Compaq Presario CQ71 Notebook PC and HP G71 Notebook PC

Maintenance and Service Guide

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Safety warning notice

⚠ **WARNING!** To reduce the possibility of heat-related injuries or of overheating the computer, do not place the computer directly on your lap or obstruct the computer air vents. Use the computer only on a hard, flat surface. Do not allow another hard surface, such as an adjoining optional printer, or a soft surface, such as pillows or rugs or clothing, to block airflow. Also, do not allow the AC adapter to contact the skin or a soft surface, such as pillows or rugs or clothing, during operation. The computer and the AC adapter comply with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC 60950).

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1 Product description

Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
Product Name	Compaq Presario CQ71 Notebook PC	**X**			**X**		
	HP G71 Notebook PC		**X**	**X**		**X**	**X**
Processors	**Intel® Core®2 Duo processors:**						
	P8700 2.53-GHz processor (3-MB L2 cache, 1066-MHz front-side bus (FSB))	**X**	**X**	**X**	**X**	**X**	**X**
	P7450 2.13-GHz processor (3-MB L2 cache, 1066-MHz FSB)	**X**	**X**	**X**	**X**	**X**	**X**
	T6600 2.2-GHz processor (2-MB L2 cache, 800-MHz FSB)	**X**	**X**	**X**	**X**	**X**	**X**
	T6400 2.0-GHz processor (2-MB L2 cache, 800-MHz FSB)	**X**	**X**	**X**	**X**	**X**	**X**
	Intel Pentium® Processors:						
	T3400 2.16-GHz processor (1-MB L2 cache, 667-MHz FSB)	**X**	**X**	**X**	**X**	**X**	**X**
	T4200 2.00-GHz processor (1-MB L2 cache, 800-MHz FSB)	**X**	**X**	**X**	**X**	**X**	**X**
	Intel Celeron® Processors:						

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	585 2.16-GHz processor (1-MB L2 cache, 667-MHz FSB)	X	X	X			
	T1700 1.83-GHz processor (1-MB L2 cache, 667-MHz FSB)	X	X	X			
	900 2.2-GHz processor (1-MB L2 cache, 667-Mhz FSB)	X	X	X			
	T1600 1.66-GHz processor (1-MB L2 cache, 667-MHz FSB)	X	X	X			
Chipset	Northbridge						
	Intel GL40	X	X	X			
	Intel GM45	X	X	X			
	Intel PM45				X	X	X
	Southbridge: Intel ICH8M	X	X	X	X	X	X
Graphics	Intel GMA 4500M (shared memory)	X	X	X			

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	Intel GMA 4500MHD (shared memory) • Up to 285 MB on computer models equipped with 1024 MB of main system memory • Up to 797 MB on computer models equipped with 2048 MB of main system memory • Up to 1309 MB on computer models equipped with 3072 MB of main system memory • Up to 1309 MB on computer models equipped with 4096 MB of main system memory (32-bit OS) • Up to 1759 MB on computer models equipped with 4096 MB of main system memory (64-bit OS)	**X**	**X**	**X**			

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	NVIDIA N10M-GE2-S with 512 MB dedicated video memory • Up to 767 MB on computer models equipped with 1024 MB of main system memory • Up to 1278 MB on computer models equipped with 2048 MB of main system memory • Up to 1790 MB on computer models equipped with 3072 MB of main system memory • Up to 1790 MB on computer models equipped with 4096 MB of main system memory (32-bit OS) • Up to 2302 MB on computer models equipped with 4096 MB of main system memory (64-bit OS)				X	X	X
Panel	17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel	X	X	X	X	X	X
Memory	2 SODIMM slots	X	X	X	X	X	X
	Customer-accessible/ upgradable	X	X	X	X	X	X

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	Support for DDR2 dual-channel 800-MHz	X	X	X	X	X	X
	Support up to 4-GB max system memory in the following configurations:	X	X	X	X	X	X
	• 1024-MB (1024×1)	X	X	X	X	X	X
	• 2048-MB (1024×2)	X	X	X	X	X	X
	• 2048-MB (2048 ×1)	X	X	X	X	X	X
	• 3072-MB (1024×1 + 2048×1)	X	X	X	X	X	X
	• 4096-MB (2048×2)	X	X	X	X	X	X
Hard drives	Support for 9.5-mm, 6.35-cm (2.50-in) hard drives	X	X	X	X	X	X
	Customer accessible	X	X	X	X	X	X
	Single hard drive configurations:	X	X	X	X	X	X
	500-GB, 5400-rpm	X	X	X	X	X	X
	320-GB, 5400-rpm	X	X	X	X	X	X
	250-GB, 5400-rpm	X	X	X	X	X	X
	160-GB, 5400-rpm	X	X	X	X	X	X

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
Optical drives	Fixed SATA 12.7-mm tray load Support for: • DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe • Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive	X	X	X	X	X	X
Camera	VGA camera, 640×480 by 22.5 frames per second Low-light fixed angle with activity light	X	X	X	X	X	X
Microphone	Single analog microphone	X	X	X	X	X	X
Audio	High-definition audio supports Microsoft premium requirements	X	X	X	X	X	X
Modem	56K V.92 data/fax MDC modem	X	X	X	X	X	X
Ethernet	Integrated Realtek 8102E 10/100 network interface card (NIC)	X	X	X	X	X	X
Wireless	**Integrated wireless local area network (WLAN) options by way of wireless module:**						
	Atheros AR9280 802.11a/b/g/n WLAN module	X	X	X	X	X	X
	Broadcom BCM4312 802.11b/g WLAN module	X	X	X	X	X	X
	Atheros AR2425 802.11b/g WLAN module	X	X	X	X	X	X

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	Intel WiFi Link 5100 802.11a/b/g/n WLAN module	X	X	X	X	X	X
	Intel WiFi Link 5100 802.11a/b/g WLAN module	X	X	X	X	X	X
	Atheros AR2425 802.11b/g WLAN module	X	X	X	X	X	X
	Atheros AR9280 802.11a/g/n WLAN module	X	X	X	X	X	X
	Mechanical reserved to support MIMO 3x3 antennas in display panel enclosure	X	X	X	X	X	X
External media card	Realtek RTS5158E Digital Media Slot (non-push-push insertion/removal) • Memory Stick (MS) • Memory Stick Pro (MSP) • MultiMedia Card (MMC) • Secure Digital (SD) Memory Card • xD Picture Card (XD)	X	X	X	X	X	X
Ports	Audio-out jack (stereo headphone)	X	X	X	X	X	X
	Audio-in jack (stereo microphone)	X	X	X	X	X	X
	Consumer infrared	X	X	X	X	X	X
	HDMI v1.3 supporting 1080p with HDCP key	X	X	X	X	X	X

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	VGA (Dsub 15 pin) supporting: • 1920×1200 external resolution at 75 Hz • 1600×1200 external resolution at 75 Hz	X	X	X	X	X	X
	RJ-11 (modem)	X	X	X	X	X	X
	RJ-45 (Ethernet, includes link and activity lights)	X	X	X	X	X	X
	USB 2.0 ports on the computer (one USB port is combined with eSATA)	X	X	X	X	X	X
	Hot plug/unplug and auto detect for correct output to wide aspect vs. standard aspect video	X	X	X	X	X	X
	AC adapter plug (smart pin)	X	X	X	X	X	X
Docking	No docking	X	X	X	X	X	X
Keyboard/ pointing devices	17-inch full-size keyboard with numeric keypad	X	X	X	X	X	X
	Synaptics TouchPad (supports 2-way scroll with legend, taps enabled as default)	X	X	X	X	X	X
Power requirements	Battery, 47-Wh, 2.2-Ah, 6-cell Li-ion	X	X	X	X	X	X
	90-W AC adapter with localized cable plug support (2-wire plug with ground pin, supports 2-pin DC connector)				X	X	X

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Category	Description	Presario CQ71 Notebook (UMA)	HP G71 Notebook (UMA)	Silver HP G71 Notebook (UMA)	Presario CQ71 Notebook (Discrete)	HP G71 Notebook (Discrete)	Silver HP G71 Notebook (Discrete)
	65-W AC adapter with localized cable plug support (2-wire plug with ground pin, supports 2-pin DC connector)	X	X	X			
Security	Kensington Security Lock	X	X	X	X	X	X
Operating system	**Preinstalled:**						
	Windows Vista® Business (32-bit)	X	X	X	X	X	X
	Windows Vista Premium (32 and 64-bit)	X	X	X	X	X	X
	Windows Vista Home Basic (32-bit)	X	X	X	X	X	X
	FreeDOS	X			X		
Serviceability	**End-user replaceable parts:**						
	AC adapter	X	X	X	X	X	X
	Battery (system)	X	X	X	X	X	X
	Hard drive	X	X	X	X	X	X
	Memory module	X	X	X	X	X	X
	Modem module	X	X	X	X	X	X
	RTC Battery	X	X	X	X	X	X
	Optical drive	X	X	X	X	X	X
	WLAN module	X	X	X	X	X	X

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2 External component identification

Top components

TouchPad

Component		Description
(1)	TouchPad on/off button	Enables/disables the TouchPad.
(2)	TouchPad*	Moves the pointer and selects or activates items on the screen.
(3)	Left TouchPad button*	Functions like the left button on an external mouse.
(4)	TouchPad light	• White: TouchPad is enabled. • Amber: TouchPad is disabled.
(5)	TouchPad scroll zone	Scrolls up or down.
(6)	Right TouchPad button*	Functions like the right button on an external mouse.

*This table describes factory settings. To view and change pointing device preferences, select **Start > Control Panel > Hardware and Sound > Mouse**.

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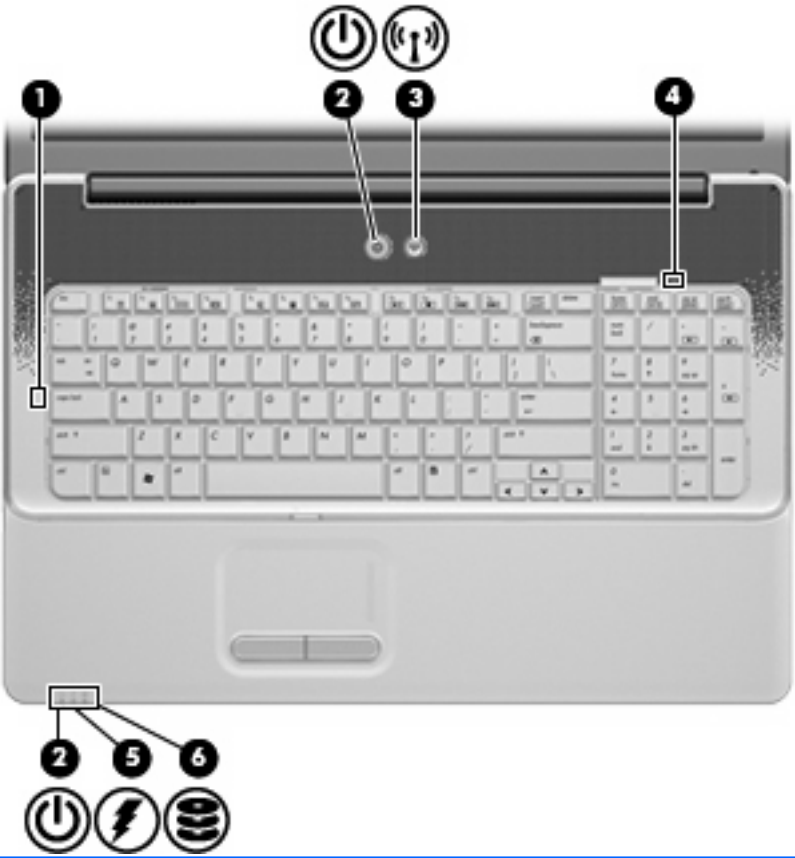
Lights

NOTE: Your computer may look slightly different from the illustration in this section.



Component		Description
(1)	Caps lock light	On: Caps lock is on.
(2)	Power lights (2)*	• On: The computer is on. • Blinking: The computer is in the Sleep state. • Off: The computer is off or in Hibernation.
(3)	Wireless light	• Blue: An integrated wireless device, such as a wireless local area network (WLAN) device and/or a Bluetooth® device, is on. • Amber: All wireless devices are off.
(4)	Num lock light	On: Num lock is on or the integrated numeric keypad is enabled.
(5)	Battery light	• On: A battery is charging. • Blinking: A battery that is the only available power source has reached a low battery level. When the battery reaches a critical battery level, the battery light begins blinking rapidly. • Off: If the computer is plugged into an external power source, the light is turned off when all batteries in the computer are fully charged. If the computer is not plugged into an external power source, the light stays off until the battery reaches a low battery level.

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Component		Description
(6)	Drive light	Blinking: The hard drive or optical drive is being accessed.

*The 2 power lights display the same information. The light on the power button is visible only when the computer is open. The power light on the front of the computer is visible whether the computer is open or closed.

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Buttons and speakers

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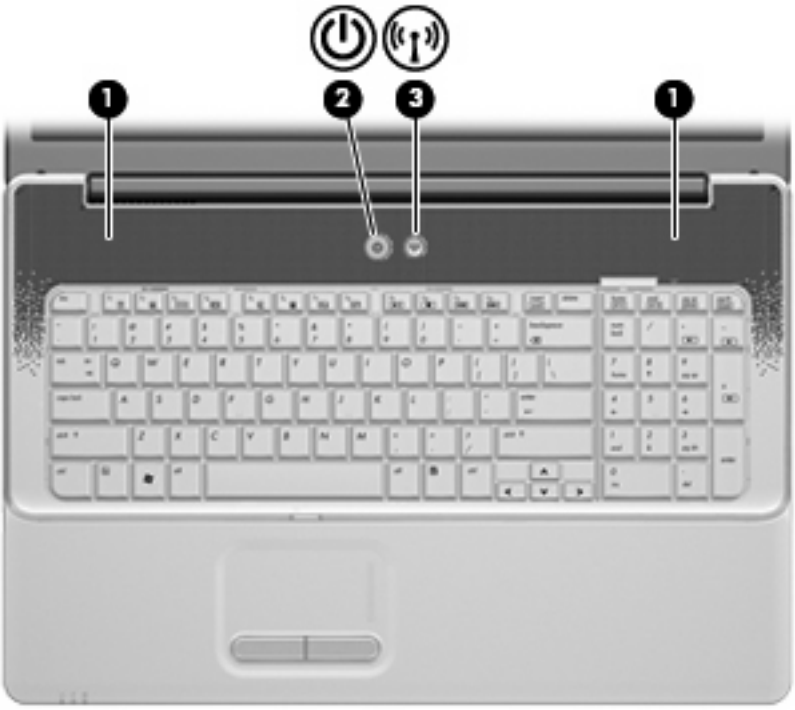

Component		Description
(1)	Speakers (2)	Produce sound.
(2)	Power button*	• When the computer is off, press the button to turn on the computer. • When the computer is on, press the button briefly to initiate Sleep. • When the computer is in the Sleep state, press the button briefly to exit Sleep. • When the computer is in Hibernation, press the button briefly to exit Hibernation. If the computer has stopped responding and Windows® shutdown procedures are ineffective, press and hold the power button for at least 5 seconds to turn off the computer. To learn more about your power settings, select **Start > Control Panel > System and Maintenance > Power Options**.
(3)	Wireless button	Turns the wireless feature on or off but does not create a wireless connection. **NOTE:** To establish a wireless connection, a wireless network must already be set up.

*This table describes factory settings. For information about changing factory settings, refer to the user guides located in Help and Support.

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Keys

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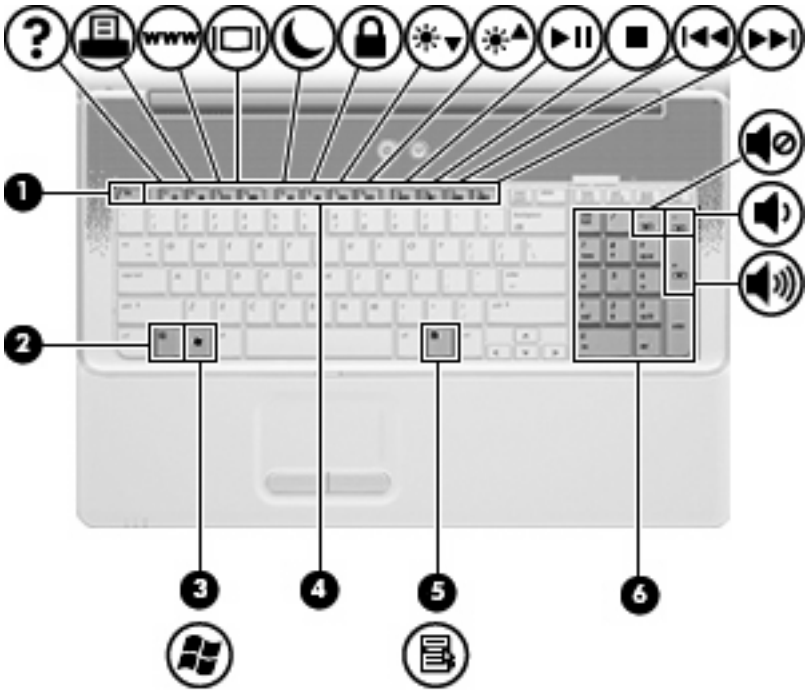

Component		Description
(1)	esc key	Displays system information when pressed in combination with the fn key.
(2)	fn key	Executes frequently used system functions when pressed in combination with a function key or the esc key.
(3)	Windows logo key	Displays the Windows Start menu.
(4)	Function keys	Execute frequently used system functions when pressed in combination with the fn key.
(5)	Windows applications key	Displays a shortcut menu for items beneath the pointer.
(6)	Integrated numeric keypad and volume hotkeys	• Can be used like the keys on an external numeric keypad. • Adjusts system volume when the asterisk (*), minus sign (-), or plus sign (+) is pressed in combination with the fn key.

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Front components

Component		Description
(1)	Audio-in (microphone) jack	Connects an optional computer headset microphone, stereo array microphone, or monaural microphone.
(2)	Audio-out (headphone) jack	Produce sound when connected to optional powered stereo speakers, headphones, ear buds, a headset, or television audio.

Right-side components

NOTE: Your computer may look slightly different from the illustration in this section.

Component		Description
(1)	Optical drive	Reads optical discs and, on select models, also writes to optical discs.
(2)	Optical drive light	Blinking: The optical drive is being accessed.
(3)	USB ports (2)	Connect optional USB devices.
(4)	RJ-11 (modem) jack (select models only)	Connects a modem cable.
(5)	AC adapter light	• On: The computer is connected to external power. • Off: The computer is not connected to external power.
(6)	Power connector	Connects an AC adapter.

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Left-side components

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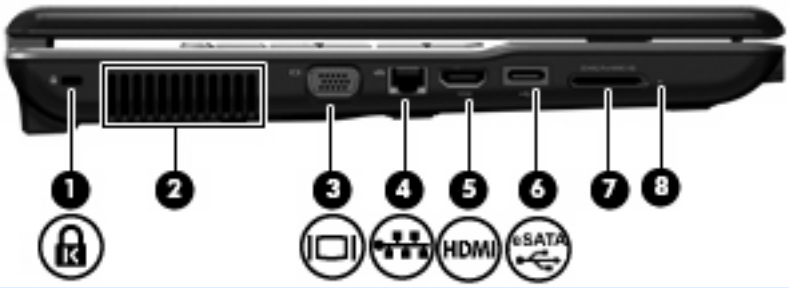

Component		Description
(1)	Security cable slot	Attaches an optional security cable to the computer. **NOTE:** The security cable is designed to act as a deterrent, but it may not prevent the computer from being mishandled or stolen.
(2)	Vent	Enables airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(3)	External monitor port	Connects an external VGA monitor or projector.
(4)	RJ-45 (network) jack	Connects a network cable.
(5)	HDMI port (select models only)	Connects an optional video or audio device, such as a high-definition television, or any compatible digital or audio component. **NOTE:** Depending on your computer model, the computer may include an HDMI port or a USB port at this location.
(6)	eSATA/USB port	Connects a high-performance eSATA component, such as an eSATA external hard drive, or connects an optional USB device.
(7)	Digital Media Slot (select models only)	Supports the following digital card formats: • Memory Stick (MS) • Memory Stick Pro (MSP) • MultiMediaCard (MMC) • Secure Digital (SD) Memory Card • xD-Picture Card (XD)
(8)	Digital Media Slot light	On: The Digital Media Slot is in use.

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Rear component

Component	Description
Vent	Enables airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.

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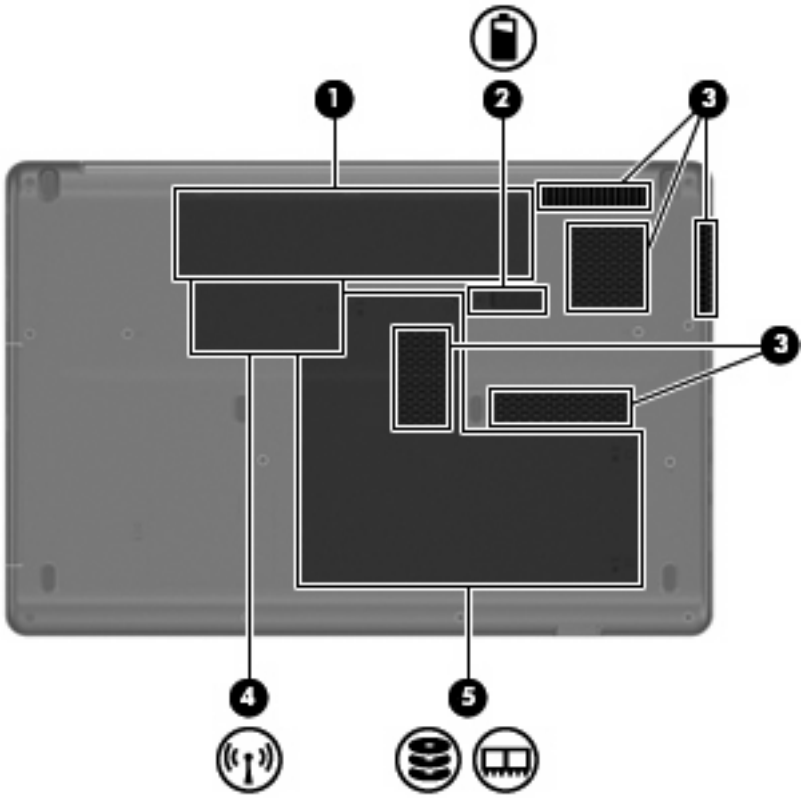
Bottom components



Component		Description
(1)	Battery bay	Holds the battery.
(2)	Battery release latch	Releases the battery from the battery bay.
(3)	Vents (5)	Enable airflow to cool internal components. **NOTE:** The computer fan starts up automatically to cool internal components and prevent overheating. It is normal for the internal fan to cycle on and off during routine operation.
(4)	Wireless module compartment	Holds a wireless LAN module. **NOTE:** To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. If you replace the module and then receive a warning message, remove the module to restore computer functionality, and then contact technical support through Help and Support.
(5)	Hard drive bay	Holds the hard drive and contains the memory module slots.

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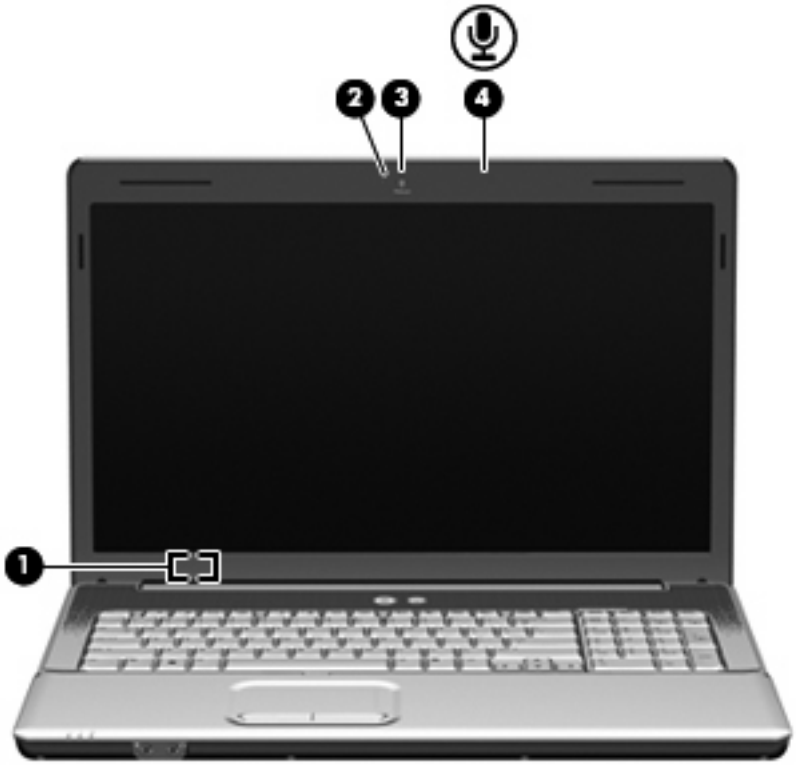
Display components



Component		Description
(1)	Internal display switch	Turns off the display and initiates Sleep if the display is closed while the power is on.
(2)	Webcam light (select models only)	On: The webcam is in use.
(3)	Webcam (select models only)	Records audio and video and captures still photographs.
(4)	Internal microphone	Records sound.

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Wireless antennas

Your computer model has at least 2 antennas that send and receive signals from one or more wireless devices.

NOTE: The antennas are not visible from the outside of the computer. For optimal transmission, keep the areas immediately around the antennas free from obstructions.

To see wireless regulatory notices, refer to the section of the *Regulatory, Safety, and Environmental Notices* that applies to your country or region. These notices are located in Help and Support.

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Additional hardware components

Component		Description
(1)	Power cord*	Connects an AC adapter to an AC outlet.
(3)	AC adapter	Converts AC power to DC power.
(3)	Battery*	Powers the computer when the computer is not plugged into external power.

*Batteries and power cords vary in appearance by region and country.

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3 Illustrated parts catalog

Service tag

When ordering parts or requesting information, provide the computer serial number and model description provided on the service tag.

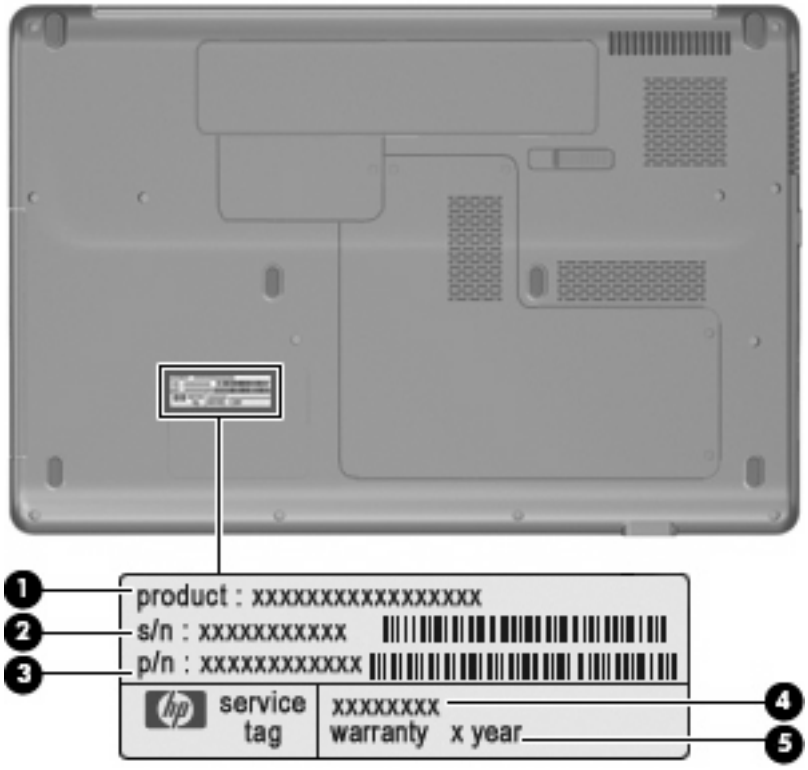
(1) Product name: The product name affixed to the front of the computer.

(2) Serial number (s/n): An alphanumeric identifier that is unique to each product.

(3) Part number/product number (p/n): The number that identifies the product and its internal components. This number is required when replacement parts are ordered.

(4) Model description: An alphanumeric identifier used to locate, documents, drivers and support for your computer.

(5) Warranty period: The duration of the warranty period for this computer.



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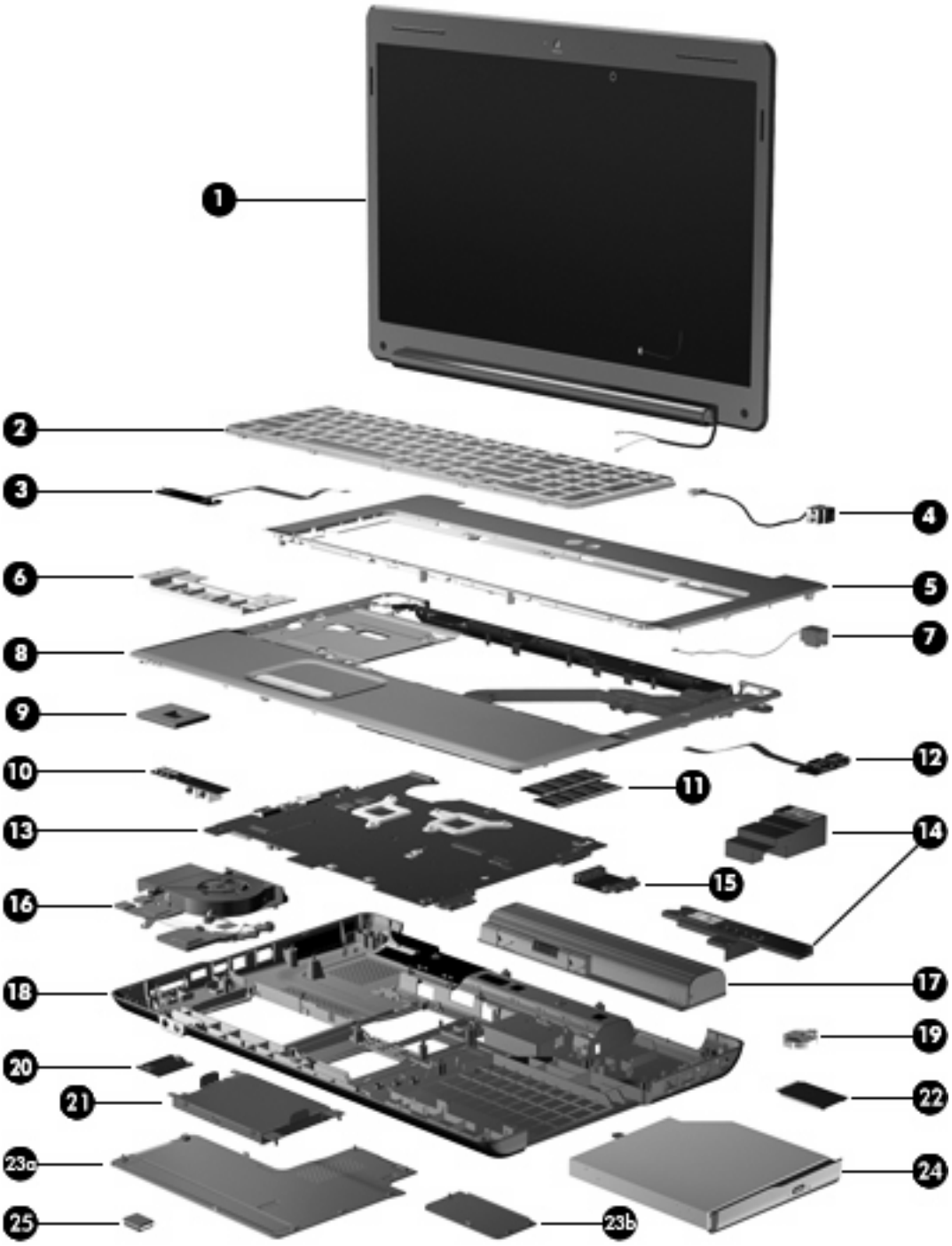
Computer major components



Item	Description	Spare part number
(1)	**17.3-inch display assembly** (includes 17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel, bezel, enclosure, hinges, camera module and cable, microphone and cable, and 2 wireless antenna transceivers and cables)	
	For use with the Presario CQ71 Notebook PC	513762-001

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Item	Description	Spare part number
	For use with the HP G71 Notebook PC	513760-001
(2)	**Keyboard**	
	Belgium, Finland, the Netherlands, Poland, South Africa, and Sweden (For use with the Presario CQ71 Notebook PC only)	517627-A41
	Czech Republic (For use with the Presario CQ71 Notebook PC only)	517627-221
	France ((For use with the Presario CQ71 Notebook PC only))	517627-051
	French Canada	517627-121
	Germany (For use with the Presario CQ71 Notebook PC only)	517627-041
	Greece (For use with the Presario CQ71 Notebook PC only)	517627-151
	Hungary (For use with the Presario CQ71 Notebook PC only)	517627-211
	International (For use with the Presario CQ71 Notebook PC only)	517627-B31
	Israel (For use with the Presario CQ71 Notebook PC only)	517627-BB1
	Italy (For use with the Presario CQ71 Notebook PC only)	517627-061
	Norway	517627-DH1
	Portugal (For use with the Presario CQ71 Notebook PC only)	517627-131
	Russia (For use with the Presario CQ71 Notebook PC only)	517627-251
	Saudi Araba (For use with the Presario CQ71 Notebook PC only)	517627-171
	Spain (For use with the Presario CQ71 Notebook PC only)	517627-071
	Switzerland (For use with the Presario CQ71 Notebook PC only)	517627-BG1
	Turkey (For use with the Presario CQ71 Notebook PC only)	517627-141
	United Kingdom	517627-031
	United States	517627-001
(3)	**Power button board**	531860-001
(4)	**RJ-11 jack and cable**	
	NOTE: The RJ-11 jack and cable are included in the Cable Kit, spare part number 531856-001.	
(5)	**Keyboard cover**	531854-001
(6)	**TouchPad button board**	531853-001
(7)	**Power connector and cable**	531864-001
(8)	**Top cover** (includes TouchPad and cable, and caps lock LED board and cable)	531852-001
(9)	**Processors** (include replacement thermal material)	
	Intel Core2 Duo P8700 (2.53-GHz processor, 3-MB L2 cache, 1066-MHz FSB)	507960-001
	Intel Core2 Duo P7450 (2.13-GHz processor, 3-MB L2 cache, 1066-MHz FSB)	507965-001
	Intel Core2 Duo P6600 (2.2-GHz processor, 2-MB L2 cache, 800-MHz FSB)	513593-001
	Intel Core2 Duo P6400 (2.0-GHz processor, 2-MB L2 cache, 800-MHz FSB)	513592-001
	Intel Pentium T4200 (2.00-GHz processor, 1-MB L2 cache, 800-MHz FSB)	513599-001

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Item	Description	Spare part number
	Intel Pentium T3400 (2.16-GHz processor, 1-MB L2 cache, 667-MHz FSB)	509549-001
	Intel Celeron 900 (2.2-GHz processor, 1-MB L2 cache, 667-MHz FSB)	534419-001
	Intel Celeron 585 (2.16-GHz processor, 1-MB L2 cache, 667-MHz FSB)	519898-001
	Intel Celeron T1700 (1.83-GHz processor, 1-MB L2 cache, 667-MHz FSB)	534084-001
	Intel Celeron T1600 (1.66-GHz processor, 1-MB L2 cache, 667-MHz FSB)	532324-001
(10)	**Audio board**	531208-001
(11)	**Memory modules**	
	2048-MB (PC2-6400, 800-MHz, DDR2)	513766-001
	1024-MB (PC2-6400, 800-MHz, DDR2)	513765-001
(12)	**USB board and cable**	531866-001
(13)	**System board** (includes replacement thermal material and power connector cable)	
	Intel GM45, HDMI	513754-001
	Intel PM45, HDMI	513758-001
	NOTE: The Intel PM45 has an NVIDIA video card on board. It uses the discrete heat sink.	
	Intel GL40, HDMI	513757-001
	Intel GL40 (for use with the Presario CQ71 Notebook PC only)	513756-001
(14)	**Speakers** (include left and right speakers and cables)	531209-001
(15)	**Optical drive expansion board**	531865-001
(16)	**Fan/heat sink assembly**	
	Discrete fan/heat sink assembly	531220-001
	NOTE: The discrete heat sink should be used with the Intel PM45 system board.	
	UMA fan/heat sink assembly	531210-001
	NOTE: The UMA heat sink should be used with the Intel GM45 and GL40 system boards.	
(17)	**Battery** (47-Wh, 2.2-Ah, 6-cell Li-ion)	513775-001
(18)	**Base enclosure**	531851-001
	Rubber Feet Kit (not illustrated, includes 6 base enclosure rubber feet)	531213-001
(19)	**RTC battery**	449729-001
(20)	**Modem module**	510100-001
	NOTE: The modem module spare part kit does not include a modem module cable. The modem module cable is included in the Cable Kit, spare part number 531856-001.	
(21)	**Hard drive**	
	NOTE: The bracket is included in the Hard Drive Hardware Kit, spare part number 513771-001.	
	160-GB, 5400-RPM	513767-001
	250-GB, 5400-RPM	513768-001

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Item	Description	Spare part number
	320-GB, 5400-RPM	513769-001
	500-GB, 5400-RPM	534129-001
(22)	**WLAN module**	
	Atheros AR2425 802.11b/g WLAN module	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	459339-003
	• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	459339-004
	Broadcom BCM4312 802.11b/g WLAN module	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	459263-001

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Item	Description	Spare part number
	• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	459263-002
	Intel WiFi Link 5100 802.11a/b/g WLAN module	
	• For use with the Presario CQ71 Notebook PC only, in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	482957-001
	Intel WiFi link 5100 802.11a/b/g/n WLAN module	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	480985-001
	Atheros AR9280 802.11a/g/n WLAN module	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	482260-001

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Item	Description	Spare part number
	• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	482260-002
	Atheros 802.11b/g/n WLAN module	
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	518436-001
	• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	518436-002
	Atheros 802.11a/b/g/n WLAN module	

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Item	Description	Spare part number
	• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	518437-001
	• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	518437-002
	Plastics Kit (see Plastics Kit on page 32 for more Plastics Kit spare part information)	531859-001
(23a)	**Hard drive cover**	
(23b)	**Wireless module compartment cover**	
(24)	**Optical drive** (includes bezel and bracket)	
	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	513773-001
	Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive	513772-001
(25)	**Bluetooth module** (includes double-sided tape) **NOTE:** The Bluetooth module spare part kit does not include a Bluetooth module cable. The Bluetooth module cable is included in the Cable Kit, spare part number 531856-001.	483113-001

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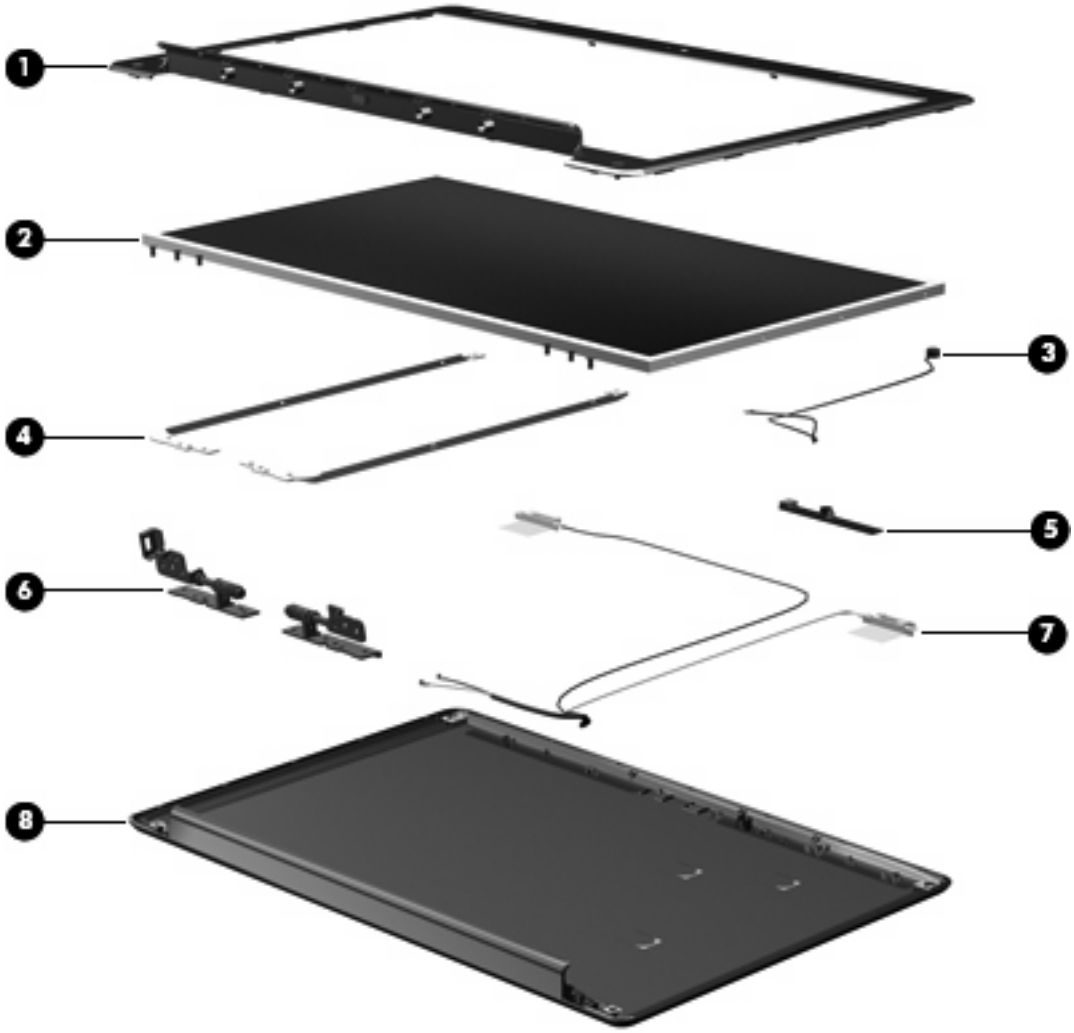
Display assembly components



Item	Description	Spare part number
	Display Assembly (includes 17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel, bezel, enclosure, hinges, camera module and cable, microphone and cable, and 2 wireless antenna transceivers and cables)	
	• For use with the HP G71 Notebook PC	513760-001
	• For use with the Presario CQ71 Notebook PC	513762-001
(1)	**Display bezel**	
	• For use with the HP G71 Notebook PC	535560-001
	• For use with the Presario CQ71 Notebook PC	531521-001
(2)	**17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel** (includes display panel cable)	513764-001
(3)	**Microphone module** (includes cable)	531203-001
(4)	**Display Bracket Kit**	531523-001

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Item	Description	Spare part number
(5)	**Camera module** (includes cable)	531527-001
(6)	**Display Hinge Kit** (includes left and right display hinges)	531522-001
(7)	**Wireless antennas (2)** **NOTE:** Wireless antennas are included with the Display Cable Kit, spare part number 531524-001.	
(8)	**Display enclosure** (includes logo)	
	• For use with the HP G71 Notebook PC	531519-001
	• For use with the Presario CQ71 Notebook PC	531518-001
	Display Cable Kit (not illustrated; includes 3 wireless antenna transceivers and cables and display panel cable)	531524-001
	Display Rubber Kit (not illustrated; includes display bezel screw covers and display bezel bumper pads)	530999-001
	Display Screw Kit (not illustrated)	531526-001

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Plastics Kit

Item	Description	Spare part number
	Plastics Kit	531859-001
(1)	Wireless module compartment cover (includes 1 captive screw, secured by a C-clip)	
(2)	Hard drive cover (includes 4 captive screws, secured by C-clips)	

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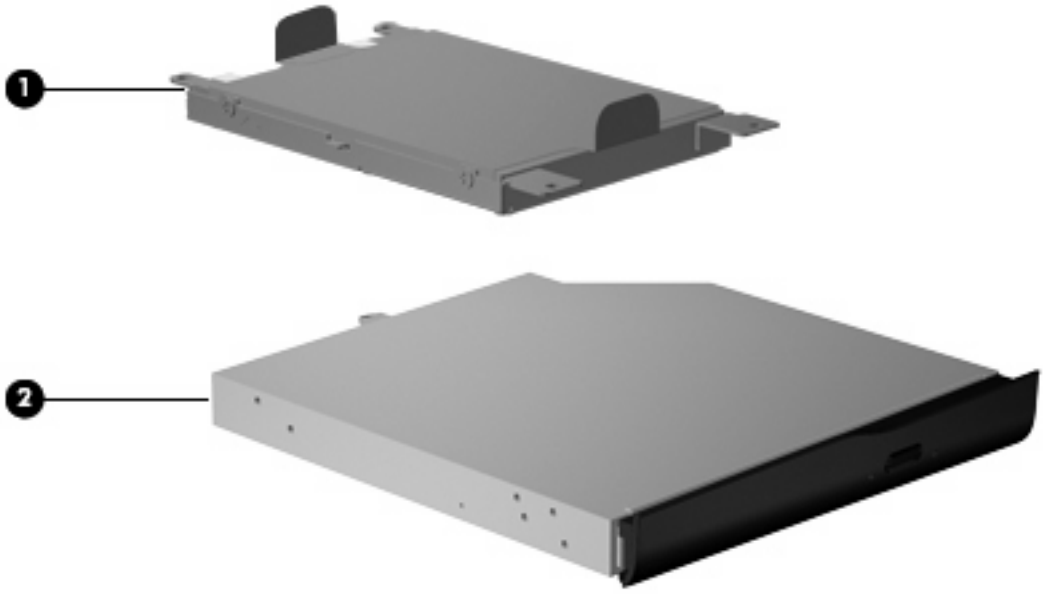
Mass storage devices



Item	Description	Spare part number
(1)	**Hard drive** (includes bracket)	
	500-GB, 5400-rpm	534129-001
	320-GB, 5400-rpm	513769-001
	250-GB, 5400-rpm	513768-001
	160-GB, 5400-rpm	513767-001
	Hard Drive Hardware Kit (includes bracket and screws)	
(2)	**Optical drive** (includes bezel and bracket)	
	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	513773-001
	Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive	513772-001

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Miscellaneous parts

Description	Spare part number
90-W AC Adapter	463955-001
65-W AC adapter	463958-001
Power cords:	
For use in Australia and New Zealand with the Presario CQ71 Notebook PC only	490371-011
For use in Denmark with the Presario CQ71 Notebook PC only	490371-081
For use in Europe with the Presario CQ71 Notebook PC only	490371-021
For use in Israel with the Presario CQ71 Notebook PC only	490371-BB1
For use in Italy with the Presario CQ71 Notebook PC only	490371-061
For use in North America	490371-001
For use in South Africa with the Presario CQ71 Notebook PC only	490371-AR1
For use in Switzerland with the Presario CQ71 Notebook PC only	490371-111
For use in the United Kingdom and Singapore	490371-031
Screw Kit • Phillips PM2.0×3.0 captive screw • Phillips PM3.0×4.0 screw • Phillips PM3.0×4.0 captive screw • Phillips PM2.5×5.0 screw • Phillips PM2.5×6.0 screw • Phillips PM2.5×6.0 captive screw • Phillips PM2.5×7.0 screw	531857-001
Wired headset	371693-001
Laser mini mouse	430958-001

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Sequential part number listing

Spare part number	Description
371693-001	Wired headset
430958-001	Laser mini mouse
449729-001	RTC battery
459263-001	Broadcom 4312 WLAN 802.11b/g for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
459263-002	Broadcom 4312 802.11b/g for use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
459339-003	Atheros AR2425 802.11b/g WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
459339-004	Atheros AR2425 802.11b/g WLAN module for use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
463955-001	90-W power adapter
463958-001	65-W power adapter

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Spare part number	Description
480985-001	Intel WiFi 5100 802.11a/b/g/n for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
482260-001	Atheros AR9280 802.11a/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
482260-002	Atheros AR9280 802.11a/g/n WLAN module for use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
482957-001	Intel WiFi 5100 802.11 a/b/g for use with the Presario CQ71 Notebook PC only, in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
483113-001	Bluetooth module
490371-001	Power cord for use in North America
490371-011	Power cord for use in Australia with the Presario CQ71 Notebook PC only
490371-021	Power cord for use in Europe with the Presario CQ71 Notebook PC only
490371-031	Power cord for use in the United Kingdom and Singapore
490371-061	Power cord for use in Italy with the Presario CQ71 Notebook PC only
490371-081	Power cord for use in Denmark with the Presario CQ71 Notebook PC only
490371-111	Power cord for use in Switzerland with the Presario CQ71 Notebook PC only
490371-AR1	Power cord for use in South Africa with the Presario CQ71 Notebook PC only
490371-BB1	Power cord for use in Israel with the Presario CQ71 Notebook PC only
507960-001	Intel Core2 Duo P8700 processor (2.53-GHz processor, 3-MB L2 cache, 1066-MHz FSB)
507965-001	Intel Core2 Duo P7450 processor (2.13-GHz processor, 3-MB L2 cache, 1066-MHz FSB)
509549-001	Intel Pentium T3400 processor (2.16-GHz processor, 1 MB L2 cache, 667-MHz FSB)
510100-001	Modem module
513592-001	Intel Core2 Duo T6400 processor (2.0-GHz processor, 2-MB L2 cache, 800-MHz FSB)
513593-001	Intel Core2 Duo T6600 processor (T6600 2.2-GHz processor, 2-MB L2 cache, 800-MHz FSB)
513599-001	Intel Pentium T4200 processor (2.00-GHz processor, 1 MB L2 cache, 800-MHz FSB)

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Spare part number	Description
513754-001	Intel GM45 system board
513756-001	Intel GL40 system board (for use with the Presario CQ71 Notebook PC only)
513757-001	Intel GL40 HDMI system board
513758-001	Intel PM45 system board
513760-001	**17.3-inch display assembly** for use with the HP G71 notebook PC (includes 17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel, bezel, enclosure, hinges, camera module and cable, microphone and cable, and 2 wireless antenna transceivers and cables)
513762-001	**17.3-inch display assembly** for use with the CQ71 Notebook PC (includes 17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel, bezel, enclosure, hinges, camera module and cable, microphone and cable, and 2 wireless antenna transceivers and cables)
513764-001	17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel
513765-001	1-GB PC2-6400 memory module
513766-001	2-GB PC2-6400 memory module
513767-001	160-GB, 5400-rpm hard drive
513768-001	250-GB, 5400-rpm hard drive
513769-001	320-GB, 5400-rpm hard drive
513771-001	Hard Drive Hardware Kit
513772-001	Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive
513773-001	DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe
513775-001	Battery, 47-Wh, 2.2-Ah 6-cell Li-ion
517627-001	Keyboard for use in the United States
517627-031	Keyboard for use in the United Kingdom
517627-041	Keyboard for use in Germany with the Presario CQ71 Notebook PC only
517627-051	Keyboard for use in France with the Presario CQ71 Notebook PC only
517627-061	Keyboard for use in Italy with the Presario CQ71 Notebook PC only
517627-071	Keyboard for use in Spain with the Presario CQ71 Notebook PC only
517627-121	Keyboard for use in French Canada
517627-131	Keyboard for use in Portugal with the Presario CQ71 Notebook PC only
517627-141	Keyboard for use in Turkey with the Presario CQ71 Notebook PC only
517627-051	Keyboard for use in Greece
517627-171	Keyboard for use in Saudi Arabia with the Presario CQ71 Notebook PC only
517627-211	Keyboard for use in Hungary with the Presario CQ71 Notebook PC only
517627-221	Keyboard for use in the Czech Republic with the Presario CQ71 Notebook PC only
517627-251	Keyboard for use in Russia with the Presario CQ71 Notebook PC only
517627-A41	Keyboard for use in Belgium, Finland, the Netherlands, Poland, South Africa, and Sweden with the Presario CQ71 Notebook PC only

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Spare part number	Description
517627-B31	Keyboard for international use with the Presario CQ71 Notebook PC only
517627-BB1	Keyboard for use in Israel with the Presario CQ71 Notebook PC only
517627-BG1	Keyboard for use in Switzerland with the Presario CQ71 Notebook PC only
517627-DH1	Keyboard for use in Norway
518436-001	Atheros 802.11b/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
518436-002	Atheros 802.11b/g/n WLAN module for use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
518437-001	Atheros 802.11a/b/g/n WLAN module for use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States
518437-002	Atheros 802.11a/b/g/n WLAN module for use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe
519898-001	Intel Celeron 585 processor (2.16-GHz processor, 1 MB L2 cache, 667-MHz FSB)
530999-001	LCD Rubber Kit
531203-001	Microphone and cable

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Spare part number	Description
531208-001	Audio board
531209-001	Speakers (include left and right speakers and cables)
531210-001	Fan/heat sink assembly (UMA)
531213-001	Rubber Kit
531220-001	Fan/heat sink assembly (discrete)
531518-001	Display enclosure for use with the Presario CQ71 Notebook PC
531519-001	Display enclosure for use with the HP G71 Notebook PC
531521-001	Display bezel for use with the Presario CQ71 Notebook PC
531522-001	Display Hinge Kit
531523-001	Display Bracket Kit
531524-001	Display Cable Kit
531526-001	Display Screw Kit
531527-001	Camera module
531851-001	Base enclosure
531852-001	Top cover with TouchPad
531853-001	TouchPad button board
531854-001	Keyboard cover
531856-001	Cable Kit
531857-001	Screw Kit
531859-001	Plastics Kit
531860-001	Power button board
531864-001	Power connector with cable
531865-001	Optical drive extender board
531866-001	USB board with cable
532324-001	Intel Celeron T1600 processor (1.66-GHz processor, 1-MB L2 cache, 667-MHz FSB)
534084-001	Intel Celeron T1700 processor (1.83-GHz processor, 1 MB L2 cache, 667 MHz FSB)
534129-001	500-GB, 5400-rpm hard drive
534419-001	Intel Celeron 900 processor (2.2-GHz processor, 1-MB L2 cache, 667-Mhz FSB)
535560-001	Display bezel for use with the HP G71 Notebook PC

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4 Removal and replacement procedures

Preliminary replacement requirements

Tools required

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

- Flat nonconductive probe
- Phillips P0 and P1 screwdrivers

Service considerations

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

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

Plastic parts

CAUTION: 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.

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Cables and connectors

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

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

Drive handling

△ **CAUTION:** Drives are fragile components that must be handled with care. To prevent damage to the computer, damage to a drive, or loss of information, observe these precautions:

Before removing or inserting a hard drive, shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.

Before handling a drive, be sure that you are discharged of static electricity. While handling a drive, avoid touching the connector.

Before removing a diskette drive or optical drive, be sure that a diskette or disc is not in the drive and be sure that the optical drive tray is closed.

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.”

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Grounding guidelines

Electrostatic discharge damage

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, ESD contains enough power to alter device parameters or melt silicon junctions.

A discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Even if the spark is neither felt nor heard, damage may have occurred.

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

△ **CAUTION:** To prevent damage to the computer when you are removing or installing internal components, observe these precautions:

Keep components in their electrostatic-safe containers until you are ready to install them.

Use nonmagnetic tools.

Before touching an electronic component, discharge static electricity by using the guidelines described in this section.

Avoid touching pins, leads, and circuitry. Handle electronic components as little as possible.

If you remove a component, place it in an electrostatic-safe container.

The following table shows how humidity affects the electrostatic voltage levels generated by different activities.

△ **CAUTION:** A product can be degraded by as little as 700 V.

Typical electrostatic voltage levels

	Relative humidity		
Event	**10%**	**40%**	**55%**
Walking across carpet	35,000 V	15,000 V	7,500 V
Walking across vinyl floor	12,000 V	5,000 V	3,000 V
Motions of bench worker	6,000 V	800 V	400 V
Removing DIPS from plastic 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

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Packaging and transporting guidelines

Follow these grounding guidelines when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe tubes, bags, or boxes.
- Protect ESD-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep ESD-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 component or assembly.
- Store reusable ESD-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Be sure 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.

Workstation guidelines

Follow these grounding workstation guidelines:

- Cover the workstation with approved static-shielding material.
- 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 ESD-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.

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Equipment guidelines

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 ±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.

The following grounding equipment is recommended to prevent electrostatic damage:

- 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

The following table lists the shielding protection provided by antistatic bags and floor mats.

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

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Component replacement procedures

This chapter provides removal and replacement procedures.

There are as many as 71 screws, in 7 different sizes, that must be removed, replaced, or loosened when servicing the computer. Make special note of each screw size and location during removal and replacement.

Service tag

When ordering parts or requesting information, provide the computer serial number and model description provided on the service tag.

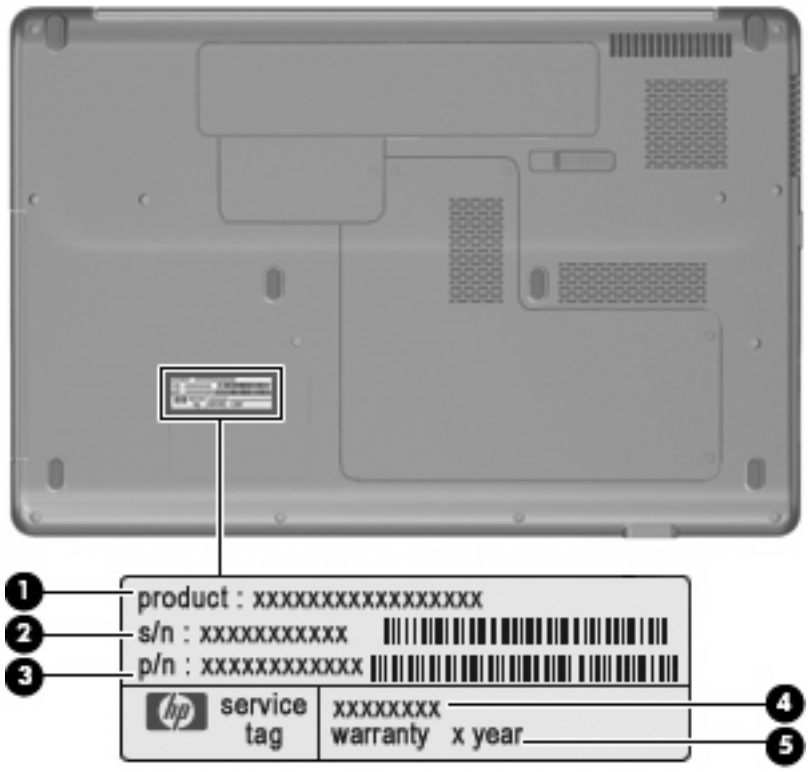
(1) Product name: The product name affixed to the front of the computer.

(2) Serial number (s/n): An alphanumeric identifier that is unique to each product.

(3) Part number/product number (p/n): The number that identifies the product and its internal components. This number is required when replacement parts are ordered.

(4) Model description: An alphanumeric identifier used to locate, documents, drivers and support for your computer.

(5) Warranty period: The duration of the warranty period for this computer.



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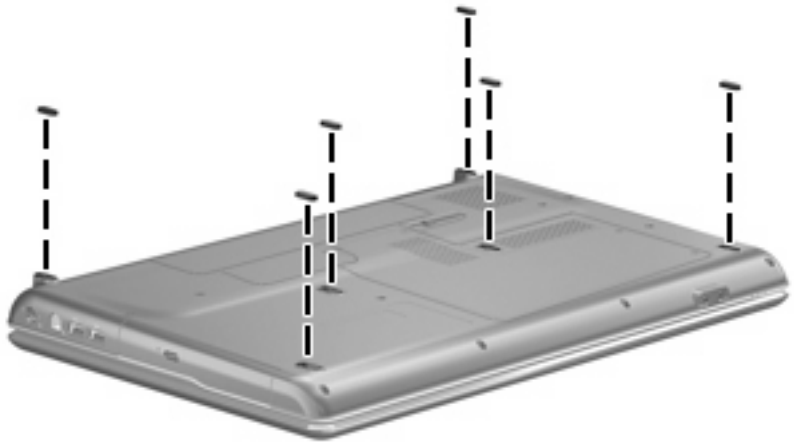
Computer feet

The computer feet are adhesive-backed rubber pads. The feet are included in the Rubber Kit, spare part number 531213-001. There are 6 rubber feet that attach to the base enclosure in the locations illustrated below.



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Battery

Description	Spare part number
Battery, 47-Wh, 2.2 Ah 6-cell Li-ion	513775-001

Before disassembling the computer, follow these steps:

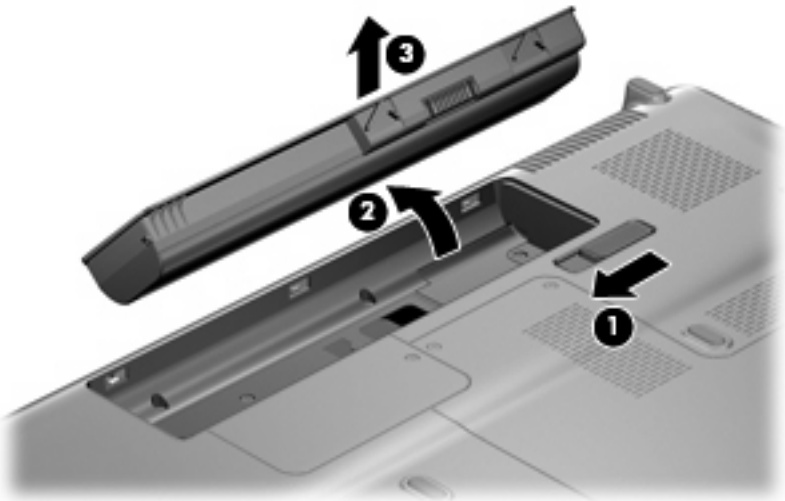
1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord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

Remove the battery:

1. Turn the computer upside down on a flat surface with the battery bay toward you.
2. Slide and release the battery release latch **(1)**.

NOTE: The battery release latch automatically returns to its original position.

3. The battery is ejected up and away from the battery bay **(2)**.
4. Remove the battery **(3)**.



To insert the battery, insert the rear edge of the battery into the battery bay, and then press the front edge of the battery forward and down until the battery is seated. The battery release latch automatically locks the battery into place.

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WLAN module

Description	Spare part number
Intel WiFi Link 5100 802.11a/b/g/n WLAN module:	
• For use with the Presario CQ71 Notebook PC only, in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	482957-001
Intel WiFi Link 5100 802.11a/b/g WLAN:	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	480985-001
Atheros AR2425 802.11b/g WLAN modules:	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	459339-003
• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	459339-004
Broadcom BCM4312 802.11b/g WLAN modules:	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	459263-001

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Description	Spare part number
• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	459263-002
Atheros AR9280 802.11a/g/n WLAN modules:	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	482260-001
• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	482260-002
Atheros 802.11b/g/n WLAN modules:	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	518436-001

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Description	Spare part number
• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	518436-002
Atheros 802.11a/b/g/n WLAN modules:	
• For use in Canada, the Cayman Islands, Guam, Puerto Rico, the U.S. Virgin Islands, and the United States	451861-001
• For use with the Presario CQ71 Notebook PC only, in Afghanistan, Albania, Algeria, Andorra, Angola, Antigua and Barbuda, Argentina, Armenia, Aruba, Australia, Austria, Azerbaijan, the Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bermuda, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, the British Virgin Islands, Brunei, Bulgaria, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad, Chile, the People's Republic of China, Colombia, Comoros, the Congo, Costa Rica, Croatia, Cyprus, the Czech Republic, Denmark, Djibouti, Dominica, the Dominican Republic, East Timor, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guiana, Gabon, Gambia, Georgia, Germany, Ghana, Gibraltar, Greece, Grenada, Guadeloupe, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Ireland, Israel, Italy, the Ivory Coast, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, the Maldives, Mali, Malta, the Marshall Islands, Martinique, Mauritania, Mauritius, Mexico, Micronesia, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nauru, Nepal, the Nether Antilles, the Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Palau, Panama, Papua New Guinea, Paraguay, Peru, the Philippines, Poland, Portugal, the Republic of Moldova, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and Principe, Saudi Arabia, Senegal, Serbia, the Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, the Solomon Islands, Somalia, South Africa, South Korea, Spain, Sri Lanka, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Swaziland, Sweden, Switzerland, Taiwan, Tajikistan, Tanzania, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, the United Arab Emirates, the United Kingdom, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zaire, Zambia, and Zimbabwe	451861-002

Before removing the WLAN module, follow these steps:

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

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3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.

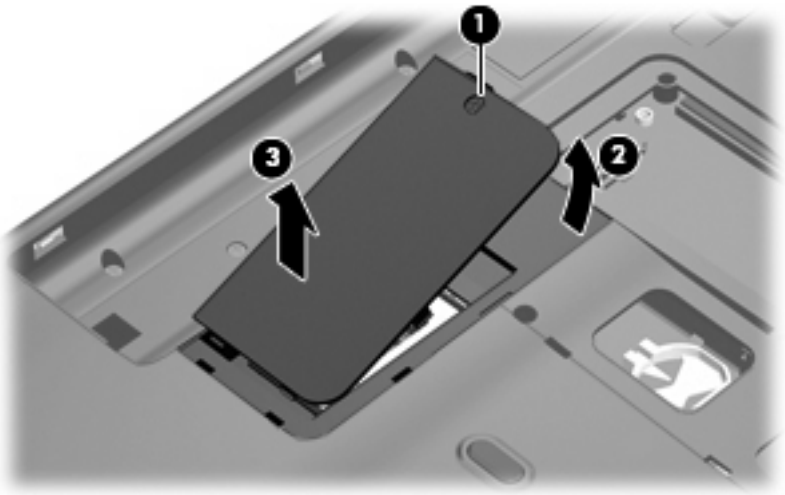
4. Remove the battery (see Battery on page 47).

Remove the WLAN module:

NOTE: To prevent an unresponsive system, replace the wireless module only with a wireless module authorized for use in the computer by the governmental agency that regulates wireless devices in your country or region. If you replace the module and then receive a warning message, remove the module to restore computer functionality, and then contact technical support through Help and Support.

1. Loosen the Phillips PM2.5×6.0 captive screw **(1)** that secures the wireless module compartment cover to the computer.

2. Lift the left side **(2)** of the cover, swing it up and to the right, and remove the cover **(3)**. The wireless module compartment cover is included in the Plastics Kit, spare part number 531859-001.



3. Disconnect the 2 WLAN antenna cables from the WLAN module.

NOTE: The black WLAN antenna cable **(1)** is connected to the WLAN module “Main” terminal. The white WLAN antenna cable **(2)** is connected to the WLAN module “Aux” terminal.

4. Remove the Phillips PM2.0×3.0 screw **(3)** that secures the WLAN module to the computer. (The edge of the module opposite the slot rises away from the computer.)

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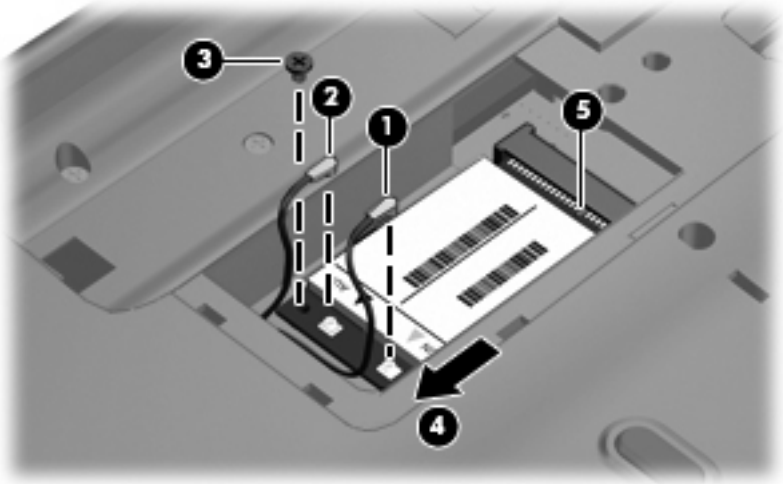
5. Remove the WLAN module **(4)** by pulling it away from the slot at an angle.

NOTE: WLAN modules are designed with a notch **(5)** to prevent incorrect insertion into the WLAN module slot.



Reverse this procedure to install a WLAN module.

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Optical drive

NOTE: The optical drive spare part kit includes an optical drive bezel.

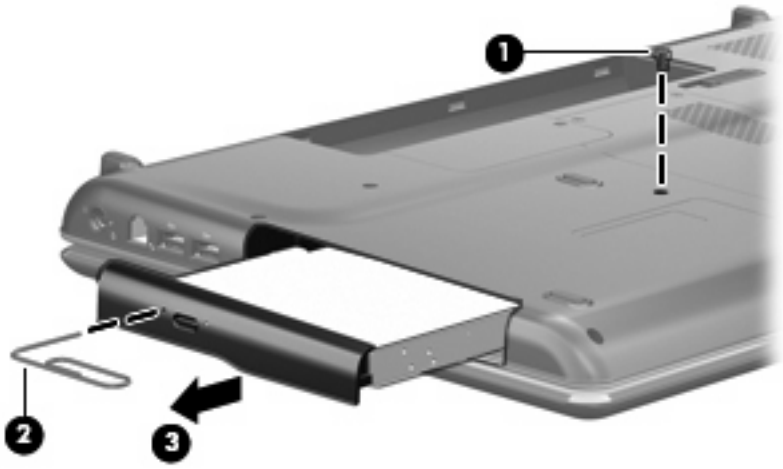
Description	Spare part number
DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe	513773-001
Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive	513772-001

Before removing the optical drive, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).

Remove the optical drive:

1. Remove the PM2.5×7.0 retention screw **(1)** to release the optical drive from the computer.
2. Insert a paper clip **(2)** to extend the disc tray.
3. Grasp the tray and slide the optical drive **(3)** out of the optical drive bay.



To insert the optical drive, insert the rear edge of the optical drive into the optical drive bay and slide it in until the optical drive is seated.

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Memory module

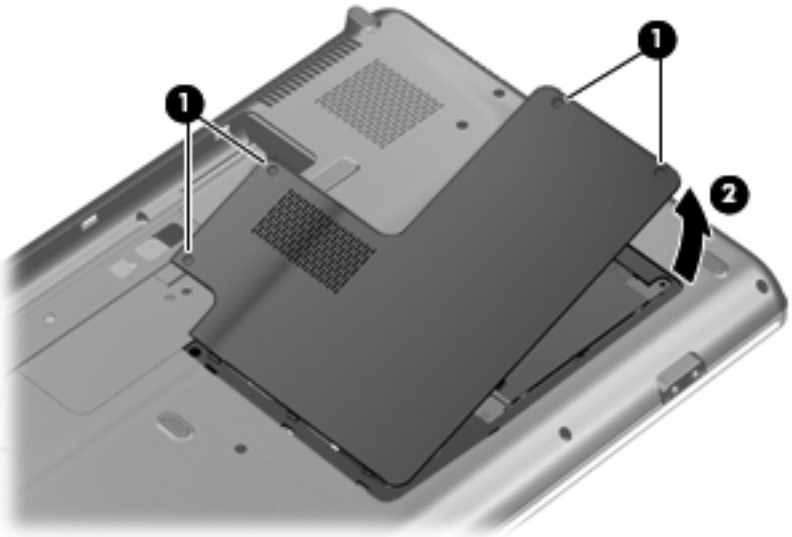
Description	Spare part number
2048-MB (800-MHz, PC2-6400, DDR2)	513766-001
1024-MB (800-MHz, PC2-6400, DDR2)	513766-001

Before removing the memory module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).

Remove the hard drive cover:

1. Loosen the 4 Phillips PM2.5×6.0 captive screws **(1)** that secure the hard drive cover to the computer.
2. Lift the left side of the cover **(2)**, swing it up and to the right, and remove the cover. The hard drive cover is included in the Plastics Kit, spare part number 531859-001.



3. Spread the retaining tabs **(1)** on each side of the memory module slot to release the memory module. (The edge of the module opposite the slot rises away from the computer.)

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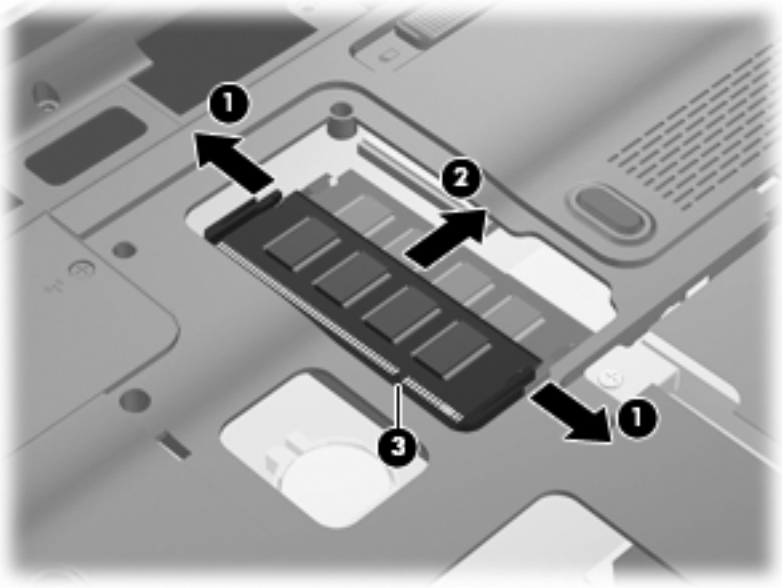
4. Remove the module **(2)** by pulling it away from the slot at an angle.

NOTE: Memory modules are designed with a notch **(3)** to prevent incorrect insertion into the memory module slot.



Reverse this procedure to install a memory module.

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Hard drive

NOTE: The hard drive spare part kit includes a hard drive bracket.

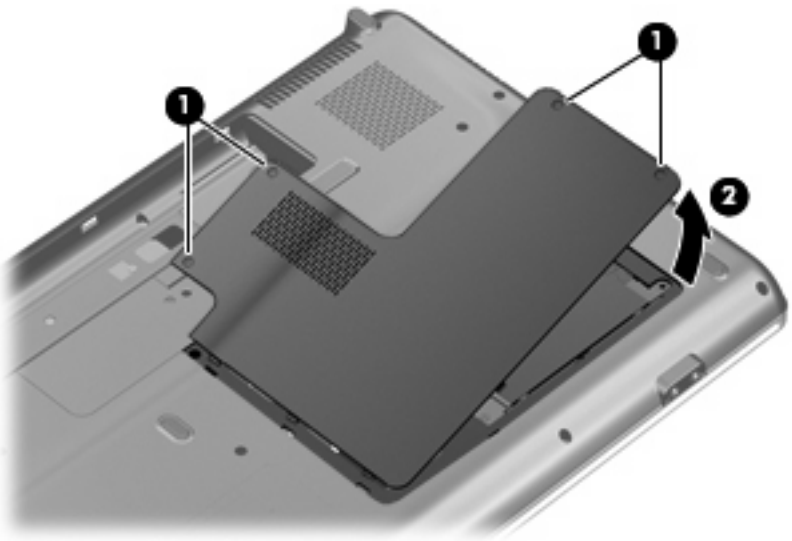
Description	Spare part number
500-GB, 5400-rpm	534129-001
320-GB, 5400-rpm	513769-001
250-GB, 5400-rpm	513768-001
160-GB, 5400-rpm	513767-001
Hard Drive Harware Kit (includes hard drive bracket and screws)	513771-001

Before removing the hard drive, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).

Remove the hard drive:

1. Loosen the 4 Phillips PM2.5×6.0 captive screws **(1)** that secure the hard drive cover to the computer.
2. Lift the left side of the cover **(2)**, swing it up and to the right, and remove the cover. The hard drive cover is included in the Plastics Kit, spare part number 531859-001.



3. Loosen the 2 Phillips PM2.5×7.0 screws **(1)** that secure the hard drive to the computer.

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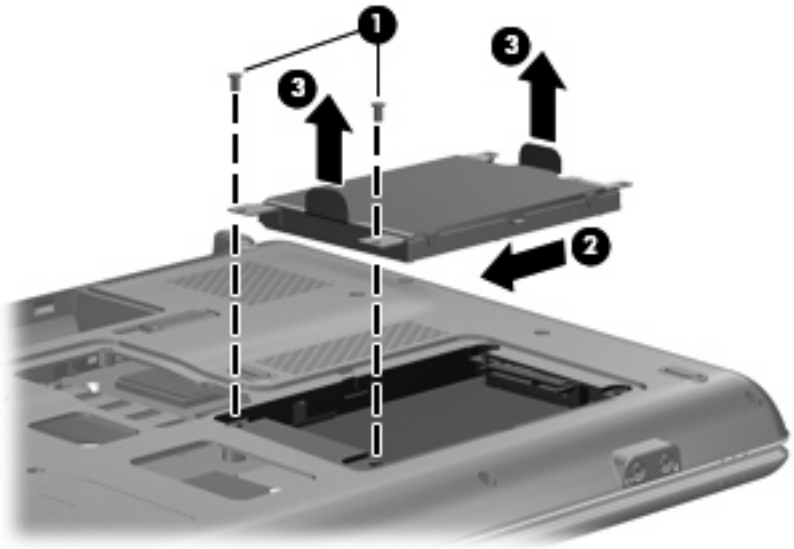
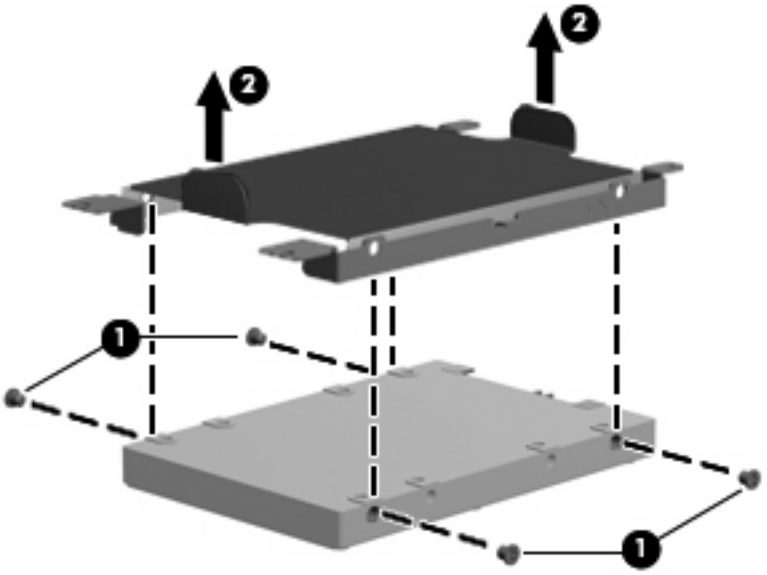
4. Use the 2 Mylar tabs to slide the hard drive **(2)** to the right until it disconnects from the system board.

5. Use the 2 Mylar tabs to lift the hard drive straight up **(3)**, and remove it from the hard drive bay.



6. If it is necessary to replace the hard drive bracket, remove the four Phillips PM3.0×4.0 screws **(1)** that secure the hard drive bracket to the hard drive.

7. Lift the bracket **(2)** straight up to remove it from the hard drive.



Reverse this procedure to reassemble and install the hard drive.

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Modem module

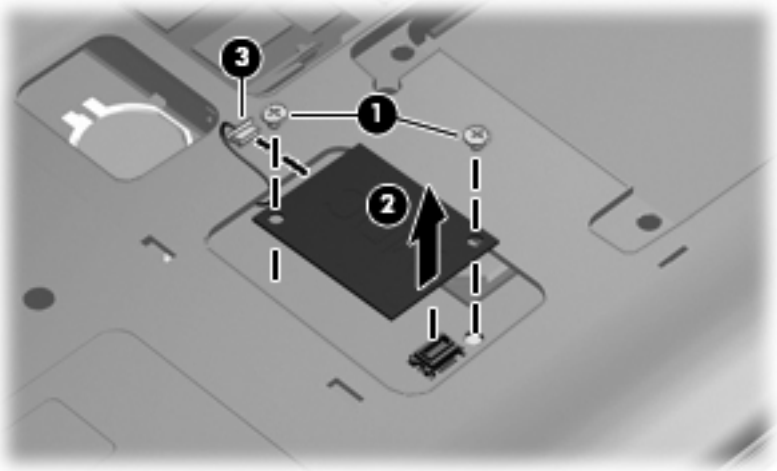
Description	Spare part number
Modem module	510100-011

Before removing the modem module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the hard drive cover (see Hard drive on page 56), if not already removed.

Remove the modem module:

1. Remove the 2 Phillips 2.0×3.0 screws **(1)** that hold the module in place.
2. Lift up along the back edge of the module **(2)**.
3. Disconnect the modem cable **(3)** when the module is free of the bay.



Reverse this procedure to install a modem module.

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RTC battery

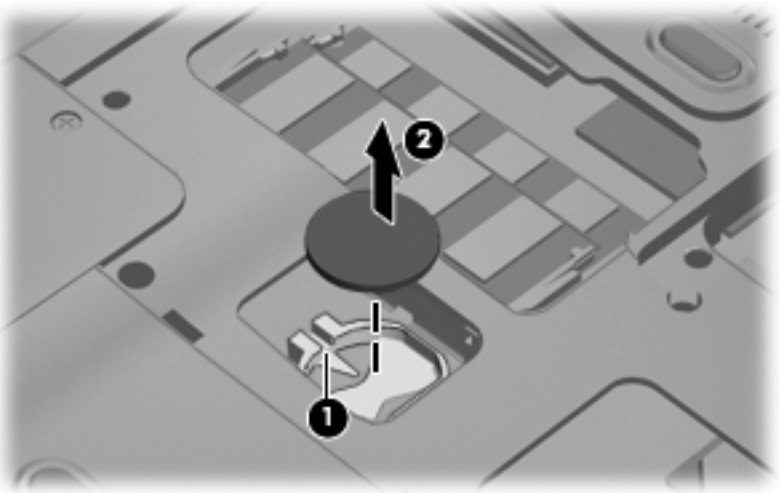
Description	Spare Part Number
RTC Battery	449729–001

Before removing the RTC battery, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the hard drive cover (see Hard drive on page 56).

Remove the RTC battery:

1. Insert a flat nonconductive probe between the tabs **(1)** on the side of the RTC battery holder.
2. Lift up to remove the RTC battery **(2)**.



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Keyboard

For use in:	Spare part number	For use in:	Spare part number
Belgium, Finland, the Netherlands, Poland, South Africa, and Sweden, for use with the Presario CQ71 notebook PC only	517627-A41	Norway	517627-DH1
Czech Republic, for use with the Presario CQ71 notebook PC only	517627-221	Portugal, for use with the Presario CQ71 notebook PC only	517627-131
France, for use with the Presario CQ71 notebook PC only	517627-051	Russia, for use with the Presario CQ71 notebook PC only	517627-251
French Canada	517627-121	Saudi Arabia, for use with the Presario CQ71 notebook PC only	517627-171
Germany, for use with the Presario CQ71 notebook PC only	517627-041	Spain, for use with the Presario CQ71 notebook PC only	517627-071
Greece, for use with the Presario CQ71 notebook PC only	517627-151	Switzerland, for use with the Presario CQ71 notebook PC only	517627-BG1
Hungary, for use with the Presario CQ71 notebook PC only	517627-211	Turkey, for use with the Presario CQ71 notebook PC only	517627-141
International, for use with the Presario CQ71 notebook PC only	517627-B31	United Kingdom	517627-031
Israel, for use with the Presario CQ71 notebook PC only	517627-BB1	United States	517627-001
Italy, for use with the Presario CQ71 notebook PC only	517627-061		

Before removing the keyboard, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the hard drive (see Hard drive on page 56).

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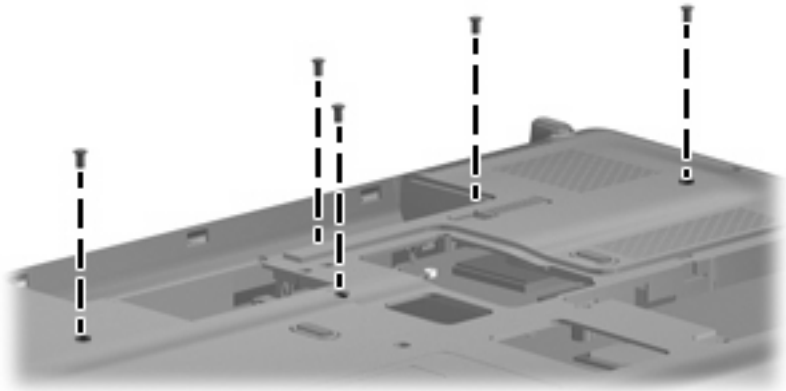
Remove the keyboard:

1. Remove the five Phillips PM2.5×7.0 screws that secure the keyboard to the computer.



2. Turn the computer right-side up, with the front toward you.
3. Open the computer as far as possible.
4. Use a nonconductive probe to lift up on the tabs located near the tab key **(1)** and the - (minus) key **(2)**.
5. Lift the rear edge of the keyboard and rotate the keyboard **(3)** toward you until it rests upside down on the top cover.

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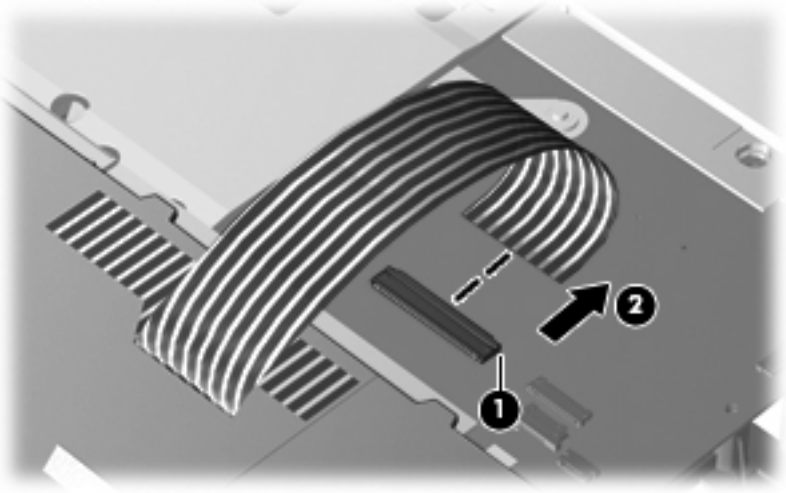
6. Release the zero insertion force (ZIF) connector **(1)** to which the keyboard cable is attached, and disconnect the keyboard cable **(2)** from the system board.



7. Remove the keyboard.

Reverse this procedure to install the keyboard.

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Keyboard cover

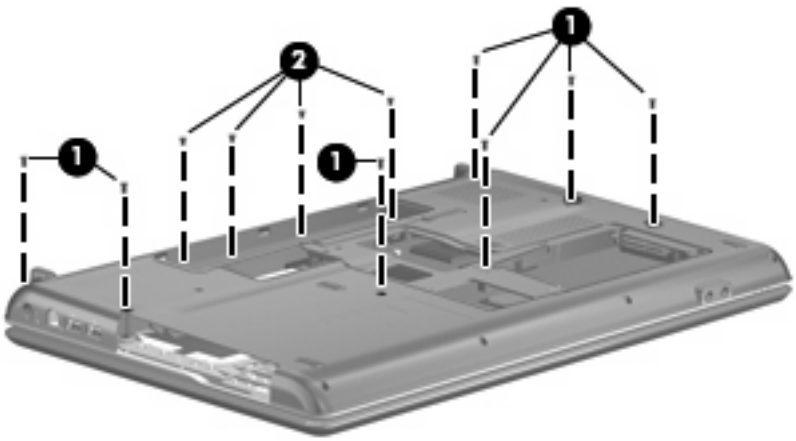
Description	Spare part number
Keyboard cover (includes LED board and cable)	531854-001

Before removing the keyboard cover, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the keyboard (see Keyboard on page 60).

Remove the keyboard cover:

1. Close the computer.
2. Turn the computer upside down, with the rear panel toward you.
3. Remove the 7 Phillips PM2.5×7.0 screws **(1)** and the 4 black Phillips PM2.0×5.0 screws **(2)** that secure the keyboard cover to the computer.



4. Turn the computer right-side up, with the front toward you.
5. Open the computer as far as possible.
6. Remove the 2 Phillips PM2.5×6.0 screws **(1)**.

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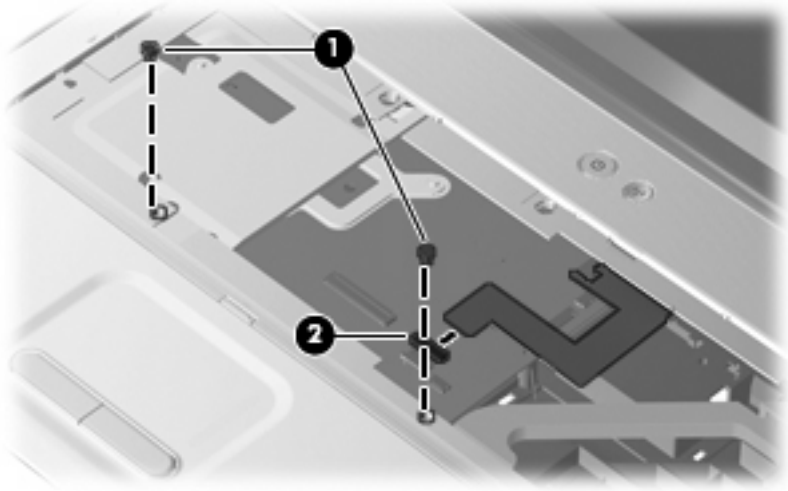
7. Release the ZIF connector to which the power button board, on the underside of the keyboard cover, is connected. Disconnect the cable **(2)** from the system board.



8. Remove the keyboard cover.

Reverse this procedure to install the keyboard cover.

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Power button board

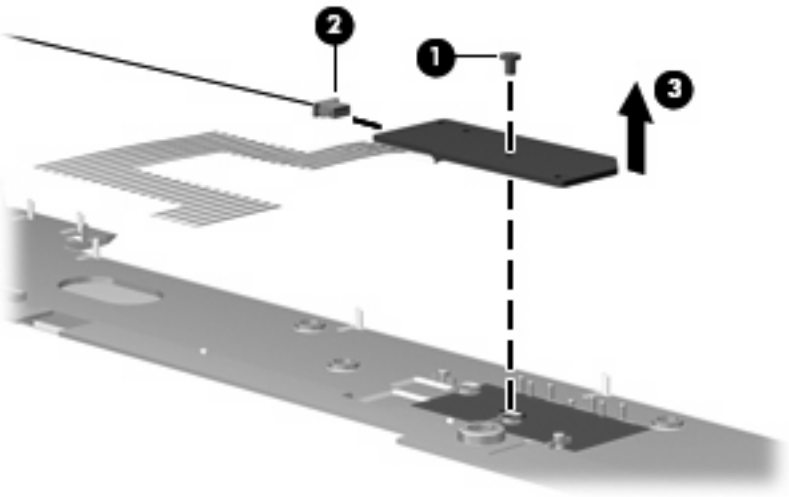
Description	Spare part number
Power button board	531860-001

Before removing the power button board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Keyboard (see Keyboard on page 60)
   b. Keyboard cover (see Keyboard cover on page 63)

Remove the power button board:

1. Turn the keyboard cover over.
2. Remove the Phillips 2.0×3.0 screw **(1)**.
3. Disconnect the num lock cable **(2)**.
4. Remove the power button board **(3)**.



Reverse this procedure to install the power button board.

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Display assembly

Description	Spare part number
17.3-inch display assembly (includes 17.3-inch 16:9 wide-aspect ratio (1600×900), white-LED backlit, HD BrightView display panel, bezel, enclosure, hinges, camera module and cable, microphone and cable, and 2 wireless antenna transceivers and cables)	
For the Presario CQ71 Notebook PC use	513762-001
For the HP G71 Notebook PC use	513760-001

Before removing the display assembly, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Disconnect the wireless antenna cables from the WLAN module (see WLAN module on page 48).
6. Remove the following components:
   a. Keyboard (see Keyboard on page 60)
   b. Keyboard cover (see Keyboard cover on page 63)

Remove the display assembly:

1. Open the computer as far as possible.
2. Disconnect the display panel cable **(1)** from the system board and remove the cable from the cavity between the system board and the display left hinge.
3. Disconnect the microphone module cable **(2)** from the system board.

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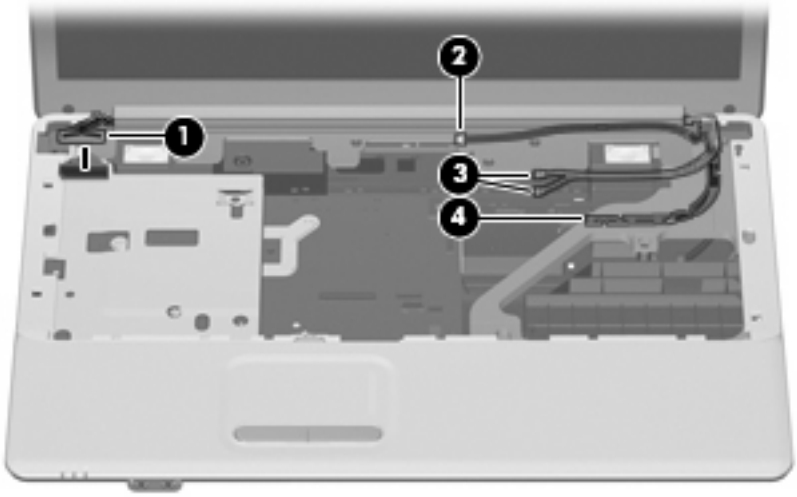
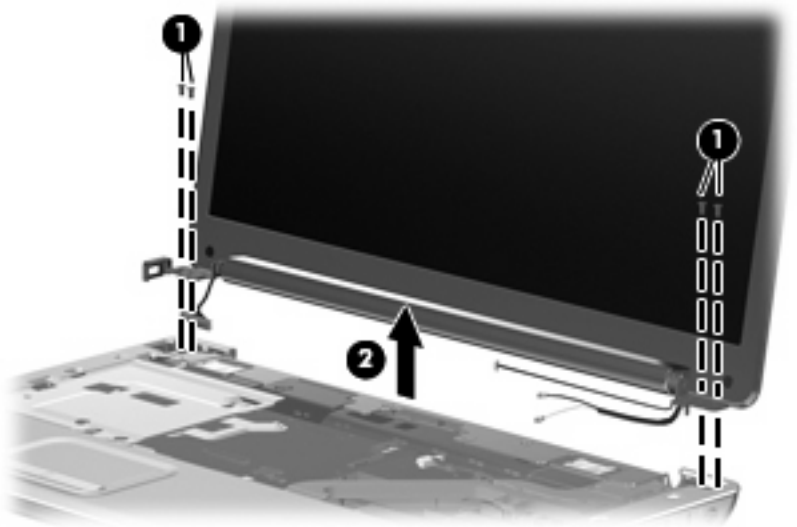
4. Remove the WLAN antenna cables **(3)** from the clips and routing channels **(4)** built into the top cover.



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

5. Remove the 4 Phillips PM2.5×7.0 screws **(1)** that secure the display assembly to the computer.

6. Lift the display assembly **(2)** straight up and remove it.



7. If it is necessary to replace any of the display assembly internal components, remove the 2 rubber screw covers **(1)** on the display bezel bottom edge. The rubber screw covers are included in the Display Rubber Kit, spare part number 531525-001.

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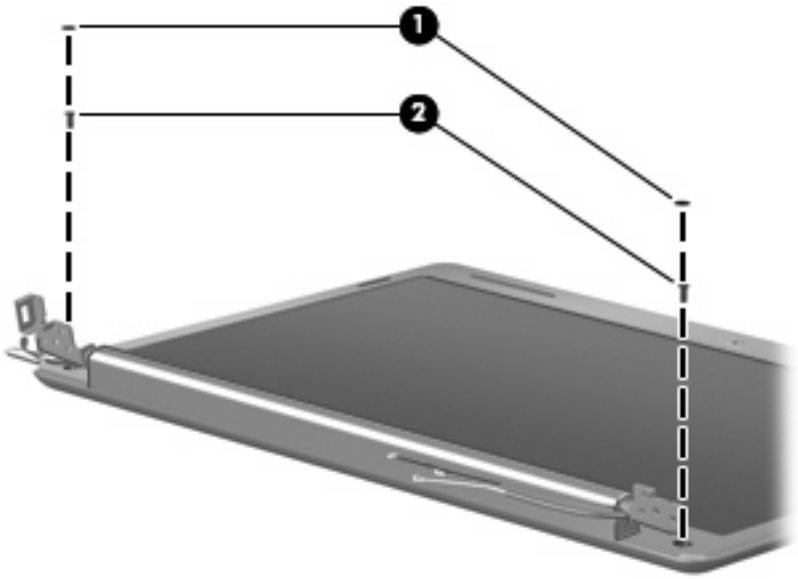
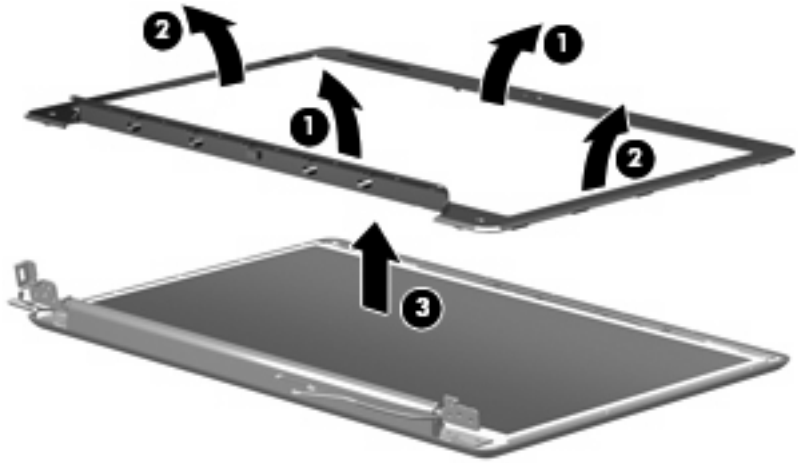
8. Remove the 2 Phillips PM2.5×7.0 screws **(2)** that secure the display bezel to the display assembly.



9. Flex the inside of the top and bottom edges **(1)** and the left and right sides **(2)** of the display bezel until the bezel disengages from the display enclosure.

10. Remove the display bezel **(3)**. For the Presario CQ71 Notebook PC, use spare part number 531521-001. For the HP G71 Notebook PC, use spare part number 535560-001.



11. Disconnect the camera module cable **(1)**.

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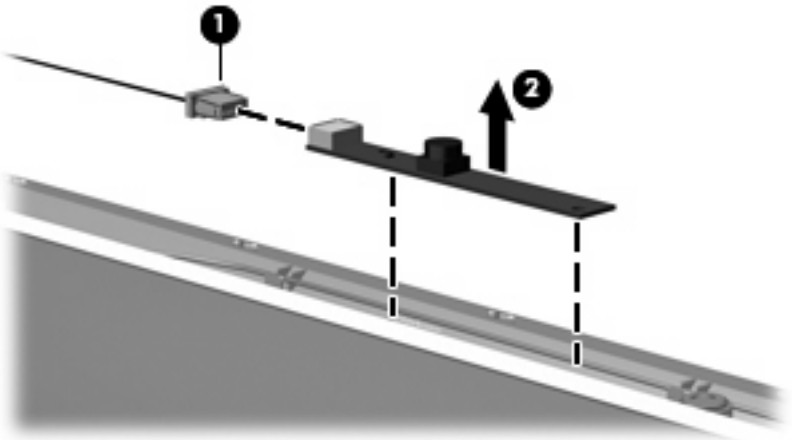
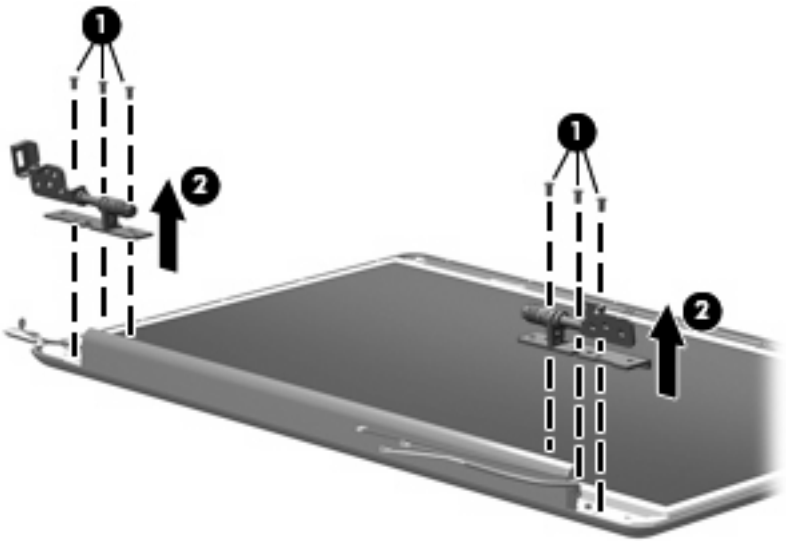
12. Lift up the camera module **(2)**. The camera module is available using spare part number 531527-001.



13. If it is necessary to replace the display hinges, remove the 3 Phillips PM2.5×6.0 screws **(1)** that secure each hinge to the display panel.

14. Remove the display hinges **(2)** from the display panel. The display hinges are available using spare part number 531522-001.



15. To remove the display panel from the display enclosure, remove the 2 Phillips PM2.5×6.0 screws **(1)** that secure the panel to the display enclosure.

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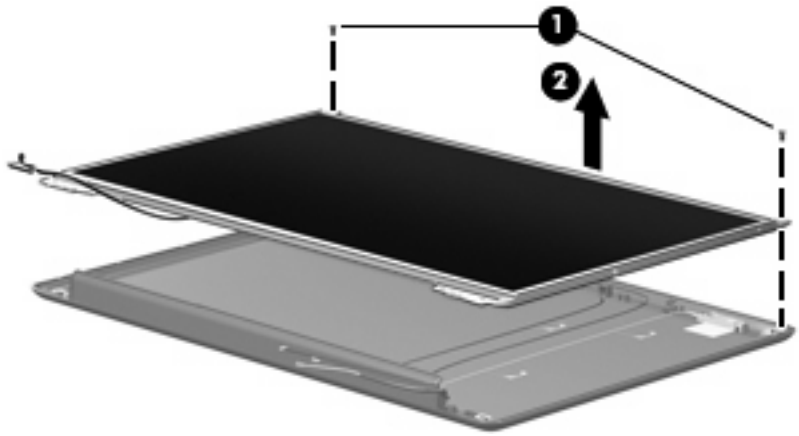
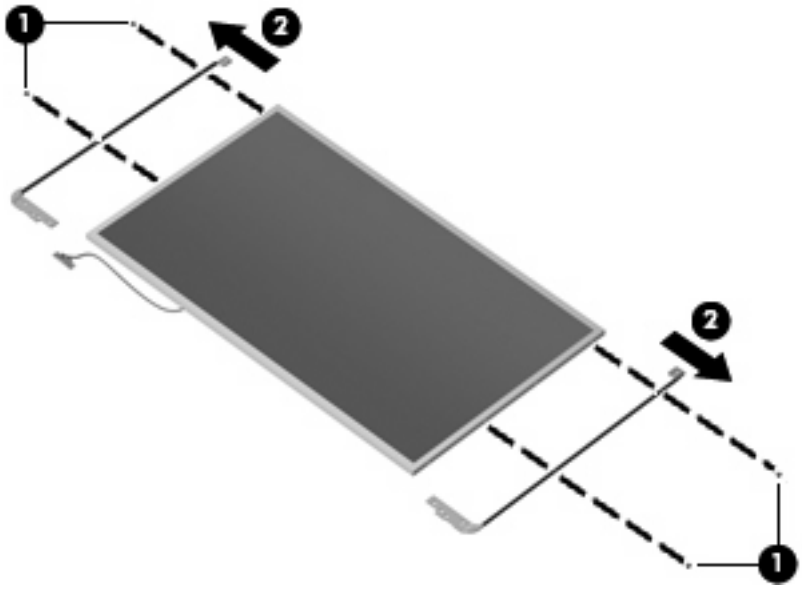
16. Lift the display panel from the back enclosure **(2)**.



17. If it necessary to replace the display panel, remove the four Phillips PM2.0×3.0 screws **(1)**.
18. Remove the brackets **(2)**.



19. If it is necessary to replace the wireless antenna transceivers and cables, lift the antennas **(1)**.
20. Remove the wireless antenna cables from the clips **(2)** built into the display enclosure.

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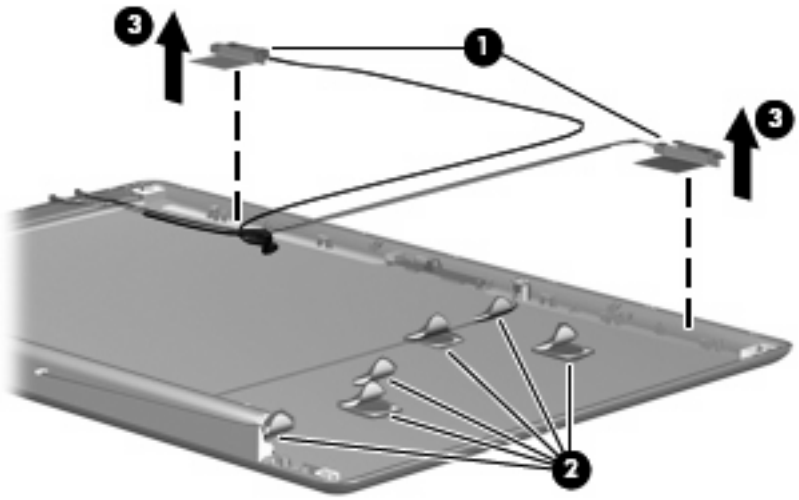
21. Remove the wireless antenna transceivers **(3)** and cables from the display enclosure. The wireless antenna transceivers and cables are available in the Display Cable Kit, spare part number 513524-001.



Reverse this procedure to install the display assembly.

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Top cover

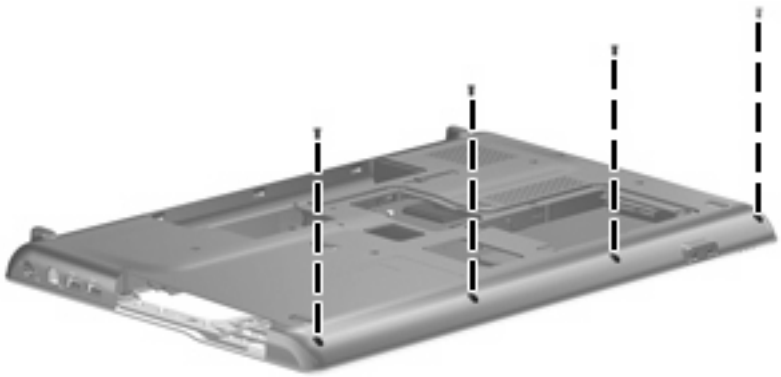
Description	Spare part number
Top cover (includes TouchPad and cable, and caps lock LED board and cable)	531852-001

Before removing the top cover, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Hard drive (see Hard drive on page 56)
   b. Optical drive (see Optical drive on page 53)
   c. Keyboard (see Keyboard on page 60)
   d. Keyboard cover (see Keyboard cover on page 63)
   e. Display assembly (see Display assembly on page 66

Remove the top cover:

1. Close the computer.
2. Turn the computer upside down, with the rear panel toward you.
3. Remove the four Phillips PM2.5×7.0 screws that secure the top cover to the base enclosure.



4. Turn the computer right-side up, with the front toward you.
5. Disconnect the caps lock LED board cable **(1)** from the system board.

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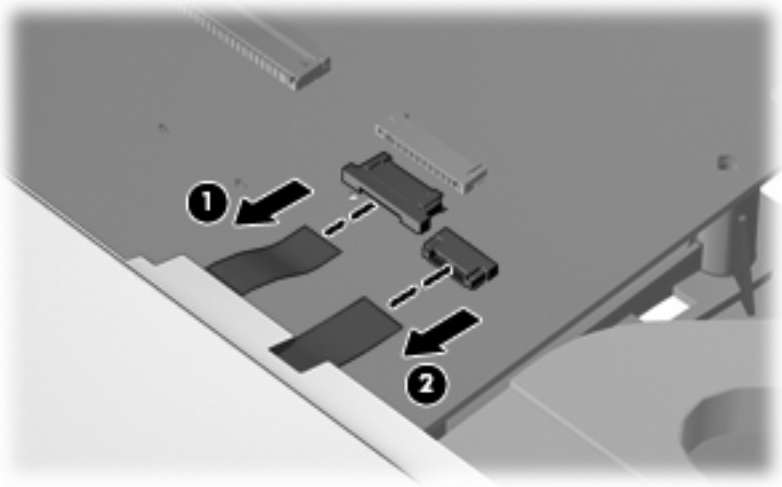
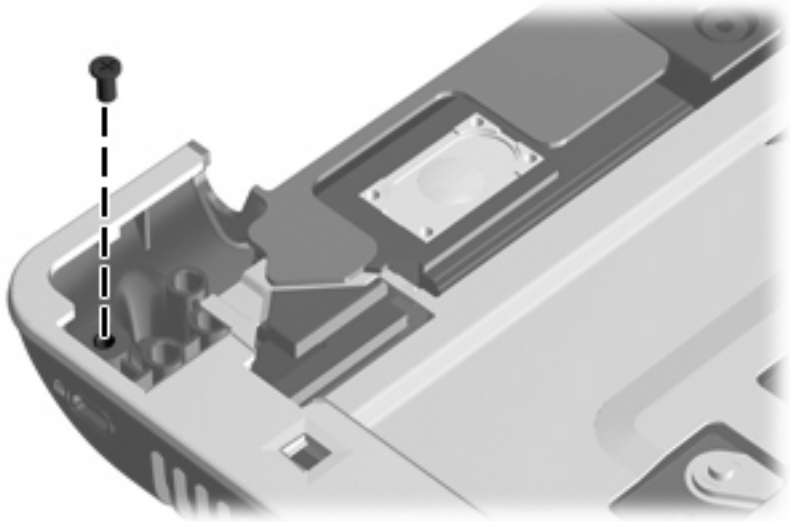
6. Release the ZIF connector to which the TouchPad board cable is connected, and then disconnect the cable **(2)** from the system board.



7. Remove the remaining Phillips PM2.5×7.0 screw located in the top left corner of the base enclosure.



8. Pull the back edge of the top cover **(1)** up and away from the base enclosure.

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9. Lift up until all edges of the top cover are disengaged from the base enclosure **(2)**.

Reverse this procedure to install the top cover.

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Speakers

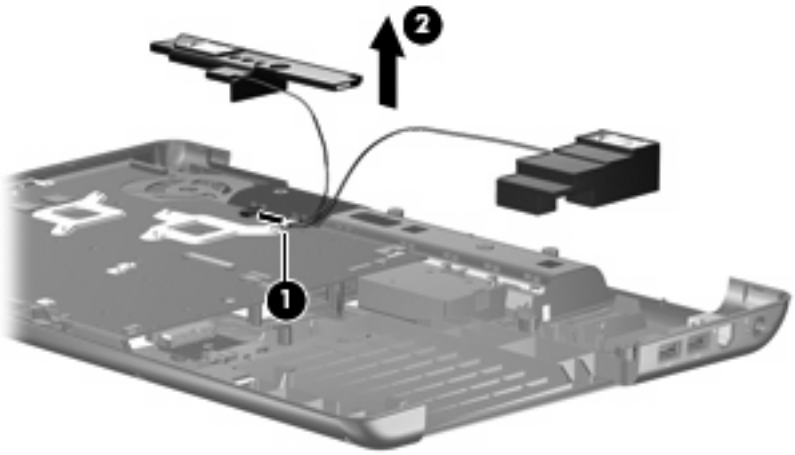
Description	Spare part number
Speakers (include left and right speakers and cables)	531209-001

Before removing the speakers, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Optical drive (see Optical drive on page 53)
   b. Hard drive (see Hard drive on page 56)
   c. Keyboard (see Keyboard on page 60)
   d. Keyboard cover (see Keyboard cover on page 63)
   e. Display assembly (see Display assembly on page 66)
   f. Top cover (see Top cover on page 72)

Remove the speakers:

1. Disconnect the speaker cable **(1)** from the system board.
2. Remove the speakers **(2)** from the base enclosure.



Reverse this procedure to install the speakers.

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System board

NOTE: The system board spare part kit includes replacement thermal material.

Description	Spare part number
Intel GM45, HDMI system board	513754-001
Intel GL40 system board	513756-001
Intel GL40 HDMI system board	513757-001
Intel PM45, HDMI system board	513758-001

Before removing the system board, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Optical drive (see Optical drive on page 53)
   b. Hard drive (see Hard drive on page 56)
   c. Keyboard (see Keyboard on page 60)
   d. Keyboard cover (see Keyboard cover on page 63)
   e. Display assembly (see Display assembly on page 66)
   f. Top cover (see Top cover on page 72)

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

- WLAN module (see WLAN module on page 48)
- Memory modules (see Memory module on page 54)
- RTC battery (see RTC battery on page 59)
- Modem module (see Modem module on page 58)

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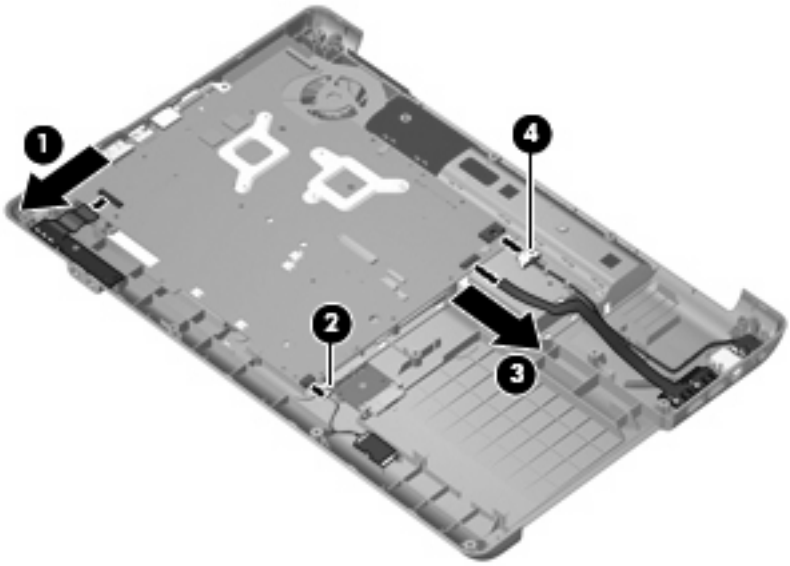
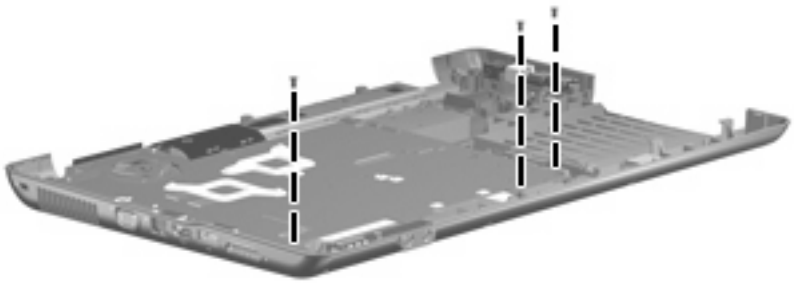
Remove the system board:

1. Disconnect the audio board cable **(1)**, the Bluetooth module cable **(2)**, the USB cable **(3)**, and the power cable **(4)** from the system board.



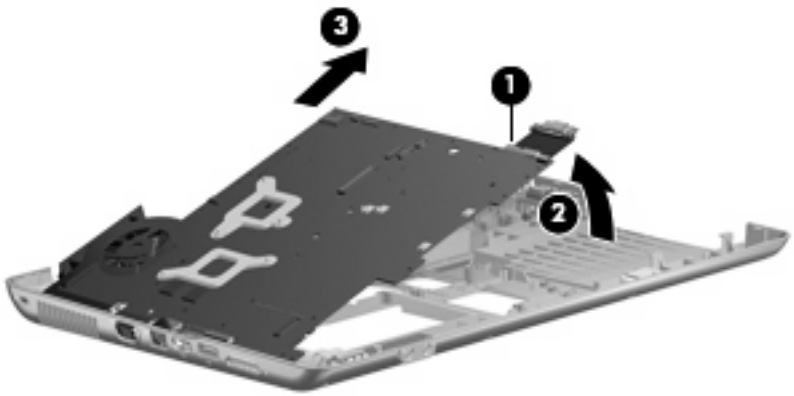
NOTE: The power connector and the RJ-11 jack are held in place with double-sided tape and can be removed after the cables have been detached from the system board.

2. Remove the 3 Phillips PM2.5×6.0 screws that secure the system board to the base enclosure.



CAUTION: Do not lift the system board by the optical drive expansion board **(1)**.

3. Lift the right edge of the system board **(2)** until the external monitor port is clear of the base enclosure. Then pull the board out of the base enclosure **(3)**.



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Reverse this procedure to install the system board.

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Bluetooth module

NOTE: The Bluetooth module spare part Kit does not include a Bluetooth module cable. The Bluetooth module cable is included in the Cable Kit, spare part number 531856-001.

Description	Spare part number
Bluetooth module (includes double-sided tape)	483113-001

Before removing the Bluetooth module, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Optical drive (see Optical drive on page 53)
   b. Hard drive (see Hard drive on page 56)
   c. Keyboard (see Keyboard on page 60)
   d. Keyboard cover (see Keyboard cover on page 63)
   e. Display assembly (see Display assembly on page 66)
   f. Top cover (see Top cover on page 72)

Remove the Bluetooth module:

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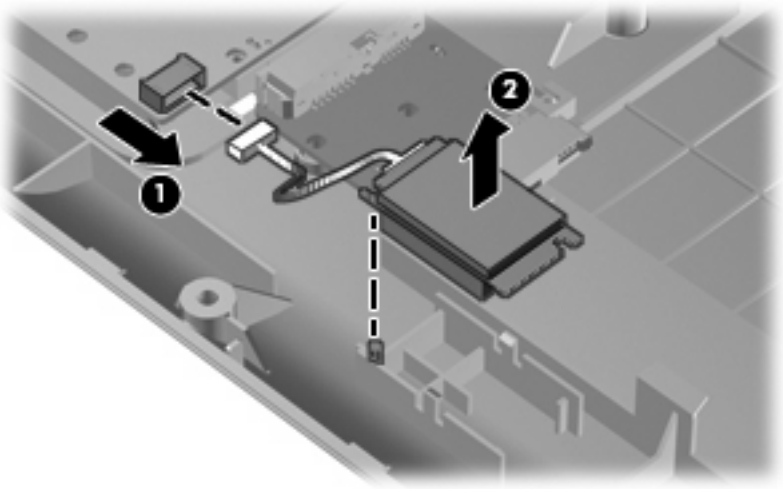
☐ Detach the Bluetooth cable **(1)** from the system board, if you have not already done so. Remove the Bluetooth module from the base enclosure **(2)**.

NOTE: The Bluetooth module is held in place with double-sided tape.



Reverse this procedure to install the Bluetooth module.

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Fan/heat sink assembly

Description	Spare part number
UMA heat sink (includes heat sink retention clip and replacement thermal material)	531210-001
Discrete Heat sink (includes heat sink retention clip and replacement thermal material)	531220-001

Before removing the heat sink, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Optical drive (see Optical drive on page 53)
   b. Hard drive (see Hard drive on page 56)
   c. Keyboard (see Keyboard on page 60)
   d. Keyboard cover (see Keyboard cover on page 63)
   e. Display assembly (see Display assembly on page 66)
   f. Top cover (see Top cover on page 72)
   g. System board (see System board on page 76)

Remove the UMA heat sink:

1. Turn the system board upside down.

△ **CAUTION:** Loosen the screws in the order indicated on the fan/heat sink assembly to ensure consistent pressure over the processor board.

2. Loosen the 3 Phillips PM2.0×5.0 captive screws **(1)** that secure the fan/heat sink assembly to the system board.

NOTE: Due to the adhesive quality of the thermal material located between the heat sink assembly and system board components, it may be necessary to move the heat sink assembly from side to side to detach the assembly.

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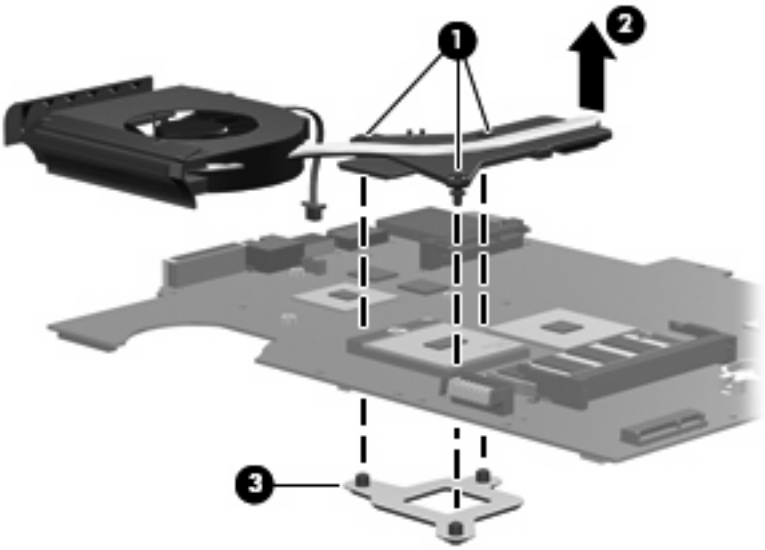
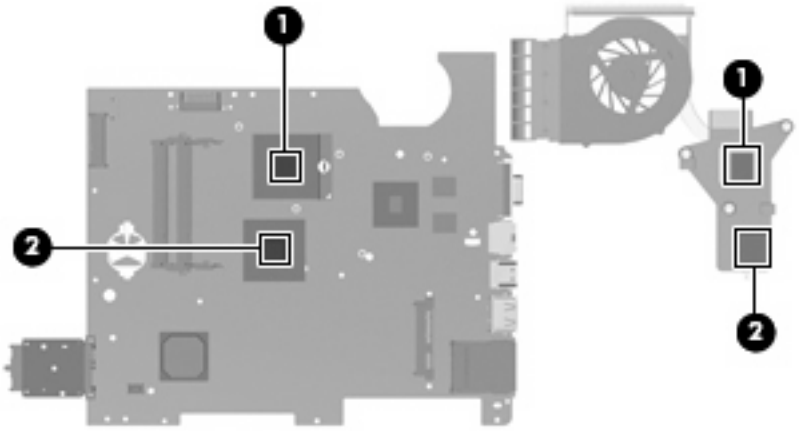
3. Remove the heat sink **(2)**. The heat sink bracket **(3)** is built into the system board.



NOTE: The thermal material must be thoroughly cleaned from the surfaces of the heat sink and processor each time the heat sink is removed. Thermal paste is applied to the fan/heat sink assembly to correspond with components on the system board as follows: the processor **(1)**, and the Northbridge chip **(2)**. Thermal pads and thermal paste are included with all heat sink, system board, and processor spare part kits.



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

Remove the discrete heat sink:

1. Turn the system board upside down.
2. Loosen the 5 Phillips PM2.0×5.0 captive screws **(1)** that secure the heat sink to the system board.

NOTE: Due to the adhesive quality of the thermal material located between the heat sink assembly and system board components, it may be necessary to move the heat sink assembly from side to side to detach the assembly.

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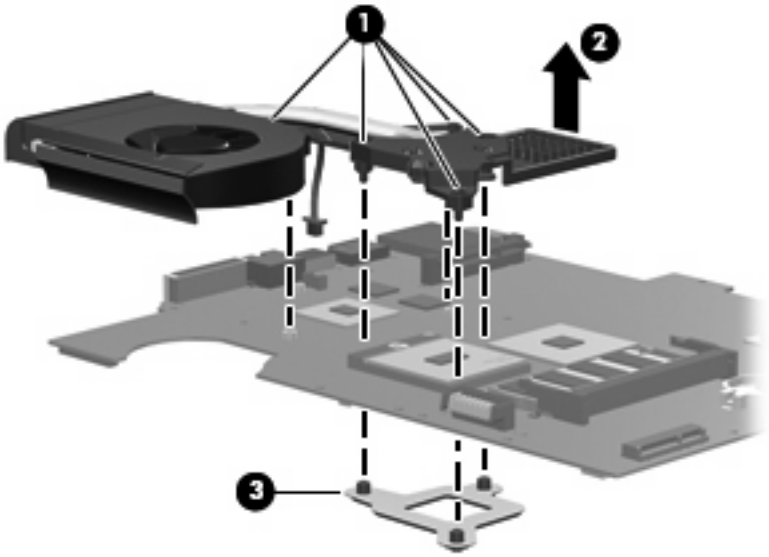
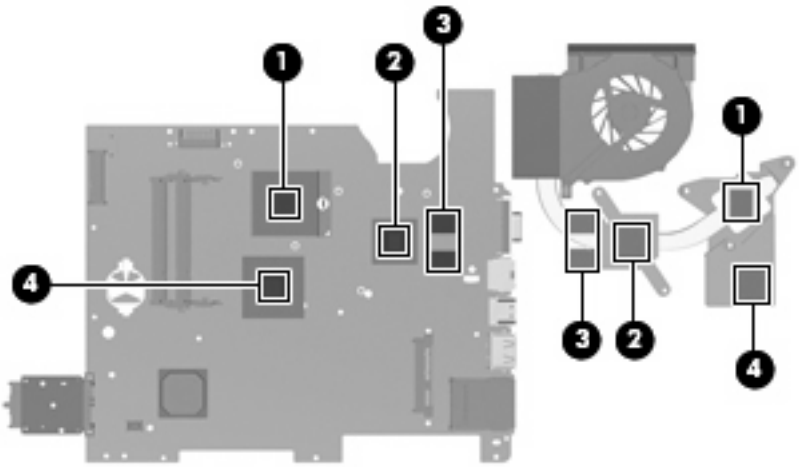
3. Remove the heat sink **(2)**. The heat sink bracket **(3)** is built into the system board.



NOTE: The thermal material must be thoroughly cleaned from the surfaces of the heat sink and processor each time the heat sink is removed. Thermal paste is applied to the fan/heat sink assembly to correspond with components on the system board as follows: the processor **(1)**, the NVIDIA video processor **(2)**, the video memory **(3)**, and the Northbridge chip **(4)**. Thermal pads and thermal paste are included with all heat sink, system board, and processor spare part kits.



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Processor

NOTE: The processor spare part kit includes replacement thermal material.

Description	Spare part number
Intel Core2 Duo P8700 (2.53-GHz processor, 3-MB L2 cache, 1066-MHz FSB)	507960-001
Intel Core2 Duo P7450 (2.13-GHz processor, 3-MB L2 cache, 1066-MHz FSB)	507965-001
Intel Core2 Duo T6600 (2.2-GHz processor, 2-MB L2 cache, 800-MHz FSB)	513593-001
Intel Core2 Duo T6400 (2.0-GHz processor, 2-MB L2 cache, 800-MHz FSB)	513592-001
Intel Pentium DC T3400 (2.16-GHz processor, 1-MB L2 cache, 667-MHz FSB)	509549-001
Intel Pentium DC T4200 (2.00-GHz processor, 1-MB L2 cache, 800-MHz FSB)	513599-001
Celeron 900 2.2-GHz processor, (1-MB L2 cache, 667-Mhz FSB, for use with computers equipped with UMA graphics memory only)	534419-001
Celeron 585 2.16-GHz processor, (1-MB L2 cache, 667-MHz FSB, for use with computers equipped with UMA graphics memory only)	519898-001
Intel Celeron DC T1700 1.83-GHz processor, (1-MB L2 cache, 667-MHz FSB, for use with computers equipped with UMA graphics memory only)	534084-001
Intel Celeron DC T1600 1.66-GHz processor, (1-MB L2 cache, 667-MHz FSB, for use with computers equipped with UMA graphics memory only)	532324-001

Before removing the processor, follow these steps:

1. Shut down the computer. If you are unsure whether the computer is off or in Hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the computer.
3. Disconnect the power from the computer by first unplugging the power cord from the AC outlet and then unplugging the AC adapter from the computer.
4. Remove the battery (see Battery on page 47).
5. Remove the following components:
   a. Optical drive (see Optical drive on page 53)
   b. Hard drive (see Hard drive on page 56)
   c. Keyboard (see Keyboard on page 60)
   d. Keyboard cover (see Keyboard cover on page 63)
   e. Display assembly (see Display assembly on page 66)
   f. Top cover (see Top cover on page 72)
   g. System board (see System board on page 76)
   h. Fan/heat sink assembly (see Fan/heat sink assembly on page 81)

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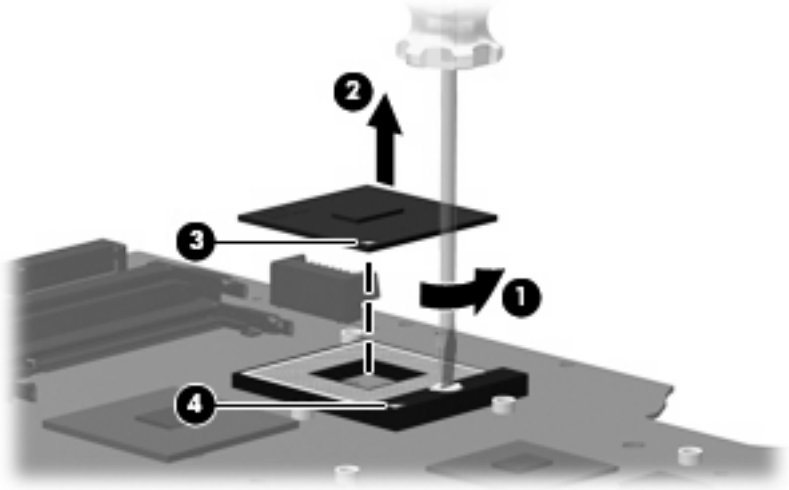
Remove the processor:

1. Turn the processor locking screw **(1)** one-half turn counterclockwise until you hear a click.
2. Lift the processor **(2)** straight up and remove it.

NOTE: When you install the processor, the gold triangle **(3)** on the processor must be aligned with the triangle icon **(4)** embossed on the processor socket.



Reverse this procedure to install the processor.

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5 Setup Utility

Starting Setup Utility

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

NOTE: The fingerprint reader (select models only) cannot be used to access the Setup Utility.

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

To start Setup Utility:

- Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press f10.

– or –

1. Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press esc.
2. When the Startup Menu is displayed, press f10.

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Using Setup Utility

Changing the language of Setup Utility

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

1. Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press f10.

   – or –

   Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press esc. When the Startup Menu is displayed, press f10.

2. Use the arrow keys to select **System Configuration > Language**, and then press enter.
3. Use the arrow keys to select a language, and then press enter.
4. When a confirmation prompt with your language selected is displayed, press enter.
5. To save your change and exit Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press enter.

Your change goes into effect immediately.

Navigating and selecting in Setup Utility

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

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

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Displaying system information

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

1. Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press f10.

   – or –

   Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press esc. When the Startup Menu is displayed, press f10.

2. Select the **Main** menu. System information such as the system time and date, and identification information about the computer is displayed.

3. To exit Setup Utility without changing any settings, use the arrow keys to select **Exit > Exit Discarding Changes**, and then press enter.

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Restoring default settings in Setup Utility

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

1. Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press f10.

   – or –

   Open Setup Utility by turning on or restarting the computer. While the “Press the ESC key for Startup Menu” message is displayed in the lower-left corner of the screen, press esc. When the Startup Menu is displayed, press f10.

2. Use the arrow keys to select **Exit > Load Setup Defaults**, and then press enter.

3. When the Setup Confirmation is displayed, press enter.

4. To save your change and exit the Setup Utility, use the arrow keys to select **Exit > Exit Saving Changes**, and then press enter.

Setup Utility default settings go into effect when the computer restarts.

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

Exiting Setup Utility

You can exit Setup Utility with or without saving changes.

- To exit Setup Utility and save your changes from the current session:

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

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

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

After either choice, the computer restarts in Windows.

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Setup Utility menus

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

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

Main menu

Select	To do this
System information	• View and change the system time and date. • View identification information about the computer. • View specification information about the processor, memory size, system BIOS, and keyboard controller version (select models only).

Security menu

Select	To do this
Administrator password	Enter, change, or delete an administrator password.
Power-On Password	Enter, change, or delete a power-on password.

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System Configuration menu

Select	To do this
Language Support	Change the Setup Utility language.
Button Sound (select models only)	Enable/disable the capacitive button tapping sound.
Virtualization Technology (select models only)	Enable/disable the processor Virtualization Technology.
Processor C6 State (select models only)	Enable/disable the processor C6 sleep state.
LAN Power Saving (select models only)	Enable/disable LAN Power Saving. When enabled, saves power when the computer is in DC mode.
Card Reader/1394 Power Saving (select models only)	Enable/disable Card Reader/1394 Power Saving.
Fan Always On	Enable/disable Fan Always On. When enabled, the computer fan will always be on.
Boot Options	Set the following boot options: • f9 and f10 Delay (sec.)—Set the delay for the f9 and f10 functions of the Setup Utility in intervals of 5 seconds each (0, 5, 10, 15, 20). • CD-ROM boot—Enable/disable boot from CD-ROM. • Floppy boot—Enable/disable boot from diskette. • Internal Network Adapter boot—Enable/disable boot from Internal Network Adapter. • Boot Order—Set the boot order for: ◦ USB Floppy ◦ Internal CD/DVD ROM drive ◦ USB CD/DVD ROM drive ◦ Hard drive ◦ USB Diskette on Key ◦ USB Hard drive ◦ Network adapter

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Diagnostics menu

Select	To do this
Hard Disk Self Test	Run a comprehensive self-test on the hard drive. **NOTE:** On models with two hard drives, this menu option is called the **Primary Hard Disk Self Test**.
Secondary Hard Disk Self Test (select models only)	Run a comprehensive self-test on a secondary hard drive.
Memory Test	Run a diagnostic test on the system memory.

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6 Specifications

Computer specifications

	Metric	U.S.
Dimensions		
Length	27.69 cm	10.9 in
Width	41.24 cm	16.24 in
Height (front to rear)	3.5 to 4.12 cm	1.38 to 1.62 in
Weight (UMA) with optical drive, hard drive, and battery	3.15 kg	6.99 lbs
Weight (discrete) with optical drive, hard drive and battery	3.2 kg	7.05 lbs
Input power		
Operating voltage	18.5 V dc —19.0 V dc	
Operating current	3.5 A or 4.74 A	
Temperature		
Operating (not writing to optical disc)	0°C to 35°C	32°F to 95°F
Operating (writing to optical disc)	5°C to 35°C	41°F to 95°F
Nonoperating	-20°C to 60°C	-4°F to 140°F
Relative humidity		
Operating	10% to 90%	
Nonoperating	5% to 95%	
Maximum altitude (unpressurized)		
Operating	-15 m to 3,048 m	-50 ft to 10,000 ft
Nonoperating	-15 m to 12,192 m	-50 ft to 40,000 ft

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

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17.3-inch, BrightView display specifications

	Metric	U.S.
Dimensions		
Height	23.33 cm	10.9 in
Width	39.86 cm	16.2 in
Diagonal	33.9 cm	17.4 in
Number of colors	262,000	
Contrast ratio	500:1 (typical)	
Brightness	200 nits (typical)	
Pixel resolution		
Pitch	0.279 × 0.279 mm	
Format	1600x900	
Configuration	RGB vertical stripe	
Character display	80 × 25	
Total power consumption	7.0 W	
Viewing angle	±40° horizontal, ±10° upper vertical, ±30° lower vertical (typical)	

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Hard drive specifications

	500 GB*	320 GB*	250 GB*	160 GB*
Dimensions				
Height	9.5 mm	9.5 mm	9.5 mm	9.5 mm
Width	70 mm	70 mm	70 mm	70 mm
Weight	102 g	102 g	102 g	102 g
Interface type	SATA	SATA	SATA	SATA
Transfer rate				
Synchronous (maximum)	100 MB/sec	100 MB/sec	100 MB/sec	100 MB/sec
Security	ATA security	ATA security	ATA security	ATA security
Seek times (typical read, including setting)				
Single track	3 ms	3 ms	3 ms	3 ms
Average	13 ms	13 ms	13 ms	13 ms
Maximum	24 ms	24 ms	24 ms	24 ms
Logical blocks	1,001,172,850	645,126,482	500,586,425	312,581,808
Disk rotational speed	5400 rpm			
Operating temperature	5°C to 55°C (41°F to 131°F)			

NOTE: Certain restrictions and exclusions apply. Consult technical support for details.

*1 GB = 1 billion bytes when referring to hard drive storage capacity. Accessible capacity is less. Actual drive specifications may differ slightly.

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DVD±RW and CD-RW SuperMulti Double-Layer Combo Drive with LightScribe

Applicable disc	**Read:** CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	**Write:** CD-R and CD-RW DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM
Access time	**CD**	**DVD**
Random	< 150 ms	< 160 ms
Cache buffer	2 MB	
Data transfer rate		
24X CD-ROM	3,600 KB/sec	
8X DVD	10,800 KB/sec	
24X CD-R	3,600 KB/sec	
16X CD-RW	2,400 KB/sec	
8X DVD+R	10,800 KB/sec	
8X DVD+RW	10,800 KB/sec	
8X DVD-R	10,800 KB/sec	
6X DVD-RW	8,100 KB/sec	
4X DVD+R Dual-Layer	5,400 KB/sec	
4X DVD-R Dual-Layer	5,400 KB/sec	
5X DVD-RAM	6,750 KB/sec	
Transfer mode	SATA	

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Blu-ray ROM with LightScribe DVD±R/RW SuperMulti DL Drive

Applicable disc		Read:	Write:
		BD ROM, BD-R, BD-RE, CD-DA, CD+(E)G, CD-MIDI, CD-TEXT, CDROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CDRW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	CD-R, CD-RW, DVD+R, DVD+R(9), DVD+RW, DVD-R, DVD-R(9), DVD-RW, DVD-RAM
Access time	BD	**CD**	**DVD**
Random	< 230 ms	< 190 ms	< 190 ms
Cache buffer	2 MB		
Data transfer rate			
24X CD-ROM	3,600 KB/sec		
8X DVD	10,800 KB/sec		
2X BD-ROM	9,000 KB/sec		
16X CD-R	2,400 KB/sec		
10X CD-RW	1,500 KB/sec		
8X DVD+R	10,800 KB/sec		
8X DVD+RW	10,800 KB/sec		
8X DVD-R	10,800 KB/sec		
6X DVD-RW	8,100 KB/sec		
4X DVD+R Dual-Layer	5,400 KB/sec		
4X DVD-R Dual-Layer	5,400 KB/sec		
DVD-RAM	6,750 KB/sec		
Transfer mode	SATA		

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System DMA specifications

Hardware DMA	System function
DMA0	Not applicable
DMA1*	Not applicable
DMA2*	Not applicable
DMA3	Not applicable
DMA4	Direct memory access controller
DMA5*	Available for PC Card
DMA6	Not assigned
DMA7	Not assigned
*PC Card controller can use DMA 1, 2, or 5.	

System memory map specifications

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

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System interrupt specifications

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 Data Fax Modem with SmartCP
IRQ6	Diskette drive
IRQ7*	Parallel port
IRQ8	System CMOS/real-time clock
IRQ9*	Microsoft ACPI-compliant system
IRQ10*	Free resource
IRQ11	ICH9 SMBus controller
IRQ12	Synaptics PS/2 TouchPad
IRQ13	Numeric data processor
IRQ14	Free resource
IRQ15	Free resource
IRQ16	USB UHCI controller Micron card reader controller 1394 OHCI controller
IRQ17	High definition audio controller Ethernet controller
IRQ18	USB UHCI controller
IRQ19	USB UHCI / EHCI controller
IRQ20	SATA controller
IRQ21	USB UCHI controller
IRQ22	High definition audio controller
IRQ23	HP mobile data protection sensor
*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.	
NOTE: 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.	

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System I/O address specifications

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	ACPI-Compliant embedded controller
063	Unused
064	Keyboard controller
065	Unused
066	ACPI-Compliant embedded controller
067 - 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
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

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I/O address (hex)	System function (shipping configuration)
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
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)

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7 Screw listing

This section provides specification and reference information for the screws used in the computer. All screws listed in this section are available in the Screw Kit, spare part number 531857-001.

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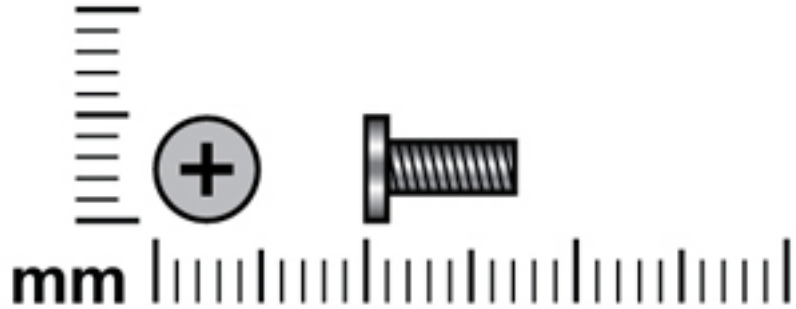
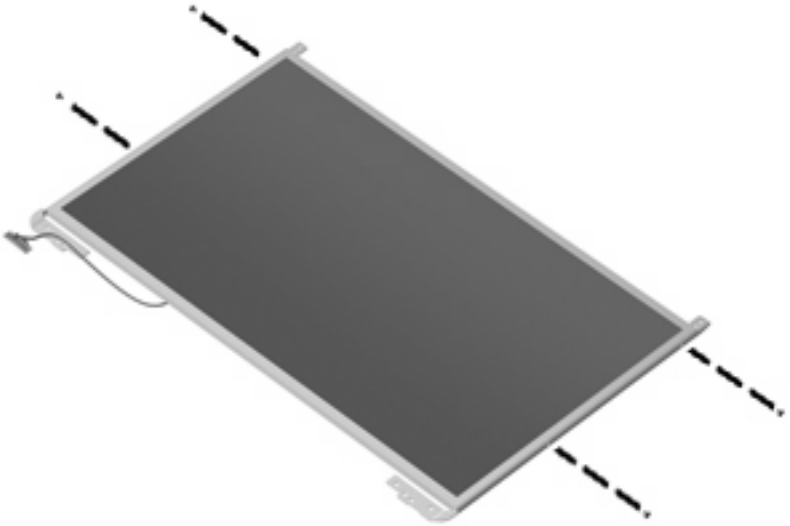
Phillips PM2.5×7.0 screw



Color	Quantity	Length	Thread	Head diameter
Black	26	7.0 mm	2.5 mm	5.0 mm



Where used: 4 screws that secure the display assembly brackets to the display panel

Where used: 2 screws that secure the display bezel to the enclosure

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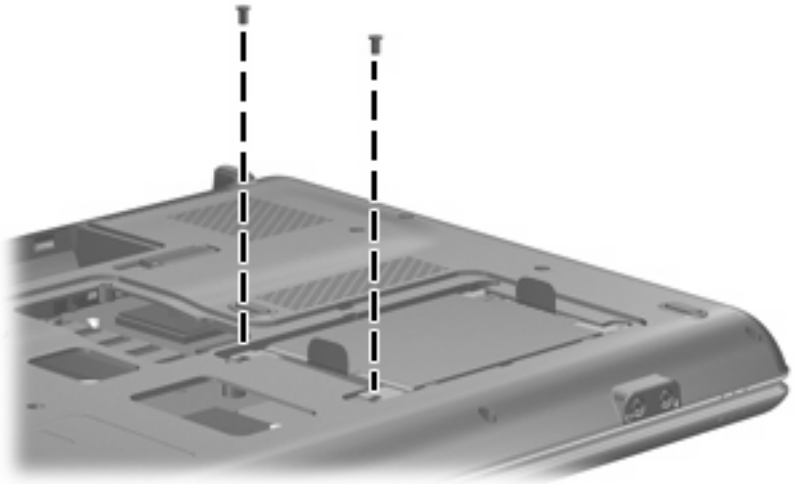
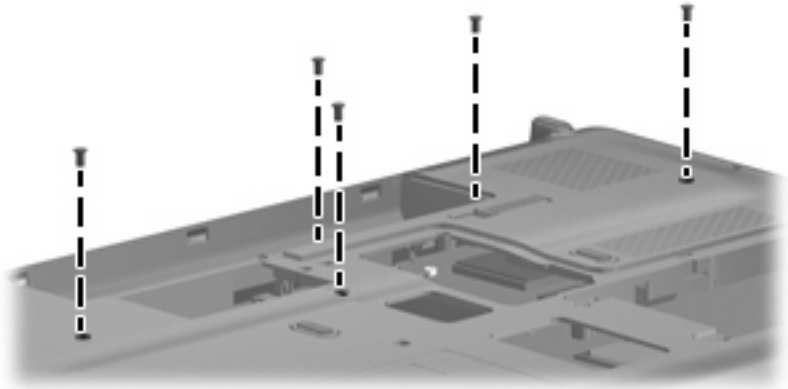
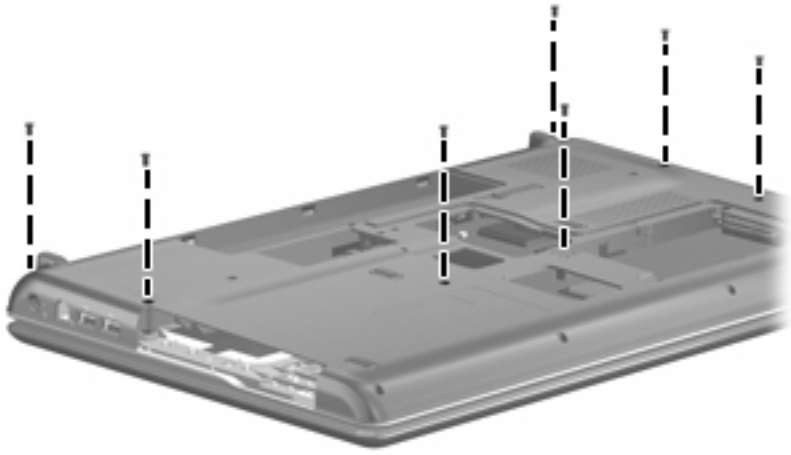


Where used: 2 screws that secure the hard drive into the bay



Where used: 5 screws that secure the keyboard to the base enclosure



Where used: 7 screws that secure the keyboard cover to the base enclosure

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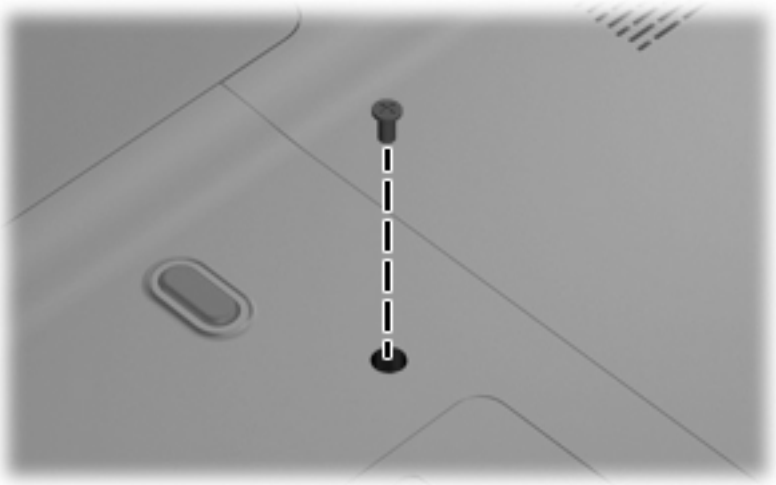
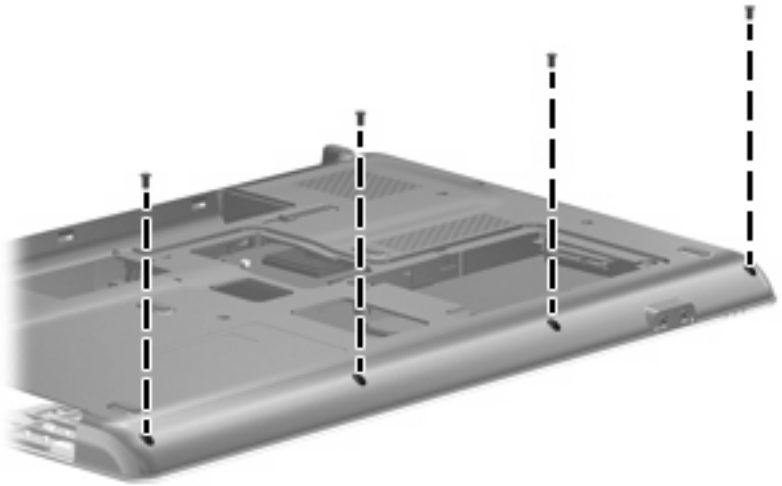
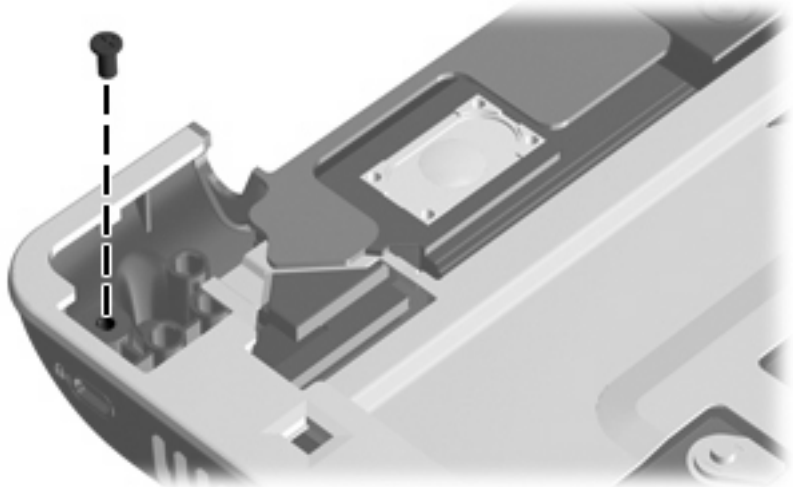


Where used: One screw that secures the optical drive to the base enclosure



Where used: 4 screws on the front of the computer that secure the top cover to the base enclosure



Where used: One screw on the top of the computer that secures the top cover to the base enclosure

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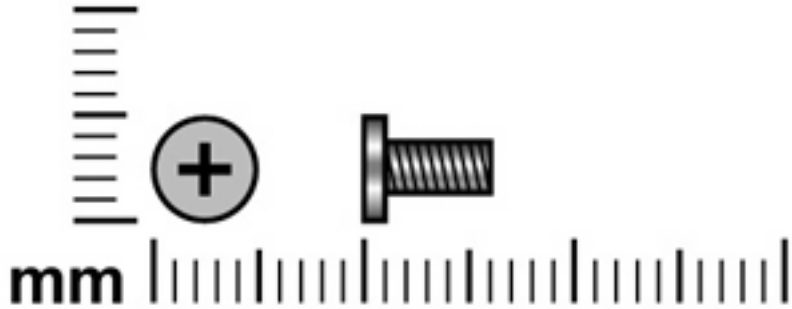
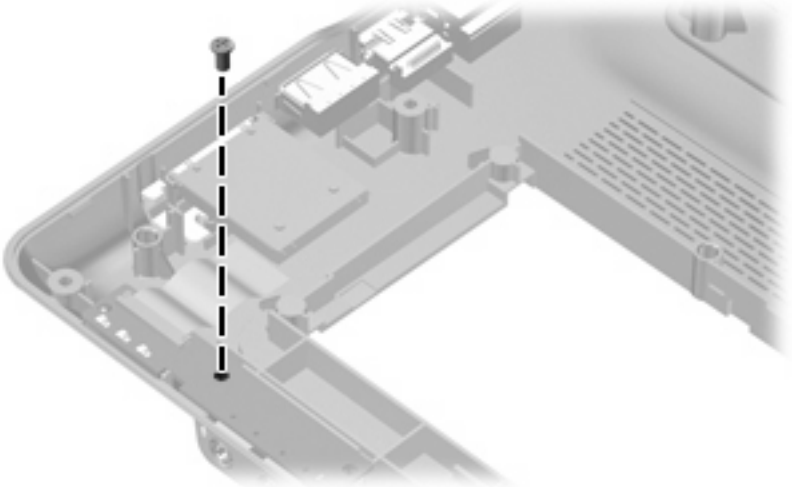
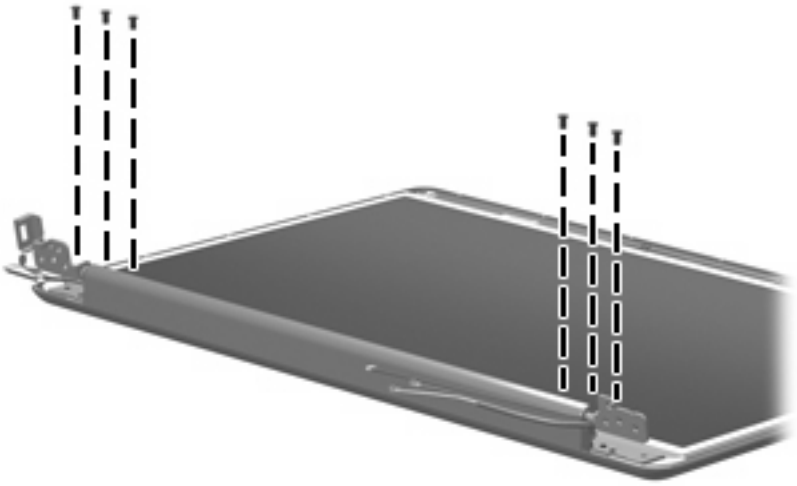
Phillips PM2.5×6.0 screw



Color	Quantity	Length	Thread	Head diameter
Black	15	6.0 mm	2.5 mm	5.0 mm



Where used: One screw that secures the audio board to the base enclosure



Where used: 6 screws that secure the display hinges to the display enclosure

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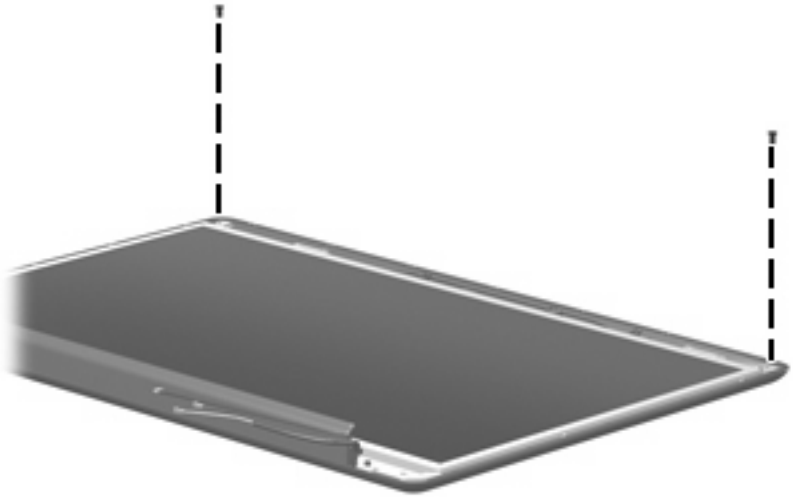
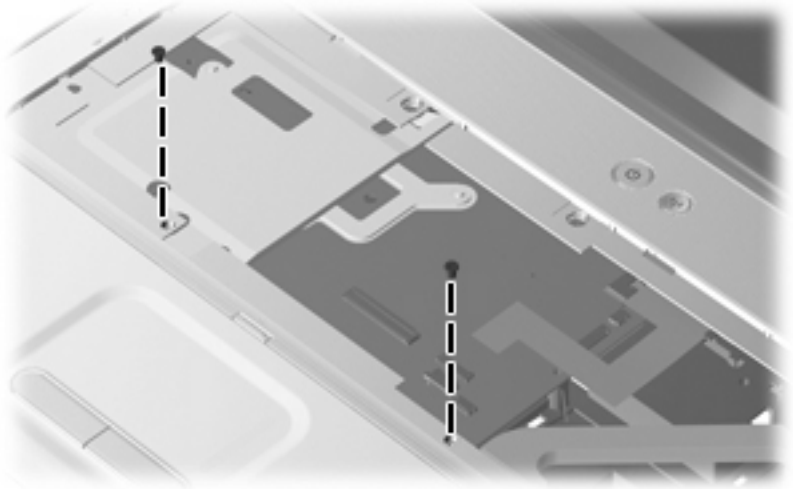
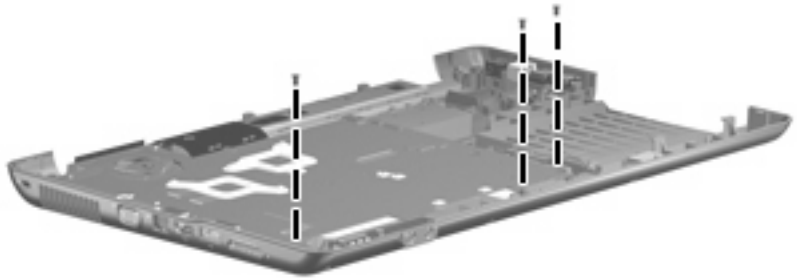


Where used: 2 screws that secure the display panel to the display enclosure



Where used: 2 screws on the top of the computer that secure the keyboard cover to the base enclosure



Where used: 3 screws that secure the system board to the base enclosure

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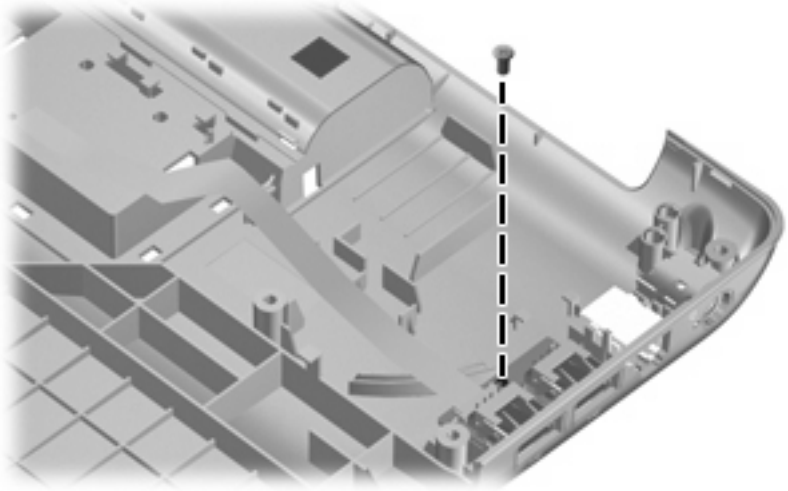

Where used: One screw that secures the USB board to the base enclosure

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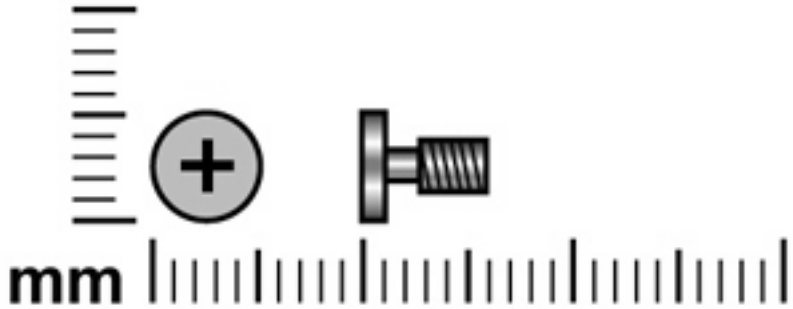
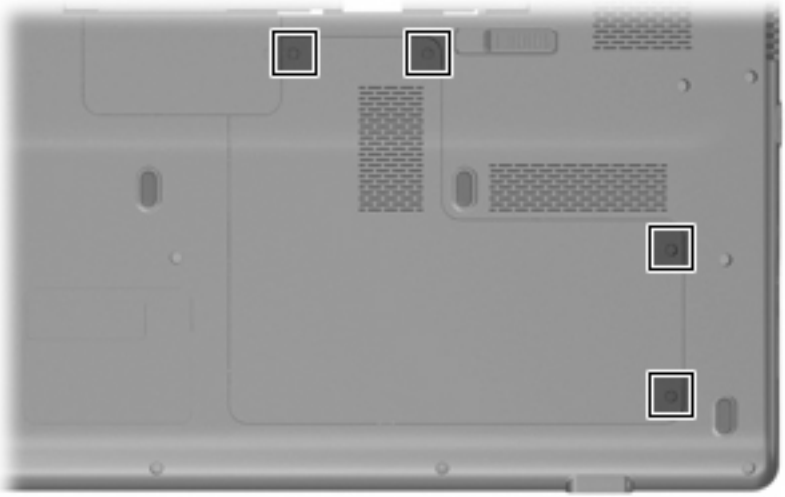
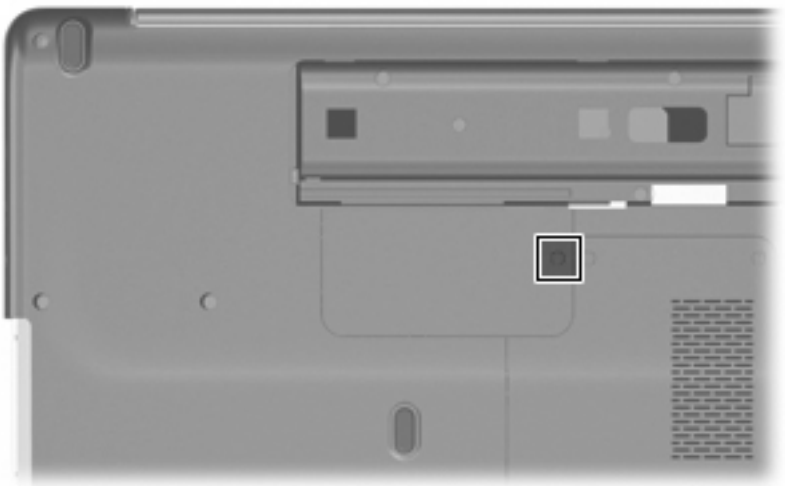
Phillips PM2.5×6.0 captive screw



Color	Quantity	Length	Thread	Head diameter
Black	5	6.0 mm	2.5 mm	5.0 mm



Where used: 4 captive screws (secured by C-clips) that secure the hard drive cover to the base enclosure



Where used: One captive screw (secured by a C-clip) that secures the WLAN cover to the base enclosure

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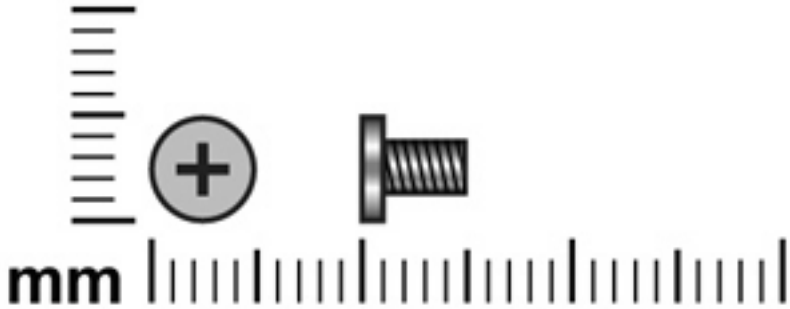
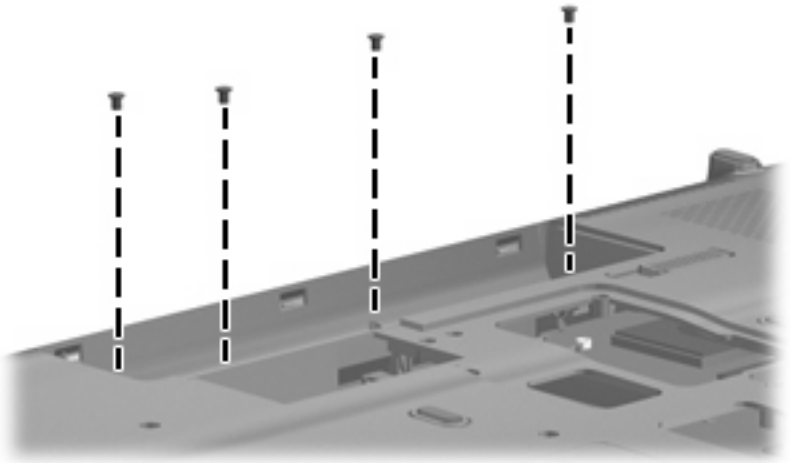
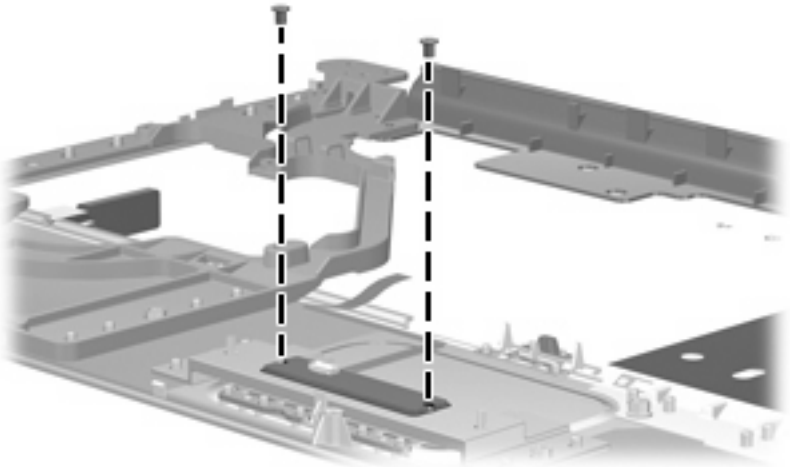
Phillips PM2.5×5.0 screw



Color	Quantity	Length	Thread	Head diameter
Black	6	5.0 mm	2.5 mm	5.0 mm



Where used: 4 screws in the battery bay that secure the keyboard cover to the base enclosure



Where used: 2 screws that secure the TouchPad button board to the top cover

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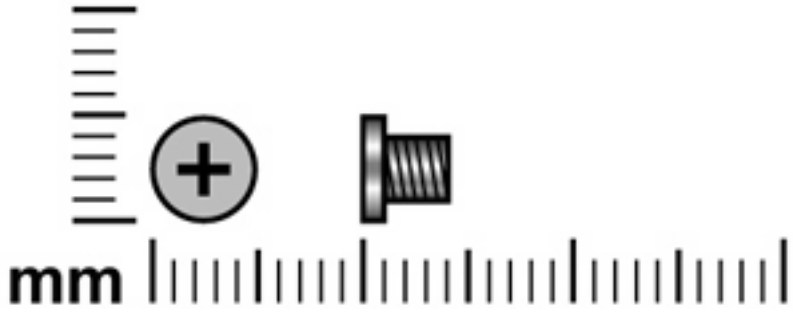
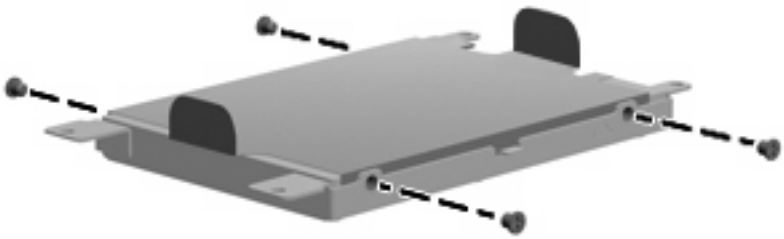
Phillips PM3.0×4.0 screw



Color	Quantity	Length	Thread	Head diameter
Silver	4	4.0 mm	3.0 mm	5.0 mm



Where used: 4 screws that secure the hard drive bracket to the hard drive

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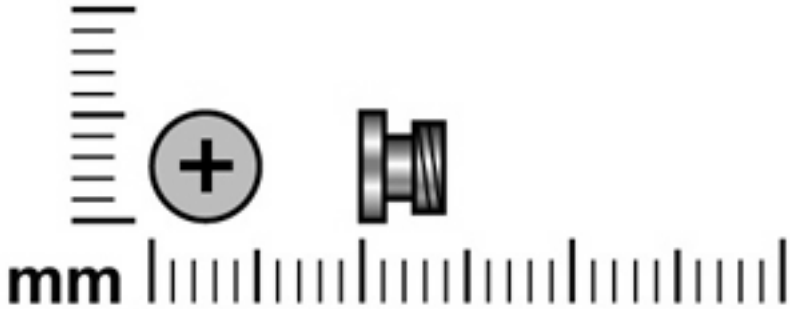
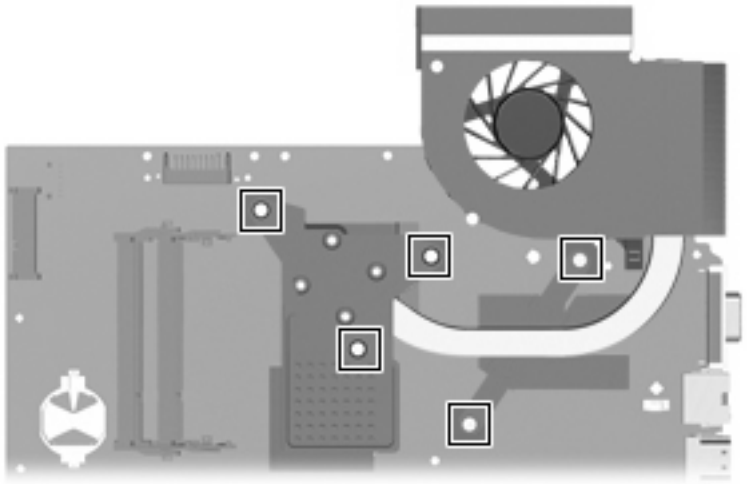
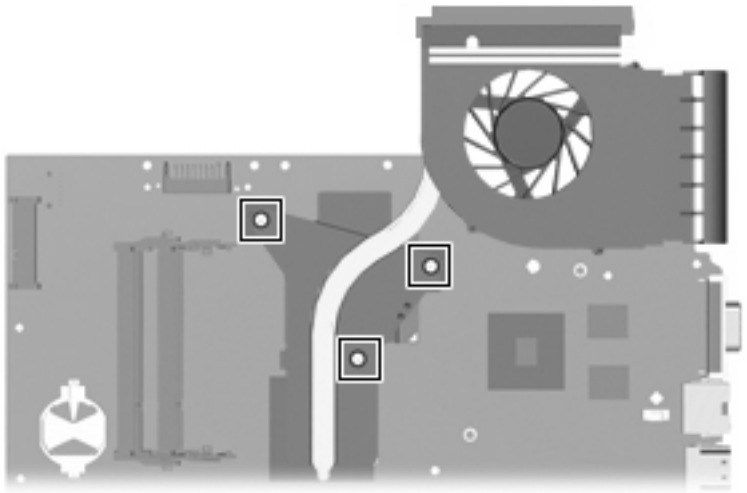
Phillips PM3.0×4.0 captive screw



Color	Quantity	Length	Thread	Head diameter
Silver	5 (discrete) or 3 (UMA)	4.0 mm	3.0 mm	5.0 mm



Where used: 5 captive screws (secured by C-clips) that secure the discrete heat sink to the system board



Where used: 3 captive screws (secured by C-clips) that secure the UMA heat sink to the system board

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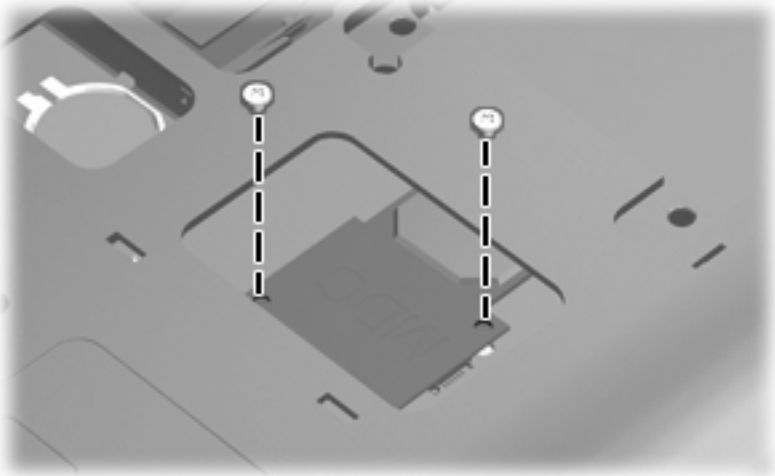
Phillips PM2.0×3.0 screw

Color	Quantity	Length	Thread	Head diameter
Silver	10	3.0 mm	2.0 mm	4.5 mm

Where used: 4 screws that secure the display assembly to the base enclosure



Where used: 2 screws that secure the modem module to the base enclosure

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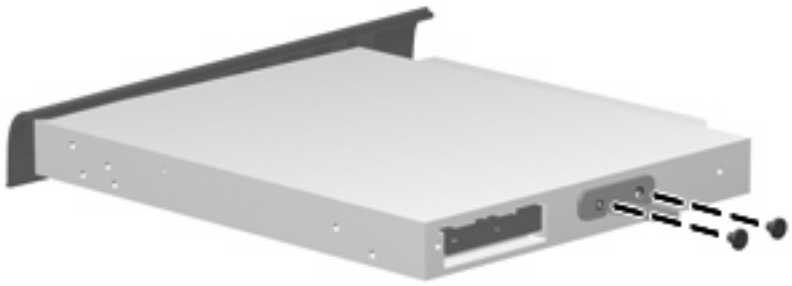
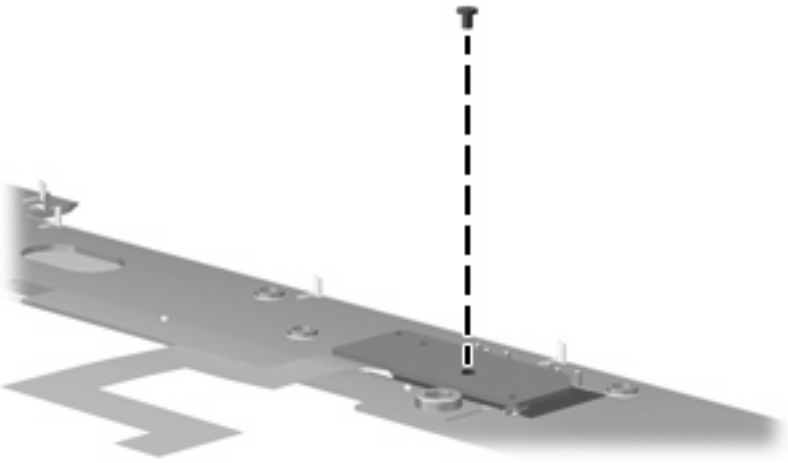
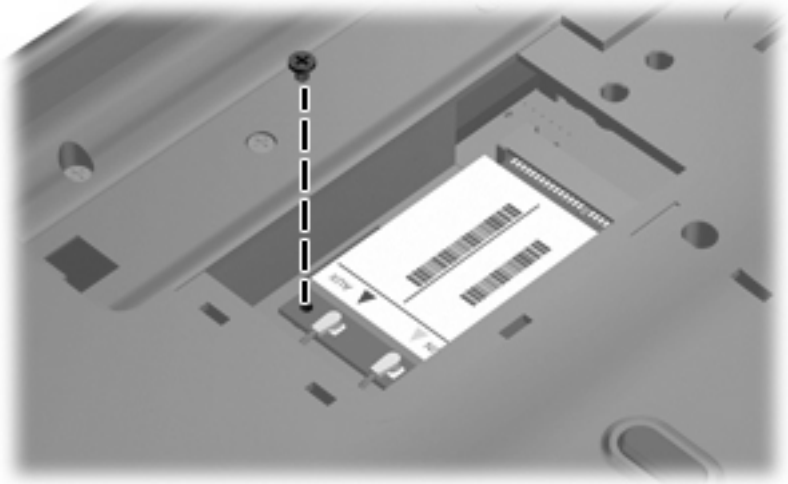


Where used: 2 screws that secure the optical drive bracket to the optical drive



Where used: One screw that secures the power button board to the keyboard cover



Where used: One screw that secures the WLAN module to the base enclosure

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8 Backup and recovery

Recovery after a system failure is as complete as your most current backup. HP recommends that you create recovery discs immediately after software setup. As you add new software and data files, you should continue to back up your system on a regular basis to maintain a reasonably current backup.

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

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

NOTE: If your computer includes a solid-state drive (SSD), you may not have a recovery partition. Recovery discs have been included for computers that do not have a partition. Use these discs to recover your operating system and software. To check for the presence of a recovery partition, select **Start > Computer**. If the partition is present, an HP Recovery drive is listed in the Hard Disk Drives section of the window.

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Creating recovery discs

HP recommends that you create recovery discs to be sure that you can restore your system to its original factory state if you experience serious system failure or instability. Create these discs after setting up the computer for the first time.

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

NOTE: If your computer does not include an internal optical drive, you can use an optional external optical drive (purchased separately) to create recovery discs, or you can purchase recovery discs for your computer from the HP Web site.

Note the following guidelines before creating recovery discs:

- You will need high-quality DVD-R, double-layer DVD-R, DVD+R, double-layer DVD+R, BD-R (writable Blu-ray), or CD-R discs. All these discs are purchased separately. DVDs and BDs have a much higher capacity than CDs. If you use CDs, up to 20 discs may be required, whereas only a few DVDs or BDs are required.

  NOTE: Read-write discs, such as CD-RW, DVD±RW, double-layer DVD±RW, and BD-RE (rewritable Blu-ray) discs, are not compatible with the Recovery Manager software.

- The computer must be connected to AC power during this process.
- Only one set of recovery discs can be created per computer.
- Number each disc before inserting it into the optical drive.
- If necessary, you can exit the program before you have finished creating the recovery discs. The next time you open Recovery Manager, you will be prompted to continue the disc creation process.

To create a set of recovery discs:

1. Select **Start > All Programs > Recovery Manager > Recovery Manager**.

   Recovery Manager opens.

2. Click **Advanced Options**.

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

3. Click **Recovery disc creation**, and then click **Next**.
4. Follow the on-screen instructions.

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Backing up your information

When to back up

- On a regularly scheduled basis

NOTE: Set reminders to back up your information periodically.

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

Backup suggestions

- Create a set of recovery discs using Recovery Manager.
- Create system restore points using the Windows® System Restore feature, and periodically copy them to disc.
- Store personal files in the Documents folder and back up this folder periodically.
- Back up templates stored in their associated programs.
- Save customized settings in a window, toolbar, or menu bar by taking a screen shot of your settings. The screen shot can be a time-saver if you have to reset your preferences.

  To copy the screen and paste it into a word-processing document, follow these steps:

  a. Display the screen.

  b. Copy the screen:

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

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

  c. Open a word-processing document, and then select **Edit > Paste**.

Using system restore points

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

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

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

When to create restore points

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

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

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Create a system restore point

1. Select **Start > Control Panel > System and Maintenance > System**.
2. In the left pane, click **System Protection**.
3. Click the **System Protection** tab.
4. Under **Automatic restore points**, select the disk for which you want to create a restore point.
5. Click **Create**.

   The System Protection window opens.
6. Follow the on-screen instructions.

Restore to a previous date and time

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

1. Select **Start > Control Panel > System and Maintenance > System**.
2. In the left pane, click **System protection**.
3. Click the **System Protection** tab.
4. Click the **System Restore** button, and then click **Next**.

   The System Restore window opens.
5. Follow the on-screen instructions.

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Performing a recovery

NOTE: You can recover only files that you have previously backed up. HP recommends that you use HP Recovery Manager to create an entire drive backup as soon as you set up your computer.

Recovery Manager software allows you to repair or restore the system if you experience system failure or instability. Recovery Manager works from recovery discs or from a dedicated recovery partition (select models only) on the hard drive. However, if your computer includes a solid-state drive (SSD), you may not have a recovery partition. If that is the case, recovery discs have been included with your computer. Use these discs to recover your operating system and software.

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

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

Recovering from the recovery discs

To restore the system from the recovery discs:

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

Recovering from the dedicated recovery partition (select models only)

NOTE: If your computer includes an SSD, you may not have a recovery partition. You will not be able to recover using this procedure. Recovery discs have been included for computers that do not have a partition. Use these discs to recover your operating system and software.

On some models, you can perform a recovery from the partition on the hard drive from either the Start button or f11. This restores the computer to it's factory condition.

To restore the system from the partition, follow these steps:

1. Access Recovery Manager in either of the following ways:
   - Select **Start > All Programs > Recovery Manager > Recovery Manager**.

     – or –

   - Restart the computer and press f11 while the “Press <F11> for recovery” message is displayed on the screen. Then select **Recovery Manager**.

   Recovery Manager opens.
2. Click **Advanced Options**.
3. Click **System recovery**, and then click **Next**.
4. Follow the on-screen instructions.

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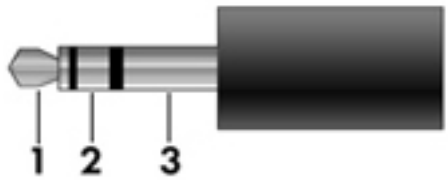
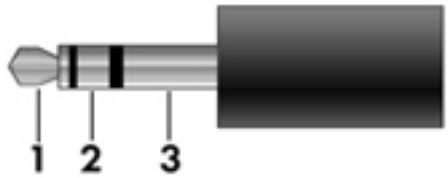
9 Connector pin assignments

Audio-in (microphone)



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

Audio-out (headphone)



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

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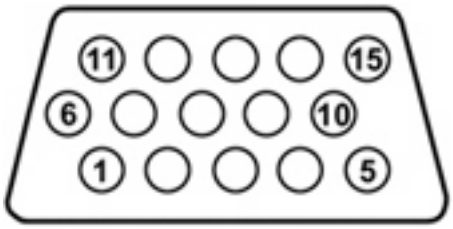
External monitor



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

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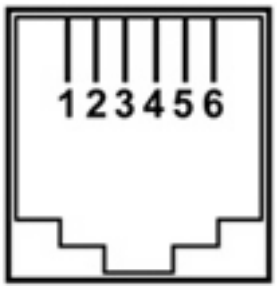
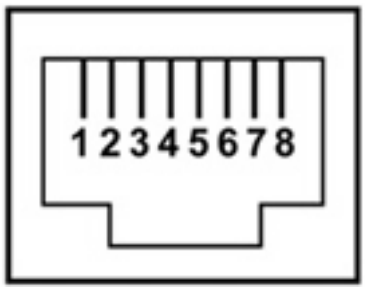
RJ-11 (modem)



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

RJ-45 (network)



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

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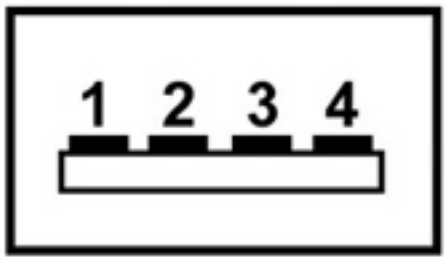
Universal Serial Bus



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

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10 Power cord set requirements

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

The 3-conductor power cord set included with the computer meets the requirements for use in the country or region where the equipment is purchased.

Power cord sets for use in other countries or regions must meet the requirements of the country or region where the computer is used.

Requirements for all countries or regions

The requirements listed below are applicable to all countries or regions:

- The length of the power cord set must be at least 1.5 m (5.0 ft) and no more than 2.0 m (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country or region 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 the power system of each country or region.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the computer.

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Requirements for specific countries or regions

Country/region	Accredited agency	Applicable note number
Australia	EANSW	1
Austria	OVE	1
Belgium	CEBC	1
Canada	CSA	2
Denmark	DEMKO	1
Finland	FIMKO	1
France	UTE	1
Germany	VDE	1
Italy	IMQ	1
Japan	METI	3
The Netherlands	KEMA	1
Norway	NEMKO	1
The People's Republic of China	CCC	5
South Korea	EK	4
Sweden	SEMKO	1
Switzerland	SEV	1
Taiwan	BSMI	4
The United Kingdom	BSI	1
The United States	UL	2

1. The flexible cord must be 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 or region where it will be used.

2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.

3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00-mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

4. The flexible cord must be Type RVV, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

5. The flexible cord must be Type VCTF, 3-conductor, 0.75-mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country or region where it will be used.

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11 Recycling

Battery

When a battery has reached the end of its useful life, do not dispose of the battery in general household waste. Follow the local laws and regulations in your area for computer battery disposal.

Display

⚠ **WARNING!** The backlight contains mercury. Exercise caution when removing and handling to avoid damaging this component and causing exposure to the mercury.

△ **CAUTION:** The procedures in this chapter can result in damage to display components. The only components intended for recycling purposes are the liquid crystal display (LCD) panel and the backlight. When you remove these components, handle them carefully.

NOTE: **Materials Disposal**. This HP product contains mercury in the backlight in the display assembly that might require special handling at end-of-life. Disposal of mercury may be regulated because of environmental considerations. For disposal or recycling information, contact your local authorities, or see the Electronic Industries Alliance (EIA) Web site at http://www.eiae.org.

This section provides disassembly instructions for the display assembly. The display assembly must be disassembled to gain access to the backlight **(1)** and the liquid crystal display (LCD) panel **(2)**.

NOTE: The procedures provided in this chapter are general disassembly instructions. Specific details, such as screw sizes, quantities, and locations, and component shapes and sizes, can vary from one computer model to another.

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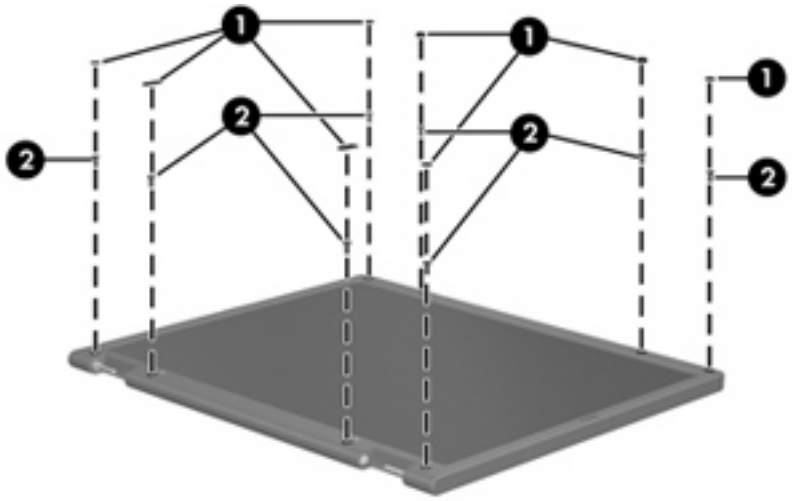
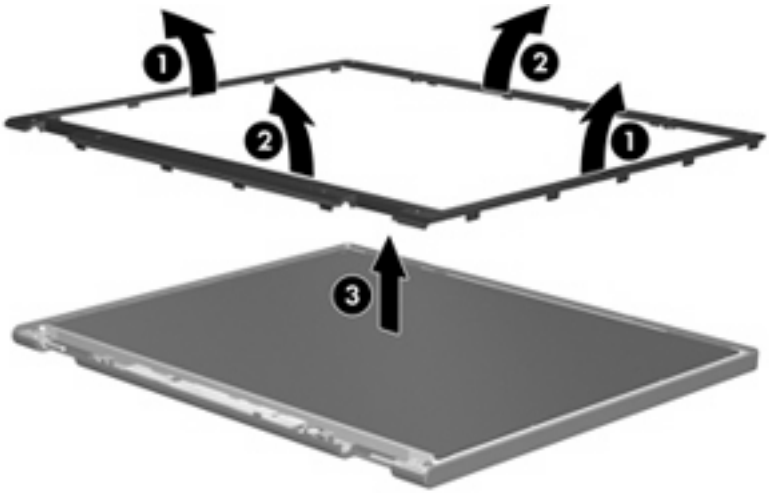
Perform the following steps to disassemble the display assembly:

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



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



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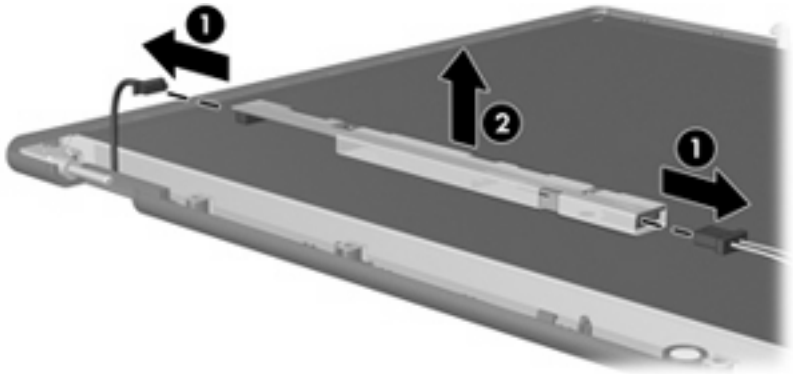
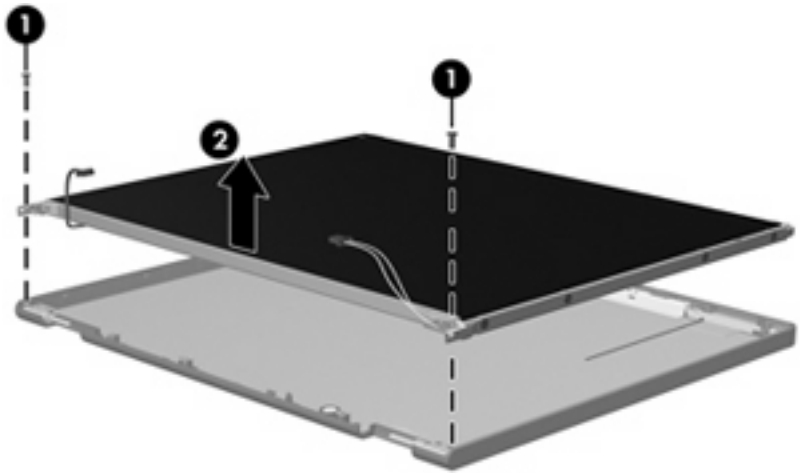
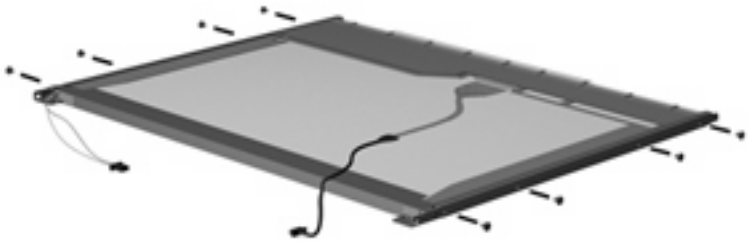
4. Disconnect all display panel cables **(1)** from the display inverter and remove the inverter **(2)**.



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



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



9. Use a sharp-edged tool to cut the tape **(1)** that secures the sides of the display panel to the display panel frame.

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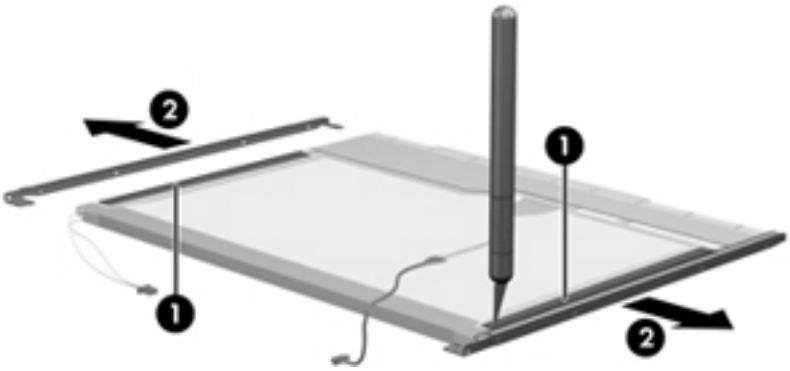
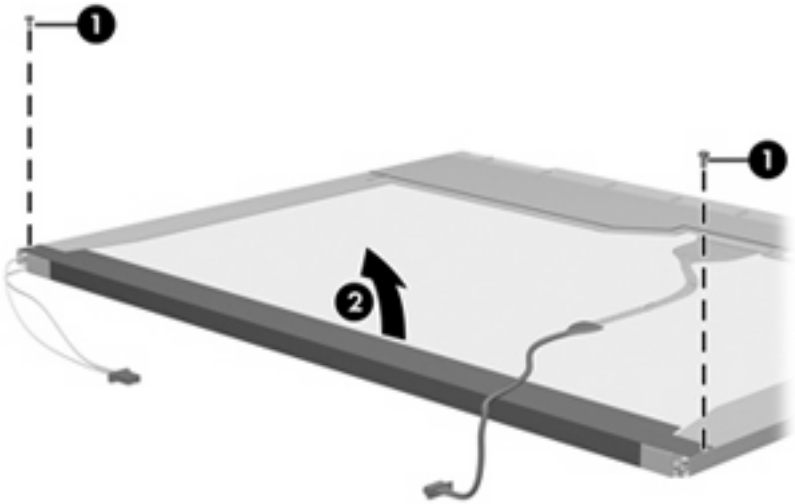
10. Remove the display panel frame **(2)** from the display panel.



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



13. Remove the backlight cover.
14. Turn the display panel right-side up.

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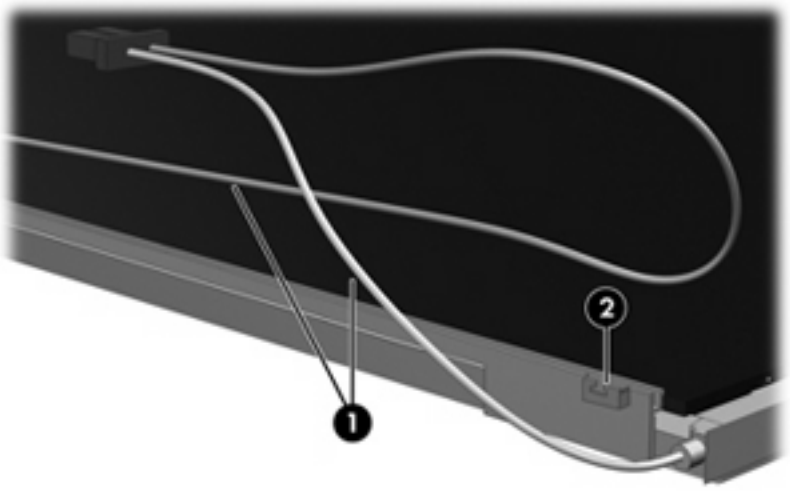
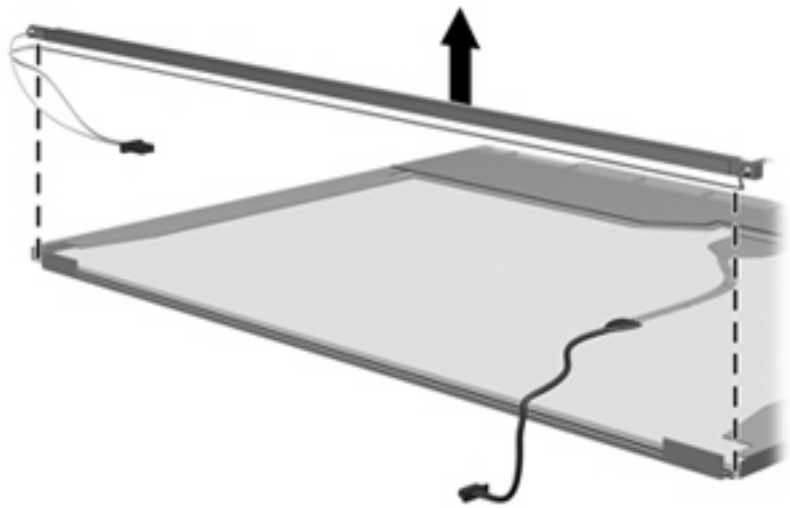
15. Remove the backlight cables **(1)** from the clip **(2)** in the display panel.



16. Turn the display panel upside down.

17. Remove the backlight frame from the display panel.

⚠ **WARNING!** The backlight contains mercury. Exercise caution when removing and handling the backlight to avoid damaging this component and causing exposure to the mercury.



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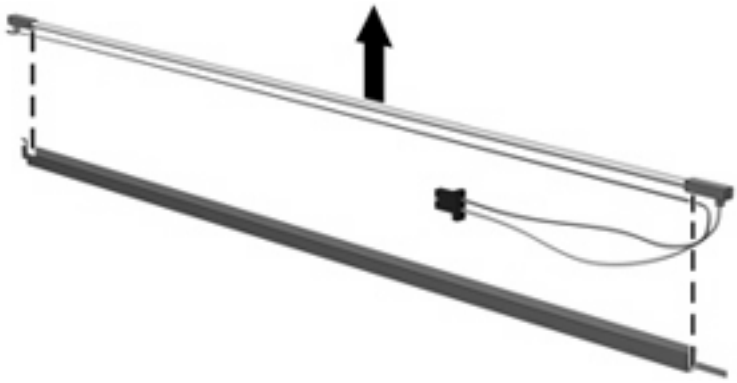
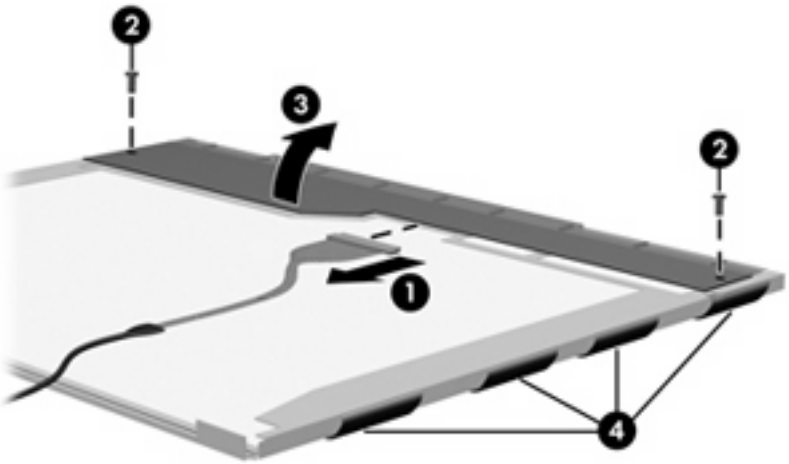
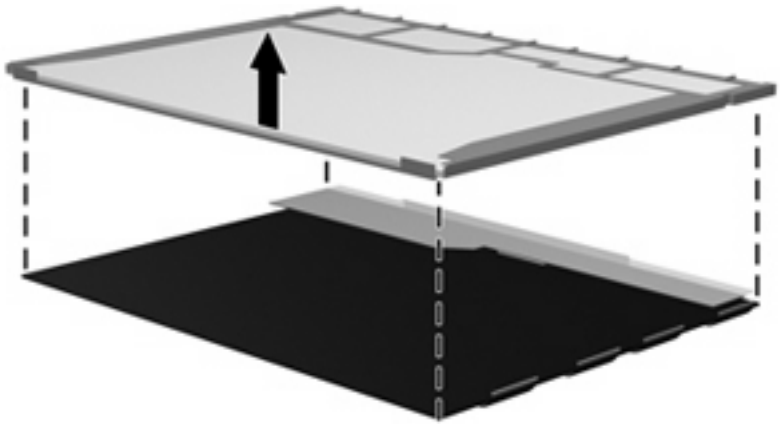
18. Remove the backlight from the backlight frame.



19. Disconnect the display cable **(1)** from the LCD panel.
20. Remove the screws **(2)** that secure the LCD panel to the display rear panel.
21. Release the LCD panel **(3)** from the display rear panel.
22. Release the tape **(4)** that secures the LCD panel to the display rear panel.



23. Remove the LCD panel.



24. Recycle the LCD panel and backlight.

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