HEWLETT®
PACKARD

User's Guide

HP Vectra XM

5/xx Series 3

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User's Guide

Welcome to Your HP Vectra PC

Congratulations on the purchase of your new Hewlett-Packard Personal Computer. Your high-performance HP Vectra PC provides:

• a Pentium™ processor in a Zero Insertion Force (ZIF) socket for easy processor upgrades

• an integrated level-two cache of 256 KB for improved performance

• a main memory of 8 MB, upgradeable to 192 MB

• an Ultra VGA PCI (Peripheral Component Interconnect) video controller with 1 MB of video memory (upgradeable to 2 MB)

• an integrated Enhanced IDE (Integrated Drive Electronics) controller on the PCI bus supporting Fast IDE and Standard IDE

• a 32-bit PCI integrated Ethernet LAN controller

• four mass storage shelves:

 ❒ three front-access shelves
 ❒ one internal shelf

• four free slots for accessory boards:

 ❒ one 32-bit PCI (Peripheral Component Interconnect) slot
 ❒ two 16-bit ISA (Industry Standard Architecture) slots
 ❒ one combination ISA or PCI slot

• one LAN connector, one parallel port, and two serial ports

• preloaded HP utilities to ease system configuration tasks

• BIOS stored in Flash ROM (for easy upgradeability)

• BIOS support for ISA "Plug and Play"

• DMI compliant with preloaded DMI demonstration application

• Designed for Windows™ 95

• Energy Star compliant.

Preloaded Software

For your convenience, your HP Vectra PC comes with the following software:

Software, Utilities, and Drivers

❒ MS-DOS 6.22

❒ MS-Windows for Workgroups 3.11

❒ HP User Tools

❒ Dashboard

❒ Mouse Control Center

❒ HP Video drivers

❒ HP LAN drivers

❒ Microsoft network client

❒ Novell network client

❒ HP IDE Disk drivers (for 32-bit disk access)

❒ ISA Plug and Play configuration utility (ICU) and driver

❒ Advanced Power Management

❒ Desktop Management Interface.

HP recommends that you create master diskettes for your preloaded software as soon as possible. Refer to chapter 1 for instructions.

Online Guides

Additionally, your HP Vectra PC has these online guides preloaded in the HPutils group in the Windows Program Manager:

❒ Discover Your HP Vectra

❒ Network Administrator Guide.

Contents

3 How to Install Accessories
Inside Your PC

4 Troubleshooting Your PC and Using the SETUP Program

5 Technical Information

6 Getting Support

1

Setting Up Your PC

This chapter leads you through the first time installation of your HP Vectra PC.

Unpacking Your PC

1   When you receive your PC, unpack all of the components:

- the computer and power cord
- the display and its cables
- the keyboard and mouse
- the manuals.

Computer

Typical Display

Computer
Power Cord

Display
Power Cord

Mouse

Keyboard

Manuals
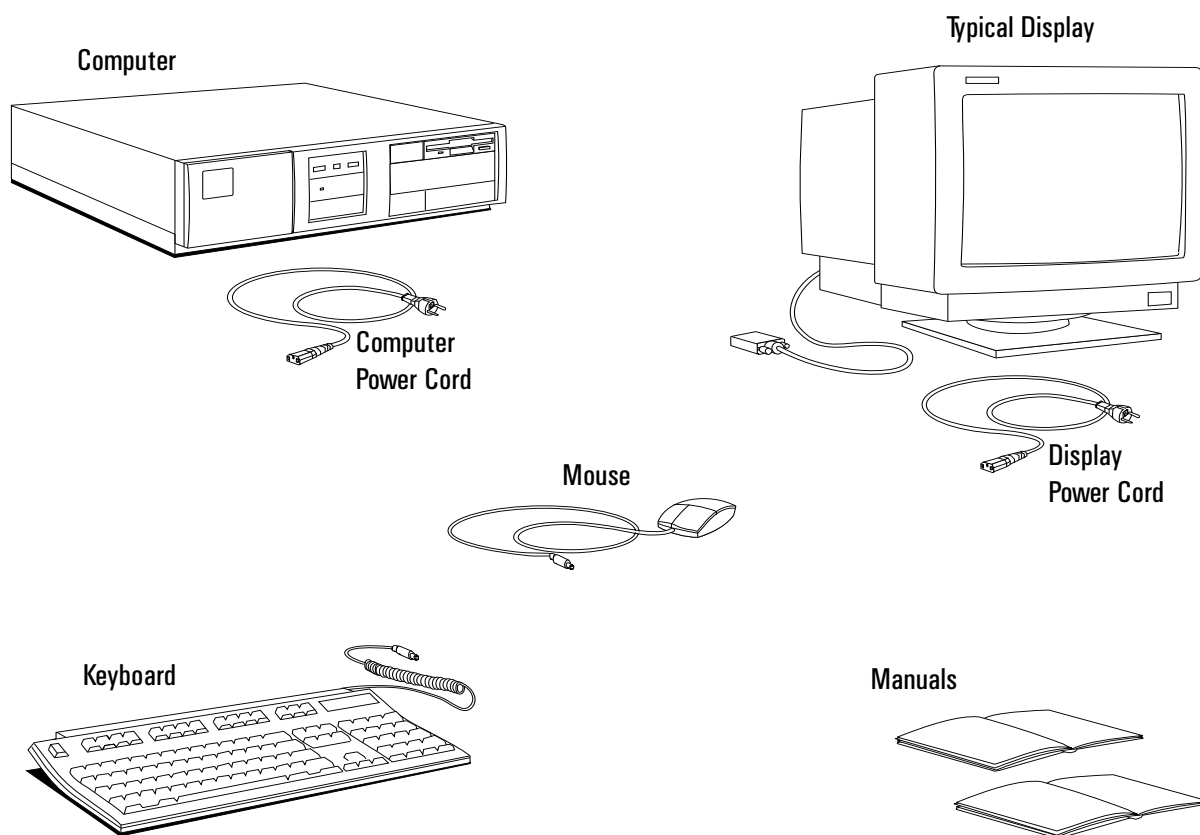
NOTE   The operating system software, drivers, and HP utilities are preloaded
on the hard disk. No diskettes are supplied.

2   Place the PC on a sturdy desk with easily accessible power outlets, and enough space for the keyboard, mouse, and any other accessories.
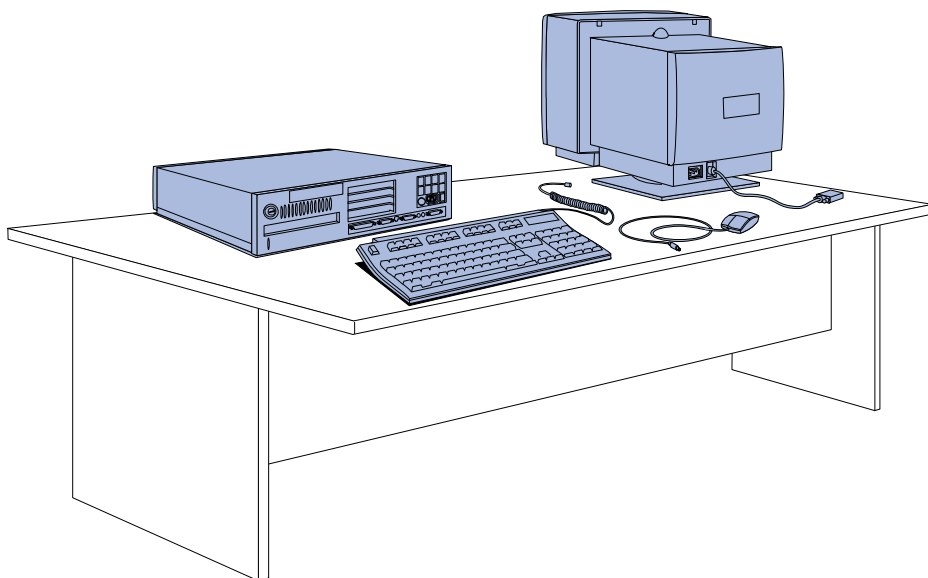
3   Position the PC so that its rear connectors are easily accessible.

4   Place the display on top of the computer. (If you have a large display, place it next to the computer.)

Installation Tools   No tools are required to install your PC. However, if you plan to install a disk drive or an accessory board inside your PC, you will need a flat-blade screwdriver. See chapter 3, *How to Install Accessories Inside Your PC*, for more information on installing accessories.

WARNING   If you are in any doubt that you can lift the display safely, do not try to move it without help. Refer to the display's manual for information.

Connecting the Mouse, Keyboard, and Display

1 Connect the mouse, keyboard, and display to the back of the computer. The connectors are shaped to go in one way only.

2 Tighten the display cable attachment screws.

Mouse

Keyboard

Display
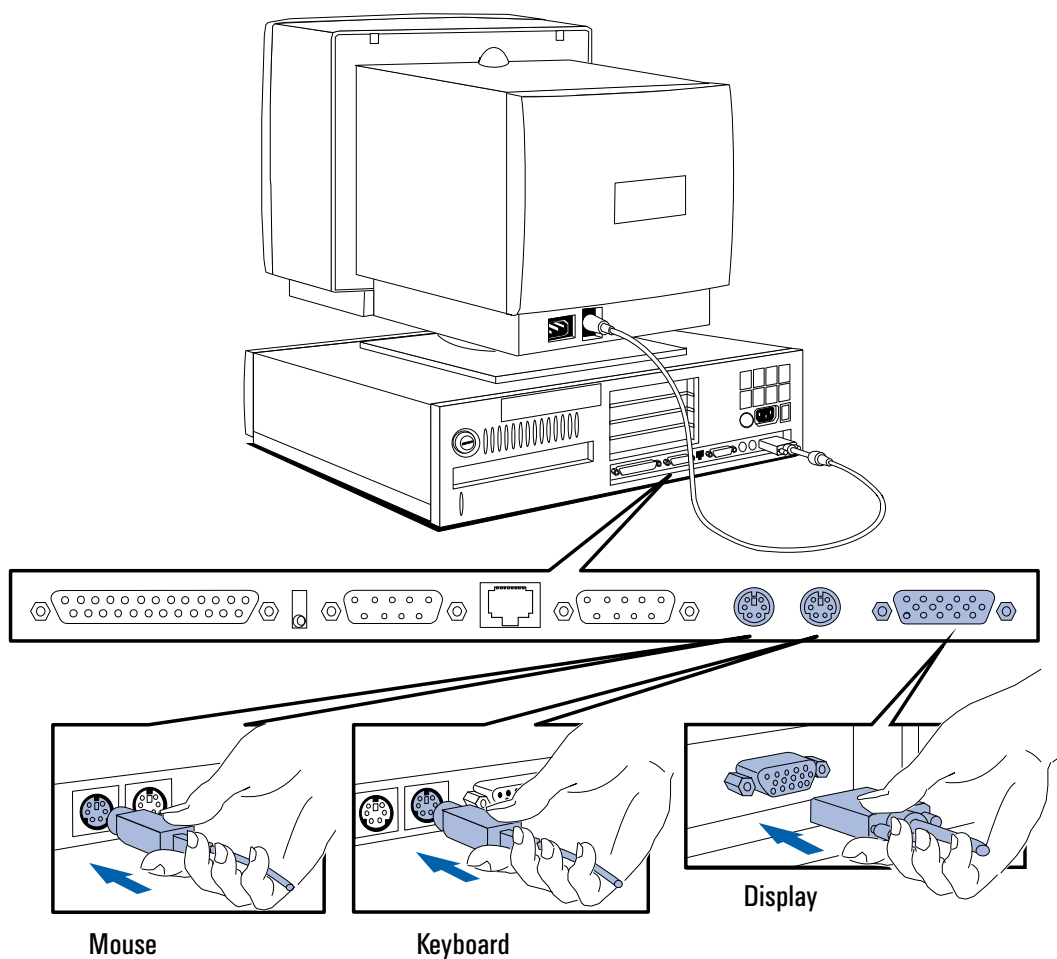
Connecting to a Network

Connect the network cable to the RJ-45 UTP (Unshielded Twisted Pair) LAN connector. Let your Network Administrator know you are connecting your PC to the network.
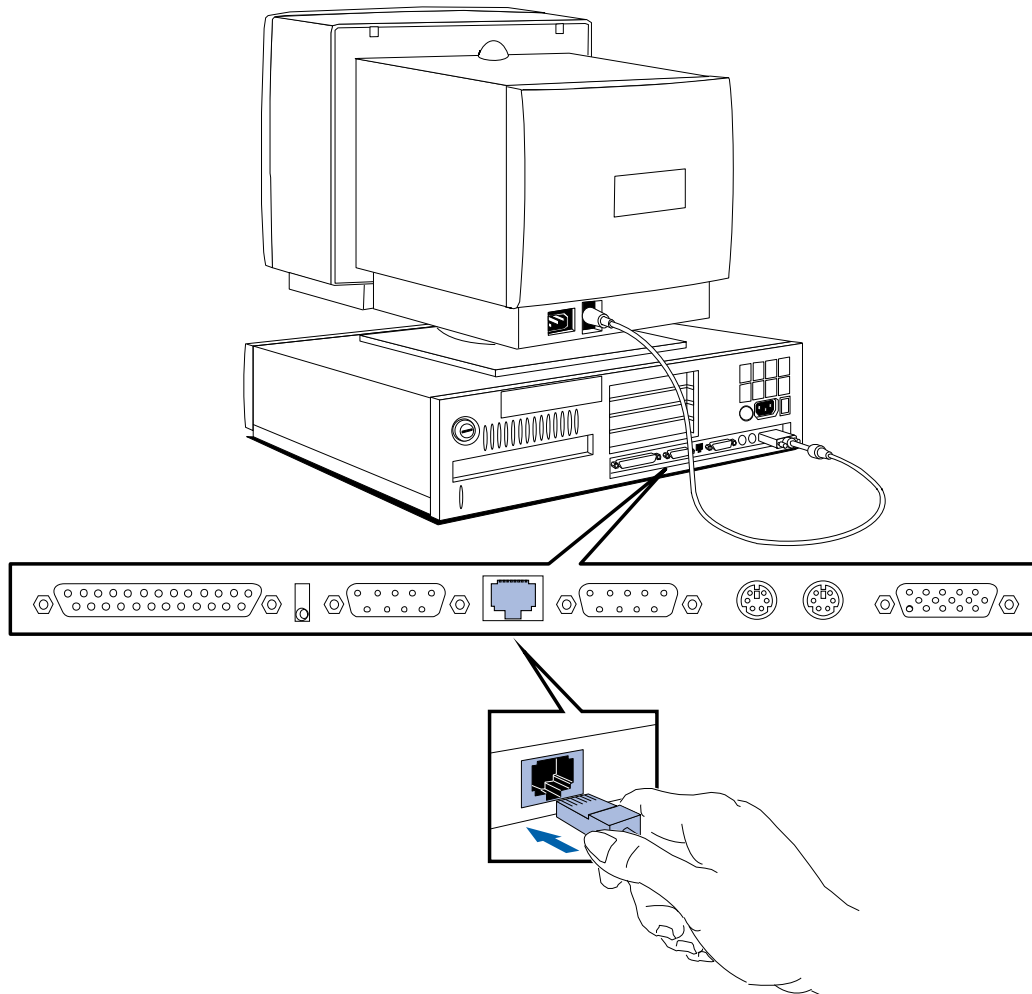
NOTE If you need a BNC Coax connector to connect to the network, you can install an optional BNC Coax adapter accessory board (order D2746A). Refer to chapter 3, *How to Install Accessories Inside Your PC*, for accessory board installation instructions.

Connecting a Printer

If you have a printer, connect its cable to the back of the computer and tighten the attachment screws. Use the connector labeled:

- Parallel (25-pin parallel connector) for a parallel device
- Serial A (9-pin serial connector) for a serial device
- Serial B (9-pin serial connector) for a second serial device.

Parallel Connector   Serial Connector
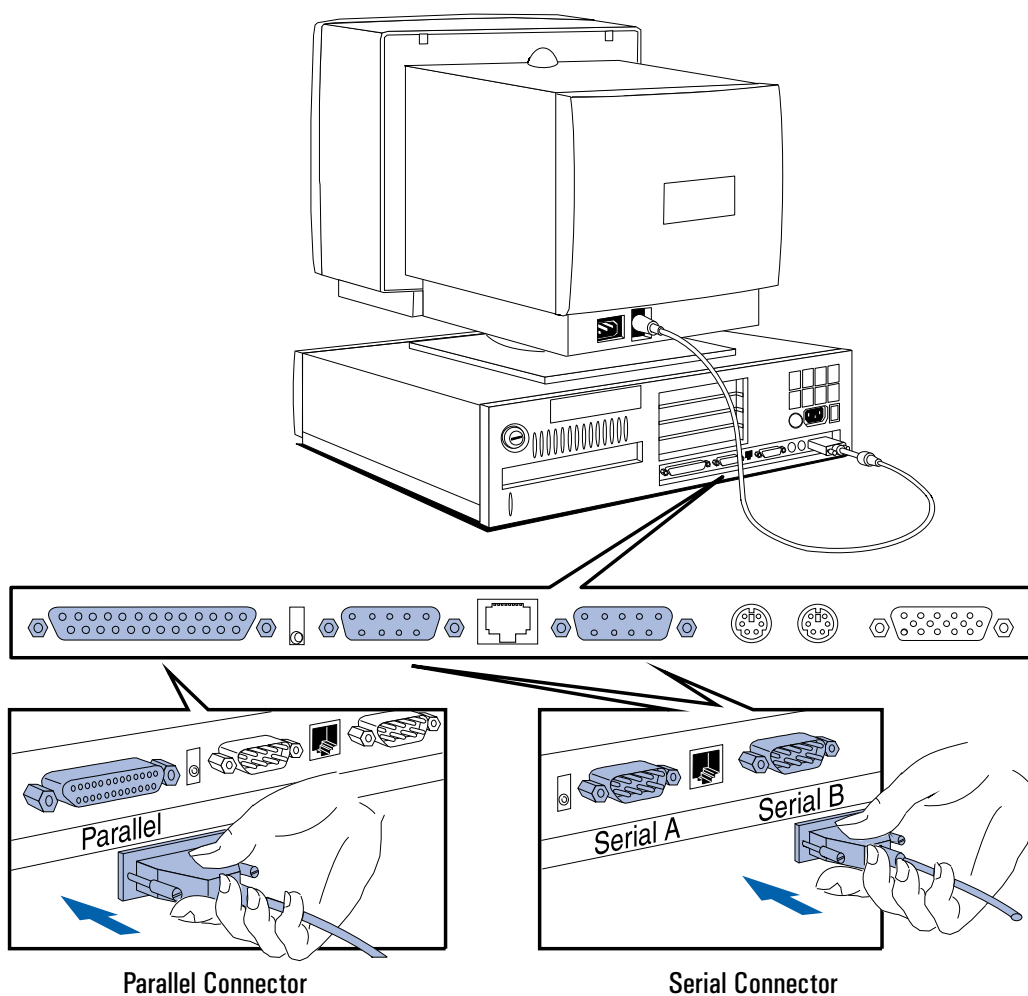
Connecting the Power Cords

1   If fitted, remove the label covering the computer's power connector.

2   Connect the power cords to the display and the computer.

3   Connect the display's power cord and the computer's power cord to a grounded outlet. (The connectors are shaped to go in one way only.)

Display
Power Cord

Computer
Power Cord
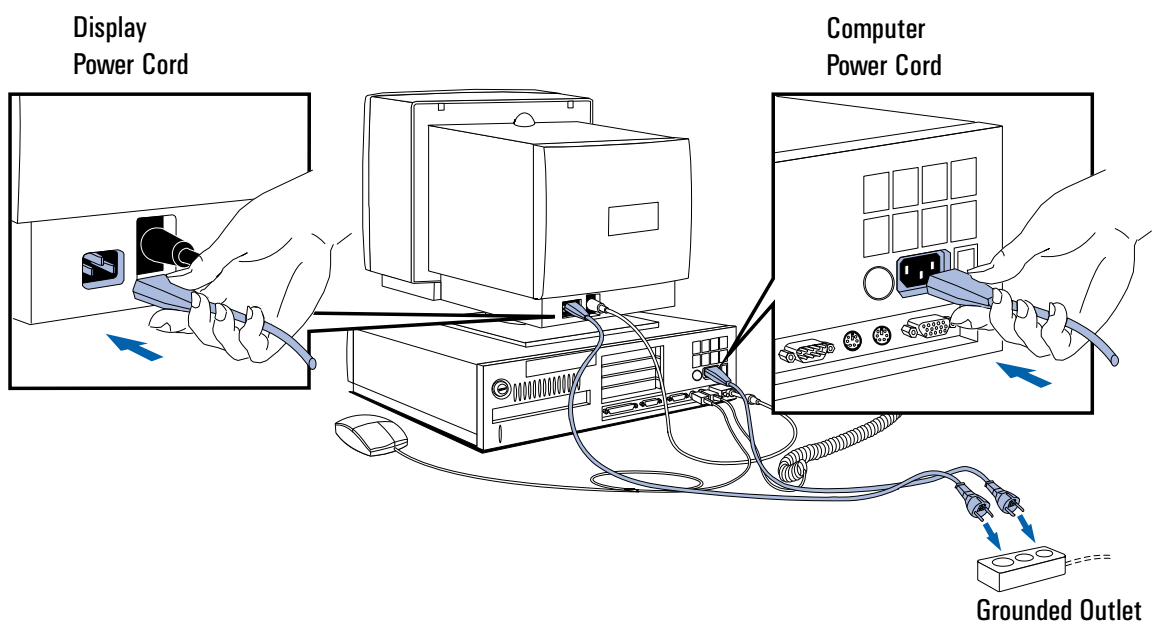
Grounded Outlet

WARNING   For your safety, always connect the equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as the one provided with this equipment, or one in compliance with your national regulations.

This PC has been designed to operate on all power systems, including "IT" power systems. It is disconnected from the power by removing the power cord from the power outlet. This means the PC must be located close to a power outlet that is easily accessible.

Starting the PC for the First Time

Your PC has preinstalled software. This software is initialized the first time you start the PC. The software initialization takes approximately three minutes, and:

- sets up the software in your language

- sets up your software to use the hardware installed in your computer—note that you can change the settings after the software has been initialized.

To initialize your software:

1 Switch on the display and then the PC.

Switch on the Display

Then switch on the PC
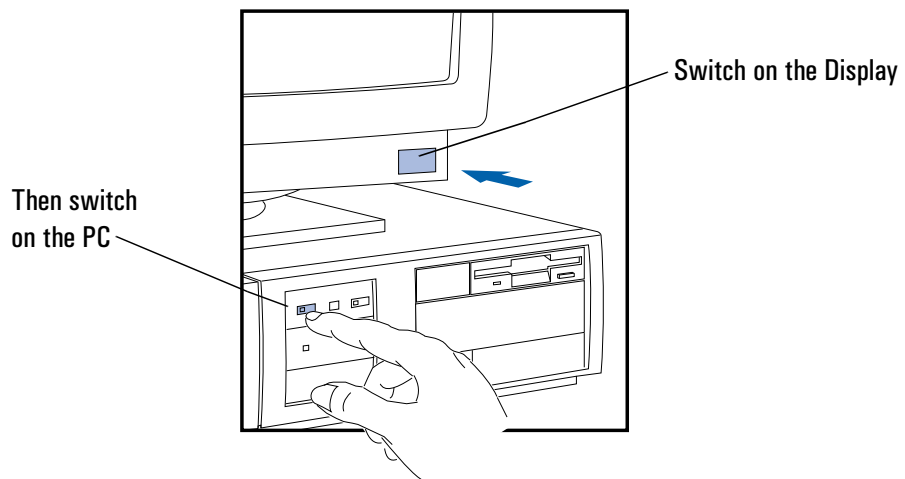
The PC performs a power-on self-test and displays a test screen.

If an error is detected during the power-on self-test, press ⏎ Enter to view an explanation of the problem. You may be prompted to press F2 to start the SETUP program. Follow the screen messages to correct the error.

NOTE   *Do NOT switch OFF the PC while the software is being initialized as this could cause unexpected results during the initialization routine.*

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2   The software initialization routine starts. It displays the software license agreement, gives you an opportunity to read Working in Comfort (ergonomic advice for computer users), and then asks you questions about the PC. For example:

- The name of the person who will use the computer and your company name. (If necessary, the name of the user can be modified later.)

- The current date and time.

- The type of printer (for example, HP LaserJet 4M). This is shown on the front of the printer. You also need to enter the connection used by the printer (for example, LPT1 for a parallel printer or COM1 for a serial printer).

- The type of network you are going to use your computer with. You will need to enter the name of the person who will use the computer, the name of the LAN Workgroup this user will be connected to, and the name you wish to give this computer.

- The model number of your display. The display's model number is shown on the cover of the manual supplied with the display and on a label on the rear of the display.

3   While the initialization program is running, complete your Warranty Registration card (in the back of this manual).

When the initialization routine is finished, click on OK and the PC will restart.

4   When your PC has restarted:

- Adjust the display screen's brightness and contrast to your needs. If the picture does not fill the screen or is not centered, adjust it using the controls on the display. Refer to the display's manual for details.
- Set the keyboard to a comfortable position.

Adjust brightness

(your display may be different from the display shown here)
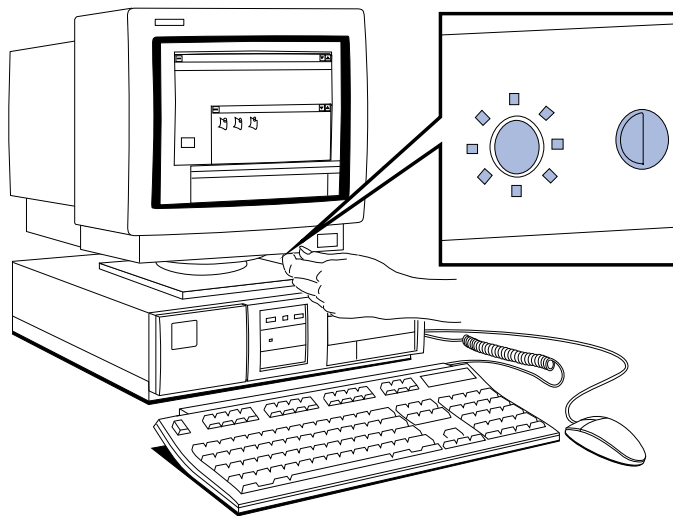
Creating Master Diskettes

It is very important that you create master diskettes for your preloaded software as soon as possible. These diskettes can then be used to restore the preloaded software to your PC in an emergency. HP recommends that you use new diskettes to create the master diskettes.

1   Double-click the mouse on the Master Diskette Creation Utility icon 🖫 in the HPUtils group in the Windows Program Manager.

2   Follow the screen messages to create master diskettes of your preloaded software. The messages will tell you how many diskettes are required.

2

Using Your PC

This chapter explains how to use the HP Vectra features and tools
designed to increase your productivity.

2   Using Your PC
Starting and Stopping Your PC

Starting and Stopping Your PC

Start your PC by pressing the power button ⏻ on the display and on the PC. If you have set a Password in the PC's SETUP program, the power-on prompt appears when you switch on the PC. If the power-on prompt ⚷ is displayed, type your Password and press ⏎Enter to use the PC.

Correct password   Wrong password

Restart the PC, then enter your password again.
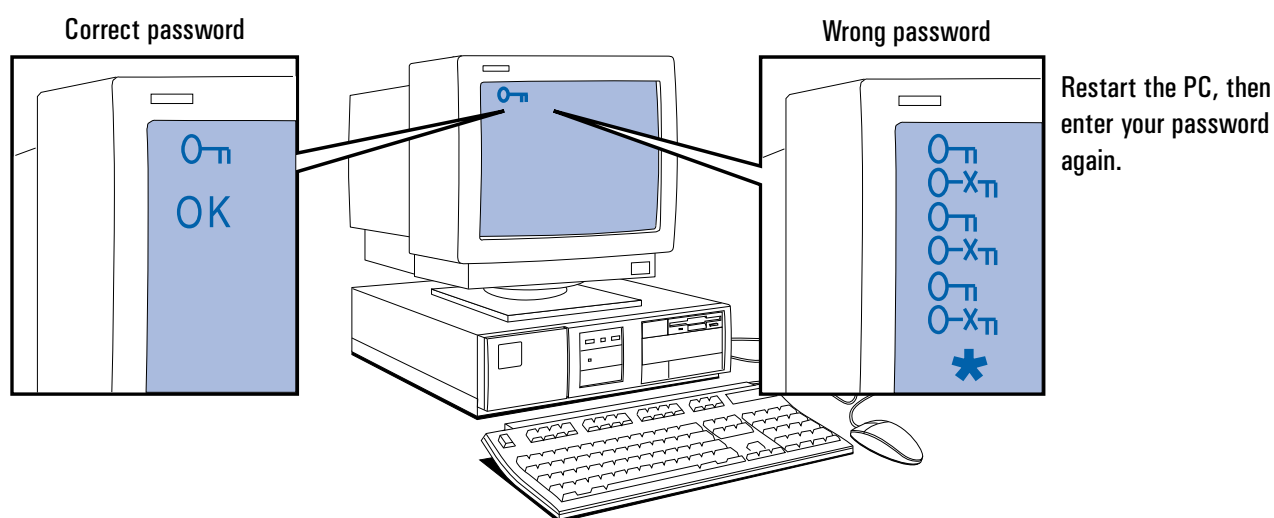
To stop your PC, first make sure that you have exited all programs then press the power button ⏻ . Refer to your operating system manual for details if you are not sure how to exit your operating system.

Configuring Password Security

You can set two passwords, which can be used to provide two levels of protection for your PC.

User Password

The User Password provides these security features:

- a power-on password prompt to prevent your PC being started in your absence

- a keyboard lock timer which you can use to lock your PC after a specified number of minutes of keyboard inactivity

- a keyboard lock button that you can use to lock your PC (leaving your applications active) when you leave your desk

- screen blanking to conceal confidential data when the PC is locked.

Keyboard Lock Button
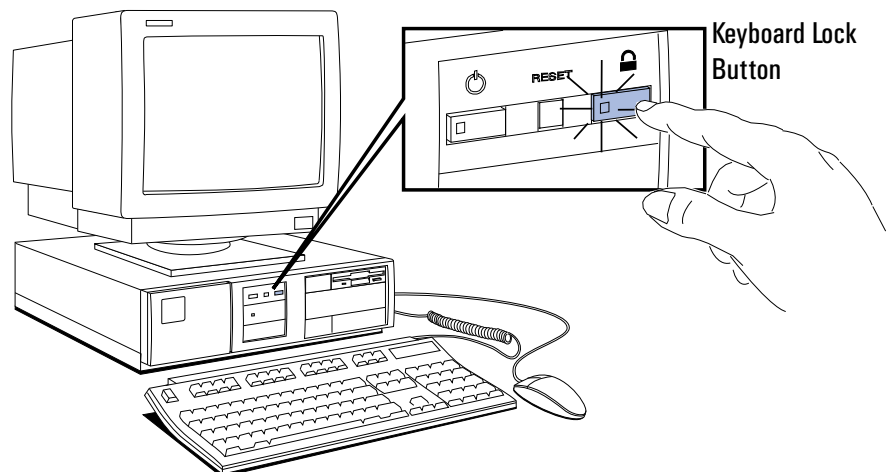
System Administrator Password

Set the System Administrator Password to protect the PC's configuration in SETUP. The PC can be started, but the System Administrator Password must be entered before any SETUP options (except User Preferences and Power Management) can be modified.

2   Using Your PC
Configuring Password Security

Setting a Password

1   Turn on the PC and the display.

    If the PC is already turned on, exit all applications and then press
    ⌨Ctrl ⌨Alt and ⌨Delete to restart the PC.

2   When **<Setup=F2>** appears at the bottom of the screen
    press ⌨F2.
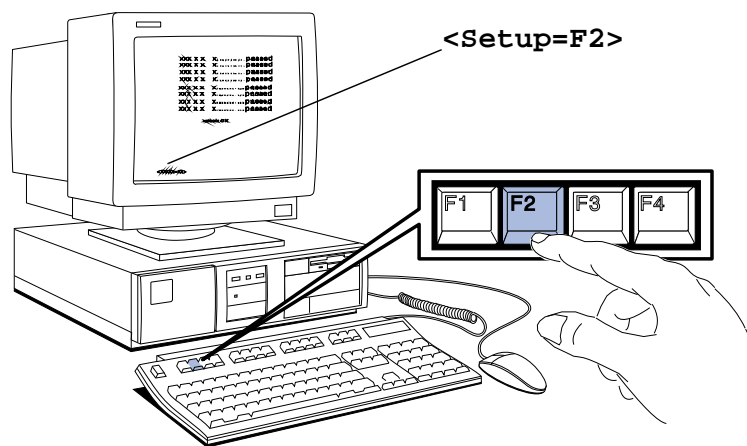
<Setup=F2>

HINT
You can press ⌨F2 to run the SETUP program when the
Power-On-Self-Test reaches **Ethernet (Integrated)**.

3   The PC's SETUP program will appear.

```
                Setup Version xx.xx.xx        F1=Help On/Off

Date (Year/Month/Day) . . . . . . . 1995 / 01 / 01
Time (Hour/Minute/Second) . . . . . 09 : 35 : 53

User Preferences
 User Password  . . . . . . . . . . Not Set
 Keyboard Lock Timer  . . . . . . . Disabled
 Screen Blanking  . . . . . . . . . Disabled
```

4   Use the ⌨△ or ⌨▽ key to move the highlight to the
    User Password line.

5   To set your User Password, press ⎯⏎ Enter⎯ once.

   a   Type your *password* and press ⎯⏎ Enter⎯.

   b   Type your *password* and press ⎯⏎ Enter⎯ again.

      The screen displays **User Password . . . . Set**

6   If you wish to erase your Password, press ⎯⏎ Enter⎯ twice.

   If you only want to set a password, press the F3 key now to save your password and exit SETUP.

Setting the Keyboard Lock Timer

7   Press the ▽ key until the **Keyboard Lock Timer** line is highlighted.

8   Press F7 or F8 to select a value between 1 and 75 minutes.

   If you wish to save this setting and leave SETUP, press the F3 key now.

Setting Screen Blanking

9   Press the ▽ key until the **Screen Blanking** line is highlighted.

10 Press F7 or F8 to select **Screen Blanking . . . Enabled**.

11 Use the F3 key to save this setting and exit SETUP.

Introducing the HP Utilities

The Hewlett-Packard Utilities are located in the Hputils group in the Windows program manager. These utilities include:

❐ Discover Your HP Vectra
an online introduction to the main features of your PC

❐ Network Administrator Guide
a guide to configuring your PC for different network operating systems (this guide exists in English only)

❐ Network Setup
a setup program for your Windows network connections

❐ Master Diskette Creation utility
an utility for creating master diskettes of your preloaded software

❐ HP PCID
a program which lets you create a personalized message, which will appear during your PC's power-on self-test

❐ HP User Tools
the HP User Tools are described below.

Using the HP User Tools

The HP User Tools let you select a better Windows video resolution, configure your printer, set the date and time, change the user name, read the Working in Comfort document (ergonomic information), and read the license agreement for your preinstalled software.

To access the HP User Tools:

1   Double-click on the Hputils group icon ▦ to display the Hewlett-Packard utilities.

2   Double-click on the HP User Tools icon 🛠 to display the HP User Tools utility.

3   Click on the button of the tool that you wish to use.

Some Buttons You May Need To Use

The Working in Comfort button provides important ergonomic advice for using your computer.

Click on this button if you want to change the name of the user of the PC. If a user name has already been entered during the software initialization routine, you may wish to change it.

Click on this button to set the correct date and time for the PC. Use when the daylight saving hour changes or when you change the PC's battery.

The Printers button lets you set up and configure your printer. Use this tool when you attach a printer to your PC. (Refer to your printer's manual for configuration information.)

Click on this button to change the video resolution, the number of colors displayed, and the display's ergonomic refresh rate. Click on this button if you install a new display.

NOTE   To click on a button, use the mouse to move the pointer to the button then press the mouse button. To learn more about Windows, click on Help in the Windows Program Manager and select the Windows Tutorial.

Understanding Power Management

Your PC supports a power management system which complies with the EPA (Environmental Protection Agency) Energy Star program. You can use power management to reduce the power used by your PC when you aren't using it. Two power management modes are supported:

- Standby mode reduces power consumption significantly
- Sleep mode reduces power consumption to a minimum.

Configuring Power Management in Windows

1   Double-click on the Main Group icon 🖳 to display the Main program group.

2   Double-click on the Control Panel icon 🖳 .

3   Double-click on the Power icon 🖳 to display the Power dialog box.

4   Select the Advanced mode.

5   Click on Options and the Setup Power Management dialog box appears.

6   Select the "Standby" timeout (set to 30 min., by default), the "Sleep At" time (set to Off, by default), or both.

NOTE   Click on the Advanced button to configure your PC to be woken up by a call coming into a fax/modem, or to select a hard disk sleep mode.

7   Click on OK to close the Setup Power Management dialog box.

8   Click on OK to enable Power Management in Windows.

Activating Sleep Mode in Windows

To activate Sleep mode, click on the Sleep Mode icon 🌙 (at the bottom-left of the screen).

To return to full power mode, press any key.

Power Management in DOS

For more information about the DOS power management utility, at the DOS prompt type **HELP POWER** and press ⏎ Enter .

Personalizing Your Mouse

Your PC has preinstalled Windows software which lets you personalize the functionality of your mouse.

1   Double-click on the Mouse Software group icon   to display the Mouse Software.

2   Double-click on the Mouse Control Center icon   in the Windows Program manager to display the Mouse Control Center.

3   Click on the Help button for more information about the Mouse Control Center.

Understanding the Desktop Management Interface

Your PC supports the Desktop Management Interface (DMI). The DMI lets an application request information about your computer. For example, an application can use the DMI to view:

- the hardware and software components installed in your PC
- the operating system used by your PC
- the number of available accessory board slots.

All this information is stored in a Management Information Format (MIF) file, installed on your PC as part of the DMI package.

To install the DMI demonstration application and learn more about the Desktop Management Interface:

1   Double-click on the DMI group icon   in the Windows Program Manager.

2   Double-click on the DMI Readme icon   for up-to-date information about the DMI support for your PC.

3   Double-click on the DMI Setup icon   to install the DMI demonstration application on your PC.

Tips for Using Your PC

	If you want to:	You need to:
1	Install hardware accessories.	Refer to chapter 3 "How to Install Accessories Inside Your PC".
2	Configure hardware accessories.	Refer to chapter 3 "How to Install Accessories Inside Your PC".
3	Install new applications, and set up and use an application.	Read the manuals supplied with the application software.
4	Start a Windows application.	Double-click on its icon.
5	Switch to another application that is running under Windows.	Press [Alt] and [Esc] simultaneously.
6	Change the mouse double-click and tracking speed, and left-hand or right-hand mouse buttons.	Use the Mouse Control Center icon.
7	Set up your network connection.	Use the Network Setup icon in the HPutils group.
8	Set up a printer.	Use the Printers icon in the HP User Tools.
9	Make more disk space available.	Delete unnecessary files and increase disk space by using a disk compression program. Install a larger disk drive.
10	Make more memory available.	Install more main memory. Refer to chapter 3.
11	Display more colors.	Use the Video Mode icon in the HP User Tools. Install more video memory. Refer to chapter 3.
12	Stop anyone from starting the PC in your absence.	Run the built-in SETUP program and set a Password. Refer to chapter 2 for details.

3

How to Install Accessories Inside Your PC

This chapter explains how to install accessories, such as extra memory, accessory boards, and additional disk drives, in your PC.

Supported HP Accessories

This chapter describes how to install memory, mass storage devices, and accessory boards in your PC.

Contact your dealer for an up-to-date list of supported devices.

Up to three front access drives, such as:
5.25-inch 1.2 MB flexible disk drive,
(half height) order D2881B

3.5-inch 1.44 MB flexible disk drive,
(one third height) order D2035B

IDE CD-ROM Drive
order D2889A

One internal mass storage device
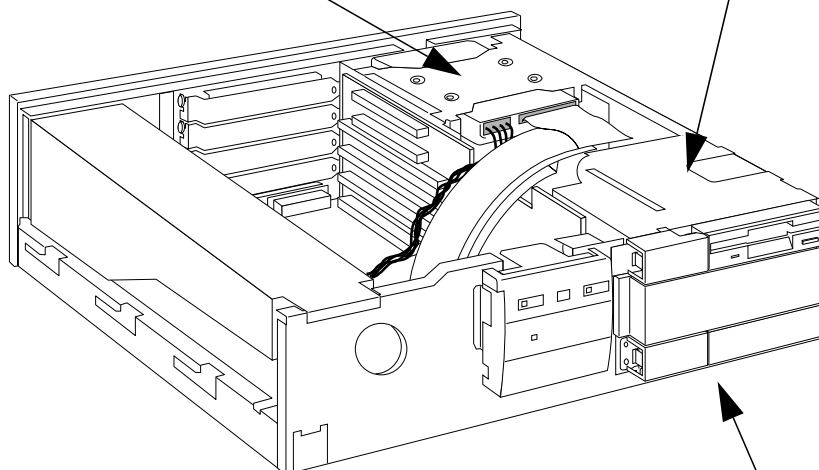
**Mounting Rails
for front access devices:**
5.25-inch disk drive rails,
order D2880A (5 pairs of rails)
3.5-inch disk drive rails,
order D3566A (5 pairs of rails)

Video Memory Module:
1 MB to upgrade to 2 MB,
order D3404A

Up to four accessory boards, such as:
BNC Coax Adapter D2746A
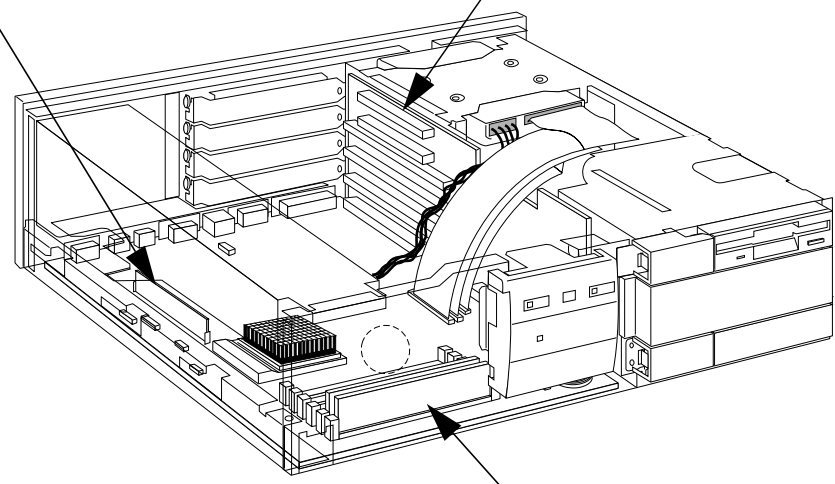
Main Memory Modules (70 ns):

4 MB, order D2690A
8 MB, order D2691A
16 MB, order D2297A
32 MB, order D2298A

WARNING   For your safety, never remove the PC's cover without first removing
the power cord, and any connection to a telecommunications network.

Removing and Replacing the Cover

1   Switch off the display and computer.

2   Disconnect the power cords from the power outlets, computer, and display. Then remove the display.
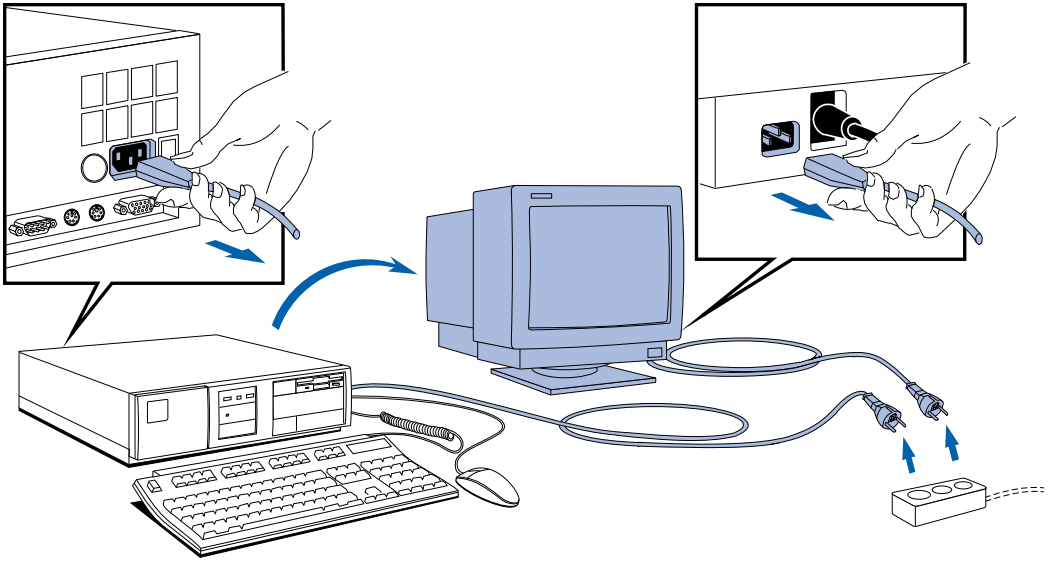
3   If necessary, unlock the cover using the key provided with the PC.

4   Slide the two tabs on the front of the computer inwards. Firmly slide the cover forward 5 cm (2 inches), and lift it up and off the computer.
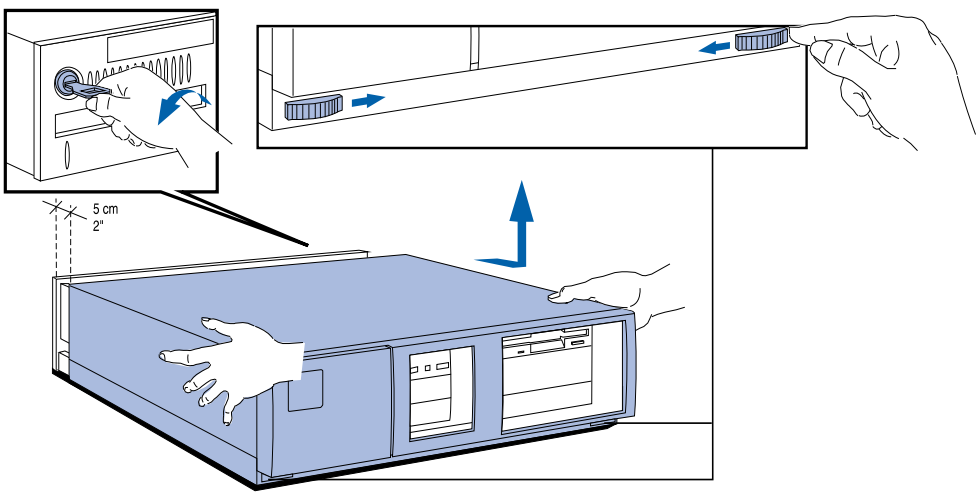
Replacing the Cover after Installing Accessories

1   Check that you have installed all your accessories.

2   Make sure that all internal cables are properly connected and safely routed.

3   Ensure the cover lock is unlocked and the tabs are inwards.

4   Lower the cover onto the computer, and firmly slide it into position.

5   Slide the two tabs on the front of the cover outwards.

6   If a keylock is fitted, lock the cover using the key.
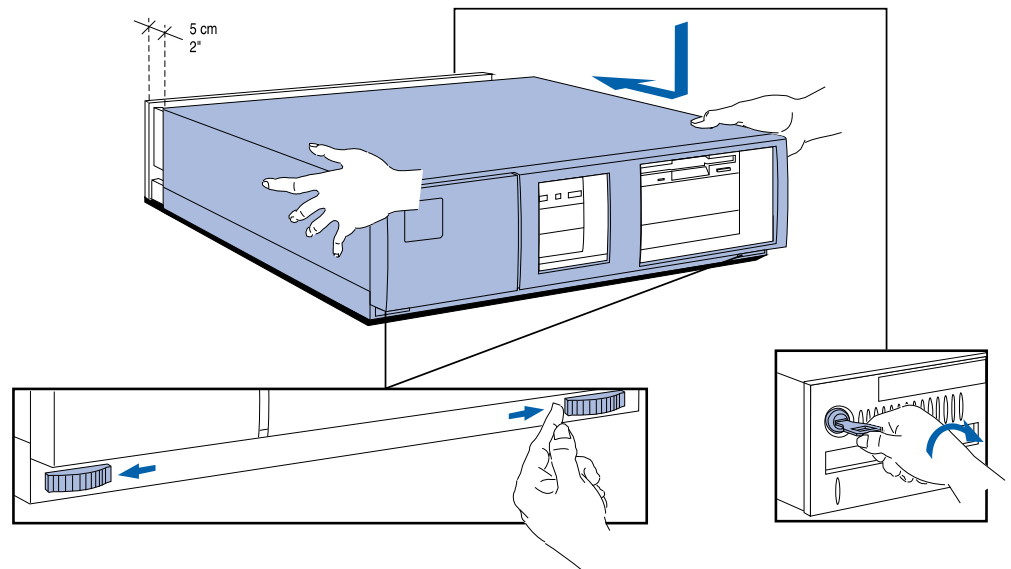
7   Place the display on top of the computer. Reconnect all cables and power cords.

Removing and Replacing the Power Supply

You must remove the power supply to access the sockets for the main memory, video memory, processor, or accessory board slots.

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover (see page 24).

3   Lift the front of the power supply to disengage the hinge on the rear.
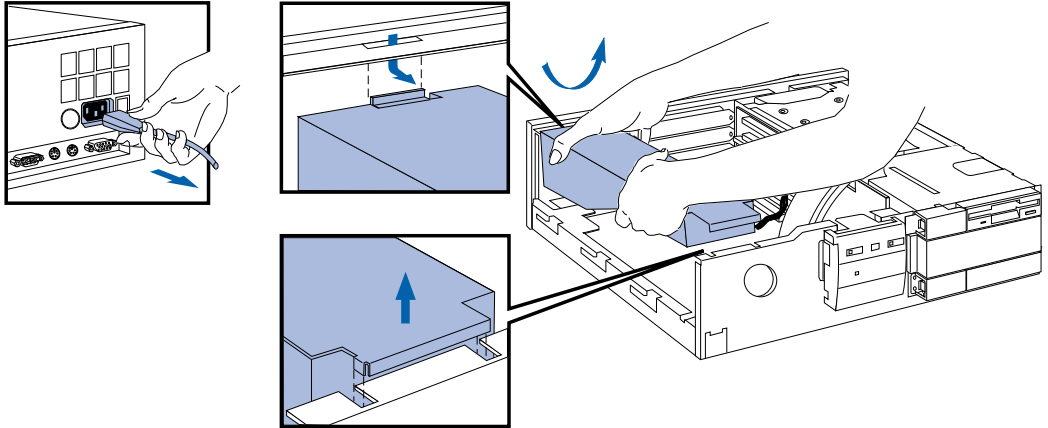
4   Lift the power supply clear and lay it upside down on the frame above the disk drives.
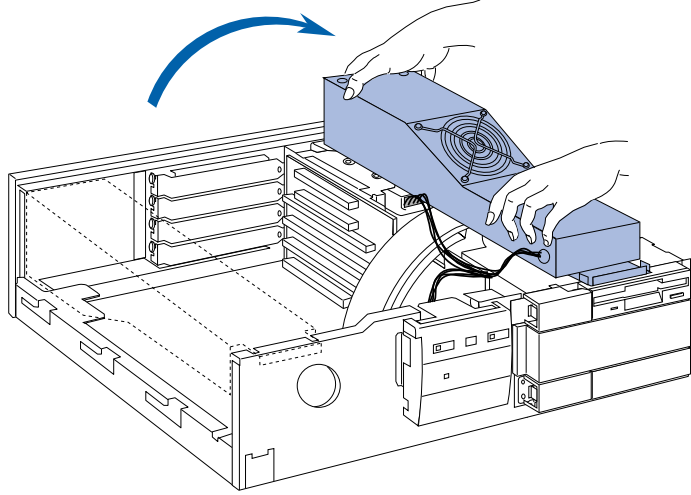
Replacing the Power Supply after Installing Accessories

1   Ensure that you have installed all of your accessories in the PC.

2   Position the power supply over the left-hand side of the PC, and ensure that the cables are neatly routed around any accessory boards.

3   Raise the front of the power supply and engage the hinge on the rear.
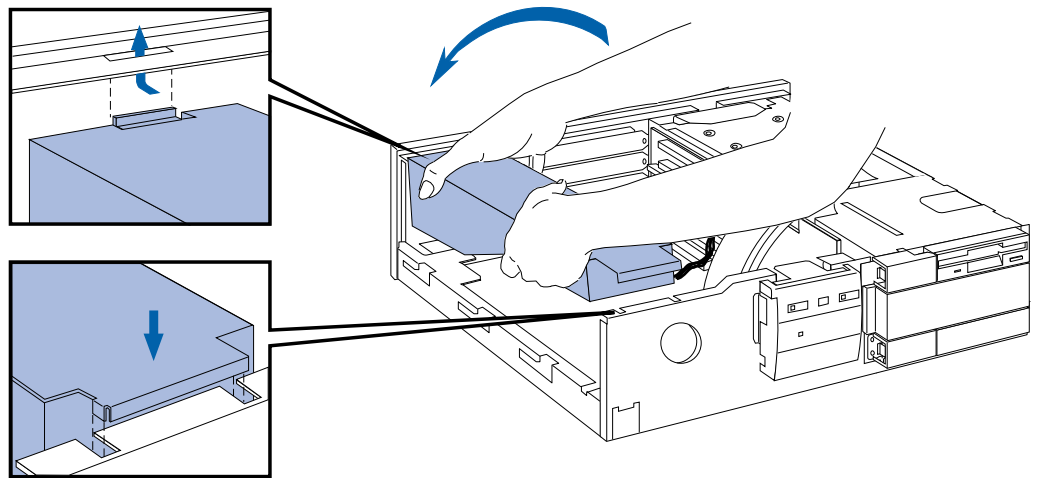
4   Lower the front of the power supply into position so it rests on the front panel.

Installing Memory

Main Memory Modules

Your PC is supplied with main memory. If you need more main memory to run your application software, you can install up to a total of 192 MB.

Main memory is available in modules of 4 MB, 8 MB, 16 MB, or 32 MB. Memory modules must be installed from bank A, up to bank C. When two modules are installed in a bank, they must be the same size. For a list of available modules, refer to the beginning of this chapter.

WARNING   Static electricity can damage electronic components. Turn all equipment OFF. Don't let your clothes touch the accessory.
To equalize the static electricity, rest the accessory bag on top of the power supply while you are removing the accessory from the bag. Handle the accessory as little as possible and with care.

To install a main memory module:

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover and power supply (see pages 24 and 26).

3   Align the main memory module directly over the socket. Slide the memory module into the slot at 45°. *Firmly* press the memory module *completely* into the connector.
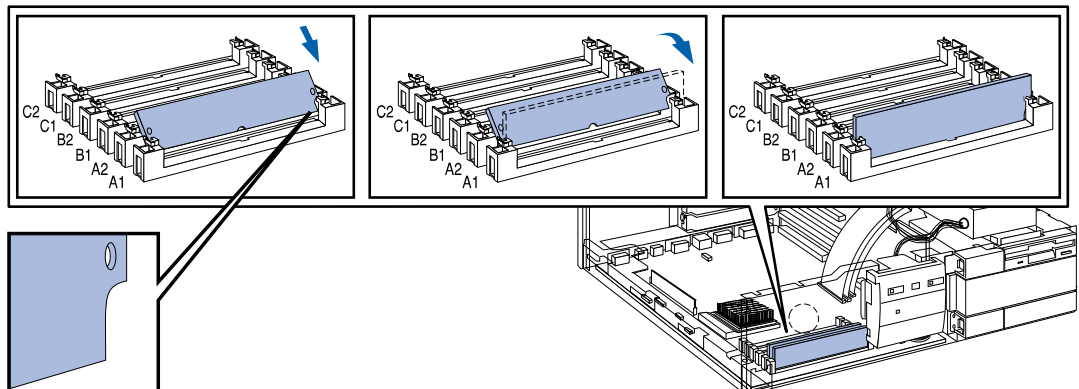
4   Pivot the memory module to the vertical position.

5   Repeat this procedure for each memory module you are installing.

If you need to remove a main memory module:
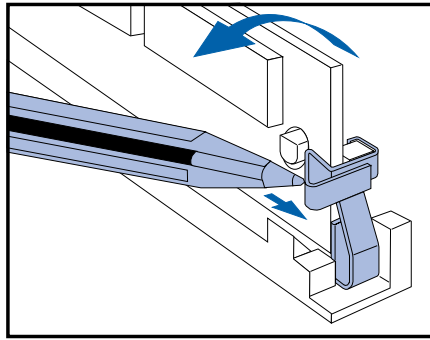
Release the retaining clip and
pull the module forward and out
of the socket

6   Install any other accessories before replacing the cover and power supply (see pages 25 and 27). Reconnect all cables and power cords.

Completing the Main Memory Installation Procedure:

1   Switch on the PC. When **Error 0250** appears (indicating that the Power-On-Self-Test has detected a change in your memory configuration), press F2 to run SETUP.

2   Check that SETUP has automatically detected and configured the Memory Size fields. Ensure the TOTAL memory is correct. If it is incorrect, check that you have correctly installed the memory modules.

3   Set the extended memory limit field to **Y** if you have application software designed for 286 and earlier processors that cannot work with more than 16 MB total memory.

4   Press F3 to save and exit SETUP.

Installing a Video Memory Module

Your PC is supplied with 1 MB of video memory. If you need to have more video memory to display more colors, higher resolutions, or for increased speed, you can install up to 2 MB inside your PC. The PC has one socket for a 1 MB video memory module (order D3404A). Some of the available video resolutions are listed below (refer to page 86 for more detailed information on video resolutions).

Resolution:	Video memory required for these colors:			
	16 colors	256 colors	64 K colors hi-color	16.7 M colors true-color
640 x 480	1 MB			1 MB
800 x 600	1 MB		1 MB	2 MB
1024 x 768	1 MB		2 MB	Not Available
1280 x 1024	1 MB	2 MB	Not Available	

To Install a Video Memory Module

1 Disconnect the power supply cord.

2 Remove the computer's cover and power supply (see pages 24 and 26).

3 Align the video memory module directly over the socket. Slide the memory module into the slot at 45°. *Firmly* press the memory module *completely* into the connector.
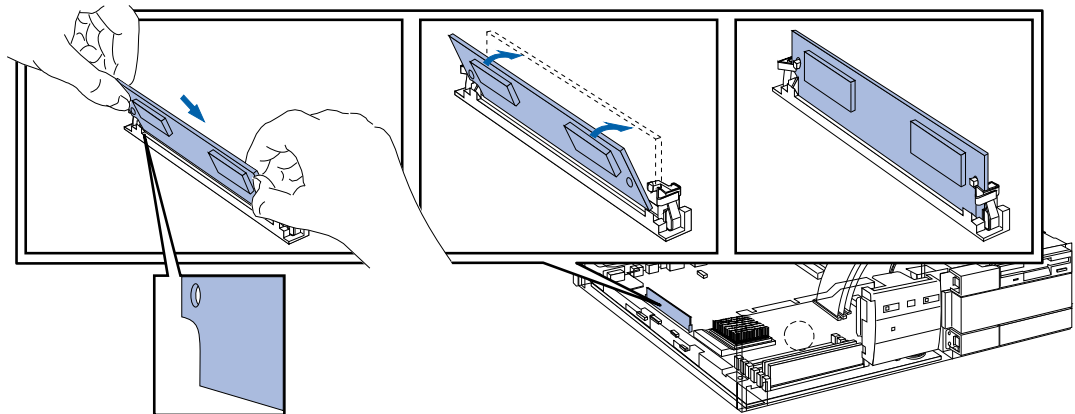
If you need to remove the video memory module:
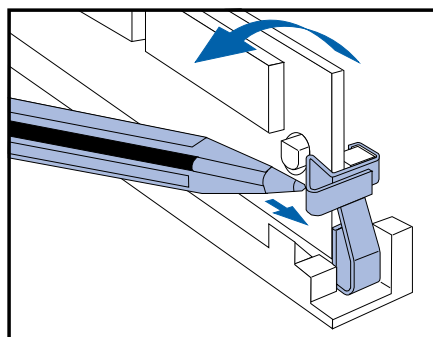
Release the retaining clip and
pull the module forward and out
of the socket

4   Install any other accessories before replacing the cover and power
supply (see pages 25 and 27). Reconnect all cables and power
cords.

Completing the Video Memory Installation Procedure

1   Switch on the PC.

2   Check that the Power-On-Self-Test has automatically detected and
configured the **Video RAM Size** field.

3   When Windows is loaded, click on the Hputils group icon to
display the Hewlett-Packard utilities.

4   Click on the HP User Tools icon to display the HP User Tools
utility.

5   Click on the Video Mode icon and follow the screen messages
to change the video resolution and the number of colors displayed.

NOTE   If you need to use a special video driver for your application, you may
be asked to insert a diskette containing the driver in drive A. In this case,
insert the video drivers diskette you created with the Master Disk
Creation utility. Alternatively, type **C:\MASTERS\VIDDRV\DISKWIN** (for
Windows applications) or type **C:\MASTERS\VIDDRV\DISKDOS** (for
DOS applications) and press ⏎ Enter .

Installing Accessory Boards

The PC has four accessory board slots:

- Slot 1 (the bottom slot) can be used for half-length 16-bit ISA boards
- Slot 2 can be used for full-length 16-bit ISA boards
- Slot 3 can be used for either a full-length 32-bit PCI or
  a full-length 16-bit ISA board
- Slot 4 (the top slot) can be used for a half-length 32-bit PCI board.

Configuring Accessory Boards with Plug and Play

Plug and Play is an industry standard for automatically configuring your PC's hardware resources and the accessory boards installed in it. Your PC has configurable support for Plug and Play in the BIOS.

When you start your PC, the Plug and Play BIOS automatically detects which hardware resources (IRQs, DMAs, memory ranges, and I/O addresses) are used by the system-based components.

Configuring Plug and Play with the SETUP program

You can use the SETUP program to select the level of support provided by the BIOS for Plug and Play-compatible accessory boards:

1 Turn on the PC and press F2 when **<Setup=F2>** appears.

2 Highlight the **Plug and Play Device Management** line and use F7 or F8 to select **None**, **Boot Only**, or **Full**.

- If **None** is selected, you must use the *ISA Configuration Utility* (ICU) to configure all accessory boards.
- If **Boot Only** is selected, Plug and Play accessory boards which have the ability to boot (start) your PC will be configured by the BIOS. You must use the ICU to configure all other accessory boards.
- If **Full** is selected, all Plug and Play accessories will be configured by the BIOS. However, if you install a non-Plug and Play accessory board, you must use the ICU to determine a conflict-free setting for the board.

3 Press F3 to save your selection and exit from the SETUP program.

Using the ISA Configuration Utility (ICU)

You can use the ICU to configure Plug and Play accessory boards if **Plug and Play Device Management** is set to **None** or **Boot Only** in the SETUP program.

The ICU can also determine the recommended settings for each ISA non-Plug and Play board you want to install. These settings may be different from those recommended by the accessory board's manufacturer. In this case, the board's jumper settings and driver options must be altered.

To run the ICU:

1   Double-click on the Plug and Play group icon ▦ in the Windows Program Manager.

2   Double-click on the ICU Notes icon 🗐 for up-to-date information about the Plug and Play support for your PC.

3   Double-click on the ICU User Guide icon ❓ for detailed information about using the ICU.

4   Double-click on the ICU icon 📇 to launch the ISA Configuration Utility and configure system resources for the accessory board.

The ICU is preloaded with configuration details for many non-Plug and Play accessory boards. If your accessory board is not listed by the ICU, you have two options:

a   Some non-Plug and Play accessory boards are supplied with a configuration file, which can be used by the ICU to determine which resources are required by the board. Insert the disk containing the configuration file when prompted by the ICU.

b   If you do not have a configuration file for your accessory board, you will need to enter the configuration details manually when prompted by the ICU. Refer to the documentation supplied with your accessory board for information on the resources required by the board.

NOTE   You do not need to run the ICU when you install a PCI accessory board. PCI accessory boards are automatically configured when installed in your PC.

Installing the Board

1 Before you install a non-Plug and Play accessory board, run the ISA Configuration Utility in the *Plug and Play* group in Windows. See page 33 for instructions.

NOTE   PCI boards are configured automatically when installed in the PC.

2 Disconnect the computer's power supply cord.

3 Remove the computer's cover and power supply (see pages 24 and 26).

4 Find a free slot. Some boards may have preferred locations and special installation instructions detailed in their manuals.

5 Unscrew and remove the slot cover. Store it in a safe place.
   If the slot cover is tight, loosen the screws on the adjacent slots.
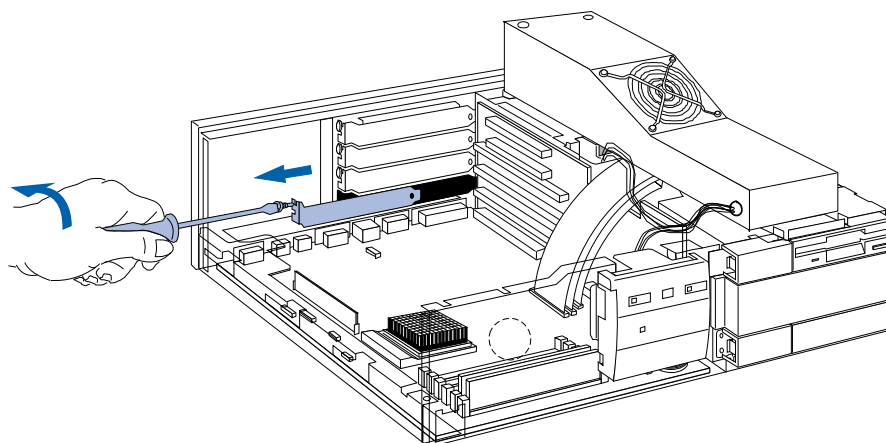
6   Hold the board horizontally by its "top" edge. Slide it into the board guide of the chosen slot. Do *not* bend the board.
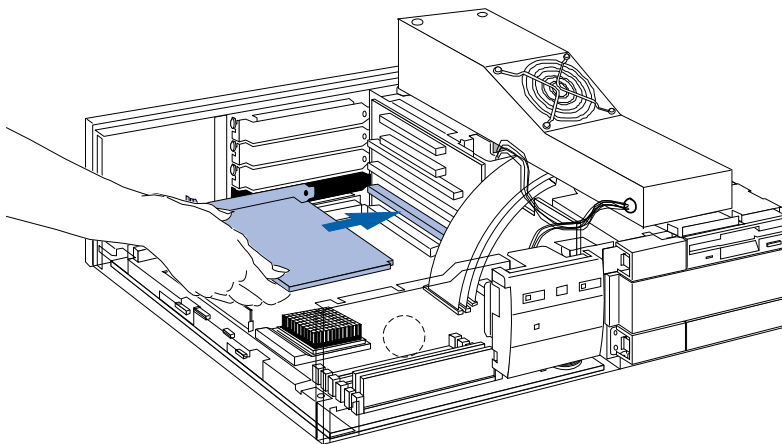
7   Align the board's connector with the slot's socket. Firmly press the board into the socket. Ensure the board's connector engages *completely* with the socket and does not touch components on other boards.

8   Secure the board by replacing the slot cover screw.
    If you loosened the screws on adjacent slots, tighten them.
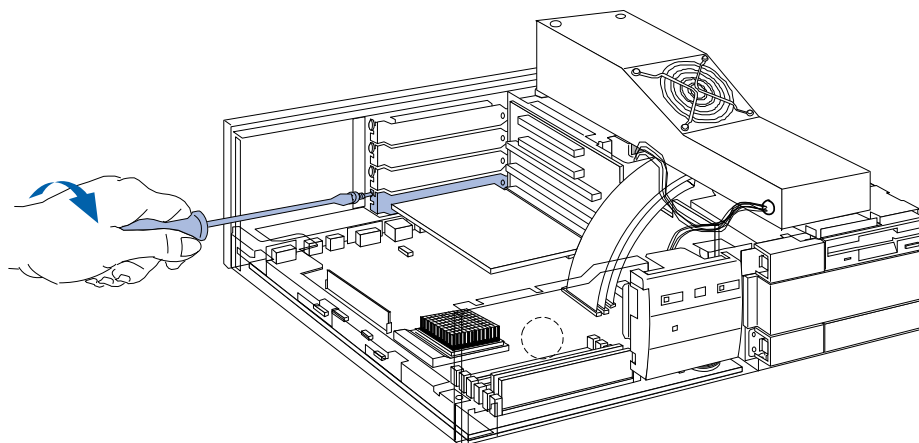
3 How to Install Accessories Inside Your PC
Installing Accessory Boards

9 If you install a BNC Coax adapter accessory board (D2746A), connect its cable to the AUI (Attachment Unit Interface) connector on the system board.

AUI connector for BNC Coax adapter
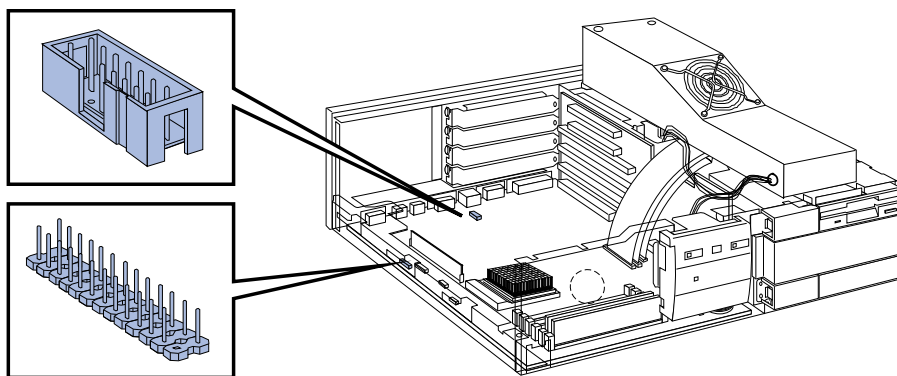
VESA pass-through connector for video boards

10 If you install a VESA-standard video adapter board that uses the integrated video graphics controller, connect the accessory board's cable to the VESA pass-through connector on the system board.

11 Install any other accessories before replacing the power supply and the cover (see pages 25 and 27). Reconnect all cables and power cords.

Completing the Installation of an ISA Accessory Board

If you have installed an ISA accessory board that uses IRQ 9, 10, 11, or 15, you must run the SETUP program and reserve the IRQ for the accessory board. This allows PCI devices to be automatically configured. You should always leave at least one IRQ available for use by the integrated PCI devices.

1 Turn on the PC and press `F2` when **<Setup=F2>** appears.

2 Highlight the **IRQ** field you want to change, for example **IRQ 11**.

3 Press `F7` or `F8` to make the IRQ available for PCI (**Available for PCI**) or make it unavailable for PCI (**Used by an ISA Board**).

4 Press `F3` to save any changes you made and exit the SETUP program.

Installing Mass Storage Devices

If you need to have extra mass storage space for your application software, you can install additional mass storage devices.

The PC has one internal drive shelf for a hard disk drive. If your PC already has a hard disk drive, this shelf will be occupied.

There are three front access drive shelves. The top shelf is occupied by a 3.5-inch flexible disk drive. The middle shelf may be used to install a flexible disk drive or a CD-ROM drive. The bottom shelf may be used to install a second hard disk drive or a 1-inch high, 5.25-inch or 3.5-inch, front access device.

Your PC has the following connectors on the system board which may be used by mass storage devices:

- a flexible disk drive connector
  (supporting up to two flexible disk drives)

- an IDE CD-ROM drive connector
  (this connector - colored red - cannot be used for IDE hard disk drives)

- an Enhanced IDE hard disk drive connector
  (supporting up to two IDE hard disk drives).

Before Installing an Additional IDE Drive

Create a bootable diskette *before* installing an additional IDE drive.

Use the *Master Diskette Creation* utility 📑 to create a bootable master copy of the operating system. This utility is located in the HPutils group.

For non-DOS/Windows operating systems, refer to the operating system documentation for information on how to create a bootable diskette, format a drive, and install the operating system.

NOTE

You may install a non-IDE mass storage device, but it will need an accessory board and driver software (usually supplied with the device). Contact the product vendor for more information.

Installing a Flexible Disk Drive or a CD-ROM Drive in the Middle Shelf

1 Disconnect the computer's power supply cord.

2 Remove the computer's cover (see page 24).

3 Remove the RFI bezel from the middle shelf and put it in a safe place.

RFI bezel
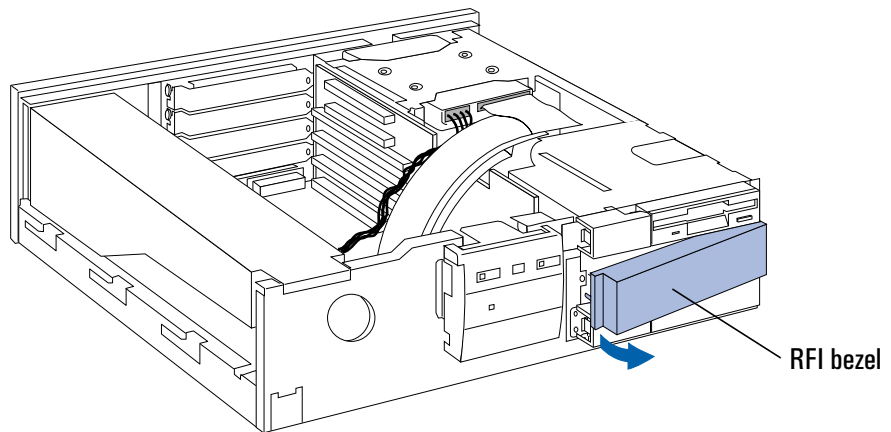
4 Slide the device into the middle shelf and secure the device in position using the screws provided with the device.
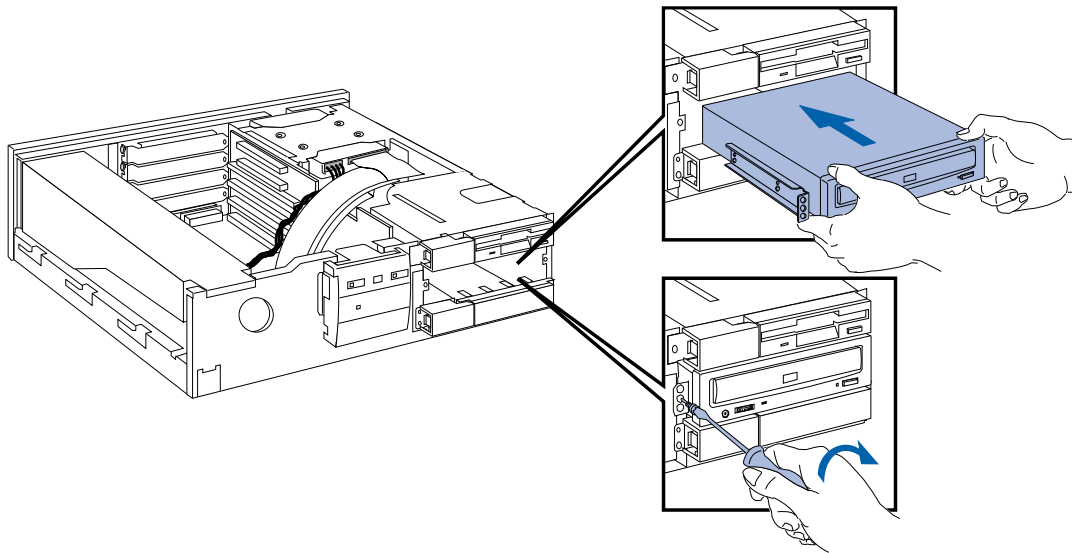
5   Connect the data and power cables to the rear of the device installed in the middle shelf. If you are installing an IDE CD-ROM drive, connect the drive to the data cable with the **red** connector on the system board. The connectors are shaped to go in one way only.
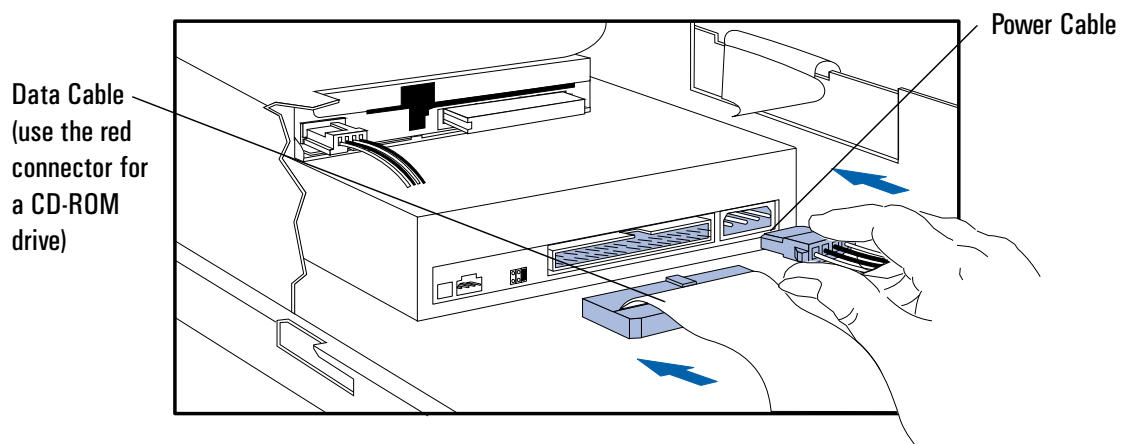
Power Cable

Data Cable
(use the red
connector for
a CD-ROM
drive)

6   Install any other accessories before replacing the cover (see page 25). Reconnect all cables and power cords.

Completing the
Installation

7   Switch on the PC and press ⌷F2⌷ when **<Setup=F2>** appears.

8   If you installed a flexible drive, check that SETUP has detected it.

9   If you installed a CD-ROM drive, highlight the **IRQ 15** line and use ⌷F7⌷ or ⌷F8⌷ to select **Used by an ISA Board**.

10 Press ⌷F3⌷ to save and exit SETUP.

blckfoot.bk : chapter3.fb4 Page 40 Monday, July 21, 1997 3:38 PM

3   How to Install Accessories Inside Your PC
Installing Mass Storage Devices

Installing an IDE Hard Disk Drive in the Rear Shelf

The PC has an integrated Enhanced IDE controller which supports two Fast IDE hard disk drives.

Refer to the drive's manuals to see if you must set jumpers or if there is a special installation procedure to follow.

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover (see page 24).

3   Slide the drive into the rear drive shelf, supporting the drive with your hand.
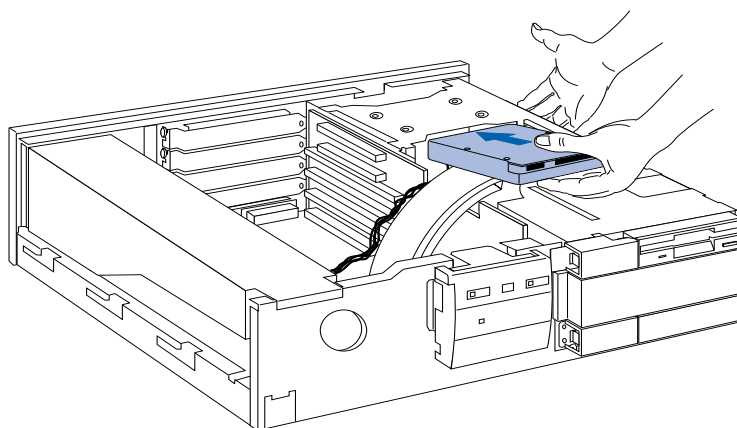
4   Align the drive with the holes in the rear drive shelf. Then secure the drive with the screws provided with it.
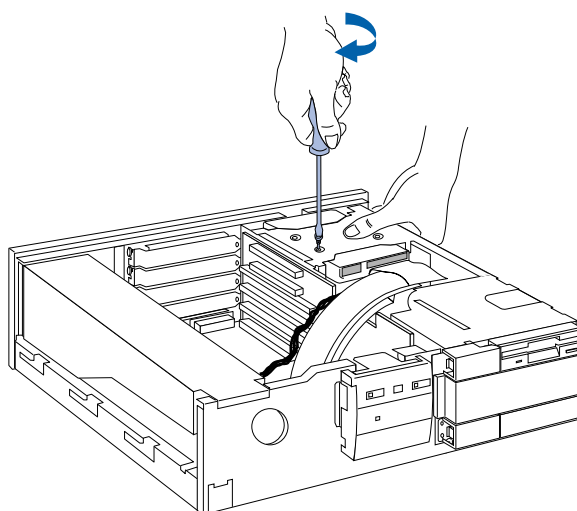
40

5   Connect the power cable and the data cable to the rear of the drive. (The connectors are shaped to go in one way only.)
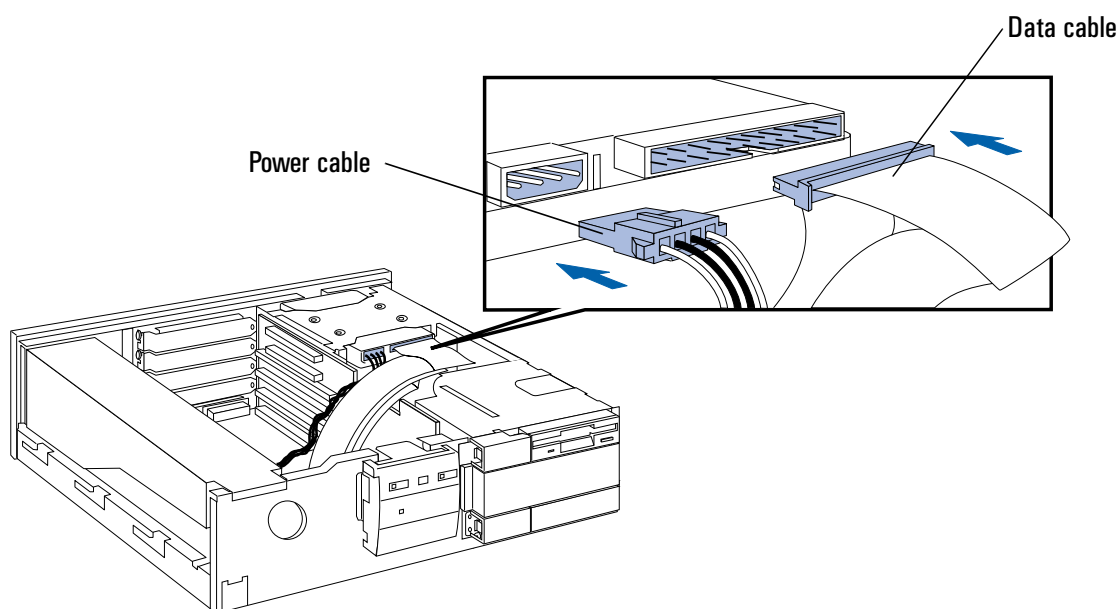
Data cable

Power cable

6   Install any other accessories before replacing the cover (see page 25). Reconnect all cables and power cords.

7   Refer to page 52 to complete the installation.

Installing an IDE Hard Disk Drive in the Bottom Shelf

The PC has an integrated Enhanced IDE controller which supports two Fast IDE hard disk drives.

Refer to the drive's manuals to see if you must set jumpers or if there is a special installation procedure to follow.

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover (see page 24).

3   If there is a device in the middle shelf, remove it.

4   If there is no device in the middle shelf, remove the RFI bezel.

5   Remove the two RFI bezels from the bottom shelf.

6   Support the power supply with your hand (to prevent it falling out) and carefully turn the PC onto it's side.
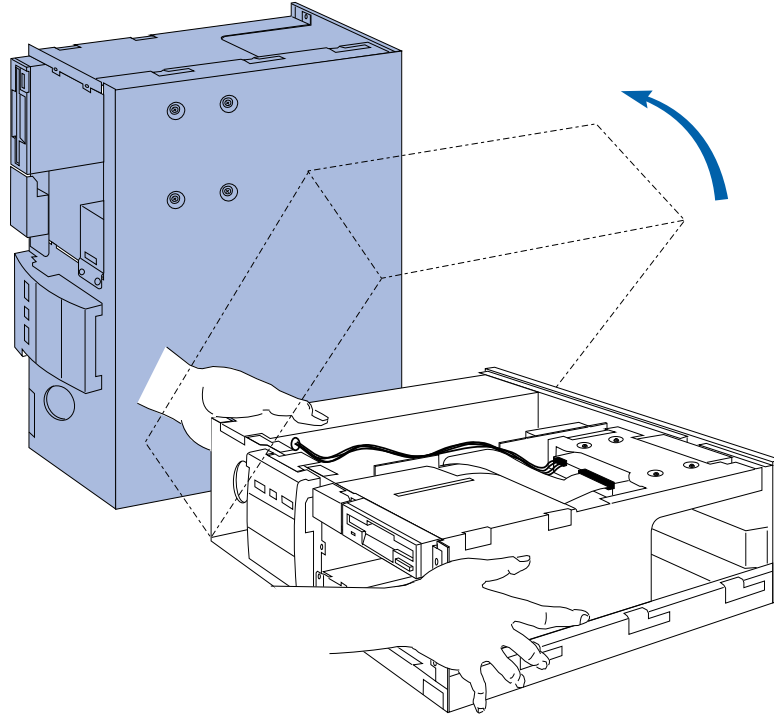
7   Slide the hard disk into the bottom shelf, supporting the disk with your hand.
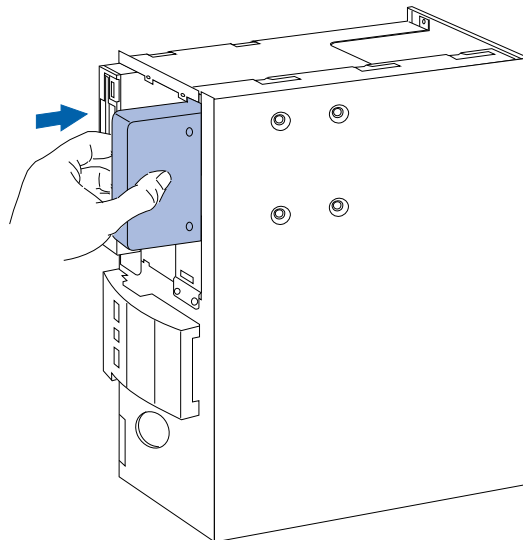
3   How to Install Accessories Inside Your PC

Installing Mass Storage Devices

8   Align the drive with the holes in the bottom of the PC. Support the drive with your hand while securing the drive with the four screws provided.
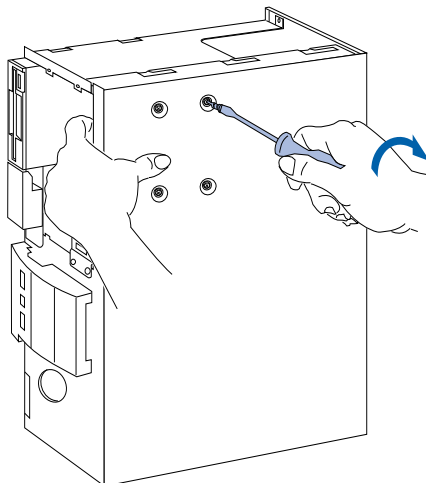
9   Support the power supply with your hand and very carefully return the PC to the upright position.

10 Connect the data and power cables to the rear of the drive.
    The connectors are shaped to fit one way only.

Data cable
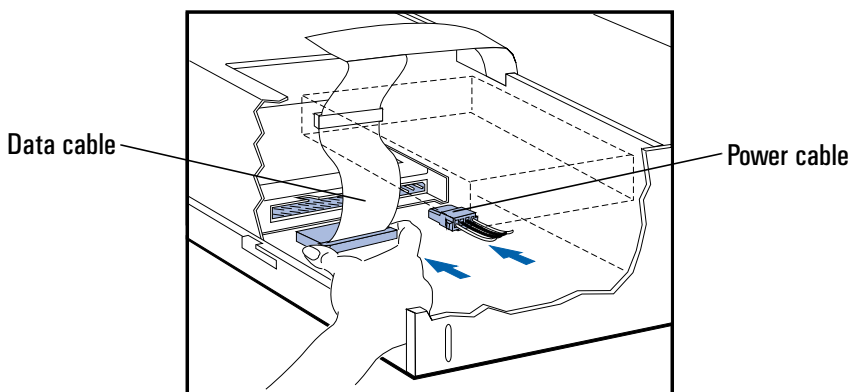
Power cable

11 If a device was removed from the middle shelf, replace it.

12 If no device was removed from the middle shelf, replace the RFI bezel.

13 Install any other accessories before replacing the cover (see page 25). Reconnect all cables and power cords.

14 Refer to page 52 to complete the installation.

Installing a 5.25-inch Drive in the Bottom Shelf

A slim (1-inch high) 5.25-inch front access drive can be installed in the bottom shelf.

NOTE   Disk drives ordered from HP are supplied with mounting rails. If you order your drive from another supplier, you will need to order drive mounting rails from HP.
You should order product number D2880A (5.25-inch disk drive rails).

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover (see page 24).

3   If there is a device in the middle shelf, remove it.

4   If there is no device in the middle shelf, remove the RFI bezel.
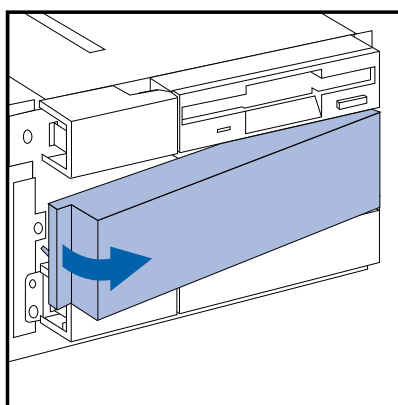
5   Remove the two RFI bezels from the bottom shelf.
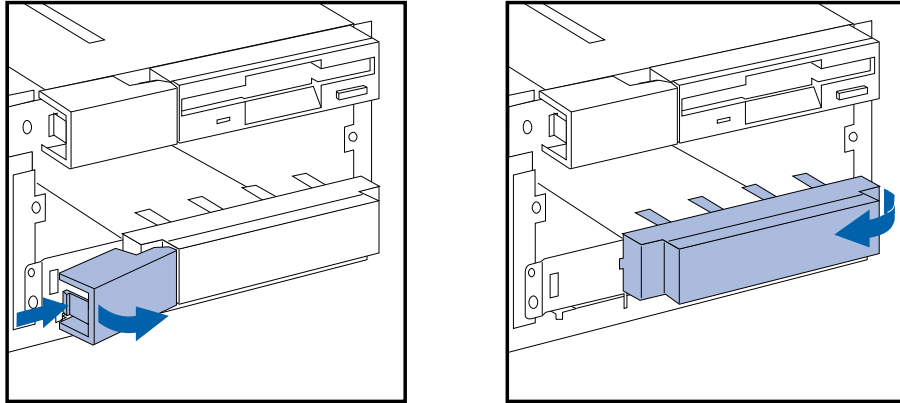
6   Remove the side bracket from the bottom shelf and store it in a safe place.
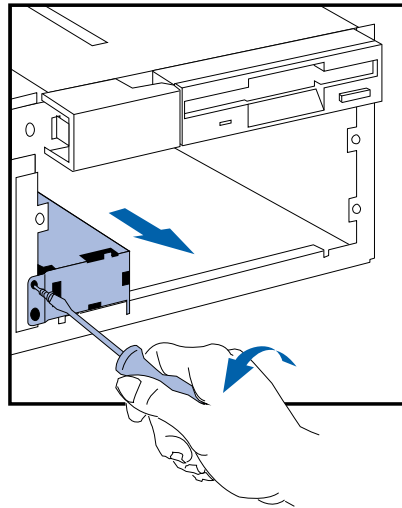
7   Slide the drive mid-way into the bottom shelf.
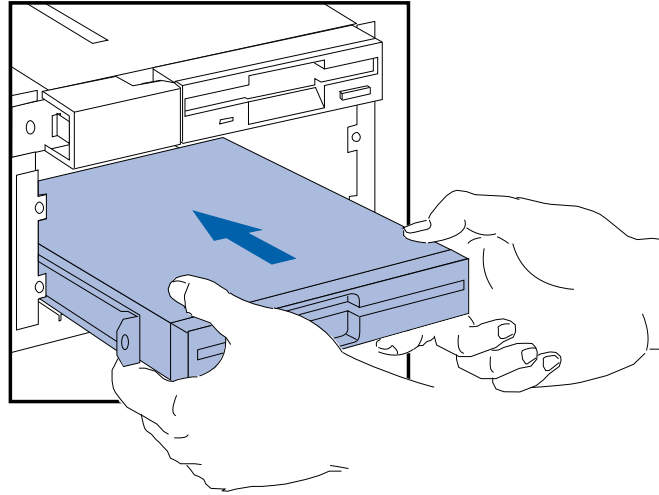
8   Connect the data and power cables to the rear of the drive.
The connectors are shaped to fit one way only.

Data cable

Power cable

9   Slide the drive completely into the bottom shelf and secure it with
    the screws provided with the device.
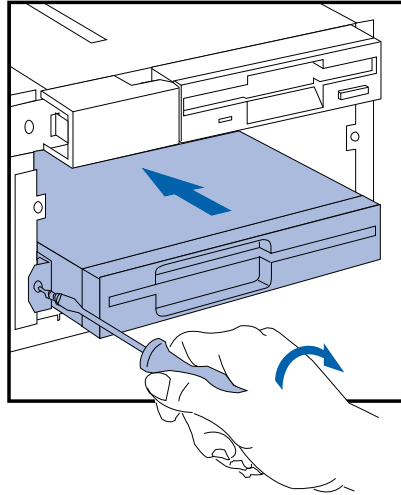
10 If a device was removed from the middle shelf, replace it.

11 If no device was removed from the middle shelf, replace the RFI
    bezel.

12 Install any other accessories before replacing the cover (see page
    25). Reconnect all cables and power cords.

Installing a 3.5-inch Device in the Bottom Shelf

A slim (1-inch high) 3.5-inch front access drive can be installed in the bottom shelf.

NOTE   Disk drives ordered from HP are supplied with mounting rails. If you order your drive from another supplier, you will need to order drive mounting rails from HP.
You should order product number D3566A (3.5-inch disk drive rails).

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover (see page 24).

3   If there is a device in the middle shelf, remove it.

4   If there is no device in the middle shelf, remove the RFI bezel.
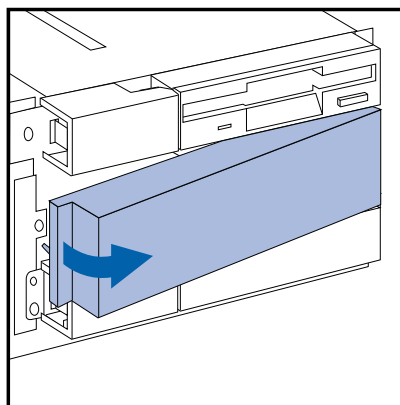
5   Remove the two RFI bezels from the bottom shelf.
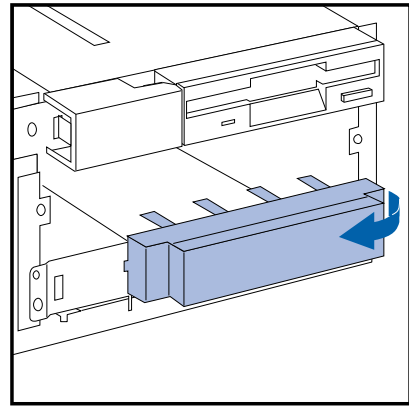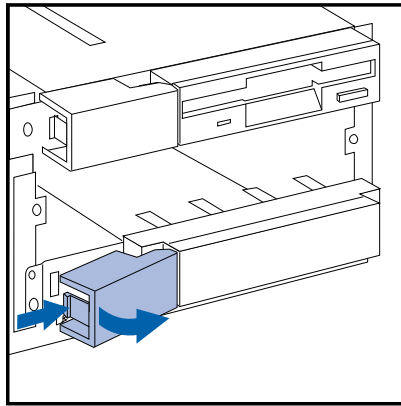
6   Slide the drive completely into the bottom shelf and secure it with the screws provided with the device.
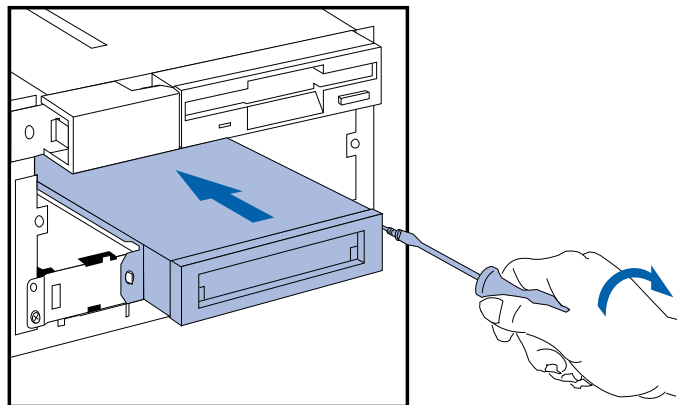
7   Replace the side bezel.
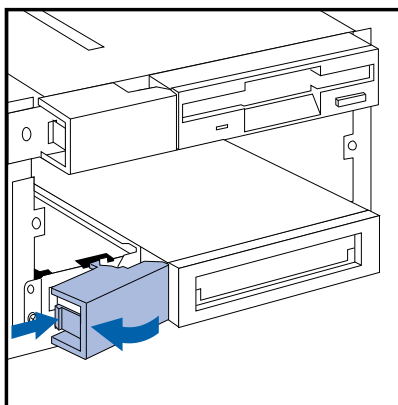
8   Connect the data and power cables to the rear of the drive.
    The connectors are shaped to fit one way only.

Data cable

Power cable

9   Slide the drive completely into the bottom shelf and secure it with
    the screws provided with the device.

10 If a device was removed from the middle shelf, replace it.

11 If no device was removed from the middle shelf, replace the RFI
    bezel.

12 Install any other accessories before replacing the cover (see page
    25). Reconnect all cables and power cords.

Completing the Installation of an IDE Drive

After installing an IDE drive you will need to run the SETUP program to confirm that the drive has been detected by the PC.

When an Additional IDE Drive is Installed

1 Switch on the PC.

2 When **<Setup=F2>** appears, press `F2` to run the SETUP program.

3 In the **Hard Disk Drives** section, check that the details for **Drive 2** have been correctly detected by the SETUP program.

4 Press `F3` to save and exit SETUP.

Refer to the operating system documentation for information on formatting a drive and installing the operating system.

When the Bootable IDE Drive is Replaced

1 Switch on the PC.

2 An error message will appear during the Power-On-Self-Test. When prompted, press `F2` to run the SETUP program.

3 In the **Hard Disk Drives** section, check that the details for **Drive 1** have been correctly detected by the SETUP program.

4 Press `F3` to save and exit SETUP.

Refer to the operating system documentation for information on formatting a drive and installing the operating system.

NOTE

If an IDE drive is removed, an error message will appear during the Power-On-Self-Test. You must run the SETUP program and select **None or SCSI** for the missing drive to correct the error.

When an IDE Drive is Not Detected by the SETUP Program

If you have installed an IDE hard disk drive and SETUP has not detected it, you must enter the details in the SETUP program manually. This information is supplied by the manufacturer of the hard disk.

1   Switch on the PC.

2   When **<Setup=F2>** appears, press [F2] to run the SETUP program.

3   In the **Hard Disk Drives** section, highlight the **Drive 1**—primary (rear drive)—or **Drive 2**—secondary (front drive)—field, and change it to **Custom**.

4   Highlight each drive parameter field you want to change.

   Press [F7] or [F8] to change the value, or type in the new value supplied with the drive. To enter the value -1, type **0** and press [F7].

5   Press [F3] to save and exit SETUP.

   Refer to the operating system documentation for information on formatting a drive and installing the operating system.

Installing an Upgrade Processor

When future upgrade processors become available, you can replace
your main processor with a more powerful processor.

1   Disconnect the computer's power supply cord.

2   Remove the computer's cover and power supply (see pages 24 and
    26).

3   If the processor heatsink is attached to the socket, unclip the
    heatsink from the socket and remove the heatsink.

4   Unlock the socket and lift out the old processor.

5   To install the new processor:

    a   Locate the corner markers:
- on the processor—a dot or notch ("broken" corner)
- on the processor socket—a dot.

    b   Position the processor over the socket, with the processor's
corner marker facing the socket's corner marker.

    c   Place the processor into the socket.

    d   Lower the socket's lever to lock the processor into place.
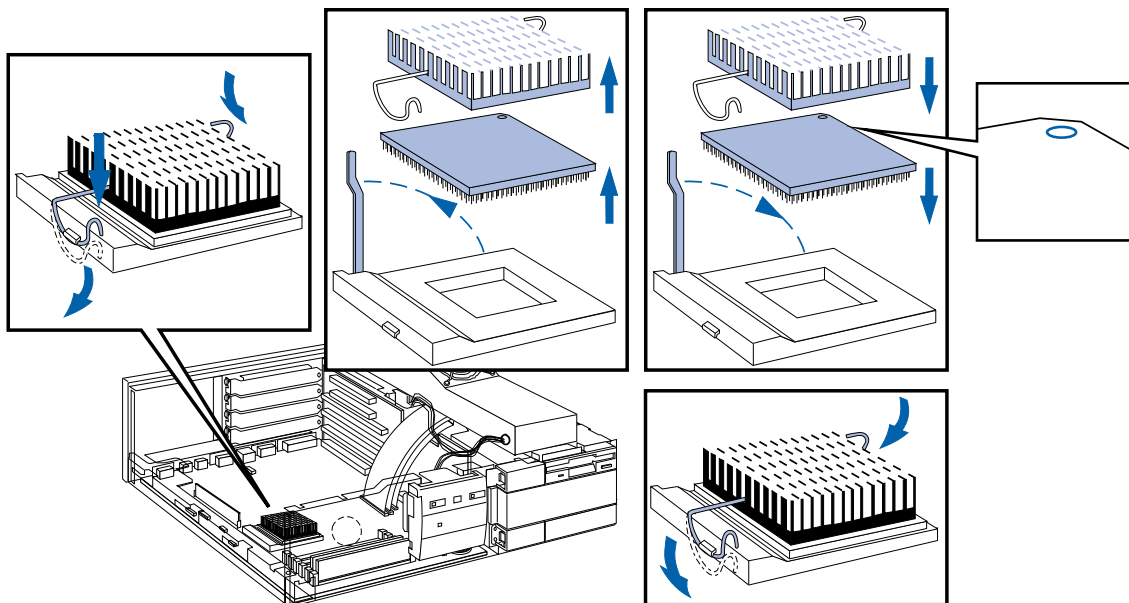
    e   Replace the heatsink, if it is attached to the socket.

6   Change the processor voltage selection jumper (J27) to correspond with the new processor, as shown in the figure below. Refer to the documentation supplied with the upgrade processor for more details about the processor voltage requirement.
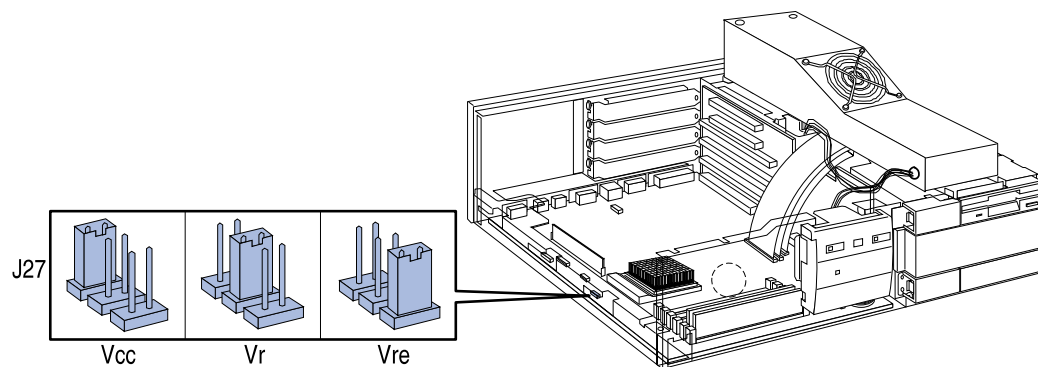
7   Replace the computer's cover and power supply (see pages 25 and 27). Reconnect all cables and power cords.

Completing the Installation of an Upgrade Processor

8   Switch on the PC and verify that the new processor is recognized by the Power-On-Self-Test.

Installing the Security Bracket

The security bracket supplied with the computer can be used to fasten the computer to your desk.

1 Remove the computer's cover (see page 24).

2 Remove the security bracket from the storage position.

Remove the bracket from the storage position

Insert the bracket in the computer
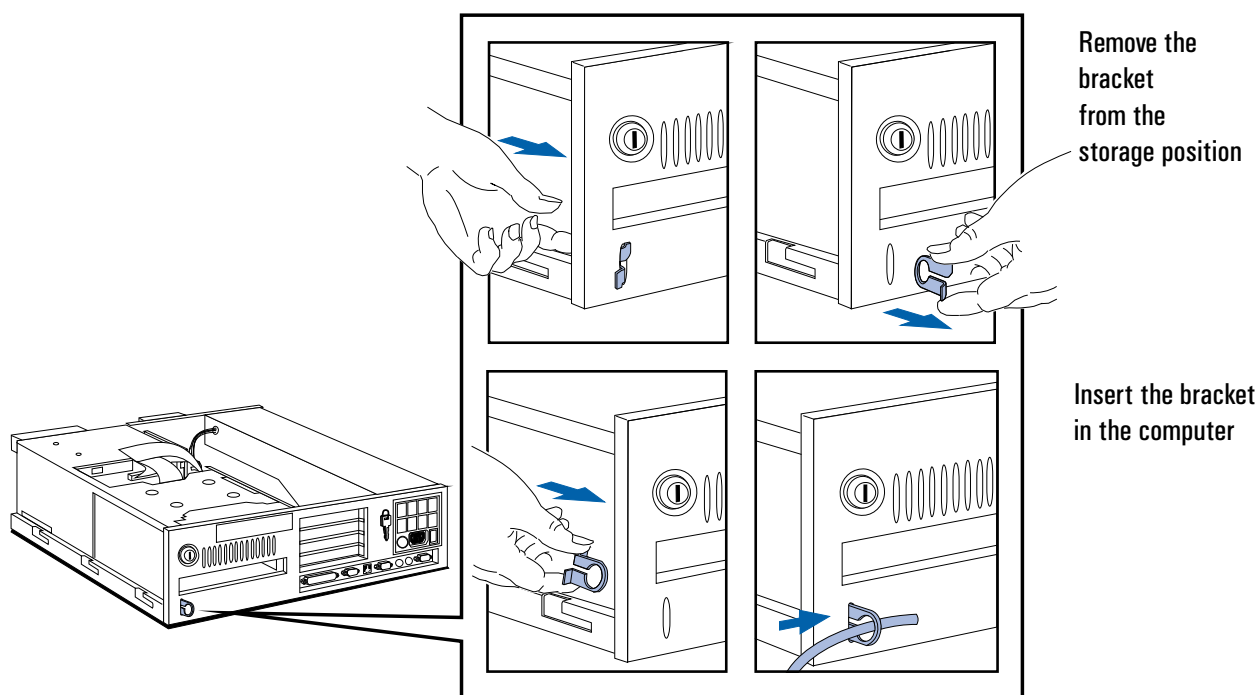
3 Insert the security bracket, from inside the computer, into the slot shown in the diagram above.

4 Press it firmly until it snaps into place.

5 Install any other accessories before replacing the cover (see page 25).

4

Troubleshooting Your PC and
Using the SETUP Program

This chapter can help you solve problems that you may encounter
when using your PC and describes how to use the HP SETUP program.

Solving Problems

If you have a problem with your PC, search the list below for the problem description which most closely matches it. Then turn to the page indicated for guidance.

If Your PC Does Not Start

❏ If nothing appears on your display, turn to page 61.

❏ If an error message appears:

- If a System ROM message appears, turn to page 62.
- If a Power-On-Self-Test error appears, turn to page 63.
- If a Power-On-Self-Test error prevents your PC from starting, turn to page 64.
- If a BIOS message prevents your PC from starting, turn to page 65.
- If an Operating System message prevents your PC from starting, turn to page 66.

If Your PC Has a Hardware Problem

❏ If your display does not work, turn to page 67.

- If your display is blurred or unreadable, turn to page 68.
- If you cannot set any video resolution higher than 640 ✕ 480, turn to page 69.

❏ If your keyboard or mouse does not work, turn to page 70.

❏ If your printer does not work, turn to page 71.

❏ If the flexible disk drive does not work, turn to page 72.

❏ If the hard disk does not work, turn to page 72.

- If the hard disk activity light does not work, turn to page 73.

❏ If an accessory board does not work, turn to page 73.

If Your PC Has a
Software Problem

❒ If you have forgotten your passwords, turn to page 74.

❒ If you can't start the SETUP program, turn to page 75.

❒ If your application software does not work, turn to page 75.

❒ If power management does not work, turn to page 76.

❒ If the date and time are incorrect, turn to page 76.

If You Cannot Solve the Problem

If you are unable to solve your problem after following the
troubleshooting advice in this chapter, refer to chapter 6 *Getting
Support* for information on getting help from your HP Reseller or from
your nearest HP Customer Support Center.

WARNING

There is a danger of explosion if the battery is incorrectly
installed. HP recommends that the battery is installed by
trained service personnel.
For your safety, never attempt to recharge, disassemble, or
burn the old battery.
In order to protect the environment, do not dispose of
batteries in the household waste. Please return used batteries
to the shop from which you bought them, or to the dealer from
whom you purchased your PC, or to HP so they can either be
recycled or disposed of in an environmentally sound way.
After removing the old battery, install either a replacement
battery (order 1420-0312) or an external battery (order 1420-
0513).

If Your PC Does Not Start

If Your Display is Blank and There Are No Error Messages

1   Make sure that all cables and power cords are firmly plugged in.

2   Make sure the power outlet is working.

3   Check that the computer and display are turned on. (The power light should be illuminated.)

4   Check the display's contrast and brightness settings.

5   If the PC still does not work:

    a   Turn off the display, the computer, and all external devices.
    b   Unplug all power cords and cables, noting their positions.
    c   Remove the cover (refer to page 25).
    d   Check that the processor is correctly installed (refer to page 54).
    e   Check that the memory modules are correctly installed (refer to page 28).
    f   Check that accessory boards are firmly seated in their slots (refer to page 32).
    g   Verify that any switches and jumpers on the accessory boards are properly set (refer to the manuals that came with each board).
    h   Check that the jumpers and switches on the system board are properly set (refer to page 90).
    i   Replace the cover (refer to page 25).
    j   Connect all cables and power cords (refer to pages 4 and 7).
    k   Turn on the display and computer.

If your PC still does not start, remove all boards and accessories, except the hard disk drive. Start the PC. If the PC now works, add the boards and accessories one at a time to determine which one is causing the problem.

If an Error Message Appears

If a System ROM Message Appears

If the following system ROM error message appears:

```
Cannot display error messages
Flash ROM may be defective
```

the contents of the system ROM are corrupted or incomplete, and you will need to update the system BIOS using the HPInit utility.

Contact your HP reseller (or your HP sales office) to get an HPInit utility diskette and the latest system BIOS for your PC by mail.

NOTE

Please specify the model number of your HP Vectra PC when ordering the HPInit utility and the latest system BIOS.
If you have access to a PC with a modem or network connection, which functions correctly, you can retrieve the latest system BIOS from one of the HP Information Services described in chapter 6 *Getting Support*.

To update the system BIOS:

1   Insert the HPInit utility diskette in drive A.

2   Switch the computer OFF and then ON, and follow the instructions until the procedure finishes. Do NOT switch off the computer until the system BIOS update procedure has completed (successfully or not) since irrecoverable damage to the ROM may occur.

3   Remove the HPInit utility diskette.

4   Switch the computer OFF and then ON to initialize the system ROM.

If a Power-On-Self-Test Error Appears

```
              Hewlett-Packard System Hardware
                     HP VECTRA PC

System BIOS (Version xx.xx.xx)                    PASSED
Video (Integrated VGA, Memory Size: 1 MB)         PASSED
System Board (Pentium(TM) xxMHz)                  PASSED
Cache Memory                                      PASSED
Keyboard/Mouse                                    ERROR
Flexible Disk Drives (A: 1.44 MB)                 PASSED
Parallel Port (378h)                              PASSED
Serial Ports (3F8h)                               PASSED
Hard Disk Drives (C: xxx MB)                      PASSED
Ethernet (Integrated)                             PASSED
System Configuration                              PASSED


Error code(s): 0632
Keyboard Error

-----------------------------------------------------------------
<View System Errors=ENTER> <Continue=F1> <Setup=F2> <Print=F7>
```

NOTE

You can stop the memory test and jump to the next test by pressing `Esc`.

If an error is detected when the PC starts, a Power-On-Self-Test error appears.

If the PC fails part of its Power-On Self-Test (POST) you should take one of the following actions:

- Press `⏎ Enter` to display further information and corrective actions (where applicable) for system errors.

- Press `F2` to run SETUP and correct the System Configuration error (refer to page 77 for information on using SETUP).

- Press `F1` to continue and ignore the error. (It is recommended that you fix the error before proceeding, even if the PC appears to start successfully.)

Corrective actions for errors that may prevent your PC from starting are described in the following table.

Power-On-Self-Test Errors that May Prevent Your PC From Starting:

`0130, 0241`
`0280`

What you should do:

1   Ensure the configuration stored in CMOS has not been cleared by the
    system board jumper (refer to chapter 5).
2   Run SETUP to correct the configuration information.
3   Replace the battery if the configuration is repeatedly lost.
4   If all the above fail to correct the problem, the system board may need
    to be replaced. Contact your service representative.

`0250`

What you should do:

1   Run SETUP and correct the errors highlighted by the SETUP program.
2   Ensure the configuration stored in CMOS has not been cleared by the
    system board jumper. Make a written note of the configuration.
3   If the hardware was changed, run SETUP to update the configuration
    information.

`06xx`

What you should do:

1   Ensure that nothing is pushing down on the keyboard, and that no key is
    stuck down.
2   If the problem persists, contact your service representative.

`61xx, 6500,`
`6510, 6520`
`8x06`

What you should do:

1   Ensure the memory modules are installed correctly (refer to chapter 3).
2   If this does not fix the problem, initialize the system ROM (refer to "If You
    Can't Start the SETUP Program" in this chapter on page 75).
3   If the problem persists, the system board may need to be replaced.
    Contact your service representative.

`65xx, 66xx`

What you should do:

1   Disable all shadowing in SETUP.
2   If this fails to correct the problem, the system board may need to be
    replaced. Contact your service representative.

`8xxx`

What you should do:

1   Check that the hard disk drive has not been disabled in SETUP.
2   Check that the disk power and data cables are correctly connected (refer
    to chapter 3).
3   If the hard disk has not been detected, use the Custom parameters in
    SETUP.

910B   **Explanation:**

        1   You connected the flexible disk drive connector B to the disk drive, and there is no connection to a drive A.

        2   Change the flexible disk drive connector to A (refer to chapter 3).

BIOS Error Messages that May Prevent Your PC From Starting:

```
Boot program in
first sector of
diskette is invalid,
cannot start from
this diskette.
Cannot start from
hard disk.
```

Explanation:
There is a problem with the disk drive, or the disk drive is not properly formatted.

What you should do:
Insert a diskette with the proper operating system, and press any alphanumeric key to continue.

```
Insert system
diskette in drive.
Press any key to
continue.
```

Explanation:

- there is no diskette containing the operating system in drive A, or
- the hard disk drive is disabled, or not present.

What you should do:
Insert a diskette with the proper operating system, and press any alphanumeric key to continue.

```
Missing operating
system
```

Explanation:
You tried to start the PC but the PC could not find the operating system.

What you should do:
Run SETUP and make sure the hard disk has been correctly configured.

```
System boot process
failed. Press any
key to try again.
```

Explanation:
You tried to start the PC but the PC could not find the operating system.

What you should do:

- check the diskette contains the operating system
- check the hard disk contains the operating system
- ensure "start from the flexible disk" or "start from the hard disk" is enabled in SETUP
- for a network, ensure "remote start" is enabled in SETUP.

Operating System Messages that May Prevent Your PC From Starting:

```
Non-system disk
or disk error
```

What you should do:
Remove the diskette, or replace it with the proper operating system diskette, and press any alphanumeric key to continue.

```
Not ready error
reading (or
writing) drive x
```

Explanation:
The device specified in the error message is not ready to accept or transmit data. This could occur if:

- The diskette has not been inserted correctly. If this is the problem, reinsert the diskette and type "R" (for Retry).
- The printer is not working—ensure it is on and ready to print.
- The device has been disabled using SETUP.

If Your PC Has a Hardware Problem

This section describes what to do if you have problems with your display, disk drives, printer, accessory board, keyboard, or mouse.

If Your Display Does Not Work

If nothing is displayed on the screen, but the PC starts and the keyboard, disk drives, and other peripheral devices seem to operate properly:

1   Check that the brightness and contrast controls are properly set.

2   Make sure that the display is plugged in and switched ON.

3   Ensure that the display video cable is correctly connected.

4   Switch off the display, and unplug it from the power outlet. Examine the video cable pins to see if they are bent. If they are, carefully straighten them.

5   Make sure that an accessory board does not use the same I/O address as the integrated video interface (03B0h to 03DFh). Refer to the documentation supplied with the accessory for more information about the I/O addresses used by it.

If the display image is not aligned with the screen (usually when you change resolutions), use the display's controls to center the image. Refer to the display manual for instructions.

If the screens generated by the applications do not appear correct, check the application's manual to find out which video standard is required. Also check your display manual to find out which refresh rate is required. Use SETUP or the HP User Tools to select the correct refresh rate.

If the display works correctly during the Power-On-Self-Test (POST), but goes blank when Windows starts:

- Restart the PC and check that the amount of video memory detected by the POST is correct. If you have installed extra video memory and only 1 MB is detected, check that the video memory modules are installed correctly (see page 30).
- If the video memory is correctly detected by the POST, follow the instructions below to correct the problem.

If Your Display is Blurred or Unreadable

If you select the wrong display in the HP User Tools menu, the display screen may become blurred or unreadable. To correct this problem:

1 Restart the PC — either switch the PC off then on, or press `Ctrl` `Alt` and `Delete`. The PC will perform its Power-On-Self-Test (POST).

2 When the POST is finished, press `F5` to bypass the startup files and display the MS-DOS prompt (`C:\`).

3 Type **CD C:\WINDOWS** `⏎ Enter`.

4 Type **SETUP** `⏎ Enter`.

5 Press the up-arrow key to select the **Display** line, and press `⏎ Enter`.

6 Select the **VGA** line, and press `⏎ Enter`.

7 Press `⏎ Enter` again to accept the configuration.

8 Press `Ctrl` `Alt` and `Delete` to restart the PC.

9 If necessary, type **WIN** `⏎ Enter` to restart Windows.

10 When Windows starts, select the correct display with the HP User Tools. Refer to chapter 2 for more information about the HP User Tools.

If You Cannot Use Any Video Resolution Higher Than 640 ✕ 480

If you cannot select a video resolution higher than 640 ✕ 480, you should clear the contents of the CMOS RAM.

To clear the configuration:

1   Switch off the PC and remove the cover (refer to chapter 3).

2   Set the system board switch 3 (CONFG) on the switch block to ON to clear the configuration (refer to page 91 for the switch location).

3   Switch on the PC to erase the memory.

4   Check that error codes **0240** and **0130** are displayed, and wait until the PC has started.

5   Switch off the PC.

6   Set the system board switch 3 (CONFG) on the switch block to OFF to re-enable the configuration.

7   Replace the cover (refer to chapter 3).

8   Switch on the PC and run SETUP by pressing ⌊F2⌉ when **<Setup=F2>** appears. (Error code **0130** will appear when the PC starts.)

9   Press ⌊F3⌉ to save the configuration and exit from SETUP.

If Your Keyboard or Mouse Does Not Work

1   Ensure that the keyboard or mouse is correctly connected.

2   Ensure that the mouse driver supplied with the preloaded software is installed correctly. (Choose a Logitech ® mouse driver in Windows Setup.)

3   Clean the mouse ball and rollers as shown in the figure below (use a non-residual contact cleaner).
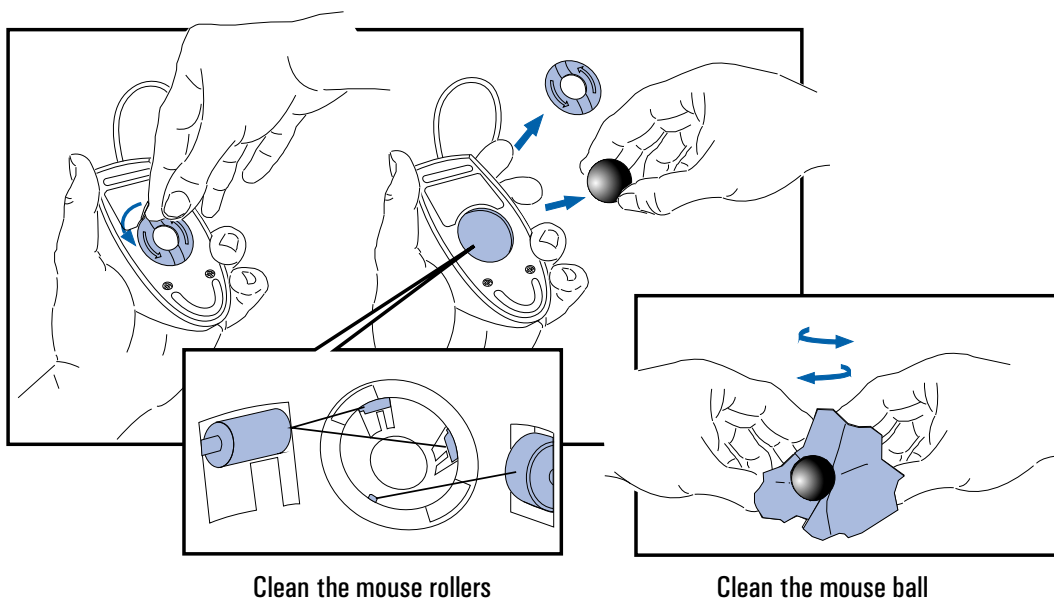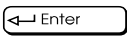
Clean the mouse rollers   Clean the mouse ball

If Your Printer Does Not Work

1   Verify that the power cord is plugged into the power outlet and the printer.

2   Make sure the printer's power switch is ON.

3   Check that the printer is on-line.

4   Examine the paper feed mechanism for a paper jam.

5   Verify that you have the correct cable for the printer. Make sure that it is securely connected to the correct connector (port) on the PC and printer.

6   Make sure that the printer is configured correctly for the PC and for the application.

   a   Ensure that the PC's port has been correctly configured using SETUP.

   b   Make sure the printer is correctly set up in Windows.

NOTE   If you are asked to insert a diskette when installing a printer, type **C:\WINDOWS\OPTIONS** and press [↵ Enter]. All of the Windows printer drivers are located in this subdirectory.

   c   Ensure the application program's "print" menu has been correctly set up. (Refer to the manual supplied with the application software.)

7   Check that the PC's port is working properly by running another peripheral connected to the port.

8   If you receive an error message, refer to the printer's manual for help.

If the Flexible Disk Drive Does Not Work

1   Ensure you are using a formatted diskette and it is inserted correctly.

2   Check you are using a diskette that is the right density.

3   Check that the flexible disk drive has not been disabled in SETUP (refer to page 77). There are three options in the **Security Features** section of SETUP which may be used to disable or enable:

- the flexible disk drives
- start from flexible disk
- writing to flexible disks.

4   Check that the disk power and data cables are correctly connected (refer to chapter 3).

5   Clean the flexible disk drive using a "wet-cleaning diskette kit".

If the Hard Disk Does Not Work

1   Check that the hard disk drive has not been disabled in SETUP (refer to page 77). There are two options in the **Security Features** section of SETUP which may be used to disable or enable:

- the hard disk drives
- start from hard disk.

2   Check that the disk power and data cables are correctly connected (refer to chapter 3).

3   Check that power management has been correctly configured.

4   If the hard disk has not been detected, use the Custom parameters in SETUP.

If the Hard Disk Activity Light Does Not Work

If the hard disk activity light does not flicker when the PC is accessing the hard disk drive:

1   Check that the control panel connector is firmly attached to the system board.

2   Check that the disk power and data cables are correctly connected (refer to chapter 3).

3   If you are using a hard disk drive with a controller board (a SCSI hard disk, for example), the activity light does not flicker when the PC is accessing the hard disk drive.

If an Accessory Board Does Not Work

Perform the following checks:

1   Ensure the board has been firmly installed in the accessory board slot (refer to chapter 3).

2   Check that the accessory board has been correctly configured with the ISA Configuration Utility.

3   Ensure the board is not using memory, I/O addresses, an IRQ, or DMA also used by the PC. Refer to the board's manual for details. For information on the current usage of IRQs by the PC, at the MS-DOS prompt type MSD and press ⏎ Enter .

4   Check that the PC has been configured correctly in SETUP.

5   If the problem persists, contact your service representative.

If Your PC Has a Software Problem

If You Have Forgotten Your Password

❒ If you forget the User Password and the System Administrator Password is set and known:

1   Restart the PC. If the keyboard is locked, unplug the power cord and plug it in again.

2   Wait for the message **<F2=Setup>**.

3   Press F2 to start SETUP.

4   Type the *System Administrator Password* to enter SETUP.

5   Highlight the **User Password** field and set a new User Password.

6   Press F3 to save the new User Password and exit SETUP.

❒ If you forget both the User Password and the System Administrator Password:

1   Switch off the PC.

2   Remove the computer's cover (refer to chapter 3).

3   Set switch 4 (PSWRD) on the system board switch block to ON (refer to chapter 5 for the switch location).

4   Switch on the PC and allow it to complete its startup routine.

5   Switch off the computer.

6   Reset switch 4 (PSWRD) to OFF.

7   Replace the computer's cover (refer to chapter 3).

8   Switch on the PC and allow it to complete its startup routine.

9   After the Power-On Self-Test has completed, press F2 when prompted to use SETUP.

10 Set new User and System Administrator Passwords.

11 Press F3 to save the new passwords and exit SETUP.

If You Can't Start the SETUP Program

This may happen if the copy of the PC's configuration stored in memory is corrupted. You will need to erase this bad configuration.

To clear the configuration:

1   Switch off the PC and remove the cover (refer to chapter 3).

2   Set the system board switch 3 (CONFG) on the switch block to ON to clear the configuration (refer to page 91 for the switch location).

3   Switch on the PC to erase the memory.

4   Check that error codes **0240** and **0130** are displayed, and wait until the PC has started.

5   Switch off the PC.

6   Set the system board switch 3 (CONFG) on the switch block to OFF to re-enable the configuration.

7   Replace the cover (refer to chapter 3).

8   Switch on the PC and run SETUP by pressing F2 when **<Setup=F2>** appears. (Error code **0130** will appear when the PC starts.)

9   Press F3 to save the configuration and exit from SETUP.

If Your Application Software Does Not Work

If the PC reports the system is OK but some software won't run, and the indicator light over the power switch is illuminated:

1   Check to see if the **AUTOEXEC.BAT** file is present with the correct settings. Refer to the operating system and application software manuals.

2   If Windows does not run properly, refer to the Windows manual for guidance.

If Power Management Does Not Work

Power Management in Windows

Check that the Sleep icon [ ] appears in the StartUp Windows group. If it is absent, click on the File menu in the Program Manager and select the New option to install **SLEEP.EXE** from the **C:\WINDOWS** directory in the StartUp group.

Check that Power Management is enabled using the Power icon [ ] in the Windows Control Panel:

1   Double-click on the Power icon [ ] in the Windows Control Panel.

2   Check that **Advanced** is selected in the Power dialog box.

If the Power icon does not appear in the Windows Control Panel:

1   Exit from Windows.

2   At the MS-DOS prompt, change to the **C:\WINDOWS** directory.

3   Type **SETUP** [⏎ Enter] to run Windows Setup and set the **Computer** field to **MS-DOS with APM**. Follow the instructions displayed by the Setup program to return to the MS-DOS prompt.

Power Management in DOS

Use a text editor to check that **DEVICE=C:\DOS\POWER.EXE ADV:MAX** is present in the CONFIG.SYS file.

If the Date and Time Are Incorrect

The date and time can be incorrect for the following reasons:

• the time has changed for the seasons

• the PC has been unplugged from the power too long, and the battery is discharged.

To change the date and time use the HP User Tools program. Refer to chapter 2 for more information about the HP User Tools. If you do not have the HP User Tools program installed, you can use the SETUP program to change the date and time.

Using the HP SETUP Program

SETUP is an integrated (ROM-based) program that displays the PC's configuration. Configuration information for associated PC features is grouped together to make it easier to find.

Check the configuration when you first use the PC and each time after you install, remove, or upgrade accessories.

NOTE   If you are unable to change the PC's configuration, check that you entered the correct password when you started SETUP.

Starting the SETUP Program

1   Turn on the PC and the display.

   If the PC is already turned on, save your data and exit all programs, then press `Ctrl` `Alt` and `Delete` to restart the PC.

2   Press `F2` while **<Setup=F2>** is displayed at the bottom of the screen.
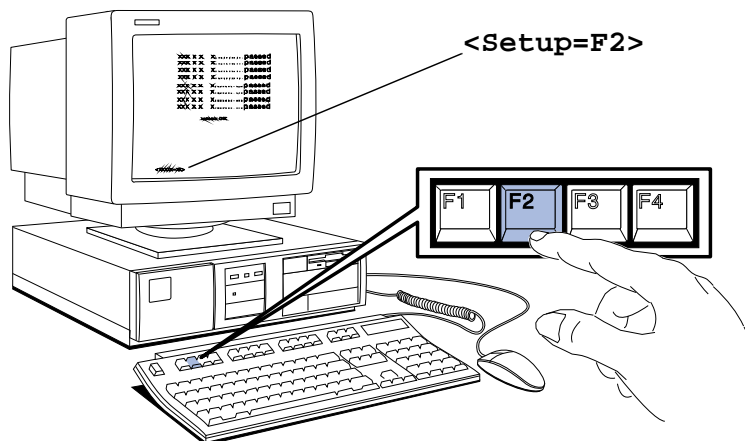
   <Setup=F2> appears for only a few seconds, just after the beeps signalling the end of the self-test.

HINT   You can press `F2` to run the SETUP program when the Power-On-Self-Test reaches **Ethernet (Integrated)**.

3   The PC's SETUP program will appear.

```
           Setup Version xx.xx.xx        F1=Help On/Off

Date (Year/Month/Day) . . . . . . . 1995 / 01 / 01
Time (Hour/Minute/Second) . . . . . 09 : 35 : 53

User Preferences
 User Password  . . . . . . . . . . Set
```

- To change a setting, move the highlight to the desired line and follow the instructions on the bottom of the screen.

- Use the ⬜△ or ⬜▽ keys to move the highlight from one line to another.

- Use the F7 or F8 key to display available values.

- Use the Num Lock key to set the numeric keypad to cursor control or numerics.

- Use the Home key to display the first SETUP screen.

- Use the F1 key to display help (press it again to turn the help off).

- Use the F3 key to save your settings and exit SETUP.

- Use the F12 key to exit SETUP without saving any changes.

Understanding the SETUP Program

The built-in SETUP program is accessed by pressing ⎡F2⎤ during the PC's Power-On-Self-Test. For more information about SETUP items press ⎡F1⎤ for context-sensitive online help.

The SETUP items displayed on your screen may differ from those shown below.

SETUP Item:	What you can do:
Date Time	Set date and time
User Preferences	Set a Password to prevent unauthorized access to your PC Enable/Disable the Keyboard Lock Timer Enable/Disable Screen Blanking Set the: Keyclick Volume, Character Repeat Speed, Autorepeat Delay, Numlock On/Off at power up.
PC Serial Number BIOS Version	View the PC Serial Number View the BIOS Version Number
Processor	View the type of processor in your PC
Computer Speed	View the speed of the processor
Memory Size	View the memory size of: • Base Memory on system board • Reserved Memory • Extended Memory • Total Memory
Memory Cache	Switch both Internal and External Cache Memory Off/On
Power Management	Enable/Disable 'Standby' mode Enable/Disable 'Sleep At' mode
Hard Disk Drives	Configure the hard disk drives (if not automatically detected, set to None for SCSI or Custom to manually configure a drive) Define if the hard disk controller is integrated on an accessory board

SETUP Item:	What you can do:
SCSI Accessory Boards	View the SCSI BIOS ROM address for an HP SCSI Accessory Board Disable/Enable shadowing of the SCSI BIOS
Flexible Disk Drives	Configure the flexible disk drives Choose which flexible disk drive to boot the system from Define if the flexible disk controller is integrated on the system board or on an accessory board
Security Features	• Set the System Administrator Password • Configure your PC to Start With Keyboard Locked • Enable/Disable Start from Flexible Disk • Enable/Disable Start from Hard Disk • Enable/Disable the Flexible Disk Drives • Enable/Disable the Hard Disk Drives • Allow/Disallow writing to Flexible Disks • Select the level of support for Plug and Play Accessories
Parallel Port	Disable/Enable the Parallel Port View I/O address and IRQ channel used by Parallel Port Select Parallel Port mode Centronics, ECP, EPP 1.7, or EPP 1.9
Serial Port	Disable/Enable the Serial Ports View I/O address and IRQ channel used by the Serial Ports
Remote Program Load	Remote Start can be configured as None or Ethernet Select which Protocol will be used
PCI Integrated Ethernet Interface	Enable/Disable the PCI integrated Ethernet interface View the MAC address
Video	Select which Video Adapter Mode is used Enable/Disable the copying of the Video BIOS to RAM for ISA Video Controllers (the PCI Video BIOS is always shadowed)
VGA Enhanced/Ergonomic Modes	Select Video Refresh Rates
IRQ Map for Accessory Boards	View available IRQ channels and select which IRQs are used by installed accessory boards

4   Troubleshooting Your PC and Using the SETUP Program

Using the HP SETUP Program

5

Technical Information

This chapter provides technical information about your PC.

Specifications

Features and Characteristics

Feature:	Description:
Processor (standard)	PENTIUM^{TM} 75 MHz, 90 MHz, or 120 MHz
Level-one cache	8 KB code, 8 KB write-back data
Level-two cache	256 KB write-through
Main memory (size/speed)	Upgradeable to 192 MB (70 ns, 32-bit or 36-bit)
Video	Integrated 64-bit Ultra VGA Controller on PCI bus 1 MB standard (for 32-bit graphics), upgradeable to 2 MB (for 64-bit graphics), DDC1 compliant
LAN	Ethernet LAN controller on PCI bus
Disk drive controller	Enhanced IDE controller on PCI bus
Rear connectors	• mini-DIN mouse • mini-DIN keyboard • 25-pin parallel • 9-pin serial (two, buffered) • 15-pin VGA
25-pin parallel connector	• Mode: Centronics or bidirectional modes (ECP/EPP) • Parallel port: 1 (378h, IRQ 7), 2 (278h, IRQ 5), or Off.

9-pin serial connectors	• Standard: Two UART 16550 buffered serial ports (both RS-232-C).
	• Serial port:
	  • Serial Port A: 3F8h (IRQ 4), 3E8h (IRQ 4), or Off
	  • Serial Port B: 2F8h (IRQ 3), 2E8h (IRQ 3), or Off

Disk drive shelves	Four internal mass storage shelves supporting: • three front-access devices (a third-height 3.5-inch drive, a half-height 5.25-inch drive or CD-ROM, and a third-height 5.25-inch or 3.5-inch device) • one internal 3.5-inch hard disk drive

Feature:	Description:
System board connectors	• VESA internal video pass-through connector • AUI connector for BNC Coax adaptor • One flexible disk drive connector • One Fast IDE connector (for up to 2 IDE hard disk drives) • One Standard IDE connector (supporting one 16-bit IDE CD-ROM drive)
Accessory slots	One half-length PCI slot, one full-length combo ISA/PCI slot, one full-length 16-bit ISA slot, and one half-length 16-bit ISA slot
Keyboard/Mouse	HP keyboard with mini-DIN connector HP mouse with mini-DIN connector.

Characteristics:	Description:
Weight (excluding keyboard and display)	9 kilograms (20 pounds).
Dimensions	39 cm (D) by 42 cm (W) by 12.5 cm (H) (15.3 inches by 16.5 inches by 4.9 inches).
Footprint	0.17 m^2 (1.8 sq ft).
Storage temperature	-40 °C to 70°C (-40 °F to 158 °F).
Storage humidity	8% to 80% (relative).
Operating temperature	5 °C to 40 °C (40 °F to 104 °F).
Operating humidity	15% to 80% (relative).
Maximum thermal dissipation	91 kcal per hour (360 BTU per hour).
Acoustic noise emission	< 40 db in the workplace under normal conditions as defined by DIN 45635 T.19 and ISO 7779).
Power supply	• Input voltage: 100-127 V ac, 200-240 V ac auto-ranging • Input frequency: 50/60Hz • Maximum power: 100 W continuous.

5   Technical Information

Specifications

Power Consumption Information

Full Power mode	44 W
Standby mode	24 W
Sleep mode	21 W
Off	< 5 W[1] [1] The power supply in your Vectra PC continues to supply power to the CMOS memory, even when switched off.

NOTE When the PC is turned off with the power button on the front panel, the power consumption falls below 5 Watts, but is not zero. This special on/off method used by this PC considerably extends the lifetime of the power supply. To reach zero power consumption in "off" mode, either unplug the PC from the power outlet or use a power block with a switch. You should be aware that, in this case, the PC will lose its time settings within a few days.

Typical Power Consumption/Availability for ISA Accessory Slots

+ 5 V	4.5A limit per slot (limited by system board)
+ 12 V	1.5A limit per slot (limited by system board)
-5 V	0.1A total power limit (limited by power supply)
-12 V	0.3A total power limit (limited by power supply)

Typical Power Consumption/Availability for PCI Accessory Slots

+ 5 V	4.5A maximum per slot
+ 12 V	0.5A maximum per slot
-12 V	0.1A maximum per slot

There is a maximum per-slot limit of 25 W between all supply rails.

IRQs, DMAs, and I/O Addresses Used by Your PC

IRQs used by PC [1]		
	IRQ0	system timer
[1] The IRQ, DMA, and I/O address mappings shown here are for a PC with a basic configuration. The resources used by your PC may vary, depending upon which accessory boards are bundled with the PC. For information on current usage of IRQs, DMAs, and I/O addresses by your PC, type MSD at the MS-DOS prompt.	IRQ1	keyboard
	IRQ2	system cascade
	IRQ3	free if not used for serial port
	IRQ4	free if not used for serial port
	IRQ5	free if not used for parallel port
	IRQ6	flexible disk drive controller
	IRQ7	free if not used for parallel port
	IRQ8	real-time clock
	IRQ9	available for PCI devices, if not used by ISA board
	IRQ10	available for PCI devices, if not used by ISA board
	IRQ11	available for PCI devices, if not used by ISA board
	IRQ12	free if the mouse is disabled in SETUP
	IRQ13	processor
	IRQ14	integrated IDE hard disk drive controller
	IRQ15	free if not used by second IDE controller
DMAs used by PC	DMA 0	free
	DMA 1	free if not used for parallel port in SETUP
	DMA 2	flexible disk drive controller
	DMA 3	free
	DMA 4	used to cascade DMA channels 0-3
	DMA 5	free
	DMA 6	free
	DMA 7	free
I/O Addresses used by PC	170h - 177h second IDE controller	
	1F0h - 1F7h integrated IDE hard disk controller	
	278h - 27Fh parallel port 2	
	2E8h - 2EFh serial port 4	
	2F8h - 2FFh serial port 2	
	3B0h - 3DFh integrated video graphics controller	
	376h - 377h second IDE controller	
	378h - 37Fh parallel port 1	
	3E8h - 3EFh serial port 3	
	3F0h - 3F7h integrated flexible disk controller	
	3F8h - 3FFh serial port 1	

5   Technical Information

Specifications

Available Video Resolutions

Resolution:	Video memory required for these colors and refresh rates:			
	16 colors	256 colors	64 K colors hi-color	16.7 M colors true-color
640 x 480	**1 MB** 60/72/75 Hz			**1 MB** 60 Hz 2 MB 60/72/75 Hz
800 x 600	**1 MB** 56/60/72/75 Hz		**1 MB** 56/60 Hz 2 MB 56/60/72/75 Hz	2 MB 56/60 Hz
1024 x 768	**1 MB** 87i/60/70/75 Hz		2 MB 87i/60/70/75 Hz	Not Available
1280 x 1024	**1 MB** 87i Hz	2 MB 87i/60/72/75Hz	Not Available	

NOTE   The available video resolutions listed above are for MS-DOS and MS-Windows. If you install an alternative operating system, the video drivers supplied for the alternative operating system will determine the available video resolutions and the number of displayable colors.

Recycling Your PC

HP has a strong commitment toward the environment. Your HP Personal Computer has been designed to respect the environment as much as possible.

HP can also take your old PC back for recycling when it reaches the end of its useful life.

In fact, HP has a product take back program in several countries. The collected equipment is sent to one of HP's recycling facilities in Europe or the USA. As many parts as possible are reused. The remainder is recycled. Special care is taken for batteries and other potentially toxic substances, which are reduced into non-harmful components through a special chemical process.

If you require more details about HP's product take back program, contact your dealer or your nearest HP Sales Office.

The PC's Memory Map

Memory Area	Memory Range	Hexadecimal Address Range	Used By
Extended Memory: 1 MB to 4 MB			
Extended memory	1024 KB upward	01000 to 0F0000	Windows Applications
Conventional Memory: 0 KB to 1024 KB (1 MB)			
384 KB Reserved Memory Area	960 KB to 1024 KB	0F0000 to 010000	64 KB BIOS area
	896 KB to 960 KB	0E0000 to 0F0000	64 KB (available)
	800 KB to 896 KB	0C8000 to 0E0000	96 KB available for accessory boards
	768 KB to 800 KB	0C0000 to 0C8000	32 KB Video BIOS Area
	640 KB to 768 KB	0A0000 to 0C0000	128 KB Video Memory Area
640 KB Base Memory Area	0 KB to 640 KB	09F000 to 0A0000	Extended BIOS Data Area
		—	User Application Program Area
		—	MS-DOS Operating System
		0500 to 0700	MS-DOS Temp Buffer
		0400 to 04FF	BIOS Data Area
		0000 to 03FF	Interrupt Vector Table

The PC's Rear Connectors

Serial Connector

(DSR) CC-6
(RTS) CA-7
(CTS) CB-8
(RI) CE-9

1- CF (DCD)
2- BB (RD)
3- BA (TD)
4- CD (DTR)
5- AB (GND)
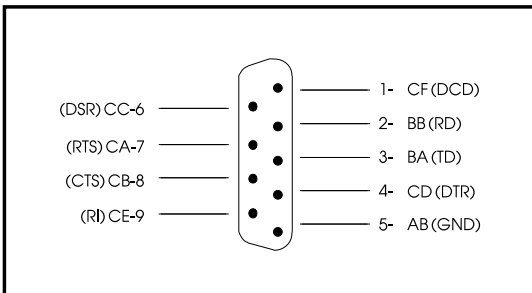
Keyboard/Mouse Connectors

Not Used-6
+5V dc-4
Not Used-2

5-Clock
3-Ground
1-Data

Parallel Connector

Strobe-1
DO-2
D1-3
D2-4
D3-5
D4-6
D5-7
D6-8
D7-9
ACK-10
BUSY-11
PE-12
SLCT-13

14-AUTO FD
15-ERROR
16-INIT
17-SLIN
18-Ground
19-Ground
20-Ground
21-Ground
22-Ground
23-Ground
24-Ground
25-Ground

Not Used - 4
RxD1 - 3
TxD2 - 2
TxD1 - 1

5 - Not Used
6 - RxD2
7 - Not Used
8 - Not Used

RJ-45 LAN Connector

Red-1
Green-2
Blue-3
Not Used-4
Ground-5

6- Ground
7- Ground
8- Ground
9- +5V for DDC
10- Ground

11-Not Used
12-Data from display (DDC1)
13-H-Sync
14-V-Sync
15-Not Used

VGA Video Connector

System Board Connectors, Jumpers, and Switches

AUI Connector
for BNC Coax
Adapter

VESA
Connector

System Board
Switches

VCC
VR
VRE

Processor Voltage
Selection Jumper
(J27)
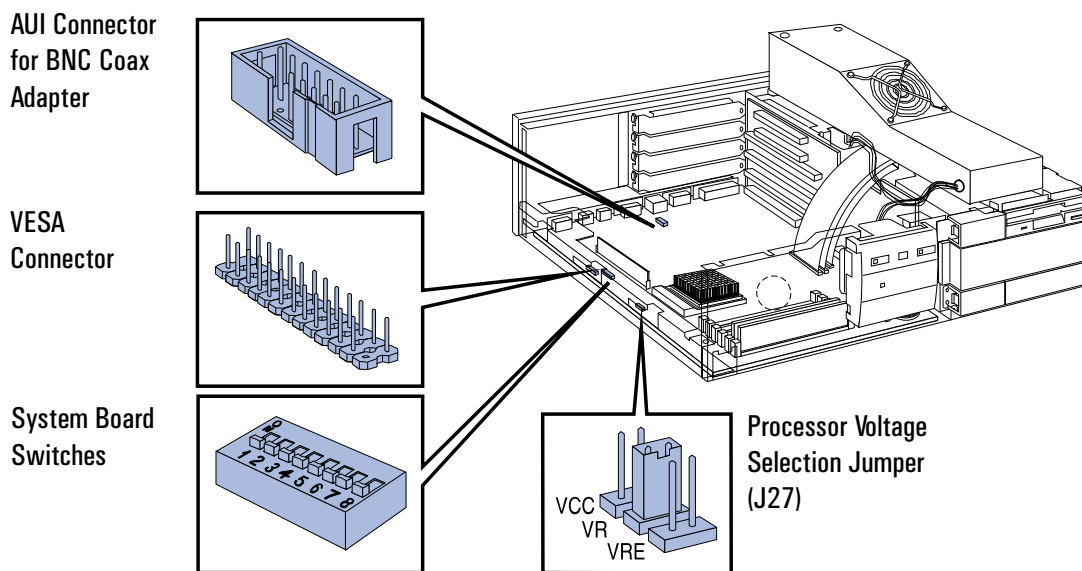
Processor Voltage Selection Jumper (J27)

Refer to the documentation supplied with an upgrade processor for
details of the processor voltage required.

Jumper:	Function:
Position VCC	Select the VCC jumper position when you install an upgrade processor which requires Vcc voltage — (Default for PCs with Pentium 75 MHz installed)
Position VR	Select the VR jumper position when you install an upgrade processor which requires Vr voltage — **(Default for PCs with Pentium 90 MHz installed)**
Position VRE	Select the VRE jumper position when you install an upgrade processor which requires Vre voltage — (Default for PCs with Pentium 120 MHz installed)

System Board Switches

Switch	Use Switch Block to:
1 - FLASH	Enable or prevent system ROM updates using the HPInit utility: • OFF to enable system updates — DEFAULT • ON to disable system updates.
2 - RESERVED	—
3 - CONFG	Retain or clear the configuration stored in EEPROM: • OFF to retain configuration — DEFAULT • ON to clear configuration.
4 - PSWRD	Enable or clear (and disable) User and System Administrator Passwords stored in EEPROM: • OFF to enable passwords — DEFAULT • ON to clear passwords.
5 - PARIT	Enable or disable parity for the main memory modules: • OFF to disable parity for 32-bit main memory modules — DEFAULT • ON to enable parity for 36-bit main memory modules.
6 - RESERVED	—
7 - RESERVED	—
8 - RESERVED	—

5   Technical Information

System Board Connectors, Jumpers, and Switches

6

Getting Support

Getting Support from your HP Reseller

Your Authorized HP Reseller has been trained on HP Vectra equipment. He is familiar with your configuration and environment, and will be able to help you.

For questions regarding non-HP hardware, software, systems, or usage not intended for, or not commonly used with, your HP Vectra contact your Authorized HP Reseller.

For questions regarding product development or custom installations, we suggest that you contact your Authorized HP Reseller, third party support services, or the HP Customer Support organization in your country. They will be able to offer you consulting services tailored to your specific needs.

HP SupportPack

HP's three-year support solution maximizes your productivity and is available from your local reseller. This easy and comprehensive support plan includes the HP SupportPack hotline to solve your problems over the phone, and if needed, provide fast and convenient next-day on-site repair of your HP Vectra PC. HP SupportPack is backed by Hewlett-Packard's technical resources and must be purchased from your local reseller within 30 days of your HP Vectra purchase.

Hewlett-Packard Information Services

All Hewlett-Packard Information Services are available 24 hours per day, 7 days per week.

HP BBS Library

The HP electronic bulletin board library service contains drivers and support information which you can download to your PC using a modem.

Country	Number	Baud Rate
United States	1 (208) 344-1691	300, 1200, 2400, 4800, 9600, 14400
United Kingdom	+44 (1344) 361891	up to 14400
Worldwide	+1 (208) 344-1691	300, 1200, 2400, 4800, 9600, 14400

Set your modem for no parity, 8 data bits, and 1 stop bit (N, 8, 1).

HP FAXback on Demand—HP FIRST

You can use this service to select documents, such as product descriptions and technical information, which are then faxed to you. To access this service, use the handset on your fax machine and dial:

Country	Number
United States	1 (800) 333-1917
Worldwide	+1 (208) 344-4809

A complete description of Hewlett-Packard electronic services is provided in document #9020.

HP Audio Tips (USA only)

Automated audio (voice) problem-solving tips for your most frequently asked questions. The number is: 1 (800) 333-1917.

Internet—FTP Library Service/World-Wide Web

Hewlett-Packard provides a library service which offers drivers and information on HP products. This library service is available to anyone in the world who has FTP access to the Internet, or World-Wide Web access through a hypermedia viewer.

Internet IP Address	192.6.71.2
Alias	ftp-boi.external.hp.com
Name	anonymous
Password	Enter your E-mail address
World-Wide Web URL	http://www.hp.com/home.html

HP Forum on CompuServe

The HP Systems Forum on CompuServe is an online service accessible via modem. This service provides information about your HP PC, and allows you to communicate with other HP users.

As a preferred Hewlett-Packard customer, you are invited to join CompuServe at no charge.

For the United States and the United Kingdom, simply call the number shown below and ask for representative #51. For all other locations, you should first call the worldwide number to obtain the number of your local sales office, then call your local sales office and ask for representative #51.

Country	Local Call / Freephone Number	Direct Number
United States	1 (800) 848-8199	+ 1 (614) 529-1349
United Kingdom	(0800) 289378	+ 44 (1272) 760680
Worldwide	—	+ 1 (614) 529-1349

CompuServe will send you a free introductory membership immediately, including information on how to access CompuServe.

At the CompuServe **!** prompt, type **GO HP**.

Hewlett-Packard Telephone Support

Technical Phone Support for Customers

HP Phone Support for your Vectra PC is available at no charge during the first year of your hardware warranty. This service will provide technical assistance with basic configuration and setup of your Vectra PC. To ensure that your enquiry is dealt with quickly, have the following information ready when you call:

- your HP Vectra model number and serial number
- the operating system version and the configuration
- a description of the software installed and the accessories used.

For more detailed information about your system configuration, contact your Authorized HP Reseller.

The HP technical phone support service does not provide support for customers who configure their PC's as network servers. In such cases, customers are advised to contact their HP reseller for assistance.

HP North American Customer Support Center

Assistance from the HP North American Customer Support Center is available Monday to Friday, 7:00 am to 6 pm Mountain time, except Wednesday when the hours are 7.00 am to 4 pm.

The number is: +1 (303) 635-1000.

HP European Customer Support Center

Assistance from the HP European Customer Support Center is available in English, Monday to Friday, 8:30 am to 6 pm Central European time, except Wednesday when the hours are 8.30 am to 4 pm.

The number is: +31 (20) 581-3330.

For other regions, contact your local dealer.

NOTE

When calling any of the international telephone numbers listed in this chapter, replace the '+' with your international telephone access code.

6   Getting Support
If You Need to Contact Hewlett-Packard

If You Need to Contact Hewlett-Packard

Should you need to contact Hewlett-Packard, check your local telephone directory for the HP Sales and Service Office near you. If you cannot find an HP office, contact one of the major HP Sales and Service Offices or one of the Worldwide Marketing Headquarters listed here.

Worldwide HP
Marketing
Headquarters

ASIA
Far East Sales Region Hdqtrs
Hewlett-Packard Asia Ltd.
22/F Peregrine Tower
Lipp Centre
89 Queensway, Central
Hong Kong

EUROPE
European Operations Hdqtrs
Hewlett-Packard S.A.
150, route du Nant-d'Avril
P.O. Box 1217
Meyrin 2/Geneva
Switzerland

MIDDLE EAST / AFRICA
Middle East / Central Africa Sales Hdqtrs
Hewlett-Packard S.A.
Rue de Veyrot 39
CH-1217 Meyrin 1/Geneva
Switzerland

LATIN AMERICA
Hewlett-Packard Latin Am. Hdqtrs
Monte Pelvoux 111
Lomas de Chapultepec
11000 Mexico D.F.

USA
Intercon Operations Hdqtrs
Hewlett-Packard Company
3495 Deer Creek Road
P.O. Box 10495
Palo Alto, CA 94303-0896
USA

CANADA
Hewlett-Packard Ltd.
6877 Goreway Drive
Mississauga
Ontario L4V 1M8
Canada

Glossary

adapter An accessory board, that connects to the system board via an accessory board slot.

BBS Bulletin Board System. A computer that uses a modem and software to serve as an information source for other computers equipped with a modem. Hewlett-Packard has a BBS that can be reached at +1 (408) 553-3500.

BIOS Basic Input-Output System. Software that provides an interface between the computer hardware and the operating system.

bus An electrical connection over which information is transported.

cache A block of high-speed memory used for the temporary storage of data.

CD-ROM Compact Disc Read Only Memory. A mass storage device that uses compact disc technology. CDs can store data, but most cannot be written to.

CMOS memory An area of your computer's memory whose contents are preserved when you turn off the computer. CMOS memory stores information that must be maintained, such as your computer's configuration.

controller A device that enables another device (such as a hard disk) to communicate with the computer.

device driver Software that enables the computer to interface with a specific peripheral, such as a printer or display.

EPA energy star program A standard for power management which requires automatic power-down to less than 30 W.

expansion slot A slot inside the computer, connected to the system board, that can be used for accessory boards.

extended memory Memory which can be addressed by the processor in the area of memory above the first 1 MB.

HP Utilities Software provided by Hewlett-Packard to perform certain tasks, for example, changing the date and time.

IDE Integrated Device Electronics. An interface standard for communications between the computer and a hard disk or CD-ROM.

IRQ Interrupt Request. A signal, that when received by the processor, halts the current process and allows a different task to be undertaken.

jumper An electrically-conductive part that is used to connect two or more points on a circuit board. Commonly used to select configuration options.

Glossary

mass storage Any device used to store large amounts of data. Usually refers to hard disks and tape backup units.

memory modules Miniature boards containing memory chips. Used for increasing the amount of memory available in the computer.

multimedia Combining static media (such as text and pictures) with dynamic data (such as sound, video, and animation) on the same system.

network server mode A security feature that prevents unauthorized use of an input device (like a keyboard or mouse) while your computer is running as an unattended network server.

pixel Picture element. The smallest addressable spot on the screen.

POST Power-On-Self-Test. A series of tests your computer performs when you switch the computer on.

RAM Random Access Memory. This memory is used to hold programs and data temporarily.

resolution A measure of the visible detail on a screen or printout. Screen resolution is measured in 'pixels across' by 'pixels down' by 'number of colors'. Printer resolution is measured in dpi (dots-per-inch).

ROM Read-Only Memory. Computer memory used to store parts of the computer's operating system permanently. ROM chips can contain instructions and data.

SCSI Small Computer System Interface. A high-speed data bus used for connecting hard disks, tape drives, and other accessories to your computer.

SCSI chain Devices connected on a single SCSI bus.

SETUP program Used to inform the computer about its configuration, for example the amount of memory installed. The setup program is stored in ROM on the system board.

shadow RAM A method of relocating the system and/or video BIOS from slower ROM chips to faster RAM to improve system performance.

SIMM Single In-line Memory Module. A small board containing several RAM chips.

terminator A resistor at the end of a SCSI cable that prevents the signal from reflecting back along the cable.

video controller An chip or expansion card which converts signals in the computer into displayable signals.

video RAM Memory that enables or speeds up drawing to the screen or increases resolution or color options.

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Regulatory Information and Warranty

Regulatory Information

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name and Address:

HEWLETT-PACKARD
Boulevard Steve Biko
38090 Villefontaine
FRANCE

Declares that the product:

Product Name: Personal Computer
Model Number: HP Vectra XM 5/xx series 3

Conforms to the following Product Specifications:

SAFETY   International: IEC 950: 1991 + A1 + A2 Europe: EN 60950: 1992 + A1 + A2

EMC   International: CISPR 22: 1985 Class B
Europe: EN 55022: 1988 Class B
EN 50082-1: 1992
prEN 55024-2: 1992 / IEC 801-2: 1992 - 3 kV CD, 8 kV AD
prEN 55024-3: 1991 / IEC 801-3: 1984 - 3 V/m
prEN 55024-4: 1992 / IEC 801-4: 1988 - 0.5 kV Signal Lines,
1 kV Power Lines

Supplementary information: The product complies with the requirements of the Low Voltage Directive 73/23/EEC and of the EMC Directive 89/336/EEC.

Grenoble   Gilbert BERTHET
April 1995   Quality Manager

FCC (for USA only)

Federal Communications Commission Radio Frequency Interference Statement
Warning:
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 and 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 correct the interference by one or more of the following measures:
• reorient or relocate the receiving antenna
• increase the separation between the equipment and the receiver
• connect the equipment into an outlet on a circuit different from that to which the receiver is connected
• consult the dealer or an experienced radio/TV technician for help.
Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and HP shielded cables, such as those you receive with your system. Changes or modifications not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.

Notice for Canada

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numérique de la Class B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Safety Warning for the USA and Canada

If the power cord is not supplied with the computer, select the proper power cord according to your local national electric code.
USA: use a UL listed type SVT detachable power cord.
Canada: use a CSA certified detachable power cord.

Si le cordon secteur n'est pas livré avec votre ordinateur, utiliser un cordon secteur en accord avec votre code electrique national.
USA: utiliser un cordon secteur UL list, de type SVT.
Canada: utiliser un cordon secteur certifié CSA.

Notice for the United Kingdom

The HP Vectra PC is approved under approval number NS/G/1234/J/100003 for indirect connection to Public Telecommunication Systems within the United Kingdom.

Noise Declaration for Germany

Lärmangabe nach Maschinenlärmverordnung - 3 GSGV (Deutschland)
LpA < 70 db am Arbeitsplatz normaler Betrieb nach EN27779: 11.92.

Notice for Japan

この装置は，第二種情報装置（住宅地域又はその隣接した地域において使用

されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置

等電波障害自主規制協議会（ＶＣＣＩ）基準に適合しております。

しかし，本装置をラジオ，テレビジョン受信機に近接してご使用になると，

受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

Notice for Korea

이 기기는 비업무용으로 전자파장해검정을 받은 기기로서 주거지역에서는
물론 모든 지역에서 사용할 수 있습니다.

HP Hardware Warranty

Important: This is your hardware product warranty statement. Read it carefully.

Warranty terms may be different in your country. If so, your Authorized HP Dealer or Hewlett-Packard Sales and Service Office can give you details.

Three Year Limited Hardware Warranty

Hewlett-Packard (HP) warrants this hardware product against defects in materials and workmanship for a period of three years from receipt by the original end-user purchaser.

The three year warranty includes on-site service during the first year of use, and return service provided by an HP Service Center or a participating Authorized HP Personal Computer Dealer Repair Center, during the second and third years of use.

If HP receives notice of above defined defects during the warranty period, HP will either, at its option, repair or replace products which prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, the customer's alternate exclusive remedy shall be a refund of the purchase price upon return of the product.

Limitation of Warranty

The above warranty shall not apply to defects resulting from: misuse; unauthorized modification; operation or storage outside the environmental specifications for the product; in-transit damage; improper maintenance; or defects resulting from use of non-HP software, accessories, media, supplies, consumables, or such items not designed for use with the product.

HP makes no other express warranty, whether written or oral, with respect to this product.

Any implied warranty of merchantability or fitness is limited to the three-year duration of this written warranty.

Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state, or province to province.

Limitation of Liability and Remedies

The remedies provided above are the customer's sole and exclusive remedies.

In no event shall HP be liable for any direct, indirect, special, incidental, or consequential damages, whether based on warranty, contract, tort, or any other legal theory.

The foregoing limitation of liability shall not apply in the event that any HP product sold hereunder is determined by a court of competent jurisdiction to be defective and to have directly caused bodily injury, death, or property damage; provided, that in no event shall HP's liability for property damage exceed the greater of $50,000 or the purchase price of the specific product that caused such damage.

Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages–including lost profit–so the above limitation or exclusion may not apply to you.

Obtaining On-Site Warranty Service

To obtain on-site warranty service, the customer must contact an HP Sales and Service Office (in the US, call the HP Customer Support Center at (303) 635-1000) or a participating Authorized HP Personal Computer Dealer Repair Center and arrange for on-site repair of the product. The customer must be prepared to supply proof of the purchase date.

This warranty is extended worldwide to products purchased from HP or an Authorized HP Personal Computer Dealer which are reshipped by the original purchaser either for use by the original purchaser or provided as an incidental part of systems integrated by the original purchaser. Service is provided in the same manner as if the product was purchased in the country of use and can only be provided in countries where the product is designed to operate. If the product is not normally sold by HP in the country of use, it must be returned to the country of purchase for service.

The system processor unit, keyboard, mouse, and Hewlett-Packard accessories inside the system processor unit–such as video adapters, mass storage devices, and interface controllers–are covered by this warranty.

Customer-replaceable components–such as the keyboard or mouse–may be serviced through expedited part shipment. In this event, HP will prepay shipping charges, duty, and taxes; provide telephone assistance on replacement of the component; and pay shipping charges, duty, and taxes for any part that HP asks to be returned.

HP products external to the system processor unit–such as external storage subsystems, displays, printers, and other peripherals–are covered by the applicable warranties for those products; HP software is covered by the HP Software Product Limited Warranty.

On-site visits caused by non-Hewlett-Packard products–whether internal or external to the system processor unit–are subject to standard per-incident travel and labor charges.

On-site service for this product is restricted or unavailable in certain locations. In HP Excluded Travel Areas–areas where geographical obstacles, undeveloped roads, or unsuitable public transportation prohibit routine travel–service is provided on a negotiated basis at extra charge.

Response time for HP on-site service in an HP Service Travel Area is normally next business day (excluding HP holidays) for HP Travel Zones 1-3 (generally 100 miles or 160 Km from the HP office). Response time is second business day for Zones 4 and 5 (200 miles, 320 Km); third business day for Zone 6 (300 miles, 480 Km); and negotiated beyond Zone 6. Worldwide Customer Support Travel information is available from any HP Sales and Service Office.

Travel restrictions and response time for dealer or distributor service are defined by the participating dealer or distributor.

Service contracts which provide after-hour or weekend coverage, faster response time, or service in an Excluded Travel Area are often available from HP, an authorized dealer, or authorized distributor at additional charge.

Customer Responsibilities

The customer may be required to run HP-supplied diagnostic programs before an on-site visit or replacement part will be dispatched.

The customer is responsible for the security of its proprietary and confidential information and for maintaining a procedure external to the products for reconstruction of lost or altered files, data, or programs.

For on-site service, the customer must provide: access to the product; adequate working space and facilities within a reasonable distance of the product; access to and use of all information and facilities determined necessary by HP to service the product; and operating supplies and consumables such as the customer would use during normal operation.

When service is being performed on-site, a representative of the customer must be present at all times. The customer must state if the product is being used in an environment which poses a potential health hazard to repair personnel; HP or the servicing dealer may require that the product be maintained by customer personnel under direct HP or dealer supervision.

Obtaining Return Warranty Service

When return warranty service applies, the product must be returned to a service facility designated by HP. Customer must enclose a copy of a document proving date of purchase.

The customer shall prepay shipping charges (and shall pay all duty and taxes) for products returned to HP for warranty service. HP shall pay for return of products to the customer except for products returned to the customer from another country.

HP Software Product License Agreement and Software & Product Limited Warranty

CAREFULLY READ THIS LICENSE AGREEMENT BEFORE PROCEEDING TO OPERATE THIS EQUIPMENT. RIGHTS IN THE SOFTWARE ARE OFFERED ONLY ON THE CONDITION THAT THE CUSTOMER AGREES TO ALL TERMS AND CONDITIONS OF THE LICENSE AGREEMENT. PROCEEDING TO OPERATE THE EQUIPMENT INDICATES YOUR ACCEPTANCE OF THESE TERMS AND CONDITIONS. IF YOU DO NOT AGREE TO THE LICENSE AGREEMENT, YOU MUST NOW EITHER REMOVE THE SOFTWARE FROM YOUR HARD DISK DRIVE AND DESTROY THE MASTER DISKETTES, OR RETURN THE COMPLETE COMPUTER AND SOFTWARE FOR A FULL REFUND.

Software License Agreement

In return for payment of the applicable fee, Hewlett-Packard grants the Customer a license in the software, subject to the following:

1   USE. Customer may use the software on any one computer. Customer may not network the software or otherwise use it on more than one computer. Customer may not reverse assemble or decompile the software unless authorized by law.

2   COPIES AND ADAPTATIONS. Customer may make copies or adaptations of the software (a) for archival purposes or (b) when copying or adaptation is an essential step in the use of the software with a computer so long as the copies and adaptations are used in no other manner.

3   OWNERSHIP. Customer agrees that he/she does not have any title or ownership of the software, other than ownership of the physical media. Customer acknowledges and agrees that the software is copyrighted and protected under the copyright laws. Customer acknowledges and agrees that the software may have been developed by a third party software supplier named in the copyright notices included with the software, who shall be authorized to hold the Customer responsible for any copyright infringement or violation of this Agreement.

4   TRANSFER OF RIGHTS IN SOFTWARE. Customer may transfer rights in the software to a third party only as part of the transfer of all rights and only if Customer obtains the prior agreement of the third party to be bound by the terms of this License Agreement. Upon such a transfer, Customer agrees that his/her rights in the software are terminated and that he/she will either destroy his/her copies and adaptations or deliver them to the third party.

5   SUBLICENSING AND DISTRIBUTION. Customer may not lease, sublicense the software or distribute copies or adaptations of the software to the public in physical media or by telecommunication without the prior written consent of Hewlett-Packard.

6   TERMINATION. Hewlett-Packard may terminate this software license for failure to comply with any of these terms provided Hewlett-Packard has requested Customer to cure the failure and Customer has failed to do so within thirty (30) days of such notice.

7   UPDATES AND UPGRADES. Customer agrees that the software does not include updates and upgrades which may be available from Hewlett-Packard under a separate support agreement.

8   EXPORT CLAUSE. Customer agrees not to export or re-export the software or any copy or adaptation in violation of the U.S. Export Administration regulations or other applicable regulation.

9   U.S. GOVERNMENT RESTRICTED RIGHTS. Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause in DFARS 252.227-7013. Hewlett-Packard Company, 3000 Hanover Street, Palo Alto, CA 94304 U.S.A. Rights for non-DOD U.S. Government Departments and Agencies are as set forth in FAR 52.227-19(c)(1,2).

Software Product Limited Warranty

Ninety-Day Limited Software Warranty

HP warrants for a period of NINETY (90) DAYS from the date of the purchase that the software product will execute its programming instructions when all files are properly installed. HP does not warrant that the operation of the software will be uninterrupted or error free. In the event that this software product fails to execute its programming instructions during the warranty period, Customer's remedy shall be a refund or repair. Should HP be unable to replace the media within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the product and all copies.

Removable Media (If supplied)

HP warrants the removable media, if supplied, upon which this product is recorded to be free from defects in materials and workmanship under normal use for a period of NINETY (90) DAYS from the date of purchase. In the event the media proves to be defective during the warranty period, Customer's remedy shall be to return the media to HP for replacement. Should HP be unable to replace the media within a reasonable amount of time, Customer's alternate remedy shall be a refund of the purchase price upon return of the product and destruction of all other nonremovable media copies of the software product.

Notice of Warranty Claims

Customer must notify HP in writing of any warranty claim not later than thirty (30) days after the expiration of the warranty period.

Limitation of Warranty

HP makes no other express warranty, whether written or oral with respect to this product. Any implied warranty of merchantability or fitness for a particular purpose is limited to the 90-day duration of this written warranty. Some states or provinces do not allow limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

This warranty gives specific legal rights, and you may also have other rights which vary from state to state, or province to province.

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Obtaining Warranty Service

Warranty service may be obtained from the nearest HP sales office or other location indicated in the owner's manual or service booklet.

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