



Maintenance and Service Guide

HP Compaq nx6115 and nx6125
Notebook PCs

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

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Product Description

The HP Compaq nx6115 and nx6125 Notebook PCs offer advanced modularity, AMD Turion™ 64 mobile technology and Mobile AMD Sempron™ processors, and extensive multimedia support.



HP Compaq nx6115 and nx6125 Notebook PCs

1.1 Features

- The following processors are available, varying by notebook model:
 - ❑ AMD Turion 64 ML-40 (2.2-GHz)
 - ❑ AMD Turion 64 ML-37 (2.0-GHz)
 - ❑ AMD Turion 64 ML-34 (1.8-GHz)
 - ❑ AMD Turion 64 ML-32 (1.8-GHz)
 - ❑ AMD Turion 64 ML-30 (1.6-GHz)
 - ❑ AMD Turion 64 ML-28 (1.6-GHz)
 - ❑ Mobile AMD Sempron 3100+ (1.80-GHz)
 - ❑ Mobile AMD Sempron 3000+ (1.80-GHz)
 - ❑ Mobile AMD Sempron 2800+ (1.60-GHz)
- The following displays are available, varying by notebook model:
 - ❑ 15.0-inch, SXGA+WVA, TFT (1400 × 1050) with over 16.8 million colors
 - ❑ 15.0-inch, XGA, TFT (1280 × 800) with over 16.8 million colors
- 80-, 60-, 40-, or 30-GB high-capacity hard drive, varying by notebook model
- 256-MB DDR PC2700 synchronous DRAM (SDRAM) at 333 MHz, expandable to 2.0 GB
- Microsoft® Windows® XP Home Edition or Windows XP Professional, varying by notebook model

- Full-size Windows keyboard with embedded numeric keypad
- TouchPad pointing device, including a dedicated vertical scroll region.
- Integrated 10 Base-T/100 Base-TX (HP Compaq nx6115 only) and 10 Base-T/100 Base-TX/1000 Gigabit (HP Compaq nx6125 only) Ethernet local area network (LAN) network interface card (NIC) with RJ-45 jack
- Integrated high-speed 56K modem with RJ-11 jack
- Integrated wireless support for Mini PCI IEEE 802.11a/b/g or 802.11b/g WLAN device
- Support for one Type II PC Card slot, with support for both 32-bit (CardBus) and 16-bit PC Cards, varying by notebook model
- External 65-watt AC adapter with 3-wire power cord, varying by notebook model
- 6-cell Li-Ion battery pack
- Stereo speakers



The following features are available only on HP Compaq nx6125 models:

- 6-in-1 Digital Media Slot
 - S-Video-out jack
 - Docking connector
 - Volume up, volume mute, and volume down buttons
 - Info Center and Presentation mode buttons
 - Support for one ExpressCard slot
-

- Support for the following optical drives:
 - ❑ DVD±RW and CD-RW Combo Drive
 - ❑ DVD/CD-RW Combo Drive
 - ❑ DVD-ROM drive
 - ❑ CD-ROM drive Connectors:
 - ❑ Audio-out (headphone)
 - ❑ Audio-in (microphone)
 - ❑ Universal Serial Bus (USB) v. 2.0 (3 ports)
 - ❑ Power
 - ❑ External monitor
 - ❑ RJ-11 (modem)
 - ❑ RJ-45 (network)
 - ❑ IEEE 1394
 - ❑ Travel battery
 - ❑ Digital Media Slot (HP Compaq nx6125 models only)
 - ❑ S-Video-out (HP Compaq nx6125 models only)
 - ❑ Docking connector (HP Compaq nx6125 models only)

1.2 Resetting the Notebook

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

1. Prepare the notebook for disassembly (refer to [Section 6.3, “Preparing the Notebook for Disassembly,”](#) for more information).
2. Remove the RTC battery (refer to [Section 6.20, “RTC Battery,”](#) for more information on removing and replacing the RTC battery).

3. Wait approximately 5 minutes.
4. Replace the RTC battery and reassemble the notebook.
5. Connect AC power to the notebook. Do not reinsert any battery packs at this time.
6. Turn on the notebook.

All passwords and all CMOS settings have been cleared.

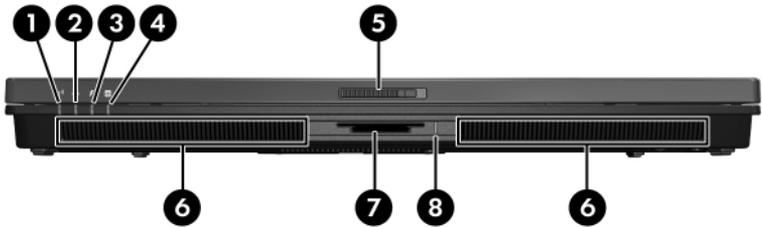
1.3 Power Management

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

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

1.4 External Components

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



Front Components

Table 1-1

Front Components

Item	Component	Function
1	Wireless light	On: An integrated wireless device, such as a wireless LAN device and/or a Bluetooth® device, is turned on.
2	Power/standby light	Green: The notebook is on. Blinking green: The notebook is in standby mode. Off: The notebook is off or in hibernation.

Table 1-1
Front Components (Continued)

Item	Component	Function
3	Battery light	<p>Amber: A battery pack is charging.</p> <p>Green: A battery pack is close to full charge capacity.</p> <p>Blinking amber: A battery pack that is the only available power source has reached a low-battery condition. When the battery reaches a critical low-battery condition, the battery light begins blinking more quickly.</p> <p>Off: If the notebook is connected to an external power source, the light is turned off when all batteries in the notebook are fully charged. If the notebook is not connected to an external power source, the light is turned off until the battery reaches a low-battery condition.</p>
4	IDE (Integrated Drive Electronics) drive light	Blinking: The hard drive or optical drive is being accessed.
5	Display release latch	Opens the notebook.
6	Speakers (2)	Produce system sound.
7	6-in-1 Digital Media Slot (HP Compaq nx6125 models only)	Supports 6 optional digital memory card formats: SD (Secure Digital) Memory Card, MultiMediaCard, Memory Stick, Memory Stick Pro, SmartMedia, and xD-Picture Card.
8	6-in-1 Digital Media Slot light (HP Compaq nx6125 models only)	On: Slot is accessing a digital memory card.

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



Right-Side Components

Table 1-2
Right-Side Components

Item	Component	Function
1	Optical drive	Holds an optical disc.
2	RJ-11 (modem) jack	Connects a modem cable.

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



Left-Side Components

Table 1-3

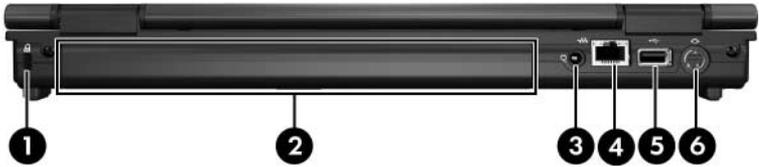
Left-Side Components

Item	Component	Function
1	Vent	Enables airflow to cool internal components.
	 To prevent overheating, do not obstruct vents. Using the notebook on a soft surface, such as a pillow, blanket, rug, or thick clothing, may block airflow.	
2	External monitor port	Connects an external monitor.

Table 1-3
Left-Side Components (Continued)

Item	Component	Function
3	1394 port	Connects an optional IEEE 1394 device, such as a camcorder.
4	USB ports (2)	Connect USB 1.1- and 2.0-compliant devices to the notebook using a standard USB cable, or connect an optional External MultiBay II to the notebook. The MultiBay II must also be connected to an external power source.
5	Audio-in (microphone) jack	Connects an optional stereo or monaural microphone.
6	Audio-out (headphone) jack	Produces system sound when connected to optional powered stereo speakers, headphones, headset, or television audio.
7	PC Card slot	Supports optional Type I or Type II PC Cards.
8	ExpressCard slot (HP Compaq nx6125 models only)	Supports optional ExpressCard/54 or ExpressCard/34 cards.
9	PC Card slot eject button	Ejects the PC Card from the PC Card slot.

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



Rear Panel Components

Table 1-4
Rear Panel Components

Item	Component	Function
1	Security cable slot	Attaches an optional security cable to the notebook.
	 Security solutions are designed to act as deterrents. These deterrents may not prevent a product from being mishandled or stolen.	
2	Battery bay	Holds a battery pack.
3	Power connector	Connects an AC adapter or an optional combination power adapter.
4	RJ-45 (network) jack	Connects a network cable.
5	USB port	Connects USB 1.1- and 2.0-compliant devices to the notebook using a standard USB cable, or connect an optional External MultiBay II to the notebook. The MultiBay II must be connected to an external power source.
6	S-Video-out jack (HP Compaq nx6125 models only)	Connects an optional S-Video device such as a television, VCR, camcorder, overhead projector, or video capture card.

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



Standard Keyboard Components

Table 1-5

Standard Keyboard Components

Item	Component	Function
1	Function keys	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.

Table 1-5
Standard Keyboard Components (*Continued*)

Item	Component	Function
4	Windows logo key	Displays the Microsoft Windows Start menu.
5	Windows applications key	Displays a shortcut menu for items beneath the pointer.
6	Arrow keys	Moves the cursor around the screen.
7	Keypad keys	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 notebook top components are shown below and described in Table 1-6.



Top Components

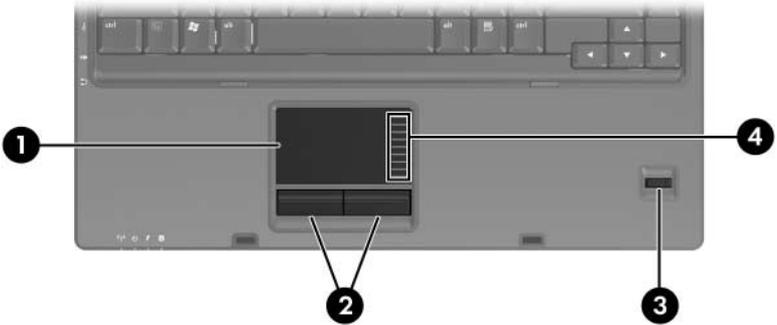
Table 1-6
Top Components

Item	Component	Function
1	Display lid switch	Puts the notebook in standby if the display is closed while the notebook is turned on.
2	Power/standby button	When the notebook is: Off, press the button to turn on the notebook. In standby, briefly press the button to exit standby. In hibernation, briefly press the button to exit hibernation. If the notebook has stopped responding and Microsoft Windows shutdown procedures cannot be used, press the power/standby button and hold for 5 seconds to turn off the notebook.

Table 1-6
Top Components (Continued)

Item	Component	Function
3	Info Center button (HP Compaq nx6125 models only)	Launches Info Center, which enables you to quickly open the following software solutions: Altiris Local Recovery, Contact HP, Help and Support, Options Demo, ProtectTools Security Manager, Software Setup, System Information, and Wireless Assistant.
4	Wireless button  To establish a wireless connection, a wireless network must already be set up.	Turns the wireless functionality on or off, but does not create a wireless connection.
5	Presentation mode button (HP Compaq nx6125 models only)	Turns on Presentation mode.
6	Caps lock light	On: Caps lock is on.
7	Num lock light	On: Num lock is on or the embedded numeric keypad is enabled.
8	Volume mute button (HP Compaq nx6125 models only)	Mutes system sound.
9	Volume down button (HP Compaq nx6125 models only)	Decreases system sound.
10	Volume up button (HP Compaq nx6125 models only)	Increases system sound.

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

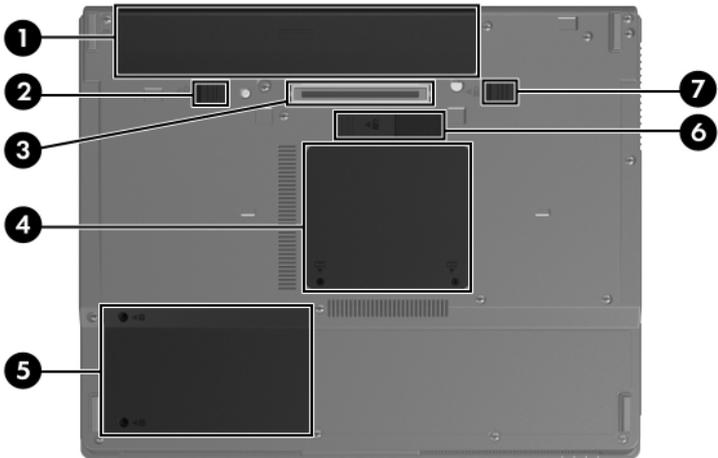


TouchPad Components

Table 1-7
TouchPad Components

Item	Component	Function
1	TouchPad	Moves the pointer and selects or activates items on the screen. Can be set to perform other mouse functions, such as scrolling, selecting, and double-clicking.
2	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
3	Fingerprint reader HP Compaq nx6125 models only)	Allows a fingerprint logon to Windows instead of using a password.
4	TouchPad scroll zone	Scrolls upward or downward.

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



Bottom Components

Table 1-8
Bottom Components

Item	Component	Function
1	Primary battery bay	Holds the primary battery pack.
2	Primary battery locking latch	Secures the primary battery pack into the battery bay.
3	Docking connector (HP Compaq nx6125 models only)	Connects the notebook to an optional HP Advanced Docking Station or HP Docking Station.
4	Travel battery connector	Connects an optional travel battery.

Table 1-8
Bottom Components (*Continued*)

Item	Component	Function
5	Memory module compartment	Contains the memory module slots.
6	Hard drive bay	Holds the hard drive.
7	Primary battery release latch	Releases the primary battery pack from the battery bay.

1.5 Design Overview

This section presents a design overview of key parts and features of the notebook. Refer to [Chapter 4, “Illustrated Parts Catalog,”](#) to identify replacement parts, and [Chapter 6, “Removal and Replacement Procedures,”](#) for disassembly steps.

The system board provides the following device connections:

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



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

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

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 Computer Setup

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



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

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

Accessing Computer Setup

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

1. Open Computer Setup by turning on or restarting the notebook. Press **f10** while the F10 = Based Setup message is displayed in the lower-left corner of the screen.
 - ❑ To change the language, press **f2**.
 - ❑ To view navigation information, press **f1**.
 - ❑ To return to the Computer Setup menu, press **esc**.
2. Select the **File**, **Security**, **Tools**, or **Advanced** menu.
3. To exit Computer Setup, choose one of the following:
 - ❑ To exit without saving any changes, use the arrow keys to select **File > Ignore changes and exit**, and then follow the instructions on the screen.
 - ❑ To exit and save all the settings you have entered, use the arrow keys to select **File > Save changes and exit**, and then follow the instructions on the screen.

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

Computer Setup Defaults

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

1. Open Computer Setup by turning on or restarting the notebook. Press **f10** while the F10 = Based Setup message is displayed in the lower-left corner of the screen.
 - ❑ To change the language, press **f2**.
 - ❑ To view navigation information, press **f1**.
2. Use the arrow keys to select **File > Restore defaults**.
3. Select the **Restore Defaults** check box.

4. To confirm the restoration, press **f10**.
5. Select **File > Save changes and exit**, and then follow the instructions on the screen.

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

Selecting from the File Menu

Table 2-1
File Menu

Select	To Do This
System Information	<ul style="list-style-type: none"> ■ View identification information about the notebook and any battery packs in the system. ■ View specification information about the processor, memory and cache size, video revision, keyboard controller version, and system ROM.
Save to floppy	Save system configuration settings to a diskette.
Restore from floppy	Restore system configuration settings from a diskette.
Restore defaults	Replace configuration settings in Computer Setup with factory default settings. (Identification information is retained.)
Ignore changes and exit	Cancel changes entered during the current session. Then exit and restart the notebook.
Save changes and exit	Save changes entered during the current session. Then exit and restart the notebook. The changes you save are in effect when the notebook restarts.

Selecting from the Security Menu

Table 2-2
Security Menu

Select	To Do This
Administrator password	Enter, change, or delete an HP Administrator password.
Power-on password	Enter, change, or delete a power-on password.
Password options	<ul style="list-style-type: none"> ■ Enable/Disable stringent security. ■ Enable/Disable required password on restart.
DriveLock passwords	<p>Enable/disable DriveLock; change a DriveLock user or master password.</p> <p> DriveLock Settings are accessible only when you enter Computer Setup by turning on (not restarting) the notebook.</p>
Smart Card security	<p>Enable/disable power-on support for smart cards.</p> <p> This feature is supported by select Smart Card readers only.</p>
Embedded security	<ul style="list-style-type: none"> ■ Enable/Disable the embedded security chip. ■ Restore embedded security chip to factory settings. ■ Enable/Disable power-on authentication support. ■ Enable/Disable automatic DriveLock. ■ Reset power-on authentication credential <p> Embedded Security settings are accessible only if the notebook is equipped with an embedded security chip.</p>
Device security	<ul style="list-style-type: none"> ■ Enable/Disable devices in the system. ■ Enable NIC for inclusion in MultiBoot.
System IDs	Enter user-defined identification values.

Selecting from the Tools Menu

Table 2-3
Tools Menu

Select	To Do This
HDD Self Test options	Run a quick or comprehensive self-test on any hard drive in the system.
Battery Information	View information about any battery packs in the notebook.
Memory Check	<ul style="list-style-type: none"> ■ Run a self-test on memory modules in the notebook. ■ View information about memory modules installed in the notebook.

Selecting from the Advanced Menu

Table 2-4
Advanced Menu

Select	To Do This
Language (or press f2)	Change the Computer Setup language.
Boot options	<ul style="list-style-type: none"> ■ Enable/Disable MultiBoot, which sets a startup sequence that can include most bootable devices and media in the system. ■ Set the boot order.
Device options	<ul style="list-style-type: none"> ■ Swap the functions of the fn key and left ctrl key. ■ Enable/Disable multiple pointing devices at startup. (To set the notebook to support only a single, usually nonstandard, pointing device at startup, select Disable.) ■ Enable/Disable USB legacy support for a USB keyboard, mouse, and hub. When USB legacy support is enabled <ul style="list-style-type: none"> <input type="checkbox"/> A USB keyboard, mouse, and hub work even when a Windows operating system is not loaded. <input type="checkbox"/> The notebook starts from a bootable hard drive, diskette drive diskette, or CD, CD-RW, or DVD inserted into a drive connected by a USB connector to the notebook or to an optional docking device. ■ Select a parallel port mode: EPP (Enhanced Parallel Port), standard, bidirectional, or ECP (Enhanced Capabilities Port). ■ Enable/Disable all settings in the SpeedStep window. (When Disable is selected, the notebook runs in Battery Optimized mode.)

2.2 Troubleshooting Flowcharts

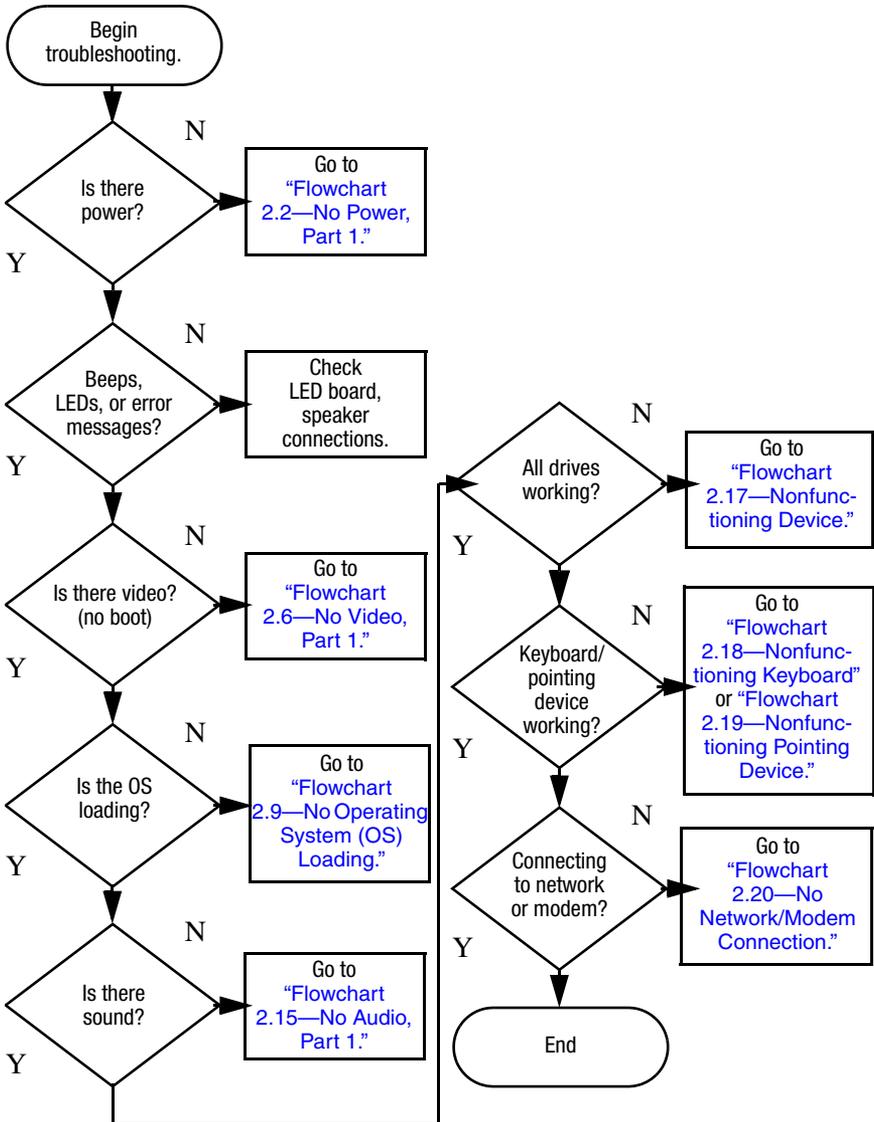
Table 2-5
Troubleshooting Flowcharts Overview

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"

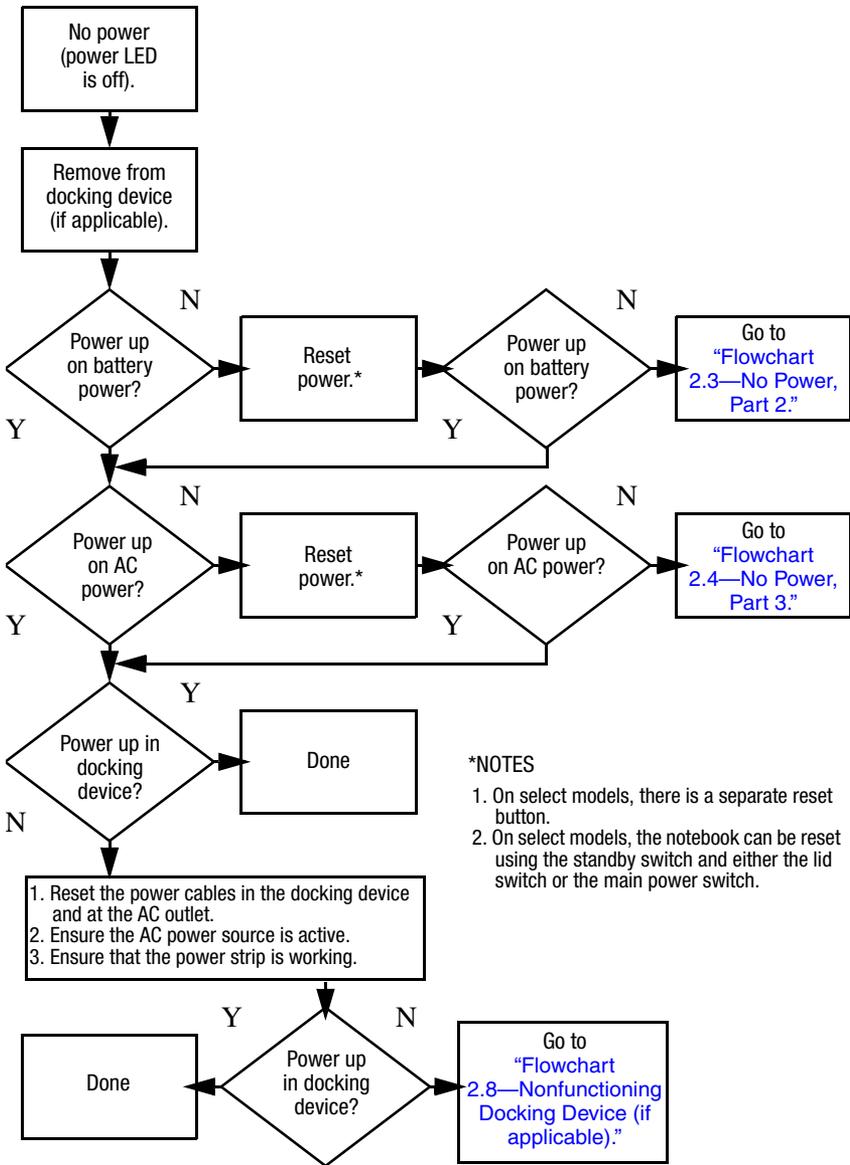
Table 2-5
Troubleshooting Flowcharts Overview (*Continued*)

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"

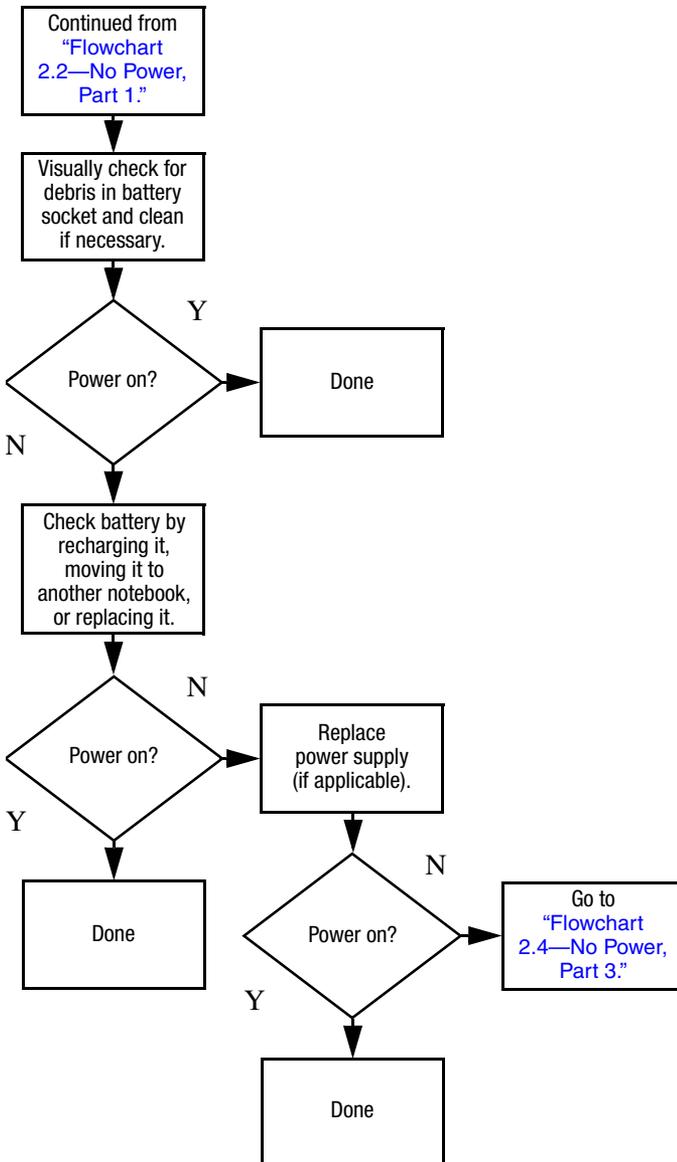
Flowchart 2.1 – Initial Troubleshooting



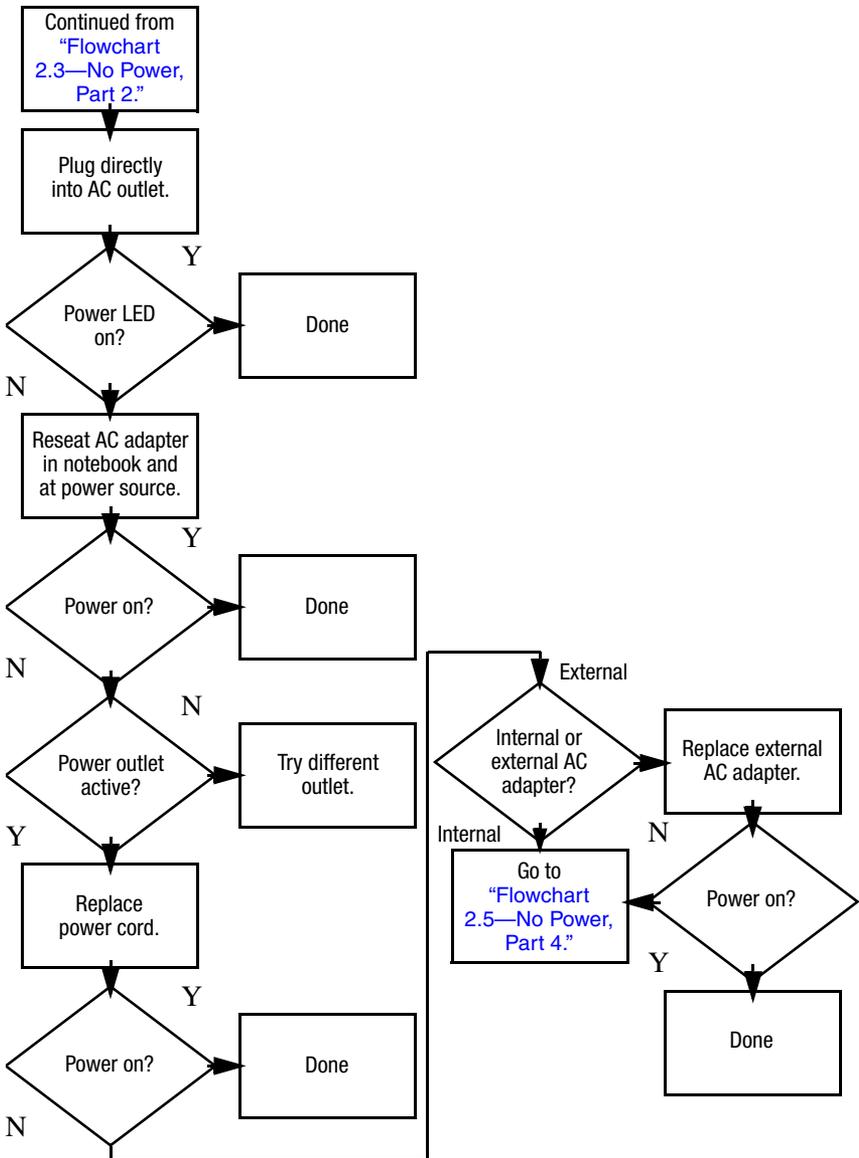
Flowchart 2.2—No Power, Part 1



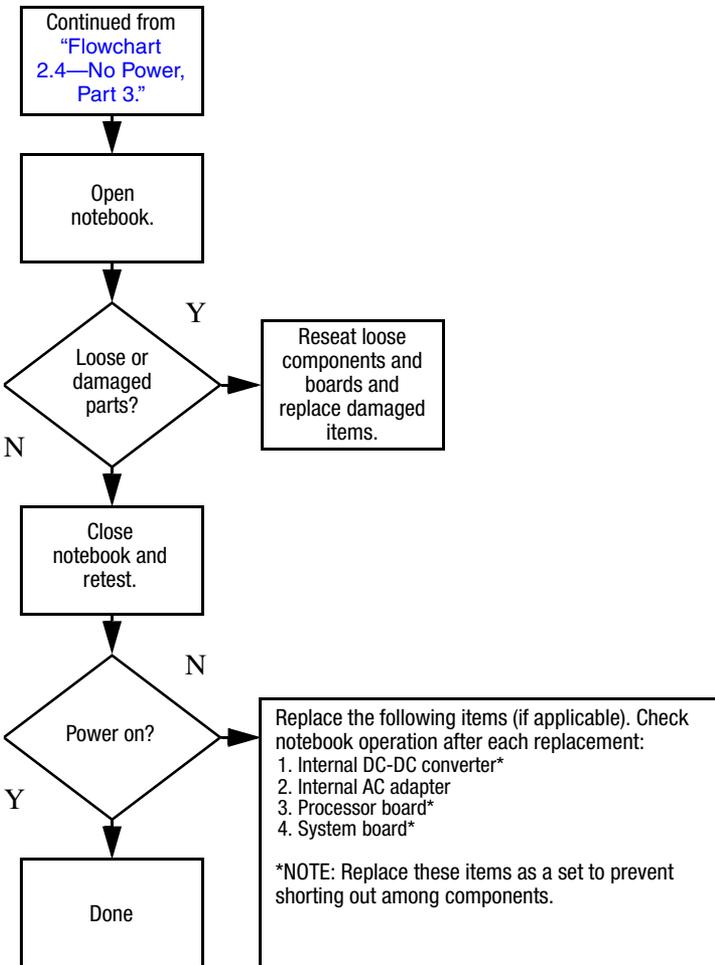
Flowchart 2.3—No Power, Part 2



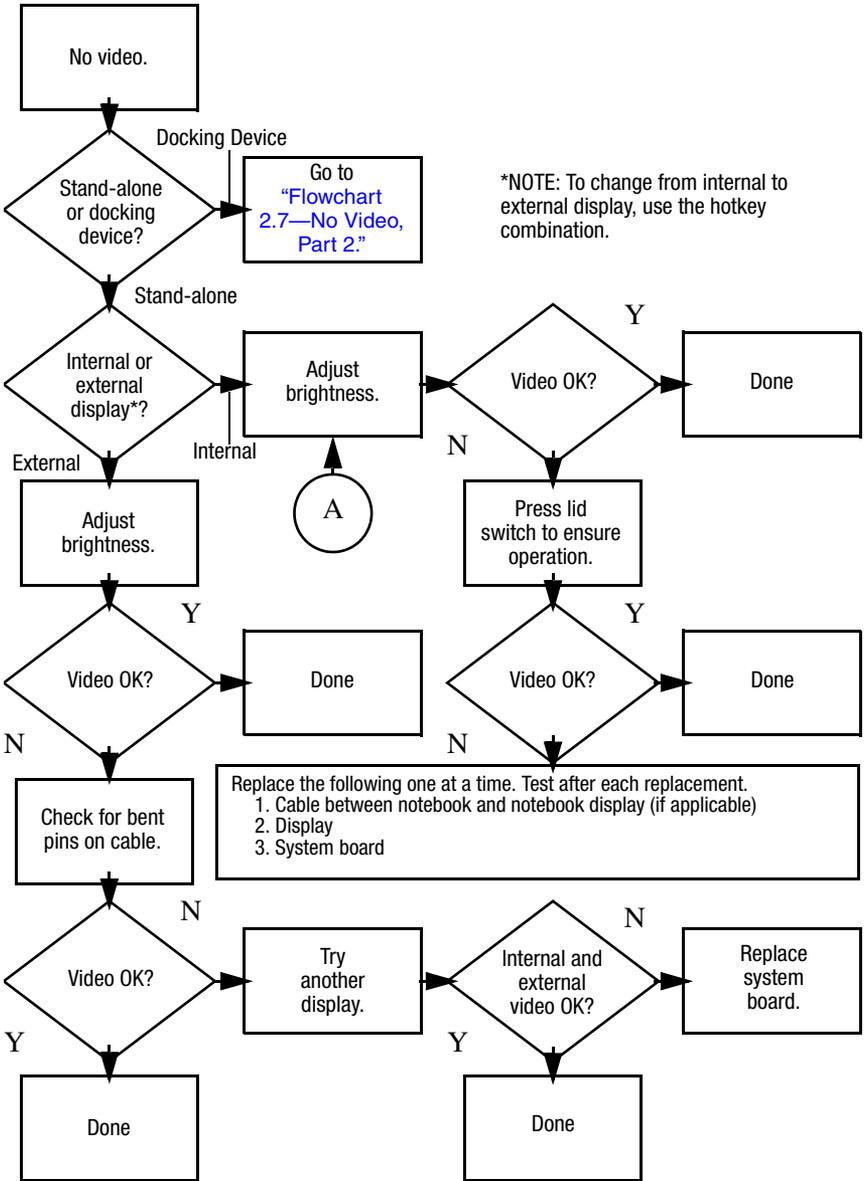
Flowchart 2.4—No Power, Part 3



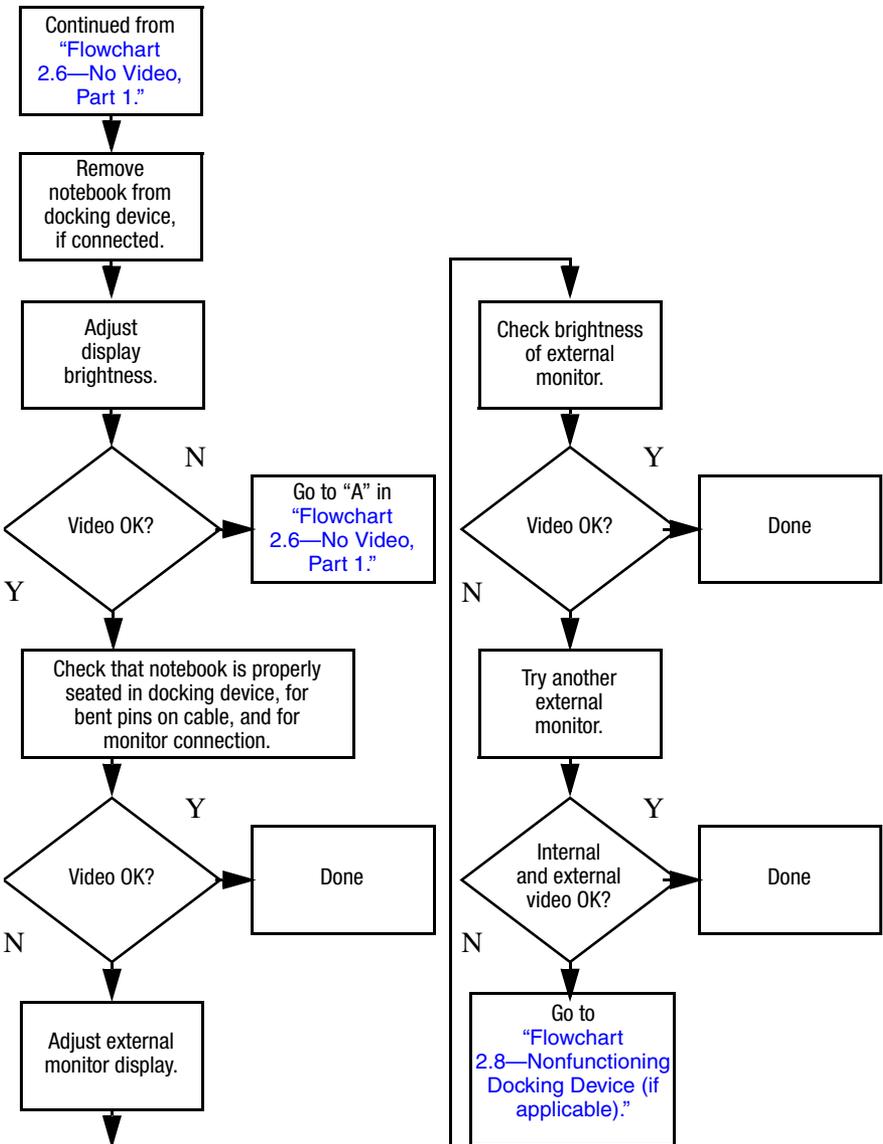
Flowchart 2.5—No Power, Part 4



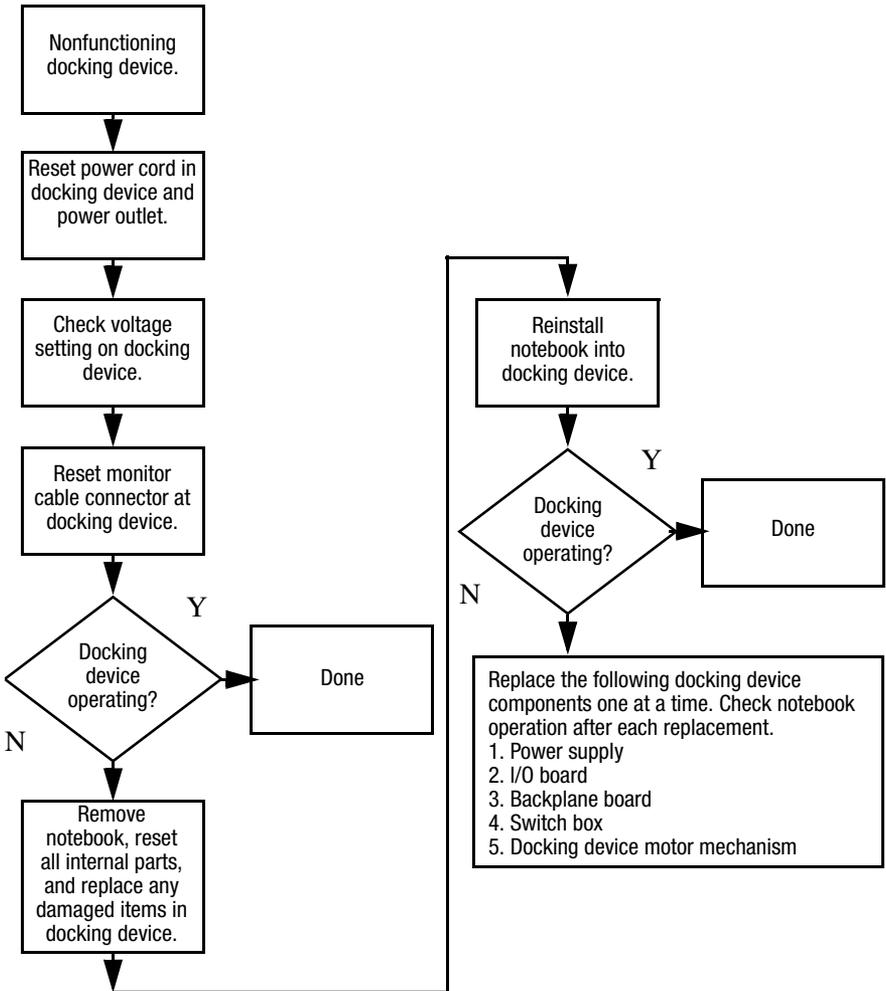
Flowchart 2.6—No Video, Part 1



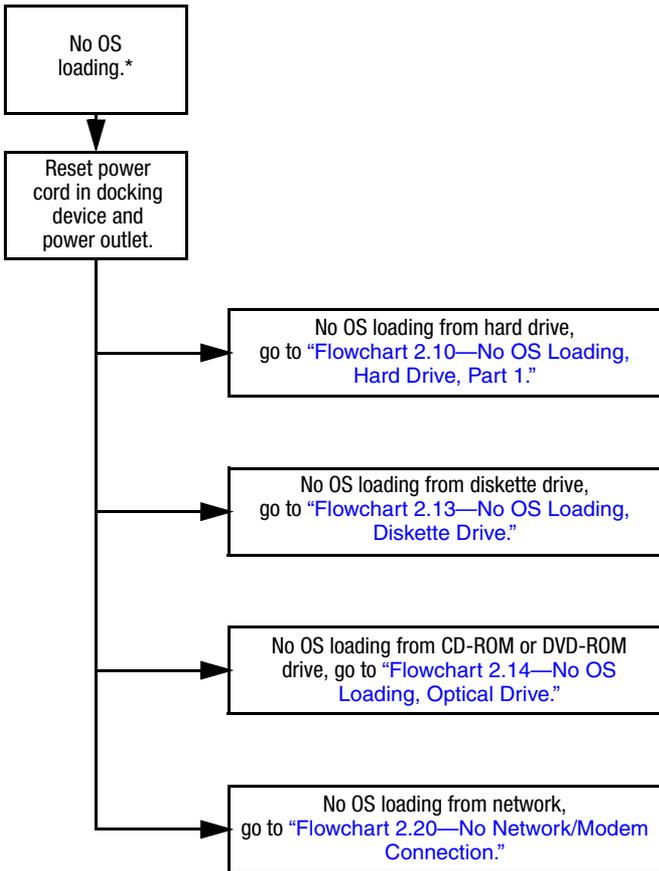
Flowchart 2.7—No Video, Part 2



Flowchart 2.8—Nonfunctioning Docking Device (if applicable)

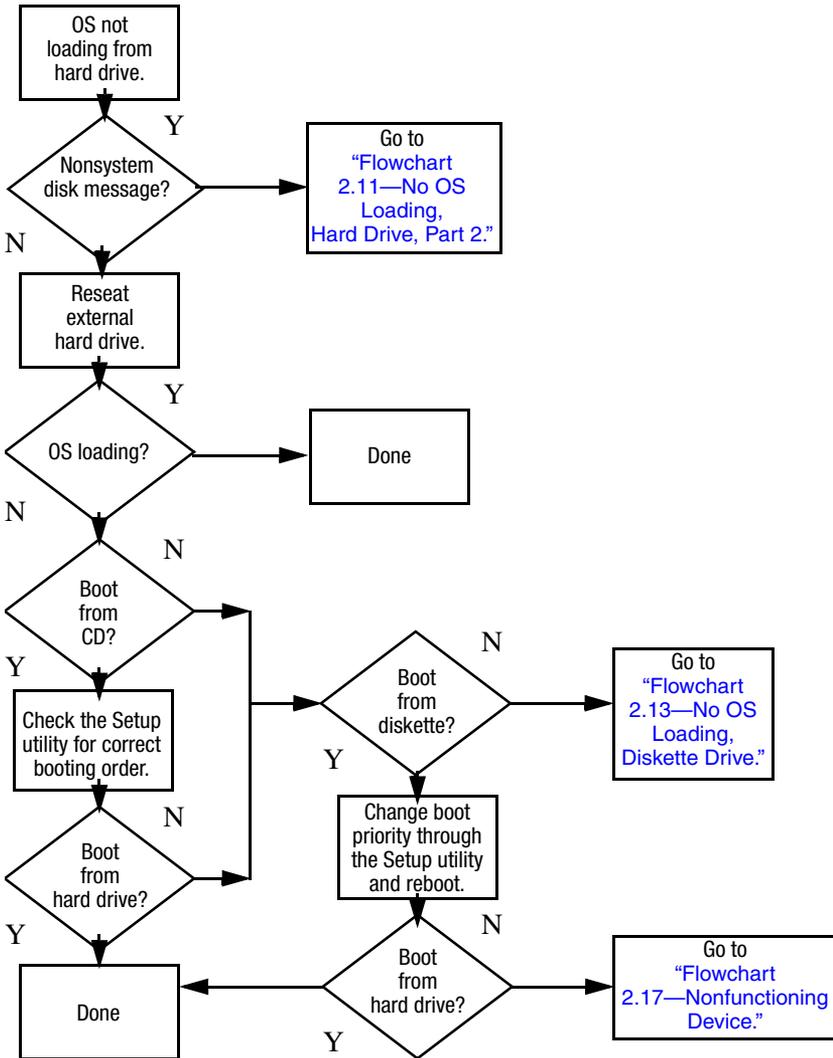


Flowchart 2.9—No Operating System (OS) Loading

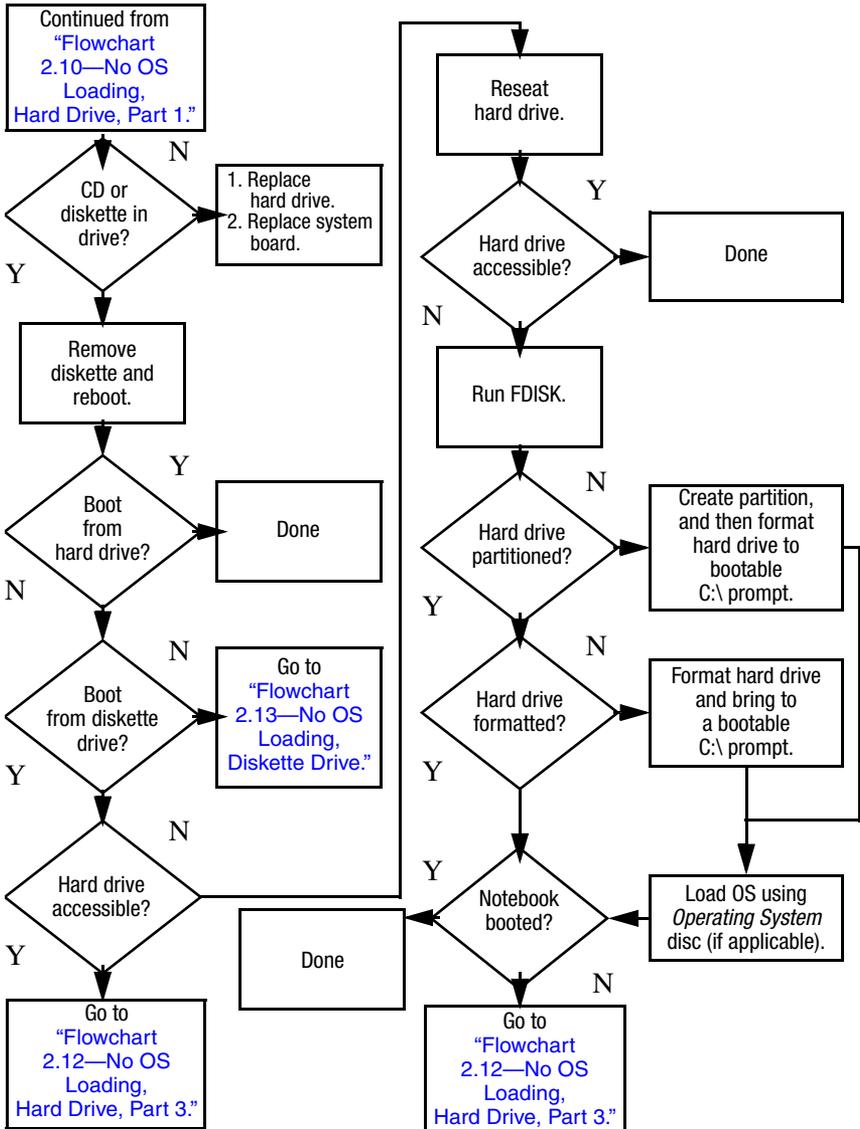


*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

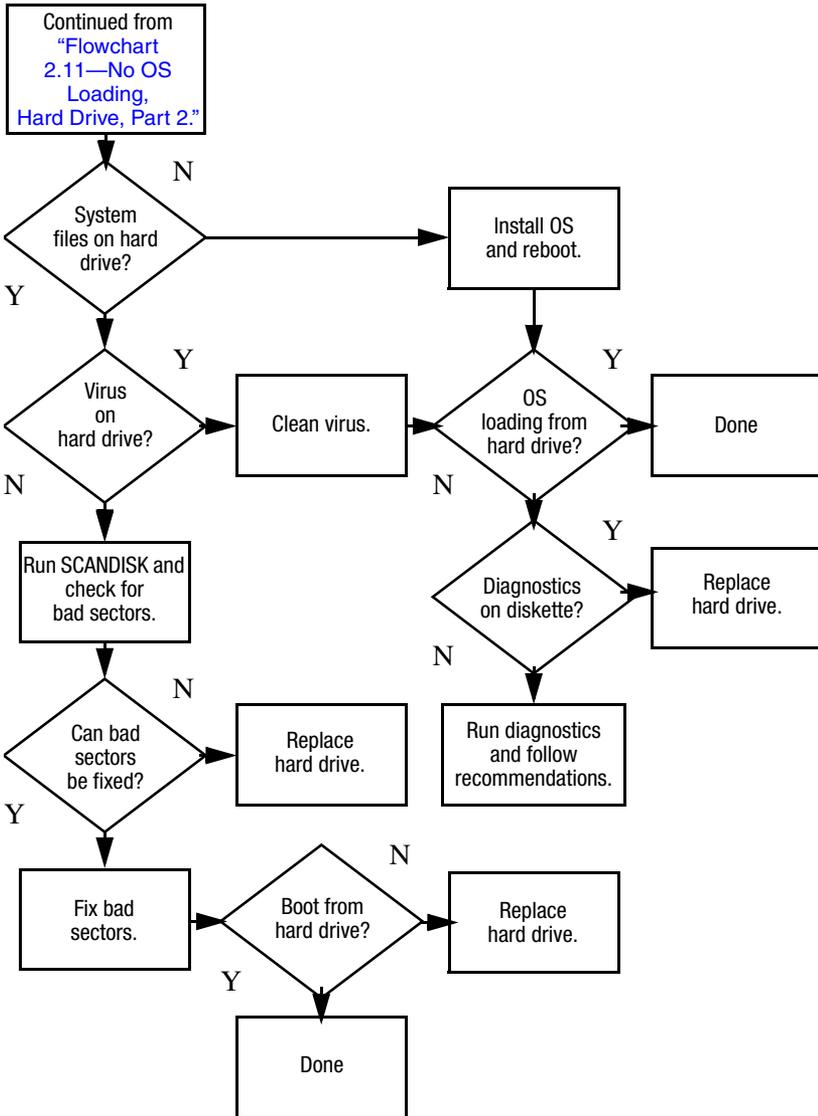
Flowchart 2.10—No OS Loading, Hard Drive, Part 1



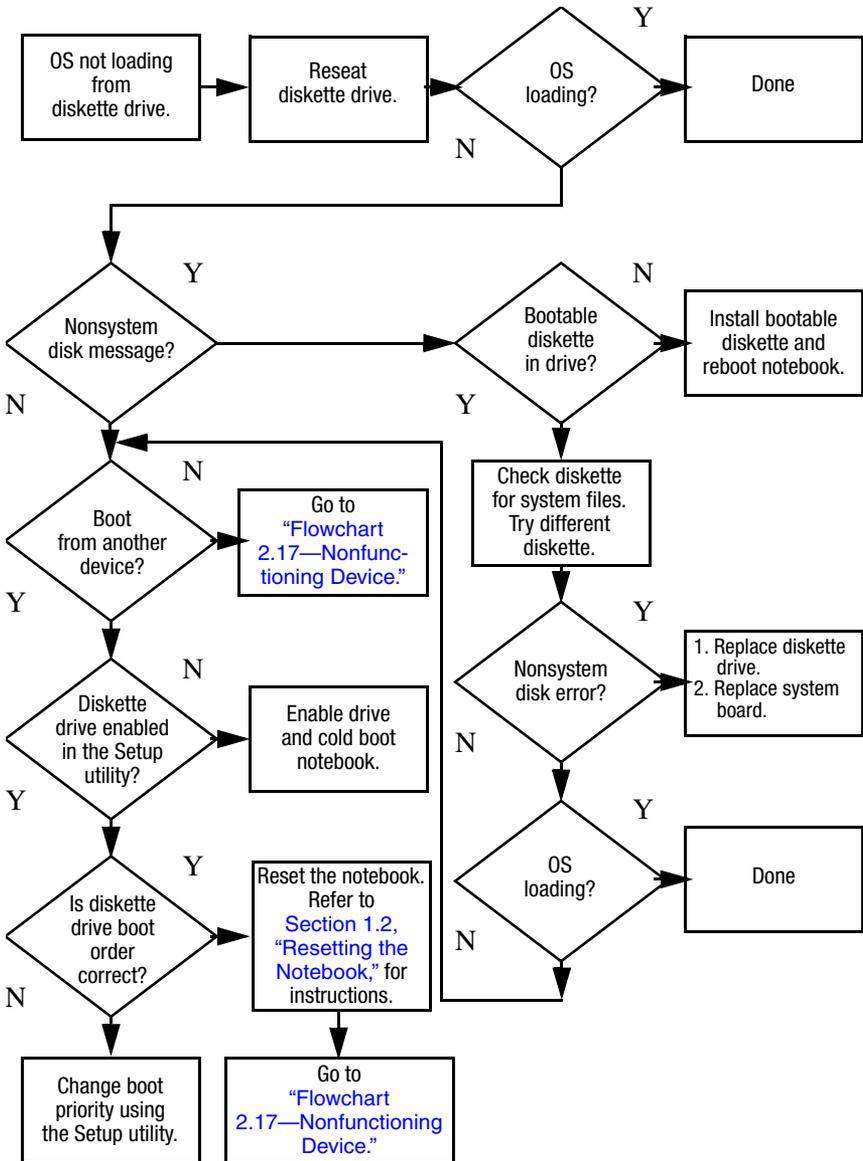
Flowchart 2.11 – No OS Loading, Hard Drive, Part 2



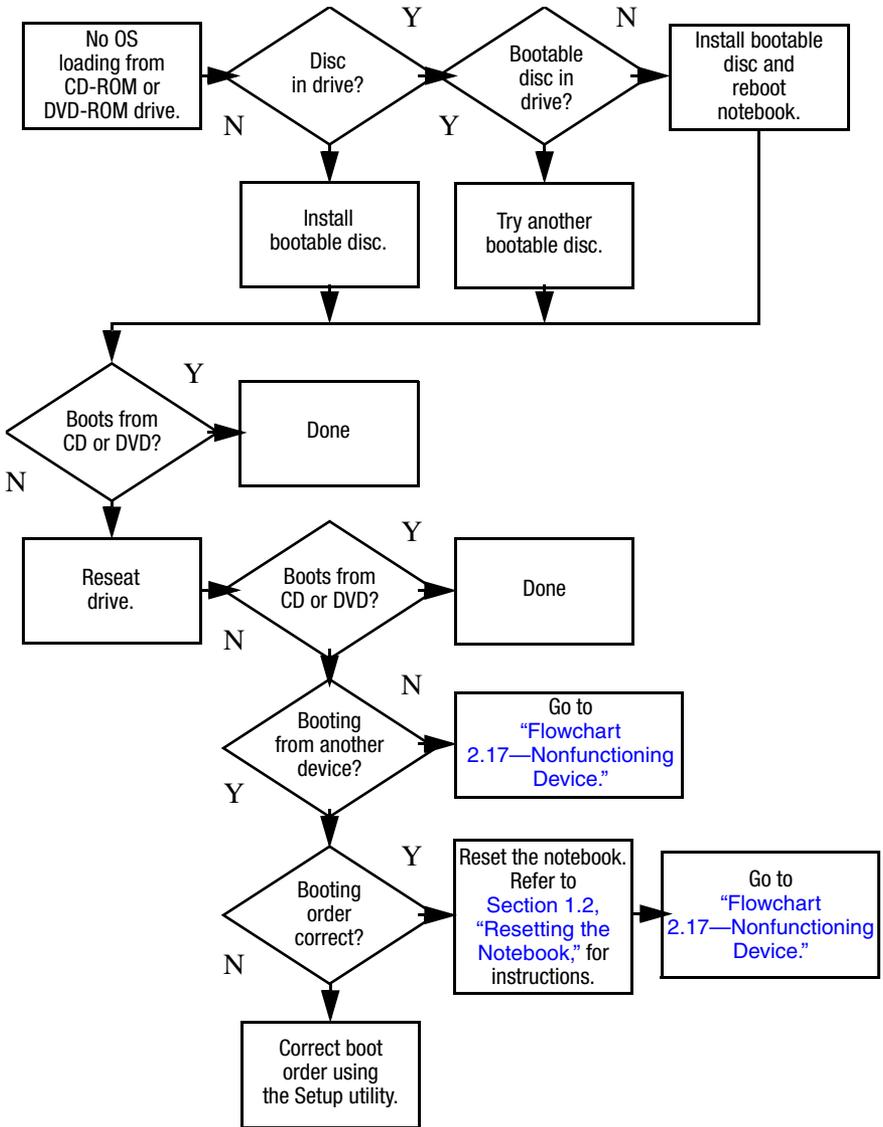
Flowchart 2.12—No OS Loading, Hard Drive, Part 3



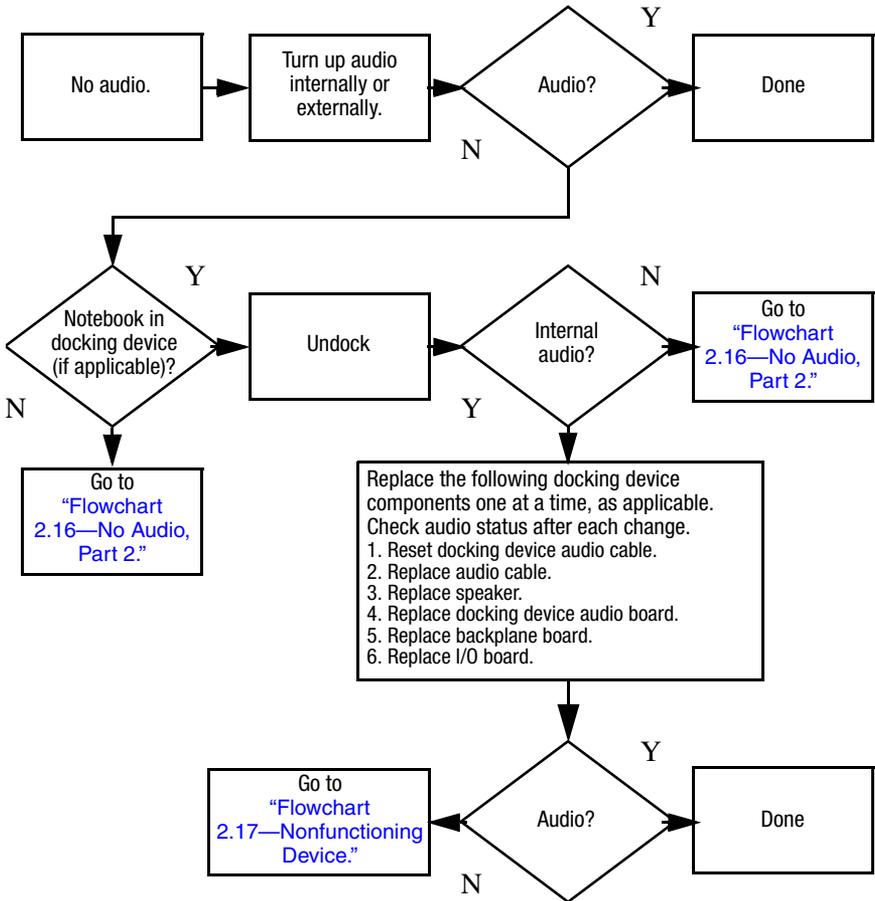
Flowchart 2.13—No OS Loading, Diskette Drive



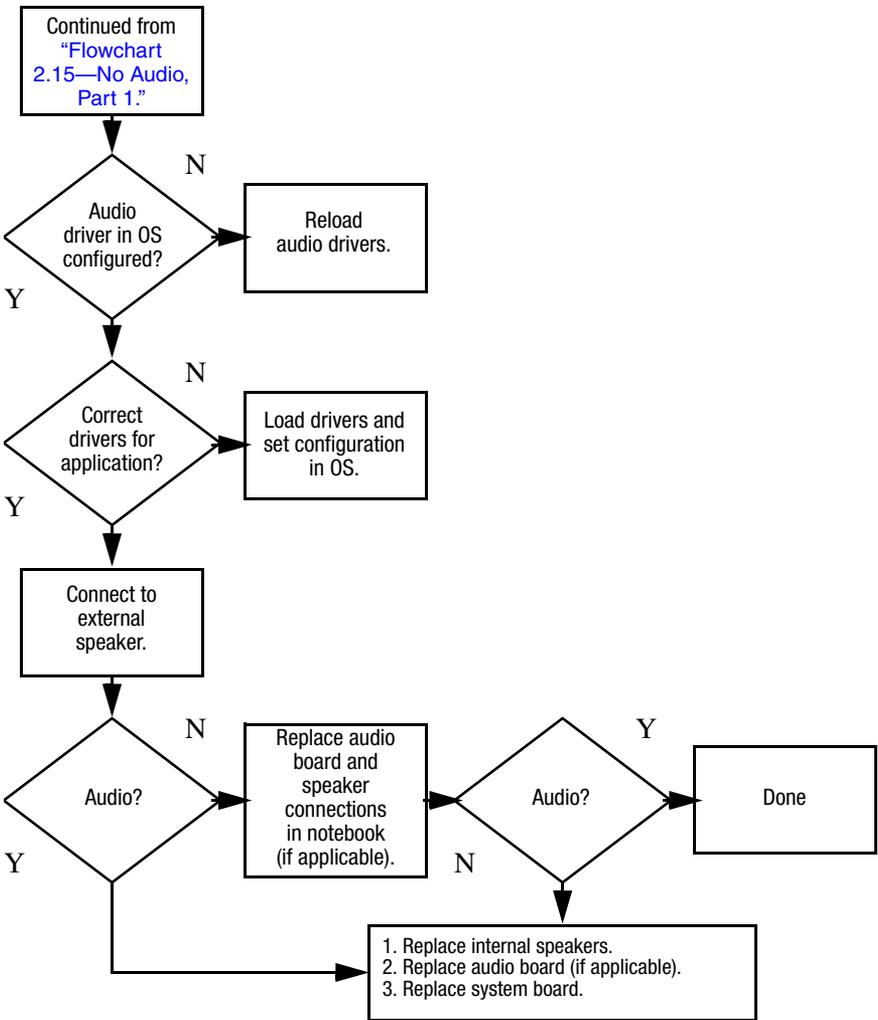
Flowchart 2.14—No OS Loading, Optical Drive



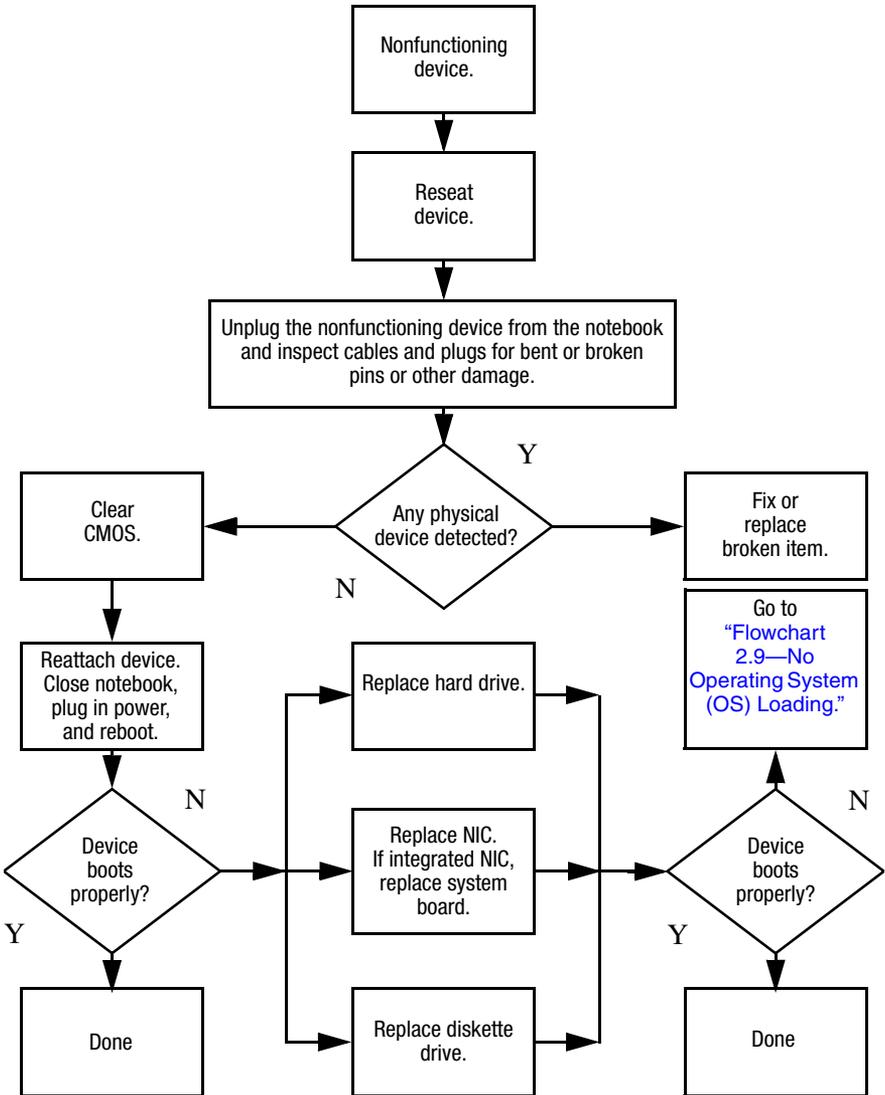
Flowchart 2.15—No Audio, Part 1



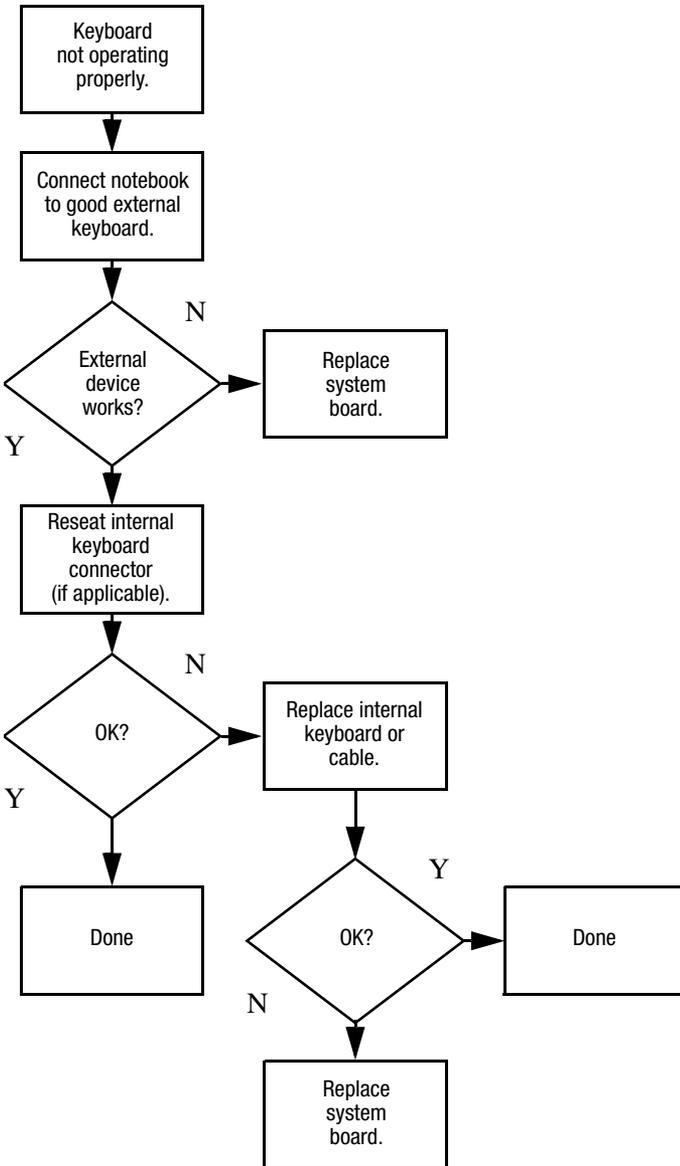
Flowchart 2.16—No Audio, Part 2



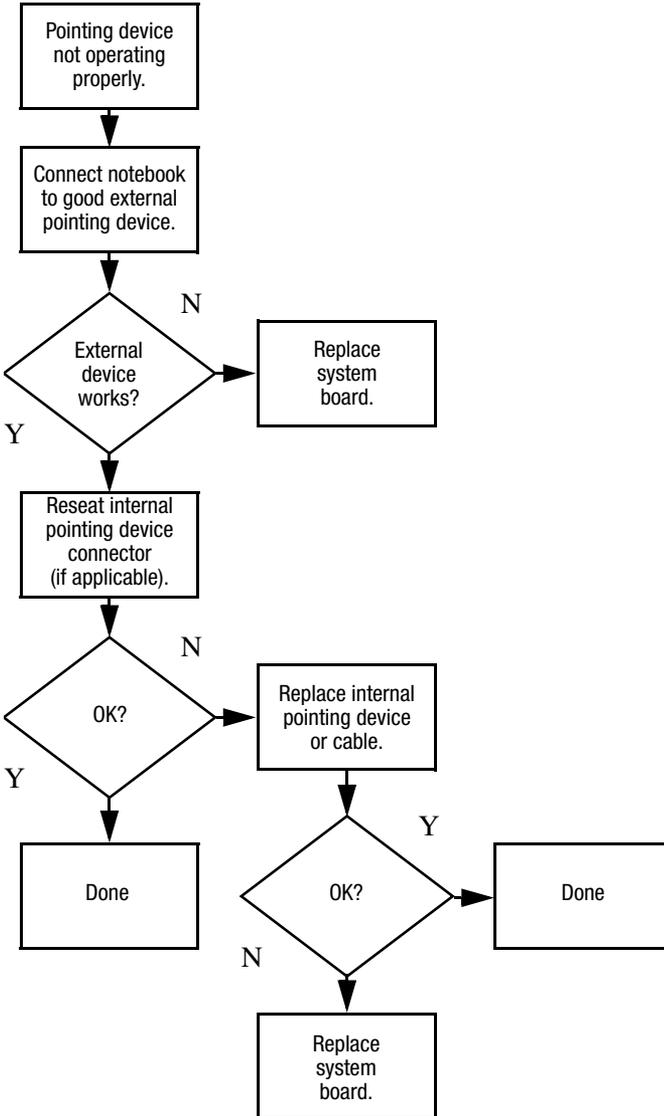
Flowchart 2.17—Nonfunctioning Device



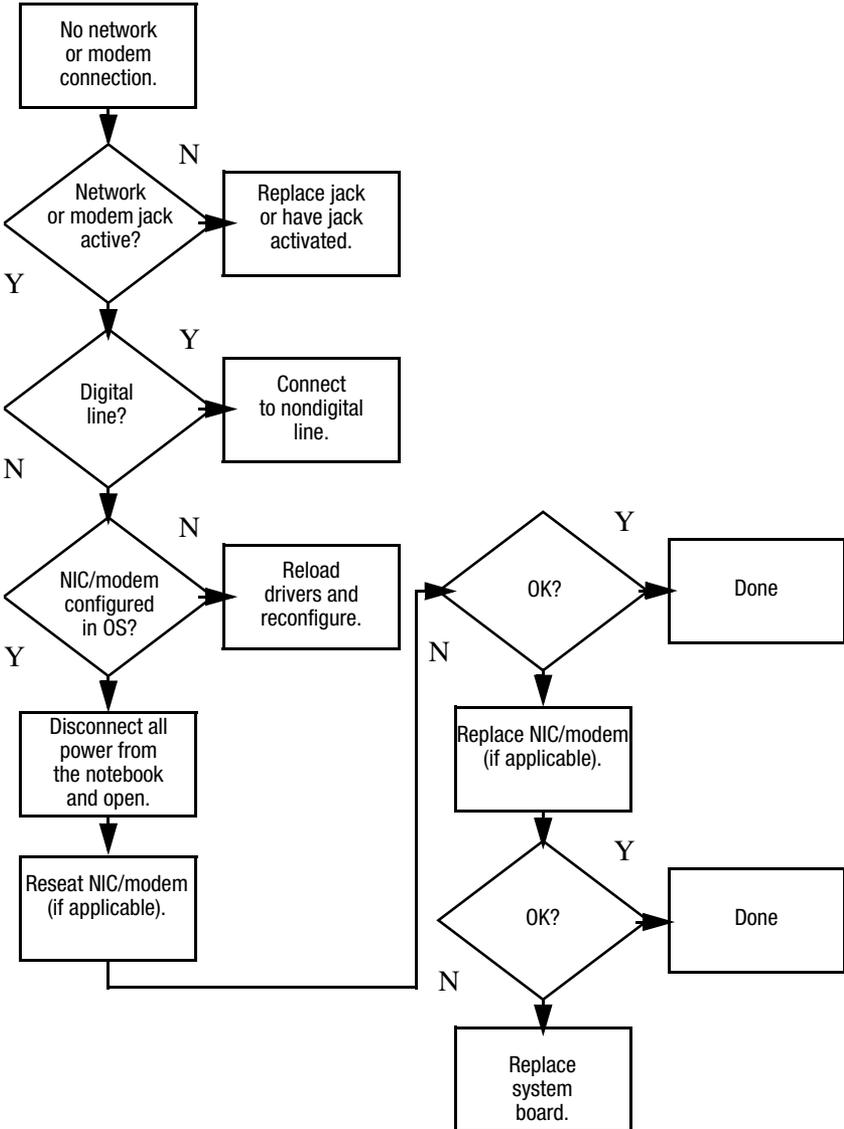
Flowchart 2.18—Nonfunctioning Keyboard



Flowchart 2.19—Nonfunctioning Pointing Device



Flowchart 2.20—No Network/Modem Connection



Software Update and Recovery

3.1 Software Updates

To stay current with the newest technology and maintain optimal performance, install the latest versions of HP software on your computer as they become available.

To update HP software:

1. Identify your computer model, product category, and series or family. Prepare for a system ROM update by identifying the ROM version currently installed on the computer. For more information, refer to “[Accessing Computer Information](#).”



CAUTION: If your computer is connected to a network, it is recommended that you consult with your network administrator before installing any software updates, especially system ROM updates.



The computer system ROM stores the BIOS software. The BIOS initializes the operating system, determines how the computer will interact with the hardware devices, and provides for data transfer among hardware devices, including the time and date.

2. Access the updates through the HP Web site (<http://www.hp.com>) or the *Support Software* CD (purchased separately). For information about obtaining the *Support Software* CD, refer to “[Obtaining the Support Software CD](#).”
3. Install the updates.

Accessing Computer Information

Before you access the updates for your computer, collect the following information:

- The product *category* is Notebook.
- The product *family* name and *series* number are printed on the display bezel.
- *Model* information is provided on the serial number label on the bottom of the computer.

To determine whether available ROM updates contain later ROM versions than those currently installed on the computer, you need to know the version of the system ROM currently installed.

ROM version information (also known as ROM date and System BIOS) can be displayed by pressing **fn+esc** (if you are already in Microsoft Windows) or by opening Computer Setup.

To use Computer Setup for displaying ROM information:

1. Open Computer Setup by turning on or restarting the computer, and then pressing **f10** while the “F10 = ROM Based Setup” message is displayed in the lower-left corner of the screen.
2. Use the arrow keys to select **File > System Information**, and then press **enter**.
ROM date information is displayed.
3. To exit Computer Setup, use the arrow keys to select **File > Ignore changes and exit**. Then follow the instructions on the screen.

Obtaining the Support Software CD

The *Support Software* CD provides HP software updates and installation instructions. The CD includes device drivers, ROM updates, and utilities.

To purchase the current *Support Software* CD or a subscription that provides both the current version and future versions of the CD, visit the HP Web site at <http://www.hp.com>.

Software Updates and the HP Web Site

Most software on the HP Web site is packaged in compressed files called *SoftPaqs*. Some ROM updates may be packaged in compressed files called *ROMPaqs*.

Most download packages contain a file named *Readme.txt*. A *Readme.txt* file contains information regarding installing and troubleshooting the file. The *Readme.txt* files included with *ROMPaqs* are provided in English only.

Downloading a ROM Update



CAUTION: To prevent damage to the computer or an unsuccessful installation, download and install a ROM update only when the computer is connected to reliable external power using the AC adapter. Do not download or install a ROM update while the computer is running on battery power, docked in an optional docking device, or connected to an optional power source. During the download and installation:

- Do not disconnect power from the computer by unplugging the power cord from the AC outlet.
 - Do not shut down the computer or initiate standby or hibernation.
 - Do not insert, remove, connect, or disconnect any device, cable, or cord.
-

To download a ROM update:

1. Access the page on the HP Web site that provides software for your computer:
 - ❑ Select **Start > Help and Support**, and then click a software update link.
 - or –
 - ❑ Visit the HP Web site at <http://www.hp.com/support>.
2. Follow the instructions on the screen to identify your computer and access the ROM update you want to download.
3. At the download area:
 - a. Identify the ROM update that is later than the ROM version currently installed on your computer. Make a note of the date, name, or other identifier. You may need this information to locate the update later, after it has been downloaded to your hard drive.
 - b. Follow the instructions on the screen to download your selection to the hard drive.
 -  Make a note of the path to the location on your hard drive where the ROM package will be downloaded. You may need to access the ROM package after it has been downloaded.

Installing a ROM Update



If your computer is connected to a network, it is recommended that you consult with your network administrator before installing any software updates, especially system ROM updates.

ROM installation procedures vary. Follow any instructions that are displayed on the screen after the download is complete. If no instructions are displayed:

1. Open Windows Explorer by selecting **Start > All Programs > Accessories > Windows Explorer**.
2. In the left pane of the Windows Explorer window:
 - a. Click **My Computer** and then your hard drive designation. (The hard drive designation is typically Local Disk C.)
 - b. Open the folder on your hard drive that contains the update.



Follow the path you made a note of before you downloaded the update.

3. Double-click the file with an .exe extension (for example, filename.exe).

The ROM installation begins.

4. Complete the installation by following the instructions on the screen.



After a message on the screen reports a successful installation, you may delete the downloaded file from your hard drive.

Downloading Other Software

To download and install software other than a ROM update:

1. Access the page on the HP Web site that provides software for your computer:
 - ❑ Select **Start > Help and Support**, and then click a software update link.
- or –
- ❑ Visit the HP Web site at <http://www.hp.com/support> and click **Download drivers and software** to download the software for your computer model.

2. Follow the instructions on the screen to find the software you want to update.
3. At the download area, select the software you want and follow the download instructions on the Web page.

 Make a note of the path to the location on your hard drive where the ROM package will be downloaded. You may need to access the ROM package after it has been downloaded.

4. When the download is complete, open Windows Explorer by selecting **Start > All Programs > Accessories > Windows Explorer**.
5. In the left pane of the **Windows Explorer** window, click **My Computer** and then your hard drive designation. (The hard drive designation is typically Local Disk C.)

 Follow the path you made a note of earlier to the folder on your hard drive that contains the update.

6. Open the folder and double-click the file with an .exe extension (for example, filename.exe).
The installation begins.
7. Complete the installation by following the instructions on the screen.



After a message on the screen reports a successful installation, you may delete the download package from your hard drive.

3.2 System Recovery

The computer system recovery process provides several ways to recover optimal system functionality. For best results, attempt to recover optimal computer functionality by using the following procedures *in the order described here*.

Safeguarding Your Data

Software or devices added to the computer can cause your system to become unstable. To safeguard your documents, store personal files in the My Documents folder and periodically create a backup copy of the My Documents folder.

Altiris Local Recovery

Altiris Local Recovery is a preloaded application that protects the files on your computer by storing copies of files, called *snapshots*. If files on your computer are accidentally deleted or corrupted, you can easily restore the files yourself. You can also restore your complete file system to a previous state.

Altiris Local Recovery provides protection of files by backing up files to a hidden Altiris recovery partition. When you install the software, the Recovery Agent Partition Wizard guides you through the process of creating the recovery partition. After the partition is created, the computer restarts and creates the first snapshot. After the snapshot is created, the computer restarts, making the snapshot available for recovery through Windows.

By default, Local Recovery automatically takes snapshots of your files on a regular basis. You can change the snapshot schedule. For more information, refer to the Altiris Local Recovery Help.

To access your snapshots in the Altiris Recovery Agent folder:

1. Right-click the Altiris Recovery Agent icon on your desktop.
2. Click **Open**.

To restore one of the listed snapshots, drag the snapshot file to the appropriate location on your hard drive.

For more information on configuring and using Altiris Local Recovery, visit the HP Web site at <http://www.hp.com/go/easydeploy>, or open the software and click **Help** on the menu bar.

Using System Restore Points

System Restore is an operating system feature that allows you to reverse undesirable changes to your computer by restoring the computer to an earlier state, called a *restore point*. A restore point is a “snapshot” of your software, drivers, and operating system files at a particular time. The computer automatically creates restore points at regular intervals and may create additional restore points when you change your personal settings or add software or hardware.

You can manually create additional restore points to provide increased protection for your system files and settings. It is recommended that you manually create restore points

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

Restoring to any restore point does not affect your data files. For example, restoring your system software to an earlier state will not affect documents or e-mails that you saved after that time.



If you do not like the results of your restoration, you can reverse the restoration.

Creating a System Restore Point

To create a system restore point:

1. Select **Start > Help and Support**.
2. Click **System Restore**.

The System Restore window opens.

3. Click **Create a restore point**, and then click **Next**.
4. Follow the on-screen instructions.

Restoring to a Restore Point

To restore the computer to a previous date and time when it was functioning optimally:

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

Reinstalling Applications

Applications preinstalled or preloaded on your computer can be reinstalled by using the *Recovery* disc or a third-party software disc.



In most cases, the applications preloaded on your computer, such as those available in the Software Setup utility, can be reinstalled from your hard drive. To access the Software Setup utility, select **Start > All Programs > Software Setup**.

The application reinstallation process replaces corrupted system files within the application and reinstalls deleted system files within the application.

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

Reinstalling Applications from the Hard Drive

To reinstall a preloaded application or utility from your hard drive:

1. Select **Start > All Programs > Software Setup**, and then follow the instructions on the screen.
2. When you are prompted to select the software you want to reinstall, select or clear the appropriate check boxes.

Reinstalling Applications from Discs

To reinstall applications from discs:

1. Insert the disc into the optical drive.
 - If autorun is enabled, an installation wizard opens.
 - If autorun is disabled, select **Start > Run**. Enter
x:\setup.exe
where *x* is your optical drive designation
and then select **OK**.
2. When the installation wizard opens, follow the installation instructions on the screen.
3. Restart the notebook if prompted.

Repairing the Operating System

To attempt an operating system repair without deleting your personal data, use the *Operating System* disc that was shipped with the computer:



If your computer does not have an optical drive, you may need to connect to an optional external MultiBay.

1. Connect the computer to external power through the AC adapter and turn on the computer.
2. Immediately insert the *Operating System* disc into the computer.
3. Press and hold the power/standby button for at least 5 seconds to turn off the computer.
4. Press the power/standby button again to turn on the computer.
5. When prompted, press any key to start from the disc.

After a few minutes, you may need to select your language, and then the Setup Wizard opens.

 On the “Welcome to Setup” page, do not press **R** (step 8 in this procedure) until you have completed steps 6 and 7.

6. Press **enter** to continue.

A licensing agreement page is displayed.

7. Press **f8** to accept the agreement and continue.

The “Setup” page is displayed.

8. Press **R** to repair the selected Windows installation.

The repair process begins. This process takes 1 to 2 hours to complete.

The computer restarts in Windows after the process is complete.

Reinstalling the Operating System



CAUTION: To protect your personal data and the software installed on the computer, back up your data before reinstalling the operating system. See the Windows online Help utility to learn more about backing up your files. Select **Start > Help and Support**. Then type "backup" in the Search box.



During the reinstallation, you may be prompted for your Product Key. Your Product Key is provided on the Microsoft Certificate of Authenticity label on the bottom of the computer.

If other recovery efforts do not successfully repair the operating system, you can reinstall it.

To reinstall the operating system:



If your computer does not have an optical drive, you may need to connect to an optional external MultiBay.

1. Connect the computer to external power through the AC adapter and turn on the computer.
2. Immediately insert the *Operating System* disc into the computer.
3. Press and hold the power/standby button for at least 5 seconds to turn off the computer.

4. Press the power/standby button again to turn on the computer.
5. When prompted, press any key to start from the disc.

After a few minutes, you may need to select your language, and then the Setup Wizard opens.

6. Press **enter** to continue.

A licensing agreement page is displayed.

7. Press **f8** to accept the agreement and continue.

The “Setup” page is displayed.

8. Press **esc** to continue installing a new copy of the operating system instead of repairing it.

9. Press **enter** to set up the operating system.

10. Press **C** to continue setup using this partition.

11. Select **Format the partition using the NTFS file system (Quick)**, and then press **enter**.

 Formatting this drive deletes all current files.

12. Press **F** to format the drive.

The reinstallation process begins. This process takes 1 to 2 hours to complete.

The computer restarts in Windows when the process is complete.

Reinstalling Device Drivers and Other Software

After the operating system installation process is complete, you must reinstall drivers.

To reinstall drivers, use the *Recovery* disc included with the computer:

1. While running Windows, insert the *Recovery* disc into the optical drive.
2. If you do not have autorun enabled:
 - a. Select **Start > Run**.
 - b. Then type `D:\SWSETUP\APPINSTL\SETUP.EXE`
where *D* indicates the optical drive.
3. Follow the on-screen instructions for installing the drivers.

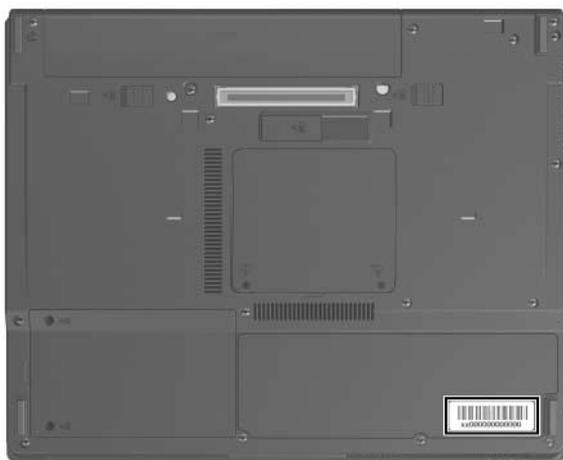
After the drivers are reinstalled, you must reinstall any software you added to the computer. Follow the installation instructions provided with the software.

Illustrated Parts Catalog

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

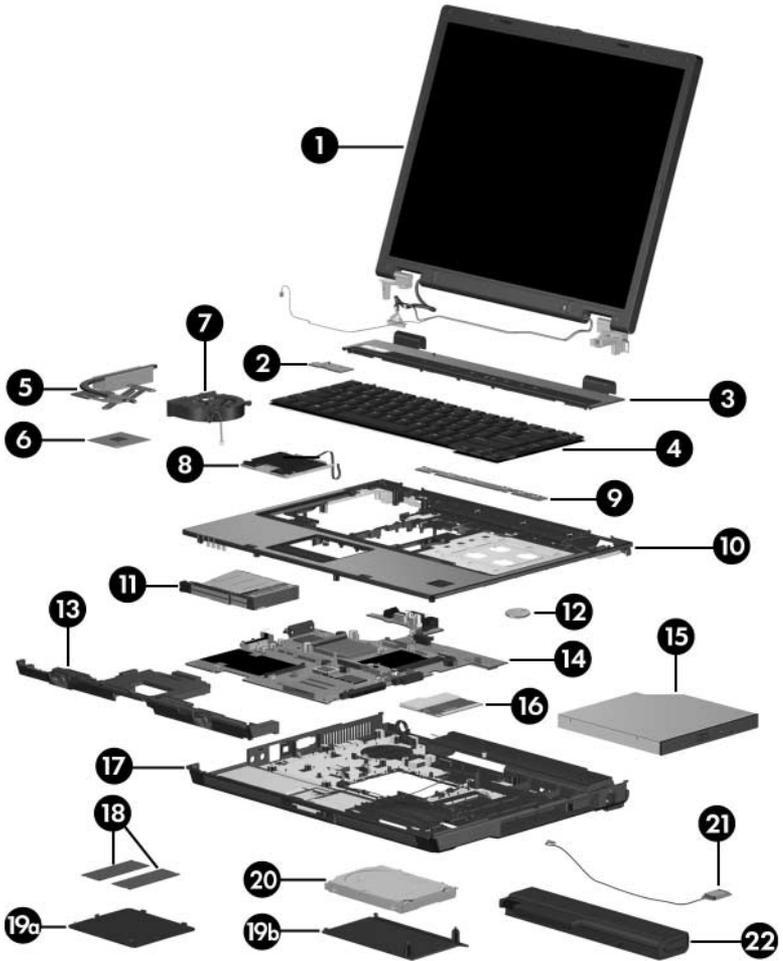
4.1 Serial Number Location

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



Serial Number Location

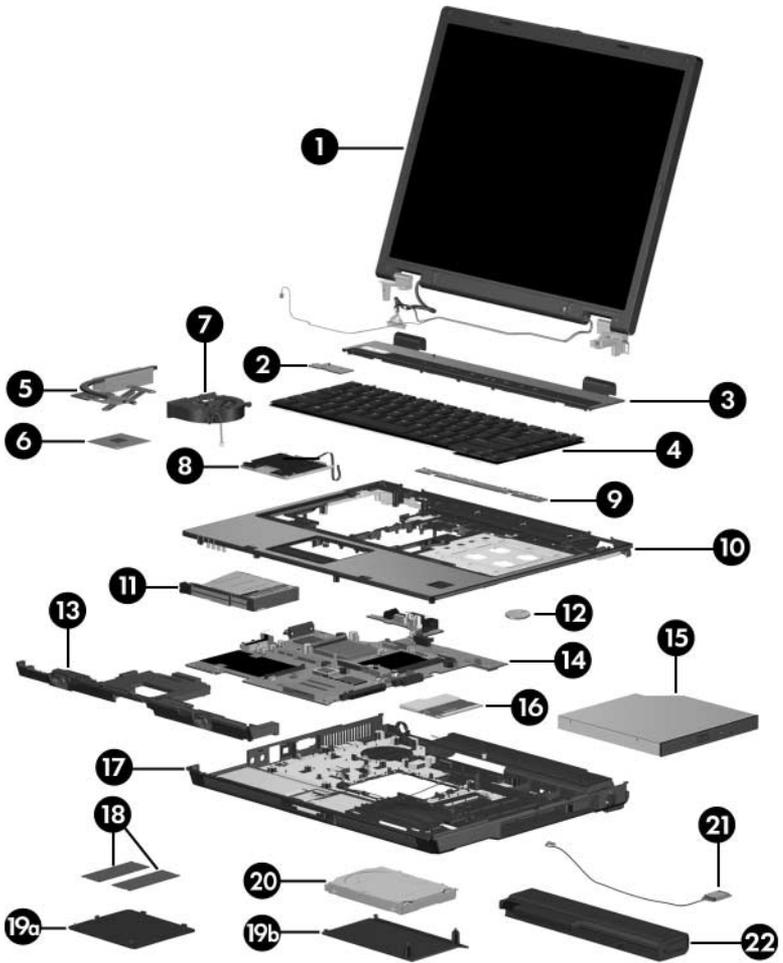
4.2 Notebook Major Components



Notebook Major Components

Table 4-1
Spare Parts: Notebook Major Components

Item	Description	Spare Part Number
1	Display assemblies (include wireless antenna boards and cables)	
	15.0-inch, SXGA+WVA, TFT	393552-001
	15.0-inch, XGA, TFT	393551-001
	Display brackets with hinges (not illustrated)	393553-001
	Display inverters (not illustrated)	393556-001
	Microphone (not illustrated)	393555-001
	Bracket Kit (not illustrated)	393595-001
	Wireless antenna set (not illustrated)	393558-001
2	Power button board (includes power button board cable)	393583-001
3	Switch covers	
	For use on HP Compaq nx6125 models	393561-001
	For use on HP Compaq nx6115 models	393562-001

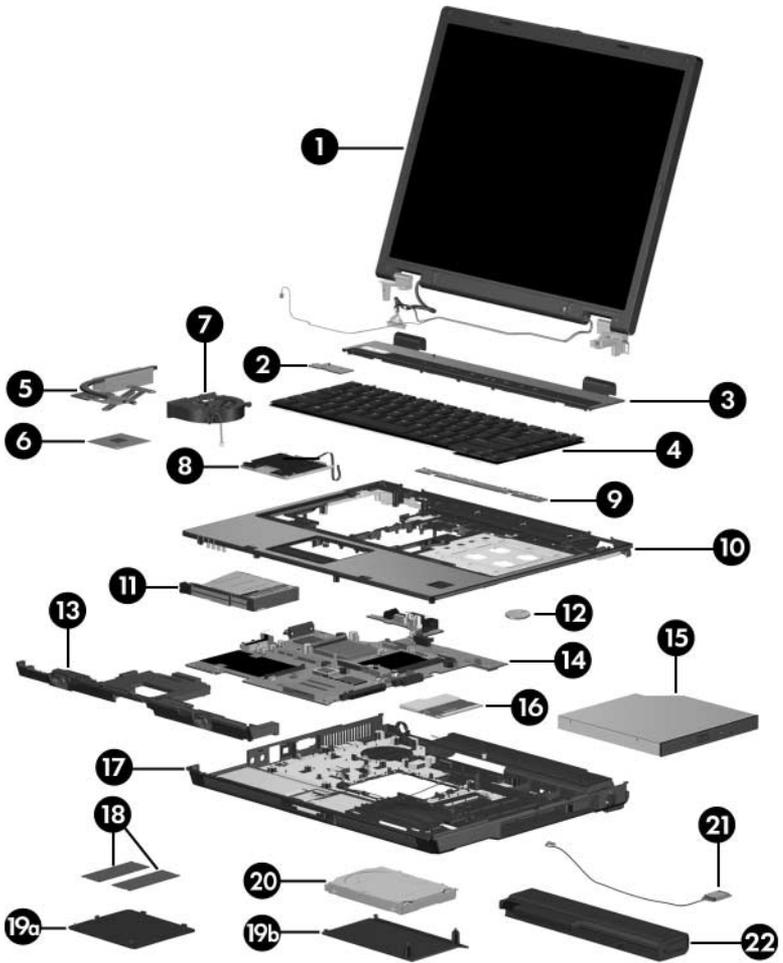


Notebook Major Components

Table 4-1

Spare Parts: Notebook Major Components (*Continued*)

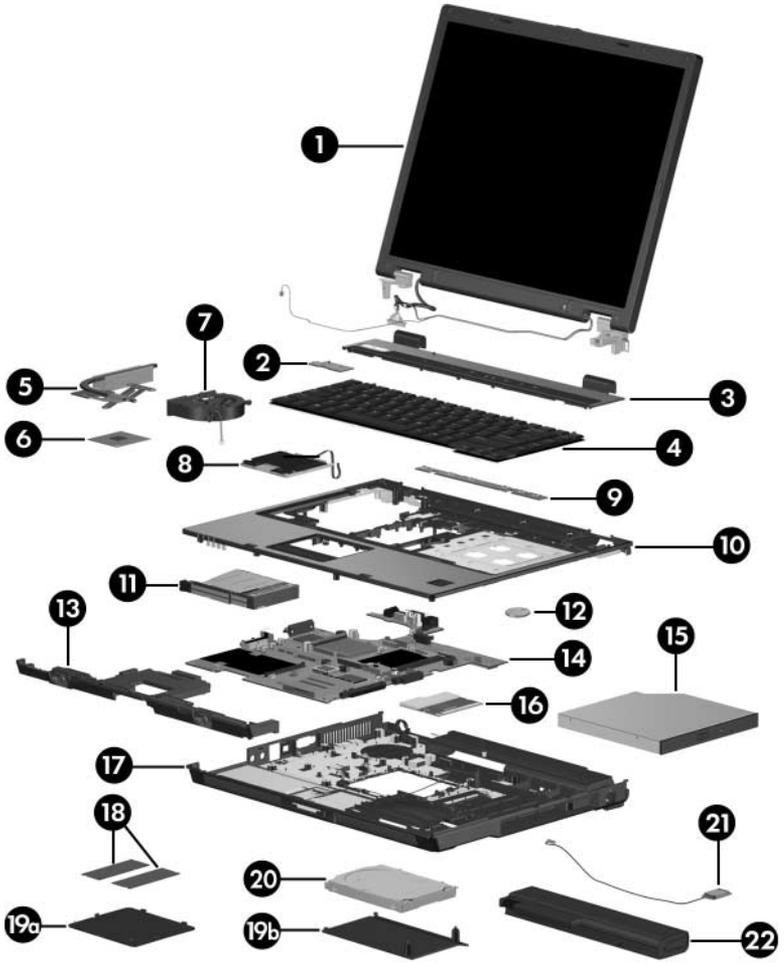
Item	Description			Spare Part Number
4	Keyboards			
	Brazil	393568-201	People's	393568-AA1
	Czech Republic	393568-221	Republic	
	Denmark	393568-081	of China	
	Europe	393568-021	Poland	393568-241
	France	393568-051	Portugal	393568-131
	French Canada	393568-121	Russia	393568-251
	Germany	393568-041	South Africa	393568-AR1
	Greece	393568-151	Saudi Arabia	393568-171
	Hungary	393568-211	Slovakia	393568-231
	Iceland	393568-DD1	Slovenia	393568-BA1
	Israel	393568-BB1	Spain	393568-071
	Italy	393568-061	Sweden	393568-101
	Japan	393568-291	Switzerland	393568-111
	Korea	393568-AD1	Taiwan	393568-AB1
	Latin America	393568-161	Thailand	393568-281
	The Netherlands	393568-331	Turkey	393568-141
	Norway	393568-091	United Kingdom	393568-031
			United States	393568-001
5	Heat sink (includes thermal paste)			393567-001



Notebook Major Components

Table 4-1**Spare Parts: Notebook Major Components (Continued)**

Item	Description	Spare Part Number
6	Processors (include thermal paste)	
	AMD Turion 64 ML-40 2.2-GHz	393579-001
	AMD Turion 64 ML-37 2.0-GHz	393578-001
	AMD Turion 64 ML-34 1.8-GHz	393577-001
	AMD Turion 64 ML-32 1.8-GHz	395744-001
	AMD Turion 64 ML-30 1.6-GHz	395743-001
	AMD Turion 64 ML-28 1.6-GHz	395742-001
	Mobile AMD Sempron 3100+ (1.80-GHz)	393582-001
	Mobile AMD Sempron 3000+ (1.80-GHz)	393581-001
	Mobile AMD Sempron 2800+ (1.60-GHz)	393580-001
7	Fan	393597-001
8	TouchPad (includes TouchPad cable)	393587-001
9	Button boards (include button board cable)	
	For use on HP Compaq nx6125 models	393584-001
	For use on HP Compaq nx6115 models	393585-001
10	Top covers (include TouchPad)	
	For use on HP Compaq nx6125 models	393559-001
	For use on HP Compaq nx6115 models	393560-001
	Fingerprint sensor (not illustrated)	393586-001
11	PC Card assembly	
	With Smart Card reader, for use on HP Compaq nx6125 models	393589-001
	Without Smart Card reader, for use on HP Compaq nx6125 models	393590-001
	Without Smart Card reader, for use on HP Compaq nx6115 models	393591-001

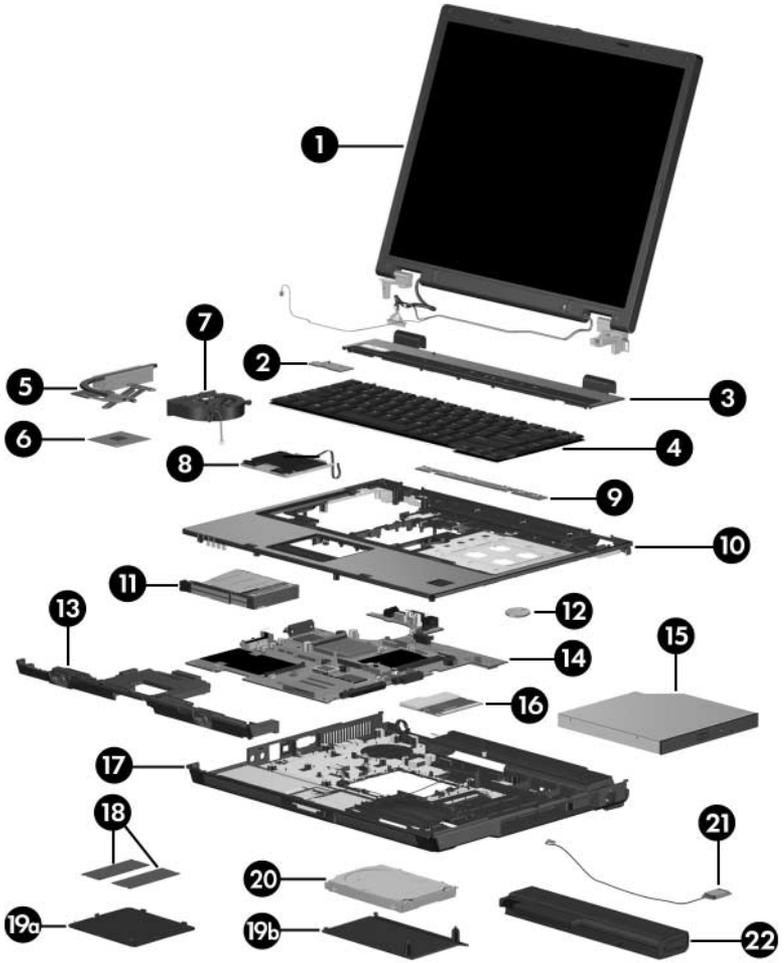


Notebook Major Components

Table 4-1

Spare Parts: Notebook Major Components (Continued)

Item	Description	Spare Part Number
12	RTC battery	393588-001
13	Speaker	393563-001
14	System boards	
	For use on HP Compaq nx6125 models	393569-001
	For use on HP Compaq nx6115 models	393570-001
15	Optical drives (include bezel)	
	24X Max CD-ROM drive	393537-001
	8X Max DVD-ROM drive	393538-001
	24X Max DVD/CD-RW Combo Drive	393539-001
	8X Max DVD±RW and CD-RW Combo Drive	393540-001
	DVD±RW and CD-RW Combo Drive, Dual Layer Drive	393541-001
16	Mini PCI communications cards	
	802.11a/b/g WLAN card for use in most of the world	377407-001
	802.11a/b/g WLAN card for use in the rest of the world	377407-002
	802.11a/b/g WLAN card for use in Japan	377407-291
	802.11b/g WLAN card for use in the United States	392557-001
	802.11b/g WLAN card for use in the rest of the world	392557-002
	802.11b/g WLAN card for use in Japan	392557-291
17	Base enclosures	
	For use on HP Compaq nx6125 models	393564-001
	For use on HP Compaq nx6115 models	393565-001



Notebook Major Components

Table 4-1

Spare Parts: Notebook Major Components (*Continued*)

Item	Description	Spare Part Number		
18	Memory modules (333-MHz, DDR, PC2700)			
	1024 MB	393573-001		
	512 MB	393572-001		
	256 MB	393571-001		
	Miscellaneous Plastics Kit	393593-001		
	Includes:			
19a	Memory module compartment cover (includes 2 captive screws)			
19b	Hard drive cover (includes 2 captive screws)			
	Not illustrated:			
	Notebook feet			
	PC Card slot space saver			
	ExpressCard slot space saver			
20	Hard drives (include frame and connector)			
	5400-rpm	4200-rpm		
	80-GB	393548-001	80-GB	393547-001
	60-GB	393546-001	60-GB	393545-001
	40-GB	393544-001	40-GB	393543-001
			30-GB	393542-001
21	Broadcomm Bluetooth wireless board (includes Bluetooth board cable)	393566-001		
22	Battery packs			
	6-cell, 4.8-AHr	385894-001		
	6-cell, 4.4-AHr	385895-001		
	6-cell, 4.4-AHr	393549-001		

4.3 Miscellaneous Plastics Kit



Table 4-2

Miscellaneous Plastics Kit

Spare Part Number 393593-001

Item	Description
1	Memory module compartment cover (includes 2 captive screws)
2	Hard drive cover (includes 2 captive screws)
3	Notebook feet (4)
4	ExpressCard slot space saver
5	PC Card slot space saver

4.4 Miscellaneous Cable Kit

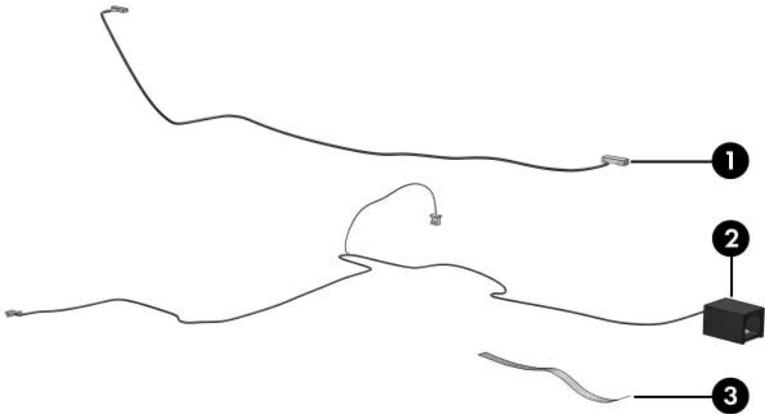


Table 4-3

Miscellaneous Cable Kit

Spare Part Number 393594-001

Item	Description
1	Bluetooth board cable
2	RJ-11 connector module and cable
3	TouchPad cable

4.5 Mass Storage Devices



Table 4-4
Mass Storage Devices
Spare Part Number Information

Item	Description	Spare Part Number
1	Hard drives (include frame and connector)	
	5400-rpm	4200-rpm
	80-GB	393548-001
	60-GB	393546-001
	40-GB	393544-001
		80-GB
		60-GB
		40-GB
		30-GB
		393547-001
		393545-001
		393543-001
		393542-001
2	Optical drives (include bezel)	
	24X Max CD-ROM drive	393537-001
	8X Max DVD-ROM drive	393538-001
	24X Max DVD/CD-RW Combo Drive	393539-001
	8X Max DVD±RW and CD-RW Combo Drive	393540-001
	DVD±RW and CD-RW Combo, Dual Layer Drive	393541-001

4.6 Miscellaneous (Not Illustrated)

Table 4-5
Miscellaneous (Not Illustrated)
Spare Part Information

Description	Spare Part Number
Label Kit	393592-001
Adjustable notebook stand	372420-001
HP Advanced Docking Station	374504-001
HP Docking Station	374803-001
65 watt AC adapter	338136-001
Screw Kit (includes the following screws; refer to Appendix C, "Screw Listing," for more information on specifications and usage)	393596-001
<ul style="list-style-type: none"> ■ Phillips PM2.5×6.0 screw ■ Phillips PM3.0×5.0 screw ■ Phillips PM1.5×3.0 screw ■ Phillips PM1.5×4.0 screw 	<ul style="list-style-type: none"> ■ Torx T8M2.5×9.0 screw ■ Torx T8M2.5×7.0 screw ■ Torx T8M2.5×4.0 screw

Table 4-5
Miscellaneous (Not Illustrated)
Spare Part Information (Continued)

Description	Spare Part Number
Power cords	
For use in:	
Australia and New Zealand	350188-011
Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden	350188-021
Canada, French Canada, Latin America, Taiwan, Thailand, and the United States	350188-001
Denmark	350188-081
Hong Kong and the United Kingdom	350188-031
Israel	350188-BB1
Japan	350188-291
People's Republic of China	350188-AA1
Saudi Arabia	350188-171

4.7 Sequential Part Number Listing

Table 4-6
Sequential Part Number Listing

Spare Part Number	Description
338136-001	65 watt AC adapter
350188-001	Power cord for use in Canada, French Canada, Latin America, Taiwan, Thailand, and the United States
350188-011	Power cord for use in Australia and New Zealand
350188-021	Power cord for use in Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden
350188-031	Power cord for use in Hong Kong and the United Kingdom
350188-081	Power cord for use in Denmark
350188-171	Power cord for use in Saudi Arabia
350188-291	Power cord for use in Japan
350188-AA1	Power cord for use in People's Republic of China
350188-BB1	Power cord for use in Israel
372420-001	Adjustable notebook stand
374504-001	HP Advanced Docking Station
374803-001	HP Docking Station
377407-001	802.11a/b/g WLAN mini PCI communications card for use in most of the world
377407-002	802.11a/b/g WLAN mini PCI communications card for use in the rest of the world

Table 4-6
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
377407-291	802.11a/b/g WLAN mini PCI communications card for use in Japan
385894-001	6-cell, 4.8-AHr battery pack
385895-001	6-cell, 4.4-AHr battery pack
392557-001	802.11b/g WLAN mini PCI communications card for use in the United States
392557-002	802.11b/g WLAN mini PCI communications card for use in the rest of the world
392557-291	802.11b/g WLAN mini PCI communications card for use in Japan
393537-001	24X Max CD-ROM drive
393538-001	8X Max DVD-ROM drive
393539-001	24X Max DVD/CD-RW Combo Drive
393540-001	8X Max DVD±RW and CD-RW Combo Drive
393541-001	DVD±RW and CD-RW Combo, Dual Layer Drive
393542-001	4200-rpm, 30-GB hard drive (includes frame and connector)
393543-001	4200-rpm, 40-GB hard drive (includes frame and connector)
393544-001	5400-rpm, 40-GB hard drive (includes frame and connector)
393545-001	4200-rpm, 60-GB hard drive (includes frame and connector)
393546-001	5400-rpm, 60-GB hard drive (includes frame and connector)
393547-001	4200-rpm, 80-GB hard drive (includes frame and connector)

Table 4-6
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
393548-001	5400-rpm, 80-GB hard drive (includes frame and connector)
393549-001	6-cell, 4.4-AHr battery pack
393551-001	15.0-inch, XGA, TFT display assembly (include wireless antenna boards and cables)
393552-001	15.0-inch, SXGA+WVA, TFT display assembly (include wireless antenna boards and cables)
393554-001	Display bracket with hinges for use on models with 14.1-inch displays
393555-001	Microphone
393556-001	Display inverter for use on models with 15.0-inch displays
393558-001	Wireless antenna set
393559-001	Top cover for use on HP Compaq nx6125 models (includes TouchPad)
393560-001	Top cover for use on HP Compaq nx6115 models (includes TouchPad)
393561-001	Switch cover for use on HP Compaq nx6125 models
393562-001	Switch cover for use on HP Compaq nx6115 models
393563-001	Speaker
393564-001	Base enclosure for use on HP Compaq nx6125 models
393565-001	Base enclosure for use on HP Compaq nx6115 models
393566-001	Broadcomm Bluetooth wireless board (includes Bluetooth board cable)

Table 4-6
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
393567-001	Heat sink (includes thermal paste)
393568-001	Keyboard for use in the United States
393568-021	Keyboard for use in Europe
393568-031	Keyboard for use in the United Kingdom
393568-041	Keyboard for use in Germany
393568-051	Keyboard for use in France
393568-061	Keyboard for use in Italy
393568-071	Keyboard for use in Spain
393568-081	Keyboard for use in Denmark
393568-091	Keyboard for use in Norway
393568-101	Keyboard for use in Sweden
393568-111	Keyboard for use in Switzerland
393568-121	Keyboard for use in French Canada
393568-131	Keyboard for use in Portugal
393568-141	Keyboard for use in Turkey
393568-151	Keyboard for use in Greece
393568-161	Keyboard for use in Latin America
393568-171	Keyboard for use in Saudi Arabia
393568-201	Keyboard for use in Brazil
393568-211	Keyboard for use in Hungary

Table 4-6
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
393568-221	Keyboard for use in Czech Republic
393568-231	Keyboard for use in Slovakia
393568-241	Keyboard for use in Poland
393568-251	Keyboard for use in Russia
393568-281	Keyboard for use in Thailand
393568-291	Keyboard for use in Japan
393568-331	Keyboard for use in the Netherlands
393568-AA1	Keyboard for use in the People's Republic of China
393568-AB1	Keyboard for use in Taiwan
393568-AD1	Keyboard for use in Korea
393568-AR1	Keyboard for use in South Africa
393568-BA1	Keyboard for use in Slovenia
393568-BB1	Keyboard for use in Israel
393568-DD1	Keyboard for use in Iceland
393569-001	System board for use on HP Compaq nx6115 models
393570-001	System board for use on HP Compaq nx6125 models
393571-001	256-MB memory module (333-MHz, DDR, PC2700)
393572-001	512-MB memory module (333-MHz, DDR, PC2700)
393573-001	1024-MB memory module (333-MHz, DDR, PC2700)

Table 4-6
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
393577-001	AMD Turion 64 ML-34 1.8-GHz processor (includes thermal paste)
393578-001	AMD Turion 64 ML-37 2.0-GHz processor (includes thermal paste)
393579-001	AMD Turion 64 ML-40 2.2-GHz processor (includes thermal paste)
393580-001	Mobile AMD Sempron 3100+ (1.60-GHz) processor (includes thermal paste)
393581-001	Mobile AMD Sempron 3100+ (1.80-GHz) processor (includes thermal paste)
393582-001	Mobile AMD Sempron 3100+ (1.80-GHz) processor (includes thermal paste)
393583-001	Power button board (includes power button board cable)
393584-001	Button board for use on HP Compaq nx6125 models (includes button board cable)
393585-001	Button board for use on HP Compaq nx6115 models (includes button board cable)
393586-001	Fingerprint sensor
393587-001	TouchPad (includes TouchPad cable)
393588-001	RTC battery
393589-001	PC Card assembly with Smart Card reader, for use on HP Compaq nx6125 models

Table 4-6
Sequential Part Number Listing (*Continued*)

Spare Part Number	Description
393590-001	PC Card assembly without Smart Card reader, for use on HP Compaq nx6125 models
393591-001	PC Card assembly without Smart Card reader, for use on HP Compaq nx6115 models
393592-001	Label Kit
393593-001	Miscellaneous Plastics Kit
393594-001	Miscellaneous Cable Kit
393595-001	Bracket Kit
393596-001	Screw Kit
393597-001	Fan
395742-001	AMD Turion 64 ML-28 1.6-GHz processor (includes thermal paste)
395743-001	AMD Turion 64 ML-30 1.6-GHz processor (includes thermal paste)
393744-001	AMD Turion 64 ML-32 1.8-GHz processor (includes thermal paste)

Removal and Replacement Preliminaries

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

5.1 Tools Required

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

- Magnetic screwdriver
- Phillips P0 screwdriver
- Torx T8 screwdriver
- 3/16-inch Hex socket wrench
- Flat-bladed driver
- Tool kit—includes connector removal tool, loopback plugs, and case utility tool

5.2 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 notebook, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

Plastic Parts

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

Cables and Connectors



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

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

5.3 Preventing Damage to Removable Drives

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

- Before removing or inserting a hard drive, shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the notebook on, and then shut it down through the operating system.
- Before removing a diskette drive or optical drive, ensure that a diskette or disc is not in the drive and ensure that the optical drive tray is closed.
- Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
- Handle drives on surfaces covered with at least one inch of shock-proof foam.
- Avoid dropping drives from any height onto any surface.
- After removing a hard drive, an optical 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.”

5.4 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.

5.5 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.

5.6 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 fixtures must directly contact dissipative surfaces, use fixtures made only 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.

5.7 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 5-1 shows how humidity affects the electrostatic voltage levels generated by different activities.

Table 5-1
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 5-2 lists the shielding protection provided by antistatic bags and floor mats.

Table 5-2
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

6

Removal and Replacement Procedures

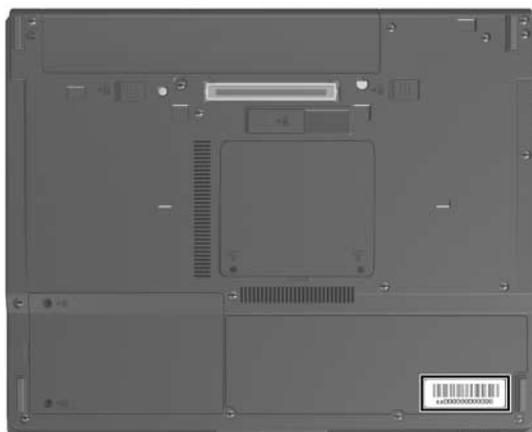
This chapter provides removal and replacement procedures.

There are 60 screws and nuts, in 8 different sizes, that may have to be removed, replaced, or loosened when servicing the notebook. Make special note of each screw and screw lock size and location during removal and replacement.

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

6.1 Serial Number

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



Serial Number Location

6.2 Disassembly Sequence Chart

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

Disassembly Sequence Chart

Section	Description	# of Screws Removed
6.3	Preparing the Notebook for Disassembly Battery pack	0
6.4	Hard Drive	2 loosened to remove the hard drive cover 4 to disassemble the hard drive
6.5	Notebook Feet	0
6.6	Bluetooth Board	1
6.7	Memory Module	2 loosened to remove the memory module compartment cover
6.8	Optical Drive	1
6.9	Switch Cover	4
6.10	Power Button Board	1
6.11	Keyboard	4
6.12	Fan	3
6.13	Heat Sink	4
6.14	Processor	0
6.15	Button Board	1

Disassembly Sequence Chart (*Continued*)

Section	Description	# of Screws Removed
6.16	Mini PCI Communications Card  To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care.	0
6.17	Display Assembly	6
6.18	Top Cover	15
6.19	TouchPad	2
6.20	RTC Battery	0
6.21	Speaker	1
6.22	System Board	3 screws 2 screw locks
6.23	PC Card Assembly	4

6.3 Preparing the Notebook for Disassembly

Before you begin any removal or installation procedures:

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

Battery Pack Spare Part Number Information

6-cell, 4.8-AHr	385894-001
6-cell, 4.4-AHr	385895-001
6-cell, 4.4-AHr	393549-001

4. Remove the battery pack by following these steps:
 - a. Turn the notebook upside down with the rear panel toward you.

- b. Slide the battery pack lock latch ❶ to the right. (The battery pack disengages from the notebook.)
- c. Slide and hold the battery pack release latch ❷ to the right.
- d. Slide the battery pack forward ❸ and remove it.



Removing the Battery Pack

Reverse the above procedure to install the battery pack.

6.4 Hard Drive

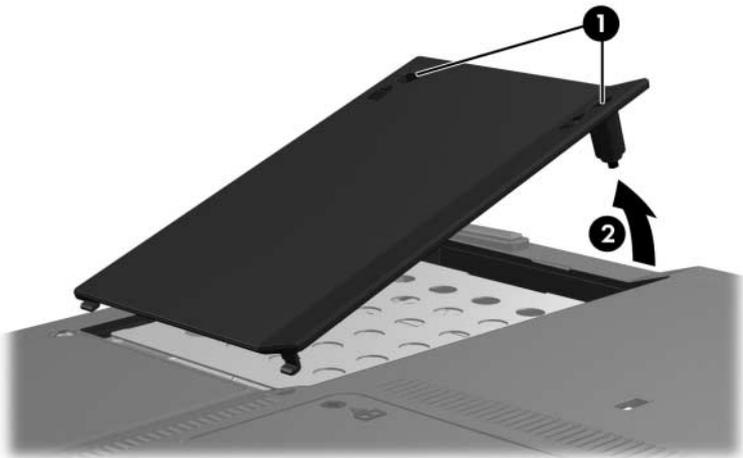
Hard Drive Spare Part Number Information

5400-rpm		4200-rpm	
80-GB	393548-001	80-GB	393547-001
60-GB	393546-001	60-GB	393545-001
40-GB	393544-001	40-GB	393543-001
		30-GB	393542-001

1. Prepare the notebook for disassembly (refer to [Section 6.3](#)).
2. Loosen the 2 Phillips PM2.5×6.0 screws ❶ that secure the hard drive cover to the notebook.
3. Lift the right side of the hard drive cover and swing it to the left ❷.
4. Remove the hard drive cover.

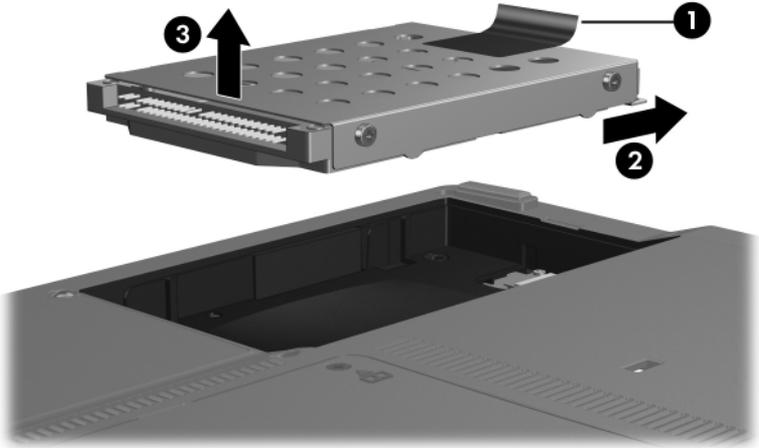


The hard drive cover is included in the Miscellaneous Plastics Kit, spare part number 393593-001.



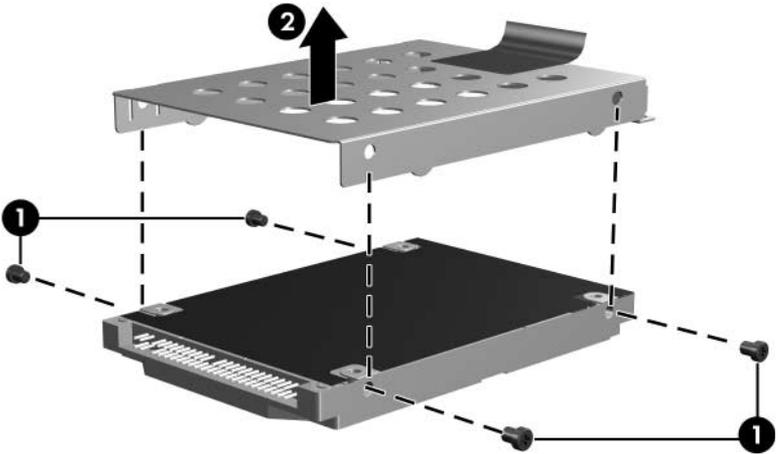
Removing the Hard Drive Cover

5. Grasp the mylar tab **1** on the right side of the hard drive and slide the hard drive to the right **2** to disconnect it from the system board.
6. Remove the hard drive from the hard drive bay **3**.



Removing the Hard Drive

7. Remove the 4 Phillips PM3.0×5.0 hard drive frame screws ❶ from each side of the hard drive.
8. Lift the frame straight up ❷ to remove it from the hard drive.

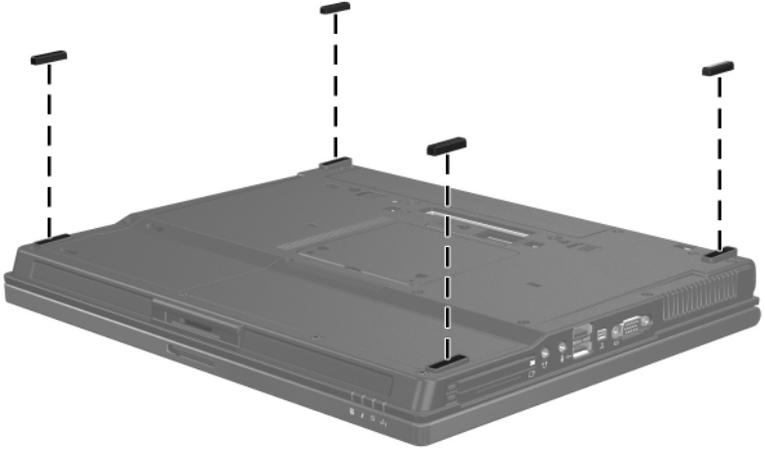


Removing the Hard Drive Frame

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

6.5 Notebook Feet

The notebook feet are adhesive-backed rubber pads. The feet are included in the Miscellaneous Plastics Kit, spare part number 393593-001.



Replacing the Notebook Feet

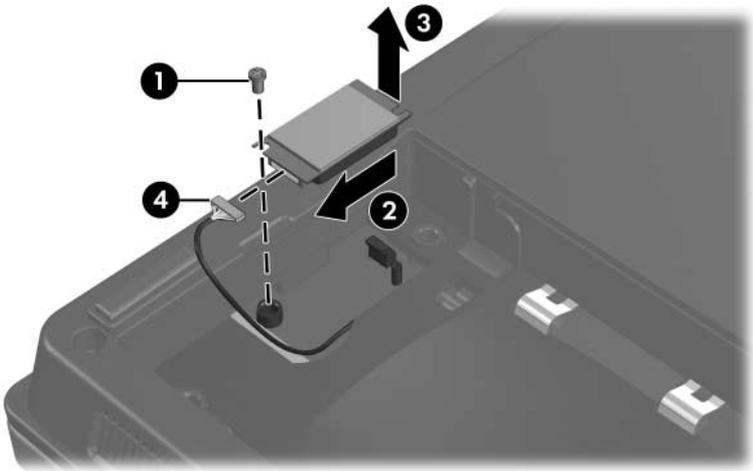
6.6 Bluetooth Board

Bluetooth Board Spare Part Number Information

Broadcomm Bluetooth wireless board (includes Bluetooth board cable)	393566-001
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1. Prepare the notebook for disassembly (refer to [Section 6.3](#)).
2. Remove the hard drive cover and hard drive ([Section 6.4](#)).
3. Position the notebook with the front toward you.

4. Remove the Phillips PM1.5×3.0 screw ❶ that secures the Bluetooth board to the notebook.
5. Slide the Bluetooth board forward ❷ and out of the clip in the top cover.
6. Remove the Bluetooth board from the notebook ❸.
7. Disconnect the Bluetooth board cable ❹ from the board.



Removing the Bluetooth Board

Reverse the above procedure to install a Bluetooth board.

6.7 Memory Module

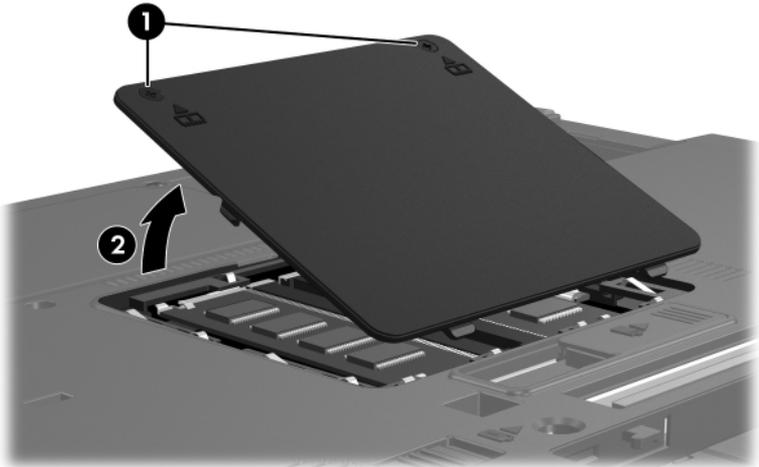
Memory Module Spare Part Number Information

1024 MB	393573-001
512 MB	393572-001
256 MB	393571-001

1. Prepare the notebook for disassembly (refer to [Section 6.3](#)).
2. Position the notebook with the rear panel toward you.
3. Loosen the 2 Phillips PM2.5×6.0 screws **1** that secure the memory module compartment cover to the notebook.
4. Lift the rear edge of the cover up and swing it toward you **2**.
5. Remove the memory module compartment cover.



The memory module compartment cover is included in the Miscellaneous Plastics Kit, spare part number 393593-001.

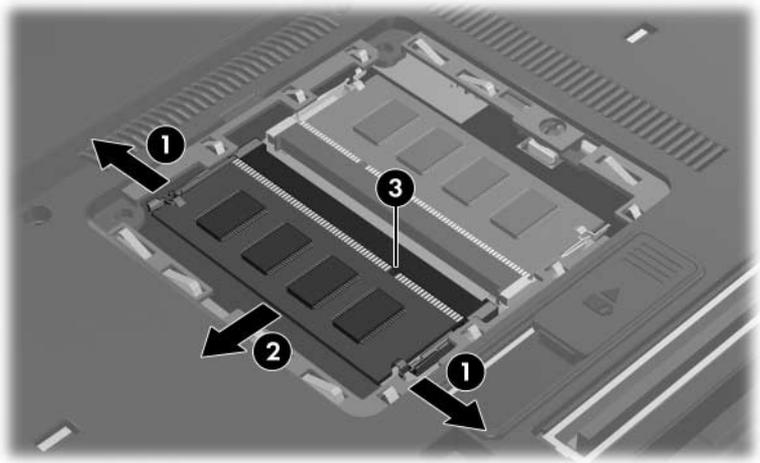


Removing the Memory Module Compartment Cover

6. Spread the retaining tabs **1** on each side of the memory module socket to release the memory module board. (The edge of the module opposite the socket rises away from the notebook.)
7. Slide the module away from the socket at an angle **2**.
8. Remove the memory module board.



Memory modules are slotted **3** to prevent incorrect installation into the memory module socket.



Removing the Memory Module

Reverse the above procedure to install a memory module.

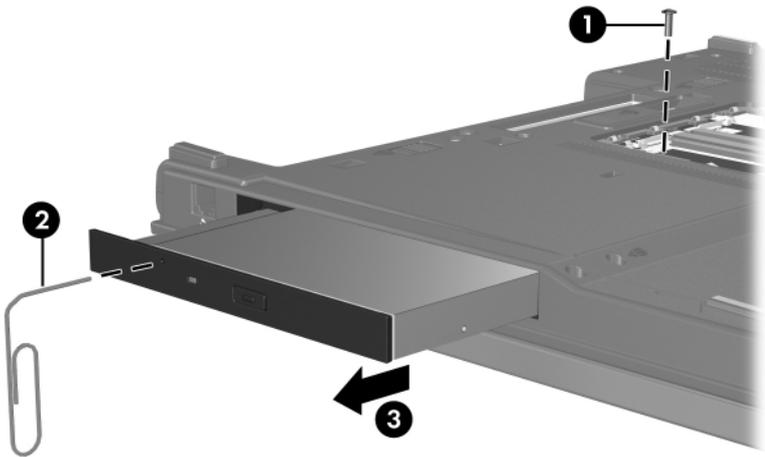
6.8 Optical Drive

Optical Drive Spare Part Number Information

24X Max CD-ROM drive	393537-001
8X Max DVD-ROM drive	393538-001
24X Max DVD/CD-RW Combo Drive	393539-001
8X Max DVD±RW and CD-RW Combo Drive	393540-001
DVD±RW and CD-RW Combo, Dual Layer Drive	393541-001

1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the memory module compartment cover ([Section 6.7](#)).
3. Position the notebook with the right side toward you.

4. Remove the Torx T8M2.5×9.0 screw ❶ that secures the optical drive to the notebook.
5. Insert a thin tool, such as an unbent paper clip ❷, into the media tray release hole and release the media tray.
6. Use the media tray to slide the optical drive out of the notebook ❸.
7. Remove the optical drive.



Removing the Optical Drive

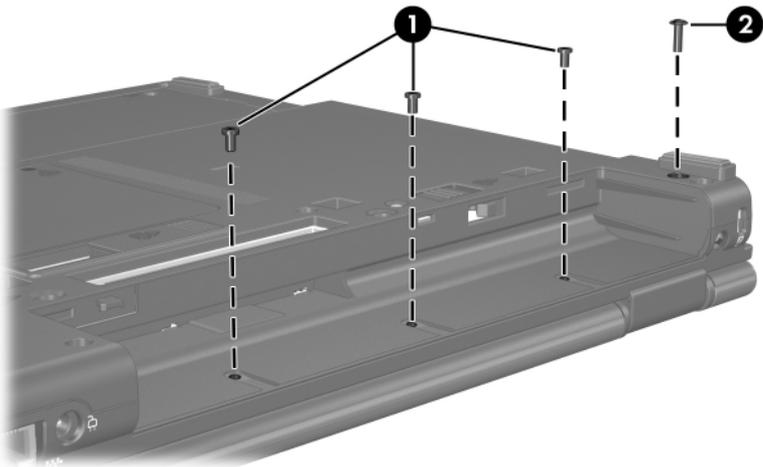
Reverse the above procedure to install an optical drive.

6.9 Switch Cover

Switch Cover Spare Part Number Information

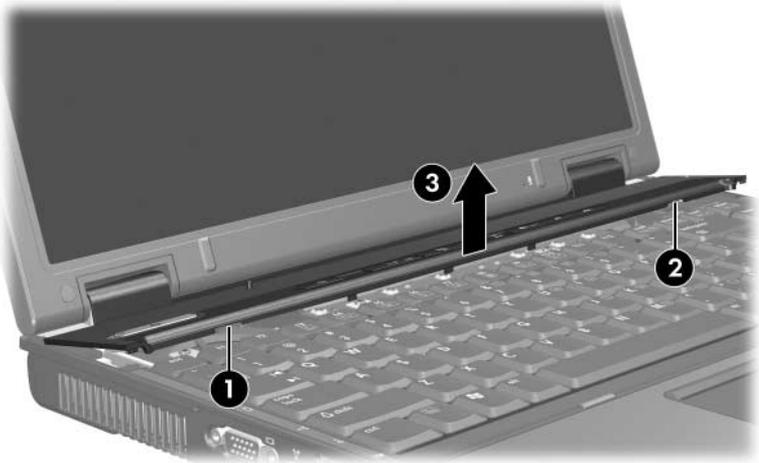
For use on HP Compaq nx6125 models	393561-001
For use on HP Compaq nx6115 models	393562-001

1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the 3 Torx T8M2.5×4.0 screws **1** and the Torx T8M2.5×9.0 screw **2** that secure the switch cover to the notebook.



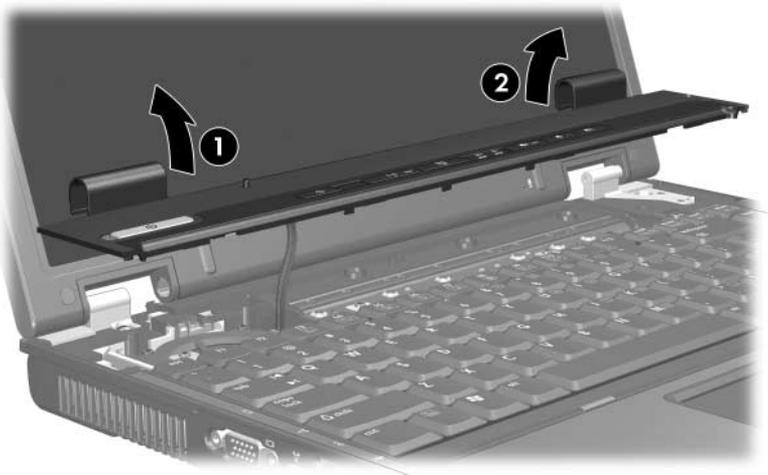
Removing the Switch Cover Screws

3. Turn the notebook display-side up with front toward you.
4. Open the notebook as far as possible.
5. Insert a flat blade screwdriver into the 2 notches in the switch cover (one behind the **f1** and **f2** keys ①, one behind the **pause** and **insert** keys ②) and lift up ③ until the front edge of the switch cover disengages from the notebook.



Releasing the Switch Cover, Part 1

6. Use a flat blade screwdriver to separate the left **1** and right hinge covers **2** from the notebook and release the switch cover.



Releasing the Switch Cover, Part 2

7. Disconnect the power button board cable from the system board.
8. Remove the switch cover.



Removing the Switch Cover

Reverse the above procedure to install the switch cover.

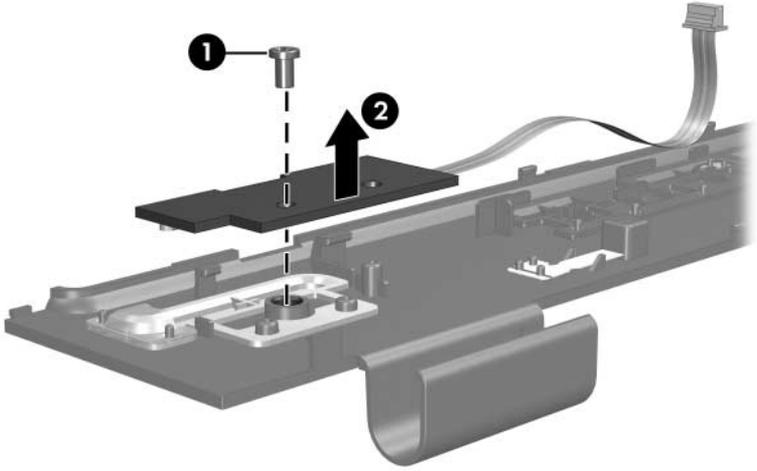
6.10 Power Button Board

Power Button Board Spare Part Number Information

Power button board (includes power button board cable)	393583-001
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1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the switch cover ([Section 6.9](#)).
3. Turn the switch cover upside down with the hinge covers toward you.

4. Remove the Torx T8M2.5×4.0 screw ❶ that secures the power button board to the switch cover.
5. Remove the power button board ❷.



Removing the Power Button Board

Reverse the above procedure to install the power button board.

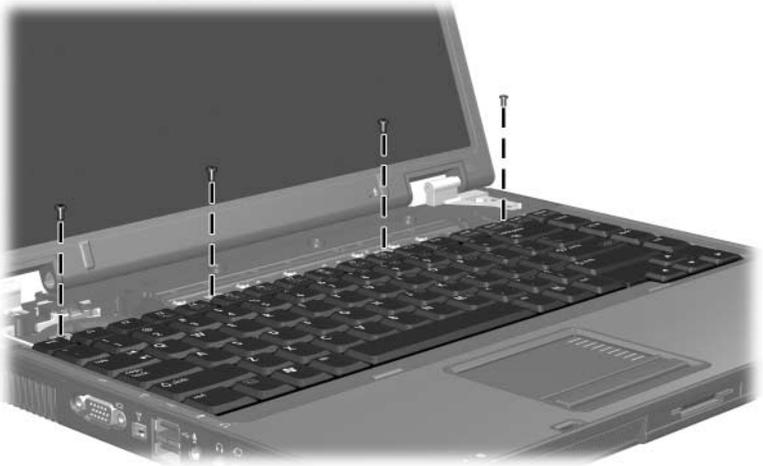
6.11 Keyboard

Keyboard Spare Part Number Information

Brazil	393568-201	People's Republic	393568-AA1
Czech Republic	393568-221	of China	
Denmark	393568-081	Poland	393568-241
Europe	393568-021	Portugal	393568-131
France	393568-051	Russia	393568-251
French Canada	393568-121	South Africa	393568-AR1
Germany	393568-041	Saudi Arabia	393568-171
Greece	393568-151	Slovakia	393568-231
Hungary	393568-211	Slovenia	393568-BA1
Iceland	393568-DD1	Spain	393568-071
Israel	393568-BB1	Sweden	393568-101
Italy	393568-061	Switzerland	393568-111
Japan	393568-291	Taiwan	393568-AB1
Korea	393568-AD1	Thailand	393568-281
Latin America	393568-161	Turkey	393568-141
The Netherlands	393568-331	United Kingdom	393568-031
Norway	393568-091	United States	393568-001

1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the switch cover ([Section 6.9](#)).

3. Remove the 4 Torx T8M2.5×4.0 screws that secure the keyboard to the notebook.



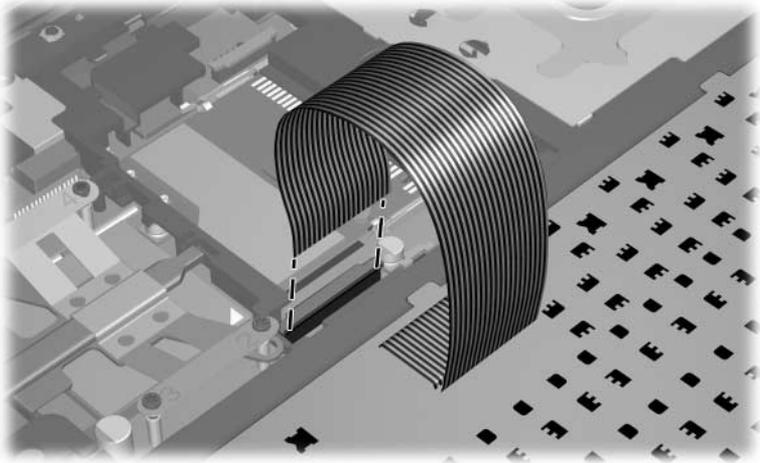
Removing the Keyboard Screws

4. Lift the rear edge of the keyboard up 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 is attached and disconnect the keyboard cable.



Disconnecting the Keyboard Cable

6. Remove the keyboard.

Reverse the above procedure to install the keyboard.

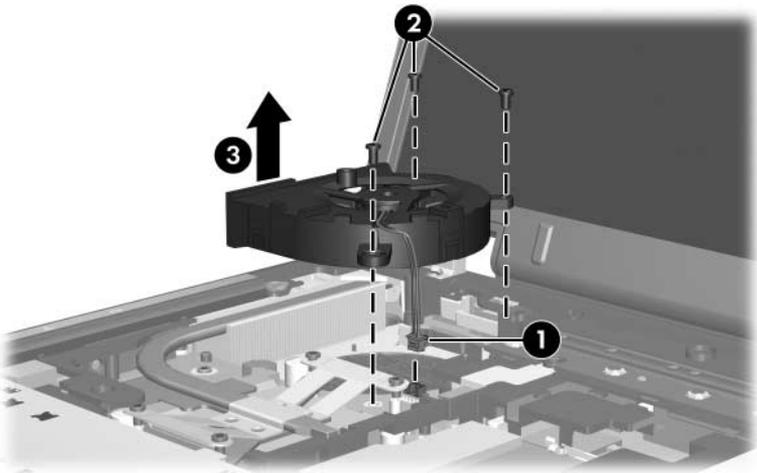
6.12 Fan

Fan Spare Part Number Information

Fan

393597-001

1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the switch cover ([Section 6.9](#)).
3. Remove the keyboard ([Section 6.11](#)).
4. Disconnect the fan cable ❶ from the system board.
5. Remove the 3 Torx T8M2.5×7.0 screws ❷ that secure the fan to the notebook.
6. Remove the fan ❸.



Removing the Fan

Reverse the above procedure to install the fan.

6.13 Heat Sink

Heat Sink Spare Part Number Information

Heat sink (includes thermal paste)

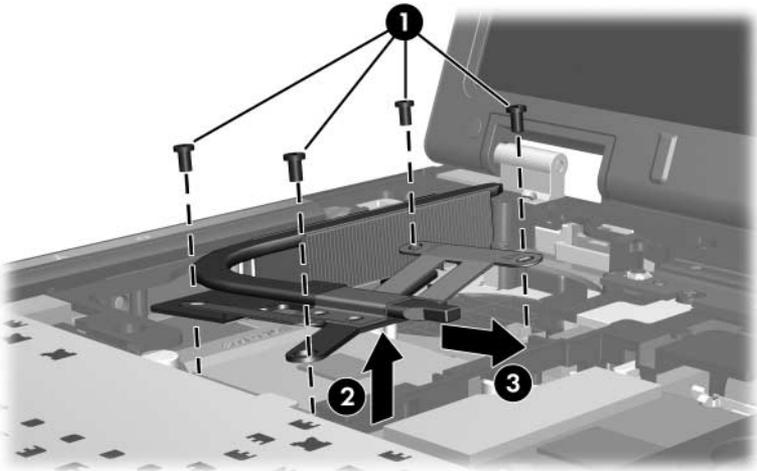
393567-001

1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Switch cover ([Section 6.9](#))
 - b. Keyboard ([Section 6.11](#))
 - c. Fan ([Section 6.12](#))

2. Remove the 4 Torx T8M2.5×7.0 screws **1** that secure the heat sink to the notebook.
3. Lift the right side of the heat sink **2** to disengage it from the processor.
4. Slide the heat sink up and to the right **3** to remove it.



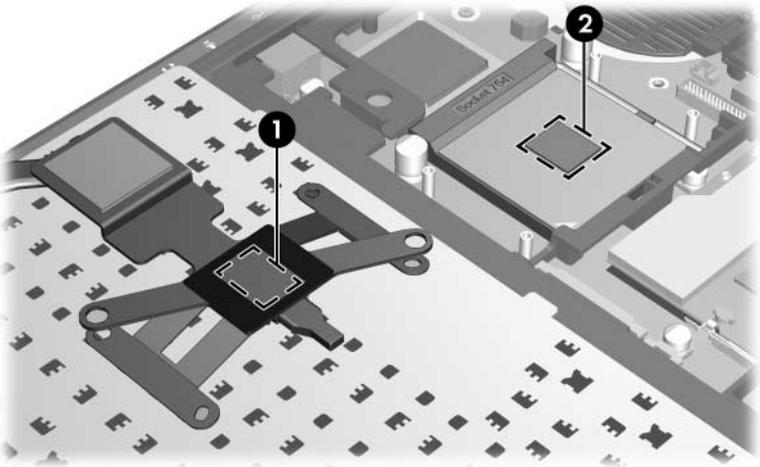
Due to the adhesive quality of the thermal paste located between the heat sink and processor, it may be necessary to move the heat sink from side to side to detach the heat sink from the processor.



Removing the Heat Sink



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



Replacing the Thermal Paste

Reverse the above procedure to install the heat sink.

6.14 Processor

Processor Spare Part Number Information

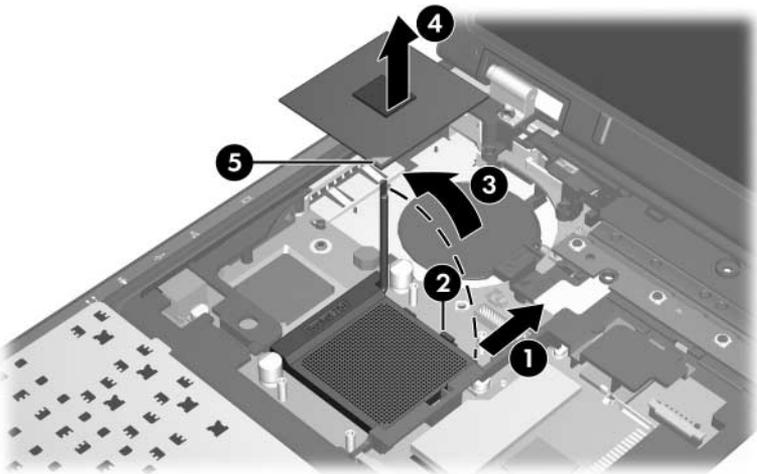
AMD Turion 64 ML-40 2.2-GHz	393579-001
AMD Turion 64 ML-37 2.0-GHz	393578-001
AMD Turion 64 ML-34 1.8-GHz	393577-001
AMD Turion 64 ML-32 1.8-GHz	395742-001
AMD Turion 64 ML-30 1.6-GHz	395743-001
AMD Turion 64 ML-28 1.6-GHz	395744-001
Mobile AMD Sempron 3100+ (1.80-GHz)	393582-001
Mobile AMD Sempron 3000+ (1.80-GHz)	393581-001
Mobile AMD Sempron 2800+ (1.60-GHz)	393580-001

1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Switch cover ([Section 6.9](#))
 - b. Keyboard ([Section 6.11](#))
 - c. Fan ([Section 6.12](#))
 - d. Heat sink ([Section 6.13](#))

2. Slide the tip of the processor socket release arm toward the display **1** until it clears the notch **2** on the processor socket.
3. Swing the processor socket release arm to the left **3** as far as it will go.
4. Lift the processor straight up and remove it **4**.



The gold triangle **5** on the processor should be aligned in the front right corner when you install the processor.



Removing the Processor

Reverse the above procedure to install the processor.

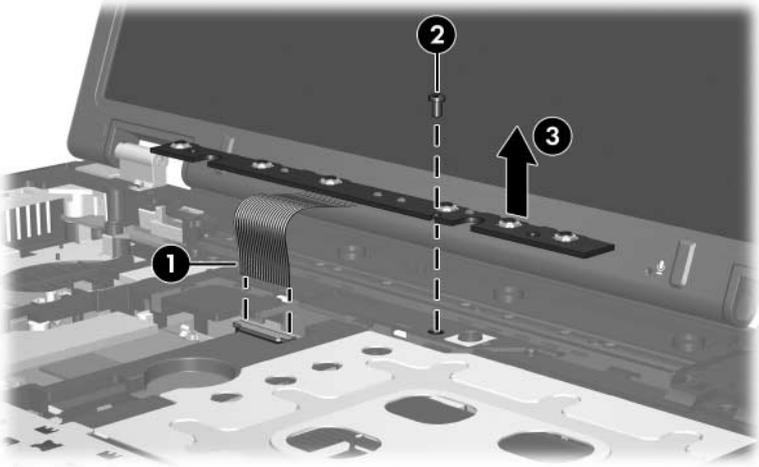
6.15 Button Board

Button Board Spare Part Number Information

For use on HP Compaq nx6125 models	393584-001
For use on HP Compaq nx6115 models	393585-001

1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the switch cover ([Section 6.9](#)).
3. Remove the keyboard ([Section 6.11](#)).

4. Release the ZIF connector to which the LED board cable is attached and disconnect the cable ❶.
5. Remove the Torx T8M2.5×4.0 screw ❷ that secures the LED board to the notebook.
6. Remove the LED board ❸.



Removing the LED Board

Reverse the above procedure to install the LED board.

6.16 Mini PCI Communications Card

Mini PCI Communications Card Spare Part Number Information

802.11a/b/g WLAN card for use in most of the world	377407-001
802.11a/b/g WLAN card for use in the rest of the world	377407-002
802.11a/b/g WLAN card for use in Japan	377407-291
802.11b/g WLAN card for use in the United States	392557-001
802.11b/g WLAN card for use in the rest of the world	392557-002
802.11b/g WLAN card for use in Japan	392557-291

1. Prepare the notebook for disassembly ([Section 6.3](#)).
2. Remove the switch cover ([Section 6.9](#)).
3. Remove the keyboard ([Section 6.11](#)).

4. Disconnect the auxiliary and main ❶ antenna cables from the Mini PCI communications card.

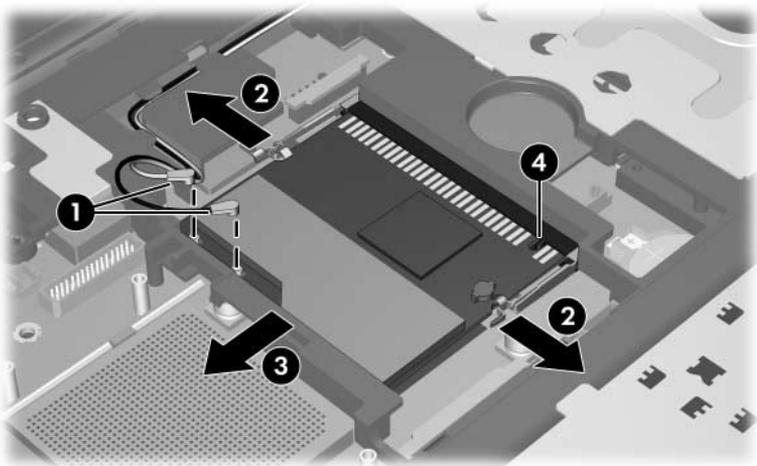


Before disconnecting the antenna cables, make note of which cable is attached to which antenna clip on the Mini PCI communications card.

5. Spread the 2 retaining tabs ❷ on each side of the Mini PCI socket to release the Mini PCI communications card. (The edge of the card opposite the socket rises away from the notebook.)
6. Remove the Mini PCI communications card by pulling the card away from the socket at a 45-degree angle ❸.



The Mini PCI communications card is slotted ❹ to prevent incorrect installation.



Removing a Mini PCI Communications Card

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

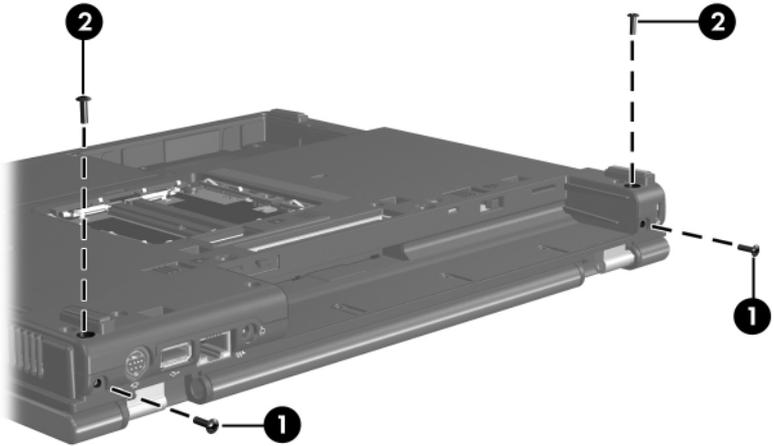
6.17 Display Assembly

Display Assembly Spare Part Number Information

15.0-inch, SXGA+WVA, TFT	393552-001
15.0-inch, XGA, TFT	393551-001

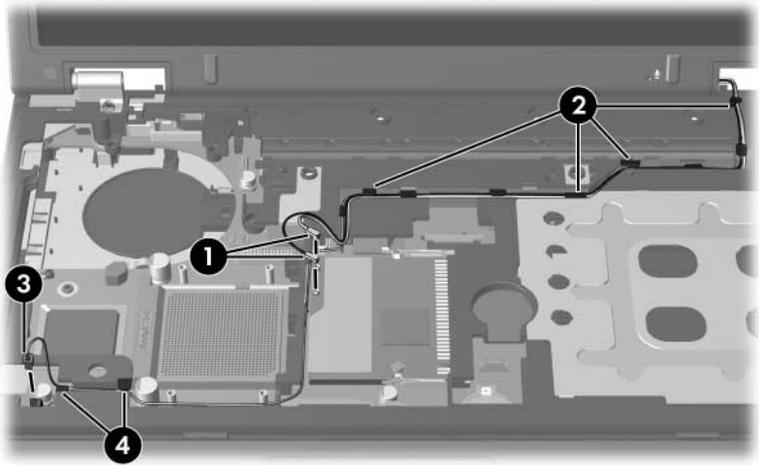
1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Switch cover ([Section 6.9](#))
 - b. Keyboard ([Section 6.11](#))
 - c. Button board ([Section 6.15](#))
2. Turn the notebook upside down with the rear panel toward you.

3. Remove the 2 Torx T8M2.5×9.0 screws **1** from the rear panel and the 2 Torx T8M2.5×9.0 screws **2** from the bottom of the notebook that secure the display assembly to the notebook.



Removing the Display Screws

4. Turn the notebook display-side up with the front toward you.
5. Open the notebook as far as possible.
6. Disconnect the wireless antenna cables **1** from the Mini PCI communications board.
7. Remove the antenna cables from the clips **2** in the top cover.
8. Disconnect the microphone cable **3** from the system board.
9. Remove the microphone cable from the clips **4** in the top cover.



Disconnecting the Wireless Antenna and Microphone Cables

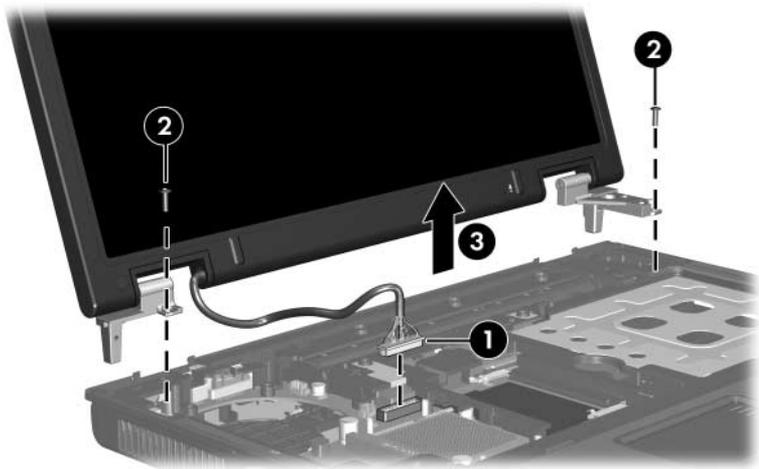
10. Disconnect the display cable ❶ from the system board.



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

11. Remove the 2 Torx T8M2.5×7.0 screws ❷ that secure the display assembly to the notebook.

12. Lift the display assembly straight up and remove it ❸.



Removing the Display Assembly

Reverse the above procedure to install the display assembly.

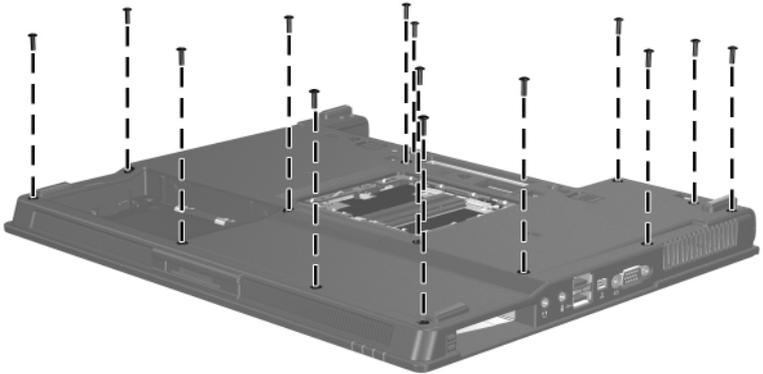
6.18 Top Cover

Top Cover Spare Part Number Information

For use on HP Compaq nx6125 models	393559-001
For use on HP Compaq nx6115 models	393560-001
Fingerprint sensor	393586-001

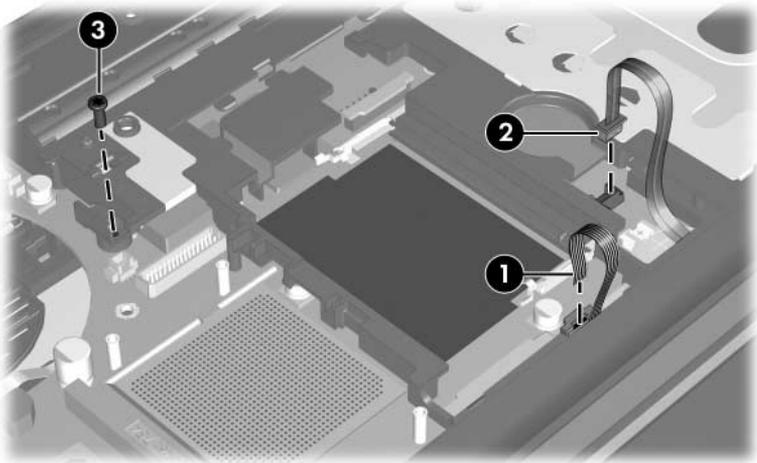
1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Optical drive ([Section 6.8](#))
 - b. Switch cover ([Section 6.9](#))
 - c. Fan ([Section 6.12](#))
 - d. Keyboard ([Section 6.11](#))
 - e. Button board ([Section 6.15](#))
 - f. Display assembly ([Section 6.17](#))
2. Turn the notebook upside down with the front toward you.

3. Remove the 14 Torx T8M2.5×9.0 screws that secure the top cover to the notebook.



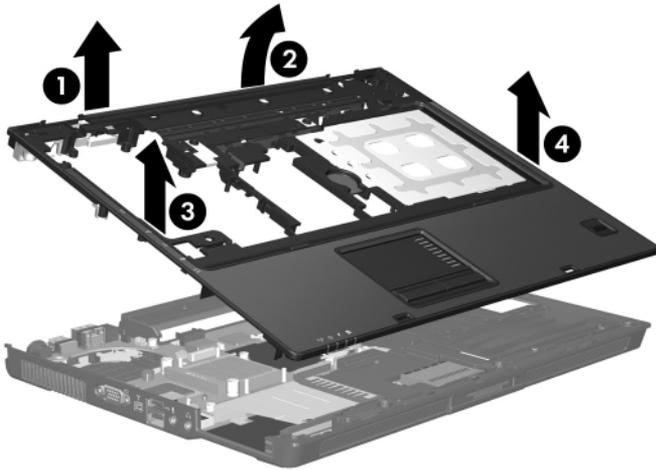
Removing the Top Cover Screws, Part 1

4. Turn the notebook top-side up with the front toward you.
5. Release the ZIF connector to which the TouchPad cable **1** is connected and disconnect the TouchPad cable from the system board.
6. Disconnect the fingerprint reader cable **2** from the system board.
7. Remove the Torx T8M2.5×7.0 screw **3** that secures the top cover to the notebook.



Disconnecting the Top Cover Cables and Removing the Top Cover Screw

8. Lift up the rear edge of the top cover ❶ until it disengages from the base enclosure.
9. Swing the top cover toward you ❷ until the left and right sides of the top cover disengage from the base enclosure.
10. Lift up on the left ❸ and right sides ❹ of the top cover until the top cover disengages from the base enclosure.



Releasing the Top Cover

11. Lift the top cover straight up until the front edge of the top cover disengages from the base enclosure and remove the top cover.

Reverse the above procedure to install the top cover.

6.19 TouchPad

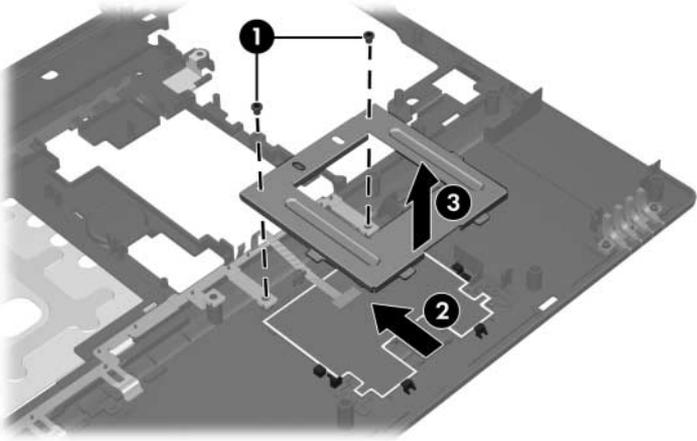
TouchPad Spare Part Number Information

TouchPad (includes TouchPad cable)

393587-001

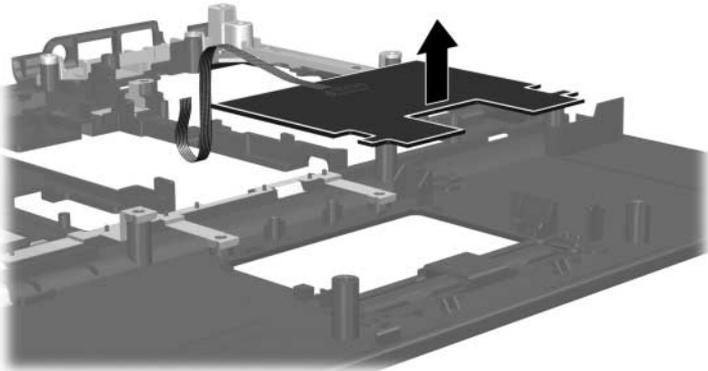
1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Optical drive ([Section 6.8](#))
 - b. Switch cover ([Section 6.9](#))
 - c. Keyboard ([Section 6.11](#))
 - d. Button board ([Section 6.15](#))
 - e. Display assembly ([Section 6.17](#))
 - f. Top cover ([Section 6.18](#))
2. Turn the top cover upside down with the front toward you.

3. Remove the 2 Torx T8M2.5×4.0 screws ❶ that secure the TouchPad to the notebook.
4. Slide the TouchPad frame back ❷, then lift the back edge of the frame up and forward ❸.
5. Remove the frame.



Removing the TouchPad Frame

6. Remove the TouchPad.



Removing the TouchPad

Reverse the above procedure to install an TouchPad.

6.20 RTC Battery

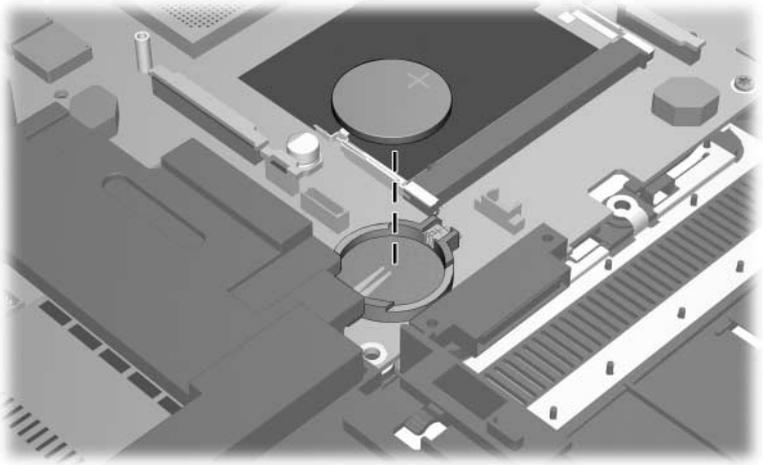
RTC Battery Spare Part Number Information

RTC battery

393588-001

1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Optical drive ([Section 6.8](#))
 - b. Switch cover ([Section 6.9](#))
 - c. Keyboard ([Section 6.11](#))
 - d. Button board ([Section 6.15](#))
 - e. Display assembly ([Section 6.17](#))
 - f. Top cover ([Section 6.18](#))

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



Removing the RTC Battery

Reverse the above procedure to install an RTC battery.

6.21 Speaker

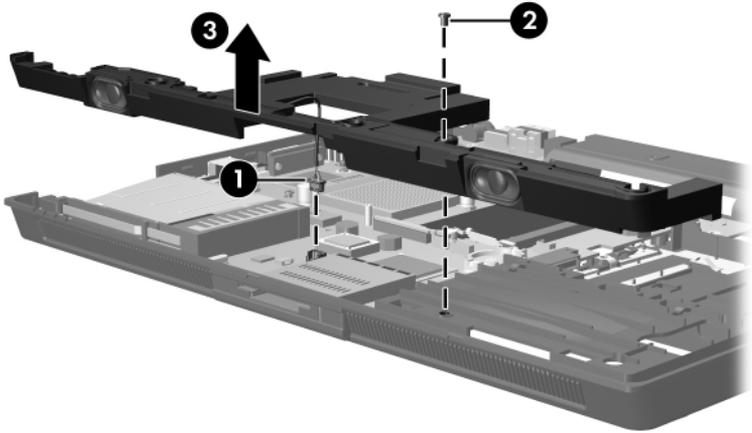
Speaker Spare Part Number Information

Speaker

393563-001

1. Prepare the notebook for disassembly ([Section 6.3](#)) and then remove the following components:
 - a. Optical drive ([Section 6.8](#))
 - b. Switch cover ([Section 6.9](#))
 - c. Keyboard ([Section 6.11](#))
 - d. Button board ([Section 6.15](#))
 - e. Display assembly ([Section 6.17](#))
 - f. Top cover ([Section 6.18](#))

2. Disconnect the speaker cable **1** from the system board.
3. Remove the Torx T8M2.5×4.0 screw **2** that secures the speaker to the notebook.
4. Lift the speaker up **3** until it clears the system board.



Removing the Speaker

Reverse the above procedure to install the speaker.

6.22 System Board

System Board Spare Part Number Information

For use on HP Compaq nx6125 models	393569-001
For use on HP Compaq nx6115 models	393570-001

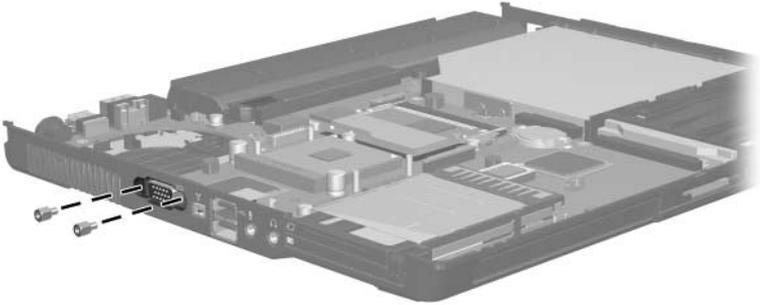


When replacing the system board, ensure that the following components are removed from the defective system board and installed on the replacement system board:

- Memory modules ([Section 6.7](#))
 - Processor ([Section 6.14](#))
 - Mini PCI communications module ([Section 6.16](#))
 - RTC battery ([Section 6.20](#))
 - PC Card assembly ([Section 6.20](#))
-

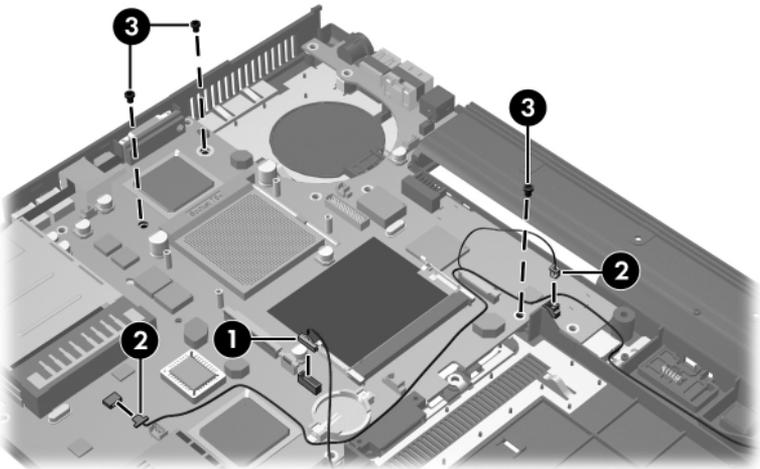
1. Prepare the notebook for disassembly ([Section 6.3](#)), and then remove the following components:
 - a. Hard drive ([Section 6.4](#))
 - b. Bluetooth board ([Section 6.6](#))
 - c. Optical drive ([Section 6.8](#))
 - d. Switch cover ([Section 6.9](#))
 - e. Keyboard ([Section 6.11](#))
 - f. Fan ([Section 6.12](#))
 - g. Heat sink ([Section 6.13](#))
 - h. Button board ([Section 6.15](#))
 - i. Display assembly ([Section 6.17](#))
 - j. Top cover ([Section 6.18](#))
 - k. Speaker ([Section 6.21](#))

2. Use a 3/16-inch Hex socket wrench to remove the 2 HM3.0×10.0 screw locks on each side of the external monitor connector.



Removing the System Board Screw Locks

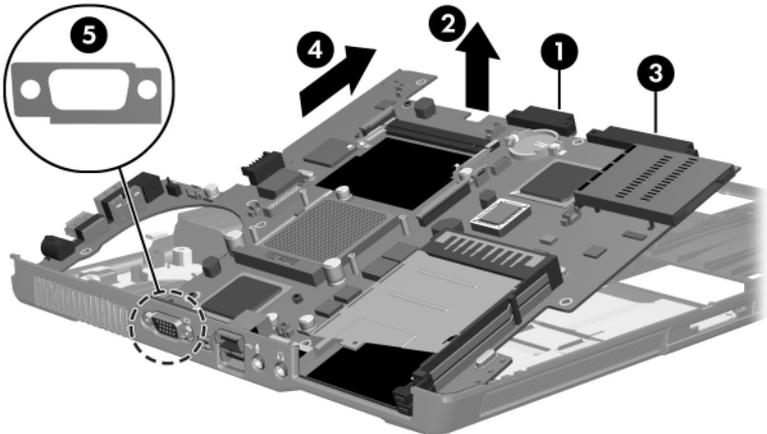
3. Disconnect the Bluetooth cable ❶ and RJ-11 connector module cable ❷ from the system board.
4. Remove the 3 Torx T8M2.5×7.0 screws ❸ that secure the system board to the base enclosure.



Removing the System Board Screws and Disconnecting the System Board Cables

5. Use the optical drive connector ❶ to lift the right side of the system board ❷ until the hard drive connector ❸ clears the base enclosure.
6. Slide the system board to the right ❹ at an angle and remove it.

 **CAUTION:** Be careful not to misplace the external monitor connector bracket ❺ when removing the system board. The bracket should be installed over the external monitor connector between the base enclosure and the system board, as shown. Failure to install the external monitor connector bracket can result in damage to the connector and system board.

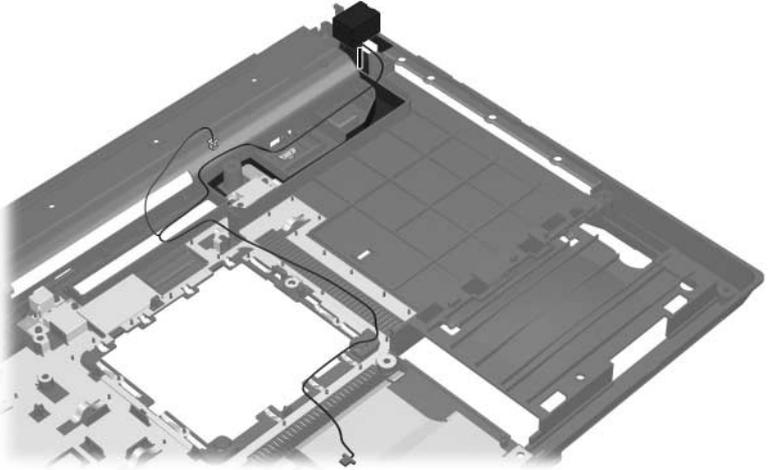


Removing the System Board

7. If necessary, remove the RJ-11 connector module and cable from the base enclosure.



The RJ-11 connector module and cable is included in the Miscellaneous Cables Kit, spare part number 393594-001.



Removing the RJ-11 Connector Module and Cable

Reverse the above procedures to install the system board.

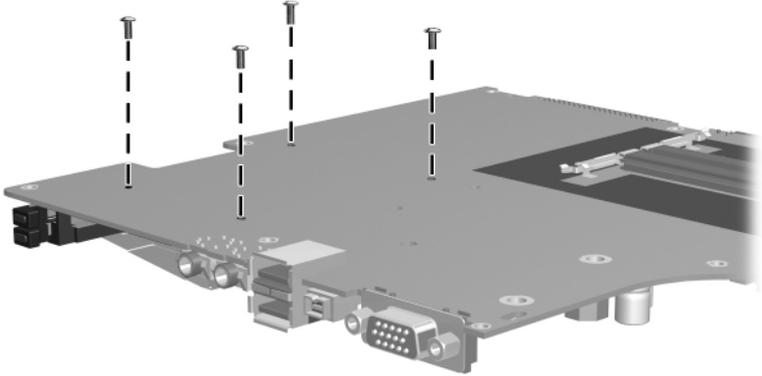
6.23 PC Card Assembly

PC Card Assembly Spare Part Number Information

With Smart Card reader, for use on HP Compaq nx6125 models	393589-001
Without Smart Card reader, for use on HP Compaq nx6125 models	393590-001
Without Smart Card reader, for use on HP Compaq nx6115 models	393591-001

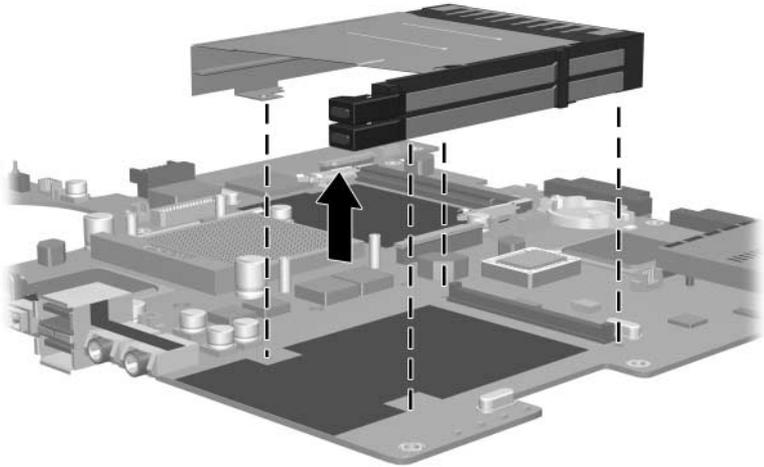
1. Prepare the notebook for disassembly ([Section 6.3](#)), and then remove the following components:
 - a. Hard drive ([Section 6.4](#))
 - b. Bluetooth board ([Section 6.6](#))
 - c. Optical drive ([Section 6.8](#))
 - d. Switch cover ([Section 6.9](#))
 - e. Keyboard ([Section 6.11](#))
 - f. Fan ([Section 6.12](#))
 - g. Heat sink ([Section 6.13](#))
 - h. Button board ([Section 6.15](#))
 - i. Display assembly ([Section 6.17](#))
 - j. Top cover ([Section 6.18](#))
 - k. Speaker ([Section 6.21](#))
 - l. System board ([Section 6.22](#))

2. Turn the system board upside down with the audio jacks, USB ports, and external monitor port toward you.
3. Remove the 4 Phillips PM1.5×4.0 screws that secure the PC Card assembly to the system board.



Removing the PC Card Assembly Screws

4. Turn the system board top-side up with the audio jacks, USB ports, and external monitor port toward you.
5. Lift the rear edge of the PC Card assembly to disconnect it from the system board and remove the PC Card assembly.



Removing the PC Card Assembly

Reverse the above procedures to install the PC Card assembly.

Specifications

This chapter provides physical and performance specifications.

Table 7-1
Notebook

Dimensions	Metric	U.S.
Height (front to back)		1.3 to 1.5 in
Width		13.0 in
Depth		10.75 in
Weight		
HP Compaq nx6125 model with 15.0-inch display, optical drive, and 6-cell battery pack		6.3 lbs
HP Compaq nx6115 model with 15.0-inch display, optical drive, and 6-cell battery pack		6.0 lbs
Input Power		
Operating voltage	18.5 V dc @ 3.5 A - 65 W	
Operating current	3.5 A	
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F

Table 7-1
Notebook (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 notebook operates well within this range of temperatures.

Table 7-2
15.0-inch, SXGA+WVA, TFT Display

Dimensions		
Height	30.0 cm	11.8 in
Width	22.9 cm	9.0 in
Diagonal	38.1 cm	15.0 in
Number of colors	Up to 16.8 million	
Contrast ratio	250:1	
Brightness	150 nits typical	
Pixel resolution		
Pitch	0.264 × 0.264 mm	
Format	1400 × 1050	
Configuration	RGB vertical stripe	
Backlight	Edge lit	
Character display	80 × 25	
Total power consumption	5.5 W	
Viewing angle	+/-35° horizontal, +15/-35° vertical typical	

Table 7-3
15.0-inch, XGA, TFT Display

Dimensions		
Height	30.0 cm	11.8 in
Width	22.9 cm	9.0 in
Diagonal	38.1 cm	15.0 in
Number of colors		Up to 16.8 million
Contrast ratio		250:1
Brightness		150 nits typical
Pixel resolution		
Pitch	0.264 × 0.264 mm	
Format	1024 × 768	
Configuration	RGB vertical stripe	
Backlight		Edge lit
Character display		80 × 25
Total power consumption		5.5 W
Viewing angle		+/-35° horizontal, +15/-35° vertical typical

Table 7-4
Hard Drives

	80-GB*	60-GB*	40-GB*	30-GB*
Dimensions				
Height	9.5 mm	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm	70 mm
Weight	99 g	99 g	99 g	102 g
Interface type	ATA-5	ATA-5	ATA-5	ATA-5
Transfer rate				
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)				
Single track	3 ms	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms	24 ms
Logical blocks [†]	156,301,488	117,210,240	78,140,160	58,605,120
Disc rotational speed	5400 and 4200 rpm	5400 and 4200 rpm	5400 and 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 7-5
Primary 6-cell, Li-Ion Battery Pack

Dimensions

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

Energy

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

Temperature

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

Table 7-6
DVD-ROM Drive

Applicable disc	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	
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	
Access time	CD	DVD
Random	< 100 ms	< 125 ms
Full stroke	< 175 ms	< 225 ms
Audio output level	Line-out, 0.7 Vrms	
Cache buffer	512 KB	
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 (1,352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 10 seconds	
Stop time	< 3 seconds	

Table 7-7
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) 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)	

Table 7-7
DVD/CD-RW Combo Drive (Continued)

Disc thickness	1.2 mm (0.047 in)	
Track pitch	0.74 μ m	
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 7-8
DVD±RW and 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) 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)	

Table 7-8
DVD±RW and CD-RW Combo Drive (Continued)

Disc thickness	1.2 mm (0.047 in)	
Track pitch	0.74 µm	
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)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 7-9
CD-ROM Drive

Applicable disc	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
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)

Table 7-9
CD-ROM Drive (Continued)

Track pitch	1.6 μ m	
Access time	CD media	DVD media
Random	< 110 ms	< 125 ms
Full stroke	< 220 ms	< 225 ms
Audio output level	Line-out, 0.7 Vrms	
Cache buffer	128 KB/s	
Data transfer rate		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 8 seconds	
Stop time	< 4 seconds	

Table 7-10
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.

Table 7-11
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 SMBus Controller—24C3 Data Fax Modem with SmartCP
IRQ6	Diskette drive
IRQ7*	Parallel port
IRQ8	System CMOS/real-time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ10*	UHCI controller—24C2 GM/GME Graphic Controller Realtek RTL8139 Family PCI fast Ethernet Controller

Table 7-11
System Interrupts (Continued)

IRQ11	USB EHCI controller—24CD USB UHCI controller—24C4 USB UHCI controller—24C7 Pro/Wireless 2200BG TI OHCI 1394 host controller TI PCI1410 CardBus controller
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 7-12
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 7-12
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 7-12
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)

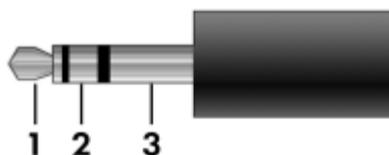
Table 7-13
System Memory Map

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	000E8000-000FFFFF	System BIOS
15 MB	00100000-00FFFFFF	Extended memory
58 MB	01000000-047FFFFF	Super extended memory
58 MB	04800000-07FFFFFF	Unused
2 MB	08000000-080FFFFF	Video memory (direct access)
4 GB	08200000-FFFEFFFF	Unused
64 KB	FFFF0000-FFFFFFFF	System BIOS

A

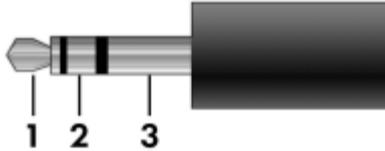
Connector Pin Assignments

Table A-1
Audio-Out (Headphone)



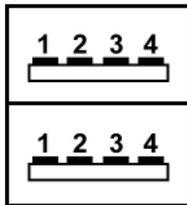
Pin	Signal	Pin	Signal
1	Audio out, left channel	3	Ground
2	Audio out, right channel		

Table A-2
Audio-In (Microphone)



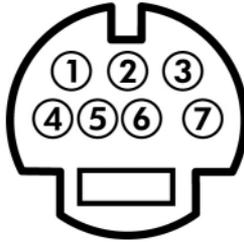
Pin	Signal	Pin	Signal
1	Audio signal in	3	Ground
2	Audio signal in		

Table A-3
Universal Serial Bus



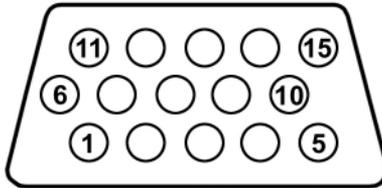
Pin	Signal	Pin	Signal
1	+5 VDC	3	Data +
2	Data -	4	Ground

Table A-4
S-Video-Out



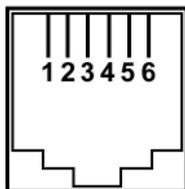
Pin	Signal	Pin	Signal
1	S-VHS color (C) signal	5	TV-CD
2	Composite video signal	6	S-VHS intensity ground
3	S-VHS intensity (Y) signal	7	Composite video ground
4	S-VHS color ground		

Table A-5
External Monitor



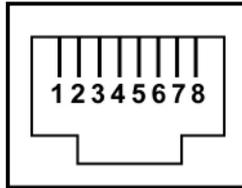
Pin	Signal	Pin	Signal
1	Red analog	9	+5 VDC
2	Green analog	10	Ground
3	Blue analog	11	Monitor detect
4	Not connected	12	DDC 2B data
5	Ground	13	Horizontal sync
6	Ground analog	14	Vertical sync
7	Ground analog	15	DDC 2B clock
8	Ground analog		

Table A-6
RJ-11 (Modem)



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

Table A-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 notebook permits it to operate from any line voltage from 100 to 120 or 220 to 240 volts AC.

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

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

General Requirements

The requirements listed below are applicable to all countries.

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

Country-Specific Requirements

3-Conductor Power Cord Set Requirements

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



NOTES:

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 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	Accredited Agency	Applicable Note Number
The Netherlands	KEMA	1
Norway	NEMKO	1
Sweden	SEMKO	1
Switzerland	SEV	1
United Kingdom	BSI	1
United States	UL	2



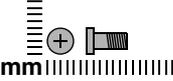
NOTES:

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.
-

Screw Listing

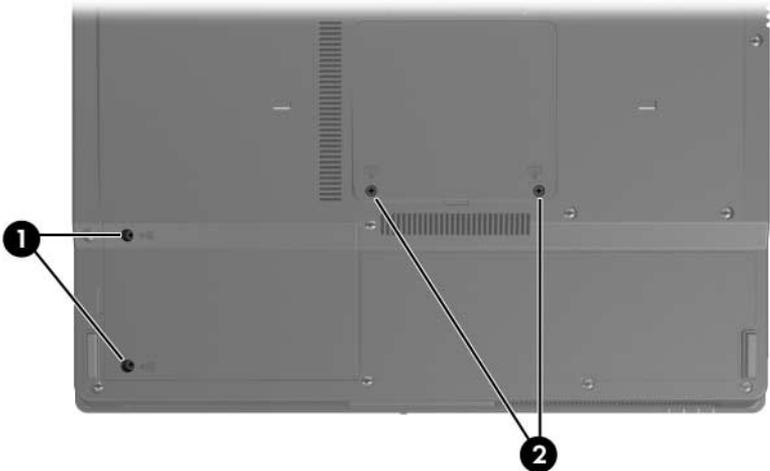
This appendix provides specification and reference information for the screws and screw locks used in the notebook. All screws and screw locks listed in this appendix are available in the Screw Kit, spare part number 393596-001.

Table C-1
Phillips PM2.5x6.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	4	6.0 mm	2.5 mm	4.0 mm

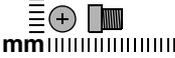
Where used:

- ➊ Two screws that secure the hard drive cover to the notebook (screws are captured on the cover by C clips; documented in [Section 6.4](#))
- ➋ Two screws that secure the memory module compartment cover to the notebook (screws are captured on the cover by C clips; documented in [Section 6.7](#))



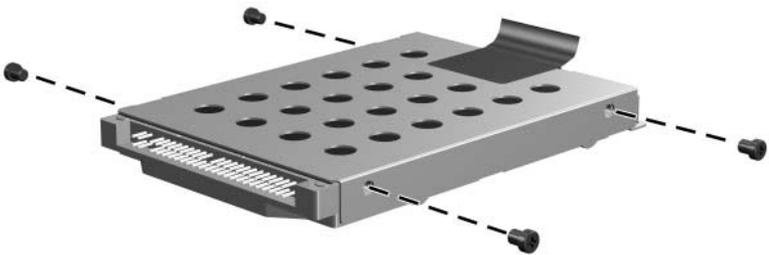
Phillips PM2.5x6.0 Screw Locations

Table C-2
Phillips PM3.0×5.0 Screw

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

Where used:

4 screws that secure the hard drive frame to the hard drive (documented in [Section 6.4](#))



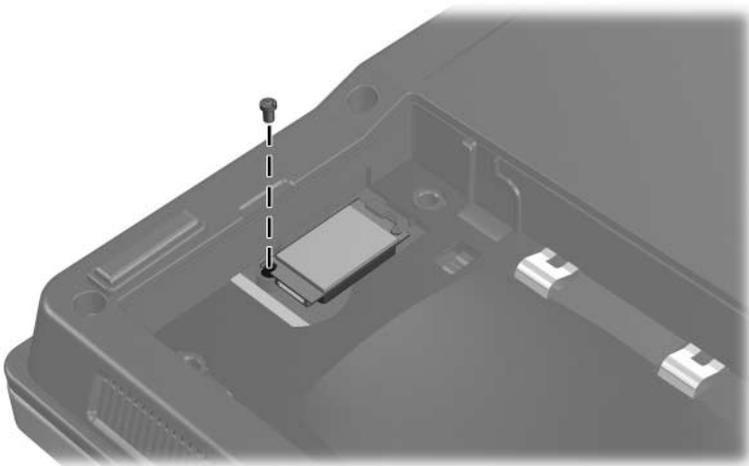
Phillips PM3.0×5.0 Screw Locations

Table C-3
Phillips PM1.5x3.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	1	3.0 mm	1.5 mm	3.0 mm

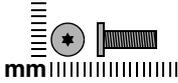
Where used:

One screw that secures the Bluetooth board to the notebook (documented in [Section 6.6](#))



Phillips PM1.5x3.0 Screw Location

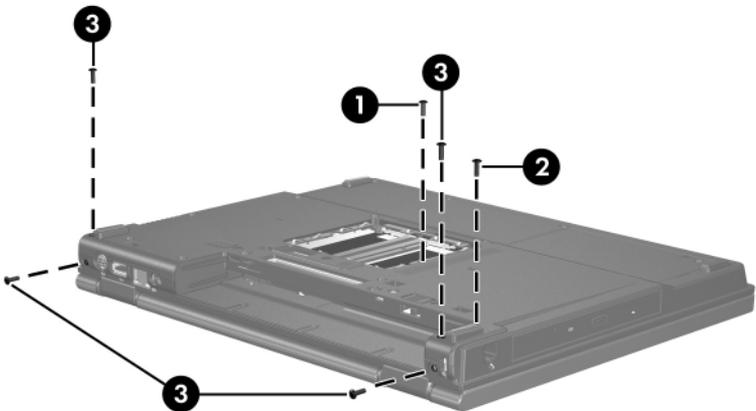
Table C-4
Torx T8M2.5×9.0 Screw



	Color	Qty.	Length	Thread	Head Width
	Black	20	9.0 mm	2.5 mm	5.0 mm

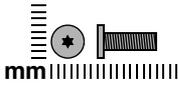
Where used:

- ❶ One screw that secures the optical drive to the notebook (documented in [Section 6.8](#))
- ❷ One screw that secures the switch cover to the notebook (documented in [Section 6.9](#))
- ❸ Four screws that secure the display assembly to the notebook (documented in [Section 6.17](#))



Torx T8M2.5×9.0 Screw Locations

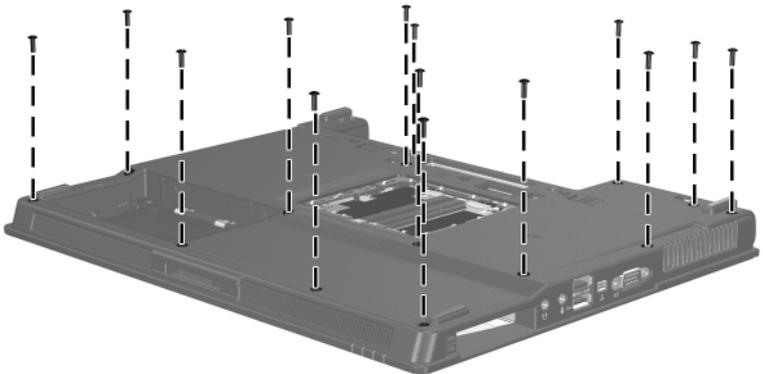
Table C-4
Torx T8M2.5×9.0 Screw (Continued)



Color	Qty.	Length	Thread	Head Width
Black	20	9.0 mm	2.5 mm	5.0 mm

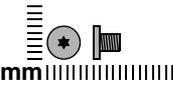
Where used:

14 screws that secure the top cover to the notebook (documented in [Section 6.18](#))



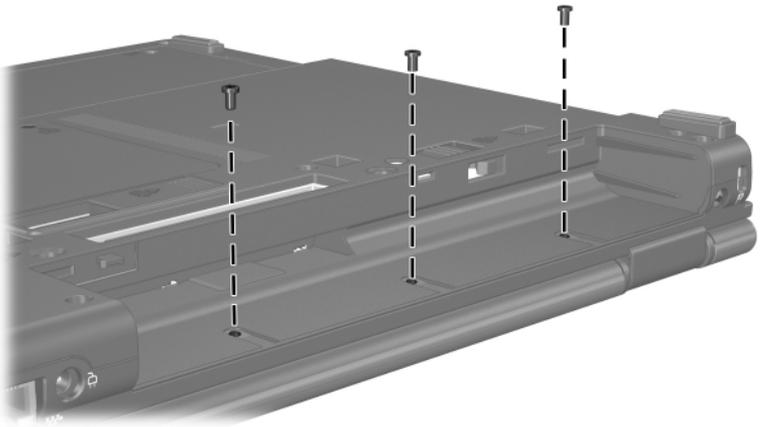
Torx T8M2.5×9.0 Screw Locations

Table C-5
Torx T8M2.5×4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	11	4.0 mm	2.5 mm	5.0 mm

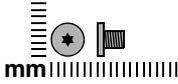
Where used:

3 screws that secure the switch cover to the notebook (documented in [Section 6.9](#))



Torx T8M2.5×4.0 Screw Locations

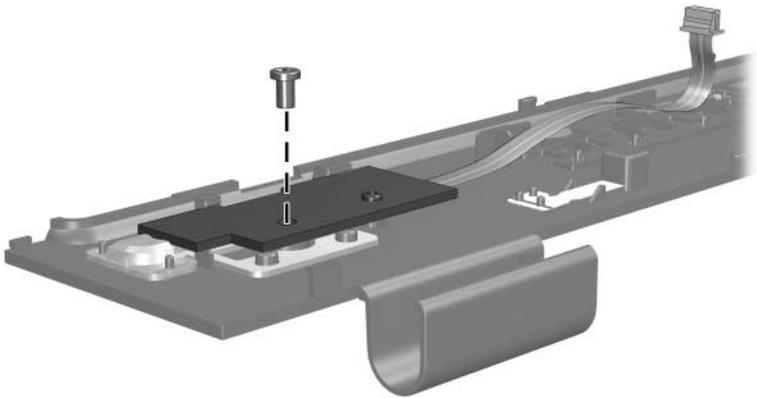
Table C-5
Torx T8M2.5x4.0 Screw (Continued)



Color	Qty.	Length	Thread	Head Width
Black	11	4.0 mm	2.5 mm	5.0 mm

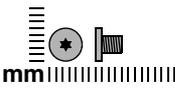
Where used:

One screw that secures the power switch board to the switch cover (documented in [Section 6.10](#))



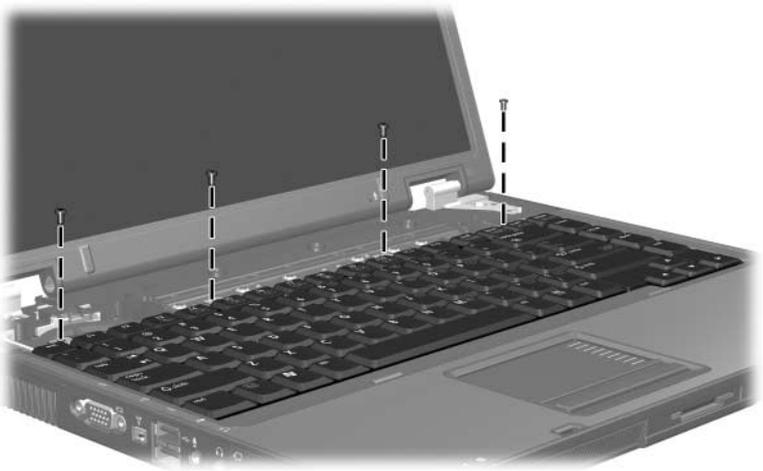
Torx T8M2.5x4.0 Screw Location

Table C-5
Torx T8M2.5×4.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	11	4.0 mm	2.5 mm	5.0 mm

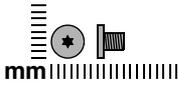
Where used:

4 screws that secure the keyboard to the notebook (documented in [Section 6.11](#))



Torx T8M2.5×4.0 Screw Locations

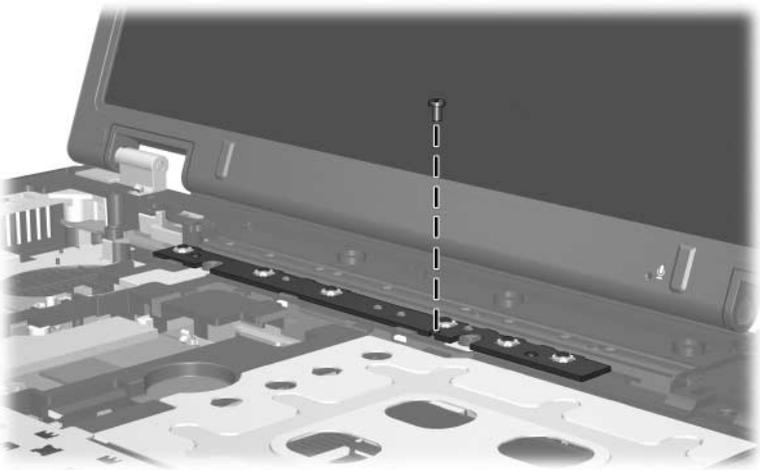
Table C-5
Torx T8M2.5x4.0 Screw (Continued)



Color	Qty.	Length	Thread	Head Width
Black	11	4.0 mm	2.5 mm	5.0 mm

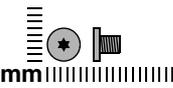
Where used:

One screw that secures the button board to the notebook (documented in [Section 6.15](#))



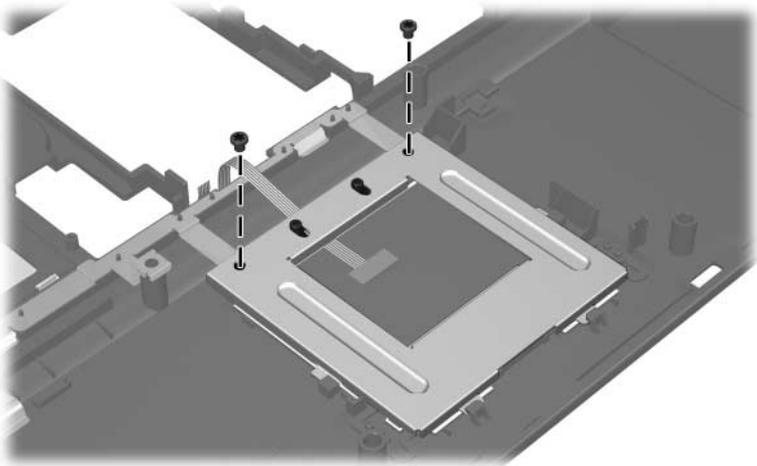
Torx T8M2.5x4.0 Screw Location

Table C-5
Torx T8M2.5×4.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	11	4.0 mm	2.5 mm	5.0 mm

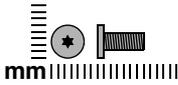
Where used:

2 screws that secure the TouchPad frame and TouchPad to the top cover
 (documented in [Section 6.19](#))



Torx T8M2.5×4.0 Screw Locations

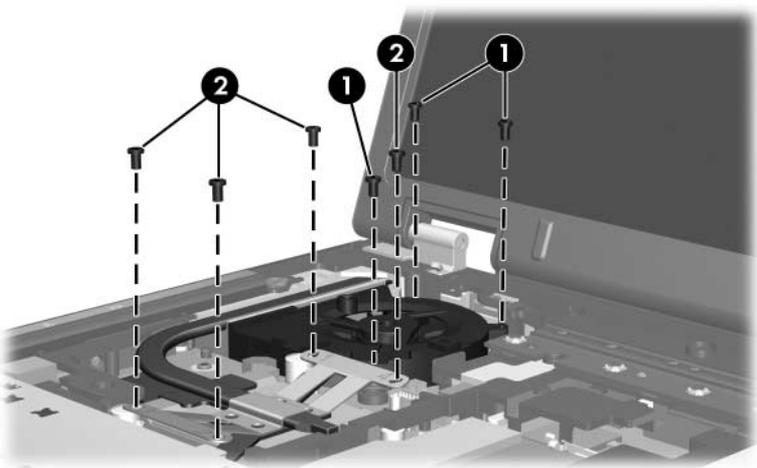
Table C-6
Torx T8M2.5×7.0 Screw



Color	Qty.	Length	Thread	Head Width
Black	13	7.0 mm	2.5 mm	5.0 mm

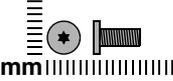
Where used:

- ❶ Three screws that secure the fan to the notebook (documented in [Section 6.12](#))
- ❷ Four screws that secure the heat sink to the notebook (documented in [Section 6.13](#))



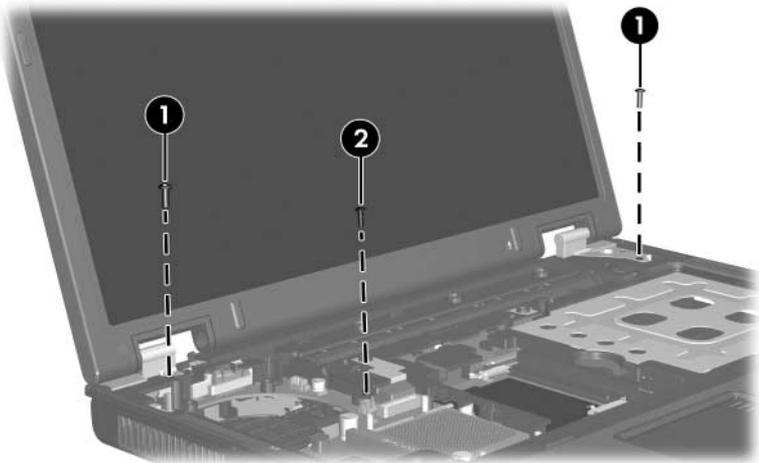
Torx T8M2.5×7.0 Screw Locations

Table C-6
Torx T8M2.5×7.0 Screw (Continued)

 mm	Color	Qty.	Length	Thread	Head Width
	Black	13	7.0 mm	2.5 mm	5.0 mm

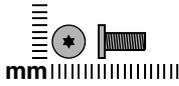
Where used:

- ❶ Two screws that secure the display assembly to the notebook (documented in [Section 6.17](#))
- ❷ One screw that secures the top cover to the notebook (documented in [Section 6.18](#))



Torx T8M2.5×7.0 Screw Locations

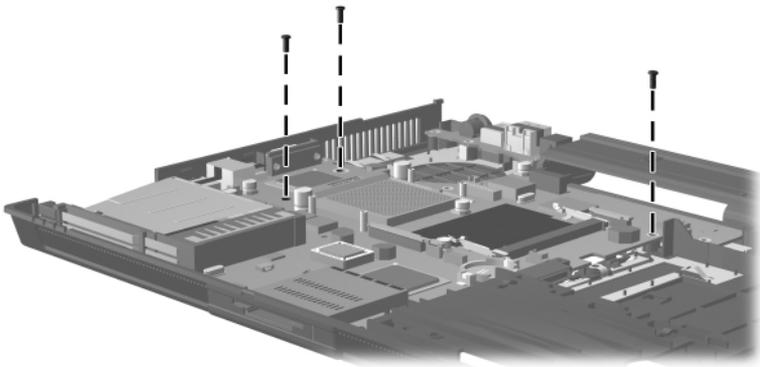
Table C-6
Torx T8M2.5x7.0 Screw (Continued)



Color	Qty.	Length	Thread	Head Width
Black	13	7.0 mm	2.5 mm	5.0 mm

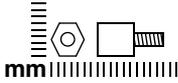
Where used:

3 screws that secure the system board to the notebook (documented in [Section 6.22](#))



Torx T8M2.5x7.0 Screw Locations

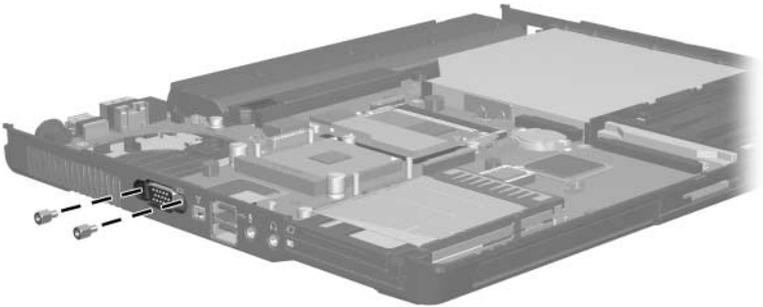
Table C-7
Hex HM3.0×10.0 Screw Lock



Color	Qty.	Length	Thread	Head Width
Silver	2	4.0 mm	1.5 mm	4.0 mm

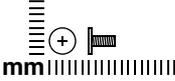
Where used:

2 screw locks that secure the system board to the base enclosure (documented in [Section 6.22](#))



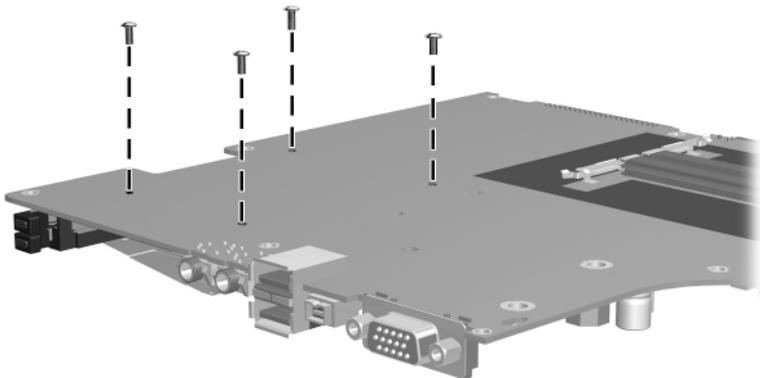
Hex HM3.0×10.0 Screw Locations

Table C-8
Phillips PM1.5x4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	4	4.0 mm	1.5 mm	4.0 mm

Where used:

4 screws that secure the PC Card assembly to the system board (documented in [Section 6.23](#))



Phillips PM1.5x4.0 Screw Locations

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.

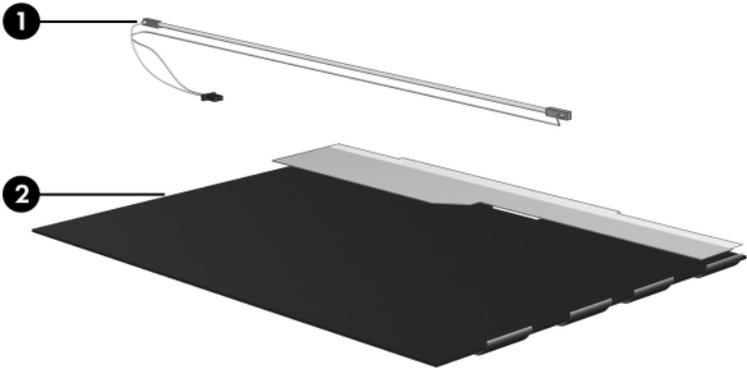


Materials Disposal

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

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

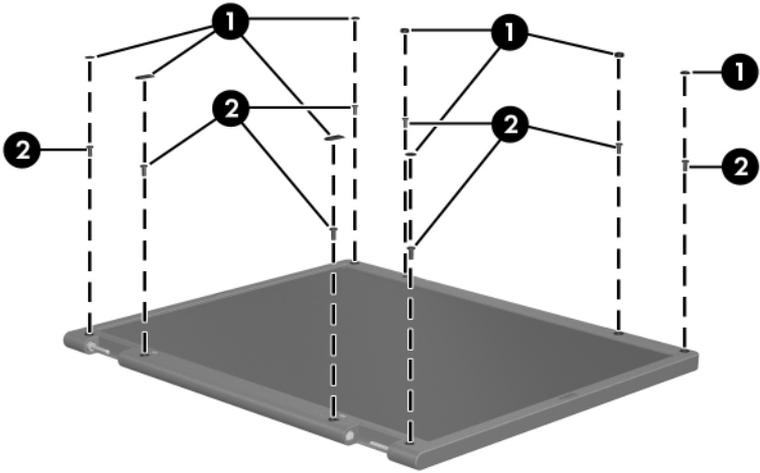
This appendix provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight ❶ and the liquid crystal display (LCD) panel ❷.



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 notebook model to another.

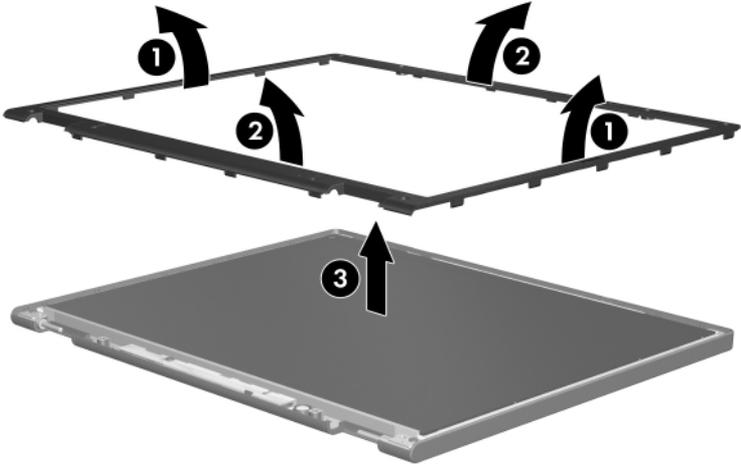
Perform the following steps to disassemble the display assembly:

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



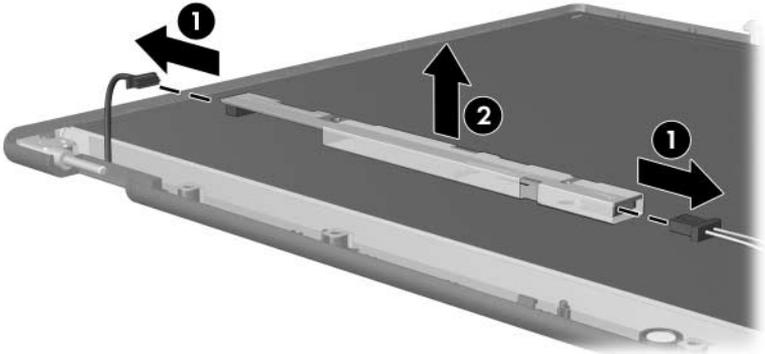
Removing the Display Bezel Screw Covers and Screws

-
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.



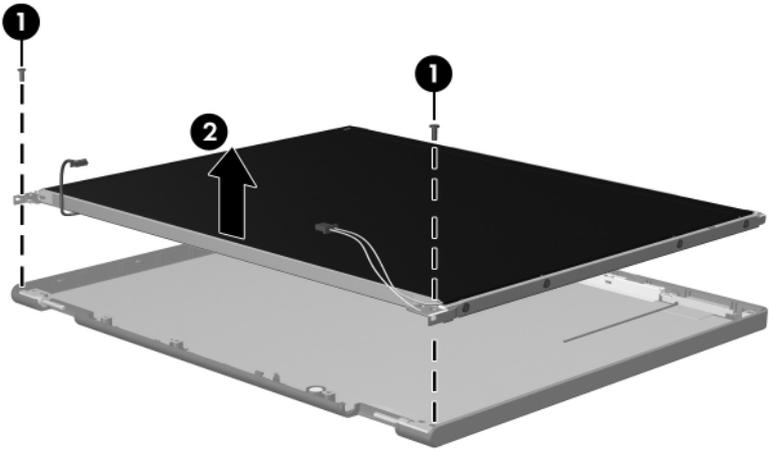
Removing the Display Bezel

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



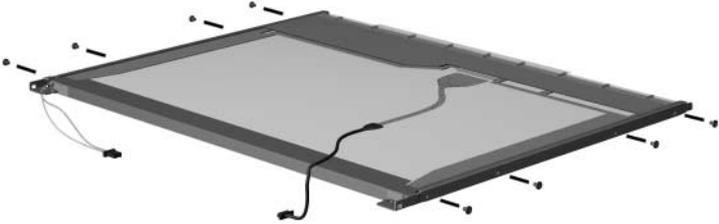
Removing the Display Inverter

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



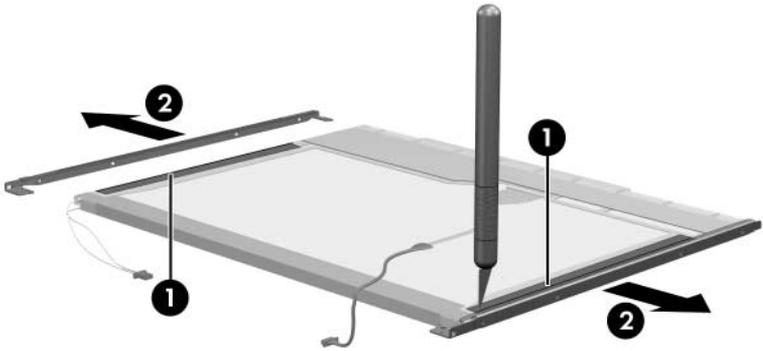
Removing the Display Panel Assembly

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



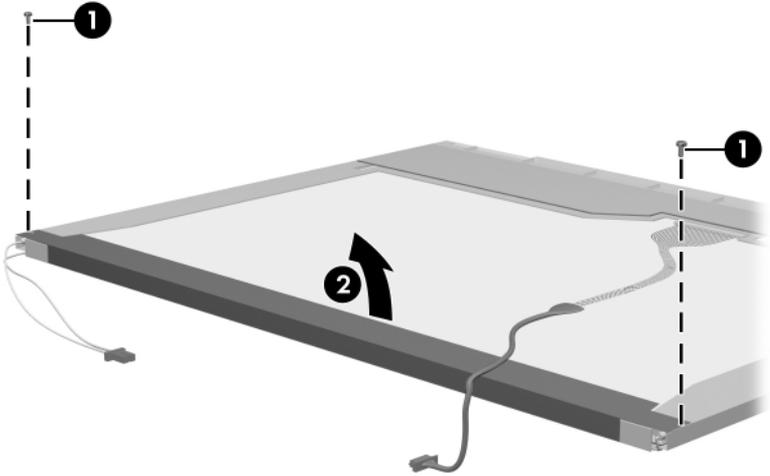
Removing the Display Panel Frame Screws

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



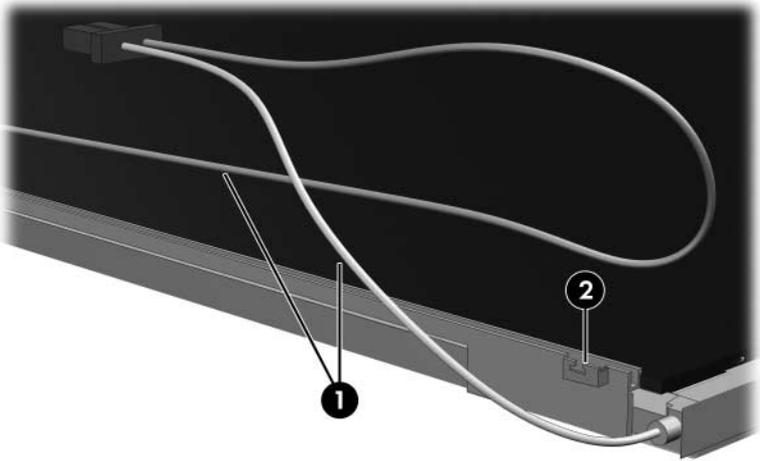
Removing the Display Frame

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



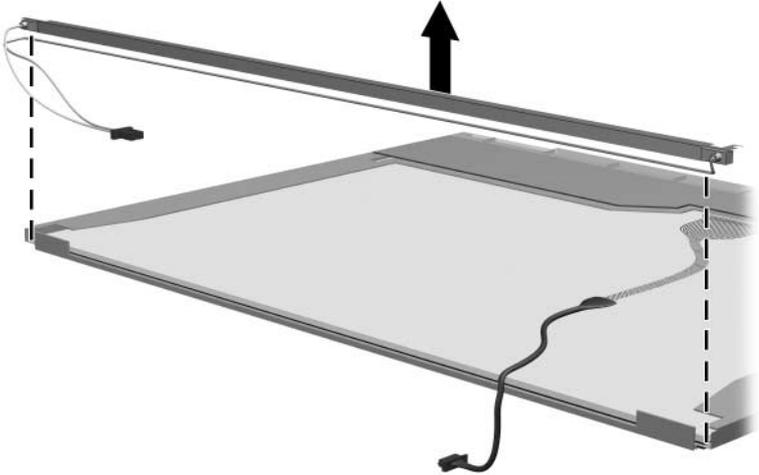
Removing the Backlight Cover

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



Releasing the Backlight Cables

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

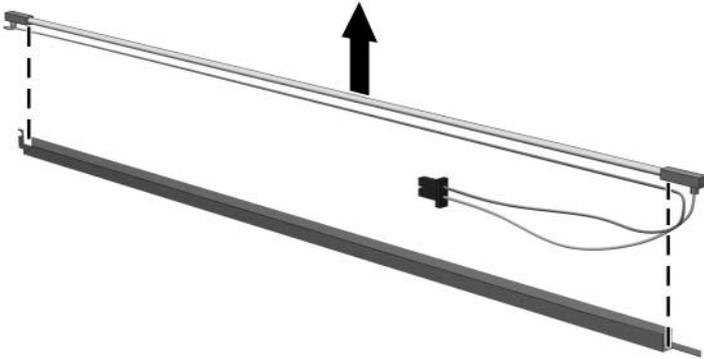


Removing the Backlight Frame



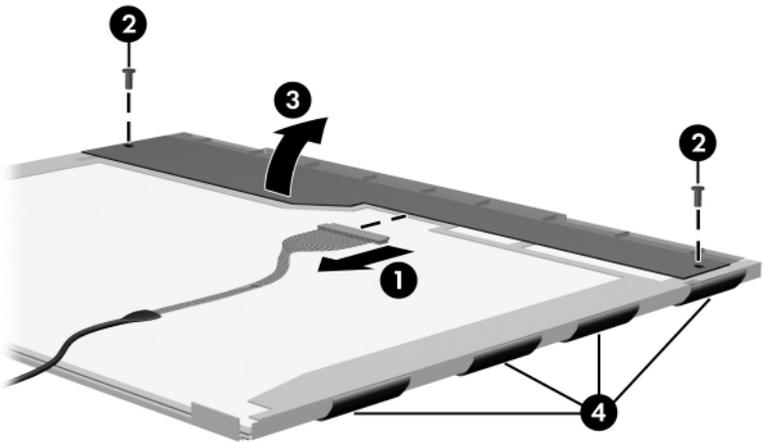
WARNING: The backlight contains mercury. Caution should be exercised when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.

18. Slide the backlight out of the backlight frame.



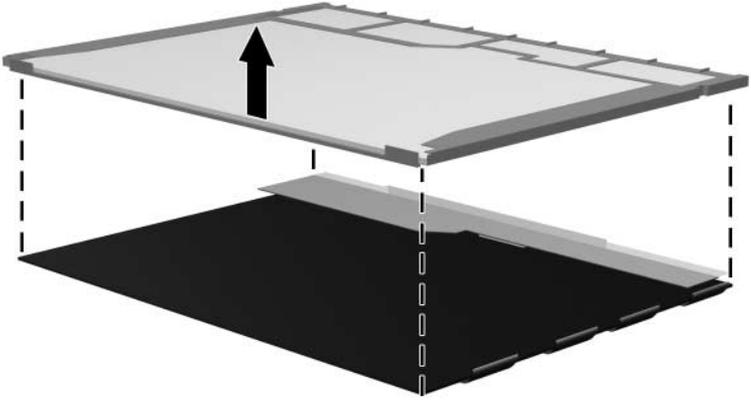
Removing the Backlight

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



Releasing the LCD Panel

23. Remove the LCD panel.



Removing the LCD Panel

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