Maintenance and Service Guide

HP Pavilion zx5000 Notebook PC
HP Pavilion zv5000 Notebook PC
Compaq Presario R3000 Notebook PC Series
HP Compaq Business Notebook nx9100 Series

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

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Product Description

The HP Pavilion zv5000 and zx5000 notebook PCs, the
HP Compaq Business Notebook nx9100 Series, and
the Compaq Presario R3000 notebook PC offer advanced
modularity; a 64-bit Mobile Intel® Pentium® 4 processor,
64-bit AMD Athlon 64 processor, or 32-bit AMD XP-M
processor; an ATI MOBILITY RADEON 9600 Pro graphics
controller with 64 or 32 MB of discrete video memory; and
extensive multimedia support.

HP Pavilion zv5000 and zx5000 Notebooks

HP Compaq Business Notebook nx9100 Series and Compaq Presario R3000 Notebooks

1.1 **Features**

■ Mobile Intel Pentium 4 3.06-, 2.80-, 2.66-, and 2.40-GHz processors, all with 512-KB L2 cache, varying by notebook model
- or -
Intel Pentium 4 DT 3.20-, 3.06-, 2.80-, 2.66-, and 2.40-GHz processors, all with 256-KB L2 cache, varying by notebook model
- or -
AMD Athlon 64 1.8-, 2.0-, and 2.2-GHz processors, all with 1-MB L2 cache, varying by notebook model
- or -
AMD Athlon XP-M 1.6-GHz processor with 256-KB L2 cache

■ 15.4-inch wide UXGA (1600 × 1200), 15.4-inch wide XGA (1024 × 768), or 15.0-inch XGA (1024 × 768) TFT displays with over 16.7 million colors, varying by notebook model

■ ATI MOBILITY RADEON 9600 Pro graphics controller with 64 or 32 MB of video memory, varying by notebook model

■ 80-, 60-, 40-, or 30-GB high-capacity hard drive, varying by notebook model

■ 256-MB DDR synchronous DRAM (SDRAM) at 333 MHz, expandable to 2.0 GB

■ Microsoft® Windows® XP Home Edition and Microsoft Windows XP Professional

■ Full-size Windows keyboard with integrated numeric keypad

■ TouchPad pointing device

■ Integrated 5-in-1 Memory Reader slot

■ Integrated 10/100/1000BaseT Ethernet local area network (LAN) NIC with RJ-45 connector

- ■ Integrated wireless support for Mini PCI 802.11a/b/g LAN devices
- ■ 2 Type II PC Card slots with support for both 32-bit (CardBus) and 16-bit PC Cards
- ■ External 120-watt AC adapter and power cord
- ■ 12- or 8-cell Li-Ion battery pack
- ■ Stereo speakers
- ■ Support for the following devices in the MultiBay:
  - ❏ 24X Max DVD+RW/R and CD-RW Combo Drive
  - ❏ 24X Max DVD/CD-RW Combo Drive
  - ❏ 8X Max DVD-ROM Drive
  - ❏ 24X Max CD-ROM Drive
  - ❏ 8-cell Li-Ion battery pack
- ■ Connectors for:
  - ❏ RJ-11 (modem)
  - ❏ RJ-45 network interface card (NIC)
  - ❏ Universal Serial Bus (USB) v. 2.0 (3)
  - ❏ S-Video
  - ❏ Parallel
  - ❏ External monitor
  - ❏ DC power
  - ❏ Docking
  - ❏ 1394 digital
  - ❏ Microphone
  - ❏ Stereo speaker/headphone
- ■ Infrared port

1.2 Power Management

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

- Standby
- Hibernation
- User-customizable settings
- Hotkeys for setting level of performance
- Battery calibration
- Lid switch standby/resume
- Power button
- Advanced Configuration and Power Interface (ACPI) compliance

1.3 External Components

The external components on the front and right side of the HP Pavilion zv5000 and zx5000 notebooks are shown below and described in Table 1-1.
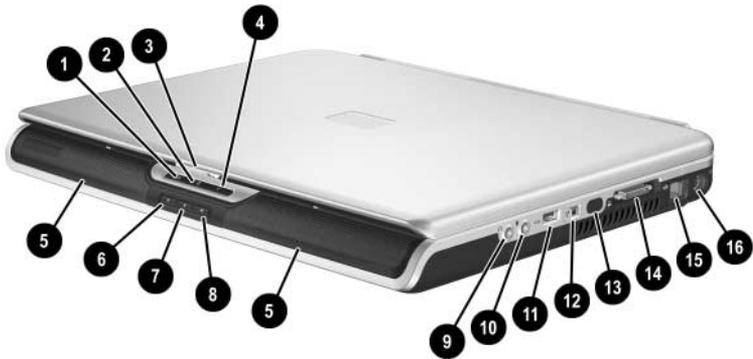
Front and Right-Side Components—HP Pavilion zv5000 and zx5000 Notebooks

Table 1-1

**Front and Right-Side Components
HP Pavilion zv5000 and zx5000 Notebooks**

Item	Component	Function
❶	Power/standby LED	On: Notebook is turned on.
		Blinking: Notebook is in Standby.
		Off: Notebook is off or in Hibernation.
❷	IDE (Integrated Drive Electronics) LED; also referred to as the hard drive/optical drive activity LED	On: The internal hard drive or the optical drive is being accessed.
❸	Display release latch	Opens the notebook.
❹	Battery LED	On: A battery pack is charging.
		Blinking: Battery pack has reached a low-battery condition.
		Off: AC power is applied with battery pack either fully charged or not installed, or no AC power is applied.
❺	Stereo speakers (2)	Produce stereo sound.
❻	Volume increase button	Increases system volume.
❼	Mute button	Mutes system volume. An LED comes on when the button is pushed in, and the sound is muted.
❽	Volume decrease button	Decreases system volume.

Front and Right-Side Components—HP Pavilion zv5000 and zx5000 Notebooks (Continued)

Table 1-1

Front and Right-Side Components
HP Pavilion zv5000 and zx5000 Notebooks *(Continued)*

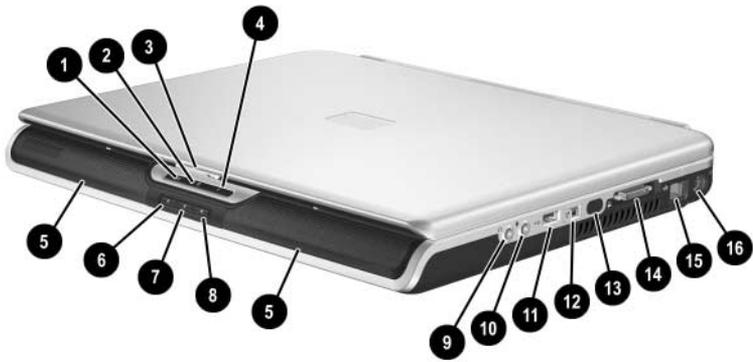| Item	Component	Function
❾	Audio-out (headphone) jack	Connects an optional headphone, headset, or powered stereo speakers. Also connects the audio function of an audio/video device, such as a television or VCR.
❿	Audio-in (microphone) jack	Connects an optional monaural microphone.
⓫	USB port	Connects USB 1.1- and 2.0-compliant devices to the notebook using a standard USB cable.
⓬	1394 connector (select models)	Connects an optional IEEE 1394 device, such as a camcorder.
⓭	Infrared port (select models)	Provides wireless communication between the notebook and an optional IrDA-compliant device.
⓮	Expansion port	Connects an optional port replicator.
⓯	RJ-45 (network) jack	Connects an optional network cable.
⓰	S-Video jack	Connects an optional S-Video device, such as a television, VCR, camcorder, overhead projector, or video capture card.

The external components on the front and right side of
the HP Compaq Business Notebook nx9100 Series and
Compaq Presario R3000 notebook are shown below
and described in Table 1-2.
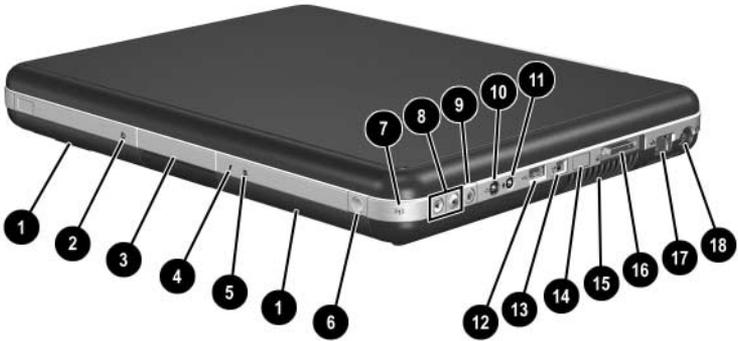
*Front and Right-Side Components—HP Compaq Business
Notebook nx9100 Series and Compaq Presario R3000 Notebook*

Table 1-2

**Front and Right-Side Components
HP Compaq Business Notebook nx9100 Series
and Compaq Presario R3000**

| Item	Component	Function
❶	Stereo speakers (2)	Produce stereo sound.
❷	Power/standby LED	On: Notebook is turned on. Blinking: Notebook is in Standby. Off: Notebook is off or in Hibernation.
❸	Display release latch	Opens the notebook.
❹	Battery LED	On: A battery pack is charging. Blinking: Battery pack has reached a low-battery condition. Off: AC power is applied with battery pack either fully charged or not installed, or no AC power is applied.
❺	IDE (Integrated Drive Electronics) LED; also referred to as the hard drive/optical drive activity LED	On: The internal hard drive or the optical drive is being accessed.
❻	Wireless button	Turns optional internal wireless device(s) on or off.
❼	Wireless LED	On: At least one optional internal wireless device is active. Off: No wireless device is active.
❽	Volume buttons (2)	Decrease and increase system volume. ■ To decrease volume, use left button. ■ To increase volume, use right button.
❾	Mute button	Mutes system volume. An LED comes on when the button is pushed in, and the sound is muted.
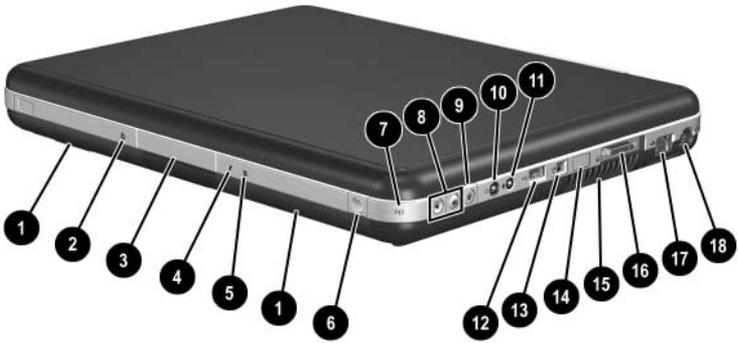
Front and Right-Side Components—HP Compaq Business Notebook nx9100 Series and Compaq Presario R3000 (Continued)

Table 1-2

**Front and Right-Side Components
HP Compaq Business Notebook nx9100 Series and
Compaq Presario R3000** *(Continued)*

Item	Component	Function
❿	Audio-out (headphone) jack	Connects an optional headphone, headset, or power stereo speakers. Also connects the audio function of an audio/video device, such as a television or VCR.
⓫	Audio-in (microphone) jack	Connects an optional monaural microphone.
⓬	USB port	Connects USB 1.1- and 2.0-compliant devices to the notebook using a standard USB cable.
⓭	1394 connector (select models)	Connects an optional IEEE 1394 device, such as a camcorder.
⓮	Infrared port (select models)	Provides wireless communication between the notebook and an optional IrDA-compliant device.
⓯	Vents (2)	Allow airflow to cool internal components.
		△ This notebook is designed to run demanding applications at full power. As a result of increased power consumption, it is normal for the notebook to feel warm or hot when used continuously. To avoid potential discomfort or burns, do not block the air vents or use the notebook on your lap for extended periods. The notebook complies with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC-60950).

Table 1-2

**Front and Right-Side Components
HP Compaq Business Notebook nx9100 Series and
Compaq Presario R3000** *(Continued)*

Item	Component	Function
⓰	module port	Connects an optional port replicator.
⓱	RJ-45 (network) jack	Connects an optional network cable.
⓲	S-Video jack	Connects an optional S-Video device, such as a television, VCR, camcorder, overhead projector, or video capture card.

The notebook rear and left-side components are shown below and described in Table 1-3.

✎ The notebook rear and left-side component locations are identical for the HP Pavilion zv5000 and zx5000, the HP Compaq Business Notebook nx9100 Series, and Compaq Presario R3000 Series. Notebook appearance varies by model.

Rear and Left-Side Components

Table 1-3

Rear and Left-Side Components

Item	Component	Function
❶	AC power connector	Connects an AC adapter.
❷	Exhaust vent	Allows airflow to cool internal components.
		⚠ This notebook is designed to run demanding applications at full power. As a result of increased power consumption, it is normal for the notebook to feel warm or hot when used continuously. To avoid potential discomfort or burns, do not block the air vents or use the notebook on your lap for extended periods. The notebook complies with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC-60950).
❸	External monitor port	Connects an optional external monitor or overhead projector.
❹	Parallel connector	Connects an optional parallel device, such as an external diskette drive bay or a printer.
❺	RJ-11 (modem) jack (select models)	Connects a modem cable.
❻	Security cable slot	Attaches an optional security cable to the notebook.
		⚠ Security solutions are designed to act as deterrents. These deterrents may not prevent a product from being mishandled or stolen.

✎ The notebook rear and left-side component locations are identical for the HP Pavilion zv5000 and zx5000, HP Compaq Business Notebook nx9100 Series, and Compaq Presario R3000 models. Notebook appearance varies by model.


Rear and Left-Side Components

Table 1-3

Rear and Left-Side Components *(Continued)*

Item	Component	Function
❼	5-in-1 Memory Reader LED (select models)	On: The 5-in-1 Memory Reader slot is accessing a digital memory card.
❽	5-in-1 Memory Reader slot (select models)	Supports 5 types of optional digital memory cards: SD Memory Card, MultiMediaCard, SmartMedia Card, Memory Stick, and Memory Stick Pro.
❾	PC Card slot (1 or 2 slots, select models)	Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.
❿	PC Card eject button (one or 2 buttons, select models)	Ejects an optional PC Card from the PC Card slot.
⓫	USB port (2)	Connect USB 1.1- and 2.0-compliant devices to the notebook using a standard USB cable.
⓬	Optical drive bay	Holds a CD-ROM Drive, DVD-ROM Drive, DVD+RW/R and CD-RW Combo Drive, or DVD/CD-RW Combo Drive.
⓭	3 drive configurations: optional HP USB Digital Drive, optional diskette drive, or no drive	■ Digital Bay: Supports an optional pocket-sized HP USB Digital Drive. ■ Diskette Drive: Supports a standard 1.4-MB diskette. ■ No drive: No drive bay is installed.

The notebook keyboard components are shown below and described in Table 1-4.

✎ The notebook keyboard component locations are identical for the HP Pavilion zv5000 and zx5000, HP Compaq Business Notebook nx9100 Series, and Compaq Presario R3000 Series. Notebook appearance varies by model.
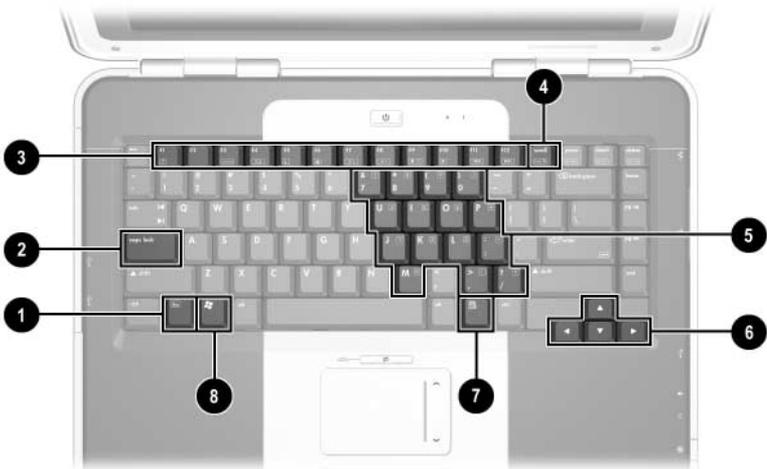
Keyboard Components

Table 1-4

Keyboard Components

Item	Component	Function
❶	**fn** key	Combines with the function keys to perform additional system and application tasks.
❷	**caps lock** key	Enables caps lock and turns on the caps lock LED.
❸	**f1** through **f12** function keys	Perform system and application tasks. When combined with the **fn** key, the function keys **f1** and **f3** through **f12** perform additional tasks as hotkeys.
❹	**num lock** key	Enables numeric lock and the internal keypad.
❺	Internal keypad	Can be used like the keys on an external numeric keypad.
❻	Arrow keys	Move the cursor around the screen.
❼	Windows applications key	Displays a shortcut menu for items beneath the pointer.
❽	Windows logo key	Displays the Windows Start menu.

The top components of the HP Pavilion zv5000 and zx5000 notebooks are shown below and described in Table 1-5.

Top Components—HP Pavilion zv5000 and zx5000 Notebooks

Table 1-5

Top Components
HP Pavilion zv5000 and zx5000 Notebooks

Item	Component	Function
❶	Power button	When the notebook is: ■ Off, press and release to turn on the notebook. ■ In Standby, press and release to exit Standby. ■ In Hibernation, press and release to exit Hibernation. If the system has stopped responding and Windows shutdown procedures cannot be used, press and hold for 5 seconds to turn off the notebook.
❷	Caps lock LED	On: Caps lock is on.
❸	Num lock LED	On: Num lock is on and or the embedded numeric keypad is enabled.
❹	Picture button	Launches a digital imaging application.
❺	Media button	Launches a multimedia application.
❻	Wireless button	Turns optional internal wireless device(s) on or off.
❼	Internet button	Launches the Internet.

Top Components—HP Pavilion zv5000 and zx5000 Notebooks (Continued)
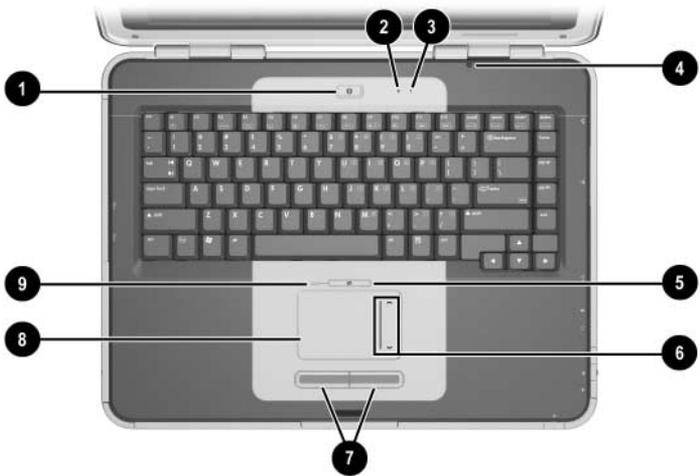
Table 1-5

Top Components
HP Pavilion zv5000 and zx5000 Notebooks *(Continued)*

Item	Component	Function
❽	Display lid switch	■ If the notebook is closed while on, turns off the display. ■ If the notebook is opened while in Standby, turns on the notebook (resumes from Standby).
❾	Exhaust vents (2)	Allows airflow to cool internal components. ⚠ This notebook is designed to run demanding applications at full power. As a result of increased power consumption, it is normal for the notebook to feel warm or hot when used continuously. To avoid potential discomfort or burns, do not block the air vents or use the notebook on your lap for extended periods. The notebook complies with the user-accessible surface temperature limits defined by the International Standard for Safety of Information Technology Equipment (IEC-60950).
❿	TouchPad button	Turns the TouchPad on or off.
⓫	TouchPad LED	On: TouchPad is enabled.
⓬	TouchPad scroll area	Scrolls upward or downward.
⓭	Left and right TouchPad buttons	Function like the left and right buttons on an external mouse.
⓮	TouchPad	Moves the pointer and selects or activates items on the screen.
⓯	5-in-1 Memory Reader LED (select models)	On: The 5-in-1 Memory Reader slot is accessing a digital memory card.

The top components of the HP Compaq Business Notebook
nx9100 Series and Compaq Presario R3000 are shown below
and described in Table 1-6.

*Top Components—HP Compaq Business Notebook nx9100 Series
and Compaq Presario R3000*