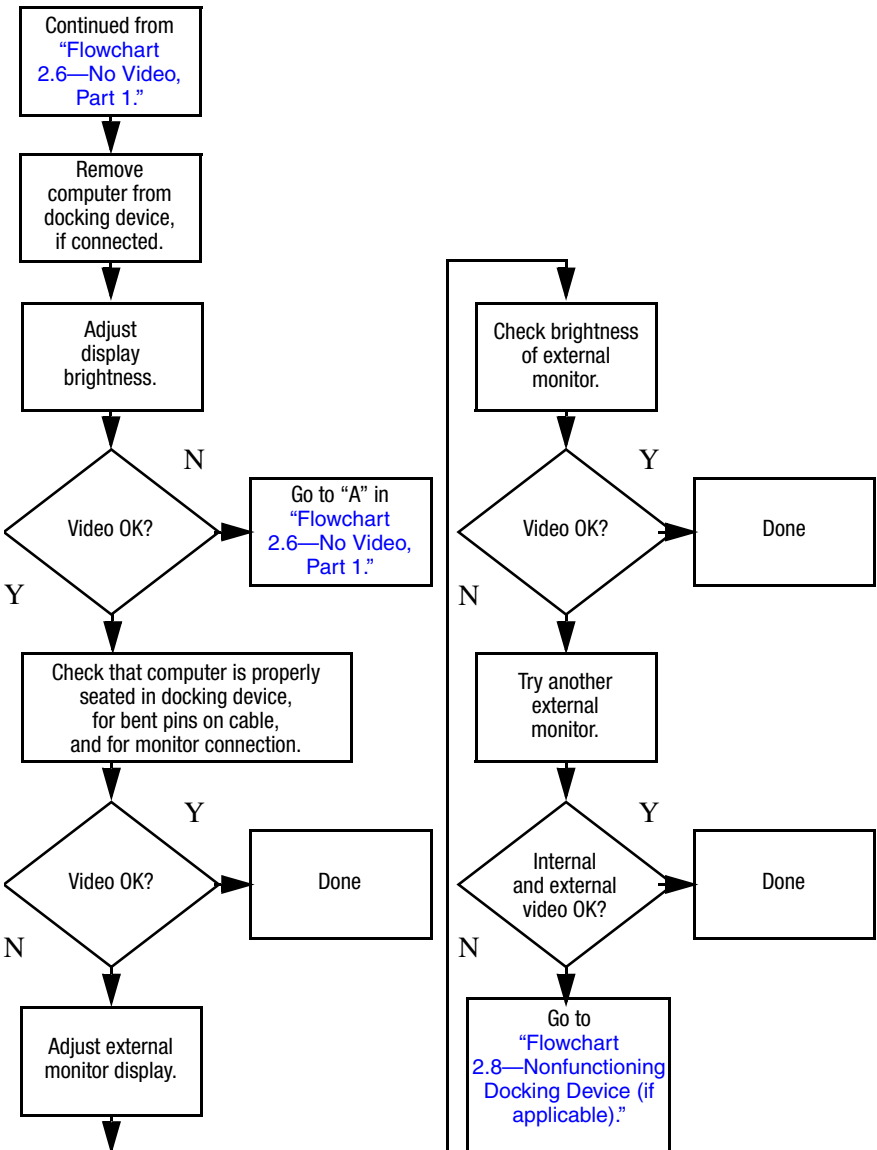
Flowchart 2.5—No Power, Part 4



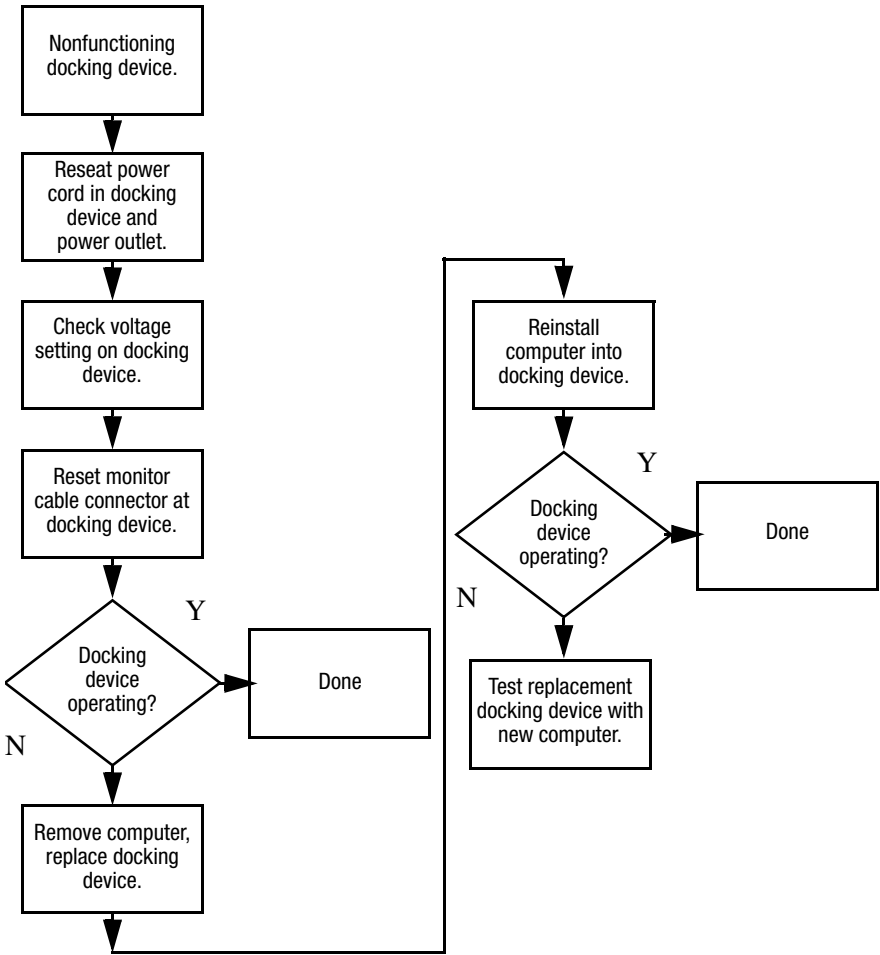
Flowchart 2.6—No Video, Part 1



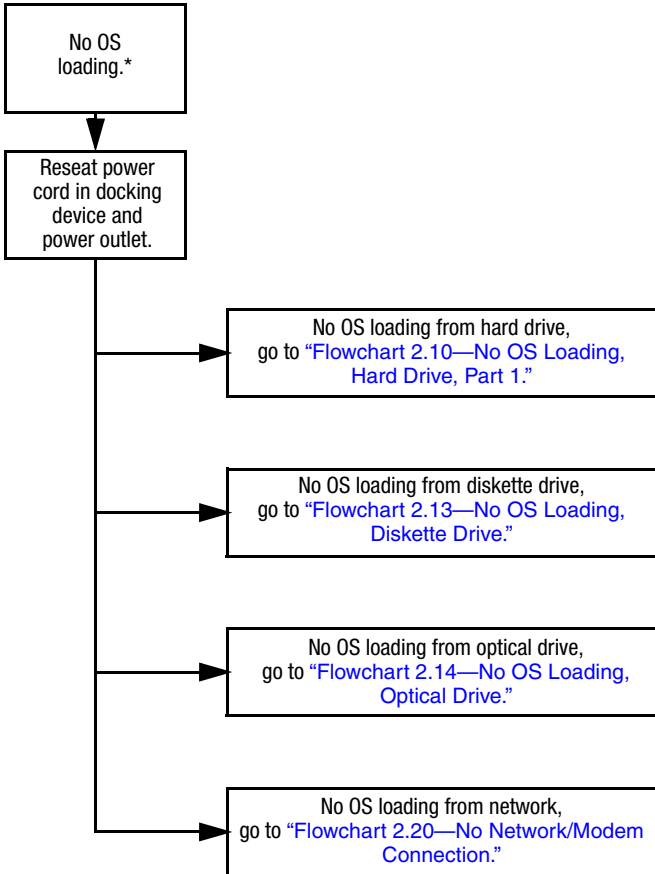
Flowchart 2.7—No Video, Part 2



Flowchart 2.8—Nonfunctioning Docking Device (if applicable)

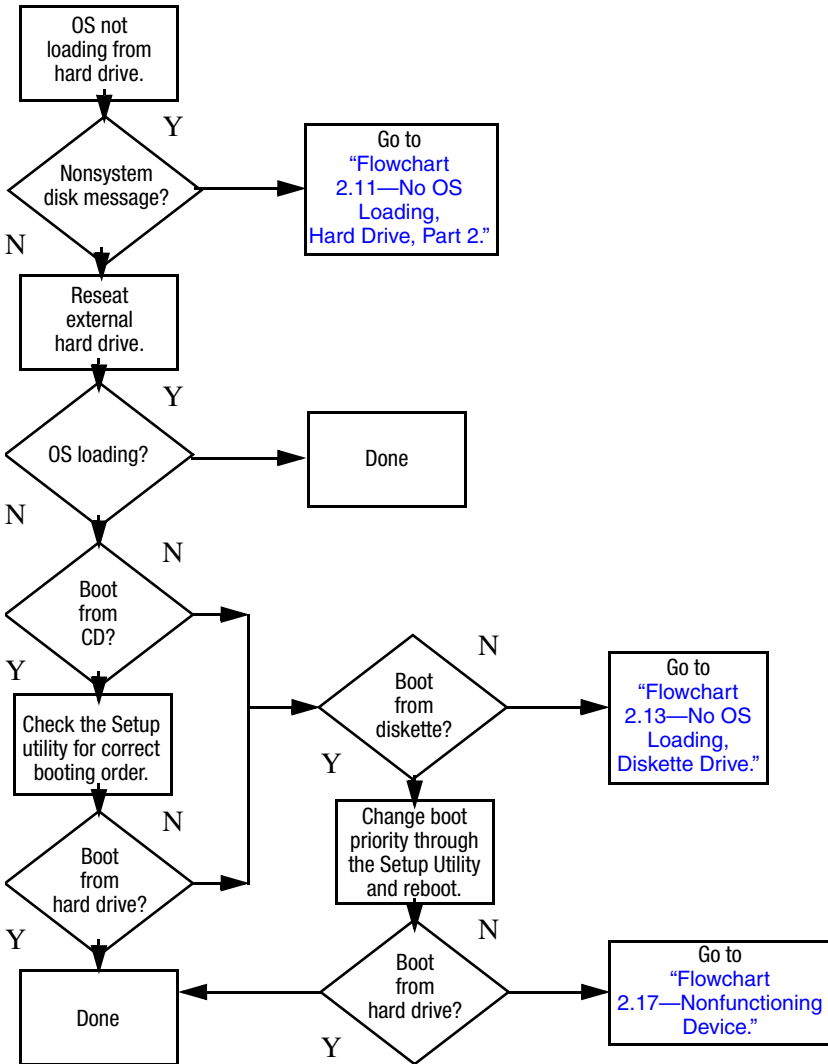


Flowchart 2.9—No Operating System (OS) Loading

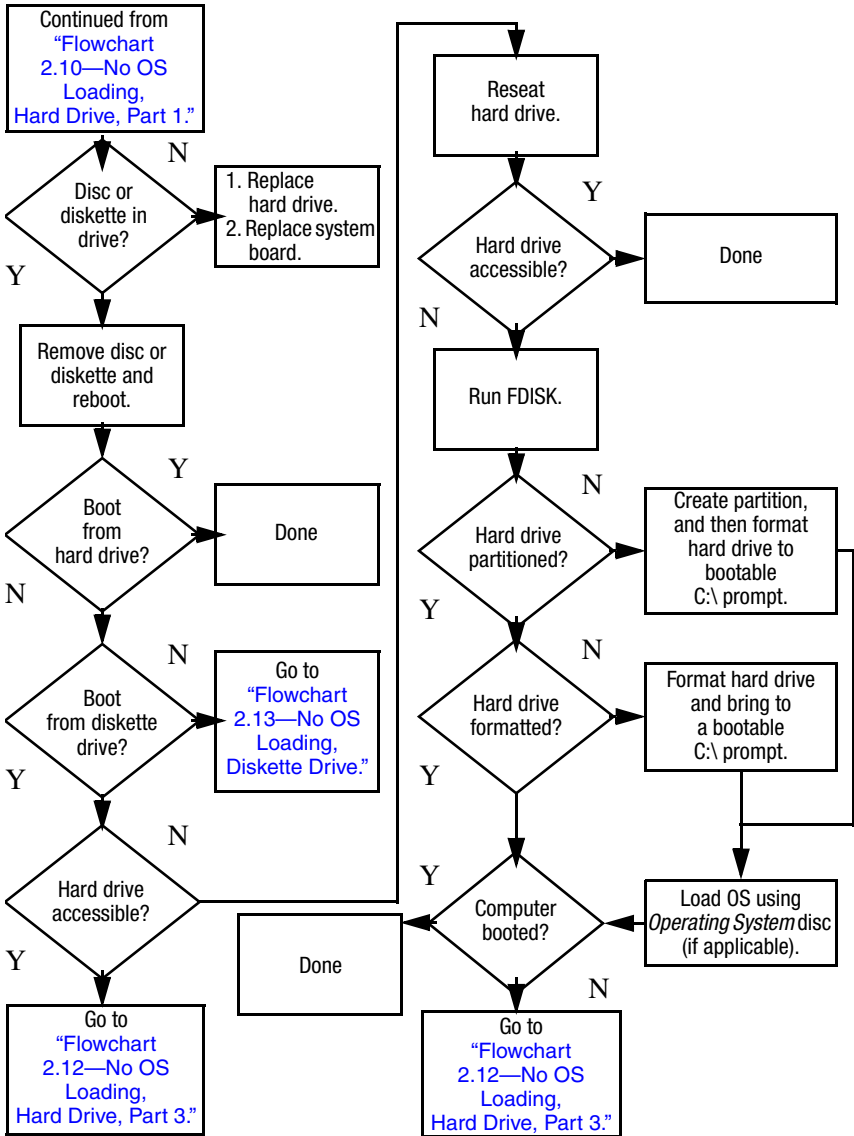


*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

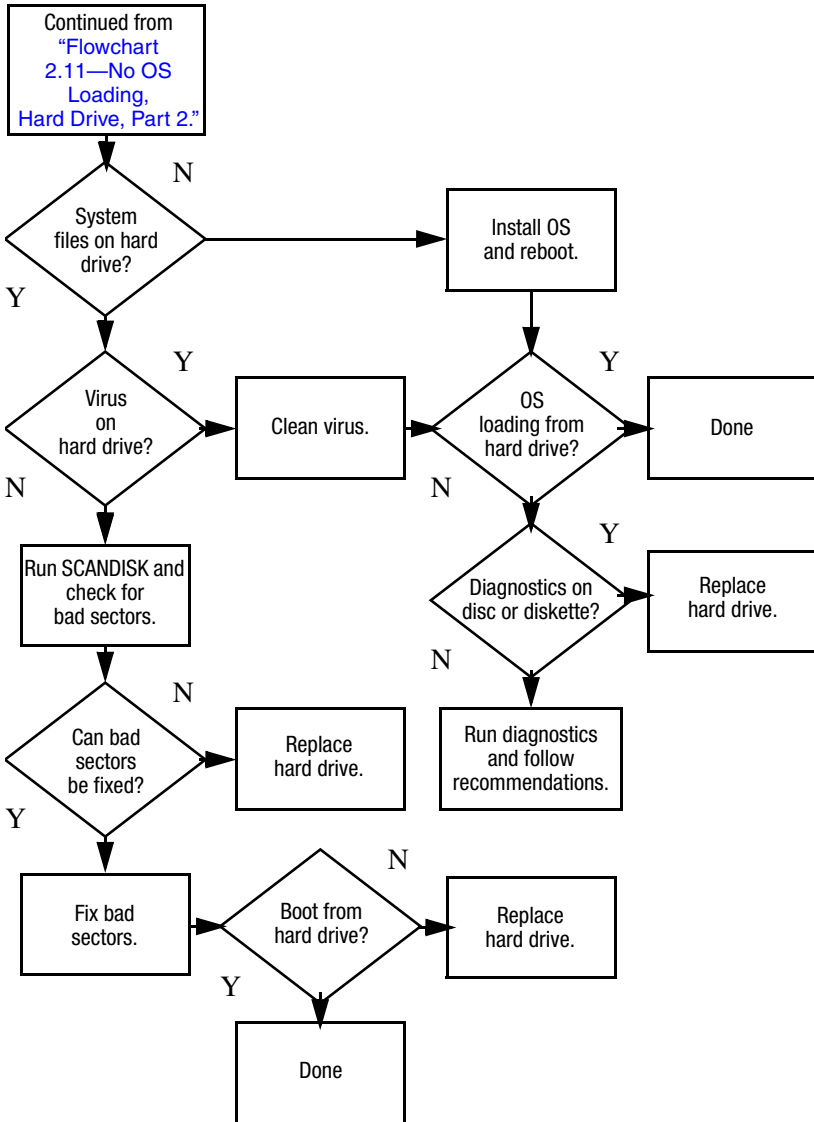
Flowchart 2.10—No OS Loading, Hard Drive, Part 1



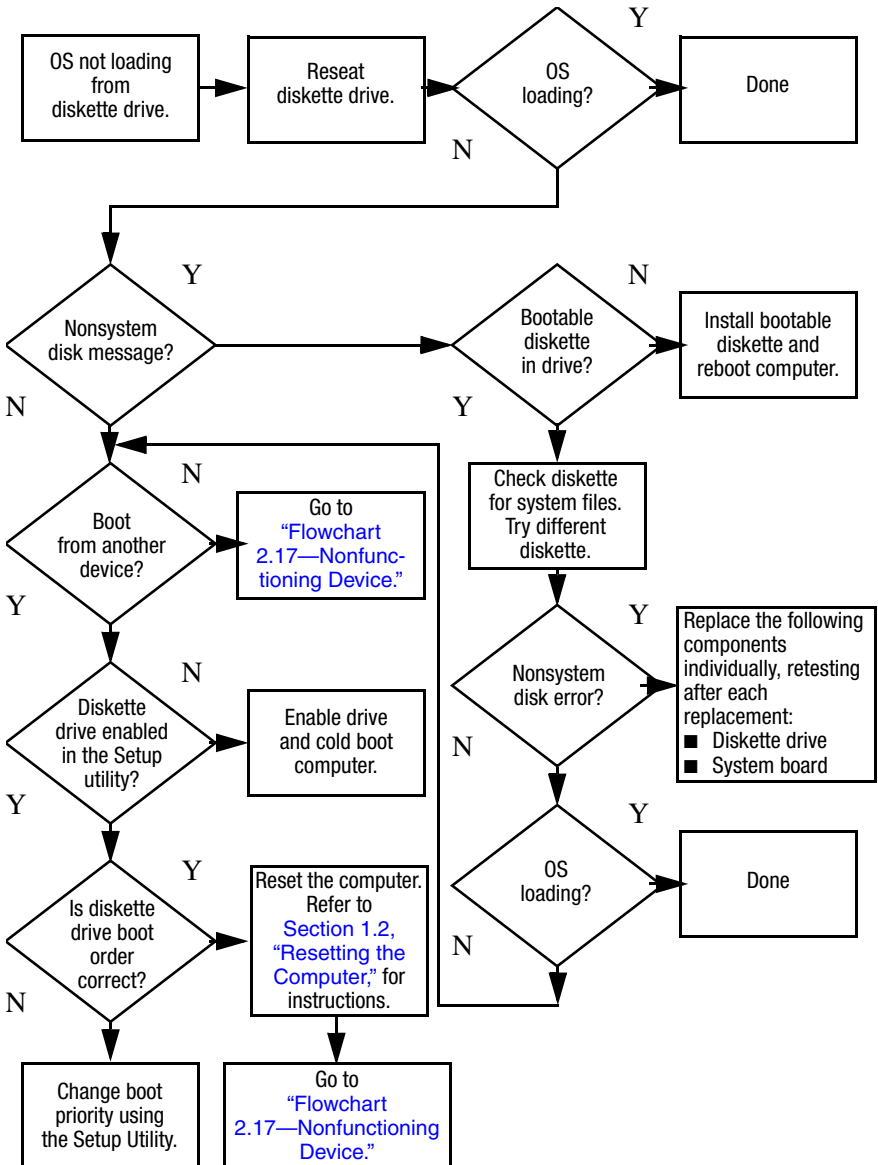
Flowchart 2.11 – No OS Loading, Hard Drive, Part 2



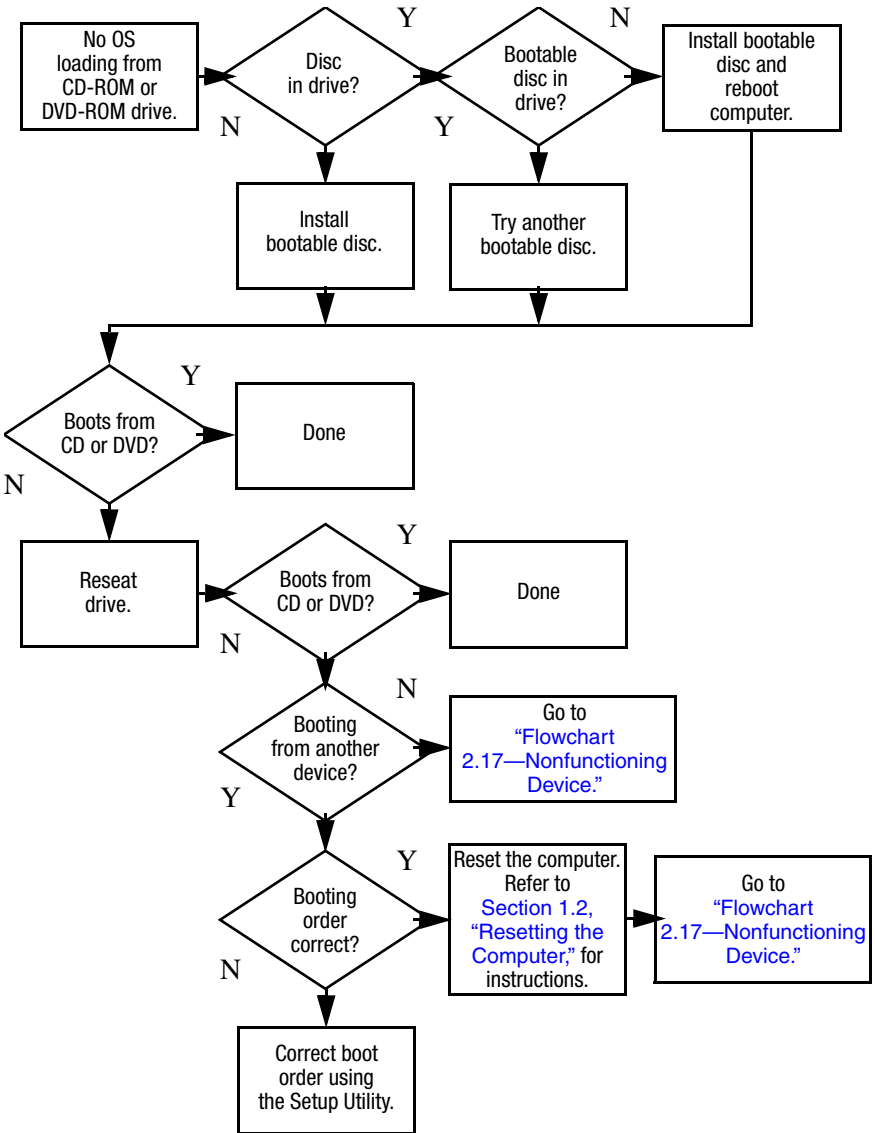
Flowchart 2.12—No OS Loading, Hard Drive, Part 3



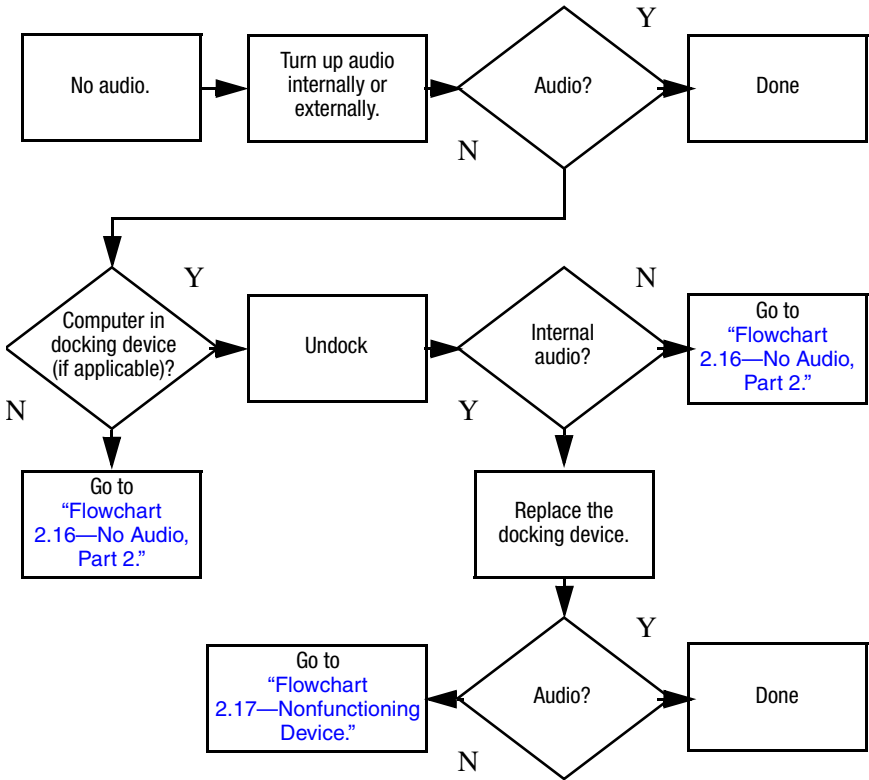
Flowchart 2.13—No OS Loading, Diskette Drive



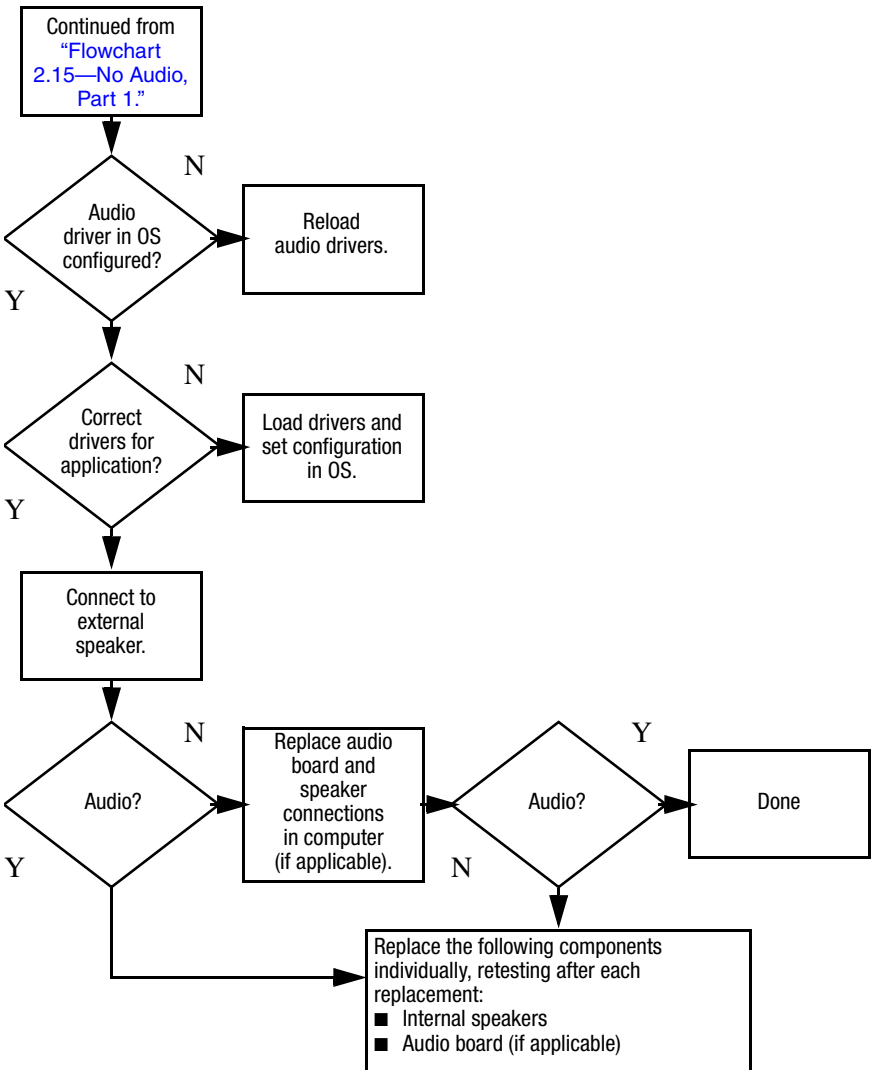
Flowchart 2.14—No OS Loading, Optical Drive



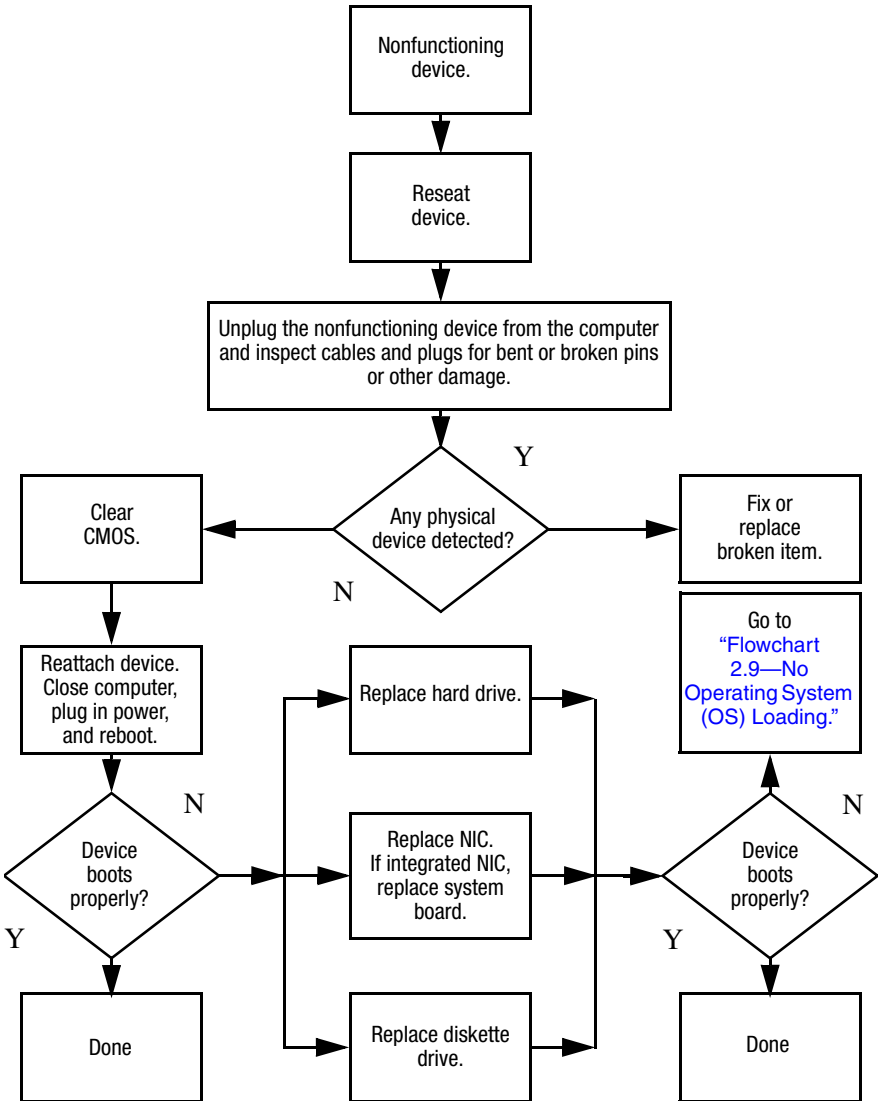
Flowchart 2.15—No Audio, Part 1



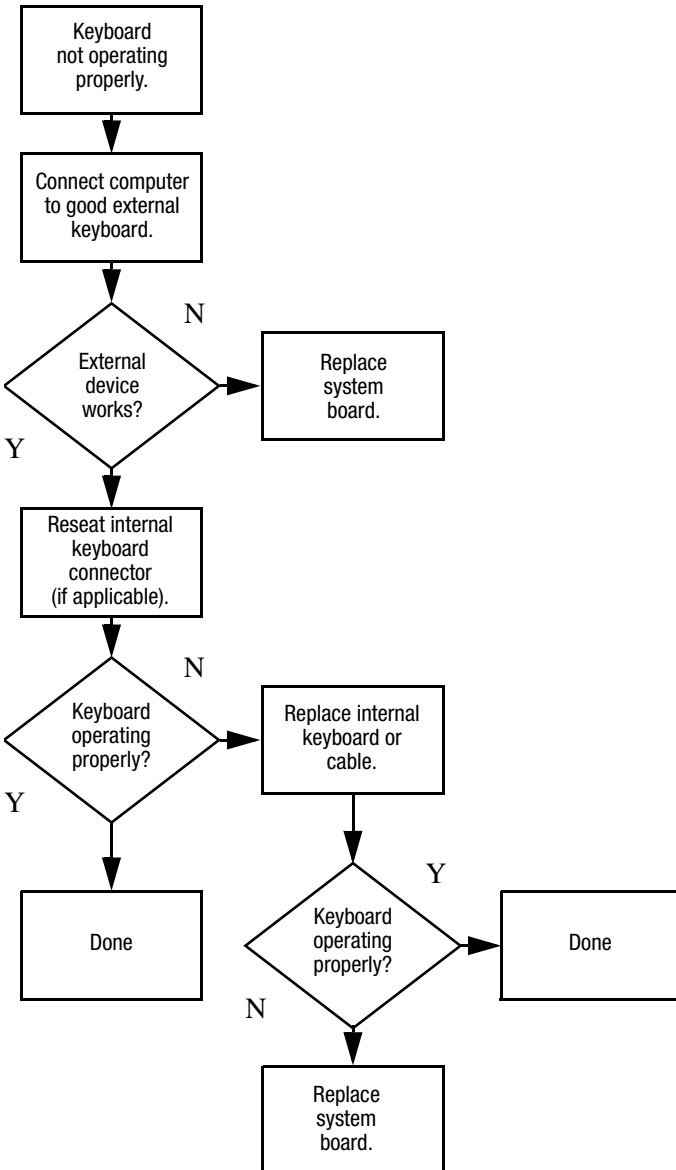
Flowchart 2.16—No Audio, Part 2



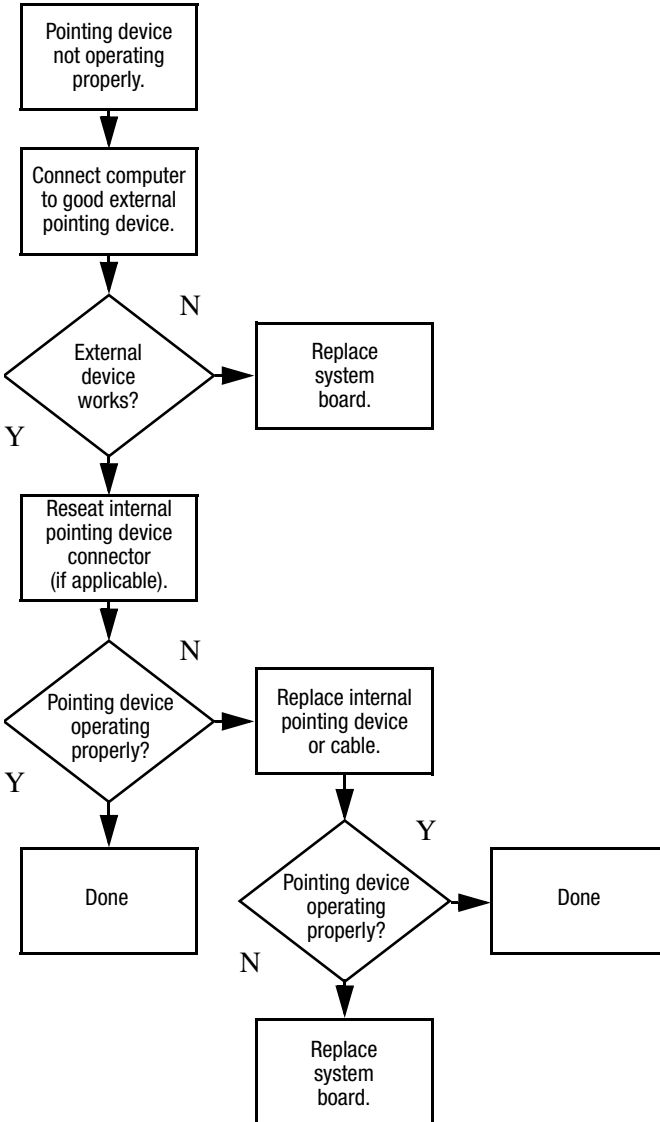
Flowchart 2.17—Nonfunctioning Device



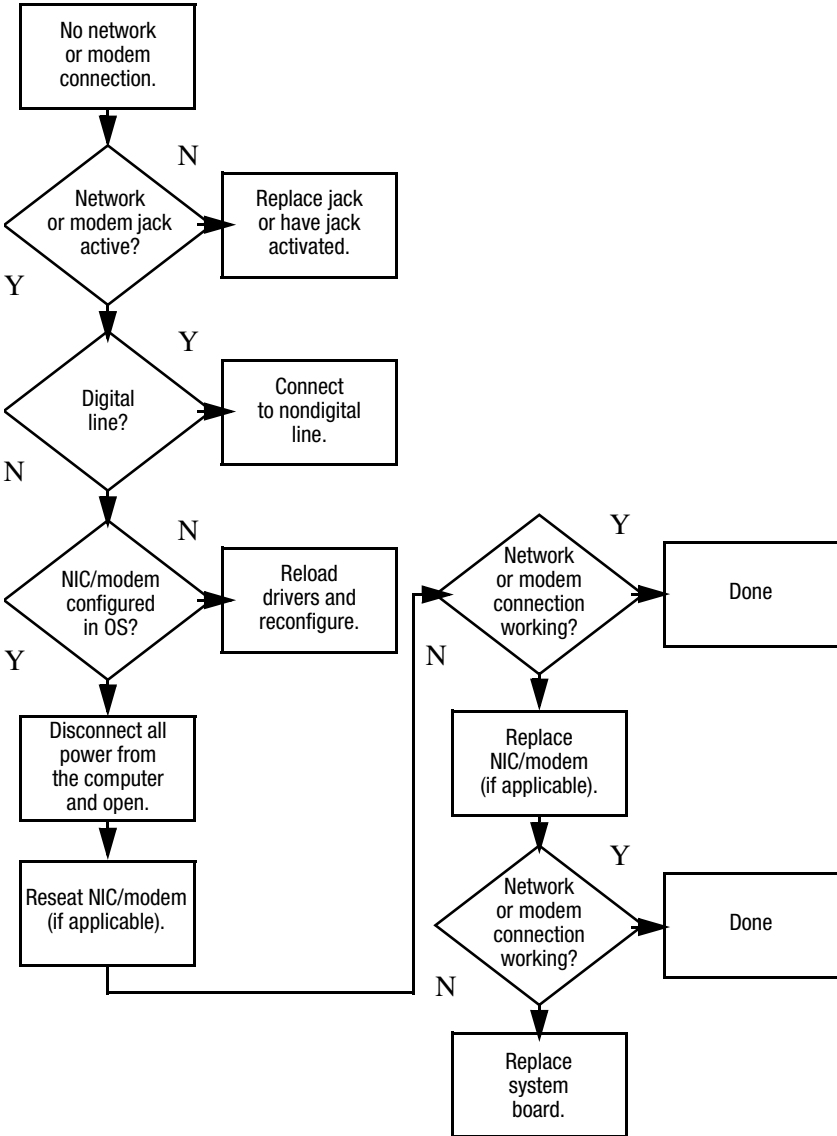
Flowchart 2.18—Nonfunctioning Keyboard



Flowchart 2.19—Nonfunctioning Pointing Device



Flowchart 2.20—No Network/Modem Connection

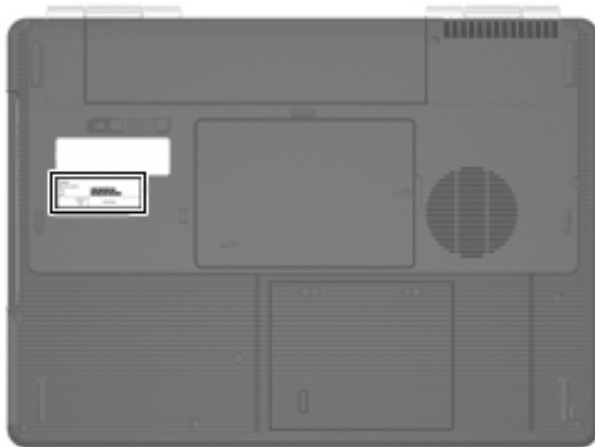


Illustrated Parts Catalog

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

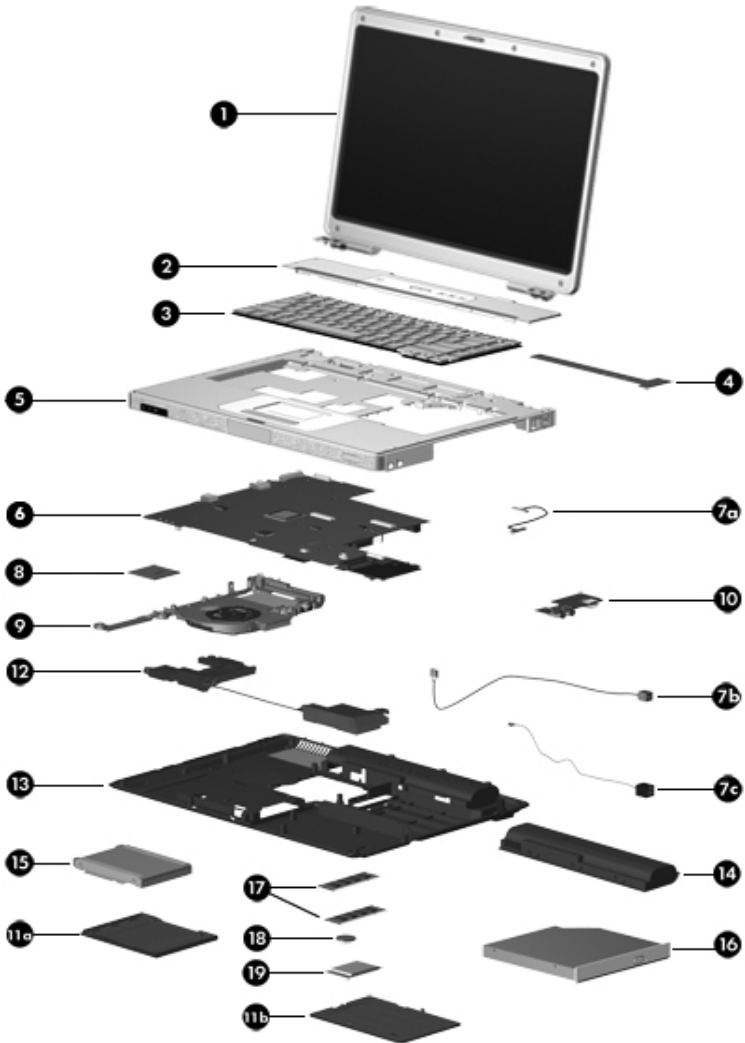
3.1 Serial Number Location

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




Serial Number Location

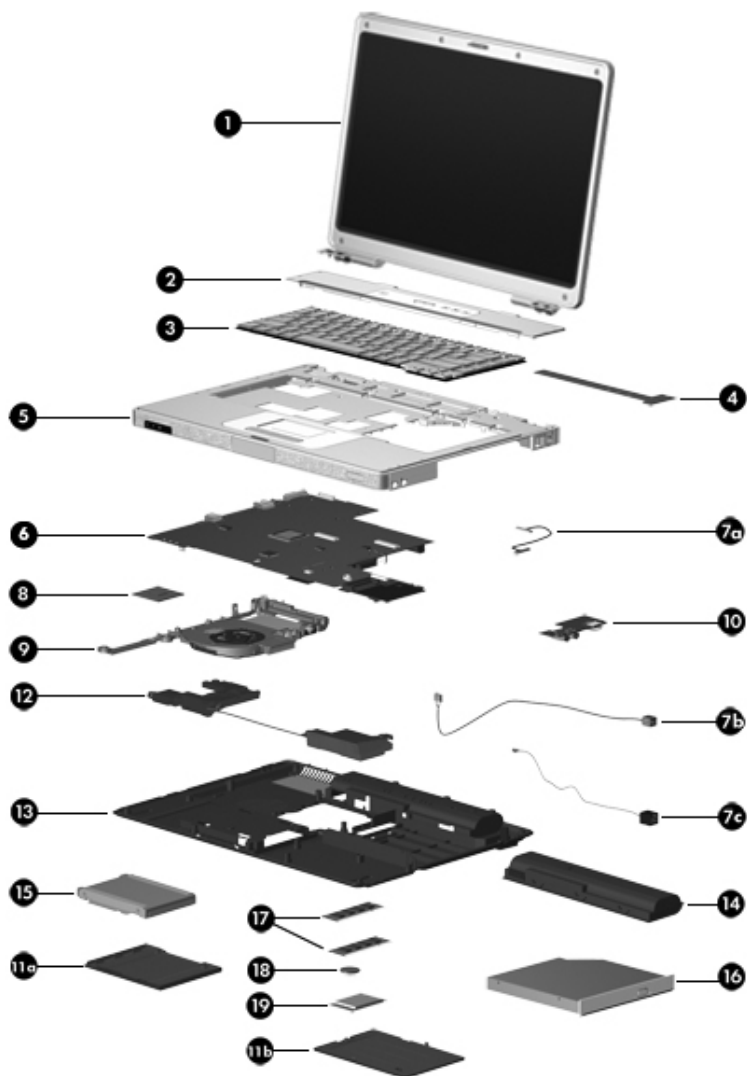
3.2 Computer Major Components



Computer Major Components

Table 3-1
Spare Parts: Computer Major Components

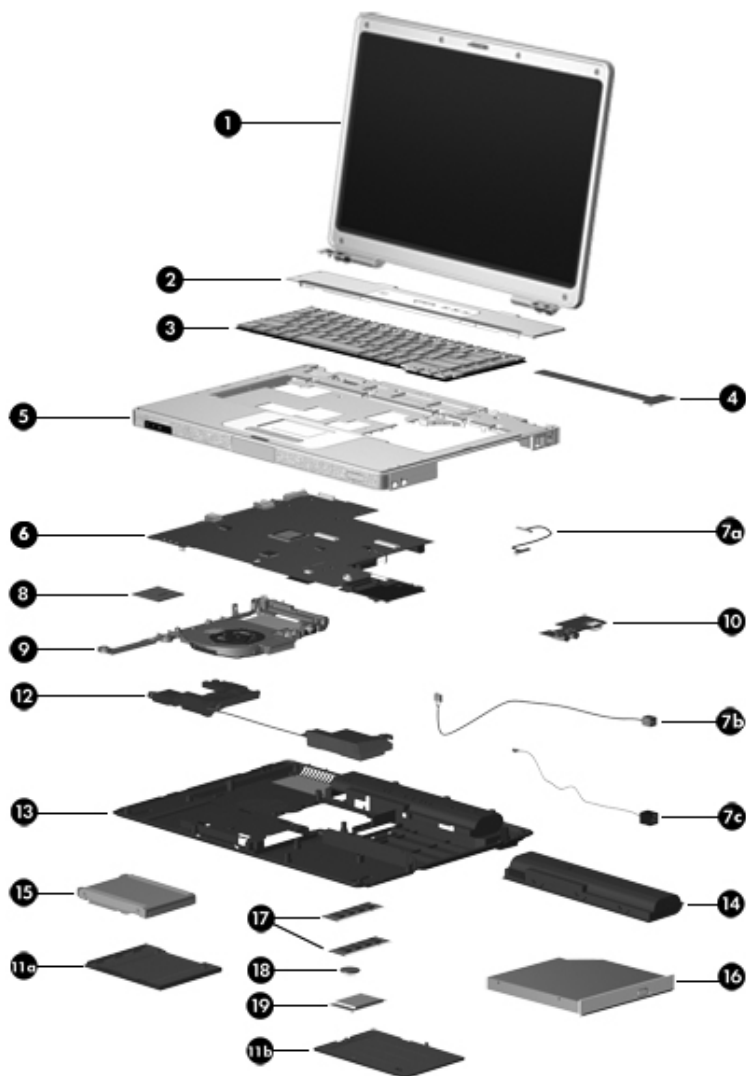
Item	Description	Spare Part Number
1	15.4-inch, WXGA display assembly with BrightView (includes display cable, wireless antenna transceivers, and antenna cables)	
	For use with HP G3000 computer models	435767-001
	For use with Compaq Presario C300 computer models	435768-001
	 Refer to Section 3.3, "Display Assembly Subcomponents," for display assembly internal component spare part number information.	
2	Switch covers	
	For use with HP G3000 full-featured computer models	435782-001
	For use with HP G3000 defeatured computer models	436187-001
	For use with Compaq Presario C300 computer models	407827-001
3	Keyboards	
	Belgium	407856-A41
	The Czech Republic	407856-221
	Denmark, Finland, Norway, Sweden	407856-DH1
	France	407856-051
	French Canada	407856-121
	Germany	407856-041
	Greece	407856-151
	International	407856-B31
	Israel	407856-BB1
	Italy	407856-061
	Japan	407856-291
	Korea	407856-AD1
	Latin America	407856-161
	Portugal	407856-131
	Russia	407856-251
	Saudi Arabia	407856-171
	Spain	407856-071
	Switzerland	407856-111
	Taiwan	403809-AB1
	Thailand	407856-281
	Turkey	407856-141
	The United Kingdom	407856-031
	The United States	407856-001



Computer Major Components

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

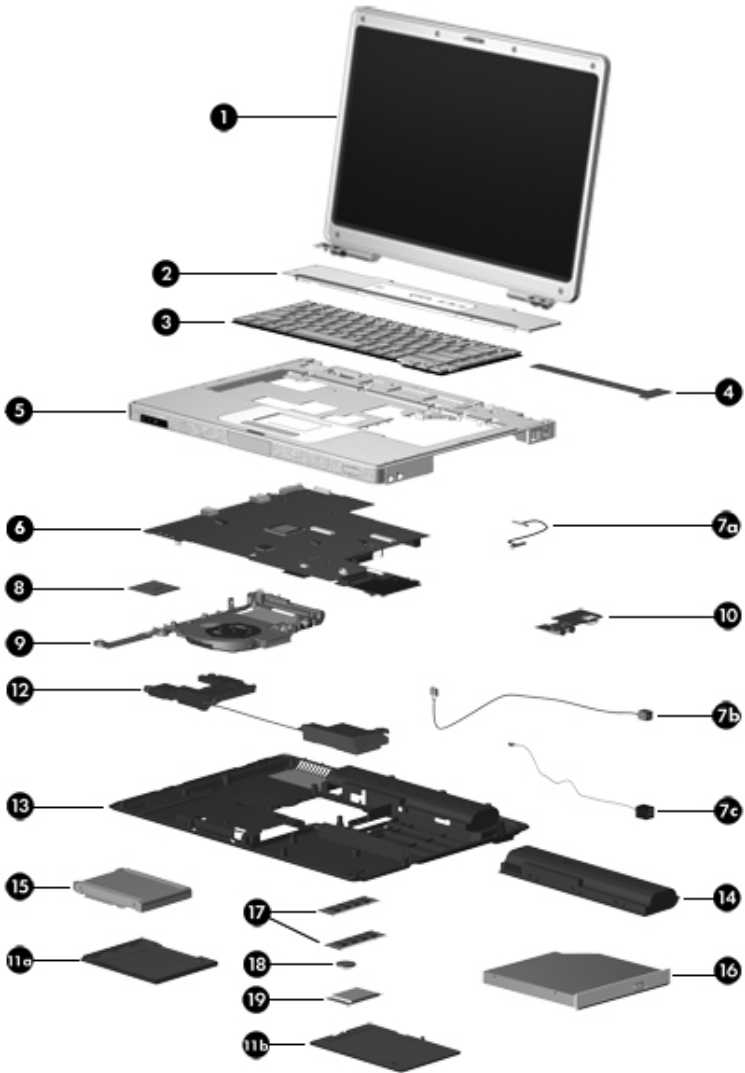
Item	Description	Spare Part Number
4	LED board (includes LED board cable)	435784-001
5	Top cover	436188-001
	TouchPad bracket (not illustrated)	407812-001
	Display release button assembly (not illustrated)	436189-001
6	System boards	
	945GM	435764-001
	940GML	435765-001
	Cable Kit	
	For use with HP G3000 computer models	435781-001
	For use with Compaq Presario C300 computer models	436186-001
7a	USB/audio board cable	
7b	Power connector and cable	
7c	Modem connector and cable	
8	Processors (include thermal paste)	
	Intel Celeron 430 1.73-GHz	435766-001
	Intel Celeron 420 1.60-GHz	430202-001
	Intel Core Duo T2250 1.73-GHz	430851-001
	Intel Core Duo T2300 1.60-GHz	430848-001
	Intel Core Duo T2050 1.60-GHz	430850-001
	Intel Core Duo T1400 1.83-GHz	430200-001
9	Fan assembly (includes thermal paste)	410055-001
	Heat sink assembly (includes thermal paste)	409073-001
10	USB/audio board (includes USB/audio board cable)	409079-001



Computer Major Components

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

Item	Description	Spare Part Number
	Plastics Kit	
	For use with HP G3000 computer models	436184-001
	For use with Compaq Presario C300 computer models	436185-001
11a	Hard drive cover (includes 2 captive screws)	
11b	Memory/Mini Card module compartment cover (includes 2 captive screws)	
12	Speakers	407785-001
13	Base enclosure	407815-001
	Rubber Feet Kits (include 8 computer feet for use on the base enclosure; not illustrated)	
	For use with HP G3000 computer models	407780-001
	For use with Compaq Presario C300 computer models	407781-001
14	6-cell, 4.0-Amp hour battery	435779-001
15	Hard drives (include bracket and connector)	
	5400 rpm, 120-GB	435775-001
	5400 rpm, 100-GB	435774-001
	5400 rpm, 80-GB	435773-001
	5400 rpm, 60-GB	435776-001

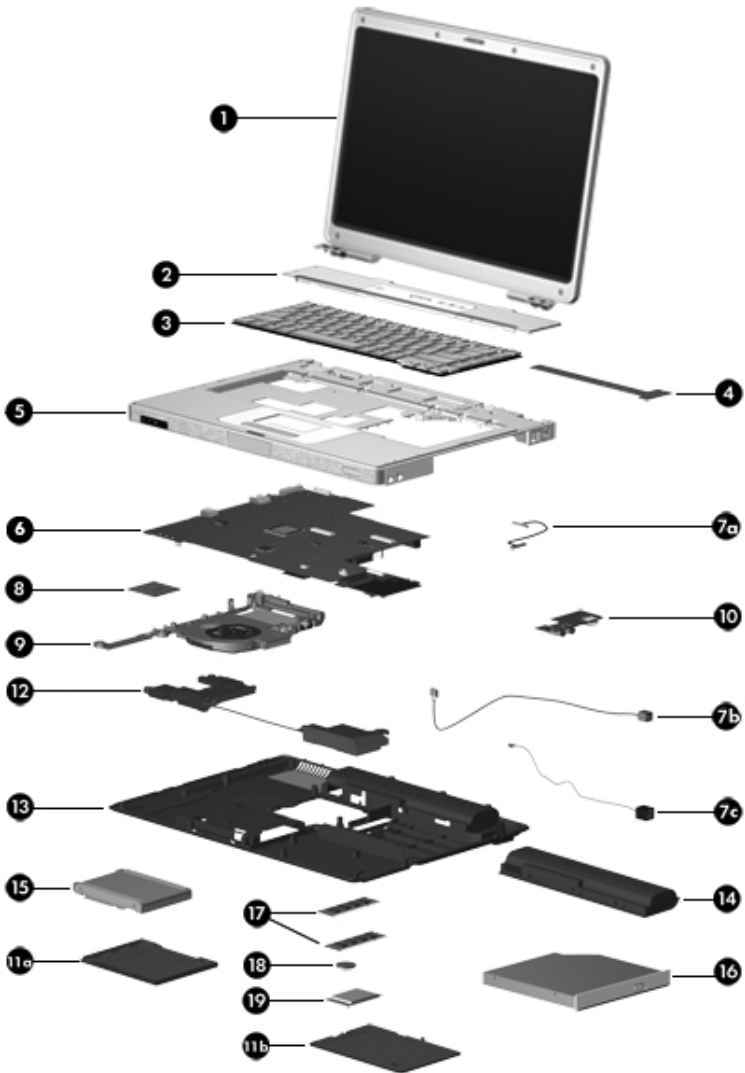


Computer Major Components

Table 3-1

Spare Parts: Computer Major Components (Continued)

Item	Description	Spare Part Number		
16	Optical drives			
	DVD±RW and CD-RW Super Multi Double-Layer Combo Drive	435777-001		
	DVD/CD-RW Combo Drive	435778-001		
17	Memory modules, 1-DIMM			
	PC2-5300			
	512 MB	435772-001		
	256 MB	435771-001		
	PC2-4200			
	512 MB	435770-001		
	256 MB	435769-001		
18	RTC battery (includes 2-sided tape)	407816-001		
19	Mini Card modules			
	802.11a/b/g WLAN module for use in the countries listed below. These countries are categorized as most of the world (MOW) 1.	407576-001		
	Antigua & Barbuda	Canada	Panama	Paraguay
	Argentina	Chile	India	Saudi Arabia
	Australia	Dominican Republic	Indonesia	Taiwan
	Bahamas	Guam	Malaysia	The United States
	Barbados	Guatemala	Mexico	Vietnam
	Brunei	Hong Kong	New Zealand	

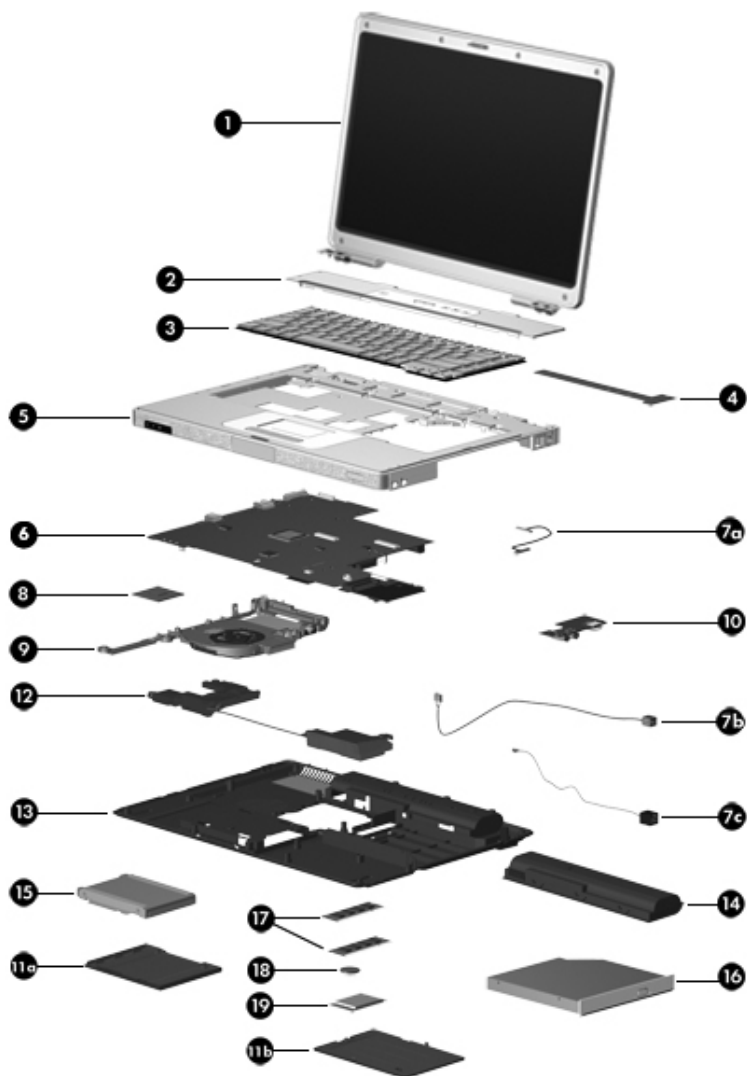


Computer Major Components

Table 3-1

Spare Parts: Computer Major Components (*Continued*)

Item	Description	Spare Part Number
19	Mini Card modules (<i>Continued</i>)	
	802.11a/b/g WLAN module for use in the countries listed below. These countries are categorized as MOW2.	407576-002
	Aruba	El Salvador
	Austria	Estonia
	Azerbaijan	Finland
	Bahrain	France
	Belgium	Georgia
	Bermuda	Germany
	Bulgaria	Greece
	Cayman Islands	Hungary
	Colombia	Iceland
	Croatia	Ireland
	Cyprus	Italy
	Czech Republic	Latvia
	Denmark	Lebanon
	Egypt	The Philippines
		Poland
		Portugal
		Romania
		Russia
		Serbia and Montenegro
		Singapore
		Slovakia
		Liechtenstein
		Lithuania
		Luxembourg
		Malta
		Monaco
		The Netherlands
		Norway
		Oman
		Slovenia
		South Africa
		Spain
		Sri Lanka
		Sweden
		Switzerland
		Turkey
		The United Kingdom
		Uzbekistan



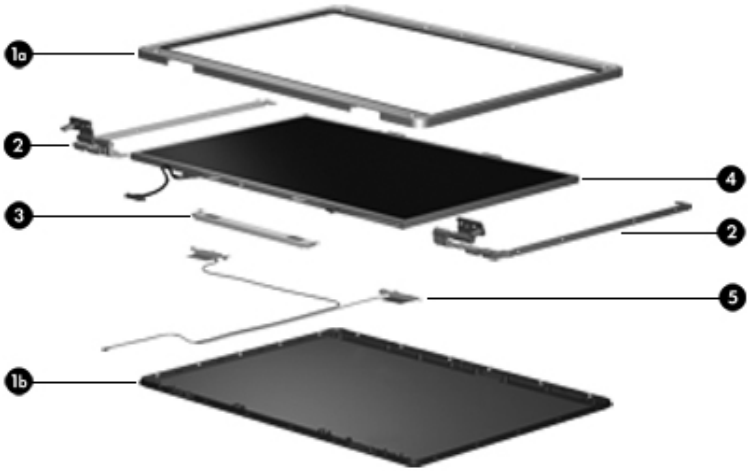
Computer Major Components

Table 3-1

Spare Parts: Computer Major Components (*Continued*)

Item	Description	Spare Part Number		
19	Mini Card modules (<i>Continued</i>)			
	802.11a/b/g WLAN module for use in the countries listed below. These countries are categorized as the rest of the world (ROW).	407576-003		
	China	Honduras	Qatar	Uruguay
	Ecuador	Pakistan	South Korea	Venezuela
	Haiti	Peru		
	802.11a/b/g WLAN module for use in Japan	407576-291		
	802.11b/g WLAN module for use in the United States and Canada	407107-001		
	802.11b/g WLAN module for use in the ROW countries listed below:	407107-002		
	China	Jordan	South Korea	Ukraine
	Ecuador	Kuwait	Thailand	Uruguay
	Haiti	Pakistan	The United Arab Emirates	Venezuela
	Honduras	Peru		
	Israel	Qatar		

3.3 Display Assembly Subcomponents



Display Assembly Components

Table 3-2
Display Assembly Subcomponents
Spare Part Number Information

Item	Description	
	Display Plastics Kit	
	For use with HP G3000 computer models	435786-001
	For use with Compaq Presario C300 computer models	436190-001
1a	■ Display bezel	
1b	■ Display enclosure	
	■ Display hinge base covers (not illustrated)	
	■ Display hinge covers (not illustrated)	
2	Display Hinge Kit (includes display hinges and display release hook)	407797-001
3	Display inverter board	407800-001
4	15.4-inch, WXGA with BrightView Display Panel Kit (includes display panel cable)	435787-001
5	Wireless Antenna Kit (includes cable, transceivers, and tape)	410118-001
	Display Label Kits (not illustrated)	
	For use with HP G3000 computer models	436191-001
	For use with Compaq Presario C300 computer models	436192-001
	Display Cable Kit (not illustrated)	430533-001
	Display Screw Kit (not illustrated), includes:	435788-001
	■ Phillips PM2.5×7.0 screws	
	■ Phillips PM2.0×4.0 screws	
	■ Rubber screw covers	

3.4 Plastics Kit

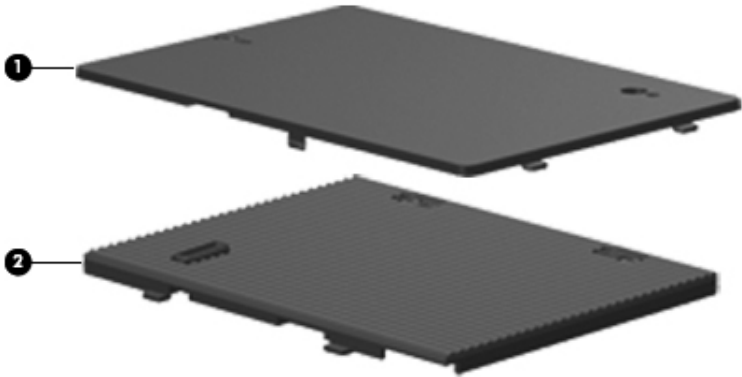


Table 3-3
Plastics Kit
Spare Part Number Information

Item	Description	Spare Part Number
	Plastics Kit	
	For use with HP G3000 computer models	436184-001
	For use with Compaq Presario C300 computer models	436185-001
1	Memory/Mini Card module compartment cover (includes 2 captive screws, secured by C-clips)	
2	Hard drive cover (includes 2 captive screws, secured by C-clips)	

3.5 Cable Kit



Table 3-4
Cable Kit
Spare Part Number Information

Item	Description	Spare Part Number
Cable Kit		
	For use with HP G3000 computer models	435781-001
	For use with Compaq Presario C300 computer models	436186-001
1	TouchPad cable	
2	Modem connector cable	
3	USB/audio board cable	
4	Power connector cable	

3.6 Mass Storage Devices



Table 3-5
Mass Storage Devices
Spare Part Number Information

Item	Description	Spare Part Number
1	Hard drives (include bracket and connector)	
	5400 rpm, 120-GB	435775-001
	5400 rpm, 100-GB	435774-001
	5400 rpm, 80-GB	435773-001
	5400 rpm, 60-GB	435776-001
2	Optical drives	
	DVD±RW and CD-RW Super Multi Double-Layer Combo Drive	435777-001
	DVD/CD-RW Combo Drive	435778-001
	USB digital drive (not illustrated)	364727-001

3.7 Miscellaneous (Not Illustrated)

Table 3-6
Miscellaneous (Not Illustrated)
Spare Part Information

Description	Spare Part Number
65-watt AC adapter	403810-001
Analog TV tuner	407941-001
Carrying case	418162-001
Composite S-Video and audio cable	407939-001
DVB-T TV tuner	412175-001
DVB-T TV tuner antenna	412176-001
Headset	371693-001
RF cable	408485-001
RF input adapter cable	407940-001
TV tuner remote control	408479-001
USB infrared receiver	408843-001
USB travel mouse	309674-001
Wired optical mouse	436238-001

Table 3-6
Miscellaneous (Not Illustrated)
Spare Part Information (Continued)

Description	Spare Part Number
Power cords	
Australia	403811-011
Canada, French Canada, and the United States	403811-001
Denmark	403811-081
International	403811-B31
India	403811-D61
Israel	403811-BB1
Italy	403811-061
Japan	403811-291
Korea	403811-AD1
Switzerland	403811-111
Taiwan	403811-AB1
The United Kingdom	403811-031
Screw Kit (includes the following screws; refer to Appendix A, "Screw Listing," for more information on specifications and usage)	435780-001
<ul style="list-style-type: none"> ■ Phillips PM2.5×5.0 captive screw ■ Phillips PM3.0×4.0 screw ■ Black Phillips PM2.5×5.0 captive screw ■ Phillips PM2.0×3.0 screw ■ Phillips PM2.0×4.0 screw 	<ul style="list-style-type: none"> ■ Phillips PM2.5×13.0 screw ■ Phillips PM2.5×9.0 screw ■ Phillips PM2.5×7.0 Screw ■ Phillips PM3.0×6.0 screw ■ Phillips PM2.5×4.0 screw

3.8 Sequential Part Number Listing

Table 3-7
Sequential Part Number Listing

Spare Part Number	Description
309674-001	USB travel mouse
364727-001	USB digital drive
371693-001	Headset
403809-AB1	Keyboard for use in Taiwan
403810-001	65-watt AC adapter
403811-001	Power cord for use in the United States
403811-011	Power cord for use in Australia
403811-031	Power cord for use in the United Kingdom
403811-061	Power cord for use in Italy
403811-081	Power cord for use in Denmark
403811-111	Power cord for use in Sweden and Finland
403811-291	Power cord for use in Japan
403811-AB1	Power cord for use in Taiwan
403811-AD1	Power cord for use in Korea
403811-B31	Power cord for use internationally
403811-BB1	Power cord for use in Israel
403811-D61	Power cord for use in India

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description																																
407107-001	802.11b/g WLAN module for use in the United States and Canada																																
407107-002	802.11b/g WLAN module for use in the ROW countries listed below:																																
	<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">China</td> <td style="width: 25%;">Kuwait</td> <td style="width: 25%;">The United Arab Emirates</td> <td style="width: 25%;"></td> </tr> <tr> <td>Ecuador</td> <td>Pakistan</td> <td></td> <td></td> </tr> <tr> <td>Haiti</td> <td>Peru</td> <td>Ukraine</td> <td></td> </tr> <tr> <td>Honduras</td> <td>Qatar</td> <td>Uruguay</td> <td></td> </tr> <tr> <td>Israel</td> <td>South Korea</td> <td>Venezuela</td> <td></td> </tr> <tr> <td>Jordan</td> <td>Thailand</td> <td></td> <td></td> </tr> </table>	China	Kuwait	The United Arab Emirates		Ecuador	Pakistan			Haiti	Peru	Ukraine		Honduras	Qatar	Uruguay		Israel	South Korea	Venezuela		Jordan	Thailand										
China	Kuwait	The United Arab Emirates																															
Ecuador	Pakistan																																
Haiti	Peru	Ukraine																															
Honduras	Qatar	Uruguay																															
Israel	South Korea	Venezuela																															
Jordan	Thailand																																
407576-001	802.11a/b/g WLAN module for use in the MOW1 countries listed below:																																
	<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Antigua & Barbuda</td> <td style="width: 25%;">The Dominican Republic</td> <td style="width: 25%;">Malaysia</td> <td style="width: 25%;"></td> </tr> <tr> <td>Argentina</td> <td>Guam</td> <td>Mexico</td> <td></td> </tr> <tr> <td>Australia</td> <td>Guatemala</td> <td>New Zealand</td> <td></td> </tr> <tr> <td>Bahamas</td> <td>Hong Kong</td> <td>Paraguay</td> <td></td> </tr> <tr> <td>Barbados</td> <td>Panama</td> <td>Saudi Arabia</td> <td></td> </tr> <tr> <td>Brunei</td> <td>India</td> <td>Taiwan</td> <td></td> </tr> <tr> <td>Canada</td> <td>Indonesia</td> <td>The United States</td> <td></td> </tr> <tr> <td>Chile</td> <td></td> <td>Vietnam</td> <td></td> </tr> </table>	Antigua & Barbuda	The Dominican Republic	Malaysia		Argentina	Guam	Mexico		Australia	Guatemala	New Zealand		Bahamas	Hong Kong	Paraguay		Barbados	Panama	Saudi Arabia		Brunei	India	Taiwan		Canada	Indonesia	The United States		Chile		Vietnam	
Antigua & Barbuda	The Dominican Republic	Malaysia																															
Argentina	Guam	Mexico																															
Australia	Guatemala	New Zealand																															
Bahamas	Hong Kong	Paraguay																															
Barbados	Panama	Saudi Arabia																															
Brunei	India	Taiwan																															
Canada	Indonesia	The United States																															
Chile		Vietnam																															

Table 3-7

Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
407576-002	802.11a/b/g WLAN module for use in the MOW2 countries listed below:
	Aruba
	Austria
	Azerbaijan
	Bahrain
	Belgium
	Bermuda
	Bulgaria
	The Cayman Islands
	Colombia
	Croatia
	Cyprus
	The Czech Republic
	Denmark
	Egypt
	El Salvador
	Estonia
	Finland
	France
	Georgia
	Germany
	Greece
	Hungary
	Iceland
	Ireland
	Italy
	Latvia
	Lebanon
	The Philippines
	Poland
	Portugal
	Romania
	Russia
	Serbia and Montenegro
	Singapore
	Slovakia
	Liechtenstein
	Lithuania
	Luxembourg
	Malta
	Monaco
	The Netherlands
	Norway
	Oman
	Slovenia
	South Africa
	Spain
	Sri Lanka
	Sweden
	Switzerland
	Turkey
	The United Kingdom
	Uzbekistan

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
407576-003	802.11a/b/g WLAN module for use in the ROW countries listed below: <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <div style="width: 20%;">China</div> <div style="width: 20%;">Pakistan</div> <div style="width: 20%;">South Korea</div> </div> <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <div style="width: 20%;">Ecuador</div> <div style="width: 20%;">Peru</div> <div style="width: 20%;">Uruguay</div> </div> <div style="display: flex; justify-content: space-between; padding: 0 10px;"> <div style="width: 20%;">Haiti</div> <div style="width: 20%;">Qatar</div> <div style="width: 20%;">Venezuela</div> </div> <div style="padding: 0 10px;">Honduras</div>
407576-291	802.11a/b/g WLAN module for use in Japan
407780-001	Rubber Feet Kit for use with HP G3000 computer models (includes 8 computer feet for use on the base enclosure)
407781-001	Rubber Feet Kit for use with Compaq Presario C300 computer models (includes 8 computer feet for use on the base enclosure)
407785-001	Speakers
407797-001	Display Hinge Kit
407800-001	Display inverter board
407812-001	TouchPad bracket
407815-001	Base enclosure
407816-001	RTC battery (includes 2-sided tape)
407827-001	Switch cover for use with Compaq Presario C300 computer models
407856-001	Keyboard for use in the United States

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
407856-031	Keyboard for use in the United Kingdom
407856-041	Keyboard for use in Germany
407856-051	Keyboard for use in France
407856-061	Keyboard for use in Italy
407856-071	Keyboard for use in Spain
407856-111	Keyboard for use in Switzerland
407856-121	Keyboard for use in French Canada
407856-131	Keyboard for use in Portugal
407856-141	Keyboard for use in Turkey
407856-151	Keyboard for use in Greece
407856-161	Keyboard for use in Latin America
407856-171	Keyboard for use in Saudi Arabia
407856-221	Keyboard for use in the Czech Republic
407856-251	Keyboard for use in Russia
407856-281	Keyboard for use in Thailand
407856-291	Keyboard for use in Japan
407856-A41	Keyboard for use in Belgium
407856-AD1	Keyboard for use in Korea
407856-B31	Keyboard for use internationally

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
407856-BB1	Keyboard for use in Israel
407856-DH1	Keyboard for use in Denmark, Finland, Norway, and Sweden
407939-001	Composite S-Video and audio cable
407940-001	RF input adapter cable
407941-001	Analog TV tuner
408479-001	TV tuner remote control
408485-001	RF cable
408843-001	USB infrared receiver
409073-001	Heat sink assembly (includes thermal paste)
409079-001	USB/audio board (includes USB/audio board cable)
410055-001	Fan assembly (includes thermal paste)
410118-001	Wireless Antenna Kit (includes cable, transceivers, and tape)
412175-001	DVB-T TV tuner
412176-001	DVB-T TV tuner antenna
418162-001	Carrying case
430200-001	Intel Core Duo T1400 1.83-GHz processor (includes thermal paste)
430202-001	Intel Celeron 420 1.60-GHz processor (includes thermal paste)
430533-001	Display Cable Kit

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
430848-001	Intel Core Duo T2300 1.60-GHz processor (includes thermal paste)
430850-001	Intel Core Duo T2050 1.60-GHz processor (includes thermal paste)
430851-001	Intel Core Duo T2250 1.73-GHz processor (includes thermal paste)
435764-001	945GM system board
435765-001	940GML system board
435766-001	Intel Celeron 430 1.73-GHz processor (includes thermal paste)
435767-001	15.4-inch, WXGA display assembly with BrightView for use with HP G3000 computer models (includes display cable, wireless antenna transceivers, and antenna cables)
435768-001	15.4-inch, WXGA display assembly with BrightView for use with Compaq Presario C300 computer models (includes display cable, wireless antenna transceivers, and antenna cables)
435769-001	256 MB, PC2-4200, 1-DIMM, memory module
435770-001	512 MB, PC2-4200, 1-DIMM, memory module
435771-001	256-MB, PC2-5300, 1-DIMM, memory module
435772-001	512-MB, PC2-5300, 1-DIMM, memory module
435773-001	80-GB, 5400 rpm hard drive (includes bracket and connector)

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
435774-001	100-GB, 5400-rpm hard drive (includes bracket and connector)
435775-001	120-GB, 5400-rpm hard drive (includes bracket and connector)
435776-001	60-GB, 5400 rpm hard drive (includes bracket and connector)
435777-001	DVD±RW and CD-RW Super Multi Double-Layer Combo Drive
435778-001	DVD/CD-RW Combo Drive
435779-001	6-cell, 4.0-amp hour battery
435780-001	Screw Kit
435781-001	Cable Kit for use with HP G3000 computer models
435781-001	Cable Kit
435782-001	Switch cover for use with HP G3000 full-featured computer models
435784-001	LED board (includes LED board cable)
435786-001	Display Plastics Kit for use with HP G3000 computer models
435787-001	15.4-inch, WXGA with BrightView Display Panel Kit (includes display panel cable)
435788-001	Display Screw Kit
436184-001	Plastics Kit for use with HP G3000 computer models
436185-001	Plastics Kit for use with Compaq Presario C300 computer models

Table 3-7
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
436186-001	Cable Kit for use with Compaq Presario C300 computer models
436187-001	Switch cover for use with HP G3000 defeatured computer models
436188-001	Top cover
436189-001	Display release button assembly
436190-001	Display Plastics Kit for use with Compaq Presario C300 computer models
436191-001	Display Label Kit for use with HP G3000 computer models
436192-001	Display Label Kit for use with Compaq Presario C300 computer models
436238-001	Wired optical mouse

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 and P1 screwdrivers
- Flat-bladed screwdriver

4.2 Service Considerations

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



As you remove each subassembly from the computer, 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 computer, ensure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the computer.

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 computer, damage to a removable drive, or loss of information, observe the following precautions:

- Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in hibernation, turn the computer 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

5

Removal and Replacement Procedures

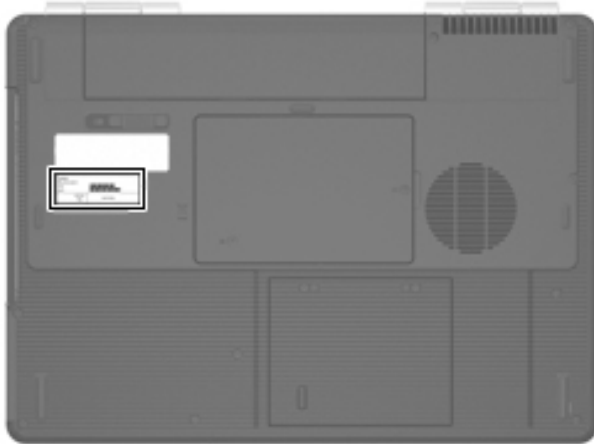
This chapter provides removal and replacement procedures.

There are as many as 84 screws, in 10 different sizes, that may have to be removed, replaced, or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

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

5.1 Serial Number

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




Serial Number Location

5.2 Disassembly Sequence Chart

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

Disassembly Sequence Chart

Section	Description	# of Screws Removed
5.3	Preparing the Computer for Disassembly	
	Battery	0
5.4	Hard Drive	2 loosened to remove the hard drive cover 4 to disassemble the hard drive
5.5	Computer Feet	0
5.6	Memory Module	1 loosened to remove the memory/Mini Card module compartment cover
5.7	Mini Card Module	2
	 To prevent an unresponsive system and the display of a warning message, install only a Mini Card device authorized for use in your computer 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 computer functionality. Then contact Customer Care.	
5.8	RTC Battery	0

Disassembly Sequence Chart (*Continued*)

Section	Description	# of Screws Removed
5.9	Optical Drive	1 to remove the optical drive 2 to remove the optical drive bracket
5.10	Switch Cover	2
5.11	Keyboard	4
5.12	Display Assembly	6 to remove the display assembly 6 to remove the display bezel 2 to remove the display hinge base covers 4 to remove the display panel 2 to remove the display release hook 4 to remove each display hinge 1 to remove each wireless antenna transceiver
5.13	Base Enclosure	18
5.14	System Board	2
5.15	Display Release Button Assembly	6
5.16	LED Board	2
5.17	Fan/Heat Sink Assembly	7
5.18	Processor	1 loosened

5.3 Preparing the Computer for Disassembly

Before you begin any removal or installation procedures:

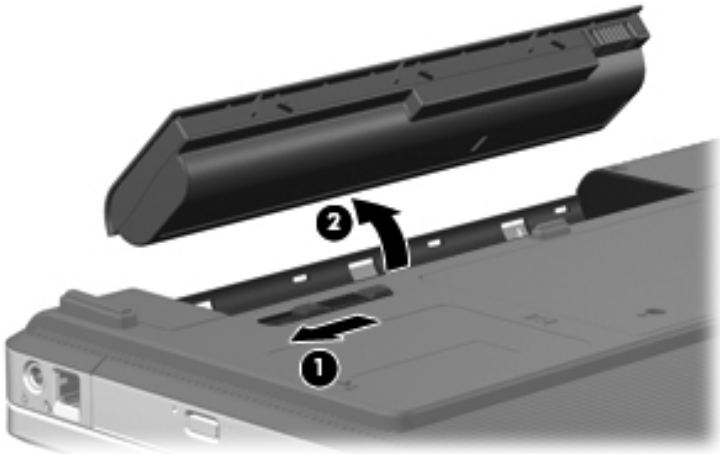
1. Shut down the computer. If you are unsure whether the computer is off or in hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power cord.

Battery Spare Part Number Information

6-cell, 4.0-Amp hour

435779-001

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



Removing the Battery

Reverse the above procedure to install the battery.

5.4 Hard Drive

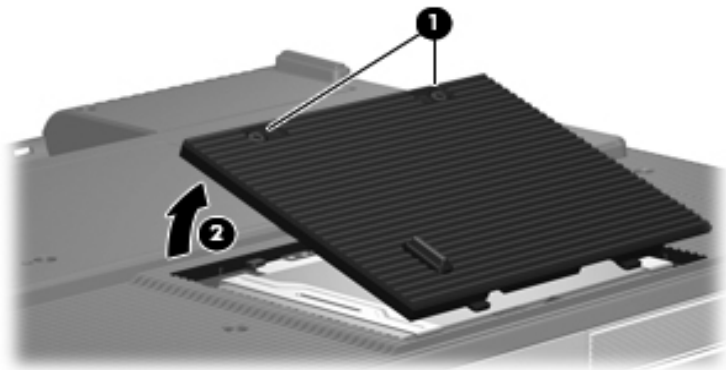
Hard Drive Spare Part Number Information

5400 rpm, 120-GB	435775-001
5400 rpm, 100-GB	435774-001
5400 rpm, 80-GB	435773-001
5400 rpm, 60-GB	435776-001

1. Prepare the computer for disassembly (refer to [Section 5.3](#)).
2. Loosen the two Phillips PM2.5×5.0 captive screws **1** that secure the hard drive cover to the computer.
3. Lift the rear edge of the hard drive cover **2**, and then swing it up and forward and remove it.

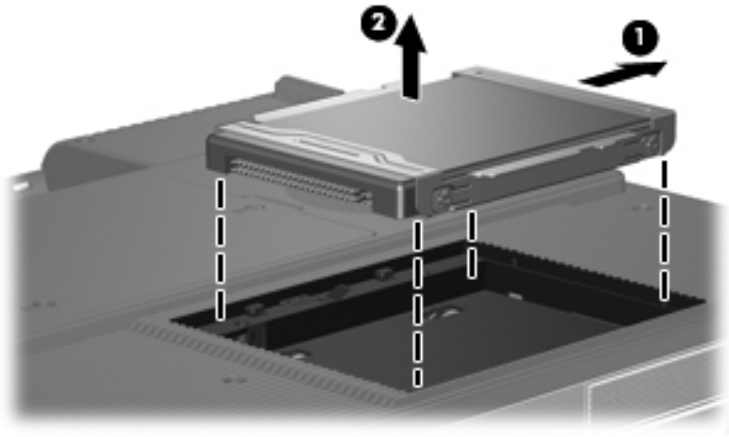


The hard drive cover is included in the Plastics Kits, spare part numbers 436184-001 (for use with HP G3000 computer models) and 436185-001 (for use with Compaq Presario C300 computer models).



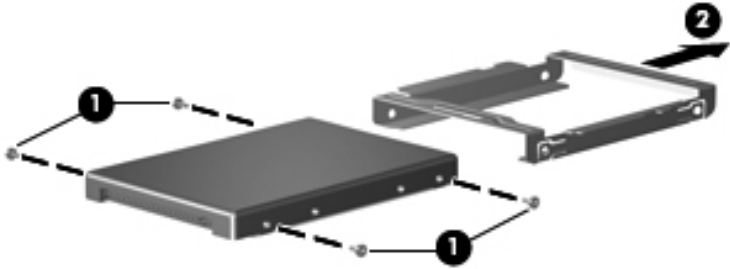
Removing the Hard Drive Cover

4. Slide the hard drive **1** to the right, and then lift the hard drive **2** from the hard drive bay.



Removing the Hard Drive

5. Remove the four Phillips PM3.0×4.0 hard drive bracket screws ❶ that secure the hard drive bracket to the hard drive.
6. Slide the bracket ❷ away from the hard drive to remove it.

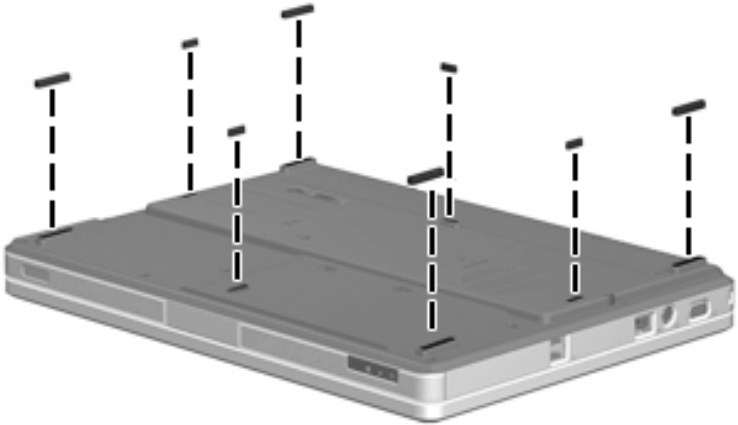


Removing the Hard Drive Bracket

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

5.5 Computer Feet

The computer feet are adhesive-backed rubber pads. The feet are included in the Rubber Feet Kits, spare part numbers 407780-001 (for use with HP G3000 computer models) and 407781-001 (for use with Compaq Presario C300 computer models).



Replacing the Computer Feet

5.6 Memory Module

Memory Module Spare Part Number Information

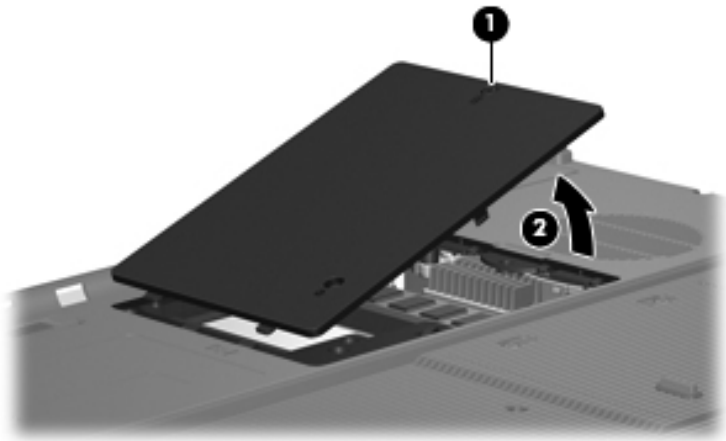
PC2-5300, 1-DIMM	
512 MB	435772-001
256 MB	435771-001
PC2-4200, 1-DIMM	
512 MB	435770-001
256 MB	435769-001

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

2. Loosen the Phillips PM2.5×5.0 captive screw ❶ that secures the memory/Mini Card module compartment cover to the computer.
3. Lift the right side of the cover ❷ and swing it up and to the left and remove it.



The memory/Mini Card module compartment cover is included in the Plastics Kits, spare part numbers 436184-001 (for use with HP G3000 computer models) and 436185-001 (for use with Compaq Presario C300 computer models).

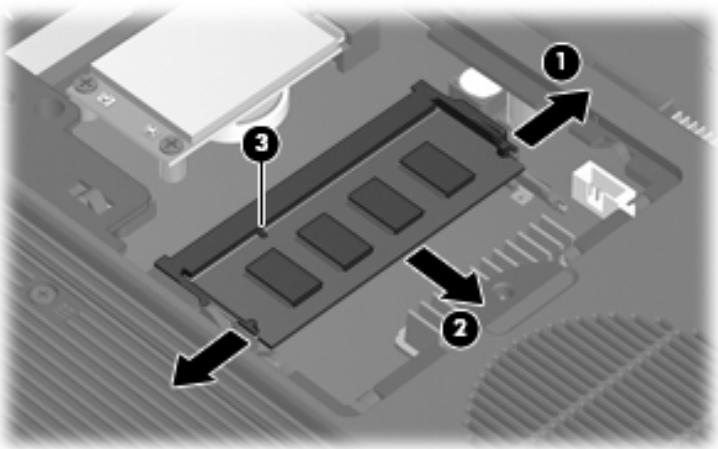


Removing the Memory/Mini Card Module Compartment Cover

4. Spread the retaining tabs ❶ on each side of the memory module socket to release the memory module. (The edge of the module opposite the socket rises away from the computer.)
5. Remove the memory module by pulling the module away from the socket at an angle ❷.



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 Card Module

Mini Card Module

Spare Part Number Information

802.11a/b/g WLAN module for use in the MOW1 countries listed below: 407576-001

Antigua & Barbuda	Chile	Panama	Paraguay
Argentina	Dominican Republic	India	Saudi Arabia
Australia		Indonesia	Taiwan
Bahamas	Guam	Malaysia	The United States
Barbados	Guatemala	Mexico	
Brunei	Hong Kong	New Zealand	Vietnam
Canada			

802.11a/b/g WLAN module for use in the MOW2 countries listed below: 407576-002

Aruba	Estonia	Poland	Norway
Austria	Finland	Portugal	Oman
Azerbaijan	France	Romania	Slovenia
Bahrain	Georgia	Russia	South Africa
Belgium	Germany	Serbia and Montenegro	Spain
Bermuda	Greece	Singapore	Sri Lanka
Bulgaria	Hungary	Slovakia	Sweden
Cayman Islands	Iceland	Liechtenstein	Switzerland
Colombia	Ireland	Lithuania	Turkey
Croatia	Italy	Luxembourg	The United Kingdom
Cyprus	Latvia	Malta	
Czech Republic	Lebanon	Monaco	Uzbekistan
Denmark	The Philippines	The Netherlands	
Egypt			
El Salvador			

Mini Card Module

Spare Part Number Information *(Continued)*

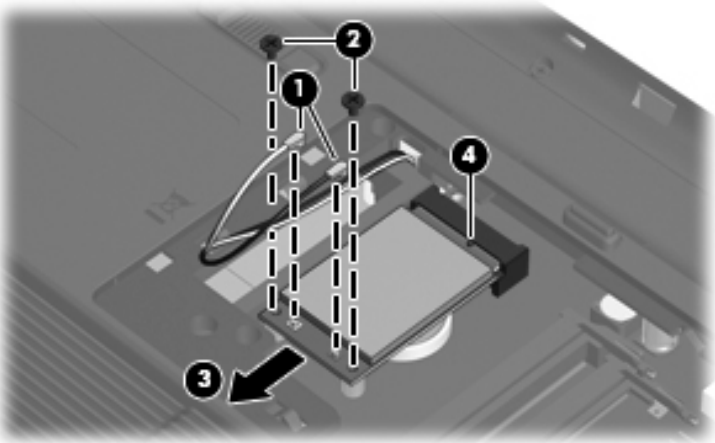
802.11a/b/g WLAN module for use in the ROW countries listed below:			407576-003
China	Honduras	Qatar	Uruguay
Ecuador	Pakistan	South Korea	Venezuela
Haiti	Peru		
802.11a/b/g WLAN module for use in Japan			407576-291
802.11b/g WLAN module for use in the United States and Canada			407107-001
802.11b/g WLAN module for use in the ROW countries listed below:			407107-002
China	Jordan	South Korea	Ukraine
Ecuador	Kuwait	Thailand	Uruguay
Haiti	Pakistan	The United Arab Emirates	Venezuela
Honduras	Peru		
Israel	Qatar		

1. Prepare the computer for disassembly ([Section 5.3](#)).
2. Remove the memory/Mini Card module compartment cover ([Section 5.6](#)).

3. Make note of which antenna cable is attached to which antenna clip on the Mini Card module, and then disconnect the auxiliary and main antenna cables ❶ from the Mini Card module.
4. Remove the two Phillips PM2.0×4.0 screws ❷ that secure the Mini Card module to the computer.
5. Remove the Mini Card module by pulling the module away from the socket at an angle ❸.



Mini Card modules are designed with a notch ❹ to prevent incorrect installation into the Mini Card module socket.



Removing a Mini Card Module

Reverse the above procedure to install a Mini Card module.

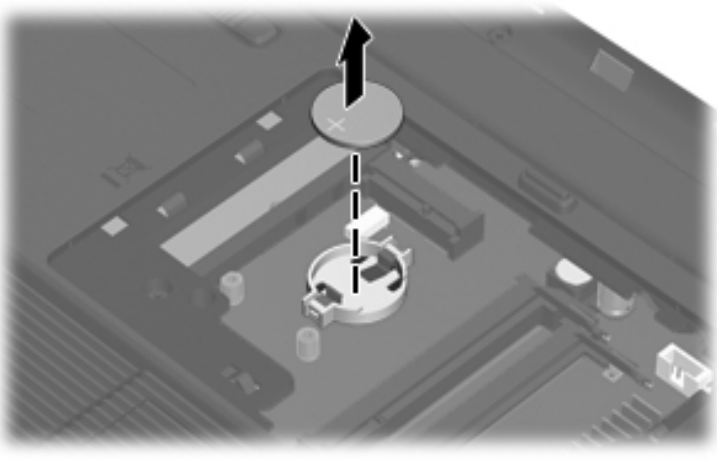
5.8 RTC Battery

RTC Battery Spare Part Number Information

RTC battery (includes tape)

407816-001

1. Prepare the computer for disassembly ([Section 5.3](#)).
2. Remove the memory/Mini Card module compartment cover ([Section 5.6](#)).
3. Remove the Mini Card communications module ([Section 5.7](#)).
4. Remove the RTC battery from the socket on the system board.



Removing the RTC Battery

Reverse the above procedure to install an RTC battery.

5.9 Optical Drive

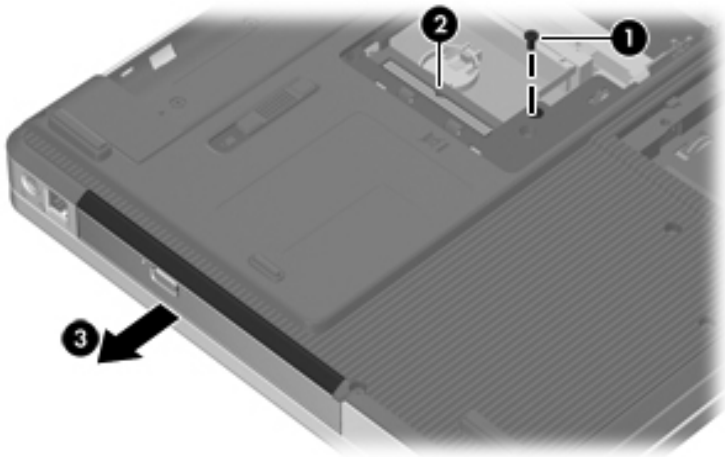
Optical Drive Spare Part Number Information

DVD±RW and CD-RW Super Multi Double-Layer Combo Drive	435777-001
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DVD/CD-RW Combo Drive	435778-001
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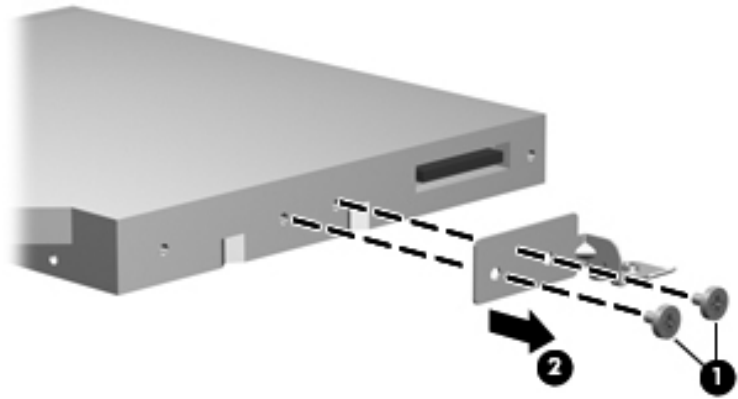
1. Prepare the computer for disassembly ([Section 5.3](#)).
2. Position the computer with the left side toward you.

3. Remove the Phillips PM2.5×5.0 screw **1** that secures the optical drive to the computer.
4. Insert a thin tool into the notch **2** on the back of the optical drive and push to disconnect the optical drive from the system board.
5. Remove the optical drive **3**.



Removing the Optical Drive

6. If it is necessary to replace the optical drive bracket, perform the following steps:
 - a. Position the optical drive with the connector toward you.
 - b. Remove the two Phillips PM2.0×4.0 screws ❶ that secure the optical drive bracket to the optical drive.
 - c. Remove the optical drive bracket ❷.



Removing the Optical Drive Bracket

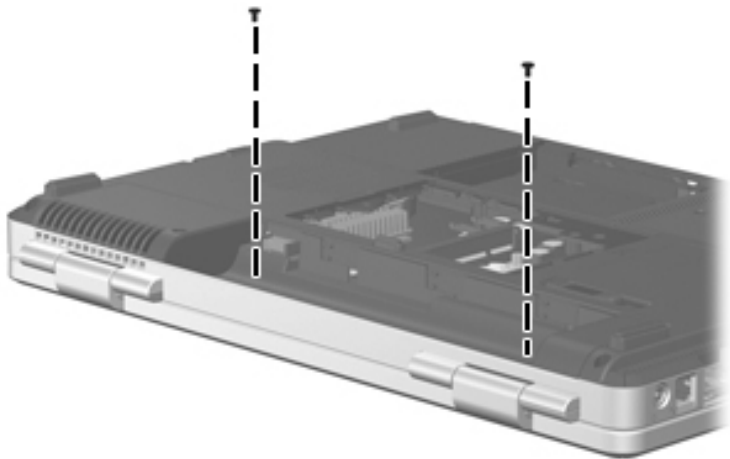
Reverse the above procedure to install an optical drive.

5.10 Switch Cover

Switch Cover Spare Part Number Information

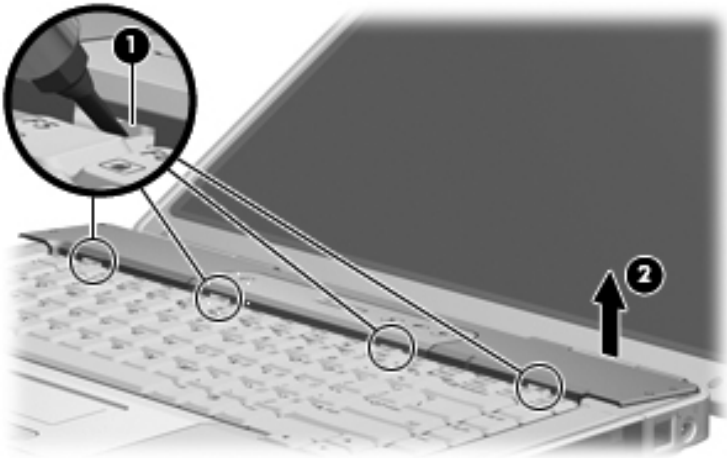
For use with HP G3000 full-featured computer models	435782-001
For use with HP G3000 defeatured computer models	436187-001
For use with Compaq Presario C300 computer models	407827-001

1. Prepare the computer for disassembly ([Section 5.3](#)).
2. Remove the two Phillips PM2.5×5.0 screws that secure the switch cover to the computer.



Removing the Switch Cover Screws

3. Turn the computer display-side up with the front toward you.
4. Open the computer as far as possible.
5. Insert a flat-bladed tool into the switch cover notches behind the **f1**, **f5**, **f11**, and **insert** keys ❶ and lift up until the switch cover ❷ disengages from the computer.
6. Remove the switch cover.



Removing the Switch Cover

Reverse the above procedure to install the switch cover.

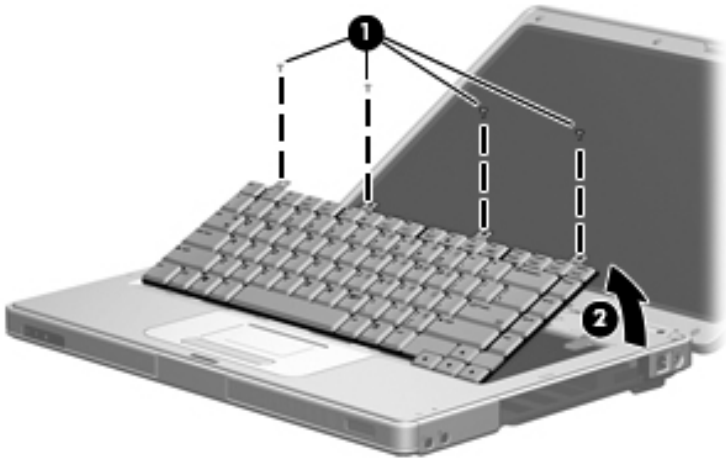
5.11 Keyboard

Keyboard Spare Part Number Information

Belgium	407856-A41	Korea	407856-AD1
The Czech Republic	407856-221	Latin America	407856-161
Denmark, Finland, Norway, Sweden	407856-DH1	Portugal	407856-131
France	407856-051	Russia	407856-251
French Canada	407856-121	Saudi Arabia	407856-171
Germany	407856-041	Spain	407856-071
Greece	407856-151	Switzerland	407856-111
International	407856-B31	Taiwan	403809-AB1
Israel	407856-BB1	Thailand	407856-281
Italy	407856-061	Turkey	407856-141
Japan	407856-291	The United Kingdom	407856-031
		The United States	407856-001

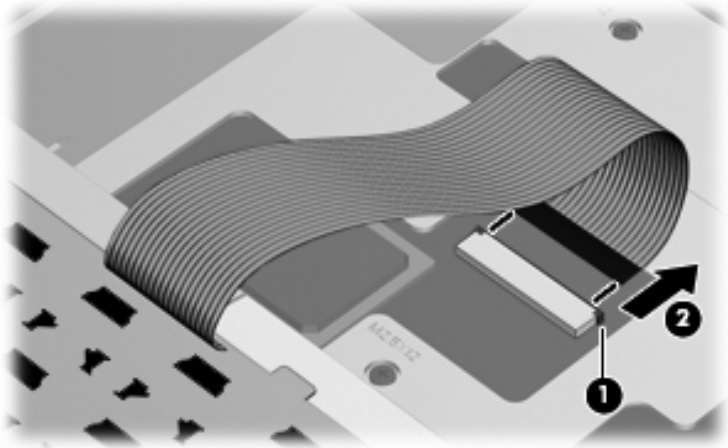
1. Prepare the computer for disassembly ([Section 5.3](#)).
2. Remove the switch cover ([Section 5.10](#)).

3. Remove the four Phillips PM2.5×5.0 screws **1** that secure the keyboard to the computer.
4. Lift the rear edge of the keyboard **2** and swing it forward until it rests on the palm rest.



Releasing the Keyboard

5. Release the zero insertion force (ZIF) connector to which the keyboard cable ❶ is attached and disconnect the keyboard cable ❷.



Removing the Keyboard

6. Remove the keyboard assembly.

Reverse the above procedure to install the keyboard.

5.12 Display Assembly

Display Assembly Spare Part Number Information



All display assemblies include a display cable, wireless antenna transceivers, and antenna cables.

15.4-inch, WXGA display assembly with BrightView (includes display cable, wireless antenna transceivers, and antenna cables)

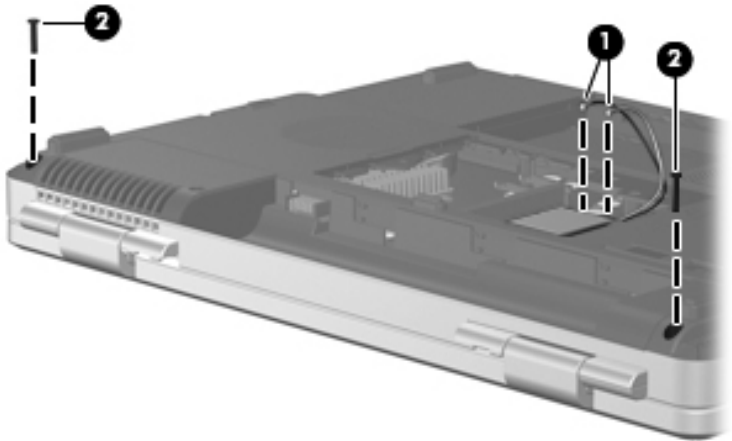
For use with HP G3000 computer models	435767-001
For use with Compaq Presario C300 computer models	435768-001

1. Prepare the computer for disassembly ([Section 5.3](#)).
2. Remove the memory/Mini Card module compartment cover ([Section 5.6](#)).



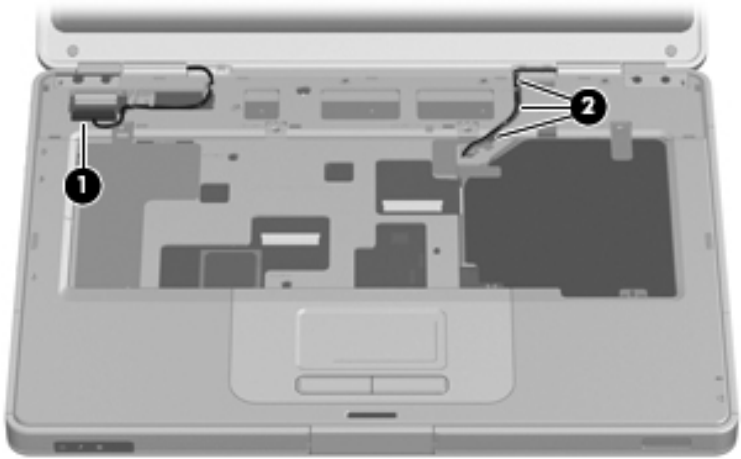
Before disconnecting the antenna cables, make note of which cable is attached to which antenna clip on the Mini Card module.

3. Disconnect the auxiliary and main wireless antenna cables **1** from the Mini Card module.
4. Remove the two Phillips PM2.5×13.0 screws **2** that secure the display assembly to the computer.



Disconnecting the Wireless Antenna Cables and Removing the Display Screws

5. Remove the switch cover ([Section 5.10](#)).
6. Remove the keyboard ([Section 5.11](#)).
7. Disconnect the display cable ❶ from the system board.
8. Remove the wireless antenna cables from the clips ❷ in the top cover.

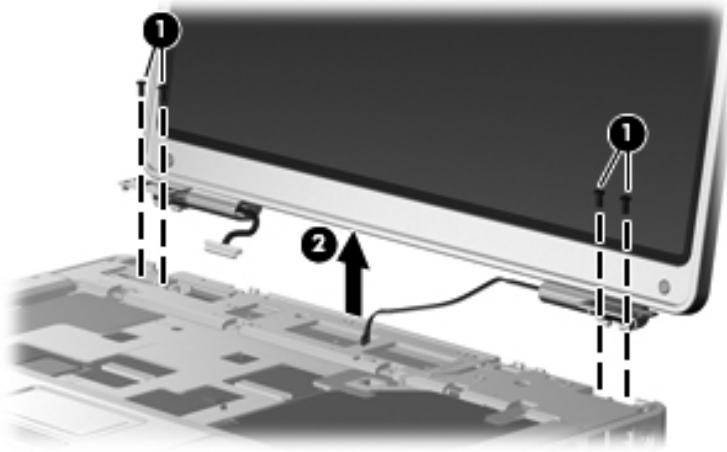


Disconnecting the Display and Wireless Antenna Cables



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 computer components.

9. Remove the four Phillips PM2.5×9.0 screws ❶ that secure the display assembly to the computer.
10. Lift the display assembly straight up and remove it ❷.



Removing the Display Assembly

Display Assembly Subcomponents

Spare Part Number Information

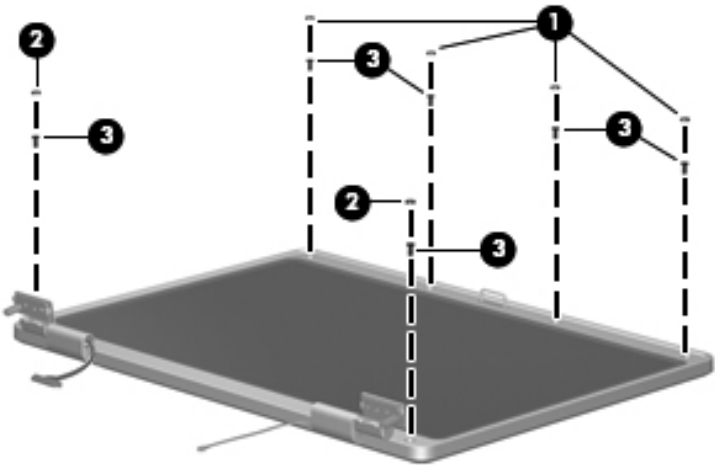
Display Plastics Kit	
For use with HP G3000 computer models	435786-001
For use with Compaq Presario C300 computer models	436190-001
■ Display bezel	
■ Display enclosure	
■ Display hinge base covers	
■ Display hinge covers	
Display Hinge Kit (includes display hinges and display release hook)	407797-001
Display inverter board	407800-001
15.4-inch, WXGA with BrightView Display Panel Kit (includes display panel cable)	435787-001
Wireless Antenna Kit (includes cable, transceivers, and tape)	410118-001
Display Label Kits	
For use with HP G3000 computer models	436191-001
For use with Compaq Presario C300 computer models	436192-001
Display Cable Kit	430533-001
Display Screw Kit	435788-001
■ Phillips PM2.5x7.0 screws	
■ Phillips PM2.0x4.0 screws	
■ Rubber screw covers	

11. Remove the six rubber screw covers **1** and **2** and the six Phillips PM2.5×7.0 screws **3** that secure the display bezel to the display assembly.



The rubber screw covers are available in the Display Screw Kit, spare part number 435788-001.

The four rubber screw covers **1** on the top edge of the display bezel are a different size and shape than the two rubber screw covers **2** on the bottom edge of the display bezel.

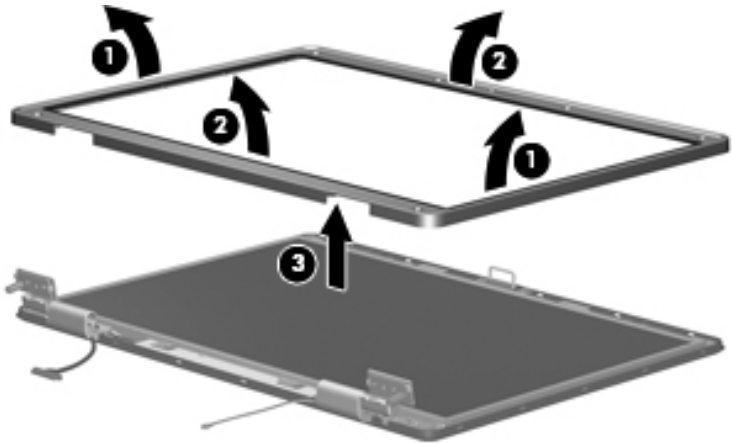


Removing the Display Bezel Screws



The display bezel and display enclosure are available in the Display Plastics Kits, spare part numbers 436190-001 (for use with HP G3000 computer models) and 407793-001 (for use with Compaq Presario C300 computer models).

12. Flex the inside edges of the left and right sides **①** and the top and bottom sides **②** of the display bezel until the bezel disengages from the display enclosure.
13. Remove the display bezel **③**.



Removing the Display Bezel

14. Disconnect the display panel cable ❶ and display backlight cable ❷ from the display inverter board.

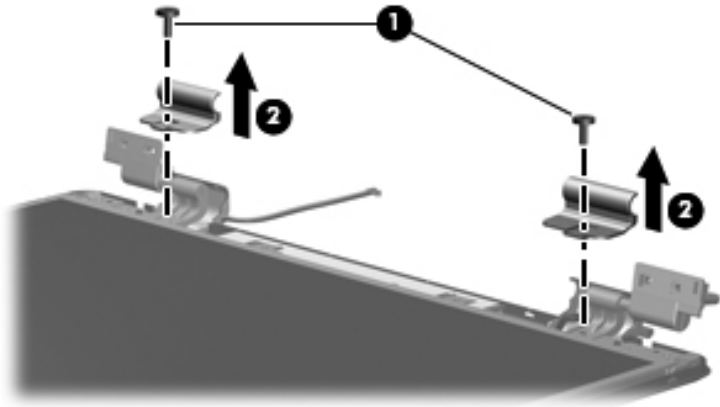


Disconnecting the Display Panel Cables



The display hinge base covers are available in the Display Plastics Kits, spare part numbers 436190-001 (for use with HP G3000 computer models) and 407793-001 (for use with Compaq Presario C300 computer models).

15. If it is necessary to replace the display hinge base covers, remove the two Phillips PM2.5×5.0 screws **1** that secure the covers to the display enclosure.
16. Remove the display hinge base covers **2**.



Removing the Display Hinge Base Covers

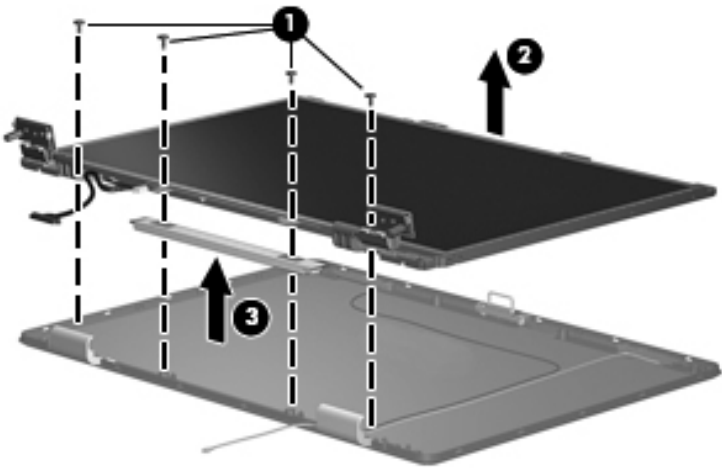
Display Assembly Subcomponents

Spare Part Number Information

15.4-inch, WXGA with BrightView Display Panel Kit (includes display panel cable)	435787-001
---	------------

Display inverter board	407800-001
------------------------	------------

17. Remove the four Phillips PM2.5×5.0 screws **1** that secure the display panel and inverter board to the display enclosure.
18. Remove the display panel **2** and inverter board **3**.

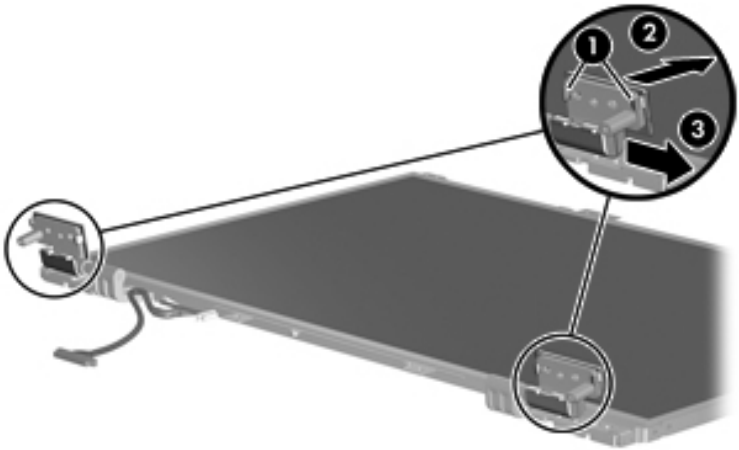


Removing the Display Panel and Inverter Board



The display hinge covers are available in the Display Plastics Kits, spare part numbers 436190-001 (for use with HP G3000 computer models) and 407793-001 (for use with Compaq Presario C300 computer models).

19. If it is necessary to replace either of the display hinge covers, detach the display hinge cover clips **1** from the display hinge.
20. Swing the display hinge cover **2** back until it clears the display hinge.
21. Slide the hinge cover **3** off of the display hinge.

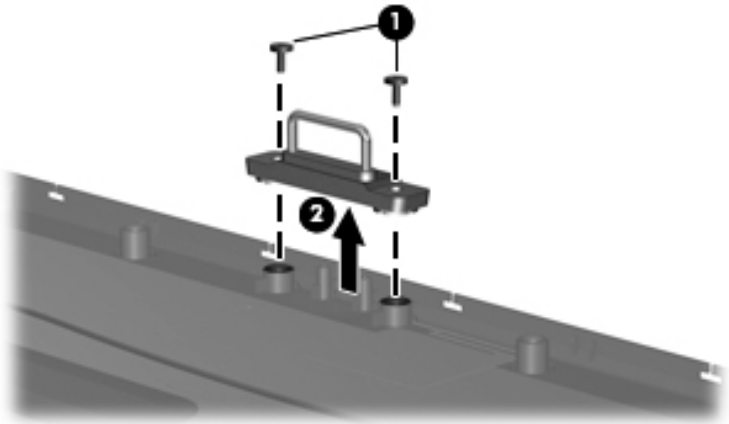


Removing the Display Hinge Covers



The display release hook is available in the Display Hinge Kit, spare part number 407797-001.

22. If it is necessary to replace the display release hook, remove the two PM2.5×5.0 screws **1** that secure the hook to the display enclosure.
23. Remove the display release hook **2**.

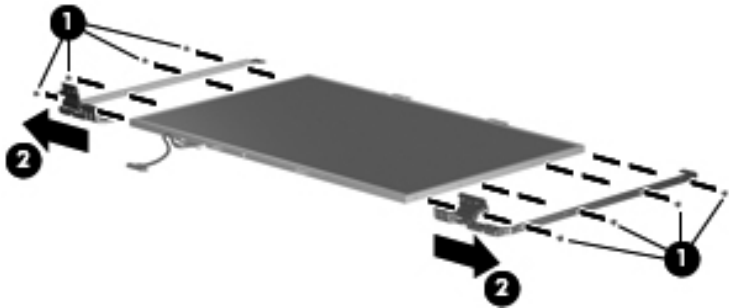


Removing the Display Release Hook



The display hinges are available in the Display Hinge Kit, spare part number 407797-001.

24. If it is necessary to replace the display hinges, remove the four Phillips PM2.0×4.0 screws **1** that secure each hinge to the display panel.
25. Remove the display hinges **2**.

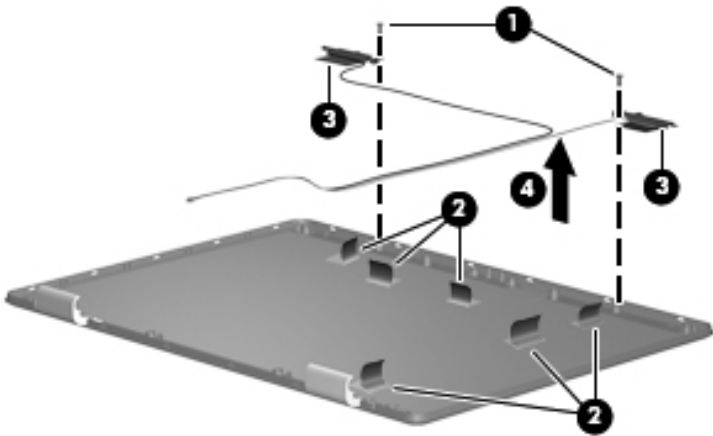


Removing the Display Hinges



The wireless antenna transceivers and cables are available in the Wireless Antenna Kit, spare part number 410118-001.

26. If it is necessary to replace the wireless antenna transceivers and cables, remove the Phillips PM2.5×5.0 screws ❶ that secure the wireless antenna transceivers to the display enclosure.
27. Release the retention tabs ❷ built into the display enclosure lining that secure the wireless antenna cables to the display enclosure.
28. Detach the wireless antenna transceivers ❸ from the display enclosure.
29. Remove the wireless antenna transceivers and cables ❹.



Removing the Wireless Antenna Transceivers and Cables

Reverse the above procedure to reassemble and install the display assembly.

5.13 Base Enclosure

Base Enclosure

Spare Part Number Information

Base enclosure	407815-001
-----------------------	------------

Rubber Feet Kits (include 8 computer feet for use on the base enclosure)

For use with HP G3000 computer models	407780-001
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For use with Compaq Presario C300 computer models	407781-001
---	------------

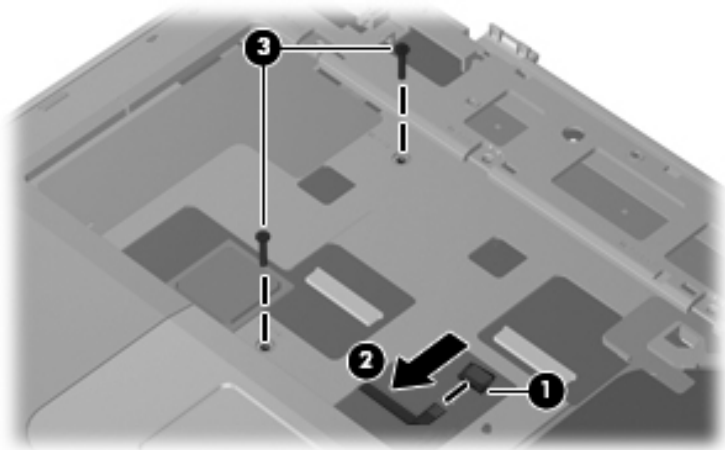
1. Prepare the computer for disassembly ([Section 5.3](#)) and then remove the following components:
 - a. Hard drive ([Section 5.4](#))
 - b. Memory/Mini Card module compartment cover ([Section 5.6](#))
 - c. Optical drive ([Section 5.9](#))
 - d. Switch cover ([Section 5.10](#))
 - e. Keyboard ([Section 5.11](#))
 - f. Display assembly ([Section 5.12](#))

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



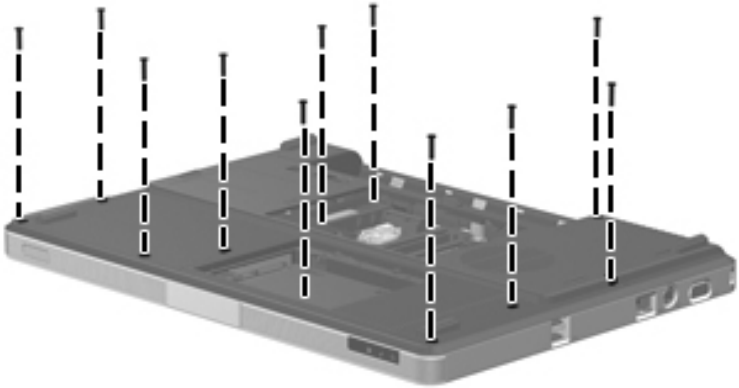
The TouchPad cable is included in the Cable Kit, spare part number 435781-001.

3. Remove the two Phillips PM2.5×13.0 screws ❸ that secure the base enclosure to the computer.



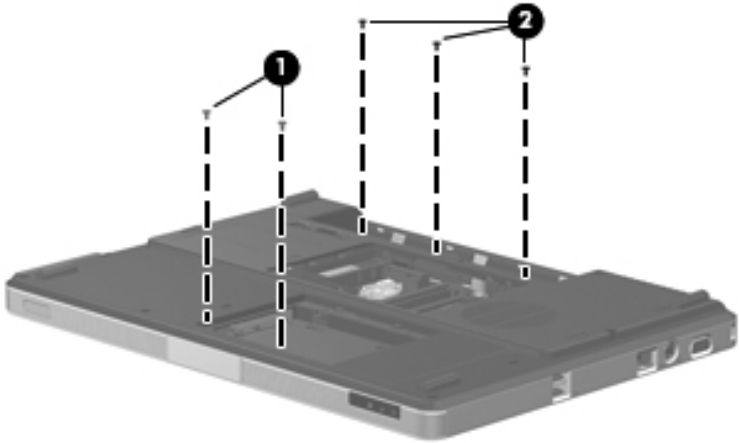
Disconnecting the TouchPad Cable and Removing the Base Enclosure Screws, Part 1

4. Turn the computer upside down with the front toward you.
5. Remove the eleven Phillips PM2.5×13.0 screws that secure the base enclosure to the computer.



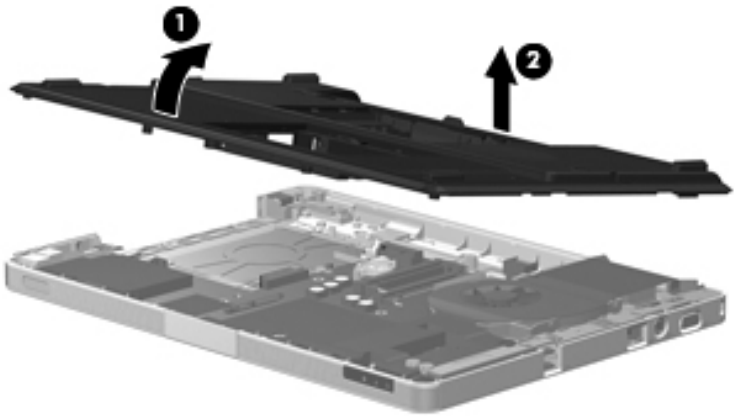
Removing the Base Enclosure Screws, Part 2

6. Remove the two Phillips PM2.5×5.0 screws ❶ in the hard drive bay and the three Phillips PM2.5×5.0 screws ❷ in the battery bay that secure the base enclosure to the computer.



Removing the Base Enclosure Screws, Part 3

7. Lift up the front edge of the base enclosure ❶ until it disengages from the top cover.
8. Lift the base enclosure ❷ straight up and remove it.



Removing the Base Enclosure

Reverse the above procedure to install the base enclosure.

5.14 System Board

System Board Spare Part Number Information

945GM	435764-001
940GML	435765-001

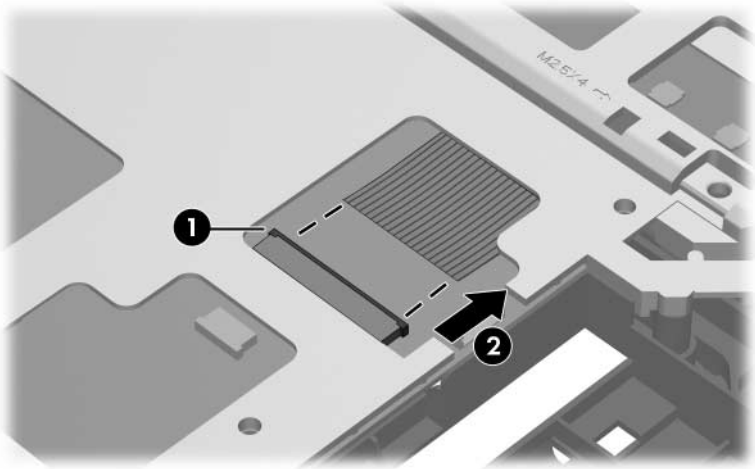


When replacing the system board, ensure that the following components are removed from the defective system board and installed on the replacement system board:

- Memory modules ([Section 5.6](#))
 - Mini Card communications module ([Section 5.7](#))
 - RTC battery ([Section 5.8](#))
 - Power connector cable ([Section 5.14](#))
 - Heat sink ([Section 5.17](#))
 - Processor ([Section 5.18](#))
 - Fan/heat sink assembly ([Section 5.17](#))
-

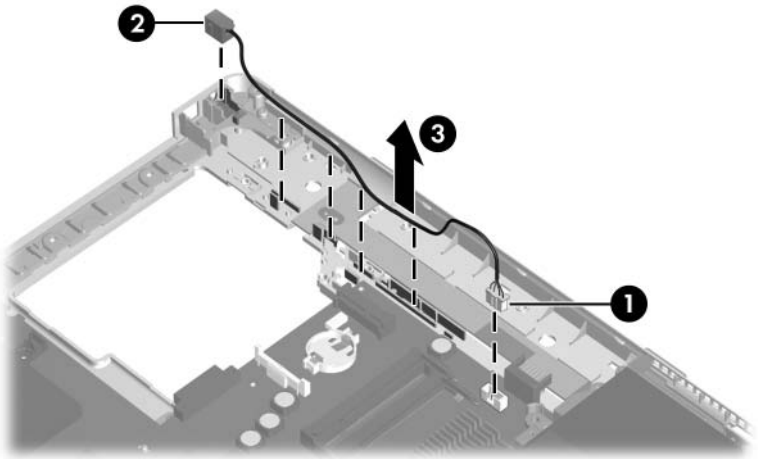
1. Prepare the computer for disassembly ([Section 5.3](#)), and then remove the following components:
 - a. Hard drive ([Section 5.4](#))
 - b. Memory/Mini Card module compartment cover ([Section 5.6](#))
 - c. Optical drive ([Section 5.9](#))
 - d. Switch cover ([Section 5.10](#))
 - e. Keyboard ([Section 5.11](#))
 - f. Display assembly ([Section 5.12](#))
 - g. Base enclosure ([Section 5.13](#))
2. Turn the top cover right-side up with the front toward you.

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



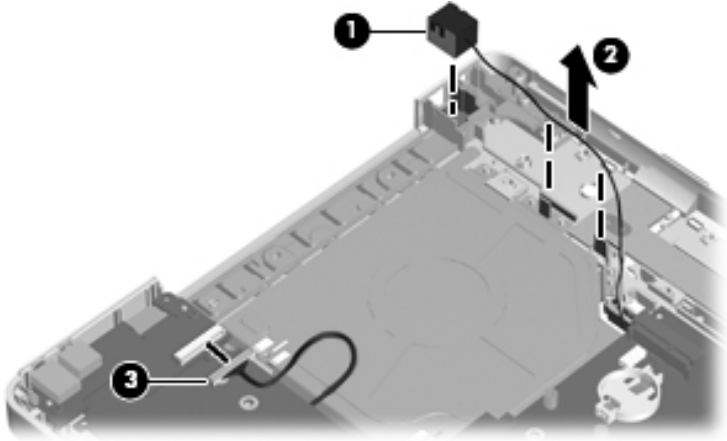
Disconnecting the LED Board Cable

4. Turn the top cover upside down with the front toward you.
5. Disconnect the power connector cable ❶ from the system board.
6. Remove the power connector ❷ from the clip in the base enclosure and remove the cable from the routing channel ❸ in the top cover.



Removing the Power Connector Cable

7. Remove the modem connector **1** from the clip in the top cover and remove the modem connector cable **2** from the routing channel in the top cover.
8. Disconnect the USB/audio board cable **3** from the USB/audio board.

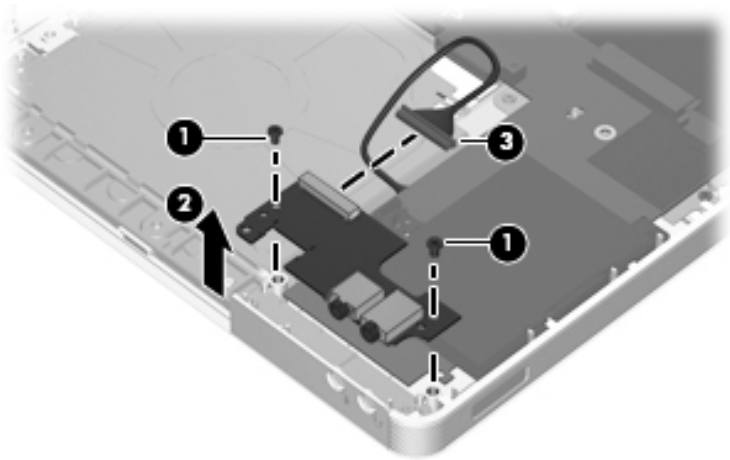


Removing the Modem Connector Cable

9. Remove the two PM2.5×5.0 screws ❶ that secure the system board and USB/audio board to the top cover.
10. Remove the USB/audio board ❷ from the top cover.
11. If it is necessary to replace the USB/audio board cable, disconnect the cable ❸ from the USB/audio board.

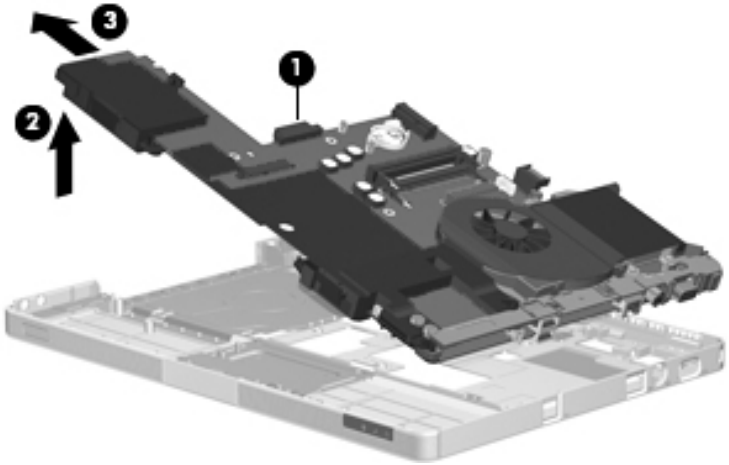


The USB/audio board is available using spare part number 409079-001. The USB/audio board cable is included with the USB/audio board and is also available in the Cable Kits, spare part numbers 435781-001 (for use with HP G3000 computer models) and 436186-001 (for use with Compaq Presario C300 computer models).



Removing the USB/Audio Board

12. Use the optical drive connector **1** to lift the left side of the system board **2** until it clears the top cover.
13. Slide the system board **3** to the left at an angle and remove it.



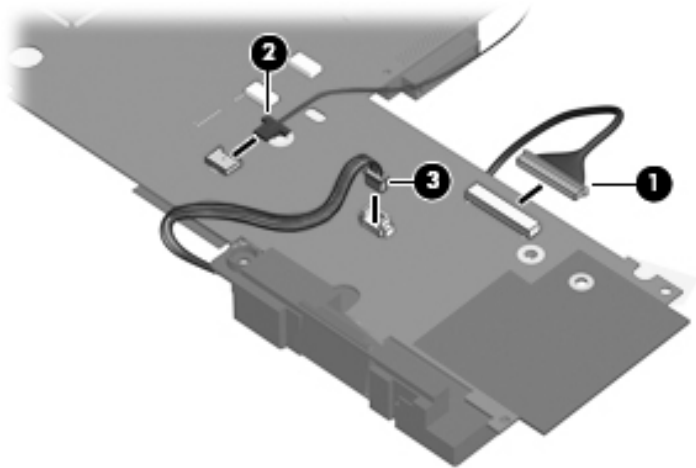
Removing the System Board

14. Position the system board with the battery connector toward you.
 15. Disconnect the following cables from the system board:
 - ❶ USB/audio board cable
 - ❷ Modem cable
 - ❸ Speaker cable
-



The USB/audio board cable is included with the USB/audio board and is also available in the Cable Kit, spare part number 407774-001.

The modem connector cable is available in the Cable Kits, spare part numbers 435781-001 (for use with HP G3000 computer models) and 436186-001 (for use with Compaq Presario C300 computer models).

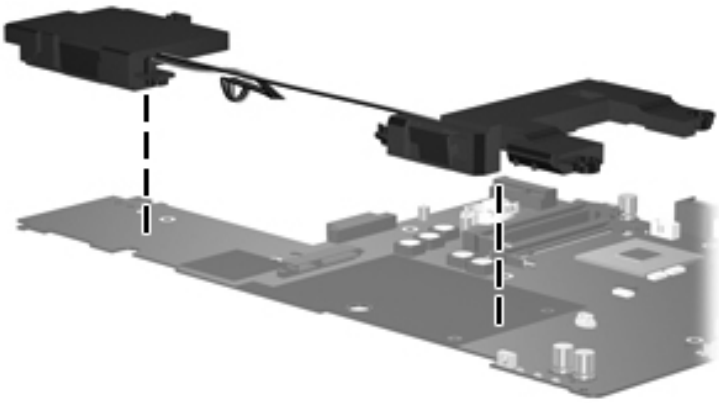


Disconnecting the USB/Audio Board, Speaker, and Modem Cables

16. Set the USB/audio board cable and modem connector cable aside.
17. Lift the system board and separate the speakers from the system board.



The speakers are available using spare part number 407785-001.



Removing the Speakers

Reverse the above procedure to install the system board.

5.15 Display Release Button Assembly

Display Release Button Assembly

Spare Part Number Information

Display release button assembly

436189-001

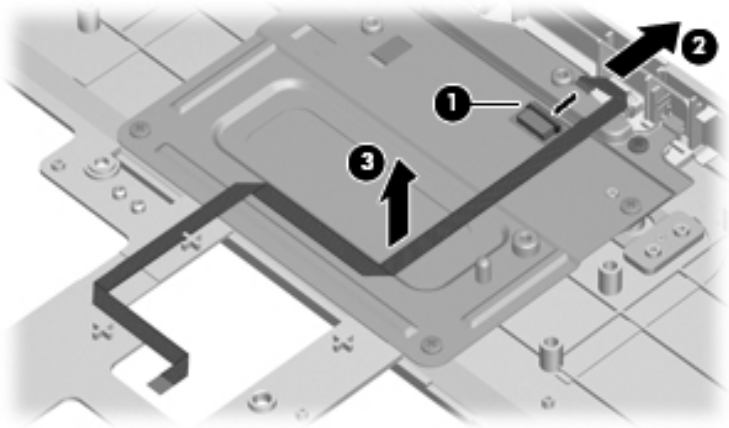
1. Prepare the computer for disassembly ([Section 5.3](#)) and then remove the following components:
 - a. Hard drive ([Section 5.4](#))
 - b. Memory/Mini Card module compartment cover ([Section 5.6](#))
 - c. Optical drive ([Section 5.9](#))
 - d. Switch cover ([Section 5.10](#))
 - e. Keyboard ([Section 5.11](#))
 - f. Display assembly ([Section 5.12](#))
 - g. Base enclosure ([Section 5.13](#))

2. Release the ZIF connector ❶ on the TouchPad board to which the TouchPad cable is connected and disconnect the TouchPad cable ❷ from the TouchPad board.



The TouchPad cable is included in the Cable Kits, spare part numbers 435781-001 (for use with HP G3000 computer models) and 436186-001 (for use with Compaq Presario C300 computer models).

3. Remove the TouchPad cable ❸.

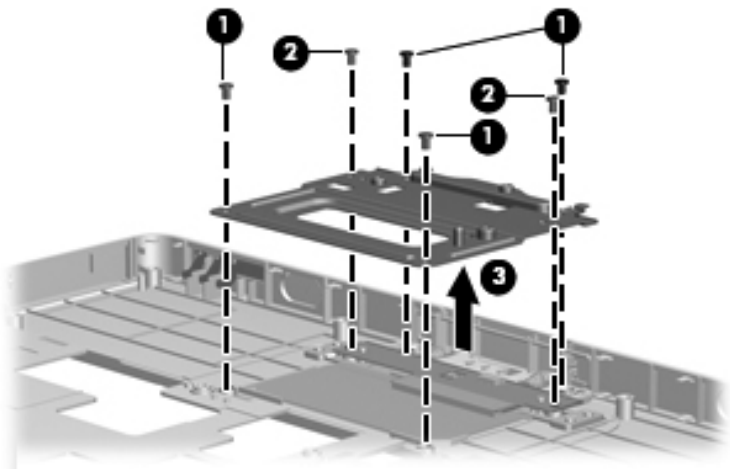


Removing the TouchPad Cable

4. Remove the four silver Phillips PM2.5×4.0 screws ❶ and the two Phillips PM2.5×5.0 screws ❷ that secure the TouchPad bracket to the top cover.
5. Remove the TouchPad bracket ❸.

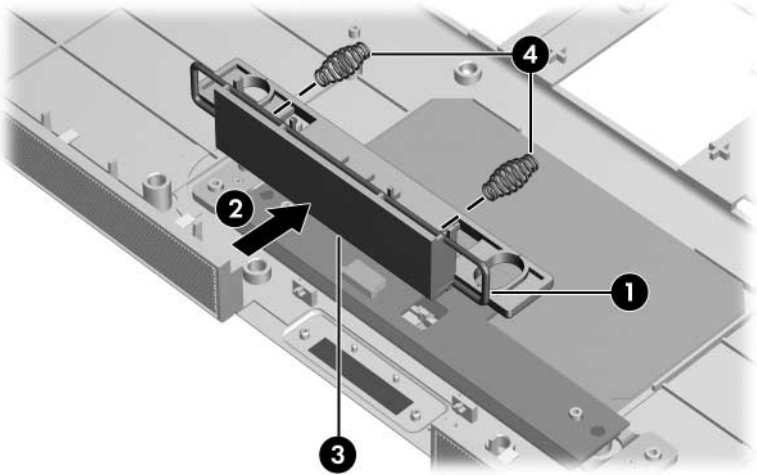


The TouchPad bracket is available using spare part number 407812-001.



Removing the TouchPad Bracket

6. Remove the display release button swing arm **1** from the top cover.
7. Push and hold the display release button **2**.
8. Remove the display release button **3** and springs **4** from the top cover.



Removing the Display Release Button Assembly

Reverse the above procedure to install the display release button assembly.

5.16 LED Board

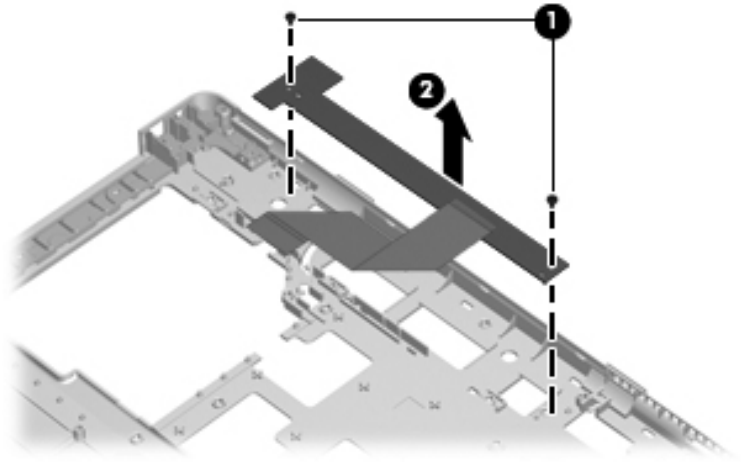
LED Board Spare Part Number Information

LED board (includes LED board cable)

435784-001

1. Prepare the computer for disassembly ([Section 5.3](#)), and then remove the following components:
 - a. Hard drive ([Section 5.4](#))
 - b. Memory/Mini Card module compartment cover ([Section 5.6](#))
 - c. Optical drive ([Section 5.9](#))
 - d. Switch cover ([Section 5.10](#))
 - e. Keyboard ([Section 5.11](#))
 - f. Display assembly ([Section 5.12](#))
 - g. Base enclosure ([Section 5.13](#))
 - h. System board ([Section 5.14](#))

2. Remove the two Phillips PM2.5×5.0 screws ❶ that secure the LED board to the top cover.
3. Remove the LED board and cable ❷.



Removing the LED Board

Reverse the above procedure to install the LED board.

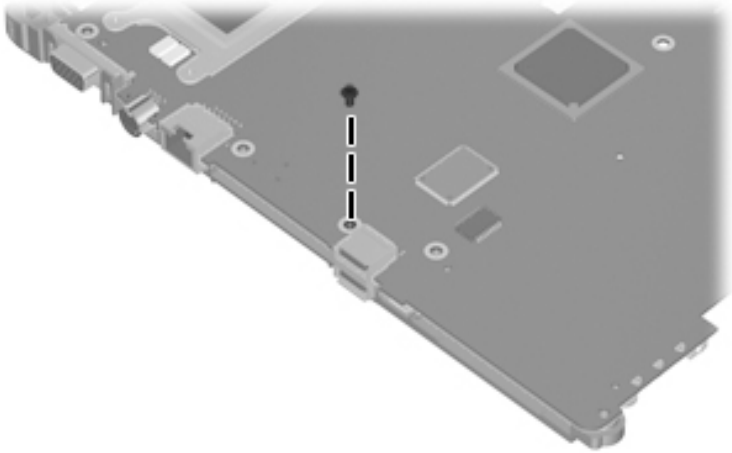
5.17 Fan/Heat Sink Assembly

Fan/Heat Sink Assembly Spare Part Number Information

Fan assembly (includes thermal paste)	410055-001
Heat sink assembly (includes thermal paste)	409073-001

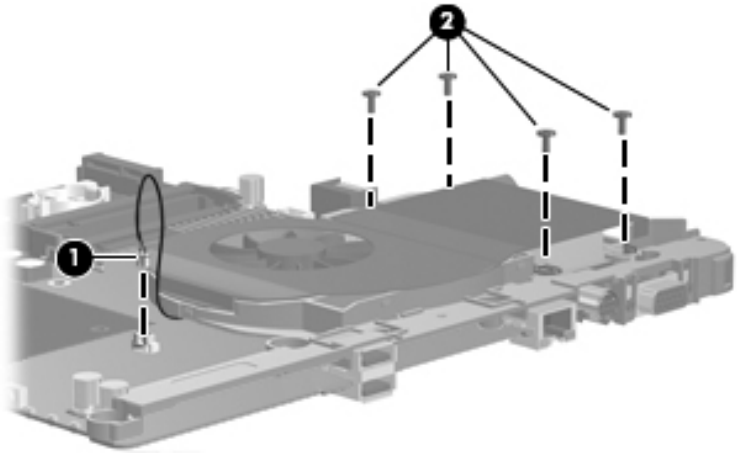
1. Prepare the computer for disassembly ([Section 5.3](#)), and then remove the following components:
 - a. Hard drive ([Section 5.4](#))
 - b. Memory/Mini Card module compartment cover ([Section 5.6](#))
 - c. Optical drive ([Section 5.9](#))
 - d. Switch cover ([Section 5.10](#))
 - e. Keyboard ([Section 5.11](#))
 - f. Display assembly ([Section 5.12](#))
 - g. Base enclosure ([Section 5.13](#))
 - h. System board ([Section 5.14](#))

2. Turn the system board right side up with the USB ports toward you.
3. Remove the Phillips PM2.0×4.0 screw that secures the fan/heat sink assembly to the system board.



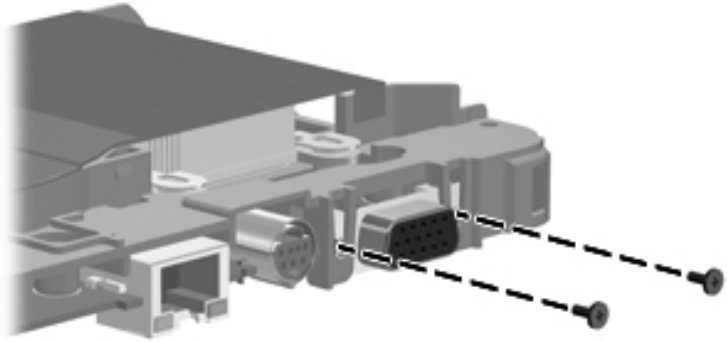
Removing the Fan/Heat Sink Assembly Screws, Part 1

4. Turn the system board upside down with the USB ports toward you.
5. Disconnect the fan cable ❶ from the system board.
6. Remove the four Phillips PM2.5×7.0 screws ❷ that secure the heat sink to the system board.



Removing the Fan/Heat Sink Assembly Screws, Part 2

7. Remove the two Phillips PM3.0×6.0 screws on each side of the external monitor port that secure the fan/heat sink assembly to the system board.

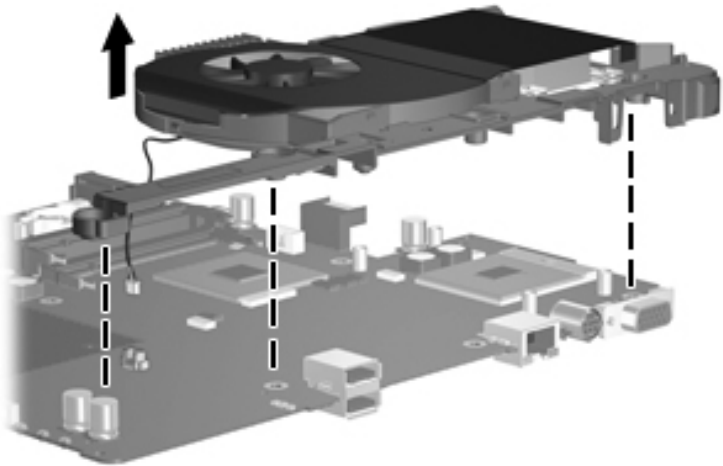


Removing the Fan/Heat Sink Assembly Screws, Part 3

8. Remove the fan/heat sink assembly.



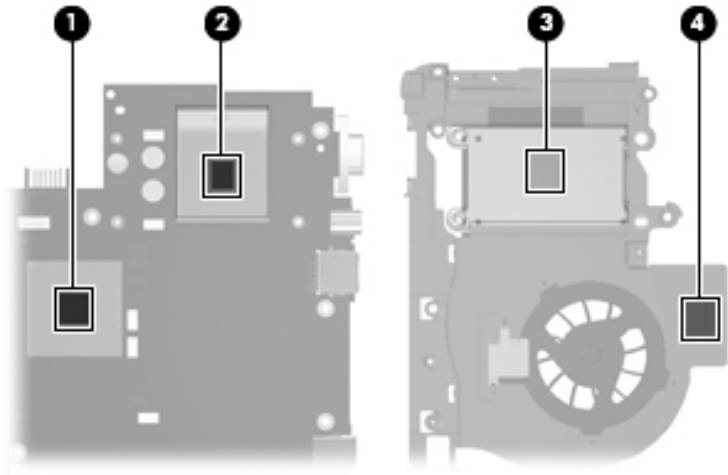
Due to the adhesive quality of the thermal paste located between the fan/heat sink assembly and processor, it may be necessary to move the fan/heat sink assembly from side to side to detach it from the processor.



Removing the Fan/Heat Sink Assembly



The thermal paste should be thoroughly cleaned from the surfaces of the processor **1** and system board **2** and the fan/heat sink assembly **3** and **4** each time the fan/heat sink assembly is removed. Thermal paste should be reapplied to both surfaces before the fan/heat sink assembly is reinstalled. Thermal paste is included with all fan/heat sink assembly and processor spare part kits.



Replacing the Thermal Paste

Reverse the above procedure to install the fan/heat sink assembly.

5.18 Processor

Processor Spare Part Number Information



All processor spare part kits include thermal paste.

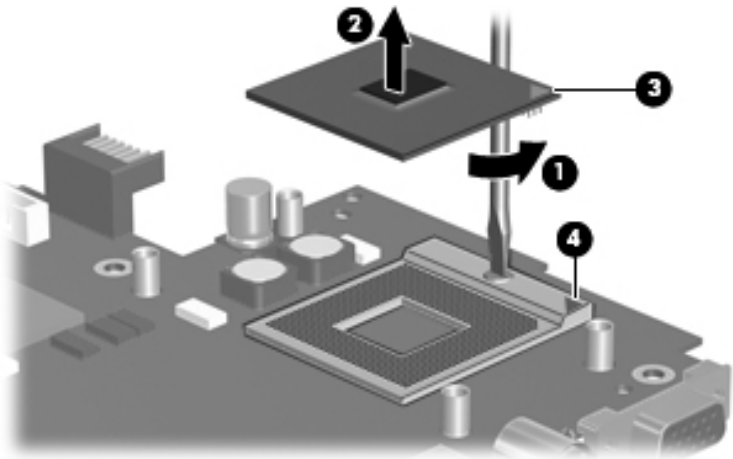
Intel Celeron 430 1.73-GHz	435766-001
Intel Celeron 420 1.60-GHz	430202-001
Intel Core Duo T2250 1.73-GHz	430851-001
Intel Core Duo T2300 1.60-GHz	430848-001
Intel Core Duo T2050 1.60-GHz	430850-001
Intel Core Duo T1400 1.83-GHz	430200-001

1. Prepare the computer for disassembly ([Section 5.3](#)), and then remove the following components:
 - a. Hard drive ([Section 5.4](#))
 - b. Memory/Mini Card module compartment cover ([Section 5.6](#))
 - c. Optical drive ([Section 5.9](#))
 - d. Switch cover ([Section 5.10](#))
 - e. Keyboard ([Section 5.11](#))
 - f. Display assembly ([Section 5.12](#))
 - g. Base enclosure ([Section 5.13](#))
 - h. System board ([Section 5.14](#))
 - i. Heat sink ([Section 5.17](#))

2. Use a flat-bladed screwdriver to turn the processor locking screw ❶ one-half turn counterclockwise until you hear a click.
3. Lift the processor straight up and remove it ❷.



The gold triangle ❸ on the processor should be aligned with the triangle icon ❹ in the front right corner when you install the processor.



Removing the Processor

Reverse the above procedure to install the processor.

6

Specifications

This chapter provides physical and performance specifications.

Table 6-1
Computer

Dimensions	Metric	U.S.
Height		
Front	3.50 cm	1.38 in.
Rear	4.50 cm	1.77 in.
Width	35.79 cm	14.09 in.
Depth	26.39 cm	10.39 in.
Weight		
With optical drive and 8-cell battery	2.99 kg	6.60 lbs
Input Power		
Operating voltage	18.5 V dc to 19.0 V dc	
Operating current	3.5 A or 4.74 A	
Temperature		
Operating	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F

Table 6-1
Computer (Continued)

Relative humidity (noncondensing)		
Operating	10% to 90%	10% to 90%
Nonoperating	5% to 95%	5% to 95%
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 computer operates well within this range of temperatures.

Table 6-2
15.4-inch, WXGA, Display

Dimensions		
Height	20.7 cm	8.15 in
Width	33.1 cm	13.03 in
Diagonal	39.1 cm	15.39 in
Number of colors	Up to 16.8 million	
Contrast ratio	200:1	
Brightness	180 nits typical	
Pixel resolution		
Pitch	0.259 × 0.259 mm	
Format	1280 × 800	
Configuration	RGB vertical stripe	
Backlight	Edge lit	
Character display	80 × 25	
Total power consumption	4 W	
Viewing angle	+/-65° horizontal, +50° vertical typical	

Table 6-3
Hard Drives



	120-GB*	100-GB*	80-GB*
Dimensions			
Height	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm
Weight	102 g	102 g	99 g
Interface type	ATA-5	ATA-5	ATA-5
Transfer rate			
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)			
Single track	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms
Logical blocks†	234,428,430	195,364,233	156,301,488
Disc rotational speed	4200 rpm	4200 rpm	5400 rpm
Operating temperature	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. Actual accessible capacity is less.			
†Actual drive specifications may differ slightly.			

Table 6-3
Hard Drives (Continued)

	80-GB*	60-GB*	40-GB*
Dimensions			
Height	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm
Weight	99 g	99 g	99 g
Interface type	ATA-5	ATA-5	ATA-5
Transfer rate			
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)			
Single track	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms
Logical blocks†	156,301,488	117,210,240	78,140,160
Disc rotational speed	4200 rpm	4200 rpm	4200 rpm
Operating temperature	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. Actual accessible capacity is less.

†Actual drive specifications may differ slightly.

Table 6-4
DVD/CD-RW Combo Drive

Applicable disc	Read:	Write:
	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), and CD-Bridge	CD-R and CD-RW
Center hole diameter	1.5 cm (0.59 in)	
Disc diameter		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	
Disc thickness	1.2 mm (0.047 in)	
Track pitch	0.74 μ m	

Table 6-4
DVD/CD-RW Combo Drive (Continued)

Access time	CD media	DVD media
Random	< 110 ms	< 130 ms
Full stroke	< 210 ms	< 225 ms
Audio output level	Line-out, 0.7 V rms	
Cache buffer	2 MB	
Data transfer rate		
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	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 6-5

DVD±RW and CD-RW Double-Layer Combo Drive

Applicable disc	Read:	Write:
	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
Center hole diameter	1.5 cm (0.59 in)	
Disc diameter		
Standard disc	12 cm (4.72 in)	
Mini disc	8 cm (3.15 in)	
Disc thickness	1.2 mm (0.047 in)	
Track pitch	0.74 μm	

Table 6-5

DVD±RW and CD-RW Double-Layer Combo Drive (Continued)

Access time	CD	DVD
Random	< 175 ms	< 230 ms
Full stroke	< 285 ms	< 335 ms
Audio output level	Audio-out, 0.7 Vrms	
Cache buffer	2 MB	
Data transfer rate		
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)	
Multword DMA mode 2	16.6 MB/s	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 6-6
System Interrupts

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Standard 101-/102-Key or Microsoft® Natural Keyboard
IRQ2	Cascaded
IRQ3	USB2 Enhanced Host Controller—24CD
IRQ4	COM1
IRQ5*	Conexant AC—Link Audio Data Fax Modem with SmartCP
IRQ6	Diskette drive
IRQ7*	Parallel port
IRQ8	System CMOS/real-time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ10*	Realtek RTL8139 Family PCI fast Ethernet Controller

Table 6-6
System Interrupts (*Continued*)

IRQ11	TI OHCI 1394 host controller TI PCI1410 CardBus controller
IRQ12	Synaptics PS/2 TouchPad
IRQ13	Numeric data processor
IRQ14	Primary IDE channel
IRQ15	Secondary IDE channel

*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.



PC Cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

Table 6-7
System I/O Addresses

I/O Address (hex)	System Function (shipping configuration)
000 - 00F	DMA controller no. 1
010 - 01F	Unused
020 - 021	Interrupt controller no. 1
022 - 024	Opti chipset configuration registers
025 - 03F	Unused
02E - 02F	87334 "Super I/O" configuration for CPU
040 - 05F	Counter/timer registers
044 - 05F	Unused
060	Keyboard controller
061	Port B
062 - 063	Unused
064	Keyboard controller
065 - 06F	Unused
070 - 071	NMI enable/RTC
072 - 07F	Unused
080 - 08F	DMA page registers
090 - 091	Unused
092	Port A
093 - 09F	Unused
0A0 - 0A1	Interrupt controller no. 2

Table 6-7
System I/O Addresses (*Continued*)

I/O Address (hex)	System Function (shipping configuration)
0A2 - 0BF	Unused
0C0 - 0DF	DMA controller no. 2
0E0 - 0EF	Unused
0F0 - 0F1	Coprocessor busy clear/reset
0F2 - 0FF	Unused
100 - 16F	Unused
170 - 177	Secondary fixed disk controller
178 - 1EF	Unused
1F0 - 1F7	Primary fixed disk controller
1F8 - 200	Unused
201	Joystick (decoded in ESS1688)
202 - 21F	Unused
220 - 22F	Entertainment audio
230 - 26D	Unused
26E - 26	Unused
278 - 27F	Unused
280 - 2AB	Unused
2A0 - 2A7	Unused
2A8 - 2E7	Unused
2E8 - 2EF	Reserved serial port

Table 6-7
System I/O Addresses (Continued)

I/O Address (hex)	System Function (shipping configuration)
2F0 - 2F7	Unused
2F8 - 2FF	Infrared port
300 - 31F	Unused
320 - 36F	Unused
370 - 377	Secondary diskette drive controller
378 - 37F	Parallel port (LPT1/default)
380 - 387	Unused
388 - 38B	FM synthesizer—OPL3
38C - 3AF	Unused
3B0 - 3BB	VGA
3BC - 3BF	Reserved (parallel port/no EPP support)
3C0 - 3DF	VGA
3E0 - 3E1	PC Card controller in CPU
3E2 - 3E3	Unused
3E8 - 3EF	Internal modem
3F0 - 3F7	“A” diskette controller
3F8 - 3FF	Serial port (COM1/default)
CF8 - CFB	PCI configuration index register (PCIDIVO-1)
CFC - CFF	PCI configuration data register (PCIDIVO-1)

Table 6-8
System Memory Map

Size	Memory Address	System Function
640 KB	00000000-0009FFFF	Base memory
128 KB	000A0000-000BFFFF	Video memory
48 KB	000C0000-000CBFFF	Video BIOS
160 KB	000C8000-000E7FFF	Unused
64 KB	000E8000-000FFFFFF	System BIOS
15 MB	00100000-00FFFFFF	Extended memory
58 MB	01000000-047FFFFFF	Super extended memory
58 MB	04800000-07FFFFFF	Unused
2 MB	08000000-080FFFFFF	Video memory (direct access)
4 GB	08200000-FFFEFFFF	Unused
64 KB	FFFF0000-FFFFFFFF	System BIOS

Table 6-9
System DMA

Hardware DMA	System Function
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

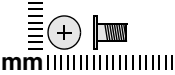
*PC Card controller can use DMA 1, 2, or 5.

A

Screw Listing

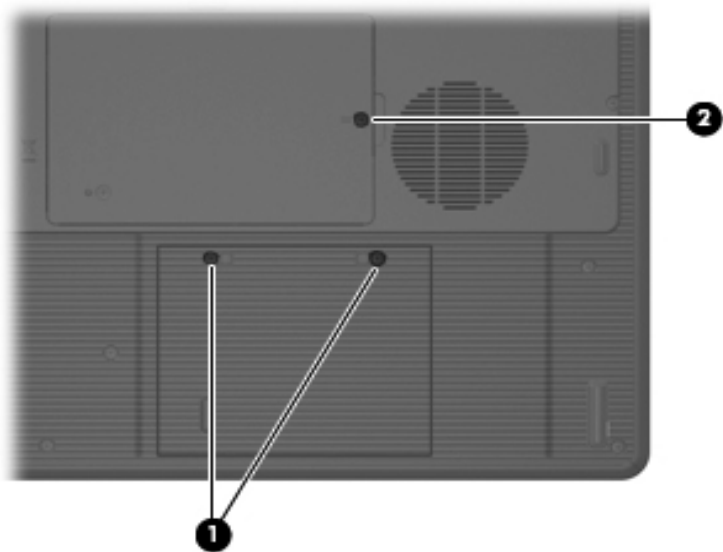
This appendix provides specification and reference information for the screws and screw locks used in the computer. All screws listed in this appendix are available in the Computer Screw Kit, spare part number 435780-001, and the Display Screw Kit, spare part number 435788-001.

Table A-1
Phillips PM2.5x5.0 Captive Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	3	5.0 mm	2.5 mm	5.0 mm

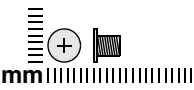
Where used:

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



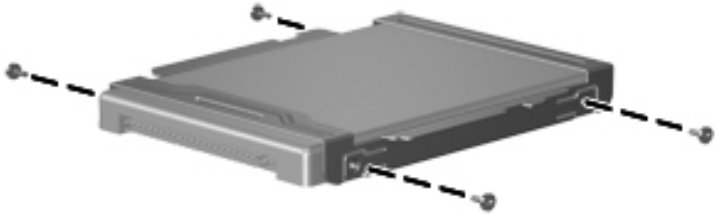
Phillips PM2.5x5.0 Captive Screw Locations

Table A-2
Phillips PM3.0×4.0 Screw

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

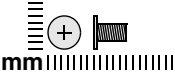
Where used:

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



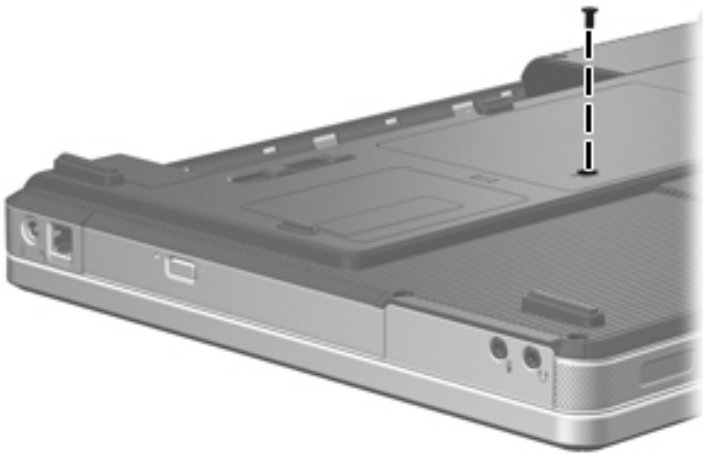
Phillips PM3.0×4.0 Screw Locations

Table A-3
Phillips PM2.5x5.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

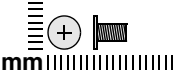
Where used:

One screw that secures the optical drive to the computer (documented in [Section 5.9](#))



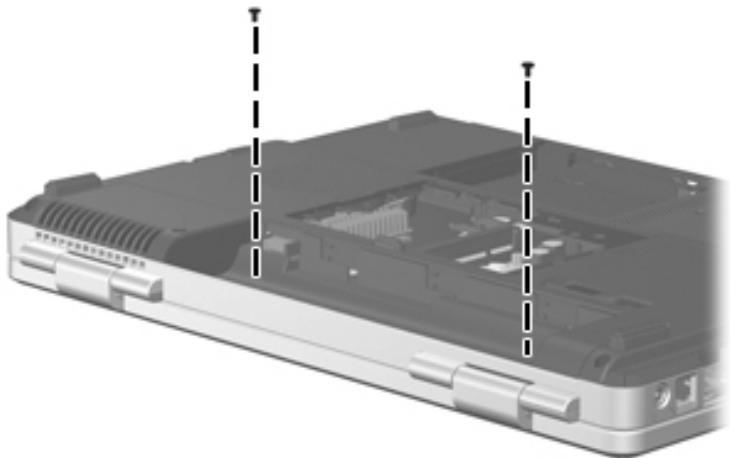
Phillips PM2.5x5.0 Screw Location

Table A-3
Phillips PM2.5×5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

Where used:

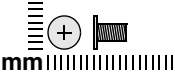
2 screws that secure the switch cover to the computer (documented in [Section 5.10](#))



Phillips PM2.5×5.0 Screw Locations

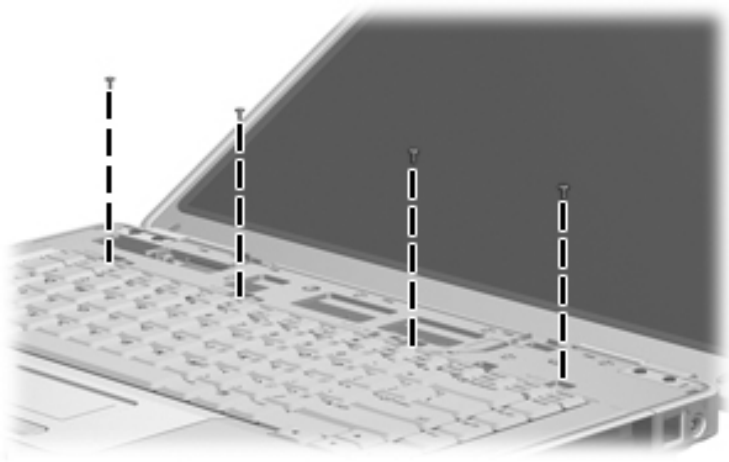
Table A-3

Phillips PM2.5x5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
mm	Black	28	5.0 mm	2.5 mm	5.0 mm

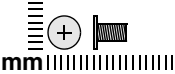
Where used:

4 screws that secure the keyboard to the computer (documented in [Section 5.11](#))



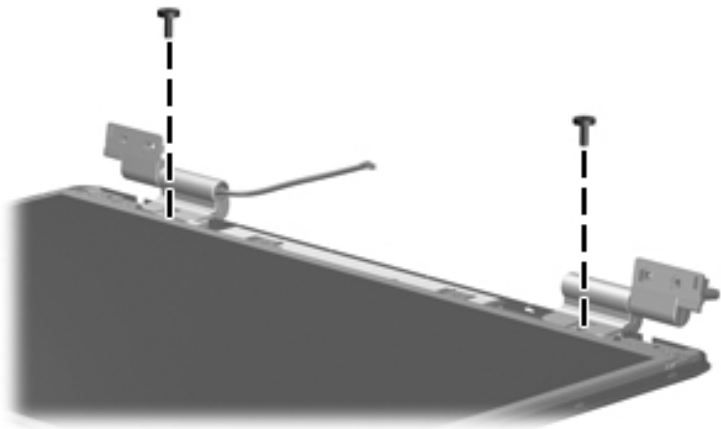
Phillips PM2.5x5.0 Screw Locations

Table A-3
Phillips PM2.5x5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

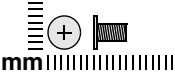
Where used:

2 screws that secure the display hinge base covers to the display enclosure (documented in [Section 5.12](#))



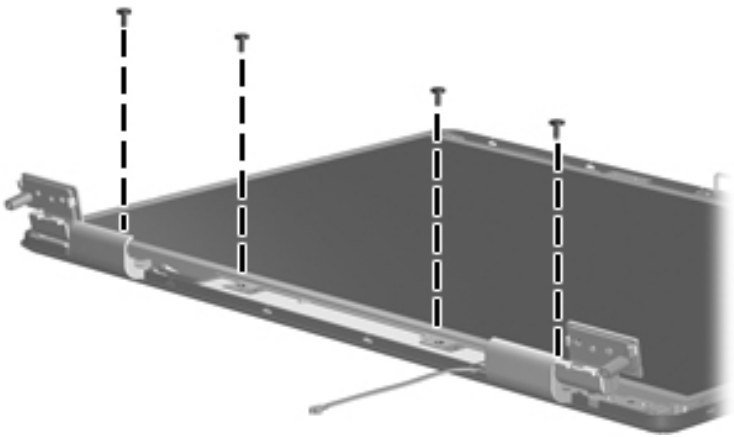
Phillips PM2.5x5.0 Screw Locations

Table A-3
Phillips PM2.5x5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

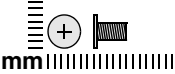
Where used:

4 screws that secure the display panel and inverter board to the display enclosure (documented in [Section 5.12](#))



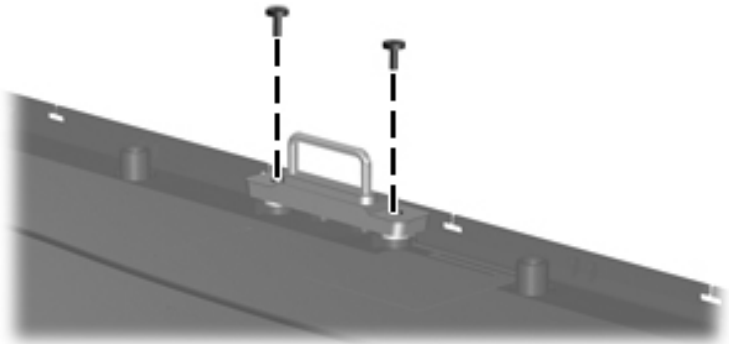
Phillips PM2.5x5.0 Screw Locations

Table A-3
Phillips PM2.5×5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

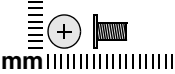
Where used:

2 screws that secure the display release hook to the display enclosure
 (documented in [Section 5.12](#))



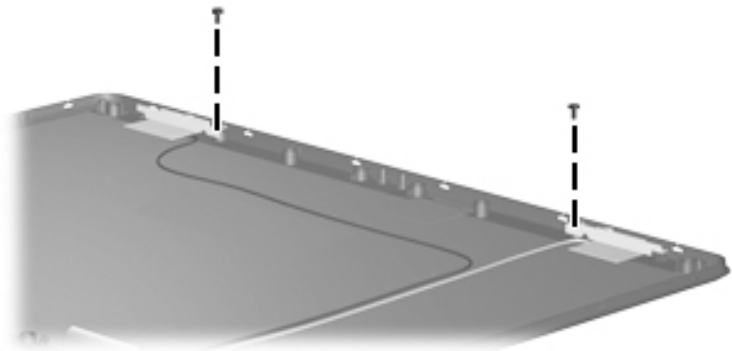
Phillips PM2.5×5.0 Screw Locations

Table A-3
Phillips PM2.5x5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

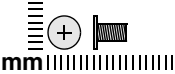
Where used:

2 screws that secure the wireless antenna transceivers to the display enclosure (documented in [Section 5.12](#))



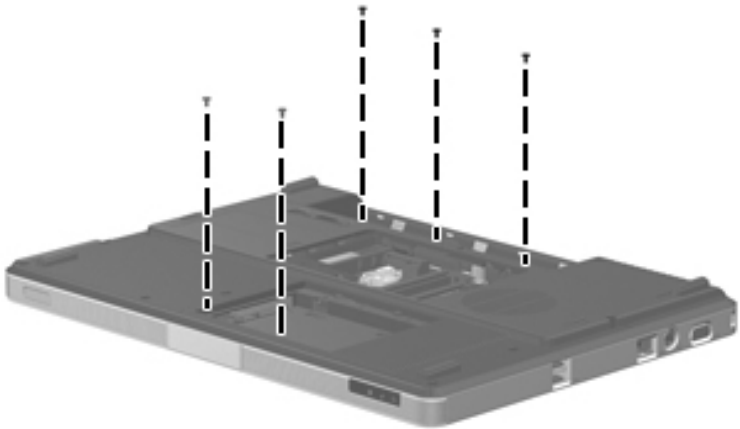
Phillips PM2.5x5.0 Screw Locations

Table A-3
Phillips PM2.5×5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

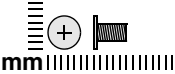
Where used:

5 screws that secure the base enclosure to the computer (documented in [Section 5.13](#))



Phillips PM2.5×5.0 Screw Locations

Table A-3
Phillips PM2.5×5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

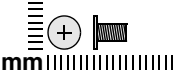
Where used:

2 screws that secure the system board to the top cover (documented in [Section 5.14](#))



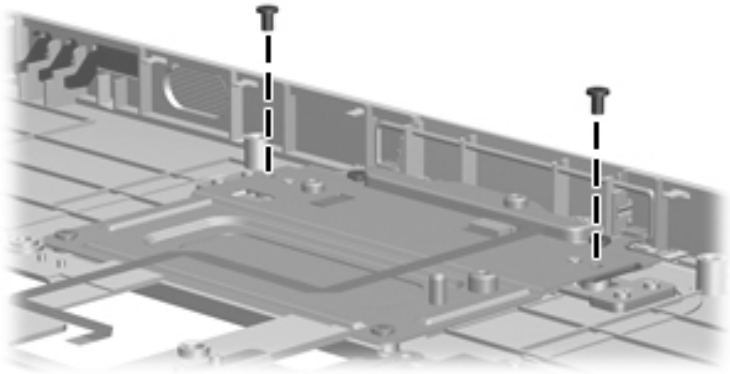
Phillips PM2.5×5.0 Screw Locations

Table A-3
Phillips PM2.5×5.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

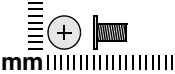
Where used:

2 screws that secure the TouchPad bracket to the top cover (documented in [Section 5.15](#))



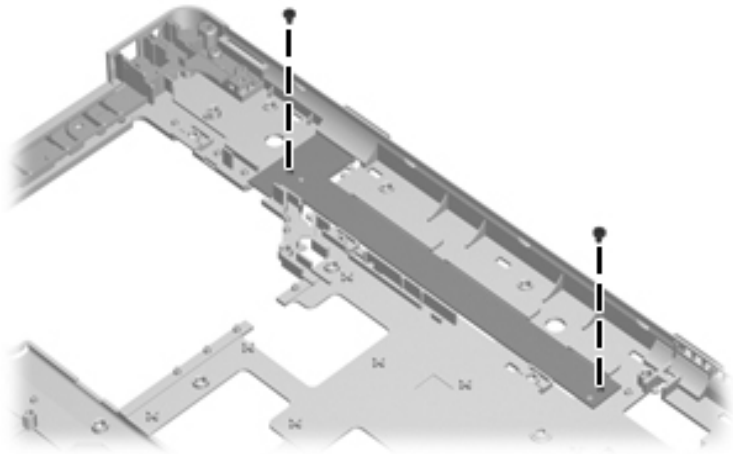
Phillips PM2.5×5.0 Screw Locations

Table A-3
Phillips PM2.5x5.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Black	28	5.0 mm	2.5 mm	5.0 mm

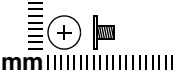
Where used:

2 screws that secure the LED board to the top cover (documented in [Section 5.16](#))



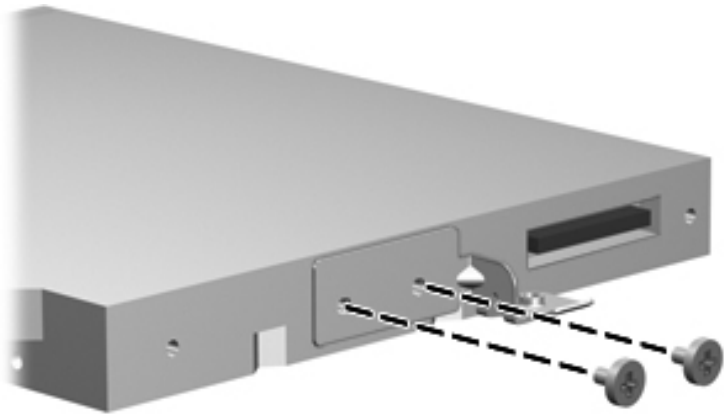
Phillips PM2.5x5.0 Screw Locations

Table A-4
Phillips PM2.0×3.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	2	3.0 mm	2.0 mm	5.0 mm

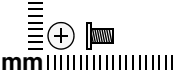
Where used:

2 screws that secure the optical drive bracket to the optical drive (documented in [Section 5.12](#))



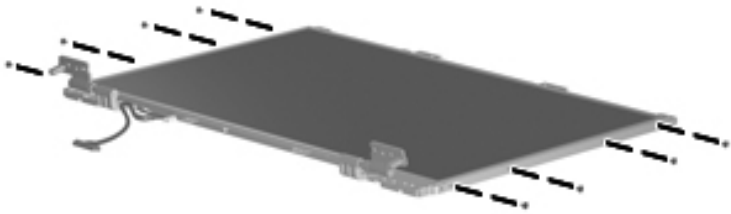
Phillips PM2.0×3.0 Screw Locations

Table A-5
Phillips PM2.0×4.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	11	4.0 mm	2.0 mm	4.0 mm

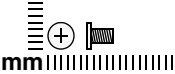
Where used:

8 screws that secure the display hinges to the display panel (documented in [Section 5.12](#))



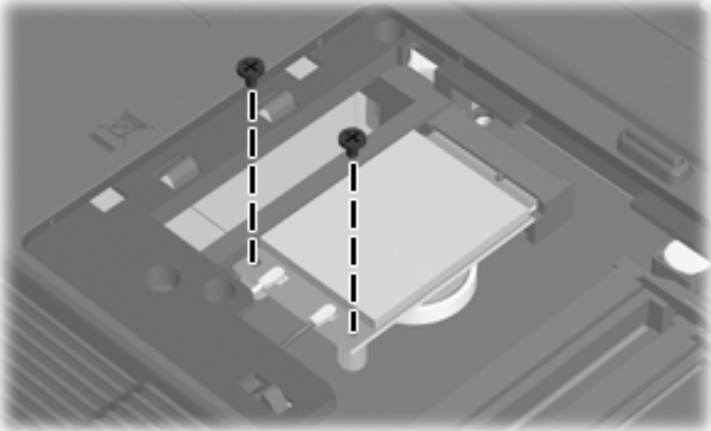
Phillips PM2.0×4.0 Screw Locations

Table A-5
Phillips PM2.0×4.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	11	4.0 mm	2.0 mm	4.0 mm

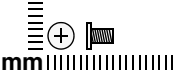
Where used:

2 screws that secure the Mini Card module to the system board (documented in [Section 5.7](#))



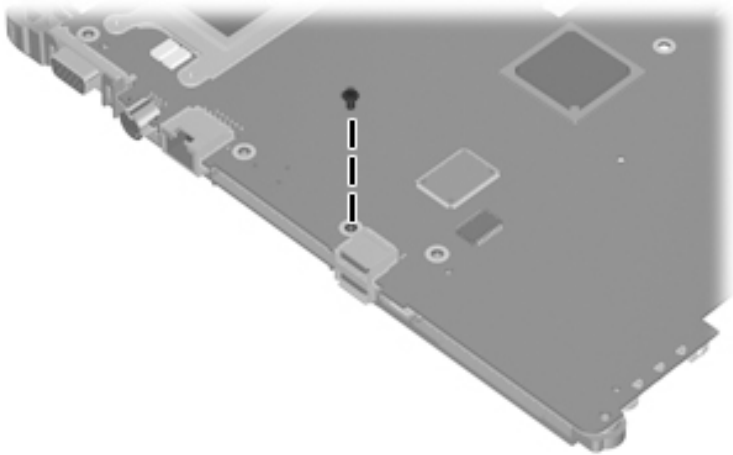
Phillips PM2.0×4.0 Screw Locations

Table A-5
Phillips PM2.0x4.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	11	4.0 mm	2.0 mm	4.0 mm

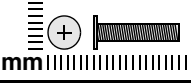
Where used:

One screw that secures the fan/heat sink assembly to the system board (documented in [Section 5.17](#))



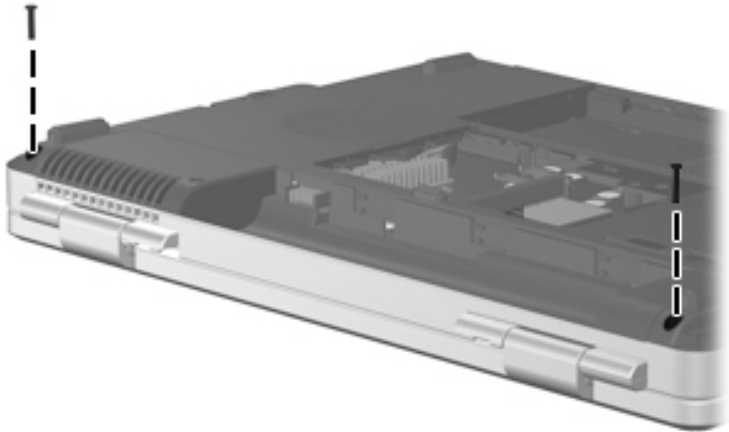
Phillips PM2.0x4.0 Screw Location

Table A-6
Phillips PM2.5×13.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	15	13.0 mm	2.5 mm	5.0 mm

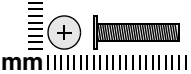
Where used:

2 screws that secure the display assembly to the computer (documented in [Section 5.12](#))



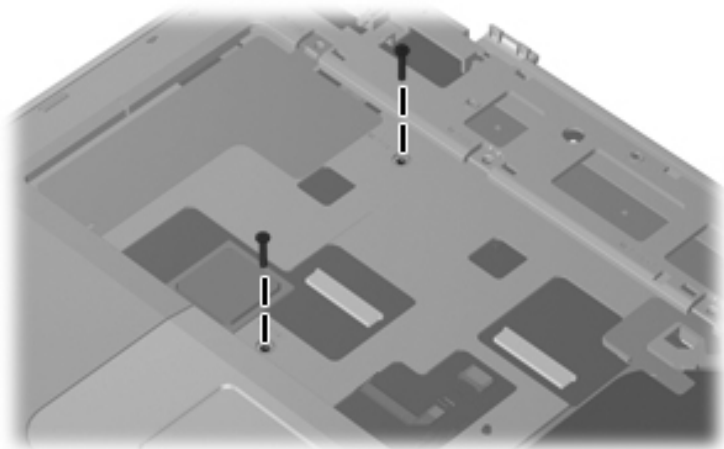
Phillips PM2.5×13.0 Screw Locations

Table A-6
Phillips PM2.5×13.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	15	13.0 mm	2.5 mm	5.0 mm

Where used:

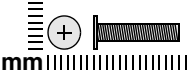
2 screws that secure the base enclosure to the computer (documented in [Section 5.13](#))



Phillips PM2.5×13.0 Screw Locations

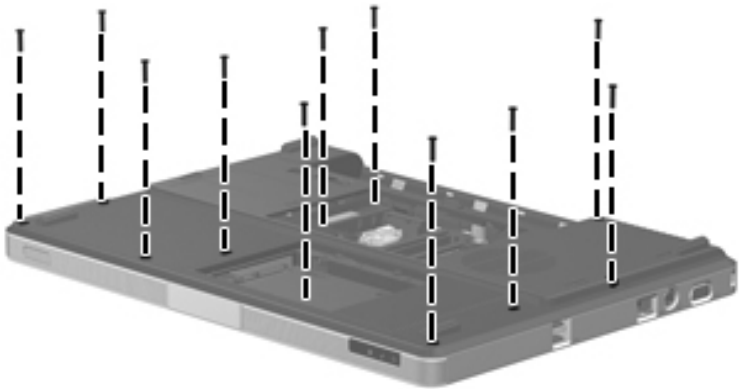
Table A-6

Phillips PM2.5×13.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Black	15	13.0 mm	2.5 mm	5.0 mm

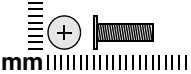
Where used:

11 screws that secure the base enclosure to the computer (documented in [Section 5.13](#))



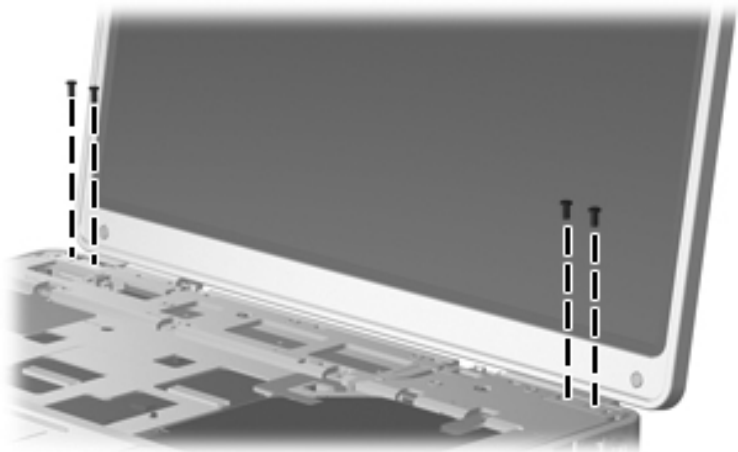
Phillips PM2.5×13.0 Screw Locations

Table A-7
Phillips PM2.5×9.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	4	9.0 mm	2.5 mm	5.0 mm

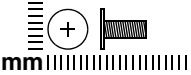
Where used:

4 screws that secure the display assembly to the computer (documented in [Section 5.12](#))



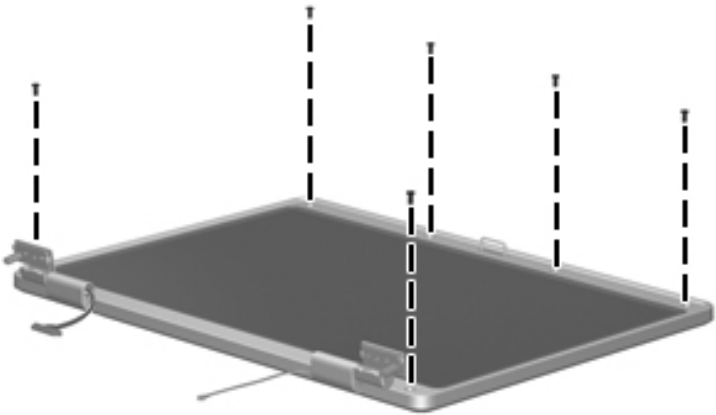
Phillips PM2.5×9.0 Screw Locations

Table A-8
Phillips PM2.5×7.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	10	7.0 mm	2.5 mm	6.0 mm

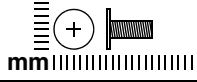
Where used:

6 screws that secure the display bezel to the display enclosure (documented in [Section 5.12](#))



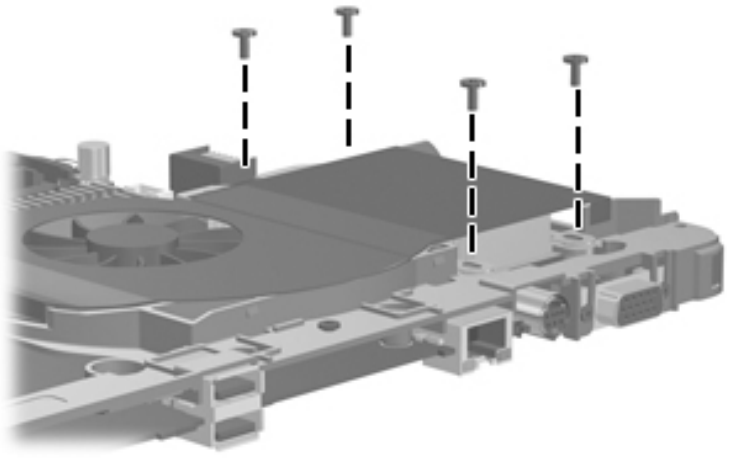
Phillips PM2.5×7.0 Screw Locations

Table A-8
Phillips PM2.5x7.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	10	7.0 mm	2.5 mm	6.0 mm

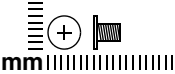
Where used:

4 screws that secure the heat sink to the system board (documented in [Section 5.17](#))



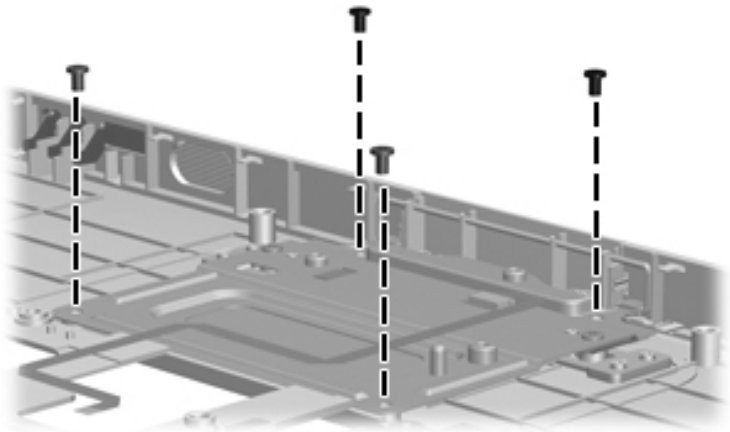
Phillips PM2.5x7.0 Screw Locations

Table A-9
Silver Phillips PM2.5×4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	4	4.0 mm	2.5 mm	5.0 mm

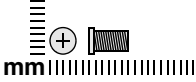
Where used:

4 screws that secure the display bezel to the display enclosure (documented in [Section 5.15](#))



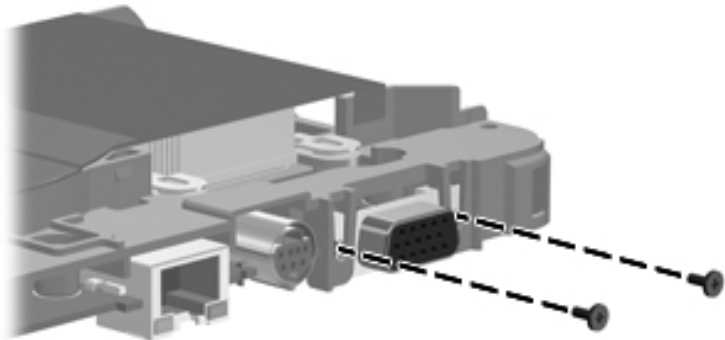
Silver Phillips PM2.5×4.0 Screw Locations

Table A-10
Phillips PM3.0x6.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	2	6.0 mm	3.0 mm	4.0 mm

Where used:

2 screws that secure the fan/heat sink assembly to the system board (documented in [Section 5.17](#))



Phillips PM3.0x6.0 Screw Locations

Backup and Recovery

Recovering System Information

Tools provided by the operating system and PC Recovery software are designed to help you with the following tasks for safeguarding your information and restoring it in case of a system failure:

- Back up your information regularly to protect your important system files.
- Make a set of recovery discs (PC Recovery software feature). Recovery discs are used to start up (boot) your computer and restore the operating system and software programs to factory settings in case of system failure or instability.
- Create system restore points (operating system feature). System restore points allow you to reverse undesirable changes to your computer by restoring the computer to an earlier state.
- Recover a program or driver (PC Recovery software feature). This feature helps you reinstall a program or driver without performing a full system recovery.
- Perform a full system recovery (PC Recovery software feature). With PC Recovery, you can recover your full factory image if you experience system failure or instability. PC Recovery works from a dedicated recovery partition on the hard drive or from recovery discs you create.

Backing Up Your Information

When to Back Up

- On a regularly scheduled basis.



Set reminders to back up your information periodically.

- Before the computer is repaired or restored.
- Before you add or modify hardware or software.

Backup Suggestions

- Create system restore points using Windows XP Professional System Restore feature.
- Store personal files in the My Documents folder and back up these folders periodically.
- Back up templates stored in their associated programs.
- Save customized settings in a window, toolbar, or menu bar by taking a screen shot of your settings.

The screen shot can be a time saver if you have to reset your preferences.

To copy the screen and paste it into a Word document:

- a. Display the screen.
- b. Copy the screen:

To copy only the active window, press **alt+fn+prt sc**.

To copy the entire screen, press **fn+prt sc**.

- c. To paste the copied images into a document, open Word, and then select **Edit > Paste**.

Using System Restore Points

When you back up your system, you are creating a system restore point. A system restore point allows you to save and name a snapshot of your hard drive at a specific point in time. You can then recover back to that point if you want to reverse subsequent changes made to your system.



Recovering to an earlier restore point does not affect data files saved or e-mails created since the last restore point.

You also can create additional restore points to provide increased protection for your system files and settings.

When to Create Restore Points

- Before you add or extensively modify software or hardware.
- Periodically, whenever the system is performing optimally.



If you revert to a restore point and then change your mind, you can reverse the restoration.

Create a System Restore Point

1. Select **Start > Help and Support > System Restore**.
The System Restore window opens.
2. Click **Create a restore point**, and then click **Next**.
3. Follow the on-screen instructions.

Restore to a Previous Date and Time

To revert to a restore point (created at a previous date and time), when the computer was functioning optimally:

1. Select **Start > Help and Support > System Restore**.
The System Restore window opens.
2. Click **Restore my computer to an earlier time**, and then click **Next**.
3. Follow the on-screen instructions.

Creating Recovery Discs

PC Recovery Disc Creator creates a set of recovery CDs or DVDs for the computer. Use recovery discs to restore the operating system and software programs to factory settings, in case of system failure or instability.



Handle these discs carefully and keep them in a safe place. The software allows the creation of only one set of recovery discs.

Note the following guidelines before creating recovery discs:

- You will need high quality CD-R, DVD-R, or DVD+R media (purchased separately).
-



DVD±RW/R and double-layer DVD±RW are not compatible with the PC Recovery Disc Creator software.

- The computer must be connected to AC power during this process.
- Only one set of recovery discs can be created per computer.

- Number each disc before inserting it into the computer optical drive.
- If necessary, you can exit the program before you have finished creating the recovery discs. The next time you open PC Recovery Disc Creator, you will be prompted to continue the disc creation process.

To create a set of recovery discs:

1. Select **Start > All Programs > System Recovery > PC Recovery Disc Creator**.

The PC Recovery Disc Creator tool opens.

2. Click **Next**.



If you are operating the computer on battery power, you will be prompted to connect to AC power before you can go to the next step.

3. Select the type of disc you want to use and click **Next**.
-



The software examines the image and displays the number of blank discs needed to create your recovery discs.

4. Insert the first disc and follow the on-screen instructions to complete the creation of the recovery discs.

Reinstalling Software Programs and Drivers

If a program or driver preinstalled at the factory is accidentally erased or is damaged, the Application and Driver Recovery tool allows you to reinstall it.



Software not provided with this computer must be reinstalled from the disc provided by the manufacturer or downloaded from the manufacturer's Web site.



Before reinstalling the program, be sure it is fully uninstalled.

The Application and Driver Recovery tool replaces corrupted system files and reinstalls deleted system files within the program.

- In most cases, if the program you are reinstalling is still on your computer, the reinstallation process does not affect your personal settings.
- In all cases, if a program has been deleted from your computer, the reinstallation process reinstalls the program or utility to the factory image but cannot restore your personal settings.

Reinstalling Preinstalled Programs and Drivers

1. Remove the program or driver:
-



In some cases, drivers are not listed in the Add or Remove Programs list. If the driver is not listed, it does not need to be removed.

- a. Select **Start > Control Panel > Add or Remove Programs**.
- b. Click the program or driver you want to remove, and then click **Change/Remove**.

2. Select **Start > All Programs > System Recovery > Application and Driver Recovery**.

The Application and Driver Recovery tool opens.

3. Select **Application Installation or Driver Installation**, and then click **Next**.
4. Follow the on-screen instructions to complete the program or driver recovery.
5. Restart the computer if prompted.

Reinstalling Programs from Discs

1. Insert the disc into the optical drive.
2. When the installation wizard opens, follow the installation instructions on the screen.
3. Restart the computer if prompted.

Performing a Recovery

PC Recovery software allows you to repair or restore the system if you experience system failure or instability. PC Recovery works from recovery discs that you create or from a dedicated recovery partition on the hard drive.



Windows XP has its own built-in repair features, such as System Restore and driver roll-back capabilities. If you have not already tried these features, try them before using PC Recovery.



PC Recovery only recovers software that was preinstalled at the factory. Software not provided with this computer must be reinstalled from the disc provided by the manufacturer or downloaded from the manufacturer's Web site.

Recovering from the Recovery Discs

To restore the system from the recovery discs:

1. Back up all personal files.
2. Insert the first recovery disc into the optical drive and restart the computer.
3. Follow the on-screen instructions.

Recovering from the Partition on the Hard Drive

You can perform a recovery from the partition on the hard drive from either the Start button or **f11**.

To restore the system from the partition:

1. Access the PC Recovery tool:
 - ❑ To access PC Recovery from the Start button, select **Start > All Programs > System Recovery > PC Recovery**.
 - ❑ To access PC Recovery from **f11**, restart the computer and press **f11** while the “Press <F11> for recovery” message is displayed on the screen.

The PC Recovery tool opens.

2. Select **PC Recovery** and click **Next**.

The computer restarts and the PC Recovery tool opens.

3. Click **OK**.
4. Follow the on-screen instructions to complete the system recovery.

If you want to perform a *destructive* recovery:



A destructive recovery formats the hard drive and restores the computer to its factory state. Select this option only as a last resort.

- a. Click **Advanced Options** on the System Recovery screen.
- b. Select **Destructive Recovery** and follow the on-screen instructions.

Deleting the Recovery Partition on the Hard Drive

The PC Recovery Advanced Options menu provides the option of deleting the recovery partition, which will increase space on the hard drive. Delete the recovery partition only if you have already created recovery discs.



CAUTION: After you create the recovery discs, you can increase space on the hard drive by deleting the recovery partition. However, doing this is not recommended. If you delete this partition, you will lose any information that is on the partition, including the PC Recovery software. Thereafter, you must use the recovery discs to access PC Recovery software.

To delete the recovery partition:

1. If you have not already created recovery discs, create them now.
2. Select **Start > All Programs > System Recovery > PC Recovery**.

The PC Recovery tool opens.

3. Select **PC Recovery** and click **Next**.

The computer restarts and the PC Recovery tools opens.

4. Click **OK**.
5. At the System Recovery screen, click **Advanced Options**.
6. Select **Delete Recovery Partition (not recommended)** and follow the on-screen instructions.

Updating Reinstalled Software

After you perform a system recovery, connect to the Internet to update all reinstalled software.

To access update links for the operating system and other software provided on your computer:

» Select **Start > Help and Support**.

To update optional software, follow the instructions provided by the software manufacturer. Some programs include an update feature you can access from a Help button or menu within the program.

Display Component Recycling



WARNING: The backlight contains mercury. Caution should be exercised when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.



CAUTION: The procedures in this appendix can result in damage to display components. The only components intended for recycling purposes are the liquid crystal display (LCD) panel and the backlight. Careful handling should be exercised when removing these components.



Materials Disposal

This HP product contains mercury in the display assembly backlight and may require special handling at end-of-life.

Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities or visit the Electronic Industries Alliance (EIA) at <http://www.eiae.org>.

This appendix provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight ❶ and the LCD panel ❷.

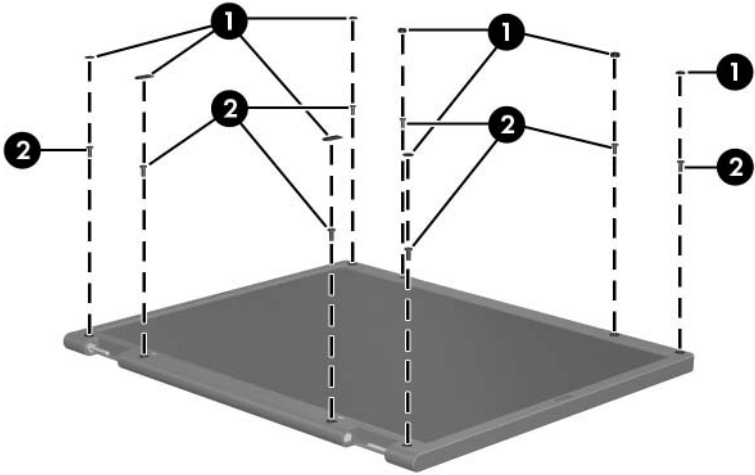


Disassembly procedures differ from one display assembly to another. The procedures provided in this appendix are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

Refer to [Section 5.12, “Display Assembly,”](#) for display assembly disassembly steps.

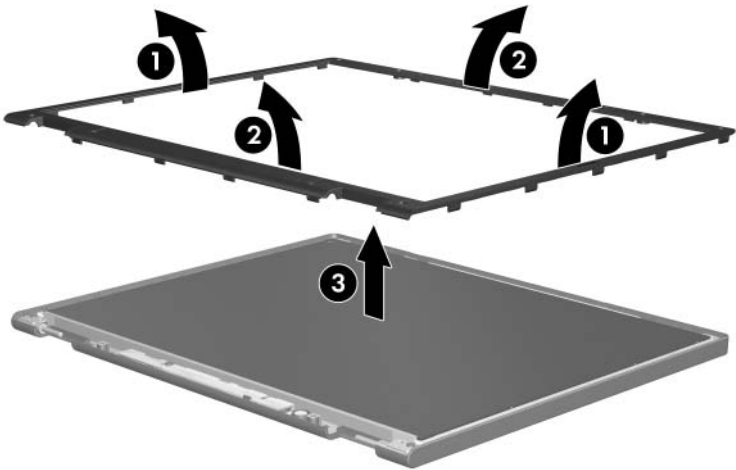
Perform the following steps to disassemble the display assembly:

1. Remove all screw covers **1** and screws **2** that secure the display bezel to the display assembly.



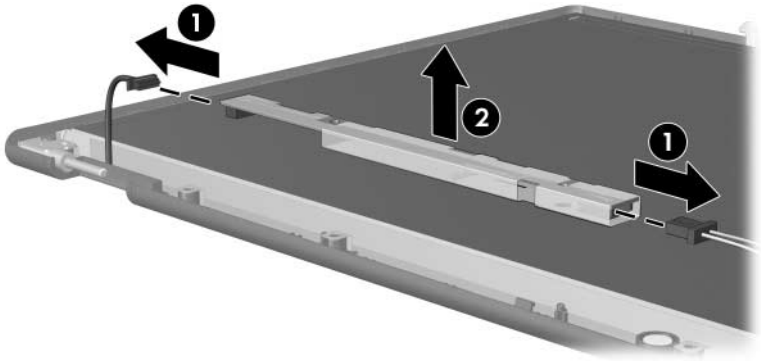
Removing the Display Bezel Screw Covers and Screws

-
2. Lift up and out on the left and right inside edges ① and the top and bottom inside edges ② of the display bezel until the bezel disengages from the display assembly.
3. Remove the display bezel ③.



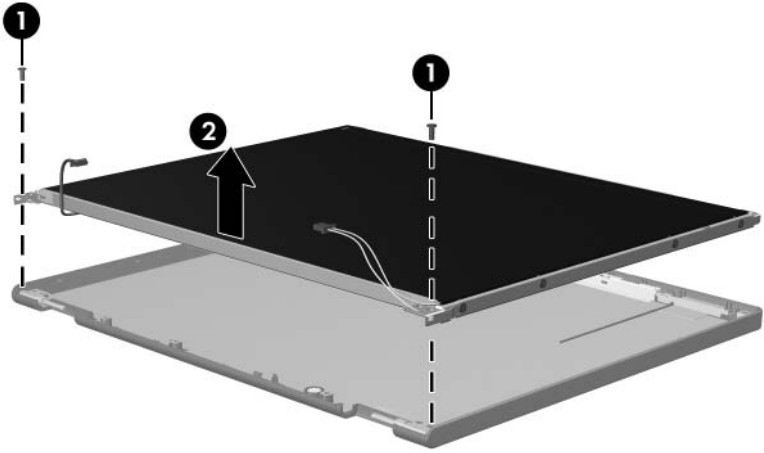
Removing the Display Bezel

4. Disconnect all LCD panel cables ❶ from the display inverter board and remove the inverter board ❷.



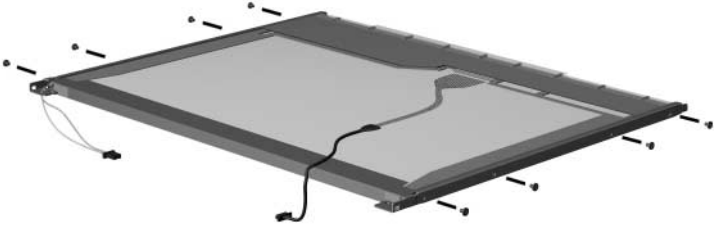
Removing the Display Inverter Board

5. Remove all screws **1** that secure the LCD panel to the display enclosure.
6. Remove the LCD panel **2** from the display enclosure.



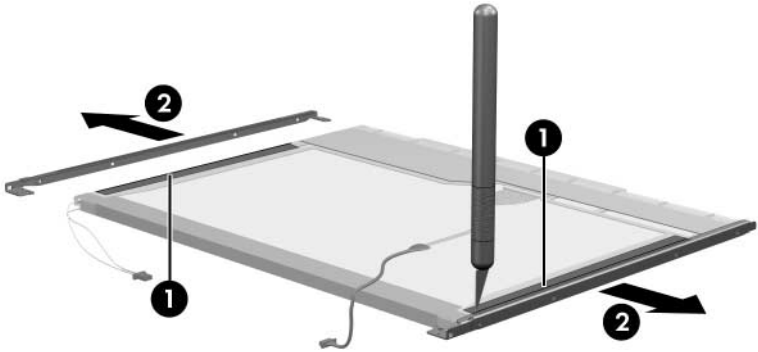
Removing the LCD Panel

7. Turn the LCD panel upside down.
8. Remove all screws that secure the LCD panel frame to the LCD panel.



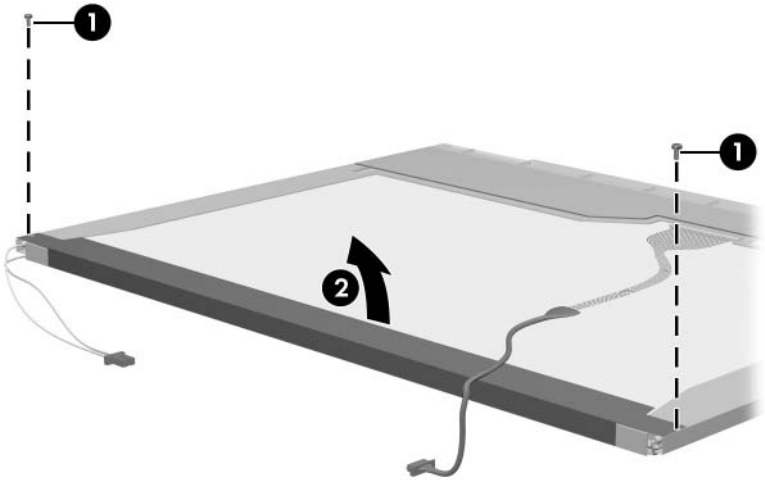
Removing the LCD Panel Frame Screws

9. Use a sharp-edged tool to cut the tape ❶ that secures the side of the LCD panel to the LCD panel frame.
10. Remove the LCD panel frame ❷ from the display panel.



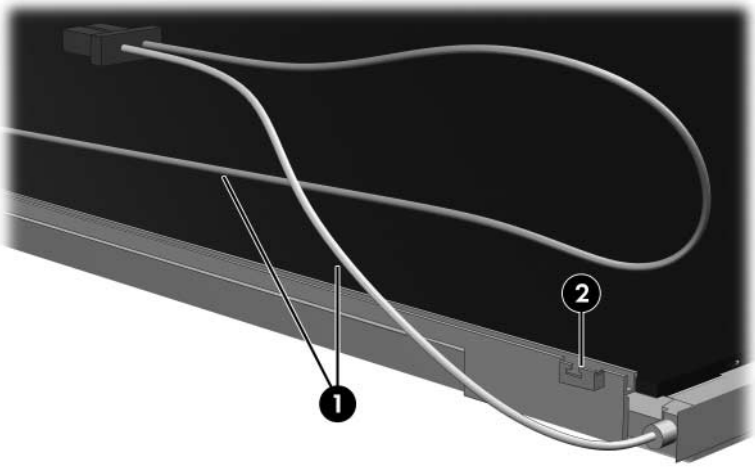
Removing the LCD Panel Frame

11. Remove the screws **1** that secure the backlight cover to the LCD panel.
12. Lift the top edge of the backlight cover **2** and swing it forward.
13. Remove the backlight cover.



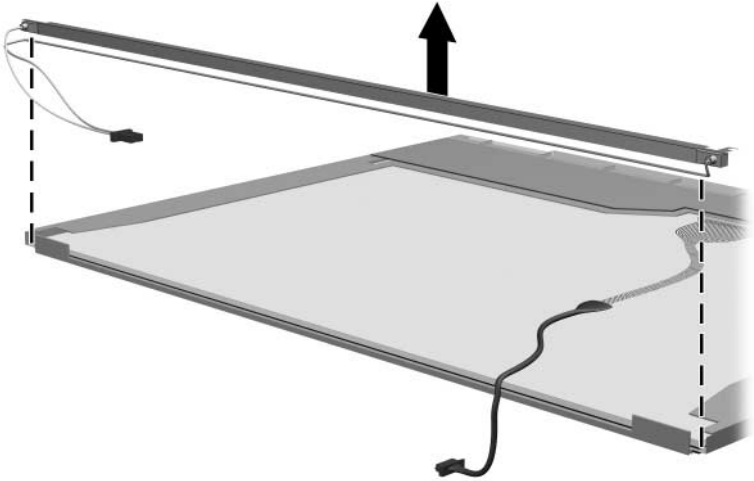
Removing the Backlight Cover

14. Turn the LCD panel right-side up.
15. Remove the backlight cables **1** from the clip **2** in the LCD panel.



Releasing the Backlight Cables

16. Turn the LCD panel upside down.
17. Remove the backlight frame from the LCD panel.

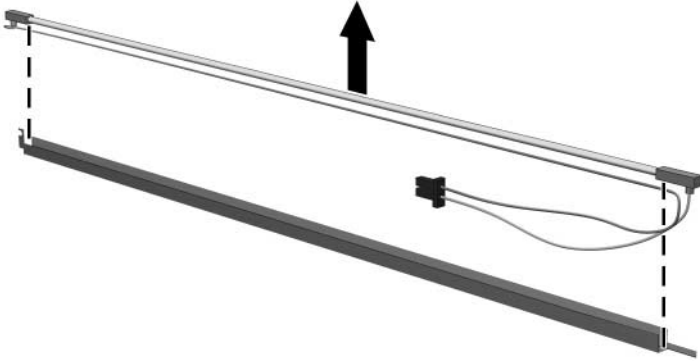


Removing the Backlight Frame



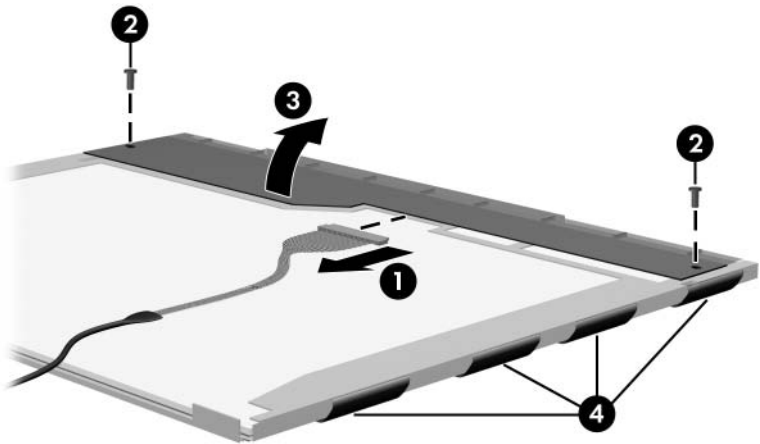
WARNING: The backlight contains mercury. Caution should be exercised when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

18. Slide the backlight out of the backlight frame.



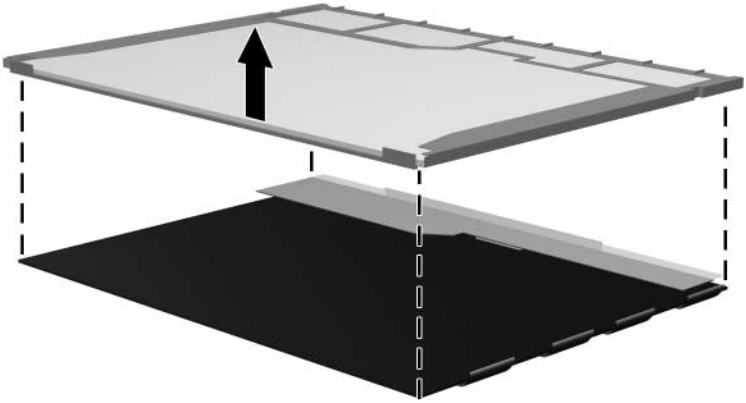
Removing the Backlight

19. Disconnect the display cable ❶ from the LCD panel.
20. Remove the screws ❷ that secure the LCD panel to the LCD rear panel.
21. Release the LCD panel ❸ from the LCD rear panel.
22. Release the tape ❹ that secures the LCD panel to the LCD rear panel.



Releasing the LCD Panel

23. Remove the LCD panel.



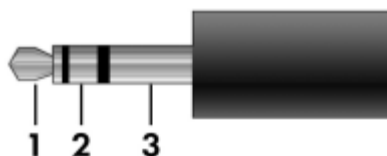
Removing the LCD Panel

24. Recycle the backlight and LCD panel.

D

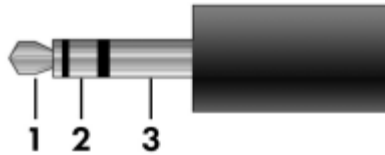
Connector Pin Assignments

Table D-1
Audio-Out (Headphone)



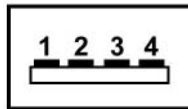
Pin	Signal	Pin	Signal
1	Audio out, left channel	3	Ground
2	Audio out, right channel		

Table D-2
Audio-In (Microphone)



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

Table D-3
Universal Serial Bus



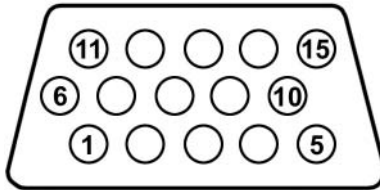
Pin	Signal	Pin	Signal
1	+5 VDC	3	Data +
2	Data -	4	Ground

Table D-4
S-Video-Out



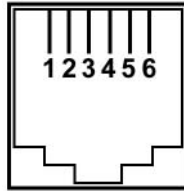
Pin	Signal	Pin	Signal
1	S-VHS color (C) signal	5	TV-CD
2	Composite video signal	6	S-VHS intensity ground
3	S-VHS intensity (Y) signal	7	Composite video ground
4	S-VHS color ground		

Table D-5
External Monitor



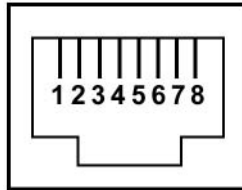
Pin	Signal	Pin	Signal
1	Red analog	9	+5 VDC
2	Green analog	10	Ground
3	Blue analog	11	Monitor detect
4	Not connected	12	DDC 2B data
5	Ground	13	Horizontal sync
6	Ground analog	14	Vertical sync
7	Ground analog	15	DDC 2B clock
8	Ground analog		

Table D-6
RJ-11 (Modem)



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

Table D-7
RJ-45 (Network)



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

Power Cord Set Requirements

3-Conductor Power Cord Set

The wide range input feature of the computer 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 computer 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 computer 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 computer.

Country-Specific Requirements

3-Conductor Power Cord Set Requirements

Country/Region	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 mm² 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 mm² 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/Region	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 mm² 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 mm² 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 RVV, 3-conductor, 0.75 mm² 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 VCTF, 3-conductor, 0.75 mm² 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.
-

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