



Maintenance and Service Guide

HP Pavilion ze4900 Notebook PC
HP Compaq nx9040, nx9030,
or nx9020 Notebook PC
Compaq Presario 2200 Notebook PC

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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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Maintenance and Service Guide
HP Pavilion ze4900 Notebook PC
HP Compaq nx9040, nx9030, or nx9020 Notebook PC
Compaq Presario 2200 Notebook PC
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Contents

1 Product Description

- 1.1 Models 1–2
- 1.2 Features 1–10
- 1.3 Resetting the Notebook 1–12
- 1.4 Power Management 1–13
- 1.5 External Components 1–14
- 1.6 Design Overview 1–32

2 Troubleshooting

- 2.1 Computer Setup 2–1
- 2.2 Troubleshooting Flowcharts 2–7

3 Illustrated Parts Catalog

- 3.1 Serial Number Location 3–1
- 3.2 Notebook Major Components 3–2
- 3.3 Mass Storage Devices 3–14
- 3.4 Miscellaneous 3–16

4 Removal and Replacement Preliminaries

- 4.1 Tools Required 4–1
- 4.2 Service Considerations 4–2
- 4.3 Preventing Damage to Removable Drives 4–3
- 4.4 Preventing Electrostatic Damage 4–4
- 4.5 Packaging and Transporting Precautions 4–5
- 4.6 Workstation Precautions 4–6
- 4.7 Grounding Equipment and Methods 4–7

5 Removal and Replacement Procedures

5.1	Serial Number	5-2
5.2	Disassembly Sequence Chart	5-3
5.3	Preparing the Notebook for Disassembly	5-5
5.4	Notebook Feet	5-10
5.5	Memory Module	5-11
5.6	Mini PCI Communications Board.	5-13
5.7	Keyboard Cover	5-16
5.8	Keyboard	5-18
5.9	Switch Board.	5-20
5.10	Speakers	5-22
5.11	Optical Drive.	5-23
5.12	Display Assembly	5-25
5.13	Top Cover	5-29
5.14	Heat Sink	5-33
5.15	Processor	5-35
5.16	Wireless Button Board	5-37
5.17	Diskette Drive	5-39
5.18	Diskette Drive Cover.	5-41
5.19	System Board	5-43

6 Specifications

A Connector Pin Assignments

B Power Cord Set Requirements

C Screw Listing

Index

1

Product Description

The HP Pavilion ze4900 Notebook PC ❶, HP Compaq nx9040, nx9030, and nx9020 Notebook PCs ❷, and Compaq Presario 2200 Notebook PCs ❸ offer advanced modularity, Intel® Pentium® M and Celeron® M processors, and extensive multimedia support.



*HP Pavilion ze4900; HP Compaq nx9040, nx9030, nx9020;
and Compaq Presario 2200*

1.1 Models

Notebook model information is shown in Tables 1-1 and 1-2.



The long model name appears only on the bottom of HP Compaq nx9000 Notebook PCs.

Table 1-1
Model Naming Conventions
HP Compaq nx9000 Notebook PCs

Key											
Hnx9040	U	P735	X5	60	Y	Cc	51	P	a		
1	2	3	4	5	6	7	8	9	10		
Key	Description				Options						
1	Brand/series designator				H = HP Compaq nx9040, x9030, or nx9020						
2	Graphics memory				U = UMA						
3	Processor brand and speed				P755 = Intel Pentium M 755 2.0 GHz P745 = Intel Pentium M 745 1.8 GHz P735 = Intel Pentium M 735 1.7 GHz P725 = Intel Pentium M 725 1.6 GHz P715 = Intel Pentium M 715 1.5 GHz P710 = Intel Pentium M 710 1.4 GHz P705 = Intel Pentium M 705 1.6 GHz C340 = Intel Celeron M 340 1.5 GHz C360 = Intel Celeron M 360 1.4 GHz C350 = Intel Celeron M 350 1.3 GHz C330 = Intel Celeron M 330 1.4 GHz C320 = Intel Celeron M 320 1.3 GHz						
4	Display type/size/resolution				S = SXGA (1400 × 1050) X = XGA (1024 × 768)				5 = 15.0 inch 4 = 14.1 inch		

Table 1-1
Model Naming Conventions
HP Compaq nx9000 Notebook PCs (Continued)

Key	Description	Options	
5	Hard drive size	60 = 60 GB 40 = 40 GB	30 = 30 GB
6	Optical drive designator	C = CD-ROM Drive D = DVD-ROM Drive	W = DVD/ CD-RW Combo Drive Y = DVD+R/ RW and CD-RW Combo Drive
7	Integrated communication/ wireless device	C = modem + FE NIC	c = 802.11g (Intel) g = 802.11g (includes 802.11b and g) N = none
8	RAM	51 = 512 MB	25 = 256 MB
9	Operating system	H = Microsoft® Windows® XP Home P = Microsoft Windows XP Pro	
10	Warranty	a = 1 year on parts and labor	

Table 1-2

HP Compaq nx9040, nx9030, and nx9020

All HP Compaq nx9000 models feature:

- TouchPad pointing device
- 6-cell lithium ion (Li-Ion) battery pack

Hnx9040	U	P735	X5	60	W	Cg	51	P	a	
Japan					PK342PA ABJ					
Hnx9040	U	P735	X5	40	W	Cc	51	P	a	
Asia Pacific					PK345PA UUF					
Hnx9040	U	P735	X4	40	D	Cc	25	P	a	
People's Republic of China					PK163PA AB2					
Hnx9040	U	P725	X5	40	Y	Cc	51	P	a	
Australia					PK150PA ABG					
Hnx9040	U	P725	X5	40	W	Cc	25	P	a	
Asia Pacific					Thailand			PK350PA AKL		
Hnx9040	U	P725	X4	40	W	Cc	25	P	a	
Taiwan					PK349PA AB0					

All HP Compaq nx9000 models feature:

- TouchPad pointing device
- 6-cell lithium ion (Li-Ion) battery pack

Hnx9040	U	P725	X4	40	W	CN	25	H	a	
People's Republic of China					PK165PA AB2					
Hnx9040	U	P725	X4	40	D	Cc	25	P	a	
People's Republic of China					Taiwan			PK159PA AB0		

Table 1-2

HP Compaq nx9040, nx9030, and nx9020 (Continued)

Hnx9040	U	P725	X4	40	D	CN	25	H	a	
People's Republic of China		PK164PA AB2								
Hnx9040	U	P725	X4	30	W	Cg	25	P	a	
Asia Pacific		PK346PA UUF								
Hnx9040	U	P725	X4	30	W	Cc	25	P	a	
Asia Pacific		PK343PA UUF								
Hnx9040	U	P725	X4	30	W	CN	25	P	a	
Japan		PK169PA ABJ								
Hnx9040	U	P715	X5	40	W	Cc	25	P	a	
Asia Pacific		PK151PA UUF			Thailand	PK168PA AKL				
Hnx9040	U	P715	X4	40	W	CN	25	H	a	
People's Republic of China		PK162PA AB2								
Hnx9040	U	P715	X4	40	D	Cc	25	P	a	
Taiwan		PK348PA AB0			Taiwan	PK347PA AB0				

All HP Compaq nx9000 models feature:

- TouchPad pointing device
- 6-cell lithium ion (Li-Ion) battery pack

Hnx9040	U	P715	X4	40	D	CN	25	H	a	
People's Republic of China		PK161PA AB2								
Hnx9040	U	P715	X4	30	W	Cg	25	P	a	
Asia Pacific		PK152PA UUF								

Table 1-2

HP Compaq nx9040, nx9030, and nx9020 (Continued)

Hnx9040	U	P715	X4	30	C	Cc	25	P	a	
Asia Pacific PK153PA UUF										
Hnx9040	U	P715	X4	30	C	CN	25	P	a	
Japan PK156PA ABJ										
Hnx9040	U	C330	X5	40	C	CN	25	P	a	
Australia PK149PA ABG										
Hnx9040	U	C320	X4	40	W	Cc	25	H	a	
People's Republic of China PK167PA AB2										
Hnx9040	U	C320	X4	40	D	Cc	25	H	a	
People's Republic of China PK166PA AB2										
Hnx9040	U	C320	X4	40	D	Cc	25	P	a	
Japan PK158PA ABJ										
Hnx9040	U	C320	X4	30	W	CN	25	H	a	
Japan PK157PA ABJ										

All HP Compaq nx9000 models feature:

- TouchPad pointing device
- 6-cell lithium ion (Li-Ion) battery pack

Hnx9040	U	C320	X4	30	W	CN	25	P	a	
Asia Pacific PK154PA UUF					Japan			PK155PA ABJ		
Hnx9040	U	C320	X4	30	D	Cc	25	P	a	
French Canada PH854AA ABC										

Table 1-2

HP Compaq nx9040, nx9030, and nx9020 (Continued)

Hnx9030	U	P735	X5	40	Y	Cc	51	P	a	
France		PG575ET ABF			Switzerland			PG575ET UUZ		
Iceland		PG575ET A2M			United Kingdom			PG575ET ABU		
Sweden/Finland		PG575ET AK8								
Hnx9030	U	P725	X5	40	Y	Cc	51	H	a	
Belgium		PG572ET AB4			Spain			PG572ET ABE		
Europe		PG572EA ABB			Switzerland			PG572ET UUZ		
Italy		PG572ET ABZ			Turkey			PG572EA AB8		
Slovenia		PG572EA AKN								
Hnx9030	U	P725	X5	40	W	Cc	51	P	a	
Iceland		PG574EA A2M			Sweden/Finland			PG574ET AK8		
Hnx9030	U	P725	X5	40	W	Cc	25	H	a	
Saudi Arabia		PG570EA ABV			South Africa			PG570EA ACQ		
Slovenia		PG570EA AKN								
Hnx9030	U	P725	X5	40	W	Cc	25	P	a	
France		PG573EA ABF			Saudi Arabia			PG573EA ABV		
Greece		PG573EA B1A			South Africa			PG573EA ACQ		
Israel		PG573EA ABT								
Hnx9030	U	P715	X5	40	W	Cc	51	P	a	
French Canada		PG523UA ABC			United States			PG523UA ABA and PH855AA ABA		

Table 1-2

HP Compaq nx9040, nx9030, and nx9020 (Continued)

All HP Compaq nx9000 models feature:

- TouchPad pointing device
- 6-cell lithium ion (Li-Ion) battery pack

Hnx9030	U	P715	X5	40	W	Cc	25	H	a	
Czech Republic		PG569EA AKB			Poland			PG569EA AKD		
Denmark		PG569ET ABY			Russia			PG569EA ACB		
Europe		PG569EA ABB			Russia			PG569ET ACB		
Hungary		PG569EA AKC			Saudi Arabia			PG569EA ABV		
Iceland		PG569ET A2M			Slovakia			PG569EA AKR		
Israel		PG569EA ABT			Slovenia			PG569EA AKN		
Italy		PG569ET ABZ			Spain			PG569ET ABE		
The Netherlands		PG569ET ABH			Turkey			PG569EA AB8		
Hnx9030	U	P715	X5	40	W	Cc	25	P	a	
Belgium		PG571ET UUG			Poland			PG571EA AKD		
Czech Republic		PG571EA AKB			Russia			PG571EA ACB		
Europe		PG571EA ABB			Russia			PG571ET ACB		
France		PG571EA ABF			Saudi Arabia			PG571EA ABV		
French Canada		PG526UA ABC			Slovakia			PG571EA AKR		
Greece		PG571EA B1A			Slovenia			PG571EA AKN		
Germany		PG571ET ABD			Turkey			PG571EA AB8		
Hungary		PG571EA AKC			United Kingdom			PG571ET ABU		
Israel		PG571EA ABT			United States			PG526UA ABA		
Hnx9030	U	C320	X4	30	D	Cc	25	P	a	
United States		PH854AA ABA								

Table 1-2

HP Compaq nx9040, nx9030, and nx9020 (Continued)

All HP Compaq nx9000 models feature:

- TouchPad pointing device
- 6-cell lithium ion (Li-Ion) battery pack

Hnx9020	U	C320	X5	30	W	CN	25	H	a	
Belgium		PG568ET UUG			Poland			PG568EA AKD		
Czech Republic		PG568EA AKB			Portugal			PG568ET AB9		
Denmark		PG568ET ABY			Russia			PG568EA ACB		
Europe		PG568EA ABB			Russia			PG568ET ACB		
France		PG568EA ABF			Saudi Arabia			PG568EA ABV		
Germany		PG568EA ABD			Slovakia			PG568EA AKR		
Greece		PG568ET B1A			Slovenia			PG568EA AKN		
Hungary		PG568EA AKC			Sweden/Finland			PG568ET AK8		
Israel		PG568EA ABT			Switzerland			PG568ET UUZ		
Italy		PG568ET ABZ			Turkey			PG568EA AB8		
The Netherlands		PG568ET ABH								
Hnx9020	U	C320	X5	30	D	CN	25	P	a	
Czech Republic		PG567EA AKB			Russia			PG567EA ACB		
Europe		PG567EA ABB			Russia			PG567ET ACB		
France		PG567ET ABF			South Africa			PG567EA ACQ		
Greece		PG567EA B1A			Slovakia			PG567EA AKR		
Hungary		PG567EA AKC			Sweden/Finland			PG567ET AK8		
Poland		PG567EA AKD								

1.2 Features

- The following processors are available, varying by notebook model:
 - ❑ Intel Pentium M 755 (2.0-GHz) with 400-MHz front side bus (FSB)
 - ❑ Intel Pentium M 745 (1.8-GHz) with 400-MHz front side bus (FSB)
 - ❑ Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB
 - ❑ Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB
 - ❑ Intel Pentium M 715 (1.5-GHz) with 400-MHz FSB
 - ❑ Intel Pentium M 705 TJ85 (1.6- and 1.5-GHz) with 400-MHz FSB; operate at a lower temperature than other processors
 - ❑ Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB
 - ❑ Intel Celeron M 340 (1.5-GHz) with 400-MHz FSB
 - ❑ Intel Celeron M 330 (1.4-GHz) with 400-MHz FSB
 - ❑ Intel Celeron M 320 (1.3-GHz) with 400-MHz FSB
- 15.0-inch SXGA (1400 × 1050) or 15.0- or 14.1-inch XGA (1024 × 768) TFT display with over 16.8 million colors, varying by notebook model
- 60-, 40-, or 30-GB high-capacity hard drive, varying by notebook model
- Diskette drive (HP Compaq nx9040 notebook model only)
- 256-MB DDR synchronous DRAM (SDRAM) at 333 MHz, expandable to 2.0 GB or 1.0 GB, varying by notebook model
- Microsoft® Windows® XP Home Edition or Windows XP Professional, varying by notebook model
- Full-size Windows keyboard with embedded numeric keypad
- TouchPad pointing device with on button and dedicated two-way scroll region
- Integrated 10/100 BASE-T Ethernet local area network (LAN) network interface card (NIC) with RJ-45 jack
- Integrated high-speed 56K modem with RJ-11 jack

- Integrated wireless support for Mini PCI IEEE 802.11b/g WLAN device (select models only)
- Support for 1 or 2 Type II PC Card slots, with support for both 32-bit (CardBus) and 16-bit PC Cards (HP Compaq nx9040 notebook models only)
- Support for 2 or 2 Type I PC Card slots, with support for both 32-bit (CardBus) and 16-bit PC Cards (all notebook models except HP Compaq nx9040)
- External 65-watt AC adapter with 3-wire power cord
- 6-cell or 8-cell Li-Ion battery pack
- Altec Lansing stereo speakers with volume up and down buttons (HP Pavilion ze4900 models only)
- Connectors:
 - External monitor
 - 2 Universal Serial Bus (USB) v. 2.0
 - RJ-11 (modem)
 - RJ-45 (network)
 - Audio-out (headphone)
 - Audio-in (microphone)
 - Power
 - IEEE 1394 digital (select models only)
 - S-Video (select models only)
 - Infrared (select HP Compaq nx9040 notebooks only)
 - Parallel (select HP Compaq nx9040 notebooks only)
 - Serial (select HP Compaq nx9040 notebooks only)
- Support for the following optical drives:
 - 24X Max DVD+RW/R and CD-RW Combo Drive (HP Compaq nx9040 and nx9030 select models only)
 - 8X Max DVD-ROM Drive
 - 24X Max CD-ROM Drive (HP Compaq nx9040, nx9030, and nx9020 select models only)
 - 24X Max DVD/CD-RW Combo Drive

1.3 Resetting the Notebook

Occasionally, the Windows operating system or the notebook might stop responding, so that you cannot turn the notebook off. If this happens, try the following in the order listed:

- Press the power button to restart.
- If possible, shut down Windows by pressing **ctrl+alt+del**, and then selecting **Shut Down > Restart**.
- Press and hold the power button for about 4 seconds until the display shuts down. Then press the power button again to restart.
- Use a ballpoint pen or a straightened paper clip to press the reset button on the bottom of the notebook.



Resetting the Notebook



To boot from a CD, insert a bootable CD (such as a Recovery disc) into the optical drive, and then restart. Press **esc** when the HP logo appears, and then select the optical drive as the temporary boot device.

1.4 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
- Lid switch standby/resume
- Power/standby button
- Advanced Configuration and Power Management (ACPM) compliance

1.5 External Components

The external components on the front and right side of the HP Pavilion ze4900 notebook are shown below and described in Table 1-3.



Front and Right-Side Components - HP Pavilion ze4900

Table 1-3
Front and Right-Side Components
HP Pavilion ze4900

Item	Component	Function
1	Display release latch	Opens the notebook.
2	Antennae (2)	Send and receive wireless device signals. The antennae are not visible from the outside of the notebook. For optimal transmission, keep the areas immediately around the antennae free from obstructions.
3	Optical drive	Supports an optical disc.
4	Battery bay	Holds a battery pack.
5	Wireless button light (select models only)	On: An integrated wireless device is hardware enabled.
6	Wireless button (select models only)	Enables/disables an internal wireless device.
7	Battery light	<ul style="list-style-type: none"> ■ Green: The battery pack is fully charged. ■ Amber: The battery pack is charging. ■ Blinking: The battery pack has reached a low-battery condition. ■ Off: No AC power is applied, or AC power is applied with battery pack either close to full-charge capacity or not installed.
8	IDE (Integrated Drive Electronics) drive light	<ul style="list-style-type: none"> ■ On or blinking: The internal hard drive or an optical drive is being accessed.
9	Hard drive bay	Holds the internal hard drive.
10	Power/standby light	<ul style="list-style-type: none"> ■ On: Notebook is turned on. ■ Blinking: Notebook is in standby. ■ Off: Notebook is off.

The external components on the front and right side of the HP Compaq nx9040, nx9030, nx9020, and Compaq Presario 2200 notebooks are shown below and described in Table 1-4.

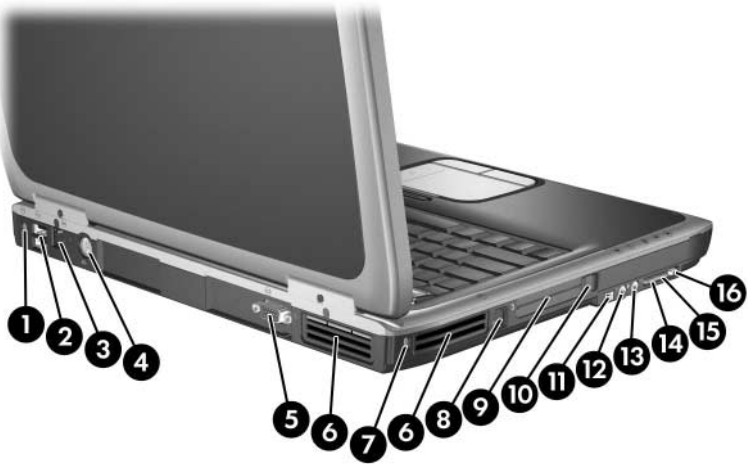


Front and Right-Side Components - HP Compaq nx9040, nx9030, nx9020, and Compaq Presario 2200

Table 1-4
Front and Right-Side Components
HP Compaq nx9040, nx9030, nx9020,
and Compaq Presario 2200

Item	Component	Function
1	Display release latch	Opens the notebook.
2	Antennae (2)	Send and receive wireless device signals. The antennae are not visible from the outside of the notebook. For optimal transmission, keep the areas immediately around the antennae free from obstructions.
3	Optical drive	Supports an optical disc.
4	Battery bay	Holds a battery pack.
5	Wireless button light	On: An integrated wireless device is hardware enabled.
6	Wireless button	Enables/disables an internal wireless device.
7	Infrared port (select HP Compaq nx9040 notebooks only)	Links the notebook and an optional remote.
8	Battery light	<ul style="list-style-type: none"> ■ Amber: The battery pack is charging. ■ Green: The battery pack is fully charged. ■ Off: The battery pack is discharging or not inserted.
9	IDE (Integrated Drive Electronics) drive light	<ul style="list-style-type: none"> ■ On or blinking: The internal hard drive or an optical drive is being accessed.
10	Hard drive bay	Holds the internal hard drive.
11	Power/standby light	<ul style="list-style-type: none"> ■ On: Notebook is turned on. ■ Blinking: Notebook is in Standby. ■ Off: Notebook is off.

The external components on the rear and left side of the HP Pavilion ze4900, HP Compaq nx9030, nx9020, and Compaq Presario 2200 notebooks are shown below and described in Table 1-5.



*Rear and Left-Side Components - HP Pavilion ze4900,
HP Compaq nx9030, nx9020, and Compaq Presario 2200*


Table 1-5

Rear and Left-Side Components

**HP Pavilion ze4900, HP Compaq nx9030, nx9020,
and Compaq Presario 2200**

Item	Component	Function
1	Power connector	Connects an AC adapter cable.
2	USB connectors (2)	Connect an optional USB device.
3	RJ-45 (network) jack	Connects an optional network cable.
4	S-Video jack (select models only)	Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card.

Table 1-5
Rear and Left-Side Components
HP Pavilion ze4900, HP Compaq nx9030, nx9020,
and Compaq Presario 2200 (Continued)

Item	Component	Function
5	External monitor port	Connects an optional VGA external monitor or projector.
6	Exhaust vents (2)	Provide airflow to cool internal components.  To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.
7	Security cable slot	Attaches an optional security cable to the notebook.
8	RJ-11 (modem) jack	Connects the modem cable.
9	PC Card slot(s) (1 or 2)	Support an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
10	PC Card eject button(s) (1 or 2)	Eject an optional PC Card from the PC Card slot.
11	1394 port (select models only)	Connects an optional 1394a device such as a scanner, a digital camera, or a digital camcorder.
12	Audio-in (microphone) jack	Connects an optional monaural (single sound channel) microphone.
13	Audio-out (headphone) jack	Connect optional headphones or powered stereo speakers. Also connect the audio function of an audio/video device such as a television or VCR.
14	Volume up button	Increases system volume.
15	Volume down button	Decreases system volume.
16	Volume mute button Mute light	Mutes or restores volume. On: Volume is muted.

The external components on the rear and left side of the HP Compaq nx9040 notebook are shown below and described in Table 1-6.




Rear and Left-Side Components - HP Compaq nx9040

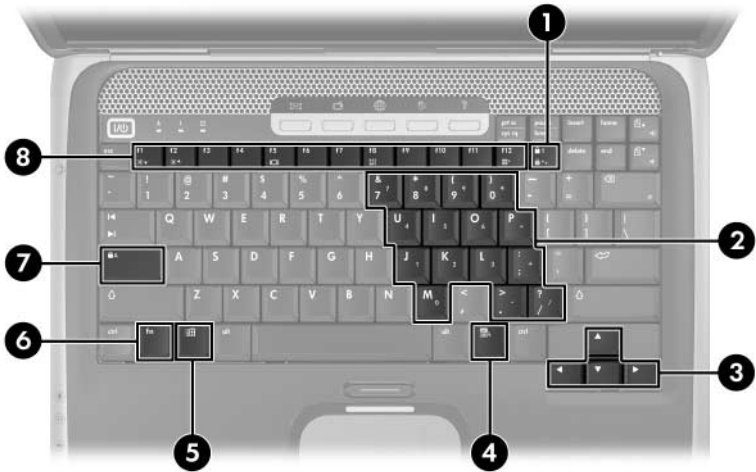
Table 1-6
Rear and Left-Side Components
HP Compaq nx9040

Item	Component	Function
1	Power connector	Connects an AC adapter cable.
2	USB connectors (2)	Connect optional USB devices.
3	RJ-45 (network) jack	Connects an optional network cable.
4	S-Video jack	Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card.
5	Parallel port	Connects an optional parallel device such as a printer.
6	Serial port	Connects an optional serial device such as keyboard or mouse.

Table 1-6
Rear and Left-Side Components
HP Compaq nx9040 (Continued)

Item	Component	Function
7	External monitor port	Connects an optional VGA external monitor or projector.
8	Exhaust vents (2)	Provide airflow to cool internal components.  To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow.
9	Security cable slot	Attaches an optional security cable to the notebook.
10	RJ-11 (modem) jack	Connects the modem cable.
11	PC Card slot(s) (1 or 2)	Support an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
12	PC Card eject button(s) (1 or 2)	Eject an optional PC Card from the PC Card slot.
13	1394 port	Connects an optional 1394a device such as a scanner, a digital camera, or a digital camcorder.
14	Audio-in (microphone) jack	Connects an optional monaural (single sound channel) microphone.
15	Audio-out (headphone) jack	Connects optional headphones or powered stereo speakers. Also connects the audio function of an audio/video device such as a television or VCR.
16	Volume up button	Increases system volume.
17	Volume down button	Decreases system volume.
18	Volume mute button Mute light	Mutes or restores volume. On: Volume is muted.
19	Diskette drive	Supports a 3.5-inch diskette.

The notebook keyboard components on the HP Pavilion ze4900 notebook are shown below and described in Table 1-7.

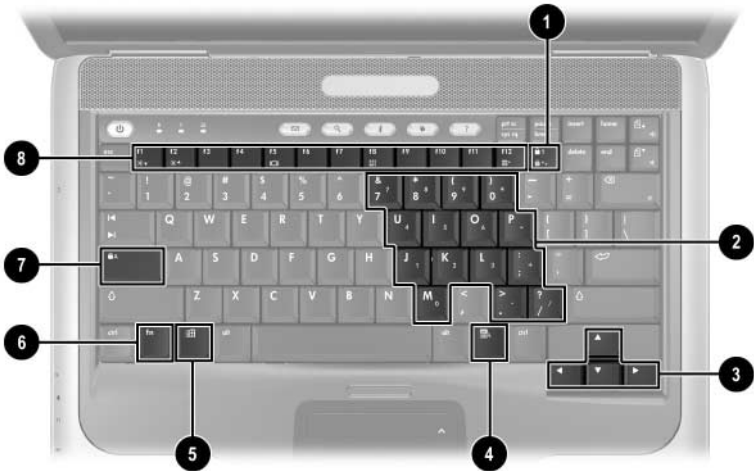


Keyboard Components - HP Pavilion ze4900

Table 1-7
Keyboard Components
HP Pavilion ze4900

Item	Component	Function
1	num lock key	Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light.
2	Keypad keys (15)	In Windows, can be used like the keys on an external numeric keypad.
3	Arrows keys	Moves the cursor around the screen.
4	Windows applications key	In Windows, displays a shortcut menu for items beneath the pointer.
5	Windows logo key	In Windows, displays the Windows Start menu.
6	fn key	Combines with other keys to perform system tasks. For example, pressing fn+f7 decreases screen brightness.
7	caps lock key	Enables caps lock and turns on the caps lock light.
8	f1 to f12 keys (12)	Perform system and application tasks. When combined with the fn key, several keys and buttons perform additional tasks as hotkeys.

The notebook keyboard components on the HP Compaq nx9040, nx9030, nx9020, and Compaq Presario 2200 notebooks are shown below and described in Table 1-8.



Keyboard Components - HP Compaq nx9040, nx9030, nx9020, and Compaq Presario 2200

Table 1-8
Keyboard Components
HP Compaq nx9040, nx9030, nx9020,
and Compaq Presario 2200

Item	Component	Function
1	num lock key	Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light.
2	Keypad keys (15)	In Windows, can be used like the keys on an external numeric keypad.
3	Arrow keys	Move the cursor around the screen.
4	Windows applications key	In Windows, displays a shortcut menu for items beneath the pointer.
5	Windows logo key	In Windows, displays the Windows Start menu.
6	fn key	Combines with other keys to perform system tasks. For example, pressing fn+f7 decreases screen brightness.
7	caps lock key	Enables caps lock and turns on the caps lock light.
8	f1 to f12 keys (12)	Perform system and application tasks. When combined with the fn key, several keys and buttons perform additional tasks as hotkeys.

The notebook top components on the HP Pavilion ze4900 notebook are shown below and described in Table 1-9.



Top Components - HP Pavilion ze4900

Table 1-9
Top Components
HP Pavilion ze4900

Item	Component	Function
1	Power button	When the notebook is <ul style="list-style-type: none"> ■ Off, press to turn on the notebook. ■ On, briefly press to initiate Hibernation. ■ In Standby, briefly press to resume from Standby. ■ In Hibernation, briefly press to restore from Hibernation.
2	Speakers (2)	Produces stereo sound.
3	Caps lock light	On: Caps lock is on.
4	Num lock light	On: Num lock or the internal keypad is on.
5	Keypad light	On: Keypad is on.
6	One-Touch buttons (5)	Each can be programmed to start any application or open a document or Web site.
7	TouchPad on button	Enables/disables the TouchPad.
8	TouchPad vertical scrolling region	Scrolls upward or downward.
9	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
10	TouchPad	Moves the pointer.
11	TouchPad light	On: TouchPad is enabled.

The notebook top components on the HP Compaq nx9040, nx9030, nx9020, and Compaq Presario 2200 notebooks are shown below and described in Table 1-10.

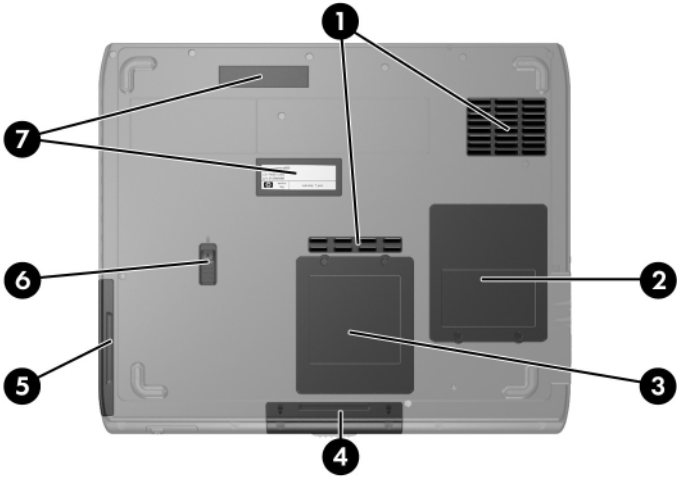


Top Components - HP Compaq nx9040, nx9030, nx9020, and Compaq Presario 2200

Table 1-10
Top Components
HP Compaq nx9040, nx9030, nx9020,
and Compaq Presario 2200



Item	Component	Function
1	Power button	When the notebook is <ul style="list-style-type: none"> ■ Off, press to turn on the notebook. ■ On, briefly press to initiate Hibernation. ■ In Standby, briefly press to resume from Standby. ■ In Hibernation, briefly press to restore from Hibernation.
2	Speakers (2)	Produces stereo sound.
3	Caps lock light	On: Caps lock is on.
4	Num lock light	On: Num lock or the internal keypad is on.
5	Keypad light	On: Keypad is on.
6	One-Touch buttons (5)	Each can be programmed to start any application or open a document or Web site.
7	TouchPad on button	Enables/disables the TouchPad.
8	TouchPad vertical scrolling region	Scrolls upward or downward.
9	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
10	TouchPad	Moves the pointer.
11	TouchPad light	On: TouchPad is enabled.

The external components on the bottom of all notebook models are shown below and described in Table 1-11.



Bottom Components

Table 1-11
Bottom Components

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

1.6 Design Overview

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

The system board provides the following device connections:

- Memory module
- Mini PCI communications devices
- Hard drive
- Display
- Keyboard and TouchPad
- Audio
- Intel Pentium M and Celeron M processors
- Fan
- 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 “Press <F10> to enter 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"> <li data-bbox="426 594 902 646">■ Run a self-test on memory modules in the notebook. <li data-bbox="426 659 902 711">■ 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

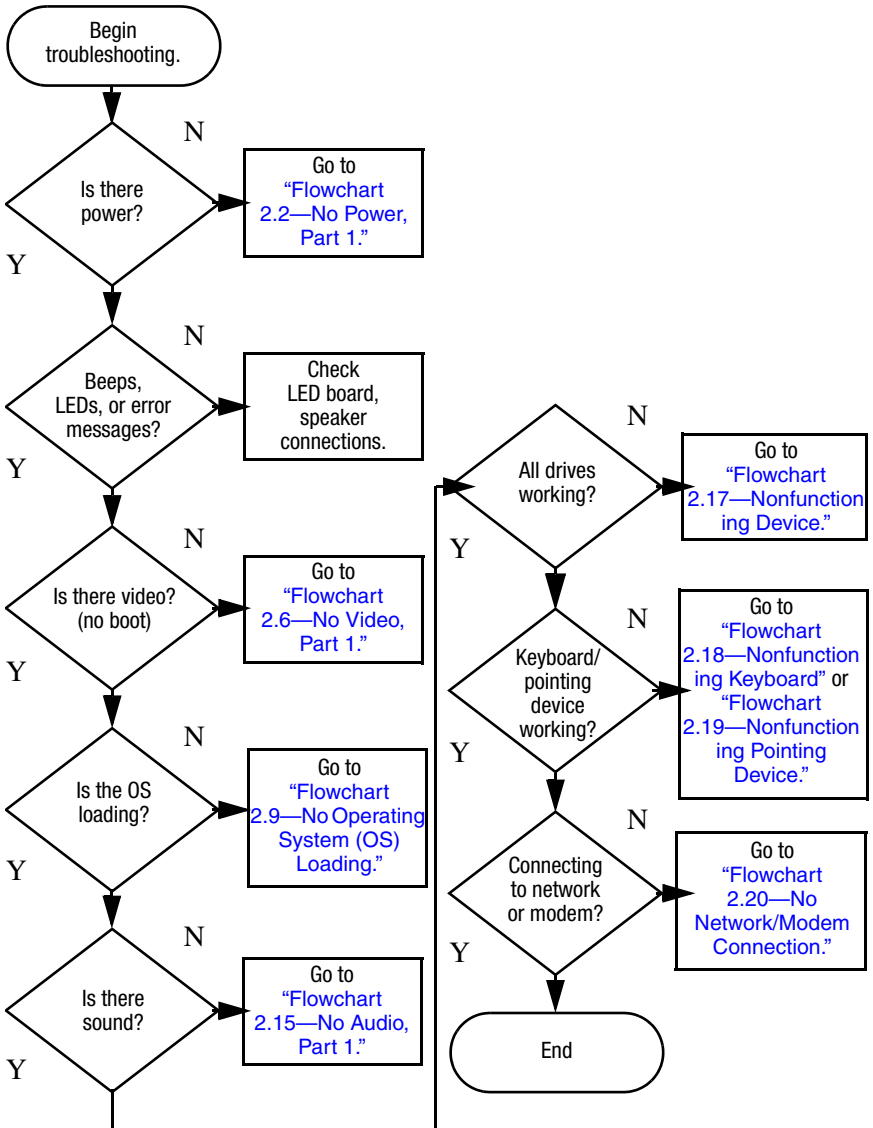
Table 2-5
Troubleshooting Flowcharts Overview

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"

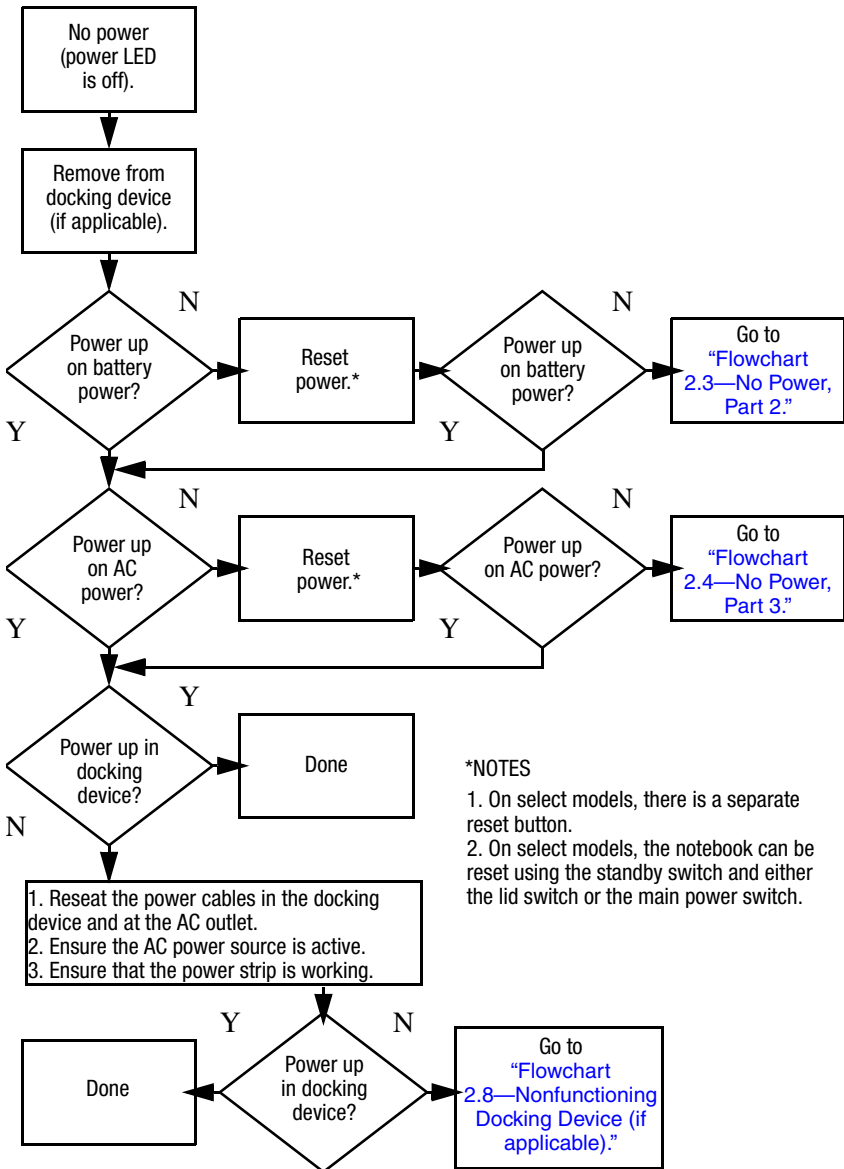
Table 2-5
Troubleshooting Flowcharts Overview (*Continued*)

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"

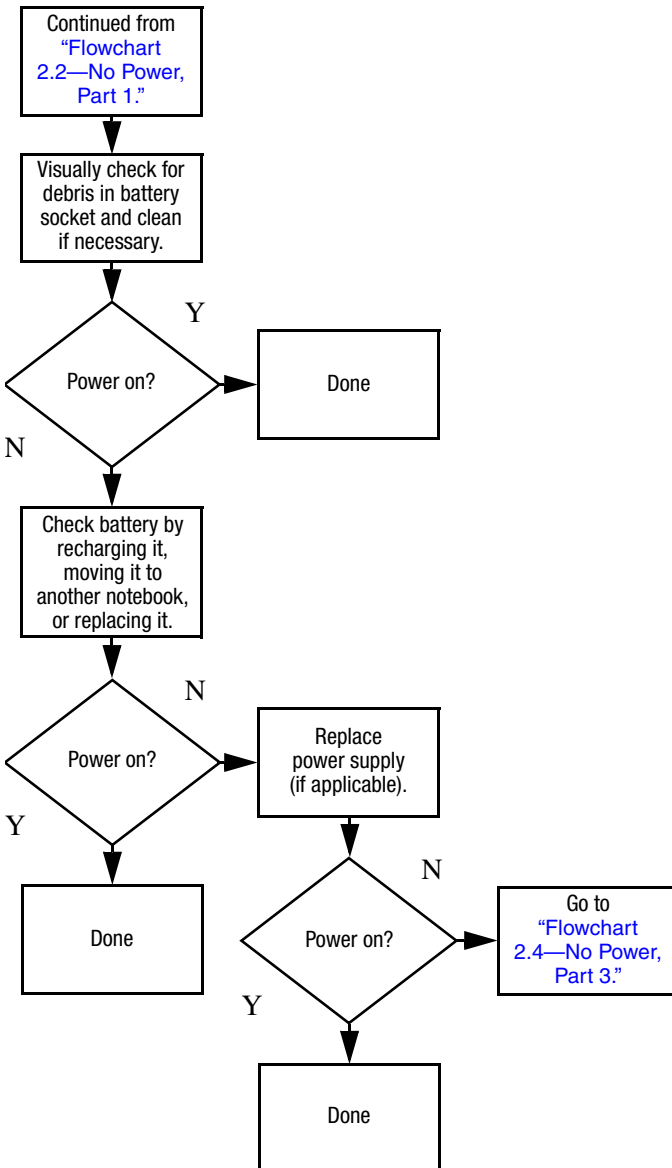
Flowchart 2.1 – Initial Troubleshooting



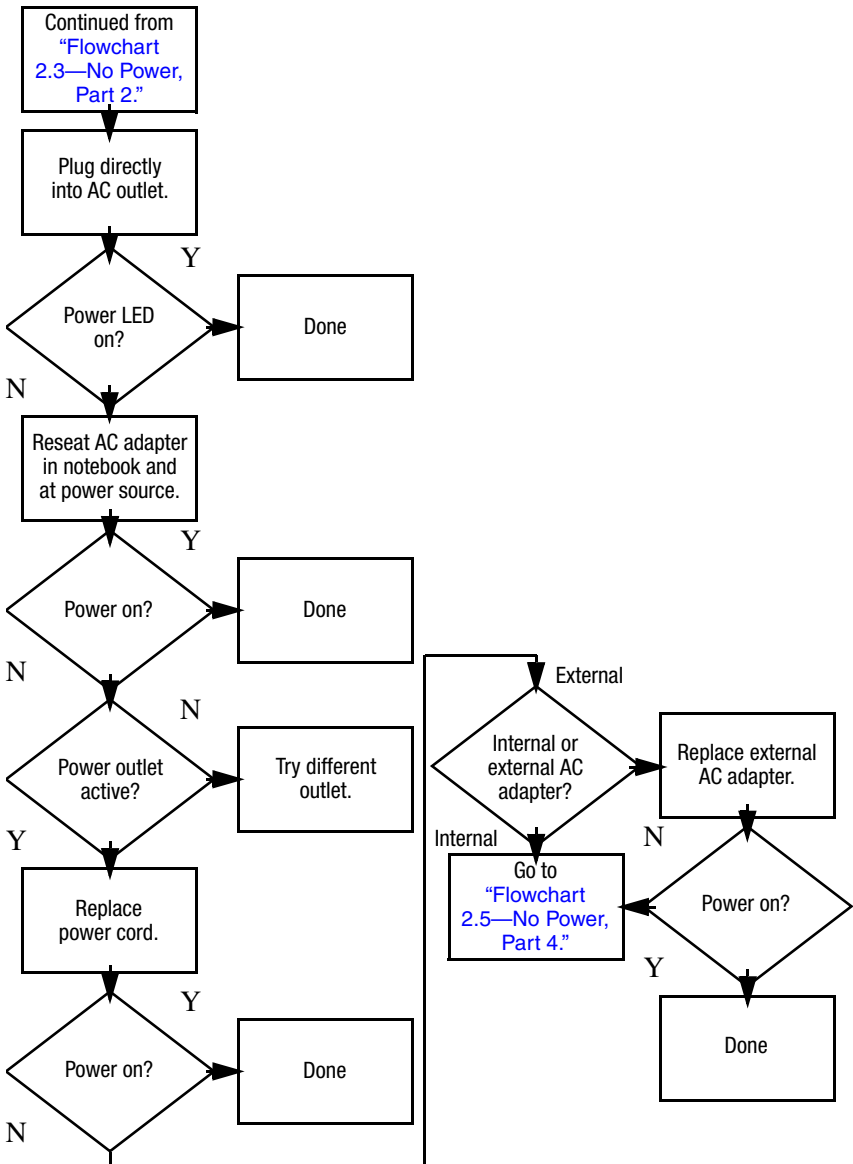
Flowchart 2.2—No Power, Part 1



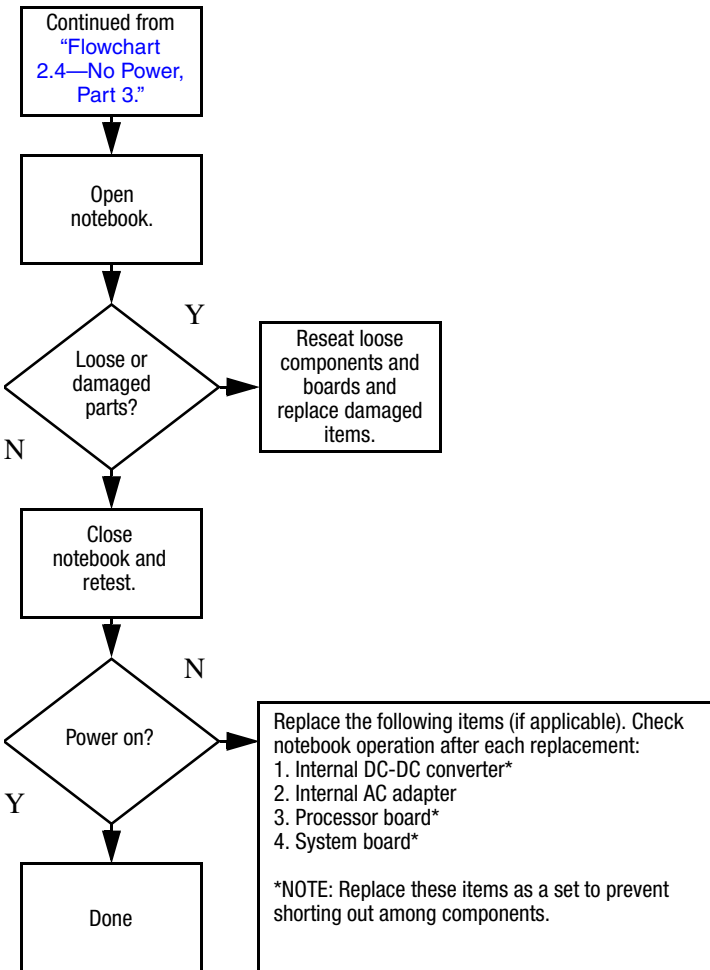
Flowchart 2.3—No Power, Part 2



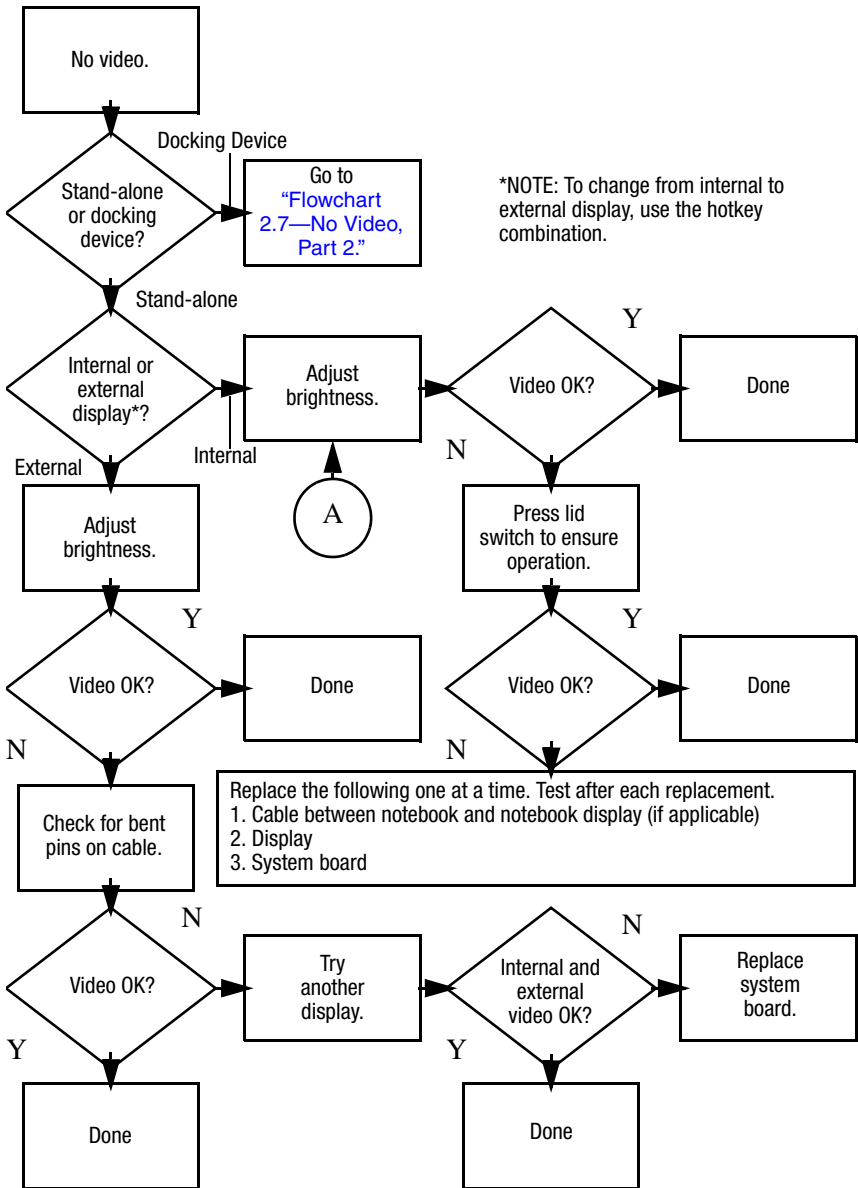
Flowchart 2.4—No Power, Part 3



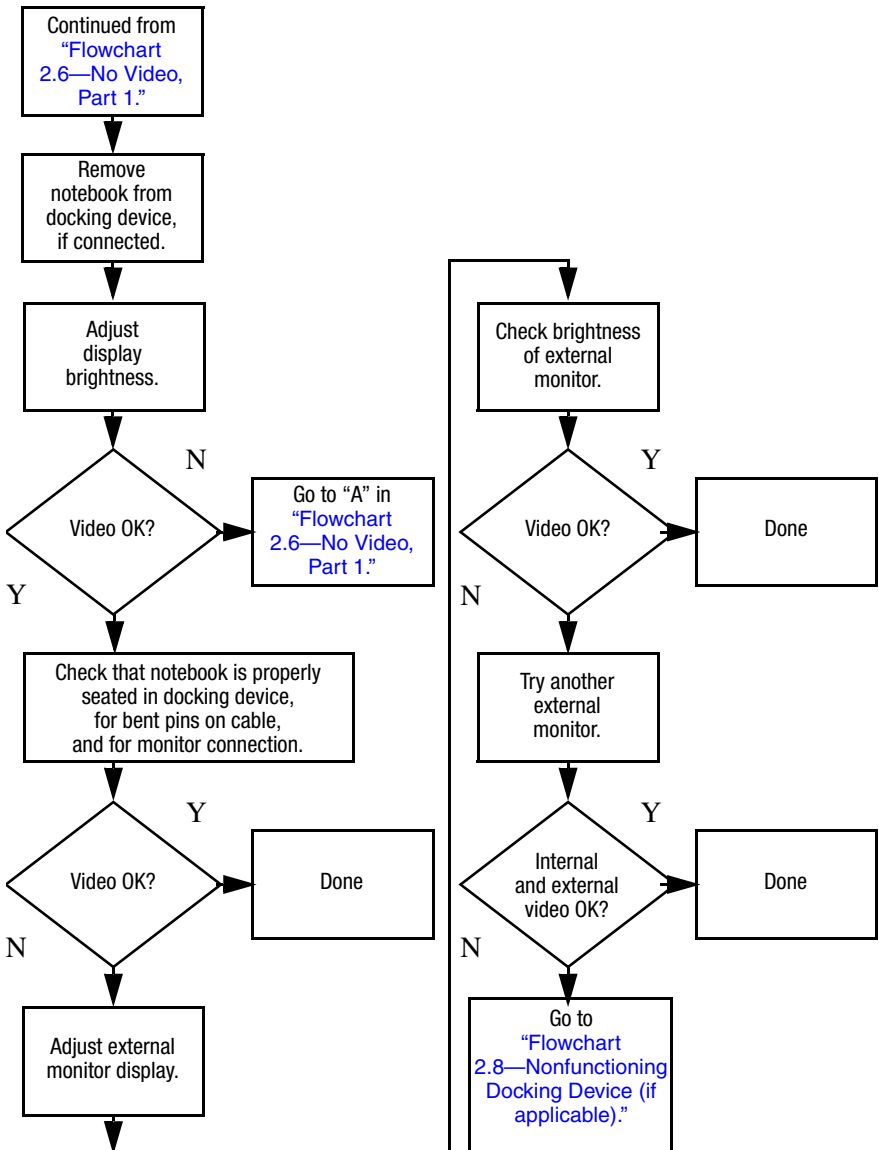
Flowchart 2.5—No Power, Part 4



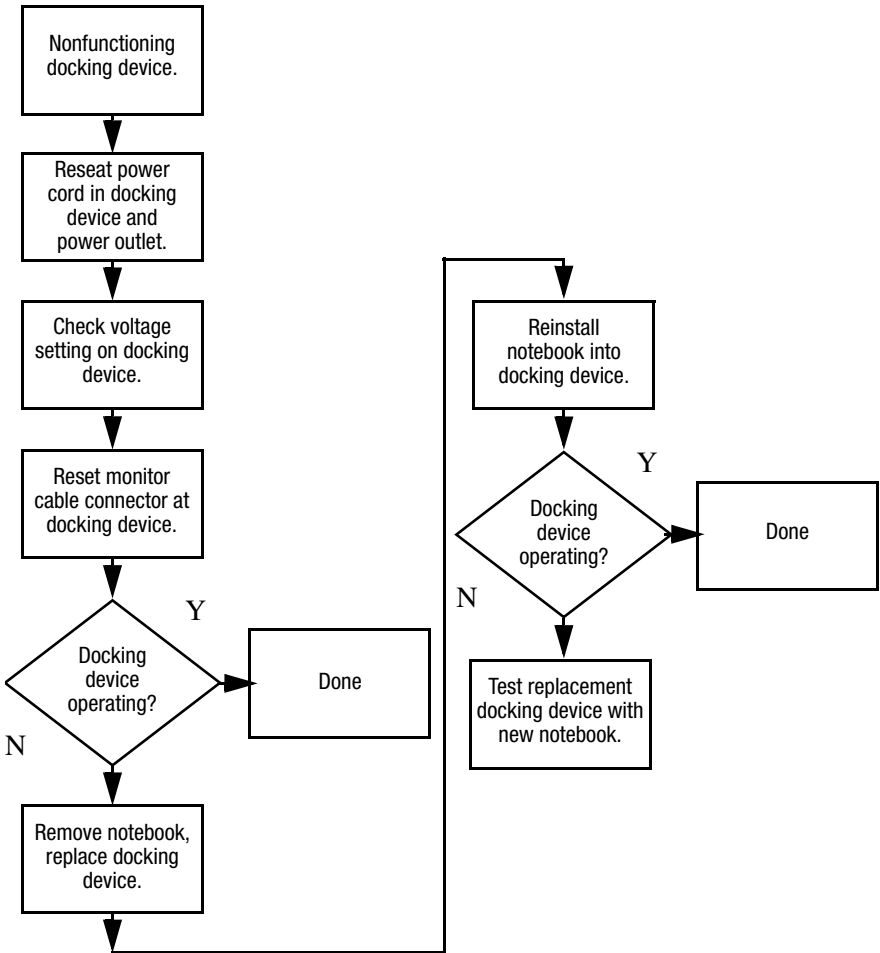
Flowchart 2.6—No Video, Part 1



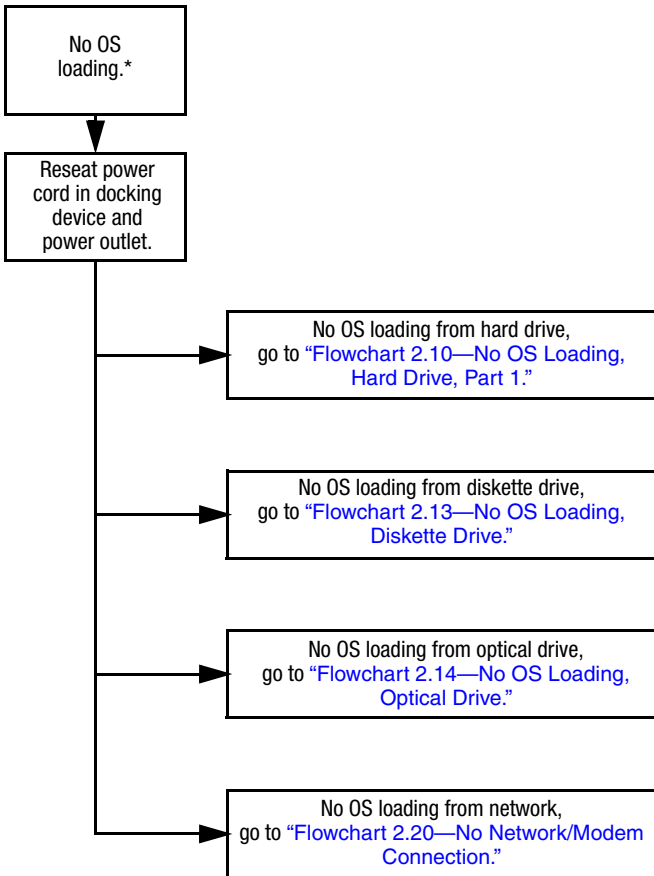
Flowchart 2.7—No Video, Part 2



Flowchart 2.8—Nonfunctioning Docking Device (if applicable)

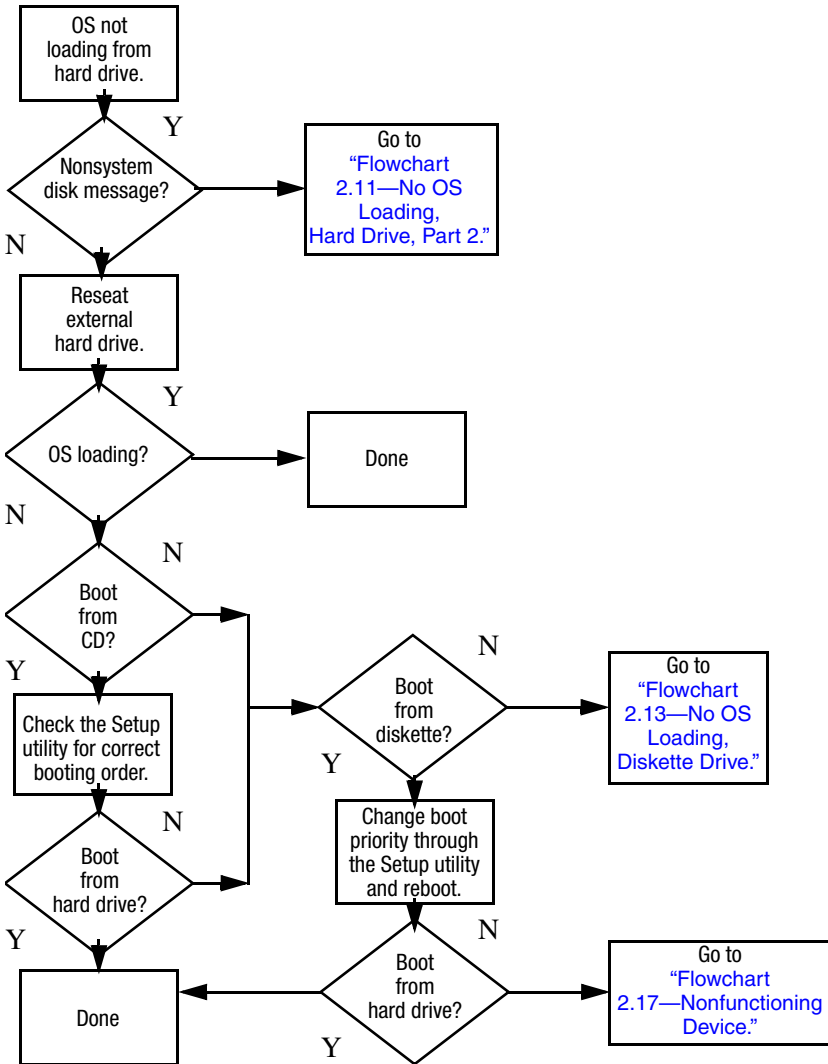


Flowchart 2.9—No Operating System (OS) Loading

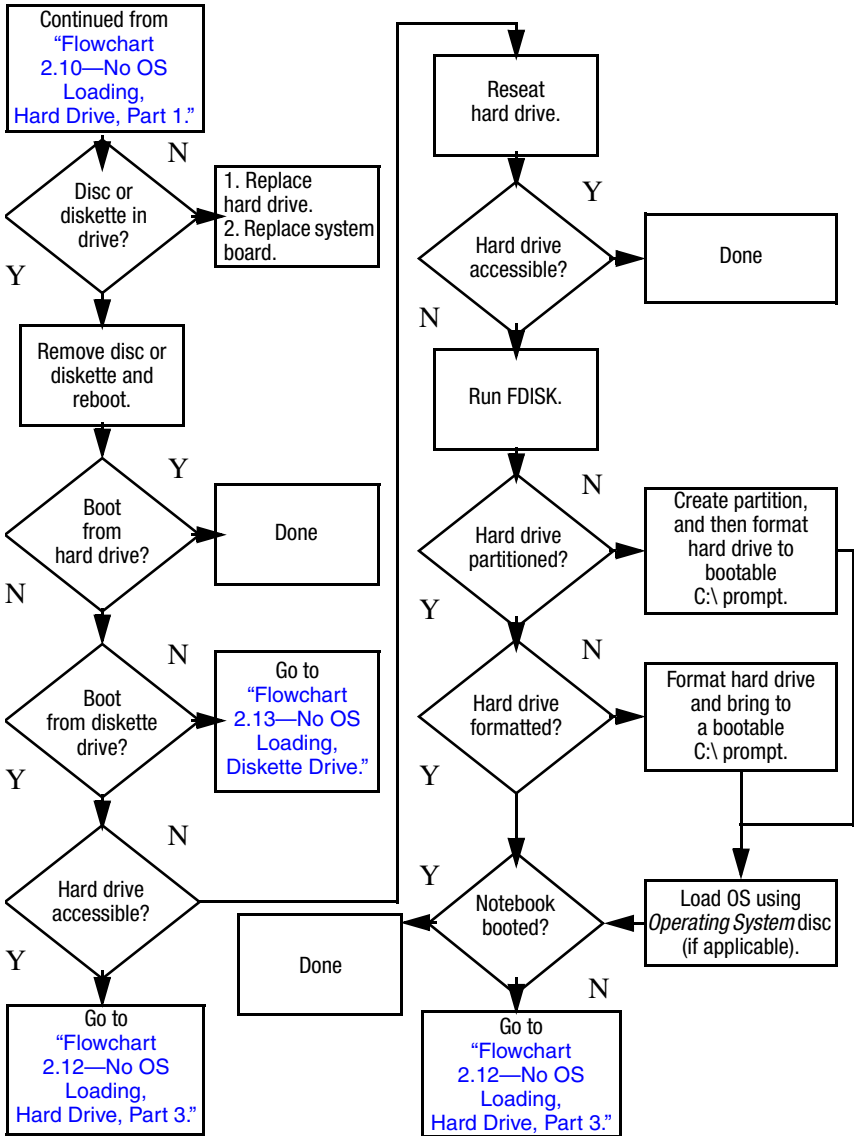


*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

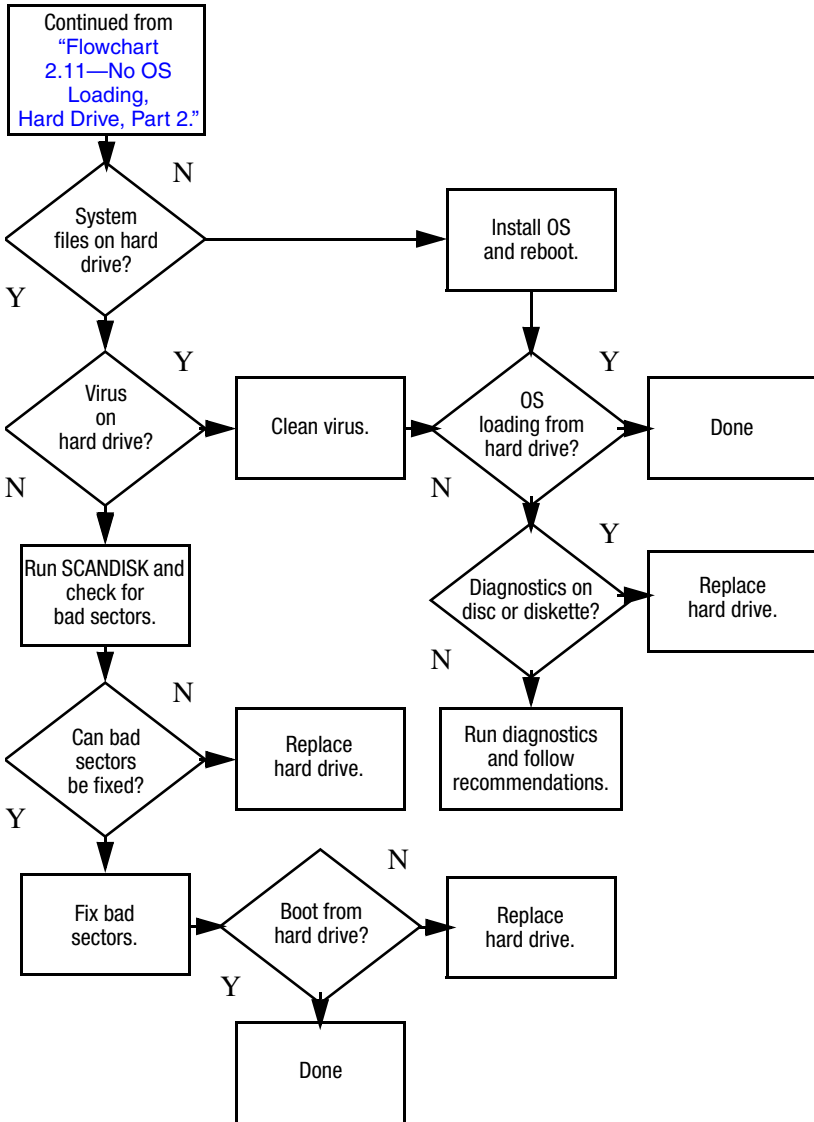
Flowchart 2.10—No OS Loading, Hard Drive, Part 1



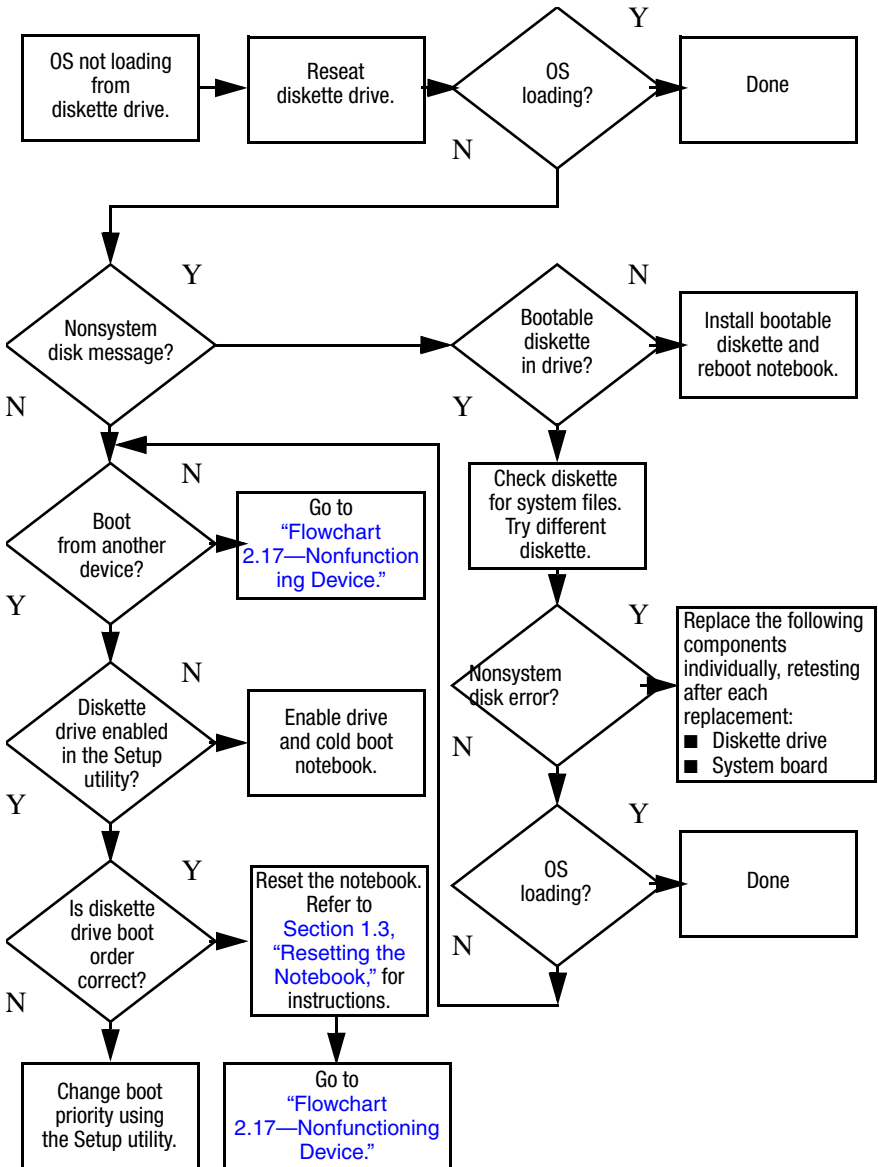
Flowchart 2.11 – No OS Loading, Hard Drive, Part 2



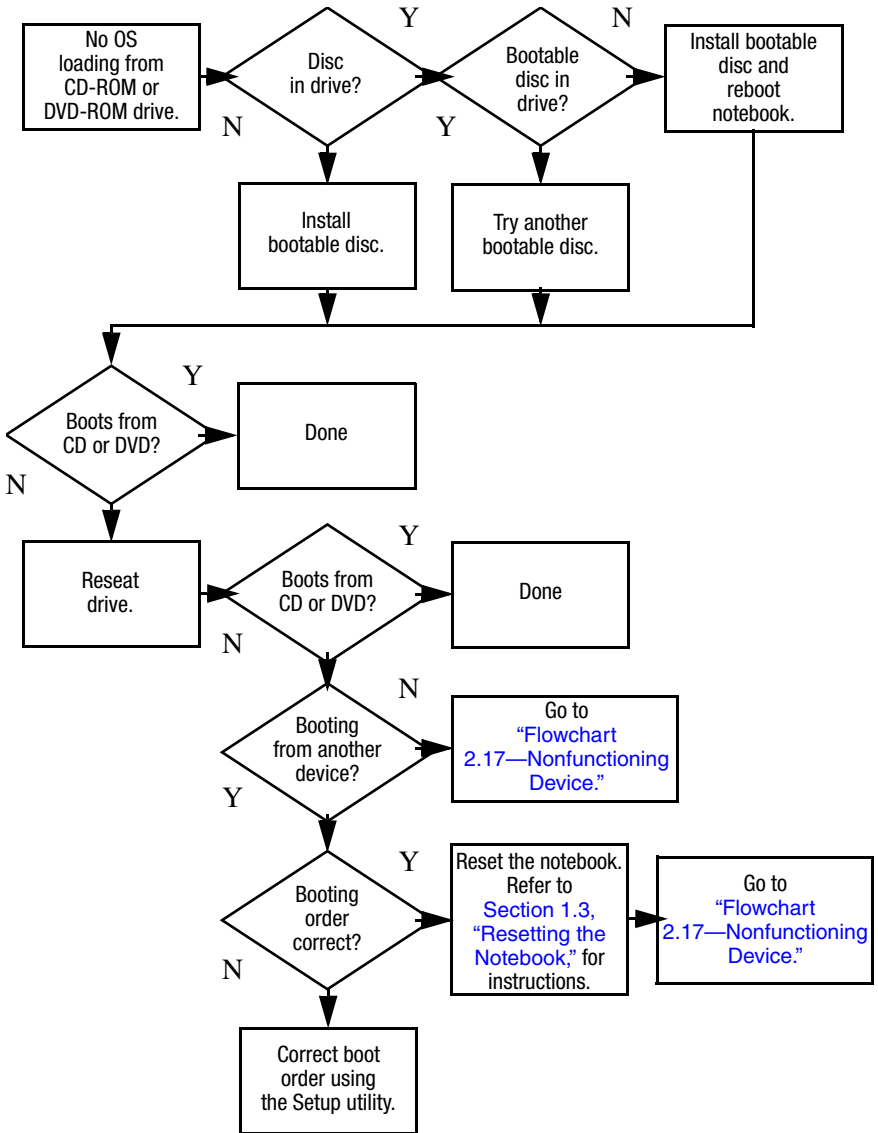
Flowchart 2.12—No OS Loading, Hard Drive, Part 3



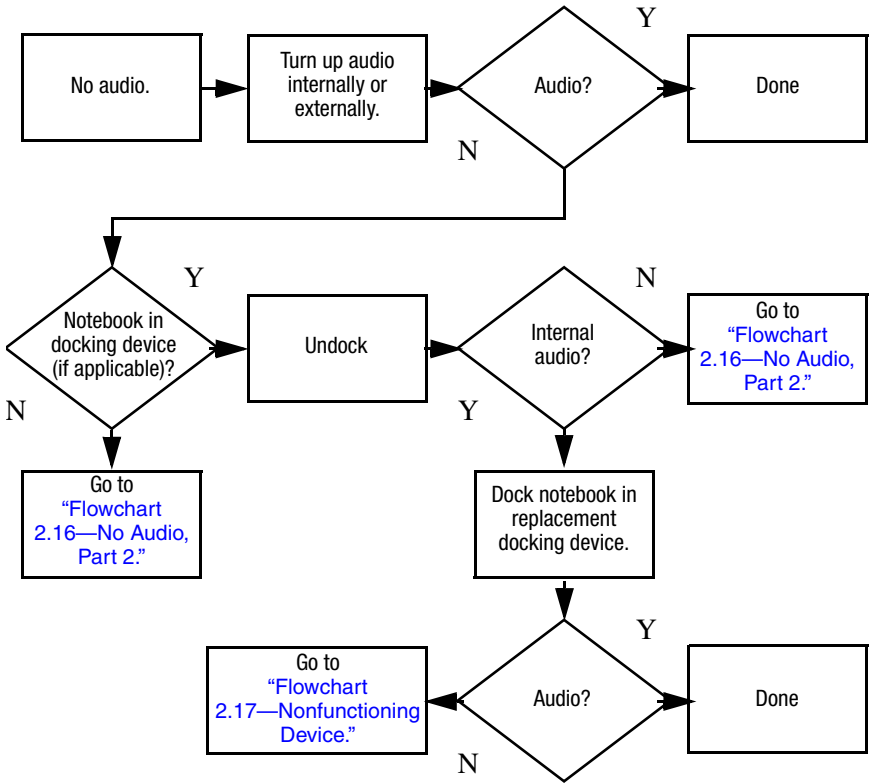
Flowchart 2.13—No OS Loading, Diskette Drive



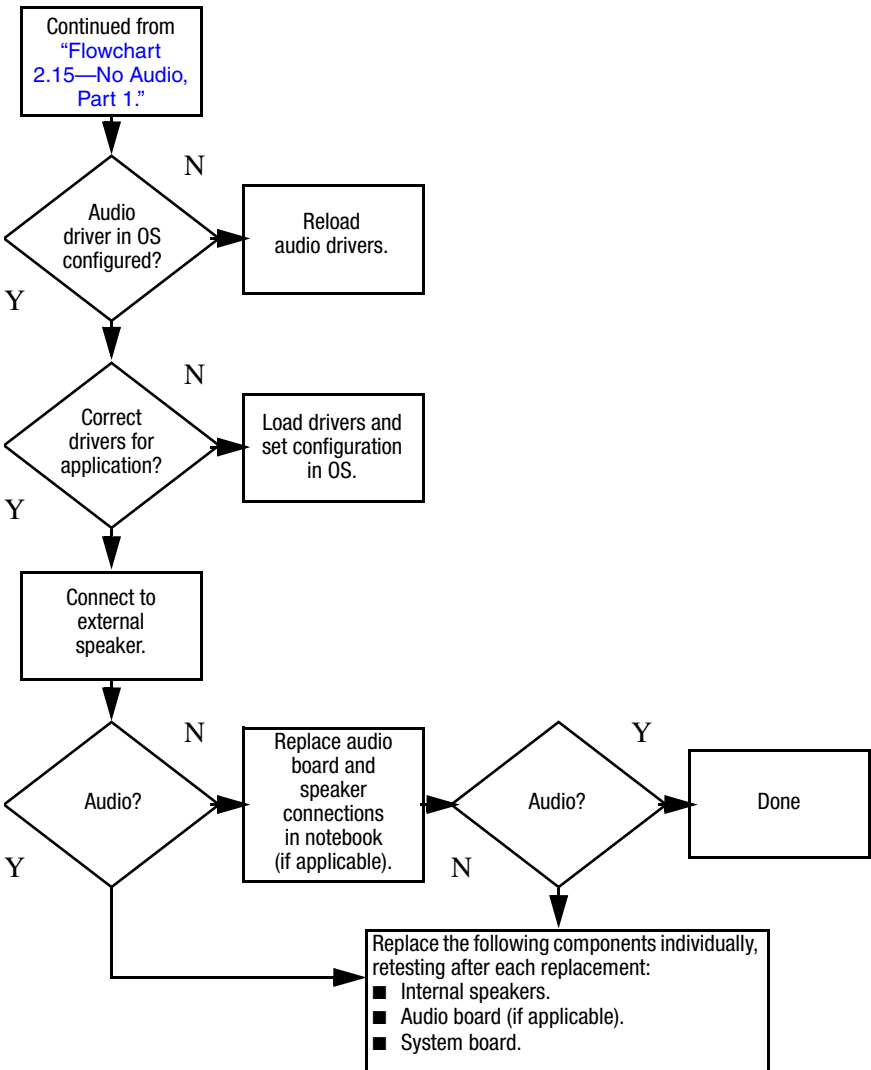
Flowchart 2.14—No OS Loading, Optical Drive



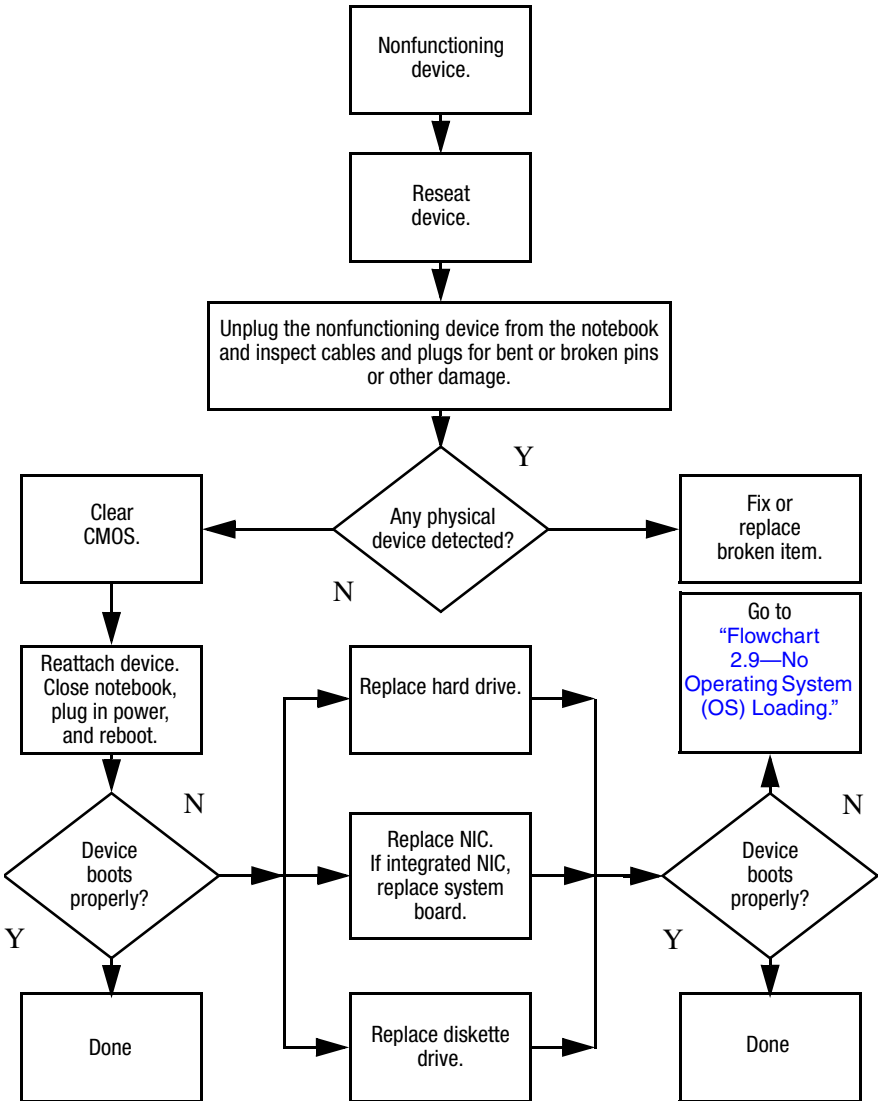
Flowchart 2.15—No Audio, Part 1



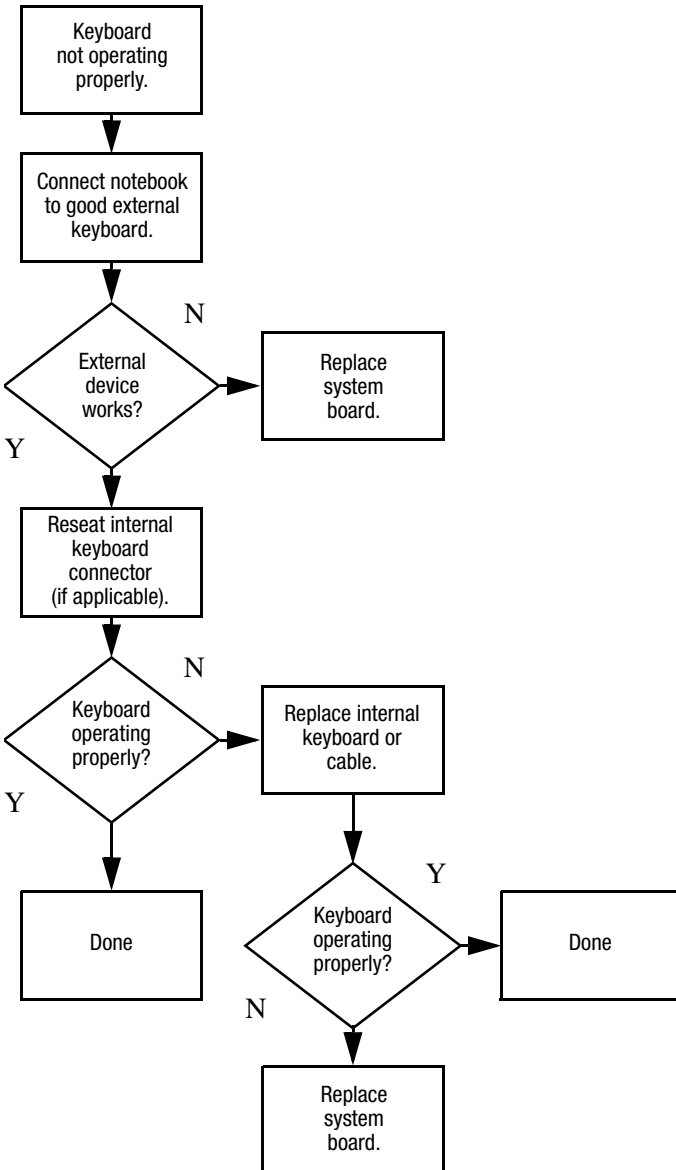
Flowchart 2.16—No Audio, Part 2



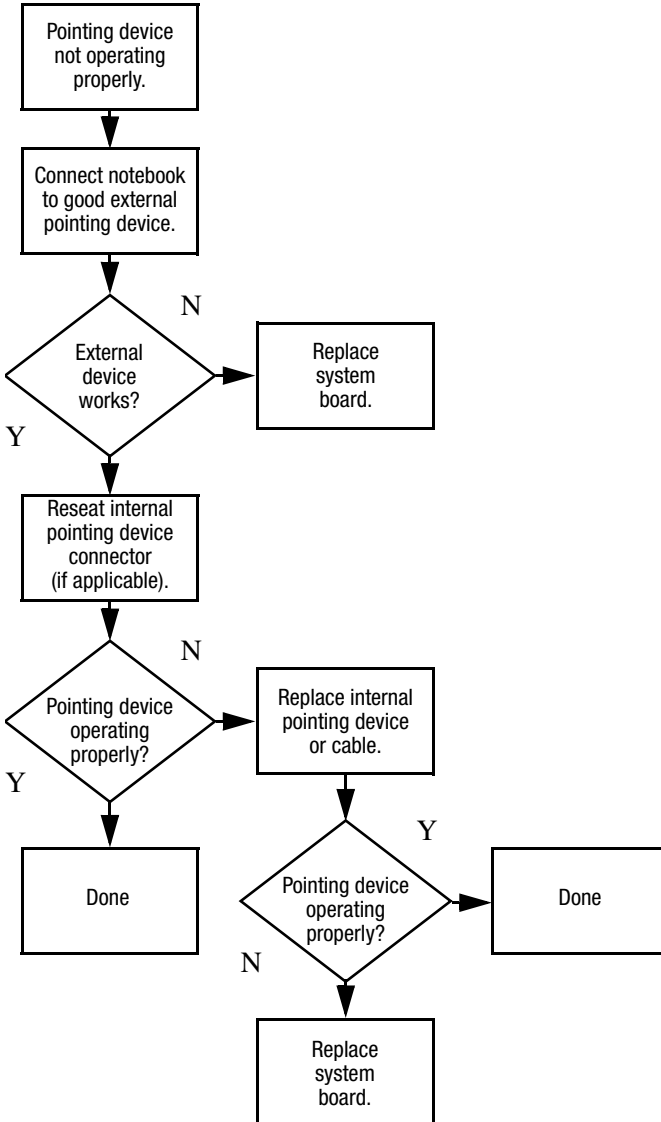
Flowchart 2.17—Nonfunctioning Device



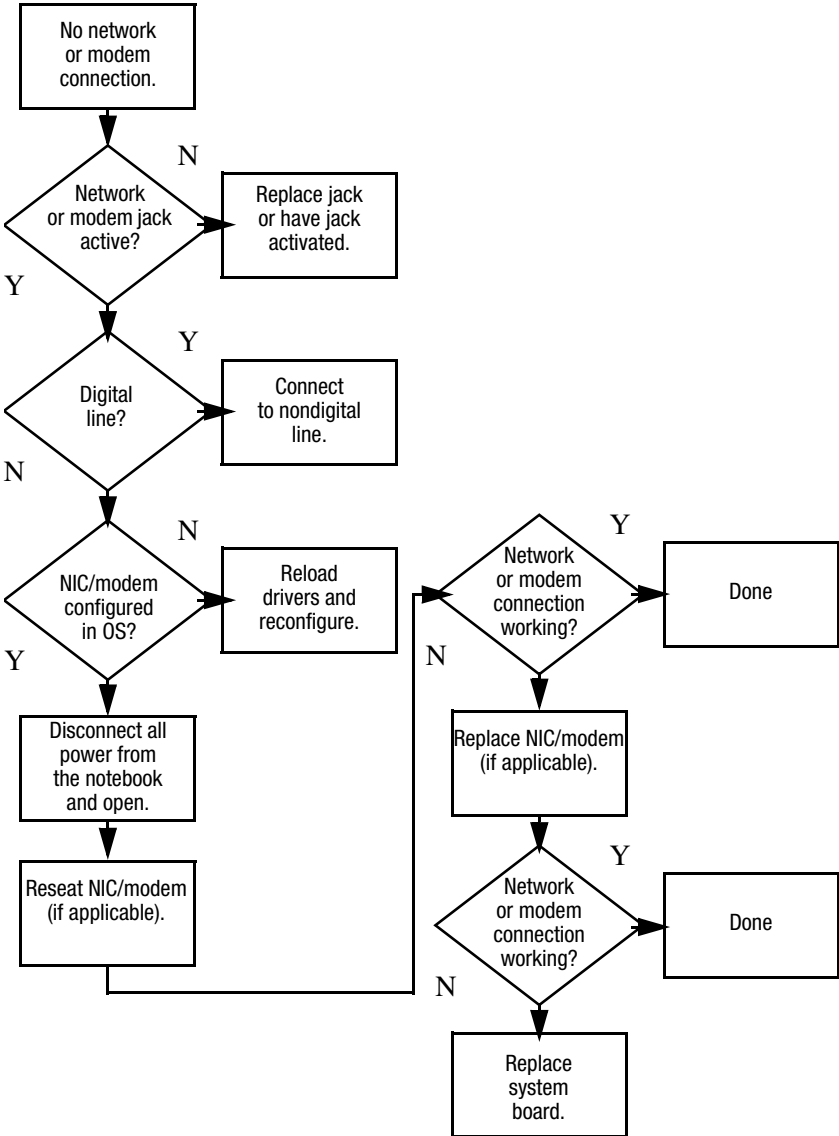
Flowchart 2.18—Nonfunctioning Keyboard



Flowchart 2.19—Nonfunctioning Pointing Device



Flowchart 2.20—No Network/Modem Connection



Illustrated Parts Catalog

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

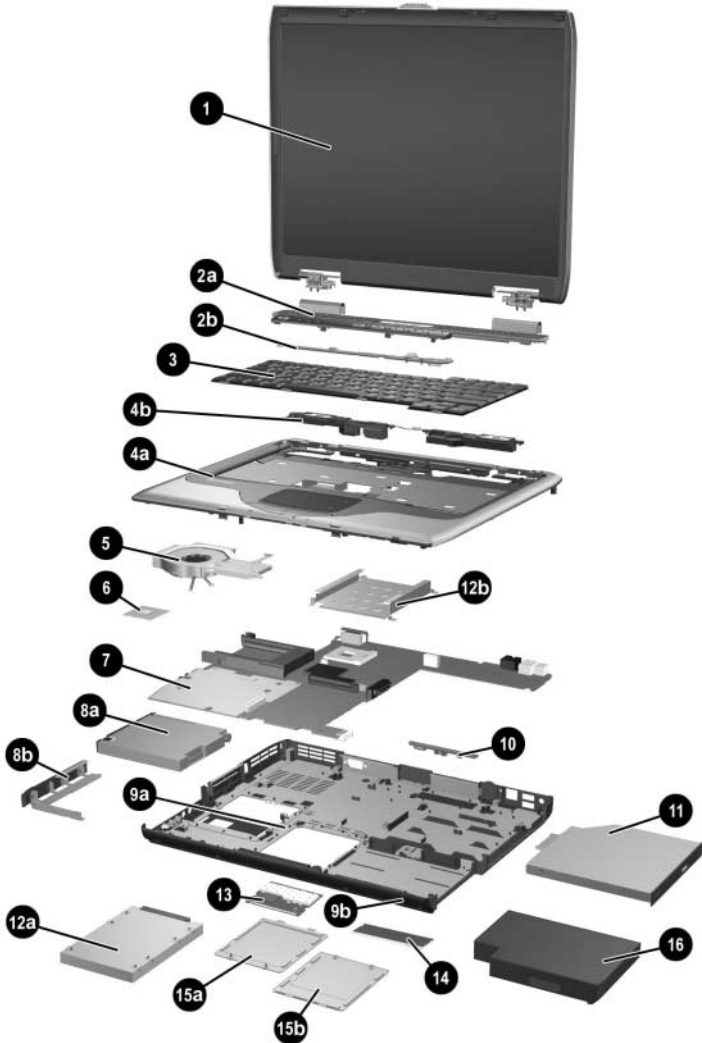
3.1 Serial Number Location

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



Serial Number Location

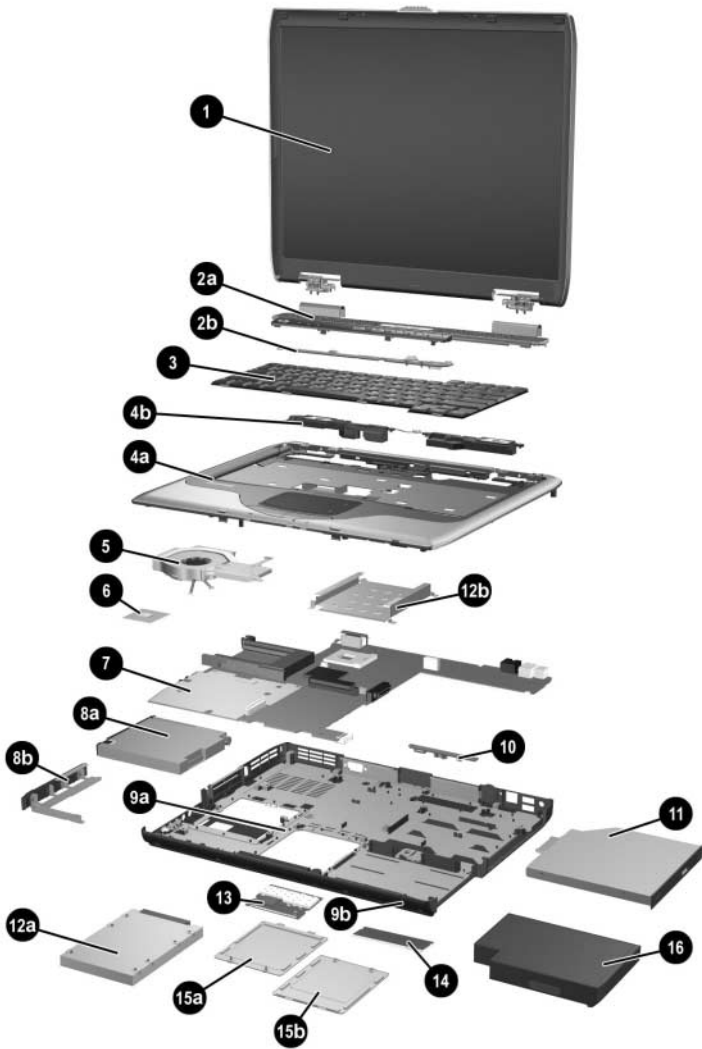
3.2 Notebook Major Components



Notebook Major Components

Table 3-1
Spare Parts: Notebook Major Components

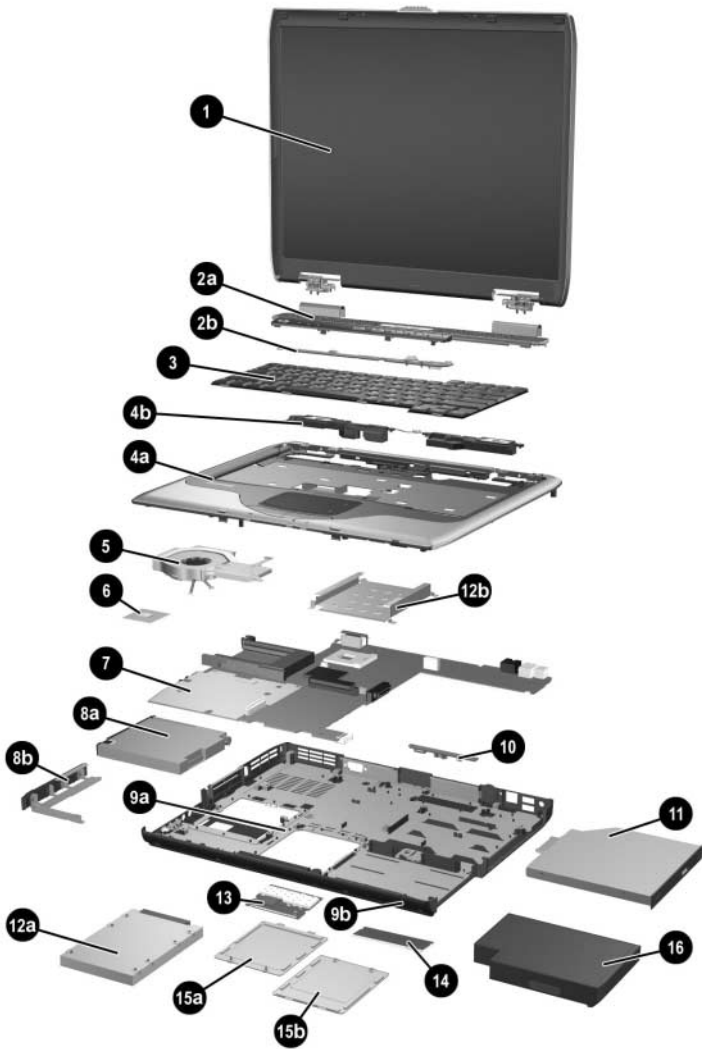
Item	Description	Spare Part Number
1	Display assemblies	
	for use on HP Pavilion ze4900 models	
	15.0-inch, SXGA+WVA	383793-001
	15.0-inch, XGA	371768-001
	14.1-inch, XGA	371767-001
	for use on HP Compaq nx9040, nx9030, and nx9020 models	
	15.0-inch, XGA	371772-001
	14.1-inch, XGA	371771-001
	for use on Compaq Presario 2200 models	
	15.0-inch, XGA	371770-001
	14.1-inch, XGA	371769-001
	Display hinge bracket, for use with 15.0-inch display assemblies (not illustrated)	389335-001
	Display hinge bracket, for use with 14.1-inch display assemblies (not illustrated)	389334-001
	Display screw covers (not illustrated)	371813-001
2a	Keyboard covers (includes speaker grilles and switch board)	
	for use on HP Pavilion ze4900 models	371802-001
	for use on HP Compaq nx9040, nx9030, and nx9020 models	371804-001
	for use on Compaq Presario 2200 models	371803-001
2b	Switch board	



Notebook Major Components

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

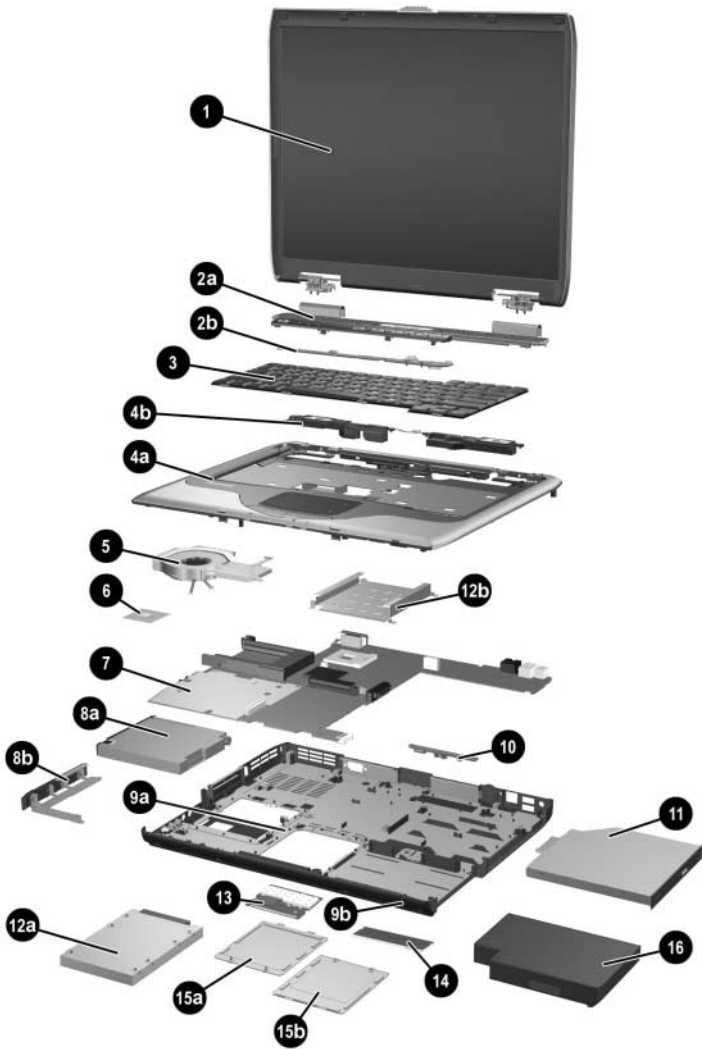
Item	Description	Spare Part Number
3	Keyboards	
	Belgium 371787-181 Latin America	371787-161
	Brazil 371787-201 Norway	371787-091
	Czech Republic 371787-221 Portugal	371787-131
	Denmark 371787-081 Russia	371787-251
	France 371787-051 Saudi Arabia	371787-171
	French Canada 371787-121 Slovakia	371787-231
	Germany 371787-041 Slovenia	371787-BA1
	Greece 371787-151 Spain	371787-071
	Hungary 371787-211 Sweden	371787-101
	Iceland 371787-DD1 Switzerland	371787-111
	International 371787-002 Taiwan	371787-AB1
	Israel 371787-BB1 Thailand	371787-281
	Italy 371787-061 Turkey	371787-141
	Japan 371787-291 United Kingdom	371787-031
	Korea 371787-AD1 United States	371787-001
4a	Top cover (includes speakers and TouchPad)	
	for use in HP Pavilion ze4900 models	371799-001
	for use in HP Compaq nx9040 models	373291-001
	for use in HP Compaq nx9030 and nx9020 models	371801-001
	for use in Compaq Presario 2200 models	371800-001
4b	Speakers	
5	Heat sink	371796-001
	Thermal Pad Kit (not illustrated)	371809-001



Notebook Major Components

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

Item	Description	Spare Part Number
6	Processors	
	Intel Pentium M 755 (2.0-GHz) with 400-MHz front side bus (FSB)	383791-001
	Intel Pentium M 745 (1.8-GHz) with 400-MHz FSB	371760-001
	Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB	371759-001
	Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB	371758-001
	Intel Pentium M 715 (1.5-GHz) with 400-MHz FSB	371757-001
	Intel Pentium M 710 (1.4-GHz) with 400-MHz FSB	378152-001
	Intel Pentium M 705 and TJ85 (1.6-GHz) with 400-MHz FSB	371762-001
	Intel Pentium M 715 and TJ85 (1.5-GHz) with 400-MHz FSB	383790-001
	Intel Pentium M 705 and TJ85 (1.5-GHz) with 400-MHz FSB	371761-001
	Intel Celeron M 360 (1.4-GHz) with 400-MHz FSB	383792-001
	Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB	371763-001
	Intel Celeron M 340 (1.5-GHz) with 400-MHz FSB	371766-001
	Intel Celeron M 330 (1.4-GHz) with 400-MHz FSB	371765-001
	Intel Celeron M 320 (1.3-GHz) with 400-MHz FSB	371764-001
	Thermal Pad Kit (not illustrated)	371809-001
7	System boards	
	for use only on models without S-Video and 1394 digital connectors	371793-001
	for use only on models with S-Video and 1394 digital connectors	371794-001
	for use on HP Compaq nx9040 models	371795-001
	Hard drive guide (not illustrated)	371798-001

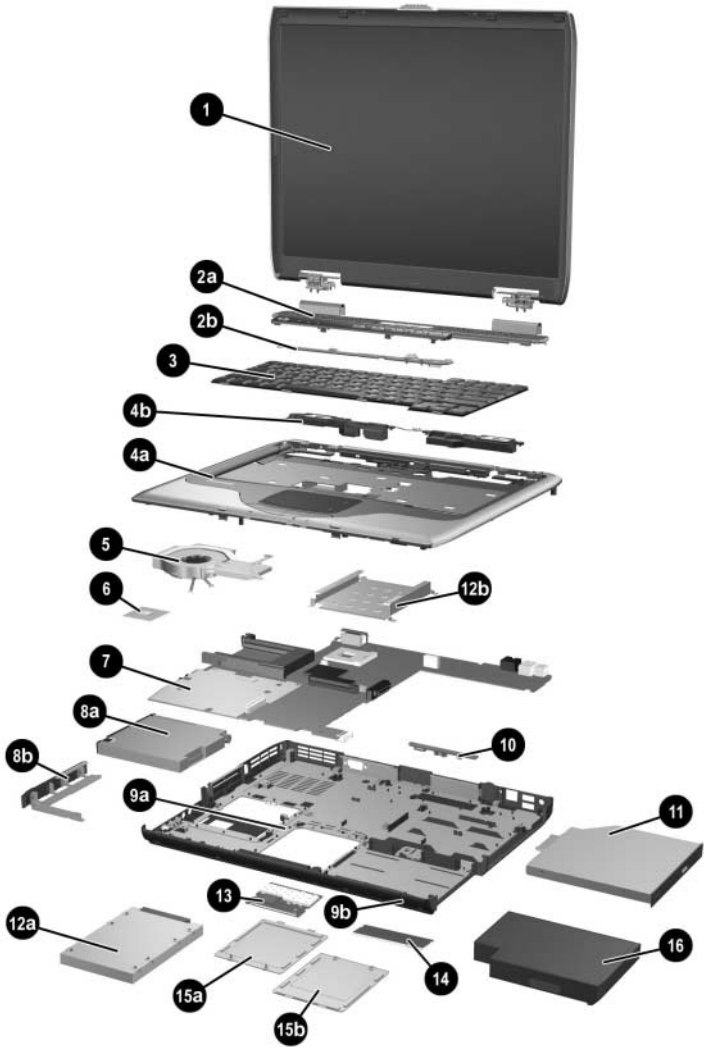


Notebook Major Components

Table 3-1

Spare Parts: Notebook Major Components (*Continued*)

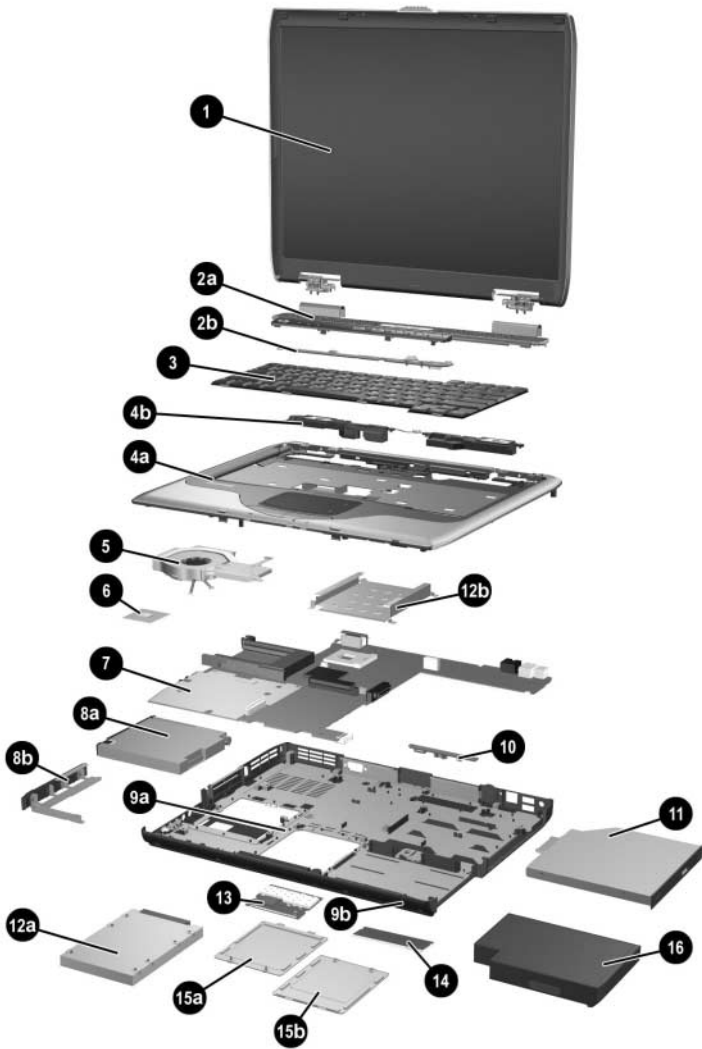
Item	Description	Spare Part Number
8a	Diskette drive (for use on HP Compaq nx9040 models only)	371779-001
8b	Diskette drive cover	371805-001
9a	Base enclosures	
	for use only on models without S-Video and 1394 digital connectors	371791-001
	for use only on models with S-Video and 1394 digital connectors	371792-001
	for use on HP Compaq nx9040 models	373290-001
	Rubber notebook feet and screw plugs (not illustrated)	371808-001
	Wireless LAN antenna cables (not illustrated)	371788-001
9b	Base enclosure button panels	
	for use on HP Compaq nx9040 models	373020-001
	for use on models with wireless only	373019-001
	for use on models with neither wireless nor infrared	373018-001
10	Wireless button boards (includes cable)	
	for use on models with infrared transceiver	373017-001
	for use on models without infrared transceiver	373016-001
11	Optical drives	
	2X Max DVD±RW and CD-RW Combo Drive	371784-001
	4X Max DVD±RW and CD-RW Combo Drive	371783-001
	4X Max DVD±RW and CD-RW Combo Drive	379337-001
	8X Max DVD±RW and CD-RW Combo Drive	379338-001
	24X Max DVD/CD-RW Combo Drive	371782-001
	8X Max DVD-ROM drive	371781-001
	24X Max CD-ROM drive	371780-001



Notebook Major Components

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

Item	Description	Spare Part Number
12a	Hard drives	
	40 GB, 5400 rpm (for use only with Asia Pacific models)	378060-001
	60-GB, 4200 rpm	371778-001
	40-GB, 4200 rpm	371777-001
	30-GB, 4200 rpm	371776-001
12b	Hard drive tray	371797-001
13	Mini PCI communications boards	
	Mini PCI 802.11b wireless LAN, for use in most of the world (MOW)	373023-001
	Mini PCI 802.11b wireless LAN, for use in the rest of the world (ROW)	373024-001
	Mini PCI 802.11b/g wireless LAN, MOW	373025-001
	Mini PCI 802.11b/g wireless LAN, MOW	373026-001
	Mini PCI 802.11b/g wireless LAN, BC	373027-001
	Mini PCI 802.11b/g wireless LAN, Atomic module, for use in the United States with HP Pavilion ze4900 models	374713-001
	Mini PCI 802.11b/g wireless LAN, Atomic module, ROW, for use with HP Pavilion ze4900 models	373048-001
	Mini PCI 802.11b/g wireless LAN, Atomic module, for use in Japan with HP Compaq nx9020 models	373062-001

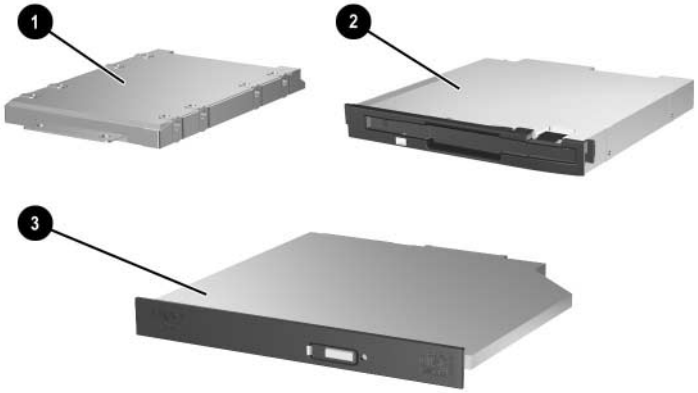


Notebook Major Components

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

Item	Description	Spare Part Number
14	Memory modules	
	512-MB DDR	371775-001
	256-MB DDR	371774-001
	128-MB DDR	371773-001
15a	Memory module compartment cover and	371806-001
15b	Mini PCI compartment cover	
16	Battery packs	
	8-cell Li-Ion	371786-001
	6-cell Li-Ion	371785-001
	6-cell Li-Ion, 4.0 Ah	383615-001

3.3 Mass Storage Devices



Mass Storage Devices

Table 3-2
Mass Storage Devices
Spare Part Number Information

Item	Description	Spare Part Number
1	Diskette drive	371779-001
2	Hard drives (includes hard drive bezel)	
	40 GB, 5400 rpm (for use only with Asia Pacific models)	378060-001
	60 GB, 4200 rpm	371778-001
	40 GB, 4200 rpm	371777-001
	30 GB, 4200 rpm	371776-001
3	Optical drives	
	2X Max DVD±RW and CD-RW Combo Drive	371784-001
	4X Max DVD±RW and CD-RW Combo Drive	371783-001
	4X Max DVD±RW and CD-RW Combo Drive	379337-001
	8X Max DVD±RW and CD-RW Combo Drive	379338-001
	24X Max DVD/CD-RW Combo Drive	371782-001
	8X Max DVD-ROM drive	371781-001
	24X Max CD-ROM drive	371780-001

3.4 Miscellaneous

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

Description	Spare Part Number
Logo Kit	371812-001
65-watt AC adapter	371790-001
Power cords	
Australia	373979-011
Brazil	373979-201
Denmark	373979-081
Europe	373979-021
Israel	373979-BB1
Italy	373979-061
Japan	373979-291
Korea	373979-AD1
People's Republic of China	373979-AA1
Saudi Arabia	373979-AR1
Switzerland	373979-111
United Kingdom	373979-031
United States	373979-001
Screw Kit (includes the following screws; refer to Appendix C, "Screw Listing," for more information on screw specifications and usage).	373294-001
■ PM2.0×9.0 screw	■ PM2.0×3.0 screw
■ PM2.0×8.0 screw	■ HM5.0×9.0 screwlock
■ PM2.0×6.0 screw	■ PM1.5×12.0 screw
■ PM2.0×5.0 screw	■ PM1.5×5.0 screw
■ PM2.0×4.0 screw	

Removal and Replacement Preliminaries

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

4.1 Tools Required

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

- Magnetic screwdriver
- Phillips P0 screwdriver
- Flat-bladed screwdriver
- Tool kit—includes connector removal tool, loopback plugs, and case utility tool

4.2 Service Considerations

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



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

Plastic Parts

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

Cables and Connectors



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

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

4.3 Preventing Damage to Removable Drives

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

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

4.4 Preventing Electrostatic Damage

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

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

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

4.5 Packaging and Transporting Precautions

Use the following grounding precautions when packaging and transporting equipment:

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

4.6 Workstation Precautions

Use the following grounding precautions at workstations:

- Cover the workstation with approved static-shielding material (refer to [Table 4-2, “Static-Shielding Materials”](#)).
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools such as cutters, screwdrivers, and vacuums.
- When 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.

4.7 Grounding Equipment and Methods

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

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

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

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

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

Table 4-1
Typical Electrostatic Voltage Levels

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



A product can be degraded by as little as 700 V.

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

Table 4-2
Static-Shielding Materials

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

5

Removal and Replacement Procedures

This chapter provides removal and replacement procedures.

There are 77 screws and screwlocks, in 11 different sizes, that must be removed, replaced, or loosened when servicing the notebook. Make special note of each screw size and location during removal and replacement.

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

5.1 Serial Number

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



Serial Number Location

5.2 Disassembly Sequence Chart

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

Disassembly Sequence Chart		
Section	Description	# of Screws Removed
5.3	Preparing the Notebook for Disassembly	
	Battery pack	0
	Hard drive	2 to remove hard drive 2 to remove hard drive bezel
5.4	Notebook Feet	0
5.5	Memory Module	2 loosened
5.6	Mini PCI Communications Board	2 loosened
5.7	Keyboard Cover	2
5.8	Keyboard	4
5.9	Switch Board	2 on all notebook models except HP Pavilion ze4900 1 on HP Pavilion ze4900

Disassembly Sequence Chart (*Continued*)

Section	Description	# of Screws Removed
5.10	Speakers	4
5.11	Optical Drive	2
5.12	Display Assembly	10
5.13	Top Cover	20
5.14	Heat Sink	3
5.15	Processor	0
5.16	Wireless Button Board	2
5.17	Diskette Drive	2
5.18	Diskette Drive Cover	2
5.19	System Board	8 screws 2 screwlocks on all notebook models except HP Compaq nx9040 6 screwlocks on HP Compaq nx9040

5.3 Preparing the Notebook for Disassembly

Before you begin any removal or installation procedures:

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

Battery Pack Spare Part Number Information

8-cell Li-Ion	371786-001
6-cell Li-Ion	371785-001
6-cell Li-Ion, 4.0 Ah	383615-001

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

- b. Slide and hold the battery release latch **1** toward the back of the notebook.
- c. Use the notch in the battery bezel to slide the battery pack to the left **2**.
- d. Remove the battery pack.




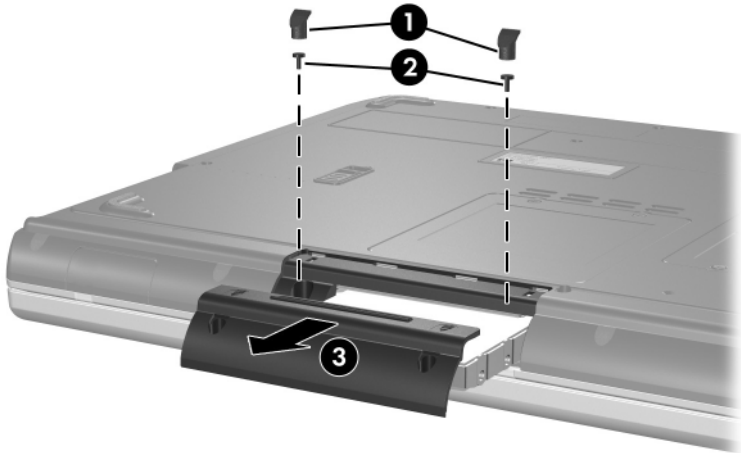
Removing the Battery Pack

Reverse the above procedure to install the battery pack.

Hard Drive Spare Part Number Information

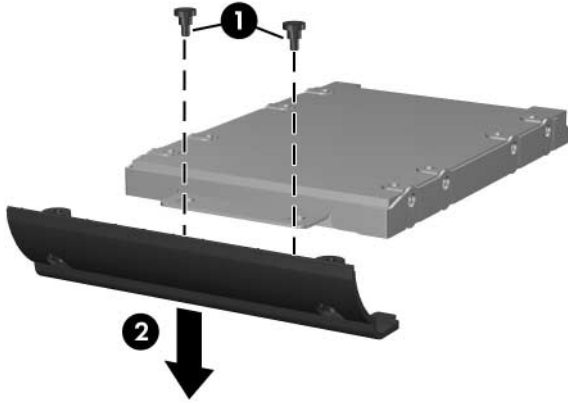
40 GB, 5400 rpm (for use only with Asia Pacific models)	378060-001
60-GB, 4200 rpm	371778-001
40-GB, 4200 rpm	371777-001
30-GB, 4200 rpm	371776-001

5. Remove the hard drive by following these steps:
 - a. Remove the two rubber screw covers **1** that conceal the hard drive retention screws.
 -  Spare part number 371808-001 should be used to replace the hard drive rubber screw covers.
 - b. Remove the two PM2.0x6.0 screws **2** that secure the hard drive to the notebook.
 - c. Use the notch in the hard drive bezel to slide the hard drive forward **3**.
 - d. Remove the hard drive.



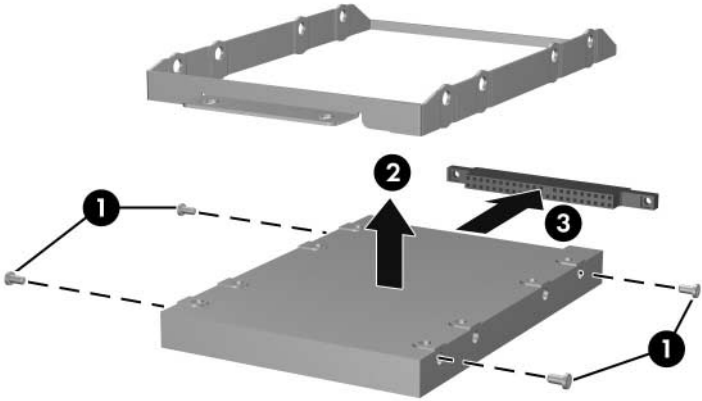
Removing the Hard Drive

- e. Remove the two PM1.5×5.0 shoulder screws **①** that secure the hard drive bezel to the hard drive.
- f. Remove the hard drive bezel **②**.



Removing the Hard Drive Bezel

- g. Remove the four PM2.5×4.0 screws ❶ that secure the hard drive frame to the hard drive.
- h. Remove the hard drive frame ❷.
- i. Remove the hard drive connector ❸.

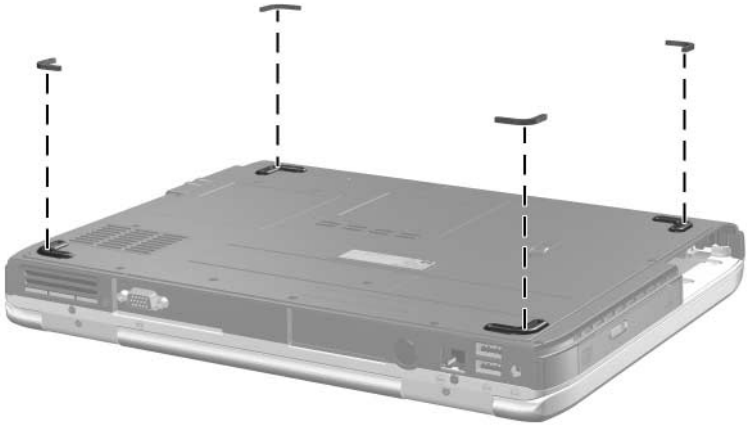


Disassembling the hard drive

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

5.4 Notebook Feet

The notebook feet are adhesive-backed rubber pads. Spare part number 371808-001 should be used to replace the notebook feet. The feet attach to the base enclosure as illustrated below.



Replacing the Notebook Feet

5.5 Memory Module

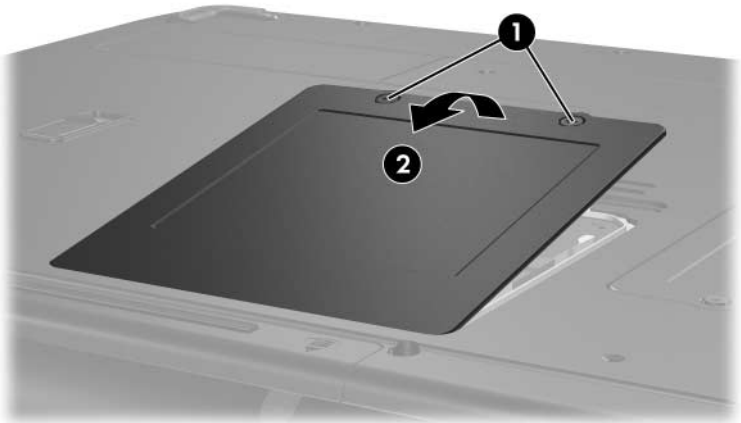
Memory Module Spare Part Number Information

512-MB DDR	371775-001
256-MB DDR	371774-001
128-MB DDR	371773-001

1. Prepare the notebook for disassembly (refer to [Section 5.3](#)).
2. Loosen the two PM2.0x4.0 screws ❶ that secure the memory module compartment cover to the notebook.
3. Lift the back edge of the memory module compartment cover and swing it forward ❷.
4. Remove the memory module compartment cover.

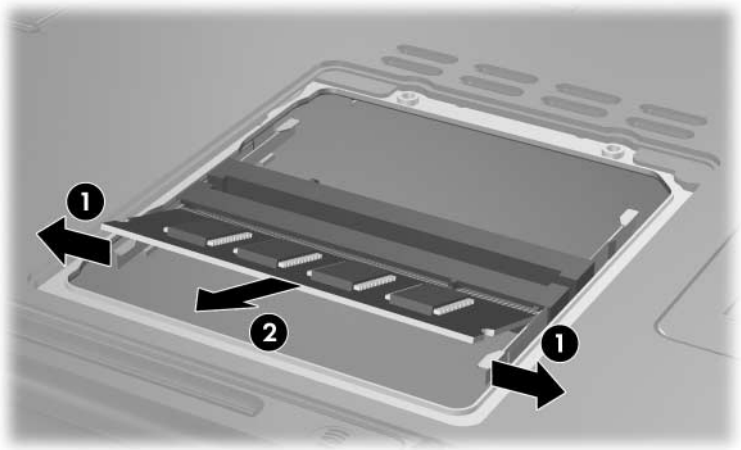


Spare part number 371806-001 should be used to replace the memory module compartment cover.



Removing the Memory Module Compartment Cover

5. Spread the two retaining tabs **1** that secure the memory module to the memory module socket. (The module rises up).
6. Remove the memory module by pulling it away from the memory module socket at a 45-degree angle **2**.



Removing a Memory Module

Reverse the above procedure to install a memory module.

5.6 Mini PCI Communications Board

Mini PCI Communications Board Spare Part Number Information

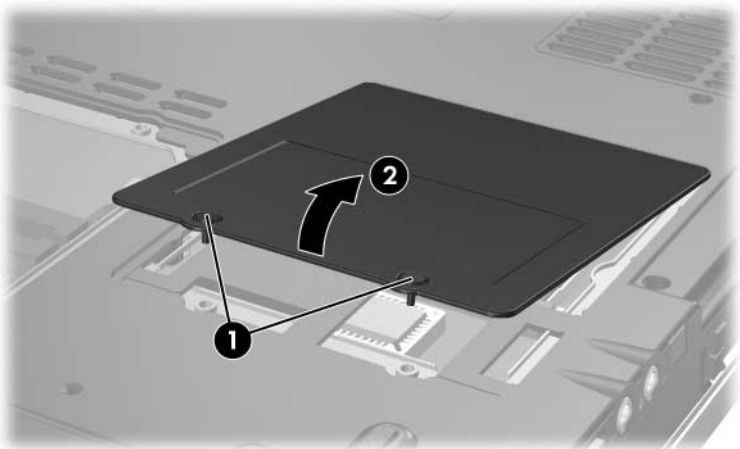
Mini PCI 802.11b wireless LAN, MOW	373023-001
Mini PCI 802.11b wireless LAN, ROW	373024-001
Mini PCI 802.11b/g wireless LAN, MOW	373025-001
Mini PCI 802.11b/g wireless LAN, MOW	373026-001
Mini PCI 802.11b/g wireless LAN, BC	373027-001
Mini PCI 802.11b/g wireless LAN, Atomic module, for use in the United States with HP Pavilion ze4900 models	374713-001
Mini PCI 802.11b/g wireless LAN, Atomic module, ROW, for use with HP Pavilion ze4900 models	373048-001
Mini PCI 802.11b/g wireless LAN, Atomic module, for use in Japan with HP Compaq nx9020 models	373062-001

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

2. Loosen the two PM2.0×4.0 screws ❶ that secure the Mini PCI compartment cover to the notebook.
3. Lift the front edge of the Mini PCI compartment cover, and then swing it back ❷.
4. Remove the Mini PCI compartment cover.



Spare part number 371806-001 should be used to replace the Mini PCI compartment cover.

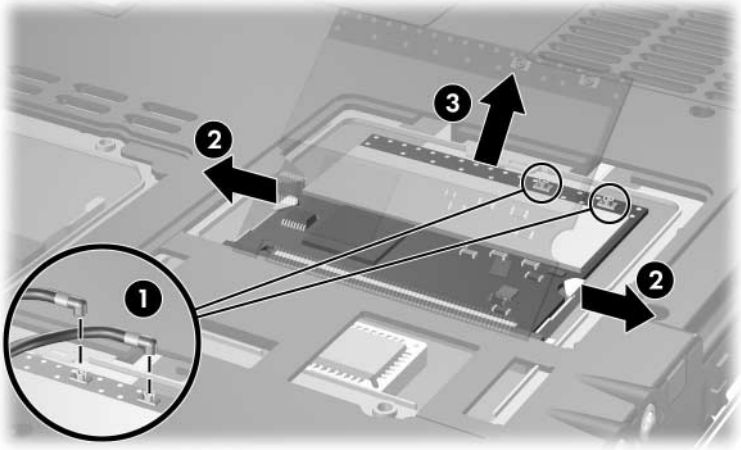


Removing the Mini PCI Communications Compartment Cover



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

5. Disconnect the wireless antenna cables **1** from the Mini PCI communications board.
6. Spread the two retaining tabs **2** that secure the Mini PCI communications board to the communications compartment socket. (The board rises up).
7. Remove the wireless communications board by pulling the board away from the socket at a 45-degree angle **3**.



Removing a Mini PCI Communications Board

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

5.7 Keyboard Cover

Keyboard Cover Spare Part Number Information

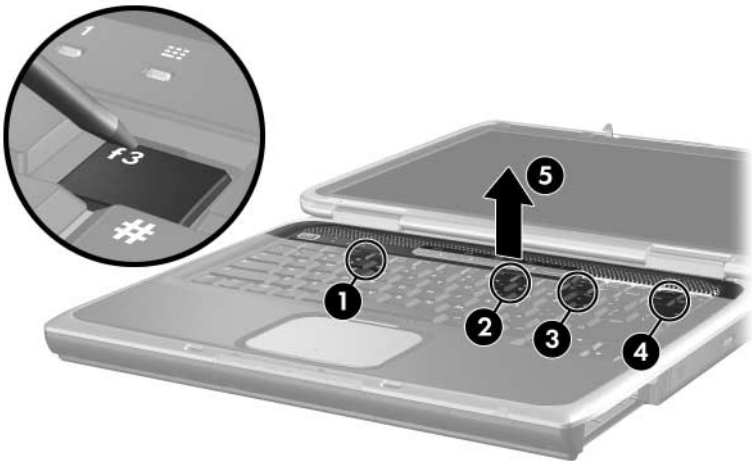
For use on HP Pavilion ze4900 notebook models	371802-001
For use on HP Compaq nx9040, nx9030, and nx9020 notebook models	371804-001
For use on Compaq Presario 2200 notebook models	371803-001

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Position the notebook with the rear panel toward you.
3. Remove the two PM2.0x6.0 screws that secure the keyboard cover to the notebook.



Removing the Keyboard Cover Screws

4. Turn the notebook display-side up with the front panel toward you.
5. Open the notebook as far as possible.
6. Press and hold the **f3** key ❶ and use a flat tool to separate the cover from the notebook.
7. Press and hold the **f8** key ❷ and use a flat tool to separate the cover from the notebook.
8. Press and hold the **f11** key ❸ and use a flat tool to separate the cover from the notebook.
9. Press and hold the **home** key ❹ and use a flat tool to separate the cover from the notebook.
10. Lift the cover up to remove it from the notebook ❺.



Removing the Keyboard Cover

Reverse the above procedure to install an keyboard cover.

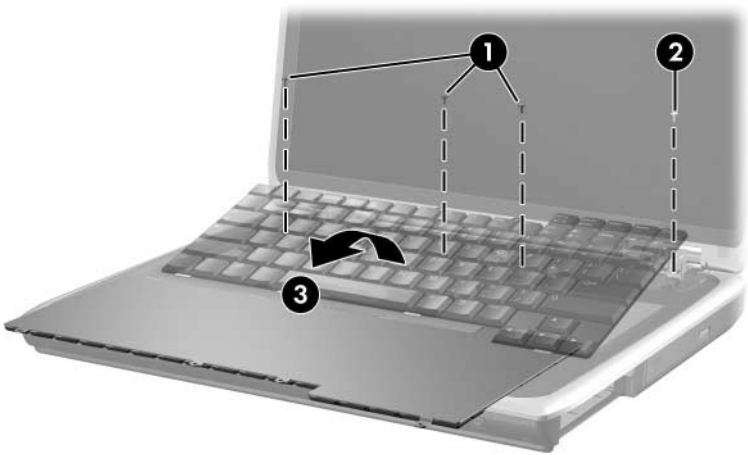
5.8 Keyboard

Keyboard Spare Part Number Information

Belgium	371787-181	Latin America	371787-161
Brazil	371787-201	Norway	371787-091
Czech Republic	371787-221	Portugal	371787-131
Denmark	371787-081	Russia	371787-251
France	371787-051	Saudi Arabia	371787-171
French Canada	371787-121	Slovakia	371787-231
Germany	371787-041	Slovenia	371787-BA1
Greece	371787-151	Spain	371787-071
Hungary	371787-211	Sweden	371787-101
Iceland	371787-DD1	Switzerland	371787-111
International	371787-002	Taiwan	371787-AB1
Israel	371787-BB1	Thailand	371787-281
Italy	371787-061	Turkey	371787-141
Japan	371787-291	United Kingdom	371787-031
Korea	371787-AD1	United States	371787-001

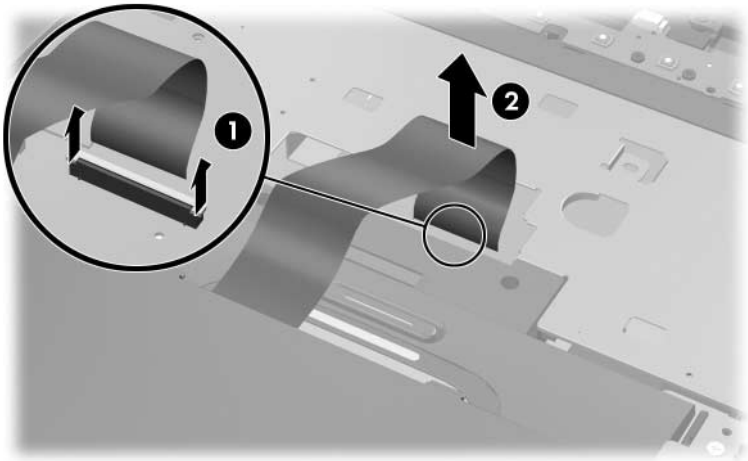
1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the keyboard cover ([Section 5.7](#)).

3. Remove the three PM2.0×4.0 screws ❶ and the PM2.0×3.0 screw ❷ that secure the keyboard to the notebook.
4. Lift the back edge of the keyboard and swing it forward until it rests on the palm rest ❸.



Releasing the Keyboard

5. Release the zero insertion force (ZIF) connector **1** to which the keyboard cable is attached and disconnect the cable **2**.
6. Remove the keyboard.



Removing the Keyboard

Reverse the above procedure to install the keyboard.

5.9 Switch Board



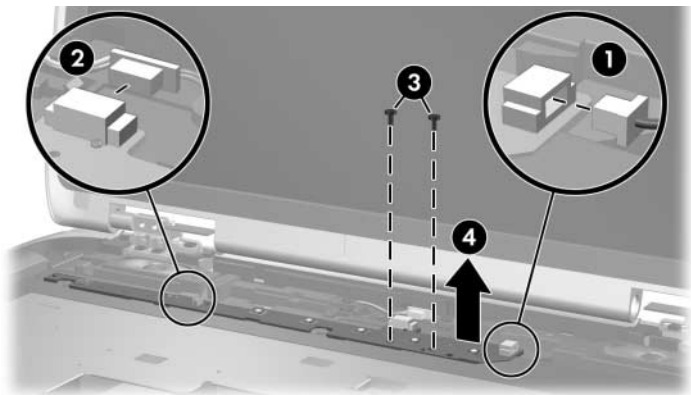
The switch board is included with the keyboard cover. Refer to [Section 5.7, “Keyboard Cover,”](#) for spare part number information.

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the keyboard cover ([Section 5.7](#)).
3. Remove the keyboard ([Section 5.8](#)).
4. Disconnect the display lid switch **1** and speaker cables **2** from the switch board.



HP Pavilion ze4900 notebook models use only one PM2.0×4.0 screw to secure the switch board in step 5.

5. Remove the two PM2.0×4.0 screws **3** that secure the switch board to the notebook.
6. Lift the right side of the switch board **4** to disconnect the board from the system board.
7. Remove the switch board.



Removing the Switch Board

Reverse the above procedure to install the switch board.

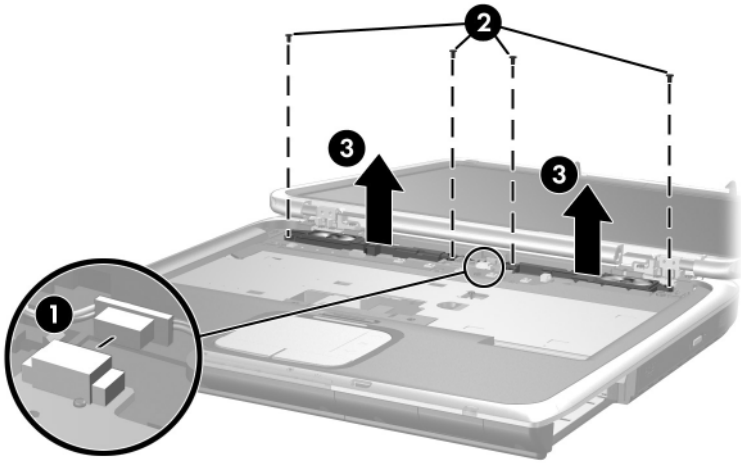
5.10 Speakers



The speakers are included with the top cover. Refer to [Section 5.13, “Top Cover,”](#) for spare part number information.

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the keyboard cover ([Section 5.7](#)).
3. Remove the keyboard ([Section 5.8](#)).

4. Disconnect the speaker cable from the switch board ❶.
5. Remove the four PM2.0×3.0 screws ❷ that secure the left and right speakers to the notebook.
6. Remove the left and right speakers ❸.



Removing the Speakers

Reverse the above procedure to install the speakers.

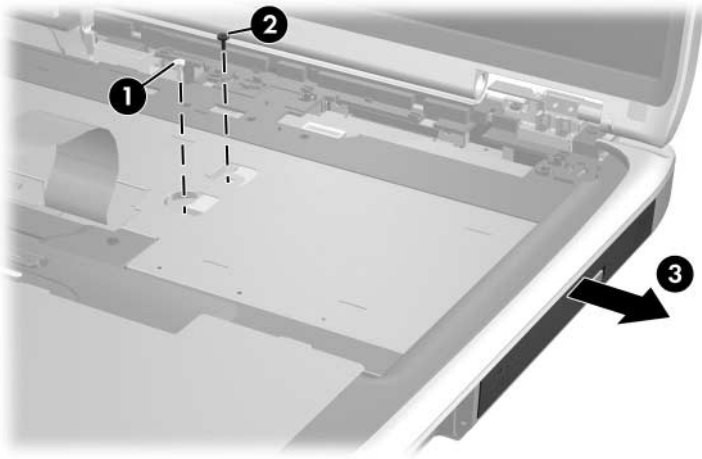
5.11 Optical Drive

Optical Drive Spare Part Number Information

2X Max DVD±RW and CD-RW Combo Drive	371784-001
4X Max DVD±RW and CD-RW Combo Drive	371783-001
4X Max DVD±RW and CD-RW Combo Drive	379337-001
8X Max DVD±RW and CD-RW Combo Drive	379338-001
24X Max DVD/CD-RW Combo Drive	371782-001
8X Max DVD-ROM drive	371781-001
24X Max CD-ROM drive	371780-001

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the keyboard cover ([Section 5.7](#)).
3. Remove the keyboard ([Section 5.8](#)).

4. Remove the PM2.0×8.0 screw ❶ and PM2.0×4.0 screw ❷ that secure the optical drive to the notebook.
5. Push on the back of the optical drive to disconnect it from the system board.
6. Remove the optical drive ❸.



Removing the Optical Drive

Reverse the above procedure to install the optical drive.

5.12 Display Assembly

Display Assembly Spare Part Number Information

For use on HP Pavilion ze4900 models

15.0-inch, SXGA+WVA	383793-001
15.0-inch, XGA	371768-001
14.1-inch, XGA	371767-001

For use on HP Compaq nx9040, nx9030, and nx9020 notebook models

15.0-inch, XGA	371772-001
14.1-inch, XGA	371771-001

For use on Compaq Presario 2200 notebook models

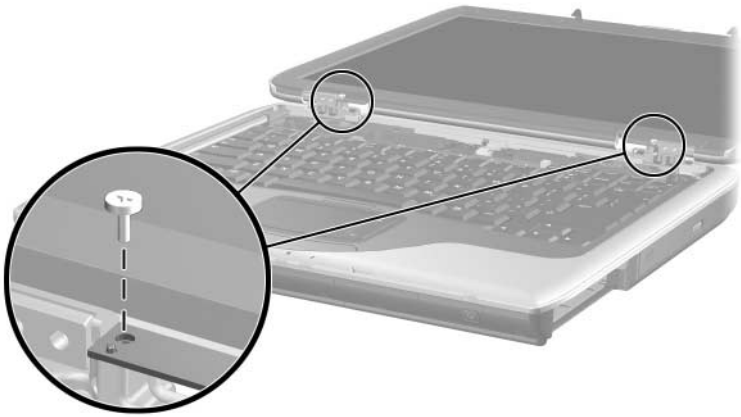
15.0-inch, XGA	371770-001
14.1-inch, XGA	371769-001

Display hinge bracket, for use with 15.0-inch display assemblies (not illustrated)	389335-001
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Display hinge bracket, for use with 14.1-inch display assemblies (not illustrated)	389334-001
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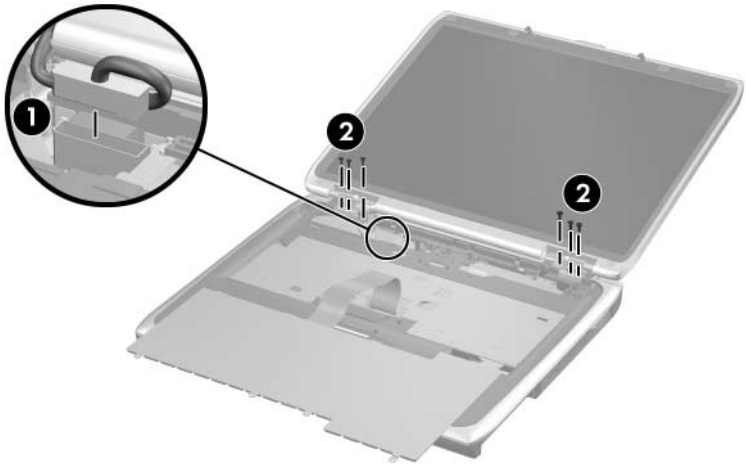
Display screw covers	371813-001
----------------------	------------

1. Prepare the notebook for disassembly ([Section 5.3](#)).
2. Remove the keyboard cover ([Section 5.7](#)).
3. Remove the keyboard ([Section 5.8](#)).
4. Remove the two PM2.0×5.0 screws that secure the wireless antenna boards to the notebook.



Removing the Wireless Antenna Boards

5. Disconnect the display cable ❶ from the system board.
6. Remove the six PM2.0×6.0 screws ❷ that secure the display to the notebook.



Removing the Display Assembly Screws

7. Position the notebook with the rear panel toward you.
8. Position the display perpendicular to the notebook.
9. Remove the two PM2.0×6.0 screws ❶ that secure the display to the notebook.
10. Lift the display straight up and remove it ❷.



Removing the Display Assembly

Reverse the above procedure to install the display assembly.

5.13 Top Cover

Top Cover Spare Part Number Information

For use on HP Pavilion ze4900 notebook models	371799-001
For use on HP Compaq nx9040 notebook models	373291-001
For use on HP Compaq nx9030 and nx9020 notebook models	371801-001
For use on Compaq Presario 2200 notebook models	371800-001

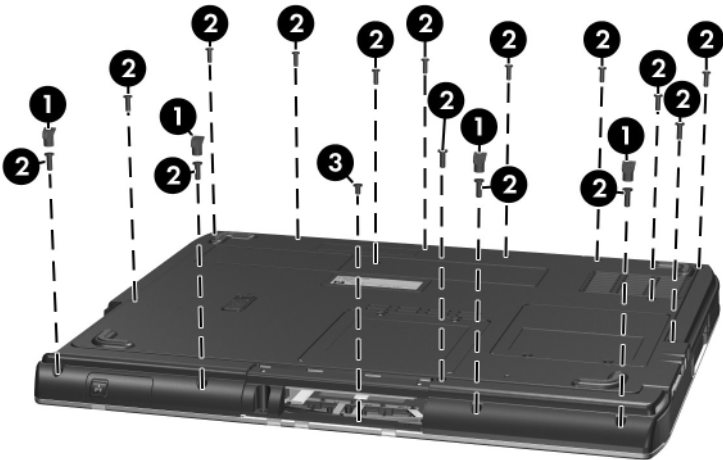
1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - ❑ Keyboard cover ([Section 5.7](#))
 - ❑ Keyboard ([Section 5.8](#))
 - ❑ Switch board ([Section 5.9](#))
 - ❑ Speakers ([Section 5.10](#))
 - ❑ Optical drive ([Section 5.11](#))
 - ❑ Display assembly ([Section 5.12](#))
2. Turn the notebook upside-down with the front panel toward you.

3. Remove the four rubber covers **1** that conceal the top cover front edge screws.



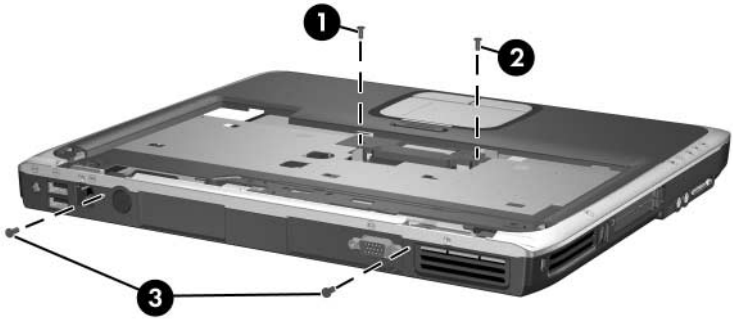
Spare part number 371808-001 should be used to replace the top cover rubber screw covers.

4. Remove the fifteen PM2.0×6.0 screws **2** that secure the top cover to the notebook.
5. Remove the PM2.0×4.0 screw **3** in the hard drive bay that secures the top cover to the notebook.



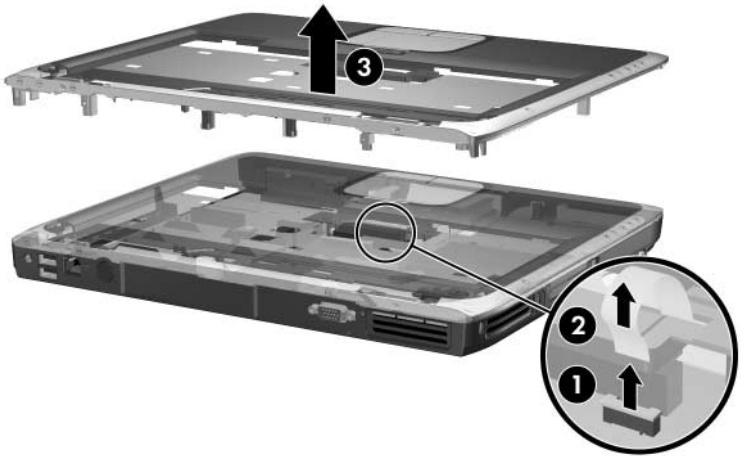
Removing the Top Cover Screws

6. Turn the notebook top-side up with the rear panel toward you.
7. Remove the PM2.0×8.0 screw **1** and the PM2.0×9.0 screw **2** that secure the top cover to the notebook.
8. Remove the two PM2.0×4.0 screws **3** that secure the top cover to the notebook.



Removing the Top Cover Screws (continued)

9. Release the ZIF connector ❶ to which the TouchPad cable is attached and disconnect the cable ❷ from the system board.
10. Lift the top cover straight up and remove it ❸.



Removing the Top Cover

Reverse the above procedure to install the top cover.

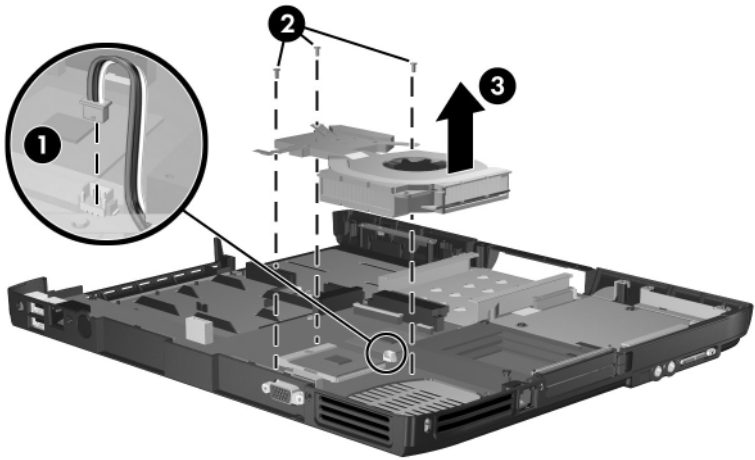
5.14 Heat Sink

Heat Sink Spare Part Number Information

Heat sink	371796-001
Thermal Pad Kit (not illustrated)	371809-001

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - ❑ Keyboard cover ([Section 5.7](#))
 - ❑ Keyboard ([Section 5.8](#))
 - ❑ Switch board ([Section 5.9](#))
 - ❑ Speakers ([Section 5.10](#))
 - ❑ Optical drive ([Section 5.11](#))
 - ❑ Display assembly ([Section 5.12](#))
 - ❑ Top cover ([Section 5.13](#))

2. Disconnect the fan cable ❶ from the system board.
3. Remove the three PM1.5×5.0 screws ❷ that secure the heat sink to the notebook.
4. Remove the heat sink ❸.



Removing the Heat Sink



Carefully clean any thermal pad residue from the heat sink and processor surfaces each time you remove the heat sink. Install a new thermal pad.

A thermal pad is included with the replacement heat sink and is also available using spare part number 371809-001.

Reverse the above procedure to install the heat sink.


5.15 Processor

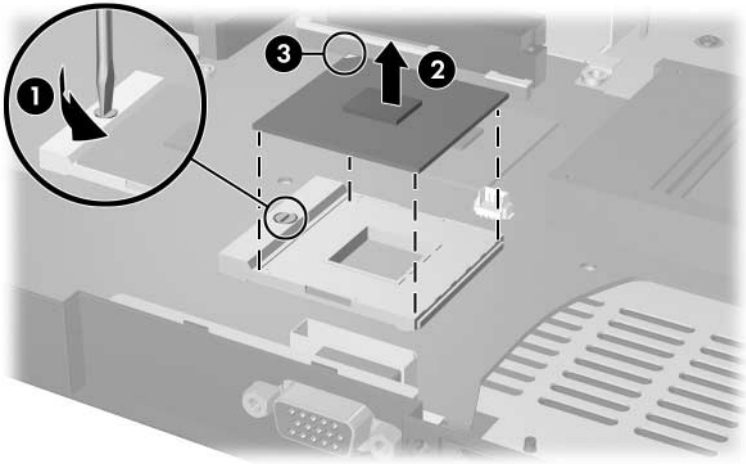
Processor Spare Part Number Information

Intel Pentium M 755 (2.0-GHz) with 400-MHz FSB	383791-001
Intel Pentium M 745 (1.8-GHz) with 400-MHz FSB	371760-001
Intel Pentium M 735 (1.7-GHz) with 400-MHz FSB	371759-001
Intel Pentium M 725 (1.6-GHz) with 400-MHz FSB	371758-001
Intel Pentium M 715 (1.5-GHz) with 400-MHz FSB	371757-001
Intel Pentium M 710 (1.4-GHz) with 400-MHz FSB	378152-001
Intel Pentium M 705 and TJ85 (1.6-GHz) with 400-MHz FSB	371762-001
Intel Pentium M 715 and TJ85 (1.5-GHz) with 400-MHz FSB	383790-001
Intel Pentium M 705 and TJ85 (1.5-GHz) with 400-MHz FSB	371761-001
Intel Celeron M 360 (1.4-GHz) with 400-MHz FSB	383792-001
Intel Celeron M 350 (1.3-GHz) with 400-MHz FSB	371763-001
Intel Celeron M 340 (1.5-GHz) with 400-MHz FSB	371766-001
Intel Celeron M 330 (1.4-GHz) with 400-MHz FSB	371765-001
Intel Celeron M 320 (1.3-GHz) with 400-MHz FSB	371764-001
Thermal Pad Kit (not illustrated)	371809-001

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - ❑ Keyboard cover ([Section 5.7](#))
 - ❑ Keyboard ([Section 5.8](#))
 - ❑ Switch board ([Section 5.9](#))
 - ❑ Speakers ([Section 5.10](#))
 - ❑ Optical drive ([Section 5.11](#))
 - ❑ Display assembly ([Section 5.12](#))
 - ❑ Top cover ([Section 5.13](#))
 - ❑ Heat sink ([Section 5.14](#))

2. Turn the processor locking screw **1** ¼-turn counterclockwise until you feel a click.
3. Lift the processor **2** straight up and remove it.

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



Removing the Processor

Reverse the above procedure to install the processor.

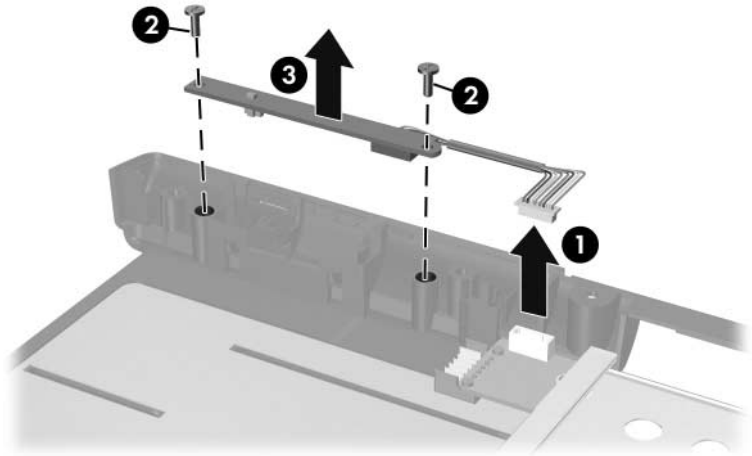
5.16 Wireless Button Board

wireless button board Spare Part Number Information

With infrared transceiver	373017-001
Without infrared transceiver	373016-001

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - ❑ Keyboard cover ([Section 5.7](#))
 - ❑ Keyboard ([Section 5.8](#))
 - ❑ Switch board ([Section 5.9](#))
 - ❑ Speakers ([Section 5.10](#))
 - ❑ Optical drive ([Section 5.11](#))
 - ❑ Display assembly ([Section 5.12](#))
 - ❑ Top cover ([Section 5.13](#))
 - ❑ Heat sink ([Section 5.14](#))

2. Disconnect the wireless button board cable **1** from the system board.
3. Remove the two PM2.0×4.0 screws **2** that secure the wireless button board to the notebook.
4. Remove the wireless button board **3**.



Removing the Wireless Button Board

Reverse the above procedure to install the wireless button board.

5.17 Diskette Drive



This section applies only to HP Compaq nx9040 notebook models.

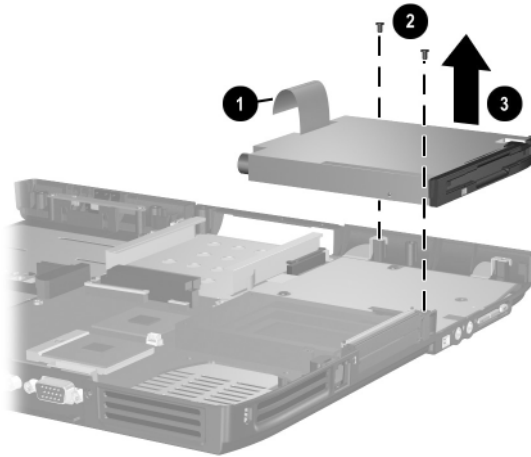
Diskette Drive Spare Part Number Information

Diskette drive

371779-001

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - Keyboard cover ([Section 5.7](#))
 - Keyboard ([Section 5.8](#))
 - Switch board ([Section 5.9](#))
 - Speakers ([Section 5.10](#))
 - Optical drive ([Section 5.11](#))
 - Display assembly ([Section 5.12](#))
 - Top cover ([Section 5.13](#))

2. Disconnect the diskette drive cable ❶ from the low insertion force (LIF) connector on the system board.
3. Remove the two PM2.0×4.0 screws ❷ that secure the diskette drive to the notebook.
4. Remove the diskette drive ❸.



Removing the Diskette Drive

Reverse the above procedure to install the diskette drive.

5.18 Diskette Drive Cover



This section applies to HP Pavilion ze4900, HP Compaq nx9030 and nx9020, and Compaq Presario 2200 notebook models.

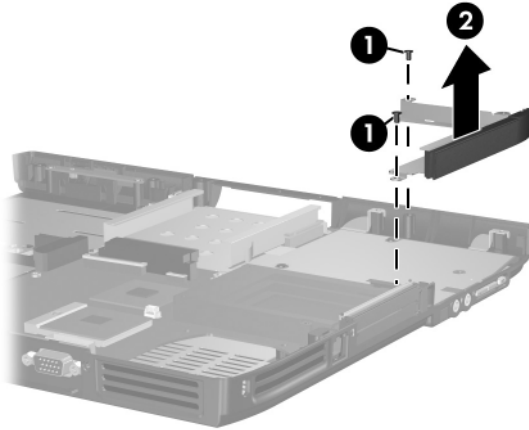
Diskette Drive Cover Spare Part Number Information

Diskette drive cover

371805-001

1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - Keyboard cover ([Section 5.7](#))
 - Keyboard ([Section 5.8](#))
 - Switch board ([Section 5.9](#))
 - Speakers ([Section 5.10](#))
 - Optical drive ([Section 5.11](#))
 - Display assembly ([Section 5.12](#))
 - Top cover ([Section 5.13](#))

2. Remove the two PM2.0x4.0 screws ❶ that secure the diskette drive cover to the notebook.
3. Remove the diskette drive cover ❷.



Removing the Diskette Drive Cover

Reverse the above procedure to install the diskette drive cover.

5.19 System Board

System Board Spare Part Number Information

For use only on notebook models without S-Video and 1394 digital connectors	371793-001
For use only on notebook models with S-Video and 1394 digital connectors	371794-001
For use on HP Compaq nx9040 notebook models	371795-001
Hard drive guide (not illustrated)	371798-001



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

- Memory modules ([Section 5.5](#))
- Mini PCI communications board ([Section 5.7](#))
- Heat sink ([Section 5.14](#))
- Processor ([Section 5.15](#))

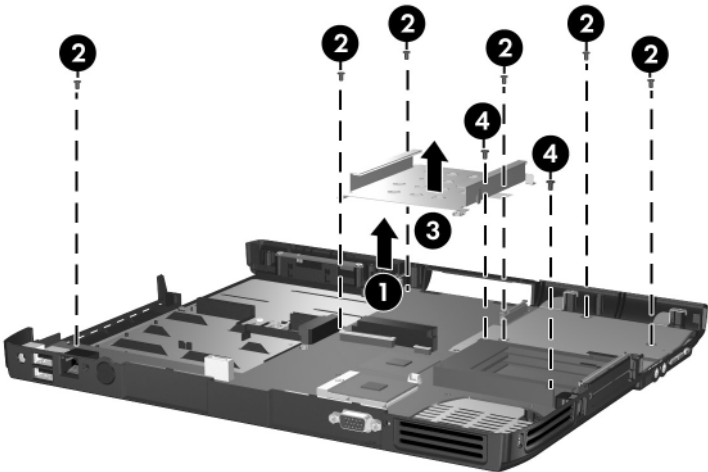
-
1. Prepare the notebook for disassembly ([Section 5.3](#)) and remove the following components:
 - ❑ Keyboard cover ([Section 5.7](#))
 - ❑ Keyboard ([Section 5.8](#))
 - ❑ Switch board ([Section 5.9](#))
 - ❑ Speakers ([Section 5.10](#))
 - ❑ Optical drive ([Section 5.11](#))
 - ❑ Display assembly ([Section 5.12](#))
 - ❑ Top cover ([Section 5.13](#))
 - ❑ Diskette drive cover ([Section 5.17](#))

2. Disconnect the wireless button board cable ❶ from the system board.
 3. Remove the six PM2.0×4.0 screws ❷ that secure the system board to the base enclosure.
 4. Remove the hard drive guide ❸.
-



Spare part number 371798-001 should be used to replace the hard drive guide.

5. Remove the two PM1.5×18.0 PC Card assembly screws ❹.

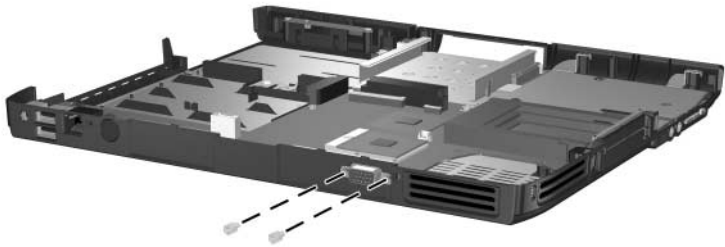


Removing the System Board Screws



Step 6 applies only to HP Pavilion ze4900, HP Compaq nx9030 and nx9020, and Compaq Presario 2200 notebook models.

6. Remove the two HM5.0×9.0 locks on each side of the external monitor port.

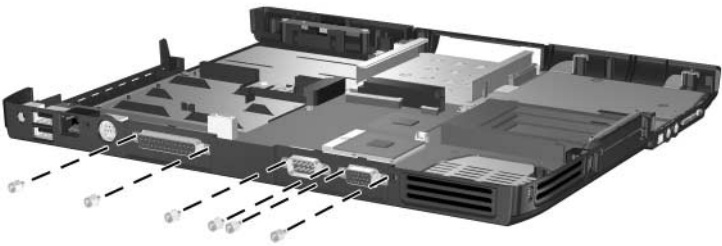


Removing the System Board Screwlocks - HP Pavilion ze4900, HP Compaq nx9030 and nx9020, and Compaq Presario 2200 Notebook Models Only



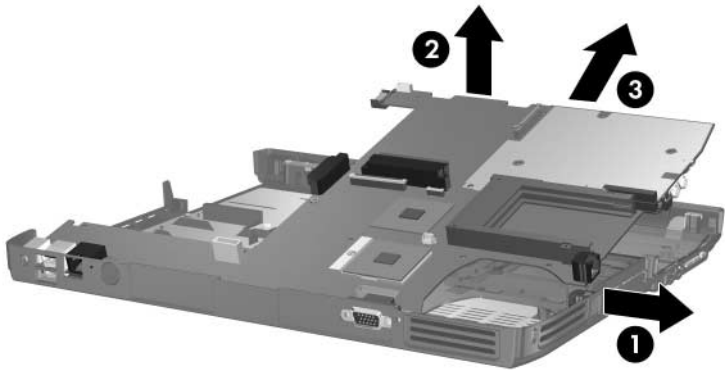
Step 7 applies only to HP Compaq nx9040 models.

7. Remove the six HM5.0×9.0 screwlocks on each side of the parallel, serial, and external monitor ports.



*Removing the System Board Screwlocks - HP Compaq nx9040
Notebook Models Only*

8. Flex the right side of the base enclosure near the audio jacks **1** until the jacks clear the base enclosure.
9. Lift the rear edge of the system board and swing it up **2** until the board rests at a 45-degree angle.
10. Slide the system board away from the base enclosure at an angle **3**.



Removing the System Board

Reverse the above procedure to install the system board.

Specifications

This chapter provides physical and performance specifications.

Table 6-1
Notebook

Dimensions		
with 15.0-inch display		
Height	4.19 cm	1.65 in
Width	27.23 cm	10.72 in
Depth	32.92 cm	12.96 in
with 14.1-inch display		
Height	3.89 cm	1.53 in
Width	27.23 cm	10.72 in
Depth	32.92 cm	12.96 in
Weight (varies by configuration)		
with 15.0-inch display and 8-cell battery pack	3.17 kg	6.99 lb
with 14.1-inch display and 8-cell battery pack	3.04 kg	6.70 lb
with 15.0-inch display and 6-cell battery pack	3.07 kg	6.78 lb
with 14.1-inch display and 6-cell battery pack	2.90 kg	6.39 lb
Stand-alone power requirements		
Nominal operating voltage	14.8 V dc	
Peak operating power	60.0 W	

Table 6-1
Notebook (Continued)


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
Relative humidity (noncondensing)		
Operating	10% to 90%	
Nonoperating	5% to 95%, 38.7°C (101.6°F) maximum wet bulb temperature	
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 to 500 Hz, 0.25 oct/min sweep rate	
Nonoperating	1.50 g zero-to-peak, 10 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 6-2
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 6-3
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 6-4
14.1-inch, XGA, TFT Display

Dimensions		
Height	28.5 cm	11.2 in
Width	21.3 cm	8.4 in
Diagonal	35.8 cm	14.1 in
Number of colors	up to 16.8 million	
Contrast ratio	250:1	
Brightness	180 nits typical	
Pixel resolution		
Pitch	0.279 × 0.279 mm	
Format	1024 × 768	
Configuration	RGB vertical stripe	
Backlight	Edge lit	
Character display	80 × 25	
Total power consumption	4 W	
Viewing angle	+/-40° horizontal, +20/-40° vertical typical	

Table 6-5
4200-rpm Hard Drives

	60-GB	40-GB	30-GB
User capacity per drive*	60 GB	40 GB	30 GB
Dimensions			
Height	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm
Weight	102 g	99 g	99 g
Interface type	ATA-5	ATA-5	ATA-5
Transfer rate			
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)			
Single track	3 ms	3 ms	2.5 ms
Average	13 ms	13 ms	12 ms
Maximum	24 ms	24 ms	23 ms
Logical blocks[†]	117,210,240	78,140,160	58,605,120
Disk rotational speed	4200 rpm	4200 rpm	4200 rpm
Operating temperature	5°C to 55°C (41°F to 131°F)	5°C to 55°C (41°F to 131°F)	5°C to 55°C (41°F to 131°F)



Certain restrictions and exclusions apply. Consult Customer Care for details.

*1 GB = 1 billion bytes when referring to hard drive storage capacity. Accessible capacity is less.

[†]Actual drive specifications may differ slightly.

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

Dimensions

Height	2.00 cm	.79 in
Width	9.40 cm	3.70 in
Depth	13.40 cm	5.28 in
Weight	.34 kg	.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 6-7
Optional 8-cell, Li-Ion Battery Pack

Dimensions

Height	2.00 cm	.79 in
Width	9.40 cm	3.70 in
Depth	13.40 cm	5.28 in
Weight	.34 kg	.75 lb

Energy

Voltage	14.4 V
Amp-hour capacity	4.4 Ah
Watt-hour capacity	65 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 6-8
DVD±RW and CD-RW Combo Drive

Applicable disk	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
Disk diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in

Table 6-8
DVD±RW and CD-RW Combo Drive (Continued)

Disk thickness	1.2 mm	0.047 in
Track pitch	0.74 μm	
Access time	CD media	DVD media
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 6-9
DVD/CD-RW Combo Drive

Applicable disk	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
Disk diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in

Table 6-9
DVD/CD-RW Combo Drive (Continued)

Disk 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	Audio-out, 0.7 Vrms	
Cache buffer	2 MB	
Data transfer rate		
CD-R (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
CD-RW (10X)	1500 KB/s (150 KB/s at 1X CD rate)	
CD-ROM (24X)	3600 KB/s (150 KB/s at 1X CD rate)	
DVD (8X)	10,800 KB/s (1352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 15 seconds	
Stop time	< 6 seconds	

Table 6-10
DVD-ROM Drive

Applicable disk	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 CD Plus Photo CD (single and multisession) CD-Bridge	
Center hole diameter	1.5 cm	0.59 in
Disk diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in
Disk thickness	1.2 mm	0.047 in

Table 6-10
DVD-ROM Drive (Continued)

Track pitch	0.74 μ m	
Access time	CD media	DVD media
Random	< 100 ms	< 125 ms
Full stroke	< 175 ms	< 225 ms
Audio output level	Audio-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 (1352 KB/s at 1X DVD rate)	
Multiword DMA mode 2	16.6 MB/s	
Startup time	< 10 seconds	
Stop time	< 3 seconds	

Table 6-11
CD-ROM Drive

Applicable disk	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
Disk diameter		
Standard disc	12 cm	4.72 in
Mini disc	8 cm	3.15 in
Disk thickness	1.2 mm	0.047 in
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	Audio-out, 0.7 Vrms	
Cache buffer	128 KB	
Data transfer rate		
CD-R (24X)	3,600 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 6-12
System DMA

Hardware DMA	System Function
DMA0	n/a
DMA1*	n/a
DMA2*	n/a
DMA3	n/a
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 6-13
System Interrupts

Hardware IRQ	System Function
IRQ0	System timer
IRQ1	Standard 101-/102-Key or Microsoft Natural Keyboard
IRQ2	Cascaded
IRQ3	Intel 82801DB/DBM USB2 Enhanced Host Controller—24CD
IRQ4	COM1
IRQ5*	Conexant AC—Link Audio Intel 82801DB/DBM SMBus Controller—24C3 Soft V92 Data Fax Modem with SmartCP
IRQ6	Diskette drive
IRQ7*	Parallel port
IRQ8	System CMOS/real time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ10*	Intel USB UHCI controller—24C2 Intel 82852/82855 GM/GME Graphic Controller Realtek RTL8139 Family PCI fast Ethernet Controller

Table 6-13
System Interrupts (Continued)


Hardware IRQ	System Function
IRQ11	Intel USB EHCI controller—24CD Intel USB UHCI controller—24C4 Intel USB UHCI controller—24C7 Intel Pro/Wireless 2200BG TI OHCI 1394 host controller TI PCI1410 cardbus controller
IRQ12	Synaptics PS/2 touch pad
IRQ13	Numeric data processor
IRQ14	Primary IDE channel
IRQ15	Secondary IDE channel
 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.	
*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.	

Table 6-14
System I/O Addresses

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

Table 6-14
System I/O Addresses (Continued)

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

Table 6-14
System I/O Addresses (Continued)

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

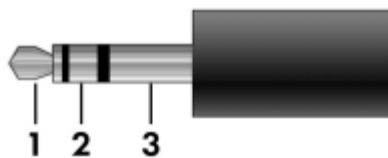
Table 6-15
System Memory Map

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	04800000-07FFFFFFF	Unused
2 MB	08000000-080FFFFF	Video memory (direct access)
4 GB	08200000-FFFEFFFF	Unused
64 KB	FFFF0000-FFFFFFFF	System BIOS

A

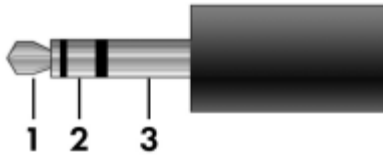
Connector Pin Assignments

Table A-1
Audio-In (Microphone)



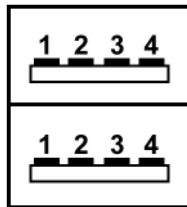
Pin	Signal	Pin	Signal
1	Audio signal in	2	Ground
3	Audio signal in		

Table A-2
Audio-Out (Headphone)



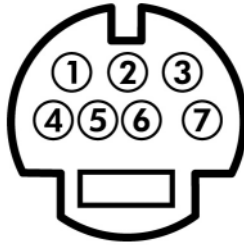
Pin	Signal	Pin	Signal
1	Audio out, left channel	2	Ground
3	Audio out, right channel		

Table A-3
Universal Serial Bus



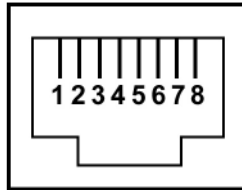
Pin	Signal	Pin	Signal
1	+5 VDC	3	Data +
2	Data -	4	Ground

Table A-4
S-Video



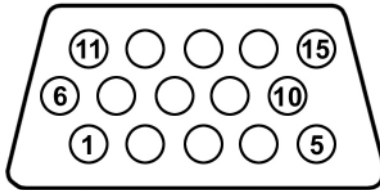
Pin	Signal	Pin	Signal
1	S-VHS color (C) signal	5	TV-CD
2	Composite video signal	6	S-VHS intensity ground
3	S-VHS intensity (Y) signal	7	Composite video ground
4	S-VHS color ground		

Table A-5
RJ-45 (Network)



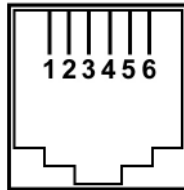
Pin	Signal	Pin	Signal
1	Transmit +	5	Unused
2	Transmit -	6	Receive -
3	Receive +	7	Unused
4	Unused	8	Unused

Table A-6
External Monitor



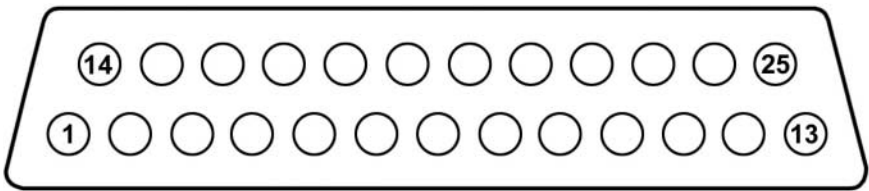
Pin	Signal	Pin	Signal
1	Red analog	9	+5 VDC
2	Green analog	10	Ground
3	Blue analog	11	Monitor detect
4	Not connected	12	DDC 2B data
5	Ground	13	Horizontal sync
6	Ground analog	14	Vertical sync
7	Ground analog	15	DDC 2B clock
8	Ground analog		

Table A-7
RJ-11 (Modem)



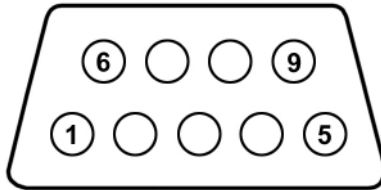
Pin	Signal	Pin	Signal
1	Unused	4	Unused
2	Tip	5	Unused
3	Ring	6	Unused

Table A-8
Parallel



Pin	Signal	Pin	Signal
1	Strobe	14	Auto linefeed
2	Data bit 0	15	Error
3	Data bit 1	16	Initialize paper
4	Data bit 2	17	Select in
5	Data bit 3	18	Ground
6	Data bit 4	19	Ground
7	Data bit 5	20	Ground
8	Data bit 6	21	Ground
9	Data bit 7	22	Ground
10	Acknowledge	23	Ground
11	Busy	24	Ground
12	Paper end	25	Ground
13	Select		

Table A-9
Serial



Pin	Signal	Pin	Signal
1	Carrier detect	6	Data set ready
2	Receive data	7	Ready to send
3	Transmit data	8	Clear to send
4	Data terminal ready	9	Ring indicator
5	Ground		

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



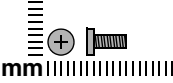
NOTES:

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 used in the notebook. All screws listed in this appendix are available in the Miscellaneous Screw Kit, spare part number 373294-001.

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

	Color	Qty.	Length	Thread	Head Width
	Black	27	6.0 mm	2.0 mm	4.0 mm

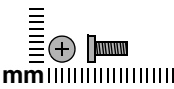
Where used:

2 screws that secure the hard drive to the notebook (documented in [Section 5.3](#))



Phillips PM2.0x6.0 Screw Locations

Table C-1
Phillips PM2.0x6.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	27	6.0 mm	2.0 mm	4.0 mm

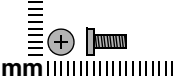
Where used:

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



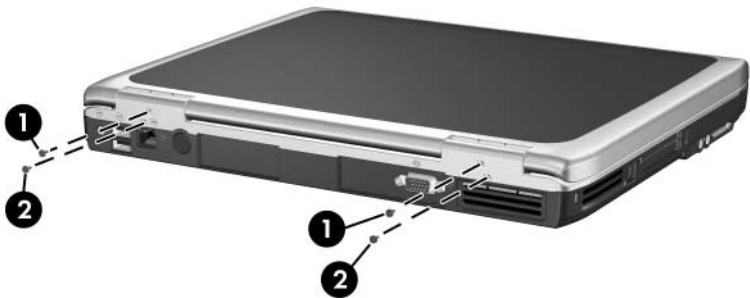
Phillips PM2.0x6.0 Screw Locations

Table C-1
Phillips PM2.0×6.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	27	6.0 mm	2.0 mm	4.0 mm

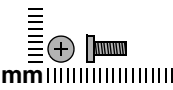
Where used:

- ❶ Two screws that secure the keyboard cover to the notebook (documented in [Section 5.7](#))
- ❷ Two screws that secure the display assembly to the notebook (documented in [Section 5.12](#))



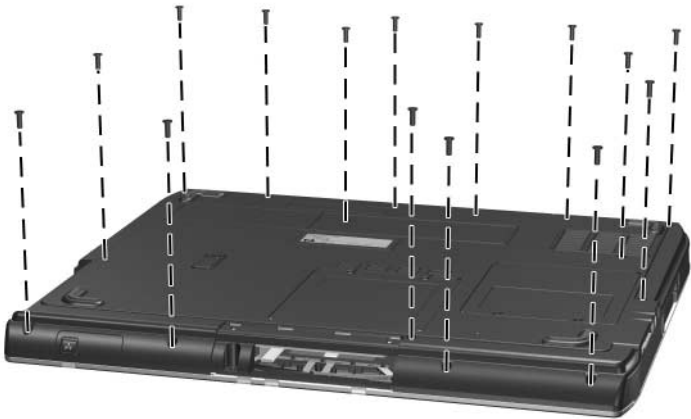
Phillips PM2.0×6.0 Screw Locations

Table C-1
Phillips PM2.0x6.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	27	6.0 mm	2.0 mm	5.0 mm

Where used:

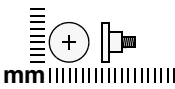
15 screws that secure the top cover to the notebook (documented in [Section 5.13](#))

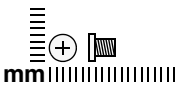


Phillips PM2.0x6.0 Screw Locations

Table C-2

Phillips PM1.5x5.0 Shoulder Screw and PM2.5x4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	2	5.0 mm	1.5 mm	5.0 mm

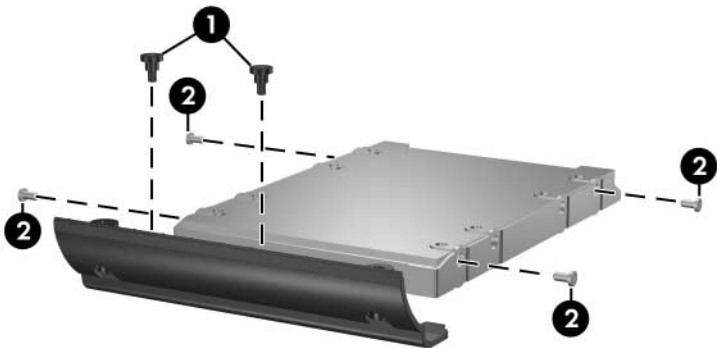
	Color	Qty.	Length	Thread	Head Width
	Silver	4	4.0 mm	2.5 mm	4.0 mm

Where used:

① Two Phillips PM1.5x5.0 shoulder screws that secure the hard drive bezel to the hard drive (documented in [Section 5.3](#))

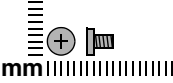
Where used:

② Four Phillips PM2.5x4.0 screws that secure the hard drive frame to the hard drive (documented in [Section 5.3](#))



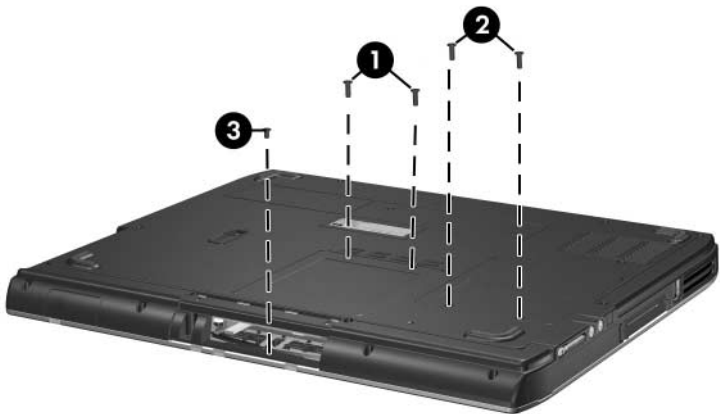
Phillips PM1.5x5.0 Shoulder Screw and PM2.5x4.0 Screw Locations

Table C-3
Phillips PM2.0×4.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	23	4.0 mm	2.0 mm	4.0 mm

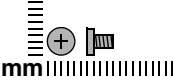
Where used:

- ❶ Two screws that secure the memory module compartment cover to the notebook (documented in [Section 5.5](#))
- ❷ Two screws that secure the Mini PCI compartment cover to the notebook (documented in [Section 5.6](#))
- ❸ One screw that secures the top cover to the notebook (documented in [Section 5.13](#))



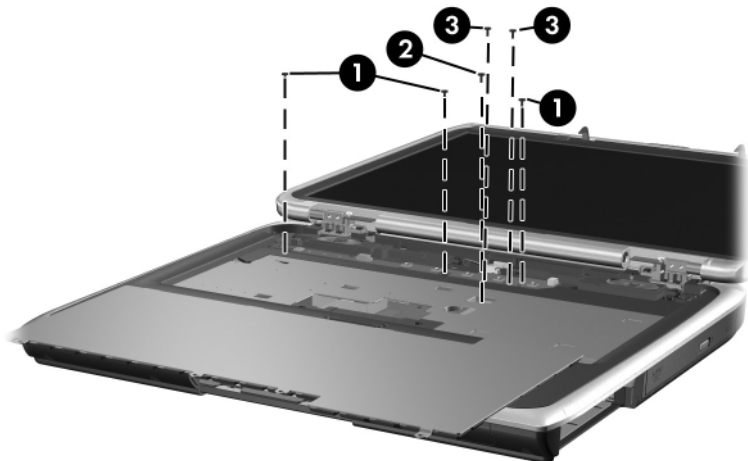
Phillips PM2.0×4.0 Screw Locations

Table C-3
Phillips PM2.0×4.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	23	4.0 mm	2.0 mm	4.0 mm

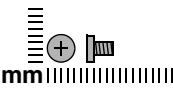
Where used:

- ❶ Three screws that secure the keyboard to the notebook (documented in [Section 5.8](#))
- ❷ Two screws that secure the switch board to the notebook (documented in [Section 5.9](#))
- 🔧 HP Pavilion ze4900 notebook models use only one PM2.0×4.0 screw to secure the switch board to the notebook.
- ❸ One screw that secures the optical drive to the notebook (documented in [Section 5.11](#))



Phillips PM2.0×4.0 Screw Locations

Table C-3
Phillips PM2.0x4.0 Screw (Continued)

	Color	Qty.	Length	Thread	Head Width
	Black	23	4.0 mm	2.0 mm	4.0 mm

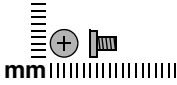
Where used:

2 screws that secure the top cover to the notebook (documented in [Section 5.13](#))



Phillips PM2.0x4.0 Screw Locations

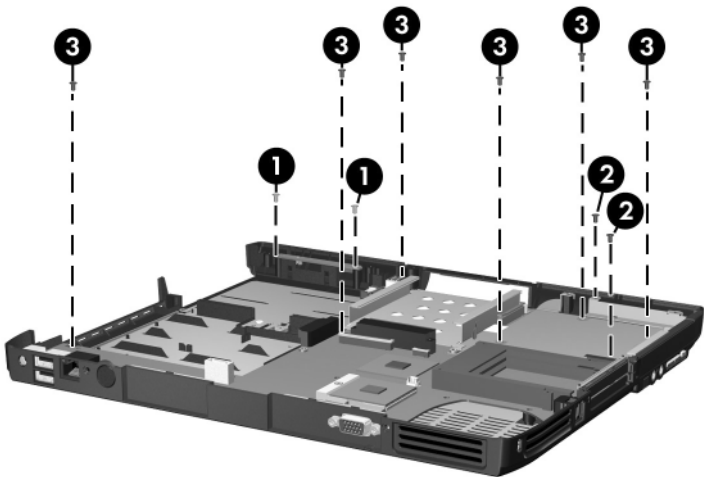
Table C-3
Phillips PM2.0x4.0 Screw (Continued)



Color	Qty.	Length	Thread	Head Width
Black	23	4.0 mm	2.0 mm	4.0 mm

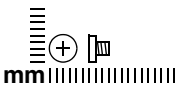
Where used:

- ❶ Two screws that secure the wireless button board to the notebook (documented in [Section 5.16](#))
- ❷ Two screws that secure the diskette drive (documented in [Section 5.17](#)) or diskette drive cover (documented in [Section 5.17](#)) to the notebook
- ❸ Six screws that secure the system board to the notebook (documented in [Section 5.19](#))



Phillips PM2.0x4.0 Screw Locations

Table C-4
Silver Phillips PM2.0×3.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	1	3.0 mm	2.0 mm	4.0 mm

Where used:

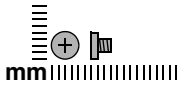
One screw that secures the keyboard to the notebook (documented in [Section 5.8](#))



Silver Phillips PM2.0×3.0 Screw Location

Table C-4

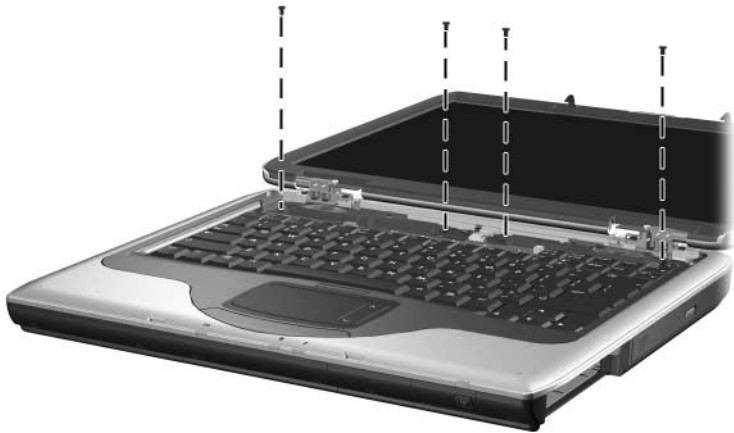
Black Phillips PM2.0×3.0 Screw (Continued)



Color	Qty.	Length	Thread	Head Width
Black	4	3.0 mm	2.0 mm	4.0 mm

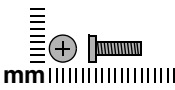
Where used:

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



Black Phillips PM2.0×3.0 Screw Locations

Table C-5
Phillips PM2.0x8.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	2	8.0 mm	2.0 mm	4.0 mm

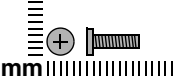
Where used:

One screw that secures the optical drive to the notebook (documented in [Section 5.11](#))



Phillips PM2.0x8.0 Screw Location

Table C-5
Phillips PM2.0x8.0 Screw (*Continued*)

	Color	Qty.	Length	Thread	Head Width
	Black	2	8.0 mm	2.0 mm	4.0 mm

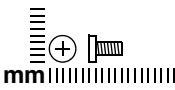
Where used:

One screw that secures the top cover to the notebook (documented in [Section 5.13](#))



Phillips PM2.0x8.0 Screw Location

Table C-6
Phillips PM2.0x5.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Silver	2	5.0 mm	2.0 mm	4.0 mm

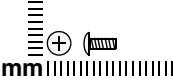
Where used:

2 screws that secure the wireless antenna boards to the notebook (documented in [Section 5.12](#))



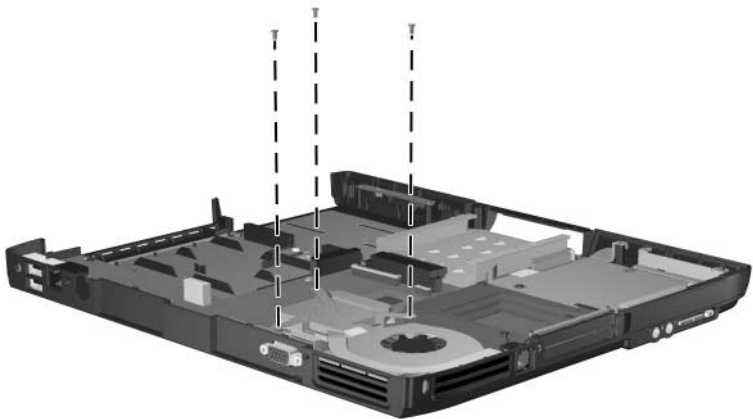
Phillips PM2.0x5.0 Screw Locations

Table C-7
Phillips PM1.5x5.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Black	3	5.0 mm	1.5 mm	5.0 mm

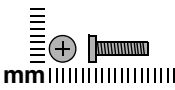
Where used:

3 screws that secure the heat sink to the notebook (documented in [Section 5.14](#))



Phillips PM1.5x5.0 Screw Locations

Table C-8
Phillips PM2.0×9.0 Screw

	Color	Qty.	Length	Thread	Head Width
	Black	1	9.0 mm	2.0 mm	4.0 mm

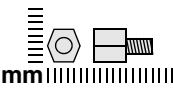
Where used:

One screw that secures the top cover to the notebook (documented in [Section 5.13](#))



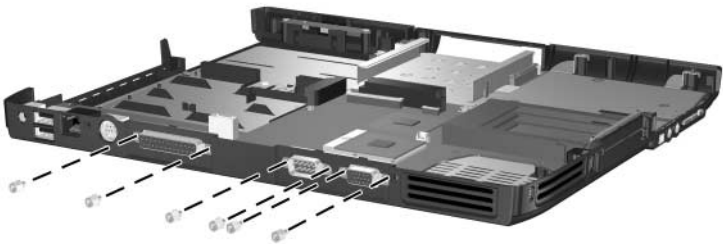
Phillips PM2.0×9.0 Screw Location

Table C-9
Hex HM5.0x9.0 Screwlock

	Color	Qty.	Length	Thread	Head Width
Silver	8	9.0 mm	2.5 mm	5.0 mm	

Where used:

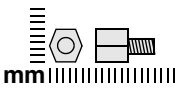
6 screwlocks that secure the system board to the notebook (documented in [Section 5.19](#), HP Compaq nx9040 notebook models only)



Hex HM5.0x9.0 Screwlock Locations - HP Compaq nx9040 Notebook Models

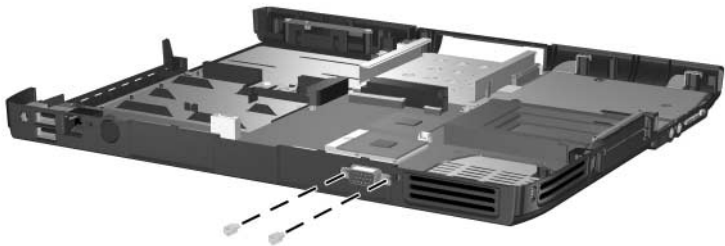
Table C-9

Hex HM5.0×9.0 Screwlock (*Continued*)

	Color	Qty.	Length	Thread	Head Width
	Silver	8	9.0 mm	2.5 mm	5.0 mm

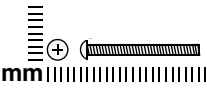
Where used:

2 screwlocks that secure the system board to the notebook (documented in [Section 5.19](#), all notebook models except HP Compaq nx9040)



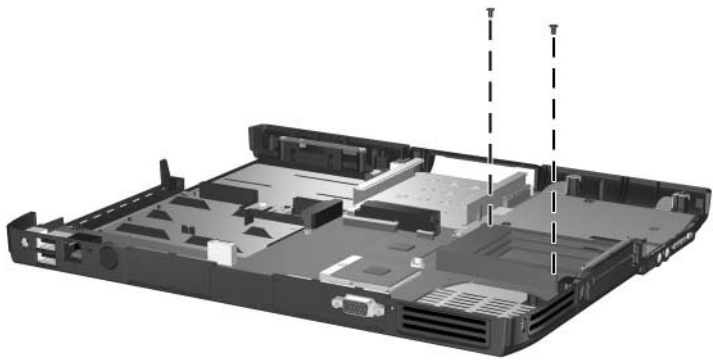
Hex HM5.0×9.0 Screwlock Locations - All Notebook Models Except HP Compaq nx9040

Table C-10
Phillips PM1.5x12.0 Screw

 mm	Color	Qty.	Length	Thread	Head Width
	Silver	2	12.0 mm	1.5 mm	5.0 mm

Where used:

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



Phillips PM1.5x12.0 Screw Locations

Index

1394 port 1-19, 1-21

A

AC adapter, spare part number
3-16

antennae 1-15, 1-17

arrow keys 1-23, 1-25

audio troubleshooting 2-23

audio-in (microphone) jack

location 1-19, 1-21

pin assignments A-1

audio-out (headphone) jack

location 1-19, 1-21

pin assignments A-2

B

base enclosure button panel,
spare part numbers 3-9

base enclosure, spare part
numbers 3-9

battery bay 1-15, 1-17, 1-31

battery light 1-15, 1-17

battery pack

removal 5-5

spare part numbers 3-13

specifications 6-7, 6-8

battery pack release latch 1-31

bottom components 1-30

C

cables, service considerations
4-2

caps lock key 1-23, 1-25

caps lock light 1-27, 1-29

CD-ROM drive

OS loading problems 2-22

precautions 4-3

removal 5-23

spare part number 3-9,
3-15, 5-23

specifications 6-15

components

bottom 1-30

front 1-14, 1-16

keyboard 1-22, 1-24

left-side 1-18, 1-20

rear 1-18, 1-20

right-side 1-14, 1-16

top 1-26, 1-28

Computer Setup

Advanced Menu 2-6

File Menu 2-3

overview 2-1

Security Menu 2-4

Tools Menu 2-5

Computer Setup defaults 2-2

- connector pin assignments
 - external monitor A-5
 - headphone A-2
 - microphone A-1
 - modem A-6
 - monitor A-5
 - network A-4
 - parallel A-7
 - RJ-11 (modem) A-6
 - RJ-45 (network) A-4
 - serial A-8
 - S-Video A-3
 - Universal Serial Bus (USB) A-2
- connectors, service considerations 4-2

D

- design overview 1-32
- disassembly sequence chart 5-3
- diskette drive
 - location 1-21
 - OS loading problems 2-21
 - precautions 4-3
 - removal 5-39
 - spare part number 3-9, 3-15, 5-39
- diskette drive cover
 - removal 5-41
 - spare part number 3-9, 5-41
- display assembly
 - removal 5-25
 - spare part numbers 3-3, 5-25
 - specifications 6-3, 6-4, 6-5
- display hinge bracket, spare part number 3-3, 5-25
- display release button 1-15, 1-17
- display screw covers, spare part number 3-3, 5-25
- DMA specifications 6-16
- docking device, troubleshooting 2-16
- drives, preventing damage 4-3
- DVD/CD-RW Combo Drive
 - OS loading problems 2-22
 - precautions 4-3
 - removal 5-23
 - spare part number 3-9, 3-15, 5-23
 - specifications 6-11
- DVD±RW and CD-RW Combo Drive
 - OS loading problems 2-22
 - precautions 4-3
 - removal 5-23
 - spare part number 3-9, 3-15, 5-23
 - specifications 6-9
- DVD-ROM drive
 - OS loading problems 2-22
 - precautions 4-3
 - removal 5-23
 - spare part number 3-9, 3-15, 5-23
 - specifications 6-13

- E**
electrostatic discharge 4-4, 4-8
exhaust vents 1-19, 1-21,
1-31
external monitor port
location 1-19, 1-21
pin assignments A-5
- F**
f1 to f12 keys 1-23, 1-25
features 1-10
feet
locations 5-10
spare part number 3-9,
5-10
flowcharts, troubleshooting
no audio 2-23, 2-24
no network/modem
connection 2-28
no OS loading 2-17
no OS loading from
diskette drive 2-21
no OS loading from hard
drive 2-18, 2-19, 2-20
no OS loading from optical
drive 2-22
no power 2-10, 2-12, 2-13
no video 2-14, 2-15
nonfunctioning device
2-25
nonfunctioning docking
device 2-16
nonfunctioning keyboard
2-26
nonfunctioning pointing
device 2-27
front components 1-14, 1-16
function key 1-23, 1-25
- G**
grounding equipment and
methods 4-7
- H**
hard drive
OS loading problems 2-18
precautions 4-3
removal 5-7
spare part numbers 3-11,
3-15
specifications 6-6
hard drive bay 1-15, 1-17,
1-31
hard drive cover, removal 5-7
hard drive guide, spare part
number 3-7, 5-43
hard drive tray, spare part
number 3-11
headphone jack
location 1-19
pin assignments A-2
heat sink
removal 5-33
spare part number 3-5, 5-33
- I**
I/O address specifications
6-19
IDE drive light 1-15, 1-17
infrared port 1-17
Integrated Drive Electronics
light 1-15, 1-17
interrupt specifications 6-17

K

- keyboard
 - removal 5–18
 - spare part numbers 3–5, 5–18
 - troubleshooting 2–26
- keyboard components 1–22, 1–24
- keyboard cover
 - removal 5–16
 - spare part numbers 3–3, 5–16
- keypad keys 1–23, 1–25
- keypad light 1–27, 1–29

L

- label area 1–31
- left-side components 1–18, 1–20
- Logo Kit, spare part number 3–16

M

- mass storage devices, spare part numbers 3–14
- memory map specifications 6–22
- memory module
 - removal 5–11
 - spare part numbers 3–13, 5–11
- memory module compartment cover
 - removal 5–11
 - spare part number 3–13

microphone jack

- location 1–19, 1–21
- pin assignments A–1

Mini PCI communications board

- removal 5–13
- spare part numbers 3–11

Mini PCI compartment 1–31

Mini PCI compartment cover

- removal 5–14
- spare part number 3–13

models 1–2

modem jack

- location 1–19, 1–21
- pin assignments A–6

modem, troubleshooting 2–28

monitor port

- location 1–19, 1–21
- pin assignments A–5

mute button 1–19, 1–21

mute light 1–19, 1–21

N

network jack

- location 1–18, 1–20
- pin assignments A–4

network, troubleshooting 2–28

nonfunctioning device, troubleshooting 2–16, 2–25

notebook feet

- locations 5–10
- spare part number 3–9, 5–10

notebook specifications 6–1

notebook, resetting 1–12

num lock key 1–23, 1–25

numeric lock light 1–27, 1–29

O

- One-Touch buttons 1–27, 1–29
- optical drive
 - location 1–15, 1–17
 - OS loading problems 2–22
 - removal 5–23
 - spare part number 5–23
 - spare part numbers 3–9, 3–15

P

- packing precautions 4–5
- parallel port
 - location 1–20
 - pin assignments A–7
- PC Card eject buttons 1–19, 1–21
- PC Card slots 1–19, 1–21
- plastic parts 4–2
- pointing device,
 - troubleshooting 2–27
- power button 1–27, 1–29
- power connector 1–18, 1–20
- power cord
 - set requirements B–2
- power cord, spare part numbers 3–16
- power management features 1–13
- power, troubleshooting 2–10
- power/standby light 1–15, 1–17
- precautions
 - hard drive 4–3
 - optical drive 4–3

processor

- removal 5–35
- spare part numbers 3–7, 5–35

R

- rear components 1–18, 1–20
- removal
 - preliminaries 4–1
 - procedures 5–1
- replacement
 - preliminaries 4–1
 - procedures 5–1
- resetting the notebook 1–12
- right-side components 1–14, 1–16
- RJ-11 (modem) jack
 - location 1–19, 1–21
 - pin assignments A–6
- RJ-45 (network) jack
 - location 1–18, 1–20
 - pin assignments A–4

S

- Screw Kit, spare part number 3–16
- screw listing C–1
- screw plugs, spare part number 3–9
- security cable slot 1–19, 1–21
- serial number 3–1, 5–2
- serial port
 - location 1–20
 - pin assignments A–8
- service considerations 4–2

- speakers
 - location 1-27, 1-29
 - removal 5-22
- specifications
 - battery pack 6-7, 6-8
 - CD-ROM drive 6-15
 - display 6-3, 6-4, 6-5
 - DMA 6-16
 - DVD/CD-RW Combo Drive 6-11
 - DVD±RW and CD-RW Combo Drive 6-9
 - DVD-ROM drive 6-13
 - hard drive 6-6
 - I/O addresses 6-19
 - interrupts 6-17
 - memory map 6-22
 - notebook 6-1
- static shielding materials 4-8
- S-Video jack
 - location 1-18, 1-20
 - pin assignments A-3
- switch board
 - removal 5-20
 - spare part numbers 5-20
- system board
 - removal 5-43
 - spare part numbers 3-7, 5-43
- system memory map 6-22

T

- Thermal Pad Kit, spare part number 5-33
- thermal pad, spare part number 3-5, 3-7, 5-35

- tools required 4-1
- top components 1-26, 1-28
- top cover
 - removal 5-29
 - spare part numbers 3-5, 5-29
- TouchPad 1-27, 1-29
- TouchPad buttons 1-27, 1-29
- TouchPad light 1-27, 1-29
- TouchPad on button 1-27, 1-29
- TouchPad vertical scrolling region 1-27, 1-29
- transporting precautions 4-5
- troubleshooting
 - audio 2-23
 - Computer Setup 2-2
 - docking device 2-16
 - flowcharts 2-7
 - keyboard 2-26
 - modem 2-28
 - network 2-28
 - nonfunctioning device 2-16, 2-25
 - OS loading 2-17
 - overview 2-1
 - pointing device 2-27
 - power 2-10
 - video 2-14

U

- Universal Serial Bus (USB) connector
 - location 1-18, 1-20
 - pin assignments A-2

V

- video troubleshooting 2–14
- volume down button 1–19,
1–21
- volume mute button 1–19,
1–21
- volume up button 1–19, 1–21

W

- Windows applications key
1–23, 1–25
- Windows logo key 1–23, 1–25
- wireless button 1–15, 1–17
- wireless button board
 - removal 5–37
 - spare part numbers 5–37
- wireless button light 1–15,
1–17
- wireless LAN antenna cables,
spare part number 3–9
- wireless LAN, spare part
numbers 3–11
- workstation precautions 4–6