## PROPRIETARY NOTICE AND LIABILITY DISCLAIMER

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# Using This Guide

The *PowerMate Ve Series User's Guide* provides a quick reference to information about your computer.

The guide contains the following information:

■ Chapter 1, Introducing Your Computer, provides a look at system components. See this chapter to familiarize yourself with your system.

■ Chapter 2, Getting Started, gives you information about using a mouse, using online documentation, and what you should do after your system is up and running.

   The chapter includes a quick-reference chart for finding information about a variety topics.

■ Chapter 3, Installing Options, provides installation procedures for internal and external options.

■ Chapter 4, Setting System Parameters, describes the Setup utility and explains how to use it to configure your system.

■ Chapter 5, Setting System Board Jumpers, provides information on changing jumper settings when reconfiguring your system.

■ Chapter 6, Using Voyetra Sound Software, explains how to use Voyetra's Multimedia Sound Software to play music CDs, record, play and edit audio files, and play and edit MIDI files.

■ Chapter 7, 24-Hour Information Services, lists the services available to you for information and help and describes how to access the services.

- Chapter 8, If You Have a Problem, contains troubleshooting tips for solving simple problems and provides information on where you can find help when you cannot solve a problem yourself.

- Appendix A, Setting Up a Healthy Work Environment, contains guidelines to help you use your computer productively and safely. This appendix also instructs you on how to set up and use your computer to reduce your risk of developing nerve, muscle, or tendon disorders.

- Appendix B, Reviewing System Interrupts, provides the interrupt settings used by the system.

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## ⚠ WARNING

Prolonged or improper use of a computer workstation may pose a risk of serious injury. To reduce your risk of injury, set up and use your computer in the manner described in Appendix A, Setting Up a Healthy Work Environment.

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## TEXT CONVENTIONS

This guide uses the following text conventions.

- Warnings, cautions, and notes have the following meanings:

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## ⚠ WARNING

Warnings alert you to situations that could result in serious personal injury or loss of life.

---

⚠ **CAUTION**

Cautions indicate situations that can damage the hardware or software.

NOTE Notes give important information about the material being described.

- Names of keyboard keys are printed as they appear on the keyboard, for example, **Ctrl**, **Alt**, or **Enter**.

- Text or keystrokes that you enter appear in boldface type. For example, type **return** and press **Enter**.

- File names are printed in uppercase letters.

## RELATED DOCUMENTS

In addition to this guide, the following printed documentation ships with your PowerMate® Ve Series system. See the NEC PowerMate Customers Catalog included with your system for other related documentation.

- *NEC PowerMate Ve Series Quick Setup/ Quick-Reference Roadmap*
  Quick Setup contains information for quickly getting your system up and running. Read this information to set up the system for the first time.

  The Quick-Reference Roadmap gives you a look at the documentation, NEC tools, software applications, and services available to you.

■ *How Does Your Workplace Measure Up?*
This brochure provides information for setting up and using your computer productively and safely. Information includes guidelines to reduce the risk of injury associated with using a computer.

■ *Windows 95 User's Guide*
This guide is a quick reference to information about using Windows 95.

Your system comes with the following online documentation on the hard disk:

■ *PowerMate Ve Series System Documentation*
This online documentation is your comprehensive source of information about your system. It contains a System Tour, User's Guide, Product Information Center, Option Installation Center, and Support Center.

■ *Healthy Environment*
This is an online version of the "How Does Your Workplace Measure Up?" brochure.

■ *Using Windows 95*
Comes with Windows 95 systems. Contains information for using Windows 95.

Most of your application programs provide extensive online help. Some programs provide separate online user's guides for specific applications.

Windows 95 provides extensive online help and "wizards" to guide you through procedures.

In addition to the documentation that ships with the system, the following documentation is available from NEC:

■ *PowerMate Ve Series Service and Reference Manual* (part number 819-181528-000) which provides information for maintaining, troubleshooting, and repairing the PowerMate Ve Series system. This guide also includes hardware and interface information for programmers, engineers, and others who need to know how the system is designed.

To purchase the service and reference manual, call NEC at 1-800-233-6321 (in the U.S.) or contact your local NEC sales provider (outside U.S.).

■ NEC FastFacts™
NEC FastFacts is an automated service that sends the latest information about NEC and its products directly to a fax machine. The service is available 24 hours a day, 7 days a week.

With FastFacts, you can obtain product literature and technical information bulletins. By using FastFacts, you can be kept up-to-date on the latest technical information for your system.

See "NEC's FastFacts Service" in Chapter 7 for information about using FastFacts.

# 1 Introducing Your Computer

> ## ⚠ WARNING
>
> Prolonged or improper use of a computer workstation may pose a risk or serious injury. To reduce your risk of injury, set up and use your computer in the manner described in Appendix A, Setting Up a Healthy Work Environment.

After setting up your computer, familiarize yourself with your system. The following sections provide a brief look at the front and back features of your system.

For a comprehensive source of information about your computer, see the online *NEC PowerMate Ve Series System Documentation* in the Windows® NEC Information group.

## FRONT FEATURES

The following figure shows the features on the front of the system. A brief description of the features follows the figure.

System Controls
and Lamps

Diskette Drive A    CD-ROM Reader*    Power
                                      Button
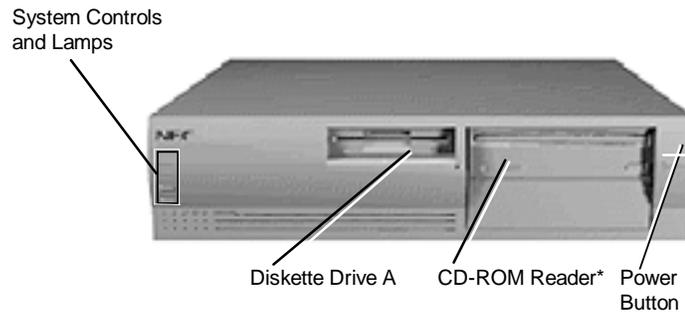
*Multimedia systems only.

*Front features*

The following figure depicts in detail the system lamps and controls called out in the previous figure.



Power Lamp
Disk Lamp
Reset Button
Suspend Button
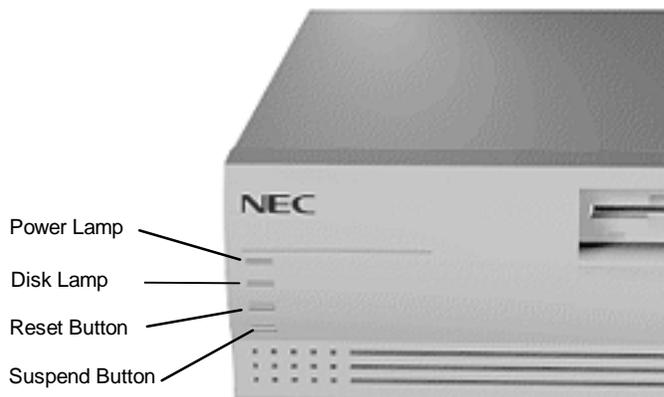
*System controls and lamps*

## System Controls and Lamps

System controls let you select specific system operations. Lamps let you know the status of system operation. Your computer has the following controls and lamps:

■ Power button
Press this button to turn on system power. Press it again to turn off the power.

■ Suspend button
Lets you initiate a power-saving mode of operating your computer. Press this button to suspend system operation when you plan to be away from your computer for a short time. Press any key or move your mouse to resume system operation to where you stopped it. See "The Power Menu" in Chapter 4 for more information on the Suspend operation.

A blinking system unit power lamp lets you know that the system is in a power-saving mode.

■ Reset button
The reset button lets you manually restart your system when it does not respond to keyboard commands.

---

⚠ **CAUTION**

Resetting your system can result in the loss of data. Press the reset button only when all other methods of restarting your computer fails.

---

■ Power lamp
The power lamp indicates whether system power is on or off. It also lets you know if the system is operating in a power-saving mode.

A steady green lamp indicates that the power is on to all system components. A blinking green lamp indicates that the system is in Suspend mode with full power reduction.

■ Disk lamp
Indicates if your hard disk is doing anything. A green lamp tells you that the hard disk is reading or writing data.

---

⚠ **CAUTION**

Do not turn off the system, unless absolutely necessary, while the disk lamp is lit. To do so can damage your hard disk or data.

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### Diskette Drive A

Diskette drive A loads and starts programs from a diskette. Diskette drive A is your primary "bootable" drive.



Diskette Drive
Busy Lamp

Diskette Release Button
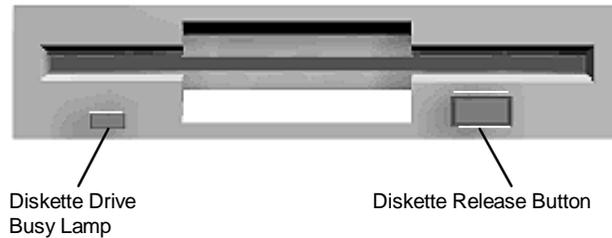
*Diskette drive A features*

Your diskette drive has the following features:

■ Diskette drive busy lamp
Lights when your diskette drive is reading to or writing from a diskette.

---

# ⚠ **CAUTION**

To prevent damage to your diskette drive and data, do not turn off the system or remove a diskette while the diskette drive busy lamp is lit.

---

■ Diskette release button
Press this button to release a diskette from the diskette drive.

## CD-ROM Reader

An eight-speed CD-ROM reader is a standard feature in multimedia models. The CD-ROM reader is assigned as drive E.

Use the CD-ROM reader to load and start programs from a compact disc (CD). You can also use the CD-ROM reader to play your audio CDs.

> **NOTE** You can boot your system from the CD-ROM with a bootable CD. To enable the system to boot from the CD-ROM, see "Boot Menu" in Chapter 4.

The CD-ROM reader operates at different speeds depending on whether the CD you are using contains data or music. This allows you to get your data faster and to see smoother animation and video.

> **NOTE** The CD-ROM reader in your system might look different from the one shown here.

CD Tray          CD Busy          Emergency
                 Lamp             Eject Hole

Headphone        Volume                    Open/Close
Jack             Control Knob              Button
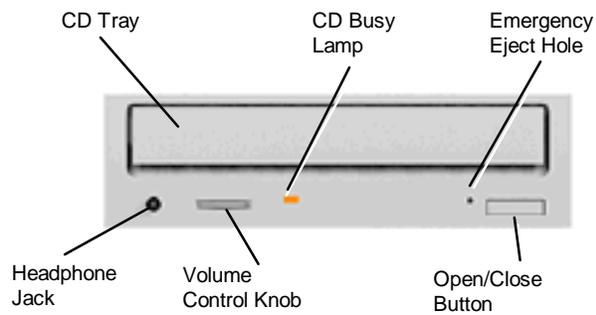
*CD-ROM reader features*

The CD-ROM reader has the following features:

■ Headphone jack
   Allows the connection of an optional set of headphones
   with a stereo mini-jack plug.

■ Volume control knob
   Lets you adjust the volume of an optional set of
   headphones.

■ Open/close button
   Opens or closes the reader's loading tray. Press this
   button when the computer power is on to insert or
   remove a CD into or out of the reader.

■ Emergency eject hole
   Allows the manual ejection of a CD if the eject function
   is disabled by software or if a power failure occurs.

■ CD busy lamp
  Lights when the reader is retrieving data, music, or
  graphics/audio from a CD. Do not eject the CD or turn
  off the system unit when the lamp is on.

■ CD tray
  Provides a surface for loading a CD into the reader.
  Press the open/close button to open or close the CD tray.

## BACK FEATURES

On the back of your computer, you'll find external
connectors, power supply features, and expansion board
slots. The following figures show these features.
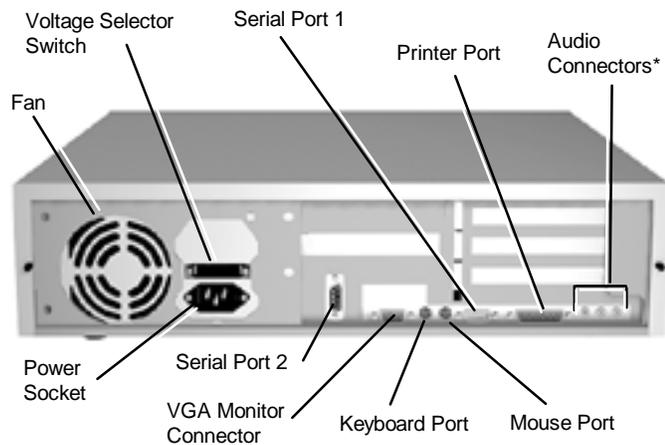


*Multimedia systems only.

*Rear features*

The following figure (multimedia systems only) identifies the audio connectors called out in the previous figure.



Line Out Jack

Microphone In Jack

Line In Jack
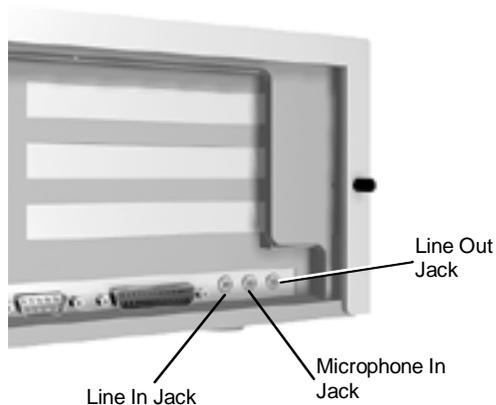
*Audio connectors*

## External Connectors

External connectors let you attach peripheral devices, such as a monitor, keyboard, mouse, and printer to your system. Your system has the following external connectors:

■ VGA monitor connector
Attach the signal cable from your monitor to this connector. Supports an NEC MultiSync® monitor or other video graphics array (VGA)-compatible monitor with a 15-pin connector.

- Audio connectors
  These connectors come integrated on multimedia models. The connectors include microphone in, line in, and line out jacks.

  — The microphone in jack lets you connect a microphone for recording audio information in your data system files.

  — The line in jack lets you connect a stereo audio device such as a stereo amplifier or a cassette or minidisc player for playback or recording.

  — The line out jack allows you to connect an *amplified* output device such as powered speakers, stereo tape recorder, or an external amplifier for audio output. Use this jack to connect the stereo speakers that come with your system.

- Printer Port
  Use this port to connect a parallel printer with a 25-pin connector to the system.The enhanced printer port supports Enhanced Capabilities Port (ECP) and Enhanced Parallel Port (EPP) modes.

- Serial Ports
  Attach a serial device with a 9-pin connector to each serial port. Serial devices include a pointing device, serial printer, or modem. The buffered high-speed serial port supports transfer rates of up to 19.2 KB per second.

- Keyboard port
  Attach the keyboard that comes with your computer to this connector.

  The keyboard port supports a personal system (PS)/2®-compatible keyboard with a 6-pin mini DIN connector.

■ Mouse port
   Attach the mouse that comes with your computer to this
   port. The mouse port supports a PS/2-compatible
   mouse.

## Power Supply Features

Your system has the following power supply features:

■ Power supply fan
   Keep this area clear for proper ventilation. The power
   supply fan cools system components and prevents them
   from overheating.

■ Voltage selector switch
   Sets the voltage for your system to 115 volts or
   240 volts.

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# ⚠ **CAUTION**

Set the switch correctly for the voltage in your area.
Most wall outlets in the United States and Canada
are 115 volts. Outlets in Europe, Australia, and Asia
(except Taiwan) are 240 volts. Taiwan uses 115-volt
outlets.

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■ Power socket
   Connect your power cable to this socket.

## SPEAKERS

Multimedia models come with a pair of high-quality, 8-watt stereo speakers that you can arrange to suit your work environment.

An AC adapter comes with the system. To take full advantage of your stereo speakers and system's sound capabilities, set up the speakers with the AC adapter. The speakers connect to the line out jack on the back of the system unit.

Power Lamp

Power Button

Treble

Bass

Volume Control
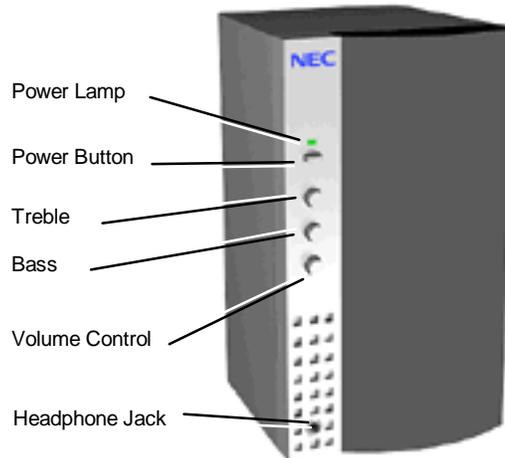
Headphone Jack

*8-watt speaker*

The right speaker features a power button, power lamp, volume knob, treble and bass controls, and headphone jack.

Adjust the speaker volume by using the volume control or by using the preinstalled sound system software. See "Integrated Peripherals" in Chapter 4 for more information. Use the sound software to balance the speakers.

The sound software is Voyetra Multimedia Sound Software. See Chapter 6 for information on using the Multimedia Sound Software.

## THE MICROPHONE

The microphone allows you to record voice and sound into your computer data files. See Chapter 6 for information on recording sound using the Multimedia Sound Software.

*Microphone*

# 2 Getting Started

This chapter provides the information you need to start using your system. Information includes:

■ Using a Mouse
If you are already familiar with using a mouse, skip this section.

■ About Your Online Documentation
Read this section for an explanation of the online document format and where to access it on your computer.

■ Where to Go from Here
Look at this section for a quick reference to what you can do and where you can get information.

## USING A MOUSE

Use the mouse to quickly move around on the screen, to select menu items, and to choose functions specific to your software.

Use the mouse to

■ Click
Clicking selects an object on your screen. To "click," point to the object and press and release the left mouse button.

■ Double click
Some actions require a double click to execute them. To "double click" an object, point to the object and press and release the left mouse button twice.

■ Press
Pressing the mouse button holds an action until you release the mouse button.

■ Drag
Dragging the mouse attaches the pointer to an object on the screen and allows you to highlight text or move an object. To drag an object, point to the object, press the left mouse button, and move the mouse to the new location.

Typical screen objects that you click or double click are icons, buttons, and menu options.

NOTE If your mouse pointer disappears, move your mouse in wide circles to bring it back into the screen.

For more information about your mouse, see your online User's Guide and your application documentation. Also included in the online documentation is information on cleaning your mouse.

## ABOUT YOUR ONLINE DOCUMENTATION

Besides this printed user's guide, your system comes with online documentation conveniently available right from Windows.

To access the online system documentation, locate the NEC Information group in Windows. Click the NEC PowerMate Online Documentation icon. A welcome screen appears with the information you need to use the online documentation.

The *NEC PowerMate Ve Series System Documentation* is a comprehensive source of information about your system. To help you find the information you need, the documentation is organized by topic and the following modules:

■ System Tour

■ User's Guide

■ Product Information Center

■ Option Installation Center

■ Support Center.

> NOTE Run the online NEC PowerMate Ve Series System Documentation at the shipping default video resolution — 800 by 600 with 256 colors with small fonts.

Other online documents include:

■ *Healthy Environment*

■ *Using Windows 95*.

Most of your application programs provide extensive online help at the touch of a button (usually the Help button).

Some programs provide separate online user's guides for specific applications.

Windows 95 provides extensive online help and "wizards" to guide you through procedures.

## WHERE TO GO FROM HERE

Once you have your system up and running, we suggest that you do the following:

■ If you have options to install, see Chapter 3, Installing Options.

■ Make the distribution media, see "Operating System Backup Utility" in Chapter 4.

■ Read Appendix A, Setting Up a Healthy Work Environment.

■ Take the System Tour in your online *NEC PowerMate Ve Series System Documentation*.

■ See the online User's Guide in your online *NEC PowerMate Ve Series System Documentation*.

■ Install any applications. See the documentation that comes with the application.

See the following quick reference chart to find information about some of the things you might want to do:

**Quick Reference to Information About Your Computer**

| WHAT YOU WANT TO FIND | WHERE TO FIND IT |
|---|---|
| Basic information about my computer | Online User's Guide in *NEC PowerMate Ve Series System Documentation* |
| Setting a password | "Setting a Password" in the online User's Guide (*NEC PowerMate Ve Series System Documentation)* Chapter 4 in this guide |
| Using Windows | Online *Using Windows 95* Printed *Windows 95 User's Guide* |
| | The NEC PowerMate Customer catalog offers additional Windows 95, MS-DOS 6.2/Windows for Workgroups, and Windows NT documentation. |
| Loading a CD | "Loading a CD" in the online User's Guide (*NEC PowerMate Ve Series System Documentation*) |
| Playing a music CD | Multimedia models: AudioStation online help Chapter 6 in this guide |
| Using the suspend button | "Saving Power" and "Managing Power" in the online User's Guide (*NEC PowerMate Ve Series System Documentation*) |
| Adding options | "Adding Internal Options" or "Adding External Options," in the online Option Installation Center (*NEC PowerMate Ve Series System Documentation)* Chapter 3 in this guide |

Note:  AudioStation comes with multimedia models.

**Quick Reference to Information About Your Computer**

| WHAT YOU WANT TO FIND | WHERE TO FIND IT |
|---|---|

| | |
|---|---|
| Understanding power management | "Saving Power" and Managing Power" in the online User's Guide (*NEC PowerMate Ve Series System Documentation*) |
| Using online services, like America Online®, Prodigy® and CompuServe® | Online Services Help group<br>Chapter 7 in this guide |
| Changing video drivers | "Changing Video Drivers" in the online User's Guide (*NEC PowerMate Ve Series System Documentation)* |
| Protecting my system from viruses | "VirusScan for Windows," Scan95," and "WebScan" in the online System Tour (*NEC PowerMate V&P Series System Documentation*) |
| Using Desktop Management Interface | "Desktop Management Interface" in the online Product Information Center (*NEC PowerMate Ve Series System Documentation*) |
| Using support services | "24-Hour Information Services" in the online Support Guide (*NEC PowerMate Ve Series System Documentation*)<br>Chapter 7 in this guide |
| Taking care of my system | "Taking Care of Your System" in the online User's Guide (*NEC PowerMate Ve Series System Documentation*) |

# 3 Installing Options

Your PowerMate system supports a variety of industry-standard and NEC expansion options. There are many optional components available for you to customize your computer.

- monitors − your system supports the connection of a VGA-compatible monitor such as NECs Multisync XE and XP series.

- SIMM memory − your system comes with 8- or 16-MB of RAM upgradeable to 128 MB of 32-bit, 60 ns of high-speed memory using SIMM sticks.

- video DRAM − your system comes standard with 1 MB of video DRAM that provides resolutions of up to 1280 by 1024 with 16 colors, 1024 by 768 with 256 colors, 800 by 600 with 256 colors, 640 by 480 with 64,000 colors, or 320 by 200 with 16 million colors.

  With the upgrade to 2 MB of DRAM, your system supports resolutions up to 1280 by 1024 with 256 colors or 640 by 480, 800 by 600, and 1024 by 768 with 16 million colors.

- processor upgrade − a 320-pin zero insertion force (ZIF) socket on the system board supports the primary processor or an OverDrive processor for upgrades.

■ secondary cache – upgrade to a 256-KB asynchronous or synchronous pipeline burst secondary SRAM cache module (standard in some configurations).

■ drives – your system supports a total of four storage devices. In addition to the standard 3 1/2-inch 1.44 MB diskette drive, three other storage device slots are available. Hard disk configurations come with a hard disk drive installed and multimedia systems include an installed CD-ROM reader.

## OPTION INSTALLATION PROCEDURES

Installation instructions for the following options are provided in this chapter.

■ expansion boards

■ SIMM memory upgrade

■ video memory upgrade

■ processor upgrade

■ L2 SRAM cache module (standard in some configurations)

■ data storage devices

■ external options.

Some of the options require locating the connector on the system board. See the following figure for connector locations.



Cache Socket

Processor
Socket

SIMM
Socket 1

SIMM
Socket 2

SIMM
Socket 3

SIMM
Socket 4

Video DRAM
Socket
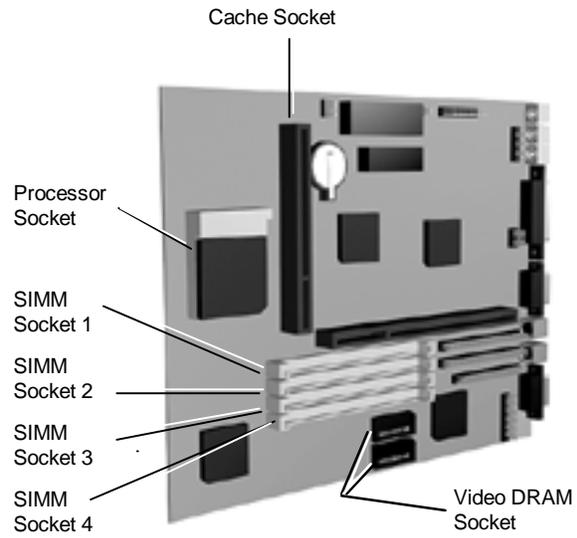
*System board sockets and connectors*

All options require the system cover removal. Procedures for removing the cover are explained later in this chapter.

## Safety Precautions

Take care when working inside the system and when handling computer components. Avoid electric shock or personal injury by observing the following warning.

## ⚠ WARNING

Before removing the system unit cover, turn off the power and unplug the system power cable. Power is removed only when the power cable is unplugged.

Static electricity and improper installation procedures can damage computer components. Protect computer components by following these safety instructions.

## ⚠ CAUTION

Electrostatic discharge can damage computer components. Discharge static electricity by touching a metal object before removing the system unit cover.

- Avoid carpets in cool, dry areas. Leave an option, such as a board or chip, in its anti-static packaging until ready to install it.

- Dissipate static electricity before handling any system components (boards, chips, and so on) by touching a grounded metal object, such as the system's unpainted metal chassis.

  If possible, use anti-static devices, such as wrist straps and floor mats.

■ Always hold a chip or board by its edges. Avoid touching the components on the chip or board.

■ Take care when connecting or disconnecting cables. A damaged cable can cause a short in the electrical circuit. Misaligned connector pins can cause damage to system components at power-on.

When installing a cable, route the cable so it is not pinched by other components and is out of the path of the system unit cover. Prevent damage to the connectors by aligning connector pins before you connect the cable.

When disconnecting a cable, always pull on the cable connector or strain-relief loop, not on the cable.

## Removing the System Unit Cover

The following procedure describes how to remove the system unit cover.

---

### ⚠ WARNING

Before removing the system unit cover, turn off the power and unplug the system power cable. Power is removed only when the power cable is unplugged.

---

1. Turn off and unplug the system unit.

2. Disconnect the keyboard, mouse, monitor, and any other external options (such as a printer) from the rear of the system unit.

# ⚠ **CAUTION**

Electrostatic discharge can damage computer components. Discharge static electricity by touching a metal object before removing the system unit cover.

**3.** Remove the two cover screws from the rear of the system unit.
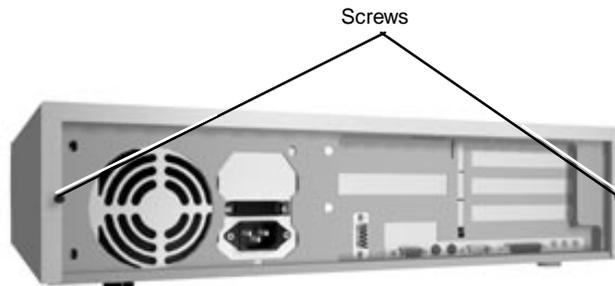
Screws



*Removing cover screws*

**4.** From the rear of the system, grasp the sides and slide the cover about an inch away from the front.

[NOTE] The cover fits tightly. Press the front edge of the cover to release it from the front panel. Also press against the rear panel to slide the cover one inch away from the front panel.

*Releasing the cover*

**5.** Lift the cover up and away from the system unit.

## Replacing the System Unit Cover

Replace the cover as follows.

**1.** Align the tabs on the sides of the cover with the inside unit frame as you position the cover over the chassis.



Cover Tabs

System Unit Frame
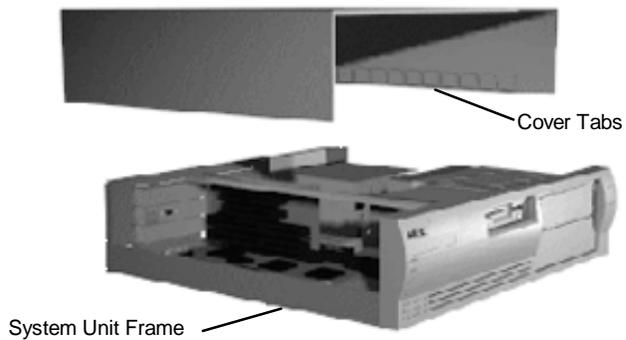
*Replacing the system unit cover*

**2.** Slide the cover forward to meet the front panel.

> NOTE  The cover fits tightly. If the cover does not slide all the way to the front panel, place one hand on the front of the unit while you slide the cover forward from the rear.

**3.** Secure the cover with the two cover screws removed earlier. (See "Removing the System Unit Cover," earlier in this chapter.)

**4.** Reconnect all external peripherals.

**5.** Plug in your power cables.

## EXPANSION BOARDS

Your PowerMate supports ISA Plug and Play expansion boards. With Plug and Play expansion boards, you can install a board in an expansion slot without changing the hardware settings. There are no system resource conflicts to resolve. Plug and Play automatically configures the board for the system.

Industry-standard 8- and 16-bit ISA, and 32-bit PCI expansion boards are supported in the system unit. ISA expansion boards can be Plug and Play or non-Plug and Play boards.

## Locating Expansion Slots

The PowerMate system has four expansion slots as follows.

- two ISA slots

- one PCI slot

- one shared PCI/ISA slot.

ISA expansion slots support industry-standard 8-bit or 16-bit expansion boards. Install half-length boards in the rear ISA slot and three-quarter-length boards in the front ISA slot. The PCI/ISA slot also supports PCI expansion boards.

PCI expansion boards run at the system's processor speed. The PCI bus handles 32 bits of data at a time, being wider as well as faster than the standard ISA bus. PCI boards can send and receive data much faster which boosts system performance.



PCI Slot      ISA Slot*

PCI/ ISA Slot

ISA Slot*
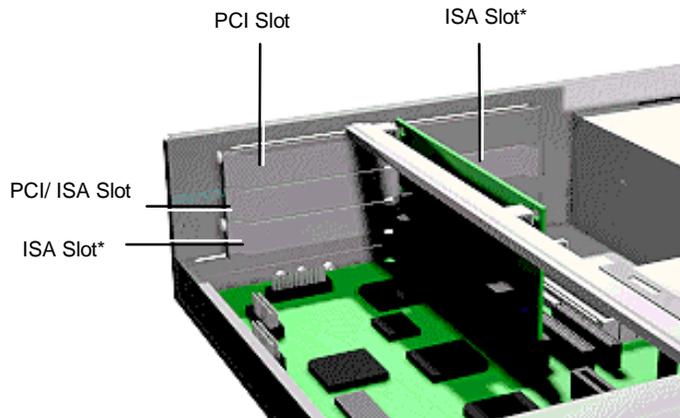
* Full size expansion boards cannot be installed in these slots.

*Locating expansion slots*

## Installing an Expansion Board

Install expansion boards in the system as follows.

1. Remove the system unit cover.

2. Follow any preinstallation instructions that come with the expansion board (such as setting switches or jumpers on the board).

3. If installing a board in the inside expansion slot (next to the power supply), see "Installing an Expansion Board in the Inside Slot." Otherwise, continue to the next step.

4. Remove the screw securing an expansion slot cover and remove the cover.

   Save the screw for installing the expansion board. Save the slot cover for future use.

# ⚠ **CAUTION**

A slot cover can damage the system board or any option board if it falls into the system. Take care to keep the slot cover from falling when removing the screw.

If the slot cover does fall into the unit, remove it before replacing the cover.
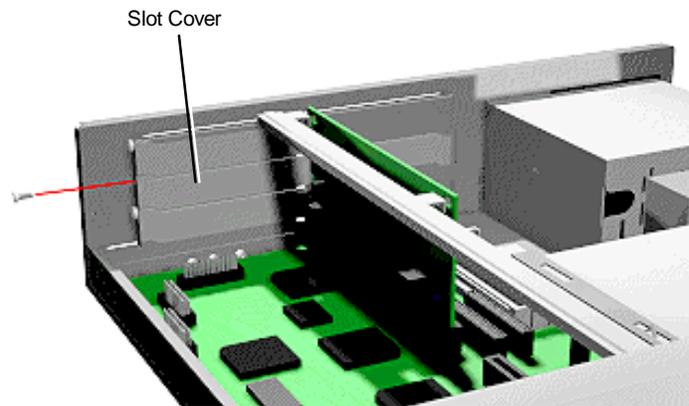
Slot Cover



*Removing a slot cover*

**5.** Hold the board by its edges and insert it into the expansion slot (see the figure on the following page). Align full-size expansion boards with the guide rail at the front of the system unit.

Press the board firmly into the expansion slot connector. Gently rock the board from side-to-side to seat it into the connector.

**6.** Insert the screw removed earlier to secure the expansion board to the support bracket.
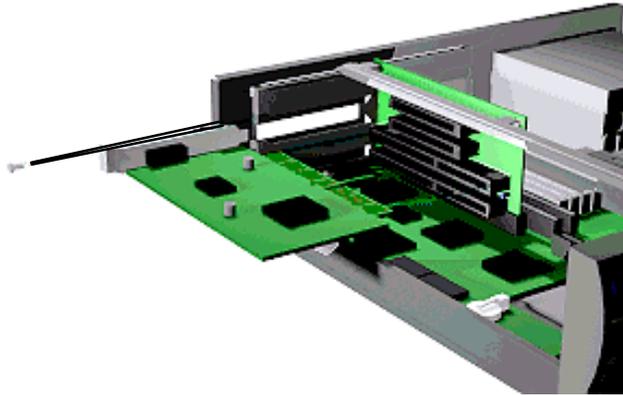
*Installing the expansion board*

**7.** Attach any signal cables required by the expansion board.

**8.** Replace the system unit cover.

## Installing an Expansion Board in the Inside Slot

Use this procedure if installing an expansion board into the inside slot in your system.

**1.** Remove the system unit cover.

**2.** Follow any preinstallation instructions that comes with the expansion board (such as setting switches or jumpers on the board).

**3.** Remove the two screws that secure the slot cover support and expansion slot cover to the rear of the system.

Remove the slot cover support and slot cover from inside the system unit.

⚠ **CAUTION**

Take care not to drop the slot cover and support into the system.

Slot Cover



Slot Cover Support Screws
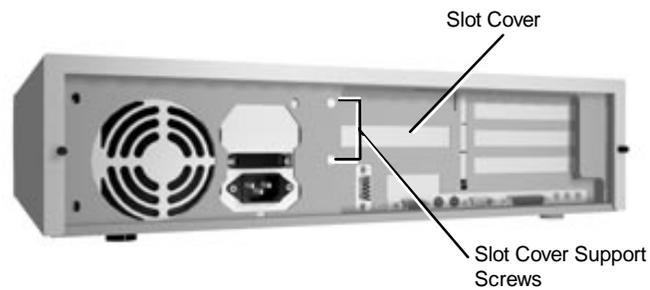
*Removing the slot cover support screws*

**4.** Hold the board by its edges, component side down and the bracket end facing the rear of the unit, and insert it into the expansion slot.

Press the board firmly into the expansion slot connector. Gently rock the board from side-to-side to seat it into the connector.

**5.** Hold the slot cover support over the expansion board bracket and replace the two screws removed earlier. The slot cover support secures the expansion board in place.
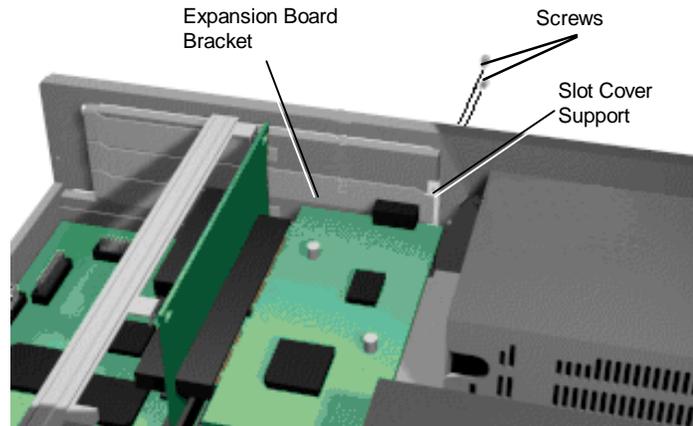


*Attaching the slot cover support*

**6.** Attach any signal cables required by the expansion board.

**7.** Replace the system unit cover.

## Removing an Expansion Board

**1.** Remove the system unit cover as previously described.

**2.** Label and remove any cables connected to the board.

> **NOTE** To remove a board from an inside slot, see "Removing an Expansion Board from the Inside Slot."

3. Remove the screw that secures the board to the support bracket.
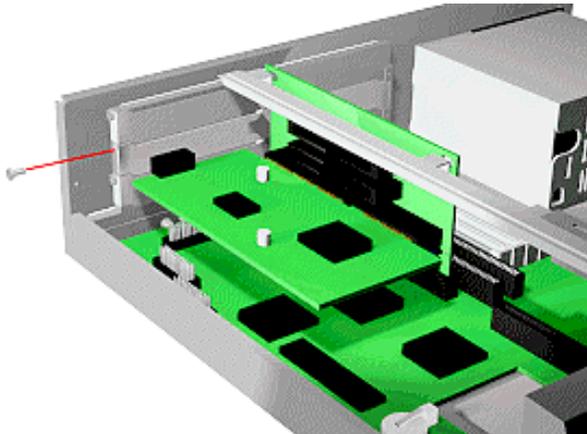
*Removing the screw*

4. Pull the board out of the connector. Gently rock the board from side-to-side to release it from its connector.

5. Replace the slot cover that was removed when the option board was installed.

6. Replace the system unit cover.

## Removing an Expansion Board from the Inside Slot

Use this procedure if removing an expansion board from the inside slot in your system.

1. Remove the system unit cover.

2. Label and remove any cables from the expansion board.

**3.** Remove the two screws that secure the slot cover support and expansion board bracket to the rear of the system.

Remove the slot cover support from inside the system unit.

---

⚠ **CAUTION**

Take care not to drop the slot cover support into the system, as it could damage the system board.

---
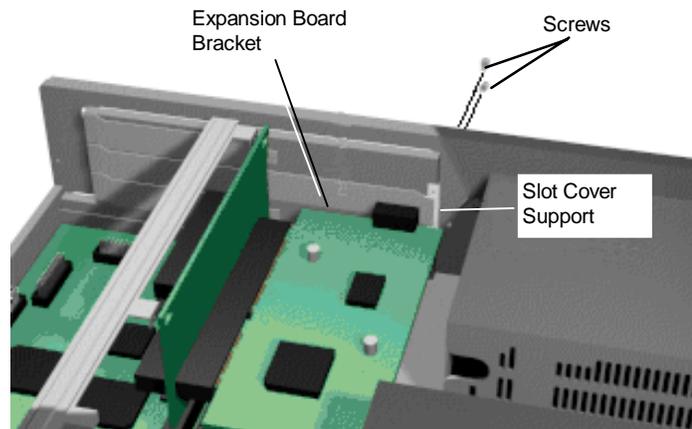


*Removing the slot cover screw*

**4.** Pull the board out of the connector. Gently rock the board from side-to-side to release it from the connector.

**5.** Replace the slot cover that was removed when the option board was installed.

**6.** Replace the system unit cover.

## SIMM UPGRADE

Your PowerMate system comes with 8 MB or 16 MB of main system memory. Four sockets on the system board support up to 128 MB of high-speed memory using industry-standard, tin-plated, single in-line memory modules (SIMM).

---

NOTE  You may install 60 or 70-ns fast page mode (FPM), or 60-ns extended data output (EDO), parity or non-parity SIMMs into the SIMM sockets.

---

- 1-MB by 32-bit (4-MB stick)

- 2-MB by 32-bit (8-MB stick)

- 4-MB by 32-bit (16-MB stick)

- 8-MB by 32-bit (32-MB stick).

---

⚠ **CAUTION**

To avoid corrosion between different metals, only use tin-plated SIMM sticks.

---

## Checking System Memory

Use the following procedure to:

- check the memory installed in the system

- determine the SIMM configuration needed to increase memory

> NOTE  SIMM memory must be installed in pairs of the same memory type.

- identify SIMM sockets.

**1.** Locate the four SIMM sockets on the system board (see "Option Installation Procedures" earlier in the chapter.

   If any cables block access to the SIMM sockets, label and disconnect them. If any boards block access to the sockets, remove them.

**2.** Use the following table to determine the SIMM configuration needed to upgrade memory and to identify the sockets for SIMM installation.

## Recommended Memory Upgrade Path

| TOTAL MEMORY | SIMM SOCKET 1 | SOCKET 2 | SIMM SOCKET 3 | SOCKET 4 |
|---|---|---|---|---|
| 8 MB* | 4 MB | 4 MB | Empty | Empty |
| 16 MB | 4 MB | 4 MB | 4 MB | 4 MB |
| 16 MB** | 8 MB | 8 MB | Empty | Empty |
| 24 MB | 4 MB | 4 MB | 8 MB | 8 MB |
| 24 MB | 8 MB | 8 MB | 4 MB | 4 MB |
| 32 MB | 8 MB | 8 MB | 8 MB | 8 MB |
| 32 MB | 16 MB | 16 MB | Empty | Empty |
| 40 MB | 4 MB | 4 MB | 16 MB | 16 MB |
| 40 MB | 16 MB | 16 MB | 4 MB | 4 MB |
| 48 MB | 8 MB | 8 MB | 16 MB | 16 MB |
| 48 MB | 16 MB | 16 MB | 8 MB | 8 MB |
| 64 MB | 16 MB | 16 MB | 16 MB | 16 MB |
| 64 MB | 32 MB | 32 MB | Empty | Empty |
| 72 MB | 4 MB | 4 MB | 32 MB | 32 MB |
| 72 MB | 32 MB | 32 MB | 4 MB | 4 MB |
| 80 MB | 8 MB | 8 MB | 32 MB | 32 MB |
| 80 MB | 32 MB | 32 MB | 8 MB | 8 MB |
| 96 MB | 16 MB | 16 MB | 32 MB | 32 MB |
| 96 MB | 32 MB | 32 MB | 16 MB | 16 MB |
| 128 MB | 32 MB | 32 MB | 32 MB | 32 MB |

*Standard configuration for 8-MB systems.
**Standard configuration for 16-MB systems.

## Removing a SIMM

Use the following procedure to remove a SIMM.

> **CAUTION:**  Reduce static discharge by touching the system's metal chassis.

1.  Remove the system unit cover.

2.  Locate the SIMM sockets (see "Option Installation Procedures" earlier in the chapter).

3.  Press the metal clips at the outer edges of the socket away from the SIMM.

4.  Push the SIMM away from the locking tabs and remove it from the socket.



Clips
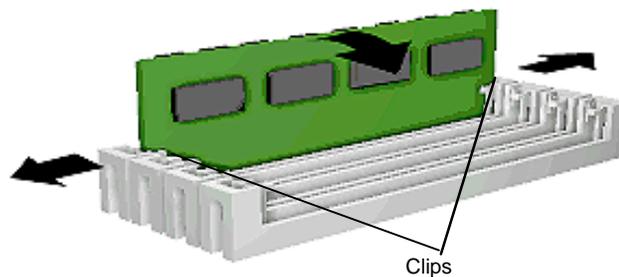
*Removing a SIMM*

Use the following procedure to install a SIMM stick.

## Installing a SIMM

Install a SIMM as follows.

1.  Remove the system unit cover.

2.  Locate the SIMM sockets (see "Option Installation Procedures" earlier in the chapter).

    Remove any currently installed SIMMs that are not needed.

> ⚠ **CAUTION**
>
> Before installing a SIMM, reduce static discharge by touching the system's metal chassis.

3.  Align the notched end of the SIMM with the socket end closest to the front of the system.

4.  Insert the SIMM at an angle into the socket.

**5.** Tilt the SIMM towards the locking tabs using equal pressure at the ends of the SIMM until it locks into the socket.



Clip

Notched End of SIMM
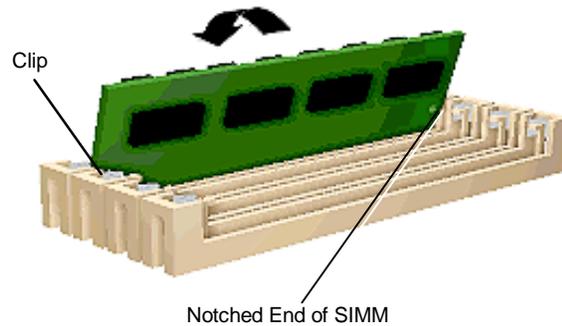
*Inserting the SIMM*

**6.** Replace any cables or boards that may have been removed.

**7.** Replace the system unit cover.

## VIDEO UPGRADE

Upgrade the video memory by adding two 512-KB by 16-bit video DRAM modules as follows.

**1.** Remove the system unit cover as previously described.

**2.** Locate the video DRAM sockets (see "Option Installation Procedures" earlier in this chapter).

If any expansion boards are obstructing your view of the sockets, remove the boards (see "Removing an Expansion Board").

# ⚠ **CAUTION**

Reduce static discharge by touching the system's metal chassis.

3. Align the notched ends of the module and socket. Using equal pressure, gently press the module into the socket. Repeat for the second module.



Notched End of Module

Notched Corner of Socket
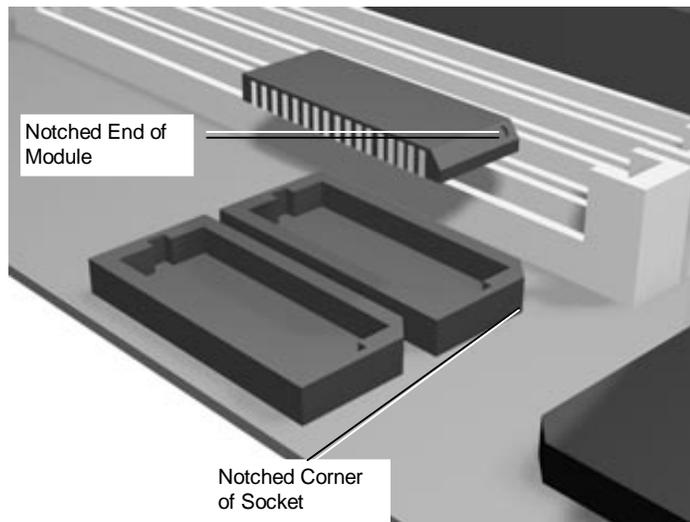
*Aligning the video DRAM module with the socket*

4. Replace any boards that were removed.

5. Replace the system unit cover.

## PROCESSOR UPGRADE

The zero-insertion force (ZIF) socket accepts pin-grid-array (PGA) processors, such as the primary processor or an OverDrive™ processor.

---

### ⚠ **CAUTION**

Incorrect installation of the processor can damage the processor, system board, or both. Follow the installation instructions carefully.

The system requires a heatsink on the OverDrive processor. Verify that you have the correct heatsink for the processor.

---

When upgrading the processor, first remove the processor currently installed in the system, then install the OverDrive processor.

## Removing the Processor

Remove the processor installed on the system board as follows.

**1.** Remove the system unit cover.

**2.** Locate the processor socket (see "Option Installation Procedures" earlier in this chapter).

If any expansion boards are obstructing the socket, remove the boards.

**3.** Release the heatsink clip from the tabs on the socket.

**4.** Release the processor by pulling the lever on the socket away from the socket and as far back as it goes without forcing.

# ⚠ CAUTION

Before picking up the processor, reduce static discharge by touching the metal frame of the system unit. See "Safety Precautions" in this chapter.

**5.** Lift the processor out of the socket.

## Installing the Processor

**1.** Remove the processor currently in the system (see previous procedure).

# ⚠ CAUTION

Before picking up the processor, reduce static discharge by touching the metal frame of the system unit.

**2.** Align the notched corner of the processor with the alignment corner in the socket and insert the processor.

**3.** Swing the lever down to lock the processor into the socket.

# ⚠ CAUTION

Remember to either reattach the heatsink used with the old processor or install the new heatsink supplied with the OverDrive processor.

**4.** Check to see if the newly installed processor requires a system board jumper change (see Chapter 5, Setting System Board Jumpers).

**5.** Replace any boards removed during this procedure.

**6.** Replace the system unit cover.

## SECONDARY CACHE UPGRADE

The system comes with 16 KB of primary cache built into the processor. All configurations support 256 KB of asynchronous or synchronous pipeline burst secondary SRAM cache. Secondary cache is standard on some configurations. The secondary cache installs into a cache socket on the system board. Secondary cache increases system performance.

> NOTE Secondary cache comes standard in all Asia, Australia, and in some U.S. configurations.
>
> NEC recommends that you purchase the NEC Cache Upgrade Kit when adding secondary cache. The NEC option kit has been tested and approved to work correctly with your system.

Use the following procedure to install the cache module.

**1.** Remove the system unit cover.

**2.** Locate the cache socket on the system board (see "Option Installation Procedures" earlier in the chapter).

If you have expansion boards obstructing the connector, remove the boards.
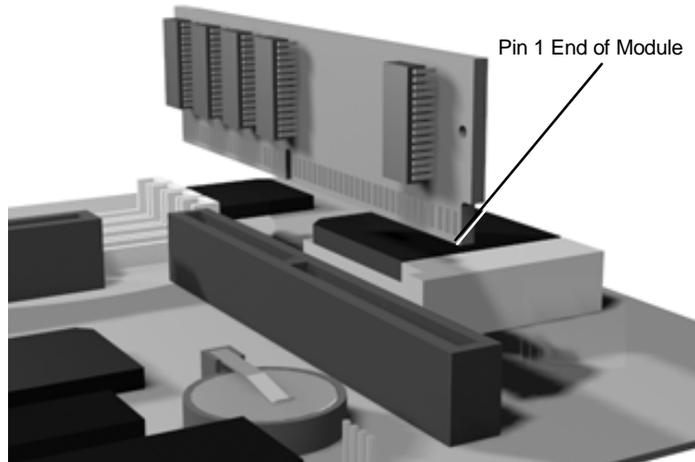
Pin 1 End of Module

*Aligning the cache module with the socket*

> ⚠ **CAUTION**
>
> Before you install a cache module, reduce static discharge by touching the system's metal chassis.

3. Align the pin 1 end of the cache module with the pin 1 end of the secondary cache socket. Using equal pressure, gently press the module into the socket.

4. Check to see if the newly installed cache module requires a system board jumper change. See Chapter 5, Setting System Board Jumpers.

5. Replace any boards that you may have removed during this procedure (see "Installing an Expansion Board" earlier in this chapter).

6. Replace the system unit cover.

## DATA STORAGE DEVICES

The system board in the computer supports the following storage devices:

■ up to two diskette drives, including the standard 1.44-MB diskette drive

■ up to four IDE devices such as IDE hard disks and an IDE CD-ROM reader.

Other storage devices might require the installation of a compatible controller board.

### Locating Device Slots

The PowerMate system has four storage device slots (see the figure on the following page):

■ a 3 1/2-inch accessible device slot which contains the standard
1.44-MB diskette drive

■ one internal hard disk drive slots (1-inch high, thin-height)

Hard disk configurations come with an IDE hard disk installed.

■ two accessible device slots (1.6-inch high, half-height)

In multimedia models, one accessible device slot contains the standard CD-ROM reader.

Other accessible devices (diskette drive, tape drive, CD-ROM reader) can be installed in the 5 1/4-inch slots.

A hard disk with a 5 1/4-inch form factor can be installed in the 5 1/4-inch slots.

The following figure shows the device slot locations.

3 1/2-Inch Slot
(contains 1.44-MB
diskette drive)

5 1/4-Inch
Accessible Slots*

3 1/2-Inch
Internal Slot
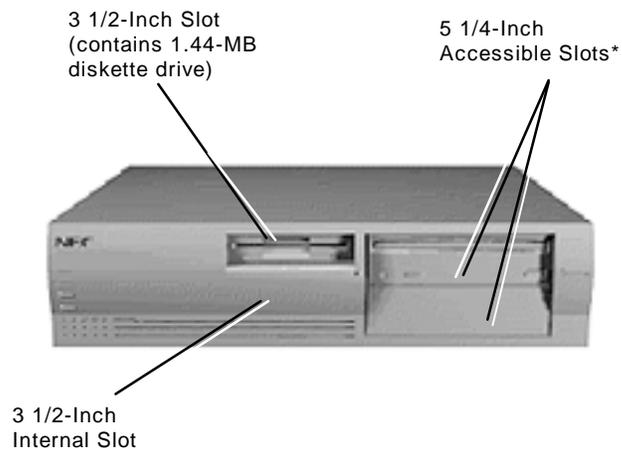
*Top 5 1/4-inch slot is unavailable in some configurations.

*Locating device slots*

## Preparing the Device

Before installing a storage device in the system, follow any preinstallation instructions that come with the device. For example, check the following:

■ Diskette drive — remove any termination on the optional diskette drive. See the documentation that comes with the drive.

■ IDE device — check the jumper settings on the device before installing it. See the documentation that comes with the device for jumper setting information.

An IDE device, such as an IDE hard disk or IDE CD-ROM reader, must be set correctly as the first (master) or second (slave) device on the IDE channel.

The standard IDE hard disk is set as the master device on the primary IDE connector. The CD-ROM reader in multimedia models is the master device on the secondary IDE connector.

## Device Cables

The cables used for installation of optional storage devices include:

■ diskette drive signal cable

■ IDE signal cables

■ system power cables.

The diskette drive and IDE cables shipped with the system each support two devices. Cable connector locations on the system board are shown in the following figure.
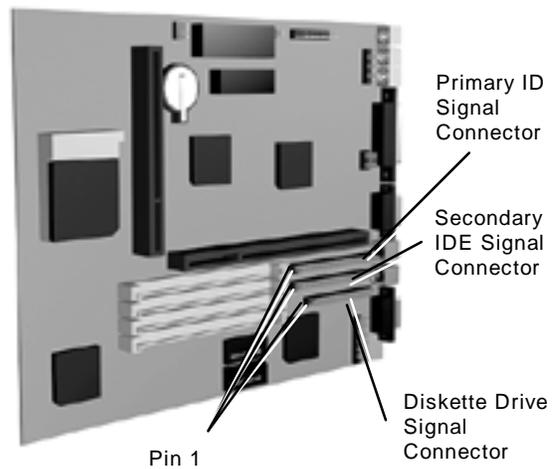


*System board cable connectors*

### *Diskette Drive Signal Cable*

A three-connector diskette drive signal cable comes attached to the system board and to the standard 1.44-MB diskette drive.

The installation of a second diskette drive in your system does not require the replacement of the existing diskette drive signal cable. Connect an optional diskette drive to the middle connector on the standard diskette drive signal cable.

The colored edge of the cable goes to pin 1 on the cable connector. Align the red edge of the cable with pin 1 (the notched end) on the drive connector.

The following figure shows a three-connector diskette drive signal cable.



Attaches to 1.44-MB
Diskette Drive

Attaches to Optional
Diskette Drive

Attaches to
System Board
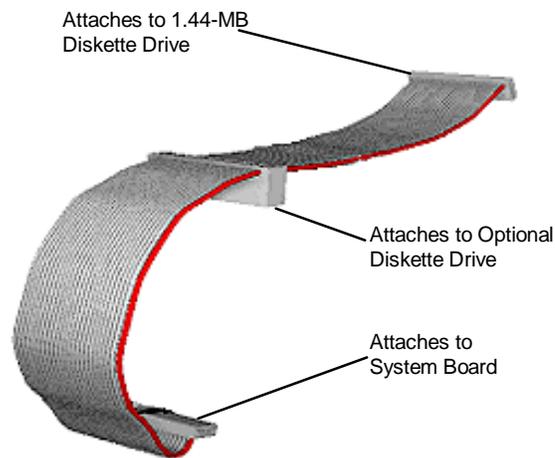
*Optional diskette drive signal cable*

### *IDE Signal Cables*

Hard disk systems come with a three-connector IDE interface cable attached to the primary IDE connector. Multimedia systems come with a second IDE cable connected to the CD-ROM reader and to the secondary IDE connector.

Each IDE connector on the system board supports two IDE devices. The addition of an IDE device to an IDE connector does not require the replacement of the existing IDE signal cable.

If installing an optional IDE CD-ROM reader, connect it to the secondary IDE connector. The primary (fast) IDE port should be reserved for hard disks.

The following figure shows a typical three-connector IDE cable. If the IDE cable is not keyed with a connector tab, align the colored edge of the cable with the pin 1 side of the drive connector.

Connects to
System Board
IDE Port

Connects to
IDE Devices
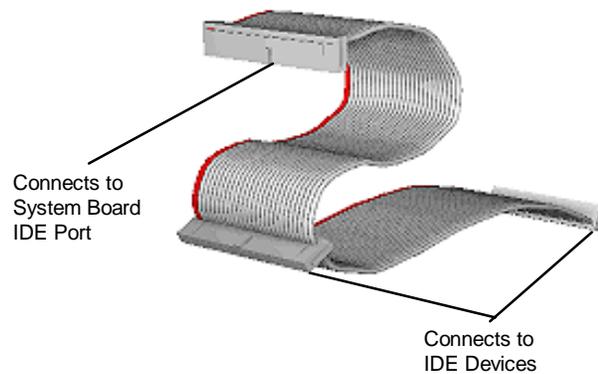
*Optional IDE cable connectors*

### *System Power Cables*

Power cables come from the power supply and are attached to the standard storage devices. System power cables vary in length and provide connector sizes to accommodate a variety of supported storage configurations. Power cable connectors are keyed to fit only in the correct position. The following figure shows the power cable connectors.

Small Power
Cable Connector

Large Power
Cable Connector
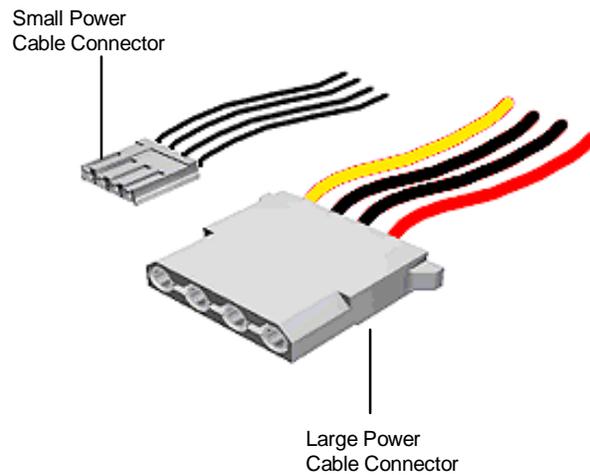
*Power cable connectors*

## Cabling Storage Devices

All storage devices require a power and signal cable connection. Devices shipped with the system are already connected.

Procedures are provided on the following optional devices:

■ IDE device – IDE hard disk drive or CD-ROM reader

■ diskette drive – 1.2-MB drive.

### Cabling an IDE Device

The following procedure explains IDE device cabling.

1.  Connect the IDE signal cable connector to the connector on the IDE device.

    Take care to prevent bending drive connector pins. Align the IDE cable connector as shown in the following figure.

2.  Locate an available power connector coming from the power supply.

3.  Connect the appropriate power cable to the power connector on the IDE device.
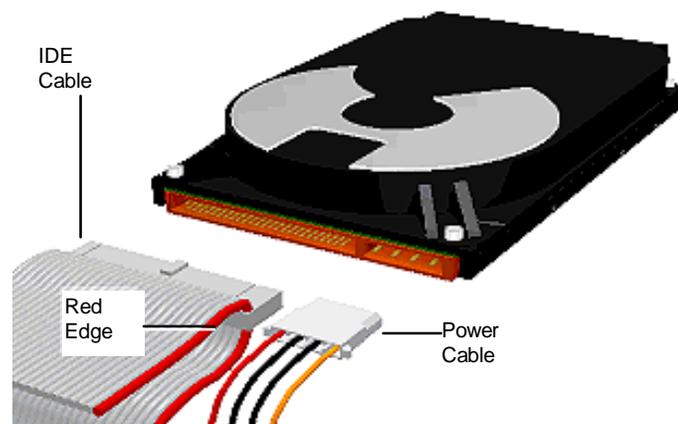


*Connecting IDE device cables*

4.  If you are installing an IDE CD-ROM reader, also connect the audio cable (see the instructions that come with the reader).

## *Cabling a Diskette Drive*

1. Connect the diskette drive signal cable connector to the signal connector on the diskette drive as shown in the following figure.

2. Locate an available power connector.

3. Connect the power cable to the power connector on the device.

1.2-MB Diskette
Drive Connector

Red Edge

Power Cable

Diskette Drive
Signal Cable
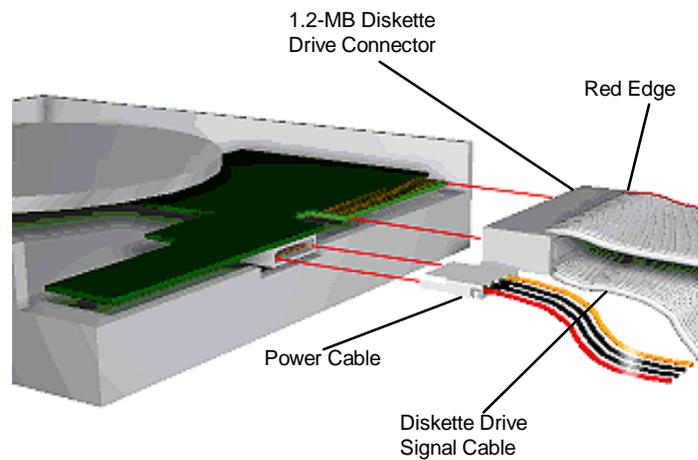
*Connecting 1.2-MB diskette drive cables*

## Installing Storage Devices

The following subsections describe how to install 3 1/2-inch
and 5 1/4-inch drives. The installation procedures include:

- removing the 3 1/2-inch drive bracket

- installing a 3 1/2-inch drive

- removing the front panel

- installing a 5 1/4-inch device

- replacing the front panel

- replacing the 3 1/2-inch drive bracket.

### *Removing the 3 1/2-Inch Drive Bracket*

The 3 1/2-inch drive bracket containing the diskette drive
must be removed before installing 3 1/2-inch or 5 1/4-inch
devices.

Remove the 3 1/2-inch drive bracket containing the standard
1.44-MB diskette drive as follows.

> **NOTE** Configurations that come with a hard disk
> already installed have a 3 1/2-inch hard disk drive
> located in the lower slot of the bracket.

1. Remove the system cover.

2. Remove the screw securing the drive bracket to the
   chassis (see the following figure).

3. Slide the bracket to the rear of the chassis to release it
   from the three bracket tabs.

**4.** Carefully lift the drive bracket up and place it on top of the power supply. Avoid pulling on the installed drive cables.



- Power Supply
- 3 1/2-Inch Drive Bracket
- Screw
- Tab
- Tabs
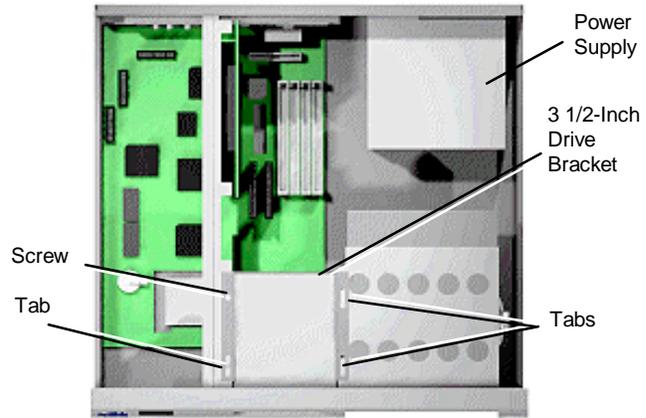
*Removing the 3 1/2-inch drive bracket*

### 3 1/2-Inch Drive Installation

Use the following procedure to install a hard disk drive into the drive bracket.

1. Remove the system unit cover.

2. Remove the 3 1/2-inch drive bracket from the system unit (see "Removing the 3 1/2-Inch Drive Bracket").

3. Follow the preinstallation instructions that come with the device, such as setting jumpers and switches.

4. Insert the hard disk drive so that the connectors extend out of the bracket on the same end as the standard diskette drive connectors.

5. Align the holes in the hard disk drive with the holes in the bracket.

6. Secure the device to the bracket with the four screws, two to a side, that come with the device.



*Securing a 3 1/2-inch drive*

7. Connect the drive cables.

8. Replace the 3 1/2-inch drive bracket (see "Replacing the 3 1/2-Inch Drive Bracket").

## *Removing the Front Panel*

Remove the front panel only if you are installing a 5 1/4-inch device. The front panel does not need to be removed if you are installing a 3 1/2-inch hard disk drive.

If you are installing a 3 1/2-inch hard disk drive (see "Installing the 3 1/2-Inch Drive").

1. Remove the system unit cover as previously described.

2. Remove the front panel by releasing the four tabs from the back of the front panel.
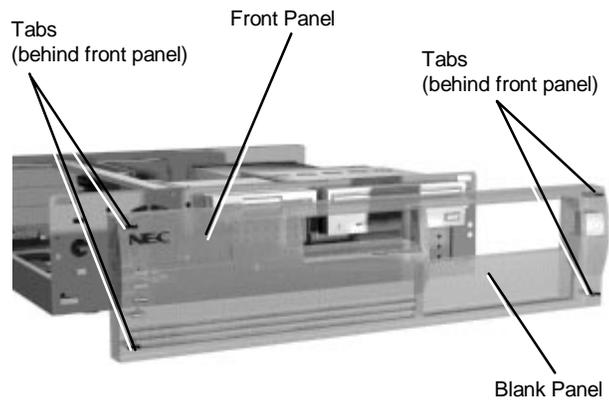


*Removing the front panel*

3. Identify the slot for the device being installed.

**4.** Remove the blank panel from the selected slot by pressing the panel tabs from inside the front panel and pushing the blank panel out.

Top Blank Panel Tabs

Bottom Blank Panel Tabs
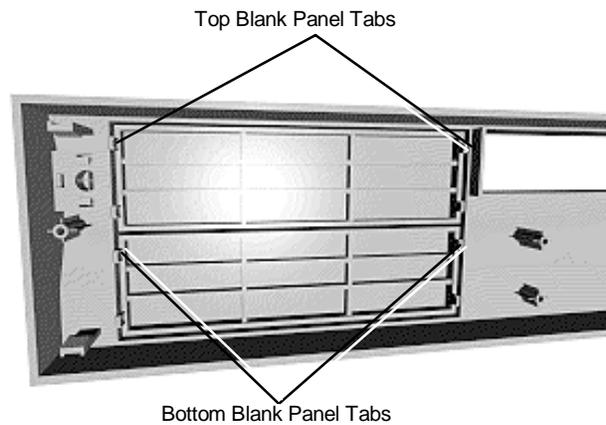
*Locating the blank panel tabs*

**5.** Remove the perforated metal plate from the selected slot on the chassis by pulling the metal plate back and forth until it releases.

**6.** Install the device (see "Installing the 5 1/4-Inch Device").

### *Installing the 5 1/4-Inch Device*

Install an accessible device into the device cage as follows.

**1.** Remove the 3 1/2-inch drive bracket from the system unit (see "Removing the 3 1/2-Inch Drive Bracket").

**2.** Remove the front panel (see "Removing the Front Panel").

**3.** Follow the preinstallation instructions that come with the device, such as setting jumpers and switches.

> **NOTE** If the 5 1/4-inch device comes with drive rails, do not attach them. Remove any rails already attached. See the documentation that comes with the device.

**4.** From the front of the system, insert the device, connector end first, into the device slot.

> **NOTE** To easily access device connectors for cabling, do not insert a 5 1/4-inch device all the way into the slot.

**5.** Connect the device cables.

**6.** Align the holes in the device with the holes in the cage.

**7.** Secure the device to the cage with the four screws, two to a side, that come with the device.
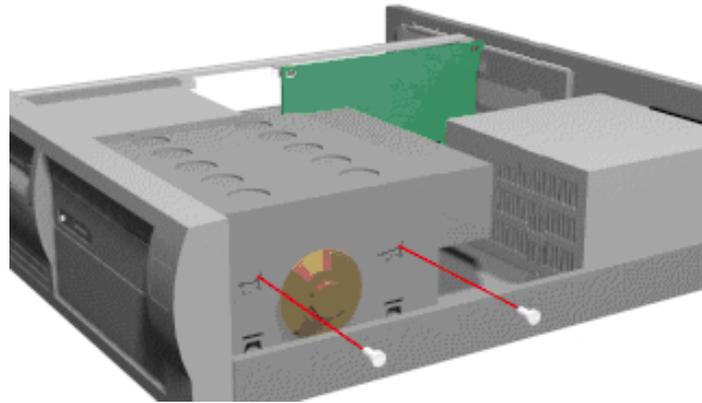
*Securing the device*

**8.** Replace the drive bracket (see "Replacing the 3 1/2-Inch Drive Bracket").

## *Replacing the Front Panel*

Replace the front panel only after it has been removed for a 5 1/4-inch device installation. If installing a 5 1/4-inch device, see "Installing the 5 1/4-Inch Device."

1. Align the four front panel tabs with the holes in the front of the system unit.

2. Evenly press the front panel into position until the tabs lock the panel in place.



Tabs
(behind front panel)

Front Panel

Tabs
(behind front panel)

NEC

Blank Panel
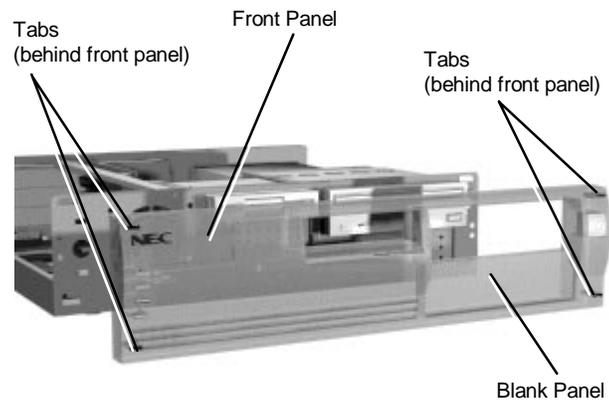
*Aligning the front panel*

3. Continue to Step 5 in "Replacing the 3 1/2-Inch Drive Bracket."

## Replacing the 3 1/2-Inch Drive Bracket

When replacing the 3 1/2-inch drive bracket, take care to prevent pulling and loosening the cable connections.

1. Place the 3 1/2-inch drive bracket in the 3 1/2-inch device slot.

2. Slide the 3 1/2-inch drive bracket toward the front of the chassis so that the tabs secure the bracket.

3. Use the previously removed bracket screw to secure the bracket in place.
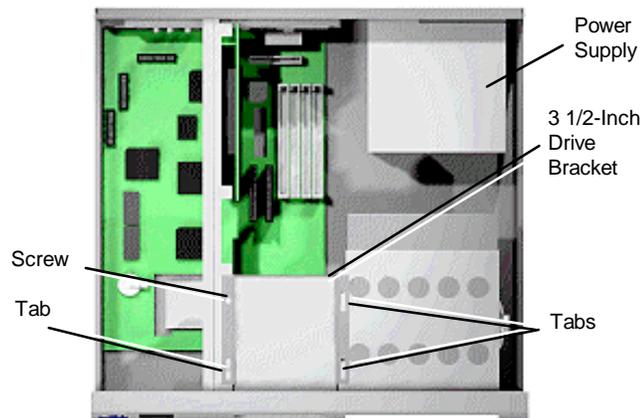


*Securing the 3 1/2-Inch drive bracket*

4. Replace the front panel (see "Replacing the Front Panel").

5. Replace the system unit cover.

> **NOTE** If a 1.2-MB diskette drive was installed, remove the protective cardboard insert from the drive.

**6.** Run the Setup program to set the new configuration.

## ADDING EXTERNAL OPTIONS

This subsection includes installation procedures for the following external options:

- parallel printer
- serial devices.

## Connecting a Parallel Printer

> **NOTE** Before connecting a printer to the system, be sure the printer is set up correctly. Follow the setup instructions that come with the printer.

Connect a parallel printer to the system as follows.

**1.** Turn off power to the system and printer.

**2.** Connect the printer cable to the printer port on the rear of the system unit.

**3.** Secure the cable with the screws provided.

**4.** Connect the other end to the printer.

**5.** If your printer requires ECP support, see "Integrated Peripherals Menu" in Chapter 4.

Printer Port

Printer Cable

Screws
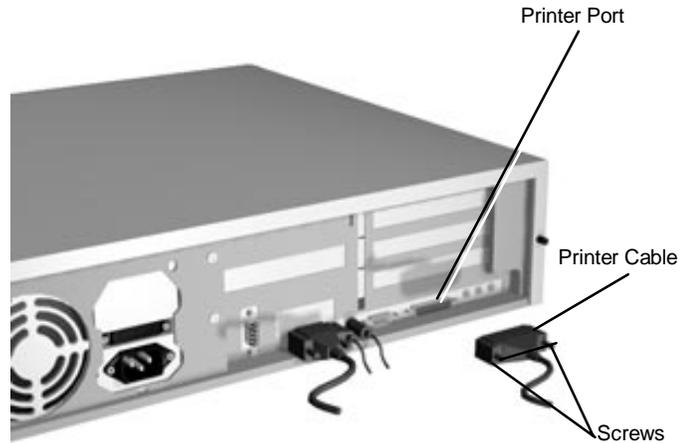
*Connecting a printer cable*

## Connecting an RS-232C Device

> **NOTE** Before connecting a serial device to the system, be sure the serial device is set up correctly. Follow the setup instructions that come with the option.

1. Turn off power to the system and to the serial device.

2. Connect one end of the serial cable to one of the two serial ports on the rear of the computer.

3. Secure the cable with the screws provided.

4. Connect the other end to the serial device.
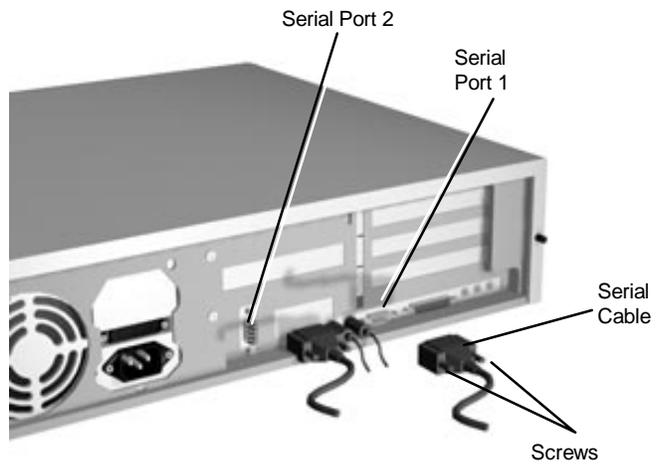
*Connecting an RS-232C cable*

# 4 Setting System Parameters

This chapter describes the Setup utility program that allows you to enter system configuration information and control special features of the system.

> **NOTE** Your system ships from the factory with the correct system parameters for your configuration. Unless you add optional hardware, you do not need to run Setup to operate your system.
>
> However, you might wish to run the Setup utility to set features that customize your system, such as security features.

System configuration information is stored in nonvolatile memory. Nonvolatile memory retains its data when system power is turned off. Nonvolatile memory in your system is a complementary metal-oxide semiconductor (CMOS) chip. The battery supplies continuous power to CMOS memory and maintains configuration information when system power is off.

> **NOTE** NEC recommends that you print out or write down your current Setup parameters and store the information in a safe place. This lets you restore your system to the current parameters if you ever need to replace the battery.

## THE SETUP UTILITY

The Setup utility lets you view and set system parameters. Use the Setup utility program to

- set the time and date.

- update or check system parameters when you add or remove expansion options.

- change or set power management features.

- correct a hardware discrepancy when the Power-On Self-Test (POST) displays an error message and prompts you to run Setup.

- check the installation of optional memory by comparing the amount of memory installed with the amount of memory displayed by Setup.

- change certain system operating parameters, such as boot device sequence and keyboard parameters.

- configure system connections for peripherals such as your diskette drive, hard disks, and devices connected to the printer port and serial ports.

- customize your system with security features such as passwords, diskette drive restriction, virus check reminder and system backup reminder.

- set system parameters in the event that your system board was replaced.

# HOW TO START SETUP

To start the Setup utility, follow these steps:

1. Turn on or reboot your system. Setup displays the
   following message:

   Press <F2> to enter SETUP

2. Press **F2**. Setup's Main Menu window appears similar
   to the following screen.

> NOTE  The screen shown is typical of your system.
> The actual items on the Main Menu depend upon
> the hardware installed in your system.

```
        PhoenixBIOS Setup — Copyright 1992-96 Phoenix Technologies Ltd.

      Main     Advanced     Security     Power     Boot     Exit
  ┌───────────────────────────────────────────────────┬─────────────────────┐
  │     System Time            [10:19:20]              │   Item Specific Help │
  │     System Date            [06/25/1996]            │                      │
  │     Diskette A             [1.44 MB, 3 ½"]         │  <Tab>, <Shift-Tab>, or│
  │     Diskette B             [Not Installed]         │  <Enter> selects field.│
  │   > IDE Adapter 0 Master   C: 1280 Mb              │                      │
  │   > IDE Adapter 0 Slave    None                    │                      │
  │   > IDE Adapter 1 Master   None                    │                      │
  │   > IDE Adapter 1 Slave    None                    │                      │
  │     Video System           [EGA/VGA]               │                      │
  │   > Memory Cache                                   │                      │
  │   > Memory Shadow          [Enabled]               │                      │
  │   > Boot Options                                   │                      │
  │   > Numlock                [Auto]                  │                      │
  │     System Memory              640 KB              │                      │
  │     Extended Memory             15 MB              │                      │
  └───────────────────────────────────────────────────┴─────────────────────┘
   F1   Help    ↑↓  Select Item   -/+   Change Values    F9   Setup Defaults
   ESC Exit     ←→ Select Menu    Enter Select > Sub-Menu F10  Previous Values
```

*Main Menu*

## HOW TO USE SETUP

The Setup utility has a Main Menu window and five top-level menus with submenus.

The Main Menu window contains the following areas:

■ A title line — the top line of the Main Menu. This line displays the Setup utility name and copyright message.

■ The menu bar — the line under the Setup title line. The menu bar contains five top-level menus that you can choose to set system parameters.

■ A Main Menu summary window — the center area on the left side of the screen. This area provides a summary of Main Menu Setup parameters. You can set some Main Menu parameters directly from this window or you can set them from the Main menu option in the legend bar.

■ The Field Help window or Item Specific Help — the area on the right side of the screen. This help area provides help information for the Setup option currently selected.

■ The legend bar — the area at the bottom of the screen. The legend bar provides a summary of command keys for using Setup.

■ The General Help window — a window that appears any time during Setup when you press **F1** or **Alt H**. This help window provides two pages of general information about using Setup.

The following sections describe how to use the Main Menu window to set system parameters.

## The Menu Bar

The menu bar at the top of the Main Menu window lists these menus:

■ Main — Use this menu for basic system configuration. For example, select "Main" to set the system time, system date, diskette drives, and video parameters. Use this menu to check memory parameters.

■ Advanced — Use this menu to set serial port and printer port addresses and interrupts, and to enable/disable the system's diskette drive controller and dual-IDE controllers.

The Advanced menu also provides menu items for setting parity and for setting parameters for large disks (for example, to use large disks with Windows NT™).

Some of the Advanced features are accessible only with a Supervisor password when the Supervisor password is set.

■ Security — Use this menu to set User and Supervisor Passwords and the Backup and Virus-check reminders.

■ Power — Use this menu to configure Power Management features.

■ Exit — Use this menu to exit the current menu.

To select an option from the menu bar, use the left and right ← → arrow keys.

See "Exiting Setup" in this chapter for a description on exiting the Main Menu.

## The Legend Bar

Use the keys listed in the legend bar on the bottom of the Setup menu to make your selections or exit the current menu. The following table describes the legend keys and their alternates.

**Setup Key Functions**

| KEY | FUNCTION |
|-----|----------|
| F1 or Alt-H | Displays the General Help window (described later in this chapter). |
| Esc | Exits the menu. |
| ← or → arrow keys | Selects a different menu. |
| ↑ or ↓ arrow keys | Moves the cursor up and down for item selection. |
| Tab or Shift-Tab | Cycles the cursor up and down for item selection. |
| Home or End | Moves the cursor to the top or bottom of the window. |
| Page Up or Page Down | Moves the cursor to the next or previous page. |
| F5 or - | Selects the Previous Value for the field. |
| F6 or + or Space | Selects the Next Value for the field. |
| F9 | Loads the Default Configuration values for this menu. |
| F10 | Loads the Previous Configuration values for this menu. |
| Enter | Executes a command or selects a submenu. |
| Alt-R | Refreshes the screen. |

### Selecting a Menu Item

To select a menu item, use the arrow keys to move the cursor to the field you want. Then use the value keys (F5, -, F6, +, or space bar) to cycle through the value for that field. The Save Values command in the Exit Menu saves the values currently displayed in all the menus.

### Displaying a Submenu

To display a submenu, use the arrow keys to move the cursor to the submenu you want. Then press **Enter**. A pointer (a right-pointing triangle) marks all selectable submenus.

### Getting Help

A Field Help window or Item Specific Help window on the right side of each menu displays the help text for the currently selected Setup option. It updates as you move the cursor to each new field.

Pressing **F1** or **Alt H** on any menu brings up the General Help window that describes the legend keys and their alternates.

The scroll bar on the right of any window indicates that there is more than one page of information in the window. Use **Page Up** and **Page Down** to display all the pages. Pressing **Home** and **End** displays the first and last page.

Press **Esc** to exit the current window.

## MAIN MENU OPTIONS

The following table lists and describes the available parameters when you select the Main menu in the legend bar. Other Main Menu parameters are available by selecting submenus.

Parameters available directly from the Main Menu summary window have a right-pointing triangle next to the parameter. Use the arrow keys to move the cursor to the parameter and press **Enter** to select a submenu.

See the sections following the table for a description of Main Menu parameters from the summary window.

**Main Menu Parameters**

| PARAMETER | OPTIONS | DESCRIPTION |
|---|---|---|
| System Time | HH:MM:SS | Sets the system time. |
| System Date | MM/DD/YYYY | Sets the system date. |
| Diskette A:<br>Diskette B: | 360KB, 5 1/4"<br>1.2MB, 5 1/4"<br>720KB, 3 1/2"<br>1.44MB, 3 1/2" (default A)<br>2.88MB, 3 1/2"<br>Not Installed (default B) | Selects the type of diskette drive in your system. |
| IDE Adapter | User (default) | Described in the following sections. |
| Video System | Monochrome<br>EGA/VGA (default)<br>CGA 80x25 | Selects the default video device. |
| Memory Cache | | Described in the following sections. |
| Memory Shadow | Enabled (default) | Described in the following sections. |
| Boot Options | | Described in the following sections. |
| NumLock | Auto (default) | Described in the following sections. |
| System Memory | Automatically detected by the system | Displays the amount of conventional memory detected at power-on. |
| Extended Memory | Automatically detected by the system | Displays the amount of extended memory detected at power-on. |

## IDE Adapters

IDE adapters control the IDE devices, such as IDE hard disk drives and IDE CD-ROM readers, in your system. Your system uses two IDE controllers integrated on the system board.

Setup supports up to four IDE devices, with an IDE adapter for each of the following configurations:

    1 Master
    1 Master, 1 Slave
    2 Masters
    2 Masters, 1 Slave
    2 Masters, 2 Slaves

The master/slave combination for a standard hard disk configuration is "1 Master." If you add a hard disk to the fast IDE port (IDE1 connector), the combination becomes "1 Master, 1 Slave." Change the jumper setting on the IDE device to set the device to master or slave (see the documentation that comes with the device).

For multimedia systems, the IDE hard disk and CD-ROM reader are both "Masters." The hard disk drive is the "Master" on the primary connector and the CD-ROM reader is the "Master" on the secondary connector. If you add an IDE hard disk to the system, the combination becomes "2 Masters, 1 Slave."

---

NOTE  If you change the CD-ROM reader setting in the multimedia configuration, the CONFIG.SYS and AUTOEXEC.BAT require changes as well.

---

Select the IDE Adapter option configuration directly from the Main Menu summary window. Available options include:

- IDE Adapter 0 Master
- IDE Adapter 0 Slave
- IDE Adapter 1 Master
- IDE Adapter 1 Slave.

IDE Adapter 0 configures the fast IDE port (IDE1 connector), and IDE Adapter 1 configures the standard IDE port (IDE2 connector).

Each IDE Adapter parameter has a right-pointing arrow to the left of it. Selecting the option displays IDE hard disk parameters. Select an IDE Adapter option and set parameters for each hard disk separately.

Use the following table to configure the hard disk. If your IDE hard disk features auto IDE type detection, you need only to select the Autotype Fixed Disk parameter. The system then automatically detects the hard disk type and sets the remaining parameters.

> (NOTE) If your IDE hard disk features auto IDE type detection, you need only to select the Autotype Fixed Disk parameter. The system then automatically detects the hard disk type and sets the remaining parameters.

**IDE Hard Disk Parameters**

| PARAMETER | OPTIONS | DESCRIPTION |
|---|---|---|
| Type | 1 to 39<br>User<br>Auto | Selecting 1 to 39 fills in all remaining fields with values for predefined disk type. "User" prompts the user to fill in remaining fields. When "Auto" is selected the BIOS automatically sets the drive type. |
| Cylinders | 1 to 16,384 | Specifies the number of cylinders. |
| Heads | 1 to 16 | Specifies the number of read/write heads. |
| Sectors/Track | 1 to 63 | Specifies the number of sectors per track. |
| Write Precomp | 0 to 65534<br>None | Specifies the number of the cylinder at which to change the write timing. |
| Multi-Sector Transfers | 2, 4, 8, 16, Sectors<br>Disabled | Specifies the number of sectors in multi-sector transfers. |
| LBA Mode Control | Enabled<br>Disabled (default) | Sets LBA Mode Control on or off. |
| 32 Bit I/O | Enabled (default)<br>Disabled | Sets 32 bit I/O to on or off. |
| Transfer Mode | Standard, Fast<br>PIO1, PIO2, PIO3 | Specifies the transfer mode. |

## Memory Cache

For memory caching parameters, select Memory Cache directly from the Main Menu summary window. See the following table for a description of memory cache parameters.

# ⚠ **CAUTION**

Incorrect settings can cause the system to malfunction.

**Memory Cache Parameters**

| PARAMETER | OPTIONS | DESCRIPTION |
|---|---|---|
| External Cache | Enabled<br>Disabled (default) | Sets the state of external cache. |
| Cache Video BIOS area | Enabled (default)<br>Disabled | Controls caching of the video BIOS area. |
| Caching Memory Regions | Enabled<br>Disabled (default) | Default is disabled. Cache shadows optional memory. ROM located in specified segments of memory and can improve performance. CAUTION: Some add-in cards, particularly with on-board firmware, do not work properly when shadowed. |

## Memory Shadow

Memory Shadow is set to enable as the default. Various options set to disable can also be enabled.

## Boot Options

Your system might require a Supervisor password to set Boot parameters. Select "Boot Options" directly from the Main Menu summary window to display the "Boot Options" menu.

Use the legend keys to make your selections and exit to the Main Menu. Use the following table to select your boot options.

**Boot Option Parameters**

| PARAMETERS | OPTIONS | DESCRIPTION |
| --- | --- | --- |
| Summary Screen | Enabled (default)<br>Disable | Displays system configuration at the end of boot-up. |
| Floppy Check | Enabled (default)<br>Disabled | Verifies diskette type during bootup. Disabling speeds boot time. |
| Last Boot Fail | 3 (default)<br>User-selectable settings<br>Disabled | Sets the number of times you can attempt to boot the system. If the system fails to boot on the set number of tries, the "Previous Boot Incomplete" message appears and the system boots with default settings.<br><br>The default setting, 3, gives you three tries to boot the system before the "Previous Boot Incomplete" message appears. |

## NumLock

Select "NumLock" directly from the Main Menu summary window to display the Keyboard Features menu.

Use the legend keys to make your selections and exit to the Main Menu. Use the following table to configure the keyboard parameters.

**Keyboard Features Parameters**

| PARAMETERS | OPTIONS | DESCRIPTION |
|---|---|---|
| Numlock | Auto (default)<br>On<br>Off | On or Off turns Num Lock on or off at bootup. Auto turns Num Lock on if it finds a numeric key pad. |
| Keyboard Auto-Repeat Rate | Fast (default)<br>Medium<br>Slow | Sets the delay time after the key is held down and before it begins to repeat the keystroke. |
| Keyboard Auto-Repeat Delay | 1/4 sec<br>1/2 sec (default)<br>3/4 sec<br>1 sec | |
| Key Click | Enabled<br>Disabled (default) | Turns audible key click on or off. |

## THE ADVANCED MENU

Accessing the Advanced menu might require a Supervisor password. When you select the Advanced menu, you also can access the Integrated Peripherals menu.

The following table explains the Advanced menu parameters.

⚠ **CAUTION**

Setting menu items in the Advanced menu to incorrect values can cause your system to malfunction.

**Advanced Menu Parameters**

| PARAMETER | OPTIONS | DESCRIPTION |
|---|---|---|
| Plug & Play OS | No<br>Yes (default) | Select "Yes" if you are using a Plug & Play capable operating system such as Windows 95. Otherwise, set to "No." |
| Reset Configuration Data | No (default)<br>Yes | If Windows 95 or the ICU has difficulty configuring the system, try setting this parameter to "Yes" to clear all of the configuration data. This parameter resets automatically to "No" to reboot. |
| ISA graphics device installed | No (default)<br>Yes | Set to "Yes" if other system devices need to know you have an ISA graphics device installed. |
| Big Memory Mode | Normal<br>Alternate | Selects the method the BIOS uses to report memory sizes over 64 MB to the operating system.<br><br>Select "Normal" for MS-DOS and Windows.<br><br>Select "Alternate" for Windows 95, OS/2® and Windows NT™. |
| Large Disk Access Mode | DOS (default)<br>Other | Select DOS if you have DOS. Select Other if you have another operating system such as Windows 95 or UNIX.<br><br>A large disk is one that has more than 1024 cylinders, more than 16 heads, or more than 63 tracks per sector. |

## Integrated Peripherals Menu

Select the "Integrated Peripherals" menu on the Advanced Menu to configure the connections between the system processor and the I/O ports (serial port 1, serial port 2, and the printer port), the diskette drives, and hard disk controllers.

> **NOTE** A Supervisor password might be required to select parameters from the Integrated Peripherals menu.

Use the legend keys to make your selections and exit to the Main Menu. Use the table that follows to configure your peripherals.

**Integrated Peripherals Parameters**

| FEATURE | OPTIONS | DESCRIPTION |
| --- | --- | --- |
| COM A Port<br>COM B Port | Disabled<br>User-selectable settings<br>Auto | Selects a unique address and interrupt request for the listed COM ports. Auto selects the next available combination. |
| | | Factory settings:<br>COM A default: 3F8, IRQ4<br>COM B default: 2F8, IRQ3 |
| LPT Port | Disabled<br>378, IRQ 7 (default)<br>User-selectable<br>settings Auto | Selects a unique address and interrupt request for the LPT port. Auto selects the next available combination. |
| LPT Mode<br>ECP | Output only (default) | Enables parallel port to function normally (Output only), bidirectionally, or in an enhanced capabilities port (ECP) mode. Check your printer documentation to set the correct LPT mode for your printer. |
| ECP Channel | DMA 0<br>DMA 1<br>DMA 3 | Available when ECP is selected for the LPT mode. |

**Integrated Peripherals Parameters**

| FEATURE | OPTIONS | DESCRIPTION |
|---|---|---|
| Diskette Controller | Enabled (default) Disabled | Enables the on-board diskette drive controller. |
| Local Bus IDE Adapter | Both (default) Disabled Primary | Enables the on-board IDE controllers. "Both" enables the primary (fast) channel and secondary (standard) channel. "Primary" enables only the primary (fast) channel. |
| PS/2 Mouse | Enabled (default) Disabled | Enables/disables PS/2-style mouse. |
| On-board Sound | Stereo with SRS (default) Stereo Mono | This parameter is only available when the BIOS detects integrated audio on the system board. When the audio is detected, stereo with surround sound is the default. |
| | | If playing an audio file with SRS built-in, use the Stereo setting. Choose Mono when stereo sound is not desired. |

## THE SECURITY MENU

Selecting "Security" from the Main Menu displays a menu with system security options.

> NOTE  You can enter the Setup program with either a User or Supervisor password. However, more Setup choices are available with a Supervisor password.
>
> The User Password can only be set after setting a Supervisor Password.

# ⚠ **CAUTION**

The features that you set in the Security menu affect the features that appear on the Security menu as well as on other Setup menus.

Enabling "Supervisor Password" requires a password for entering Setup. Passwords are not case sensitive.

Pressing **Enter** at either Set Supervisor Password or Set User Password on the menu displays a Set Password dialog box with the following prompts:

```
Enter new password:  [          ]
Re-enter new password:  [          ]
```

To set a password, type the password and press **Enter**. Reenter your password and press **Enter**.

**NOTE** If you forget your password, see "Clearing Your Password" in Chapter 5.

See the following table for a description of the security features you can select. Use the legend keys to make your selections and exit to the Main Menu.

**System Security Options**

| FEATURE | OPTIONS | DESCRIPTION |
|---------|---------|-------------|
| Supervisor Password | Disabled (default) Enabled | Must set to Enabled to set a Supervisor password. |
| Set Supervisor Password | Up to seven alphanumeric characters | Pressing **Enter** displays a dialog box for entering the supervisor password. This password gives FULL access to Setup menus. |
| User Password | Disabled (default) Enabled | Must set to Enabled to set a User password. |
| Set User Password | Up to seven alphanumeric characters | Pressing **Enter** displays the dialog box for entering the user password. This password gives RESTRICTED access to Setup menus. Requires the prior setting of a Supervisor password. |
| Password on Boot | Disabled (default) Enabled | Enabled requires a password on boot (cold boot only — no password required for warm boot). Requires the prior setting of a Supervisor and/or User password. |
| | | If disabled, password(s) are required for entering Setup but are not required for booting. |
| | | If a Supervisor password is set and this option is disabled, the BIOS boots without asking for a password. |
| Diskette Access | User (default) Supervisor | Supervisor setting restricts the use of diskette drives to a supervisor. Requires setting the Supervisor password. |
| Fixed Disk Boot Sector | Normal (default) Write Protected | Write protected helps prevent viruses. When write protected, operating systems (and viruses and application programs) which attempt to modify the boot sector will not be able to do so. |

**System Security Options**

| FEATURE | OPTIONS | DESCRIPTION |
| --- | --- | --- |
| System Backup Reminder<br><br>Virus Check Reminder | Disabled (default)<br>Daily<br>Weekly<br>Monthly | When a schedule is specified, displays a message during bootup asking (Y/N) if you have backed up the system or scanned it for viruses.<br><br>Message returns on each boot until you respond with "Y".<br><br>Daily displays the message on the first boot of the day, weekly on the first boot after Sunday, and monthly on the first boot of the month. |

## THE POWER MENU

Selecting "Power" from the menu bar displays a screen with the power management parameters described in the following table.

A power management system reduces the amount of energy used after specified periods of inactivity. The Power menu supports a Full-On state, a Standby state with partial power reduction, and a Suspend state with full power reduction. See "Power Management" in the online User's Guide for additional information about managing power.

Use the Power menu to specify your settings for Power Management. Use the following table to make your selections.

> **NOTE** To disable all power management features, set advanced power management (APM) to Disabled. See the following table to set power management parameters.

**Power Management Parameters**

| FEATURE | OPTIONS | DESCRIPTION |
|---|---|---|
| APM | Enabled (default)<br>Disabled | Advanced power management (APM) allows APM-aware software to better manage power savings. |
| Keyboard Wakeup | Enabled (default)<br>Disabled | Allows keyboard activity to wake up system. |
| Mouse Wakeup | Enabled (default)<br>Disabled | Allows mouse activity to wake up system. |
| Power Management Mode | Customize (default)<br>Disabled<br>Maximum<br>Medium<br>Minimum | Maximum, Medium, and Minimum set power-management options with predefined values. Select Customize to select your own level of power management. |
| Sleep Timeout | 15 min (default)<br>Disabled<br>User selectable | Inactivity period required before partial power shutdown (Standby User selectable mode). |
| Deep Sleep Timeout | 15 min (default)<br>Disabled | Inactivity period required after Sleep timeout to maximum power User selectable shutdown (Suspend mode). |
| Video in Sleep Mode | Off (default)<br>On | Off turns monitor off in Sleep mode. |

## THE BOOT MENU

Selecting "Boot" from the menu bar displays the following list of boot devices:

- Diskette Drive

- CD-ROM reader

- Hard Drive

## THE EXIT MENU

Selecting "Exit" from the menu bar displays the following exit options. Note that **Esc** does not exit this menu. You must select one of the items from the menu or menu bar to exit.

- Save Changes & Exit
- Discard Changes & Exit
- Get Default Values
- Load Previous Values
- Save Changes.

## Save Changes & Exit

After making your selections on the Setup menus, always select Save Changes to Non-Volatile RAM (NVRAM) to make them operative.

Unlike standard RAM memory, NVRAM is sustained by a real-time clock chip and stays on after you turn your system off.

After you save your selections, the program displays this message:

Values have been saved to CMOS!
Press <space> to continue

If you attempt to exit without saving, the program asks if you want to save before exiting.

During bootup, Setup attempts to load the values you saved in NVRAM. If the values saved in NVRAM cause the system boot to fail, reboot and press **F2** to enter Setup. In Setup, you can load the ROM default values (as described in "Get Default Values") or try to change the values that caused the boot to fail.

## Discard Changes & Exit

Use this option to exit Setup without recording any changes you may have made.

## Get Default Values

To load all the default Setup values in the Setup menus, press **F9** (setup defaults). The program displays this message:

```
Default values have been loaded!
[continue]
```

If, during bootup, the BIOS program detects a problem in the integrity of values stored in NVRAM, it displays these messages:

```
System CMOS checksum bad - run SETUP
Press <F1> to resume, <F2> to Setup
```

The CMOS values have been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS.

Press **F1** to resume the boot or **F2** to run Setup with the ROM default values already loaded into the menus. You can make other changes before saving the values to NVRAM.

## Load Previous Values

If, during a Setup session, you change your mind about your selections and have not yet saved the values to NVRAM, you can restore the values you previously saved to NVRAM.

Selecting Load Previous Values on the Exit menu updates all the selections and displays this message:

> Previous values have been loaded!
> [continue]

## Save Changes

Save Changes saves all the selections without exiting Setup. You can return to the other menus if you want to review and change your selections.

## OPERATING SYSTEM BACKUP UTILITY

The following procedures provide the required information to make a backup of the operating system you selected at power-on. The first procedure "Microsoft Create System Disks," is for the Windows 95 operating system. The second procedure "NEC Distribution Diskette Creator," is for creating a backup of the MS-DOS and Windows for Workgroups operating system.

These procedures are for backing up the operating system and does not include any other software on the hard drive. The operating system is backed up onto 1.44 MB diskettes.

## Microsoft Create System Disks

The Microsoft Create System Disks utility program is provided when you choose Windows 95 as your operating system. To back up Windows 95, you will need 30 formatted 1.44 MB diskettes.

> **NOTE** When you power-on your system for the first time, you are prompted to create a backup copy of the operating system. From then on, the backup reminder prompt appears every fifth time you power on the system.
>
> Once you back up the operating system, the reminder prompt stops appearing. If you choose not to back up the operating system, you can set the number of power ups (from 1 to 99) when the prompt does not appear.

Use the following procedure to create the backup diskettes.

**1.** From the Windows 95 Start button, select in order:

- Programs

- Accessories

- System Tools

- Create System Disk.

**2.** At the Microsoft Create System Disk screen, click on the Next button.

In this window you can change the frequency of the backup reminder prompts.

3. The second screen provides you with the following choices. Highlight the selection you want, and click on Next.

   ■ Microsoft Windows 95 Setup Disk

     This selection creates a backup of the Windows 95 operating system (30 diskettes).

   ■ Windows 95 Startup Disk

     This selection provides a bootable diskette for a system that has Windows 95 loaded.

4. Insert a diskette into drive A: and click on Next.

---

**NOTE** Label and mark the diskettes **Setup 1, 2, 3**, etc. as prompted when inserting them into the diskette drive.

The first diskette is a bootable Windows 95 Setup diskette.

---

5. Remove and insert diskettes when prompted.

## Distribution Diskette Creator

The Distribution Diskette Creator utility program is provided when you choose Windows for Workgroups as your operating system. To back up the MS-DOS and Windows for Workgroups, you will need 11 formatted 1.44 MB diskettes.

Use the following procedure to create the backup diskettes.

**1.** From the Windows desktop, locate the NEC Utilities group and double click on the "NEC Distribution Diskette Creator" icon.

**2.** In the Distribution Diskette Creator window, highlight the diskettes you want to create.

There are three MS-DOS diskettes and eight Window for Workgroups diskettes from which to choose. For a complete backup of your operating system, highlight all 11 diskettes.

> (NOTE) Label and mark the diskettes **1, 2, 3**, etc. as prompted when inserting them into the diskette drive.

**3.** Insert a diskette into the diskette drive A: and click on the Create Diskette button.

**4.** Replace the diskettes when prompted.

# 5 Setting System Board Jumpers

This chapter provides jumper setting information for configuring your system for a particular system requirement. Situations that require changing the jumper settings include the following:

■ upgrading your processor

■ installing optional cache

■ resetting your password.

---

⚠ **CAUTION**

Jumpers are set correctly at the factory for your configuration.

If your system requires a jumper change, change only the setting for that condition. Otherwise, keep the settings at their factory settings.

---

## CHANGING PROCESSOR JUMPER SETTINGS

The following procedure explains how to locate and change the jumper setting when you upgrade your processor.

---

### ⚠ WARNING:

The system power must be off before changing a jumper setting.

---

1. Power off and unplug the system and any peripherals.

2. Remove the system unit cover (see "Removing the System Unit Cover" in Chapter 3).

3. Locate these jumpers on the system board (see the following figure).

   - Processor/Bus Speed jumpers

   - Processor Voltage jumpers

   You may have to remove any installed expansion boards to access the jumpers (see "Removing an Expansion Board" in Chapter 3).

L2 SRAM Cache  VRE/VR

1
2
3

1
2
3

CLR PASSWD

BF0

1
2
3

BF1

JP5  JP4  JP7  JP3
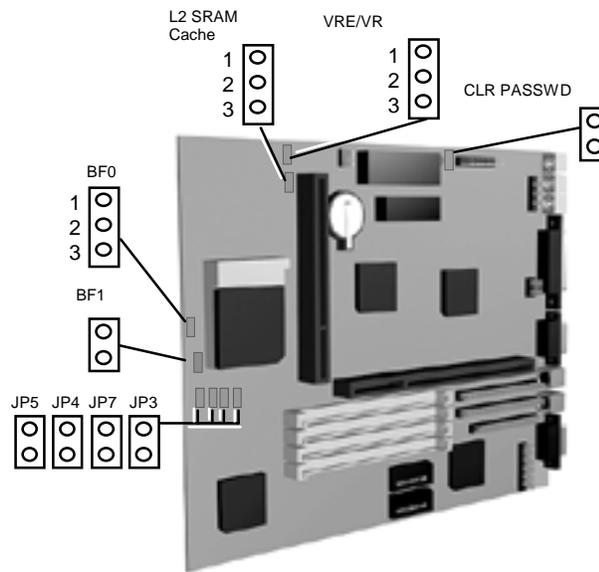
*Locating system configuration jumpers*

**4.** Set the Processor/Bus Speed jumpers for your processor upgrade. Change the jumper setting by lifting the plastic block and placing it on the appropriate pins as shown in the following figure. NEC recommends using needle-nose pliers to move a jumper.

| Processor/Bus Speed | JP5 JP4 JP7 JP3 | BF1 BF0 |
| --- | --- | --- |

Processor/bus speed jumper settings

5. Reinstall any removed expansion boards (see "Installing an Expansion Board" in Chapter 3).

6. Replace the system unit cover (see "Replacing the System Unit Cover" in Chapter 3). Reconnect the power cables and peripheral devices.

7. Power on the system.

## SETTING THE CACHE JUMPER

If you install an optional cache module (standard in some configurations), you are required to set the cache jumper. Use the following procedure to set the cache jumper.

# ⚠ **CAUTION**

Only change (or check) the cache jumper setting if you are installing optional cache. Otherwise, keep the jumper at its factory setting.

1. Power off and unplug the system and any peripherals.

2. Remove the system unit cover (see "Removing the System Unit Cover" in Chapter 3).

3. Locate the L2 SRAM Cache jumper on the system board (see the figure "Locating system configuration jumpers" earlier in the chapter).

   You may have to remove any installed expansion boards to access the jumper (see "Removing an Expansion Board" in Chapter 3).

4. Set the L2 SRAM Cache jumper on pins 1−2 for an asynchronous cache module or on pins 2−3 for a synchronous pipeline burst cache module.

SRAM cache
1-2 Asynchronous                1

2-3 Synchronous
   Pipeline Burst
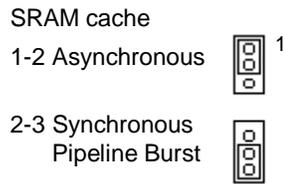
*SRAM cache jumper*

5. If you removed any expansion boards, replace them (see "Replacing an Expansion Board" in Chapter 3).

6. Replace the system unit cover (see "Replacing the System Unit Cover" in Chapter 3).

7. Reconnect the power cables and peripheral devices.

8. Power on the system.

Run Setup to enable the secondary cache (see Chapter 4, Setting System Parameters).

## CLEARING YOUR PASSWORD

If you forgot your password, use the following procedure to clear your current password and to set a new one.

1. Power off and unplug the system and any peripherals.

---

### ⚠ WARNING

The system power must be off before removing the cover and changing a jumper setting.

---

2. Remove the system unit cover (see "Removing the System Unit Cover" in Chapter 3).

3. Locate the Password Clear jumper pins on the system board (see the figure "Locating system configuration jumpers" earlier in the chapter).

   You may have to remove any installed expansion boards to access the jumpers (see "Removing an Expansion Board" in Chapter 3).

**4.** Set a jumper on the Password Clear jumper pins.

Password Clear

Normal (default)

Password Clear

*Password clear jumper*

**5.** Replace the system unit cover (see "Replacing the System Unit Cover" in Chapter 3).

**6.** Connect system power cables and monitor.

**7.** Power on the system. The system lets you boot your computer.

**8.** Power off, unplug the system and monitor, and remove the cover.

**9.** Remove the jumper block from the Password Clear jumper pins.

**10.** If you removed any expansion boards, replace them (see "Installing an Expansion Board" in Chapter 3).

**11.** Replace the system unit cover.

**12.** Reconnect the power cables and peripheral devices.

**13.** Power on the system.

Run Setup to set a new password (see Chapter 4, Setting System Parameters).

# 6 Using Voyetra Sound Software

Your PowerMate multimedia configuration ships with Voyetra® multimedia sound software. Use this software to adjust the volume of your speakers, record sound using a microphone, play, edit, and record .WAV files, play music on your CD-ROM, and record, play or edit Musical Instrument Digital Interface (MIDI) sequences and save them as .MID files.

This chapter explains how to use these multimedia sound software features. In addition, you can access the online help files.

The following components comprise the multimedia sound software package.

■ Audio Mixer

■ CD Player

■ WAV Player

■ MIDI Player

To access these components from Windows for Workgroups, double click on the program group, then select each of the components listed previously.

If you have Windows 95, click on the Start button and select Programs. From Programs, select Voyetra and a menu appears with the list of components.

The Voyetra's sound software screen resembles a
component stereo system. Each module controls a function
of your sound system. An explanation of each module
follows the figure.

Power Bar

Audio Mixer

CD Player

WAV Player

MIDI Player



*AudioStation main screen layout*

## POWER BAR

The Power Bar is the most important module because it
controls the other modules. It rearranges, opens and closes
each module, which are then removed from the screen. It
quits AudioStation and activates Help. See the following
figure.
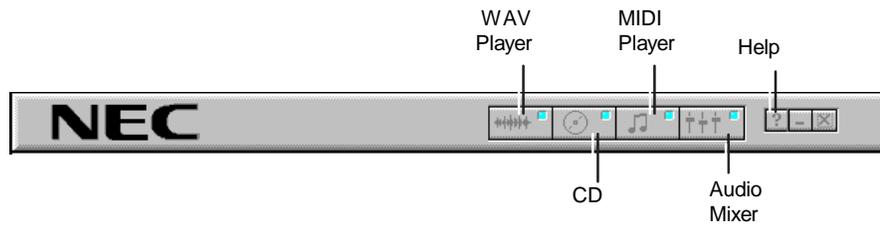


*Power bar layout*

To activate a module, click on the appropriate button. If the module is open, it closes and disappears from the stack. If the module is closed, it opens and appears at the bottom of the stack. To quit AudioStation, click on the Power button.

The Power Bar buttons are explained as follows.

Launches Help for each component.

Launches or closes the Audio Mixer module.

Launches or closes the MIDI Player module.

Launches or closes the CD Player module.

Launches or closes the WAV Player module.

> **NOTE** The online help gives detailed information on each module.

## AUDIO MIXER

Use the Mixer module to adjust the volume levels for your speakers and other AudioStation functions. The levels are adjusted by placing your pointer on the appropriate slider and dragging it up or down.

## Adjusting the Sound Using Software

With your sound software, you can control sound right from the windows desktop. You can adjust the volume, speaker balance, and more.

■ From the Programs group — click on the Voyetra icon.

■ From the Control Panel — click on the Sound icon.

■ From the Windows 95 taskbar — double click on the speaker icon next to the time on your taskbar.

## Adjusting the Sound Using the Speakers

The controls on your 8-watt speakers let you adjust the treble, bass, and volume (see the Speakers in Chapter 1 for control locations).

## CD PLAYER

The CD Player lets you play audio CDs. To play a CD, use the following procedure.

1. Place the CD into the CD-ROM reader tray with the print side up and press the button or gently push on the tray.

2. Click the **Mode** button to select a playback mode, if you wish.

3. To start the CD, press the **Play** button .

## WAV PLAYER

The WAV Player records sound by turning incoming electrical signals into numbers and saves it in computer memory. To play back the sound, the software changes the data back into electrical signals that the audio equipment amplifies and directs to the speakers or headphones.

The data format created by the WAV Player is called .WAV files which is compatible with Windows.The "tada" sound that you hear when Windows 95 starts up is an example of a .WAV file.

The following sections explain how to use WAV Player to record, play, and edit digital audio files.

## Recording Digital Audio Files

To record .WAV files, use the following procedures.

1. Connect your audio source (microphone, CD player, tape deck) to the input jack at the back of the system.

2. From the Mixer module, select your input source and set the recording volume.

3. Click on the record button. This will but the WAV Player in Record Standby mode (the red light blinks).

4. Click on the Play button to start recording. The blinking red light becomes a steady red light indicating that WAV Player is recording.

5. Speak into the microphone or play the input source to record.

6. When you finish recording, click the Stop button to stop recording.

7. Click the Play button to hear what you just recorded. If it is satisfactory, choose Save from the File menu.

8. Type a new *filename* in the dialog box and choose OK.

## Playing Digital Audio Files

Use the following procedure to load and play digital audio files.

1. To play a .WAV or .VOC digital audio file you must first insert the files you wish to hear in the playlist.

2. Once you have created a playlist, Press OK to close the playlist.

3. Click the Play button to hear the files in the playlist.

   The digital audio file plays and stops when it reaches the end.

## Editing Digital Audio Files

To edit digital audio files, click on the Edit button. This launched the AudioView program with the current file open.

## MIDI PLAYER

The MIDI player plays, edits, and records musical instrument digital interface (MIDI) sequences and saves them as .MID files. MIDI sequences are organized series of MIDI commands.

MIDI files require only a fraction of the storage space of digital audio files (.WAV).

> NOTE
> To record MIDI files, a MIDI connector and a MIDI keyboard are required.

To play MIDI files, follow these procedures.

**1.** Click on the Playlist button to open the MIDI file playlist window.

**2.** In the File section, select the files by highlighting the files you want and click on the Add button. This inserts the files into a playlist.

**3.** Click OK to close the playlist and return to the MIDI player.

**4.** Click on the Play button (single arrow) to play the playlist. If you have multiple files in the playlist the Next/Previous will skip or jump back to other files in the playlist.

# 7 24-Hour Information Services

NEC has made it easy for you to get information and help when you need it. We offer 24-hour information services via:

- NEC's FastFacts™ Service

- NEC's Bulletin Board Service

- America Online® Service

- CompuServe® Online Service

- E-mail to NEC's Technical Support Services through a commercial online service or Internet

- Fax Service to NEC's Technical Support Services

- Internet World Wide Web and NEC's FTP Site

- NEC's Technical Support Services (U.S. customers only).

If you have access to a modem and/or fax machine (telephone for Technical Support), you can use the above services to obtain information about your system at any time, day or night, seven days a week. (This service is not available for international customers.)

Not only do these services provide general information about your system, they can also be used to answer your questions and help solve any problems you may have with your system, should that ever be necessary.

## NEC'S FASTFACTS SERVICE

NEC's FastFacts service is a self-help, automated electronic information service for obtaining up-to-date product application notes, installation procedures, troubleshooting tips, data sheets, technical information bulletins, illustrated parts lists, part numbers, and other information about your system.

Using a fax machine, you can obtain information from FastFacts 24 hours a day, 7 days a week. You simply call the FastFacts number on your touch-tone telephone, order the information you want by following the voice prompts, and FastFacts will automatically fax the information to you.

If you are new to FastFacts, you should first order one of the following catalogs. Each catalog lists the available documents and their document numbers. Current catalogs include:

- Catalog 1, NEC Graphics Products

- Catalog 2, NEC CD-ROM, Printers, and Disk Drive Products

- Catalog 3, NEC Computer Products

- Catalog 4, NEC Products for the Macintosh

- Catalog 5, NEC Factory Refurbished Product List

- Catalog 6, NEC Select Direct Pricing

- Catalog 7, NEC Technical Support Notes, Technical Information Bulletins, Illustrated Parts Lists

- Catalog 9, NEC Product and Configuration Manual Index.

Order information from FastFacts as follows. If you would like instructions for using FastFacts, request document number 63233469 when prompted.

1. Be sure that your fax machine or fax/modem is on. Have the document number ready for the document you want.

2. At your touch-tone telephone, enter 800-366-0476 (U.S. and Canada only).

   For international use, enter the international long distance access number, the U.S. country code, and the U.S. telephone number (708-238-7800).

3. Listen to the instructions provided by the voice prompts.

   Press **1** if you do not want an introduction to FastFacts. Follow the automated instructions for ordering your document or catalog.

   Press **2** if you want an introduction to FastFacts. Follow the automated instructions for ordering your catalog or document.

4. When prompted, enter your fax number and name.

   For international use, first enter the international long distance access number (011), your country code, your area code or city code, then your fax number.

The information you requested will be automatically sent to your fax machine. Please wait for the ordered document to arrive at your fax machine before calling to order more documents. If FastFacts attempts to send the second order before the first order is completed, the order may be canceled. After three tries, FastFacts assumes that your line is busy and terminates any further processing of the order.

## NEC BULLETIN BOARD SERVICE

If you have access to a modem, the NEC Bulletin Board Service (BBS) can be used to provide you with the latest information on hardware and software. The BBS allows you to download files (video drivers, printer drivers, BIOS updates, etc.) for system enhancements and upgrades.

The BBS can also be accessed through the CompuServe online service.

Log onto the BBS as follows.

**1.** From the Windows for Workgroups Program Manager, select Accessories and double click on Terminal.

NOTE If you have Windows 95, see the online help or your Windows 95 documentation to set the NEC BBS parameters and dial the BBS phone number.

**2.** From the Settings menu, click on Communications, check that the settings match the following BBS parameters, and click OK when done.

- Baud rate: select the highest baud rate that matches your modem

- Parity: none

- Data bits: 8

- Stop bits: 1

- Flow control: Xon/Xoff (select Hardware if using 14.4 bps or higher).

3. From the Phone menu, click on Dial, enter the BBS phone number (508-635-4706), and click OK. Your business phone system and/or location might require a 9 1 or 1 prefix.

NOTE The first time that you use the BBS, you will be requested to provide information for a new user.

4. Press **Enter** twice

5. Enter your first name, last name, and password. Press **Enter** after each.

6. Follow the screen prompts until the NECTECH Main Menu is displayed.

7. At the Main Menu, select **J** to join a conference. Select **Conference 1** for the desktop conference.

8. From the Main Menu, press **F** and **Enter** for the File menu.

9. At the File menu, select **F** for a list of downloadable files. Follow the prompts to select a file for downloading.

## ⚠ **CAUTION**

Executable files automatically format your diskette when you download files from the BBS. Formatting destroys any data on the diskette. Before you download files from the BBS, check that you do not have information on the diskette that you need.

After you complete downloading your file, log off the BBS as follows.

1. Press **Enter** (to continue)

2. Press **G** (command for Goodbye/Hangup).

3. Press **Enter**.

## AMERICA ONLINE SERVICE

If you subscribe to America Online, you can use the service to obtain information about NEC and its products. You can use America Online to E-mail technical questions to NEC's Technical Support staff, post technical questions and messages on the Message Board, and access the NEC Software Library to download files.

Use the following steps to access America Online and NEC's online information services.

1. Log onto America Online.

2. At the opening screen, click on Go To in the Main Menu.

3. At the Go To menu, click Keyword.

4. At the prompt, type either NECTECH or NEC, then either press **Enter** or click on Go.

5. At the NEC menu, double-click on one of the following topics, then follow the prompts:

   - About NEC
   - Terms and Conditions
   - News
   - Product Information
   - Questions and Answers
   - NEC Promotions
   - Message Board
   - Software Library.

6. Exit anytime by double-clicking on the rectangle in the upper left corner of the screen.

## COMPUSERVE ONLINE SERVICE

If you subscribe to CompuServe, you can use the service to obtain information about NEC and its products. You can use CompuServe to E-mail technical questions to NEC's Technical Support staff, post technical questions and messages on the Bulletin Board, and access NEC's BBS.

> **NOTE** You cannot download information from the NEC Bulletin Board from CompuServe. You must call the NEC Bulletin Board directly using the procedure explained earlier in this chapter.

Use the following steps to access CompuServe and NEC's online information services.

**1.** Log onto CompuServe.

**2.** At the opening screen, click on Service, type in NECTECH at the prompt, and click OK.

**3.** At the NEC menu, double-click on one of the following topics, then follow the prompts:

- NEC Bulletin Board

- Information About This Service

- Access NEC BBS

- Access CompuServe Information Services

- Exit.

**4.** Exit anytime by double-clicking on the rectangle in the upper left corner of the screen.

## E-MAIL/FAX TECHNICAL SUPPORT SERVICE

The NEC Technical Support Center offers technical support by E-mail over the Internet network if you have a modem. The Internet address is:

**tech-support@nectech.com**

You can also fax technical questions to the NEC Technical Support Center if you have access to a fax machine or fax/modem. The fax number is:

**(508) 635-4666**

When using the E-mail or fax support service, you should include the following words in the subject field for prompt response from the appropriate technical person:

■ Desktop (desktop or minitower systems)

■ Monitor

■ CD-ROM

■ Printer

■ Notebook.

You should provide as much specific information about your questions as possible. Also, if you are sending a fax, please include your voice telephone number and your fax number with the question. You will receive a response to your questions within one business day.

## INTERNET

If you have a modem, you can access NEC's Home Page on the Internet World Wide Web. You can do this through a commercial online service or through your Internet account. NEC's Home Page contains general information about NEC products.

You can also use the Internet to access NEC's ftp (file transfer protocol) Site to download various files (video drivers, printer drivers, BIOS updates). The files are essentially the same files as on NEC's Bulletin Board Service.

To access the World-Wide-Web NEC Home Page, enter the following Internet Uniform Resource Locator (URL) through your service:

**http://www.nec.com/**

To access NEC's ftp Site, enter the following Internet ftp address through your service:

**ftp.nectech.com**

Once in the file menu, follow the prompts to choose and download the file(s) you want.

## NEC TECHNICAL SUPPORT SERVICES

NEC also offers direct technical support through its Technical Support Center.

Direct assistance is available 24 hours a day, seven days a week. Call the NEC Technical Support Center, toll free, at 1-800-632-4565 (for U.S. only).

Free technical support for hardware is limited to the length of the standard warranty. Software support for pre-loaded software is limited to 90 days from the time of the first call to the NEC Technical Support Center. For software support after the initial 90 days or hardware support after the warranty period, the charges are $30.00 per incident.

Please have available your system's name, model number, serial number, and as much information as possible about your system's problem before calling.

For customers outside the U.S., contact your local NEC sales provider.

# 8 If You Have a Problem

Your system has a built-in checking program that automatically tests its components when you turn the system unit power on. If there is a problem, the system displays an error message. If this happens, follow any instructions on the screen.

If screen messages do not help or an error message does not appear, use the information in this chapter to determine and solve the problem. The problem is often one that you can solve yourself.

See the following sections in this chapter for help:

■ "Problem Checklist"
See this section first to determine the cause of your problem.

■ "Solutions to Common Problems"
Refer to this section to solve common minor problems.

■ "Diagnostic Diskette"
If your system boots, use your diagnostic diskette to determine and solve the problem.

■ "Getting Help"
See this section for the help available to you for information about your computer and for help when you cannot solve a problem yourself. Select a topic for help on solving problems that you may have with your system.

## PROBLEM CHECKLIST

If you have problems, go through the following checklist for possible solutions.

■ **Is the power switch on for the computer and any connected peripherals (monitor, printer)?**

Check that all power switches are on.

■ **Is the computer and its peripherals connected to a working AC power outlet or surge protector?**

Check the outlet or surge protector by plugging a lamp into the outlet or surge protector.

■ **Are all cables and power cords connected securely?**

Check that all cables and power cords are securely connected.

■ **Is the monitor screen blank or is the display hard to read?**

Check that the monitor is on. Adjust the brightness and contrast controls on the monitor.

■ **Was a Non-System Disk error message displayed when you started the system?**

You have a diskette in the diskette drive. Remove the diskette from drive A and restart the system.

■ **Is your mouse or keyboard not responding?**

You may have connected the mouse and keyboard after turning on your system. Turn the system off, make sure the mouse and keyboard are connected, and turn the system back on.

■ **Does your system fail to recognize the CD-ROM?**

Your drive designation may be incorrect. The reader is assigned as drive E.

## SOLUTIONS TO COMMON PROBLEMS

See the following sections to match your problem area and view the possible causes and solutions.

When trying to solve problems, you should note what the system was doing when the problem occurred and what you attempted to do to correct the problem. This information is useful if you request assistance.

### System Problems

Check the following list to match your problem and see the possible cause and solution.

■ **No power and power lamp not lit**

Check that the power cable is plugged into the system power socket. Check that the other end of the cable is plugged into a live, properly grounded AC power outlet.

■ **System does not boot and error message displayed on screen**

Run the Setup Utility. Check that the parameters are set correctly, particularly if you just installed an option.

■ **System sounds continuous beeps**

Turn the system off, wait at least five seconds, and turn the system on. If the beeps continue, call your NEC dealer or the NEC Technical Support Center.

■ **System does not maintain date, time, system configuration information**

Replace the CMOS battery.

■ **System does not boot from hard disk**

The system tries to start from the diskette drive before it starts from the hard drive. Remove the diskette from the diskette drive.

Run the Setup Utility and check the Boot parameter settings to verify that the initial boot parameter is set for hard drive C and not for a diskette drive.

■ **System performance appears sluggish**

Check that your system is set for optimal operation. See your operating system documentation.

Check the memory requirements of your software applications. If required, install additional SIMM memory.

If you added optional memory, check that you correctly installed the SIMM memory.

■ **System did not recognize additional SIMM memory**

You added only one SIMM stick. SIMMs must be added in pairs. Add a second SIMM of the same type.

■ **System password forgotten**

Clear the password and reset it. See "Clearing Your Password" in Chapter 5.

## Diskette Drive Problems

Check the following problems to see the possible cause and solution.

■ **Diskette won't load**

Check that the diskette is being loaded correctly.

Check that the system and monitor power lamps are on and the power-on screen appears.

Check that the diskette is formatted. If not, format it. See your operating system documentation.

If the diskette drive busy lamp does not light when you load the diskette, try a different diskette. If this loads, the problem is in the software.

■ **Non-System Disk or Disk Error message displayed**

If you are booting from the diskette drive, insert a diskette with system files into drive A.

If a bootable diskette does not boot, use the Setup Utility to verify that the initial boot parameter is set to diskette drive A and not a hard disk.

## Monitor Problems

Check the following problems to see the possible cause and solution.

■ **Monitor screen is dark**

Check that the monitor power cable is connected to the monitor and a power outlet, the monitor signal cable is connected to the system, and the brightness and contrast controls are adjusted.

Press the space bar or move the mouse to take the system out of the power management mode.

■ **Distorted image appears on your monitor screen**

Adjust the monitor's video controls. If this does not help, turn the monitor off for several seconds, then back on.

■ **There is constant movement on the screen.**

A magnetic field is affecting your monitor. Move any devices (fan, motor, another monitor) that generate magnetic fields away from your monitor.

■ **The screen display is fuzzy or flickering, graphics characters or garbage appears on the screen.**

Check that your monitor is set up correctly and that all connections have been made.

Check that the video refresh rate and video driver are correct by using the SiS Multimedia Package video utility. In Windows for Workgroups, open the utility by double clicking the SiS MultimediaV1.04 icon in Windows.

In Windows 95, click the right mouse button anywhere on the desktop and a menu appears. Click on Properties and the Display Properties window appears.

## Keyboard/Mouse Problems

Check the following problem to see the possible cause and solution.

■ **Image appears on screen but nothing happens when you use the mouse or keyboard**

Tighten the keyboard or mouse cable connection.

If this does not help, turn off the system, wait five or more seconds, and turn on the system.

## CD-ROM Problems

Check the following problems to see the possible cause and solution.

■ **The system does not see the CD-ROM reader**

The drive designation is wrong and should be changed. The CD-ROM reader is assigned as drive E.

■ **The CD-ROM reader is not reading a disc**

Check that the disc is inserted in the CD tray with the label printed side up.

Check that the disc is a data disc, not a music disc.

Try a different disc to see if the problem is limited to one disc.

■ **The CD-ROM disc does not eject due to a power failure or software error**

Turn off the system and use the CD-ROM emergency eject feature.

■ **The CD-ROM does not play music CDs**

See "CD Module" in Chapter 6.

## Speaker Problems

Check the following problems to see the possible cause and solution.

■ **No sound from the speakers**

Check that the speaker power is on.

■ **Speaker volume is too low**

Adjust the volume control on the speaker. If the volume is still too low, adjust the volume through the system software, see Chapter 6.

■ **Sound is only coming from one speaker**

Balance the speaker output by adjusting the balance in the sound software, see Chapter 6.

## Microphone Problems

Check the following problem to see the possible cause and solution.

■ **You get no response from the microphone**

Check that the microphone is connected to the Mic In connector on the back of your system.

Adjust the microphone (MIC) level through sound software.

## REPLACING THE CMOS BATTERY

All system boards use a battery to maintain system configuration. Some system boards use a 3-volt lithium battery. If your system uses this type of battery (see the following figure) and it fails to maintain system configuration information, replace it with an identically rated battery from the same manufacturer.

---

### ⚠ CAUTION

Removing the battery from the system board causes the computer to lose system configuration information. If you can, run the Setup Utility and print out or write down your system configuration settings. Then you can restore your system to its current settings.

---

### ⚠ WARNING

The battery can explode if it is incorrectly replaced or improperly discarded. Use only the same battery or an equivalent type recommended by the manufacturer when replacing the battery.

Lithium acts as a catalyst when exposed to water and causes spontaneous combustion on contact. Discard used batteries according to the manufacturer's instructions.

---

If you need to replace the battery, follow these steps:

**1.** Turn off and unplug the computer and any external components connected to it.

2. Remove the system unit cover. Observe all safety precautions when removing the cover.

3. Locate the battery socket on the system board. You may have to remove any expansion boards in the way.

> NOTE This procedure is for system boards using the 3-volt lithium batter shown in the following figure.
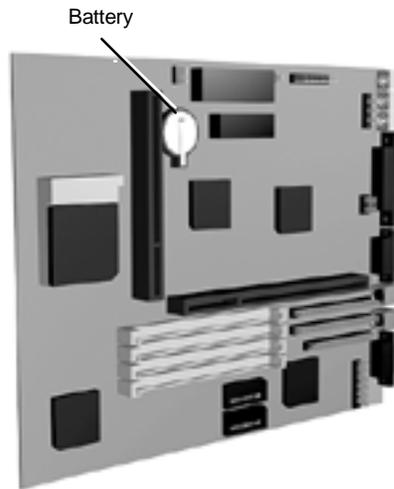
Battery



*Locating the battery socket on the system board*

**4.** Carefully lift the battery clip until there is enough space to slide the battery out of the socket.

---

## ⚠ **CAUTION**

To maintain a tight battery contact with the socket, do not over-bend the battery clip.

---
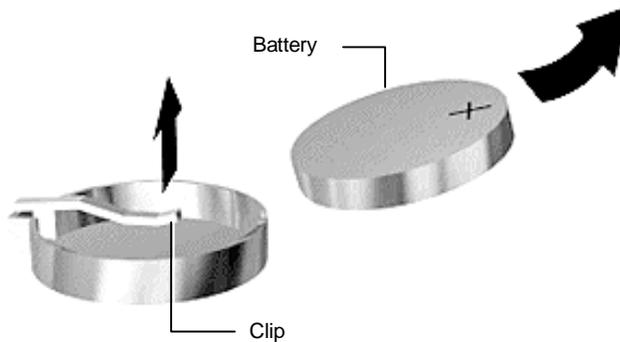


*Removing the battery*

**5.** Remove the battery and discard in accordance with the manufacturer's instructions.

6. Carefully lift the clip on the battery socket.

7. With the positive (+) side facing up, slide the new battery into the socket.

8. Replace any removed expansion boards.

9. Replace the system unit cover.

10. Connect external peripherals and power cables

11. Run the Setup Utility to reconfigure your system parameters.

## DIAGNOSTIC DISKETTE

If you are unable to resolve your system's problem using the Problem/Solutions topics in this chapter, NEC suggests that you run the diagnostic diskette.

The diagnostic diskette permits quick testing of all major system components, individual testing of different system components, and access to various testing options.

To run diagnostics, insert the diagnostic diskette into drive A with the system unit off. Power on the system. The system boots from the diskette and provides you with the test options.

## GETTING HELP

If you tried correcting problems yourself and weren't successful, you may want to try one or more of the following 24-hour services for answers to your questions. (Some services require a modem or fax machine.) See Chapter 7 for information about using theses services. (International customers should check with their NEC sales provider.)

- NEC's FastFacts Service

- NEC's Bulletin Board Service

- America Online Service

- CompuServe Online Service

- E-mail to NEC's Technical Support Services through a commercial online service or Internet

- Fax Service to NEC's Technical Support Services

- Internet

- NEC's Technical Support Services.

If you still need help, continue with the suggestions that follow.

## Getting Help From Your Company

If you are in a company, the best source of help may be internal. Your company may have designated central support personnel to whom you can go when you have problems.

## Getting Help From Your NEC Dealer

The NEC dealer from whom you purchased your system is a good source of help and should be contacted. The dealer is backed by complete support resources and programs within NEC.

## Getting Help From NEC's Technical Support Center

Help is available to you through the NEC Technical Support Center. (International customers should check with their NEC sales provider.) Direct assistance is available 24 hours a day, 7 days a week. You can call the Support Center, toll free, at 1-800-632-4565.

Free technical support for hardware is limited to the length of the standard warranty. Software support for pre-loaded software is limited to 90 days from the time of the first call to the NEC Technical Support Center. For software support after the initial 90 days or hardware support after the warranty period, the charges are $30.00 per incident.

Before calling, please have ready your system name, model number, serial number, and purchase date. Also have ready as much information as possible about the problem you are having, including any error messages that occurred.

## NEC Warranty/Non-Warranty Repair Service

Before you call for repair service, see the previous sections in this chapter to determine if you can solve the problem yourself, within your company, through your dealer, or with the help of a technician from the NEC Technical Support Center.

NEC's repair service is designed to support your warranty and non-warranty service activity. If your system requires repair service from NEC, call the appropriate repair service:

■ To request repair service in the United States, call 1-800-632-4565.

■ To request repair service in Canada, call 1-800-268-4191 (English Response) or 1-800-268-4115 (French Response).

■ If you are outside the U.S. and Canada, contact your local NEC sales provider.

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**(For United States Use Only)**

**FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT**

**WARNING:** Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment to an outlet on a circuit different from the one to which the receiver is connected.

Use shielded and properly grounded I/O cables and power cable to ensure compliance of this unit to the specified limits of the rules.

**(For Canadian Use Only)**

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B repecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

## BATTERY REPLACEMENT

A lithium battery in some computers maintains system configuration information. In the event that the battery fails to maintain system configuration information, NEC recommends that you replace the battery. See "Replacing the CMOS Battery" in Chapter 8 of this guide for battery replacement information.

**WARNING:** There is a danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

**ATTENTION:** Il y a danger d'explosion s'il y a replacement incorrect de la batterie. Remplacer uniquement avec une batterie du même type ou d'un type recommandé par le constructeur. Mettre au rébut les batteries usagées conformément aux instructions du fabricant.

## BATTERY DISPOSAL

Do not place used batteries in your regular trash.

The nickel-cadmium or nickel metal-hydride batteries must be collected, recycled, or disposed of in an environmentally-approved manner.

The incineration, landfilling, or mixing of batteries with the municipal solid waste stream is **prohibited by law** in most areas.

Return batteries to a federal or state approved battery recycler. This may be where your purchased the battery or a local seller of automotive batteries. In MINNESOTA, call 1-800-225-PRBA if further disposal information is required.

Contact your local waste management officials for other information regarding the environmentally sound collection, recycling, and disposal of the batteries.