

HP NetVectra N30 HP NetPC 20

User's Guide



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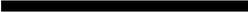
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User's Guide

Who this Manual is For

This manual is for anyone who wants to:

- Set up the PC for the first time
 - Troubleshoot problems on the PC
 - Find out where to get more information and support.
-

Important Ergonomic Information

It is strongly recommended that you read the ergonomic information before using your PC. Refer to see “Working in Comfort” on page 11 for more information.

Important Safety Information

WARNING

If you have any doubt that you can lift the PC or display safely, do not try to move it without help.

For your safety, never remove the PC's cover without first removing the power cord from the power outlet, and any connection to a telecommunications network. Always replace the cover on the PC before switching it on again. To avoid electric shock, do not open the power supply. There are no user serviceable parts inside.

WARNING

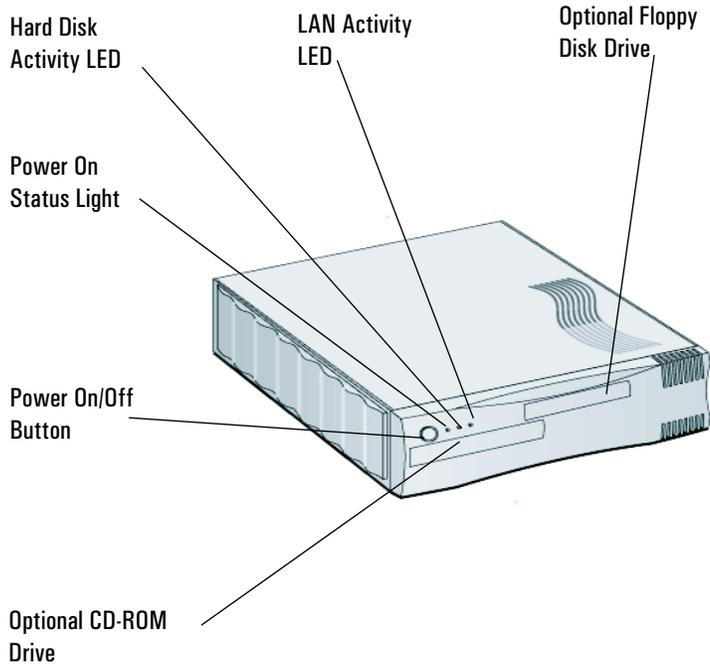
There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble, or burn the old battery. Replace only with the same or equivalent type recommended by the manufacturer. The battery in this PC is a lithium battery which does not contain heavy metals. Nevertheless, in order to protect the environment, do not dispose of batteries in 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 that they can either be recycled or disposed of in a sound way. Returned used batteries will be accepted free of charge.

To avoid electric shock and harm to your eyes by laser light, do not open the laser module. The laser module should be serviced by service personnel only. Do not attempt to make any adjustment to the laser unit. Refer to the label on the CD-ROM for power requirements and wavelength. This product is a class I laser product.

Do not attempt to connect this product to the phone line during a lightning storm. Never install telephone jacks in wet locations unless the telephone line has been disconnected at the network interface. Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface. Use caution when installing or modifying telephone lines. Avoid using a telephone (other than a cordless type) during a lightning storm. There may be a risk from lightning. Do not use the telephone to report a gas leak in the vicinity of the leak.

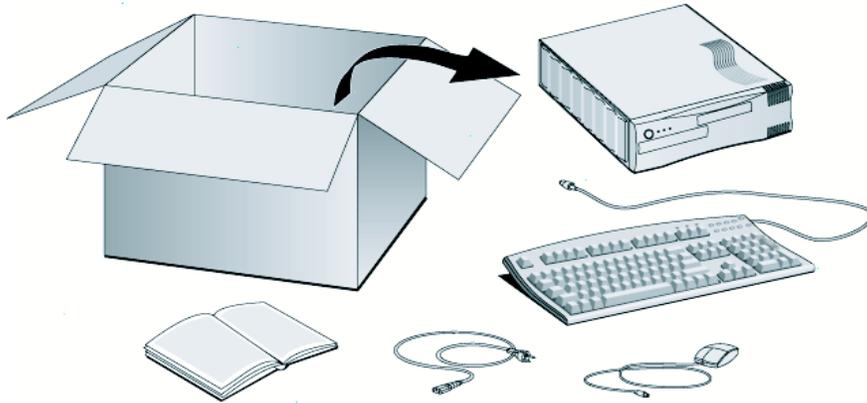
Never touch or remove the Communications board without first removing the connection to the telephone network.

Important Safety Information



Setting Up and Using Your PC

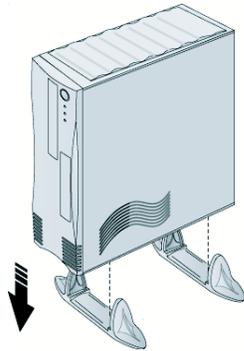
Unpacking Your PC



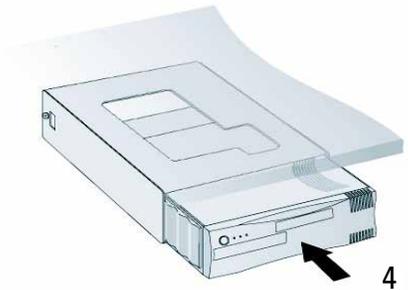
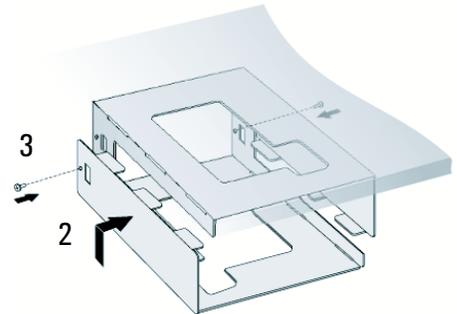
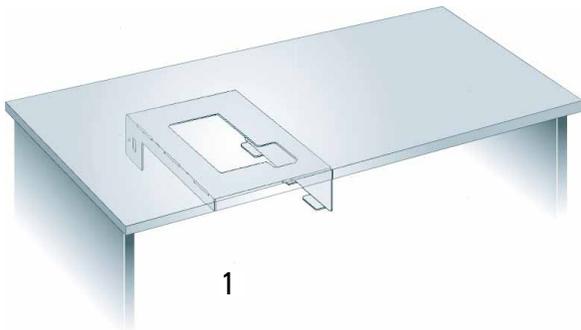
Mounting Your PC

You can use your PC as a desktop, with a foot stand (optional) or with an underdesk socket (optional).

Attaching the Foot Stand



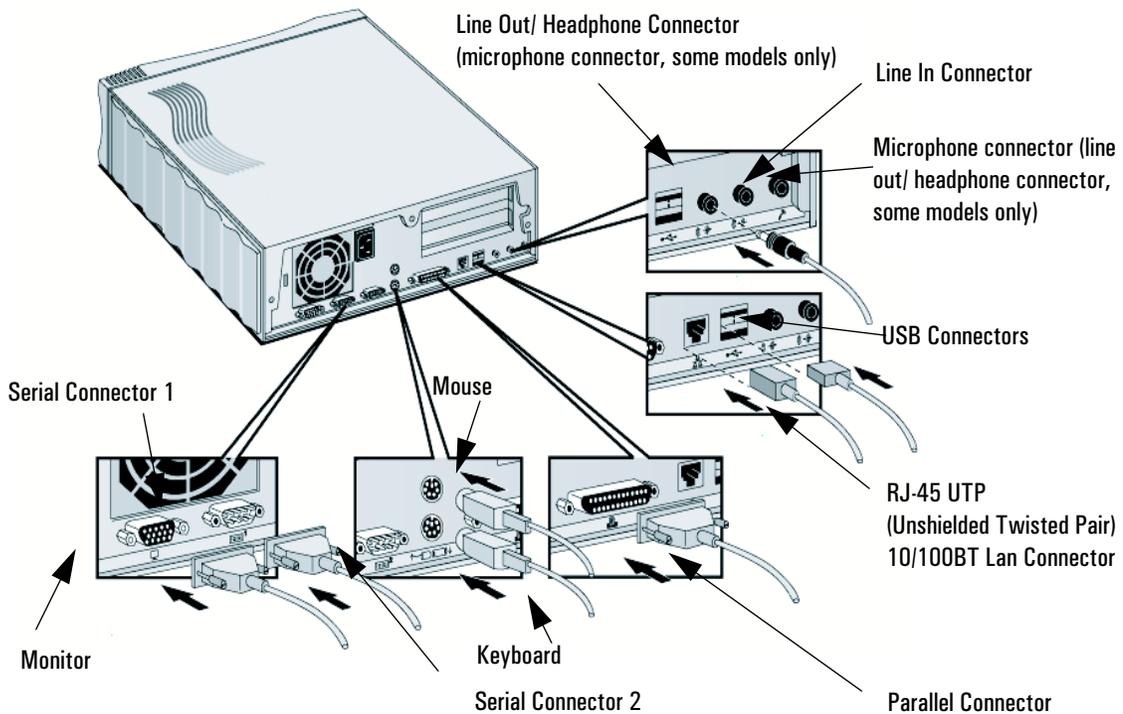
Attaching the Underdesk Socket



Connecting Your PC Accessories

WARNING

Always turn the volume down before connecting headphones or speakers, to avoid discomfort from unexpected noise or static. Listening to loud sounds for prolonged periods of time may permanently damage your hearing. Before putting on headphones, place them around your neck and turn the volume down. When you put on the headphones, slowly increase the volume until you find a comfortable listening level. When you hear comfortably and clearly, without distortion, leave the volume control in that position.



NOTE

Your PC BootROM supports PXE (Preboot Execution Environment). This protocol is enabled by selecting **Start from Network/Boot from LAN** in your PC's *Setup* program, accessed by pressing **De1** or **F2** at Start-up.

Connecting the Power Cables

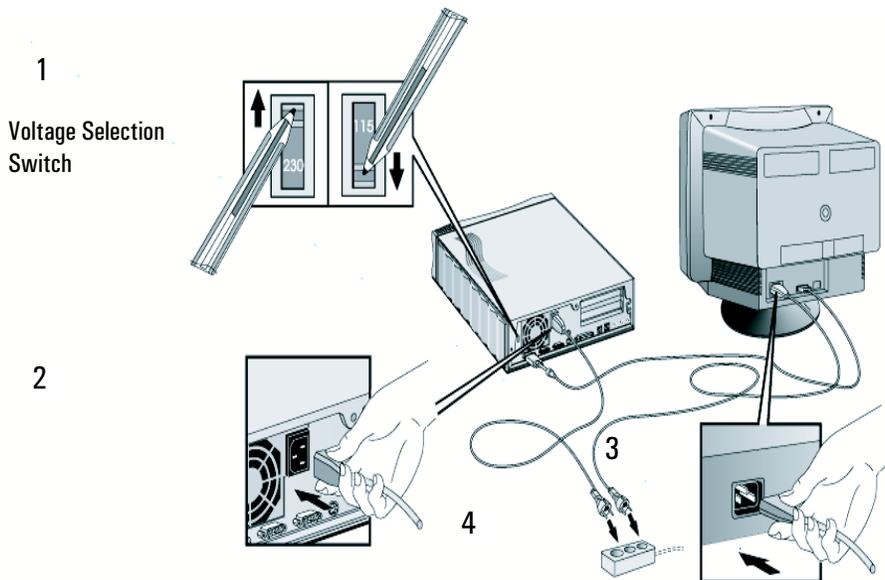
WARNING

For your safety always connect the equipment to a grounded wall outlet. Always use a power cord with a properly grounded plug, such as one provided with this equipment, or one in compliance with your national safety standards. This equipment is disconnected from the power by removing the power cord from the power outlet. This means that the equipment must be located to a power outlet that is easily accessible.

- 1 Remove the warning label covering the PC's connector, and *ensure that the voltage is correct for your country* (The voltage is set during manufacture and should already be correct).

CAUTION

Starting your PC on the wrong voltage setting may cause it permanent damage.



NOTE

If you have a CD-ROM drive, carefully remove the cardboard insert from the drive before starting your PC.

1 Setting Up and Using Your PC

Starting Your PC for the First Time

Starting Your PC for the First Time

Your PC has preinstalled software. With some models, this will require initialization the first time you start the PC. This process sets up the software in your language and sets up your software to use the hardware installed in your computer (you can change the settings after the software has been initialized).

NOTE

Do NOT switch OFF the PC while the software is being initialized- this could cause unexpected results.

Stopping Your PC

To stop the PC, first make sure that you have exited all applications and then use your operating system's shutdown command in the **Start** menu.

Using Power Management

Power management enables you to reduce the PC's power consumption when you are not using the PC.

HP Setup Program

You can configure power management in the HP Setup program. Refer to "Power Menu Items" in the HP *Setup* program. (To enter the PC's *Setup* program, restart the PC and press **Del** or **F2** during start-up.)

Operating System Power Management

Refer to your operating system documentation for information about the power management features provided.

EPA and Energy Star® Compliance

As an Energy Star® partner, HP has determined that this product meets the Energy Star® guidelines for energy efficiency.

Additional Information and Help

Additional information about your PC is available on HP's web site at www.hp.com/go/thinclientsupport.

Troubleshooting Your PC

This chapter can help you solve problems that you may encounter when using your PC.

2 Troubleshooting Your PC

If Your PC Does Not Start Properly

If your display is blank and there are no error messages when you turn on your PC, follow this procedure:

- 1 Check that your PC and monitor are plugged in and turned on. (The power light should be illuminated.)
- 2 Make sure that all cables and power cords are firmly plugged in.
- 3 Make sure the power outlet is working.
- 4 Check that you have removed the cardboard from the CD-ROM drive. (Refer to page 5)
- 5 Check that the monitor's brightness and contrast controls are properly set.
- 6 Ensure that you have entered the correct password, if one is required to use this PC.
- 7 Switch off the monitor, and unplug it from the power outlet. Disconnect the video cable and examine the video cable connector pins. If the pins are bent, carefully straighten them.
- 8 Check your monitor's manual to find out which refresh rates are supported. Use your operating system's **Display Control Panel** to select the correct refresh rate.

If the problem continues, contact the people in your organization who support and maintain the PCs on your network.

Monitor Problems

If the display image is not aligned with the screen, use the controls on your monitor to center the image (refer to your monitor's manual for instructions).

If Your Keyboard Does Not Work

- 1 Ensure that the keyboard is correctly connected to the PC.
- 2 Ensure that no keys are stuck on the keyboard.
- 3 Ensure that no liquids have been spilled on the keyboard.
- 4 If you turn on your PC, the operating system boots, the keyboard is correctly connected and does not work, the power-on password may be set to “keyboard locked”. You will need to enter a password to unlock the keyboard (and mouse).

If your Mouse Does Not Work

- 1 Ensure that the mouse is correctly connected to the PC.
- 2 Ensure the mouse driver supplied with the preloaded software is installed correctly.
- 3 Clean the mouse ball and rollers.

2 Troubleshooting Your PC

HP Setup Program

HP Setup Program

To check the PC's configuration:

- First, Turn Off Your PC Turn on the monitor and then the PC. If the PC is already turned on, save your data and exit all programs. For Windows NT 4.0 , Windows 95 and Windows 98, use the **Shut Down** command.
- To Go to the HP Summary Screen While the *Hewlett Packard* logo appears on your display, press **Tab** or **Del**. This will take you to the HP Summary Screen (POST screen). The Summary Screen will appear for only a short time. To retain the screen indefinitely (until you decide to leave it), press **Pause/Break**.
- To Go to the *Setup* Program To go immediately into the *Setup* program while the *Hewlett Packard* logo appears on your monitor (and bypass the Summary Screen), press **Del** or **F2**.
-

Hewlett Packard Support and Information Services

Hewlett Packard computers are engineered for quality and reliability to give you many years of trouble-free service. To ensure that your PC system maintains its reliability and to keep you up-to-date with the latest developments, HP and a worldwide network of trained and authorized resellers provide a comprehensive range of service and support options.

You can download documentation in PDF (Adobe Acrobat) format for your PC at HP's web site:

www.hp.com/go/thinclientsupport

Working in Comfort

Thank you for selecting HP computing equipment. To optimize your comfort and productivity, it is important that you set up your work area correctly and use your HP equipment properly. With that in mind, we have developed some set-up and use recommendations for you to follow based on established ergonomic principles.

3 Working in Comfort

Improper and prolonged use of keyboards and input devices are among those tasks that have been associated with repetitive strain injury (RSI) to soft tissues in the hands and arms. If you experience discomfort or pain while using any computing equipment, discontinue use immediately and consult your physician as soon as possible. In addition to the information on RSI given in this chapter, you may also consult the online version of *Working in Comfort* preloaded on the hard disk of the your HP computing equipment, or visit HP's *Working in Comfort* web site at: www.hp.com/ergo.

About Repetitive Strain Injury

Because your comfort and safety are our primary concern, we strongly recommend that you use HP computing equipment in accordance with established ergonomic principles and recommendations. Scientific literature suggests that there may be a relationship between injury to soft tissues—especially in the hands and arms—and prolonged improper use of keyboards or other equipment requiring repeated motions of the hands and forearms. This literature also suggests that there are many other risk factors that may increase the chance of such injury, commonly called Repetitive Strain Injury.

What is RSI?

Repetitive Strain Injury (RSI—also known as cumulative trauma disorder or repetitive motion injury) is a type of injury where soft tissues in the body, such as muscles, nerves, or tendons, become irritated or inflamed. RSI has been a reported problem for those who perform repetitive tasks such as assembly line work, meatpacking, sewing, playing musical instruments, and computer work. RSI also has been observed in those who frequently engage in activities such as carpentry, knitting, housework, gardening, tennis, windsurfing and lifting children.

What causes RSI?

The specific causes of RSI have not been established. Nevertheless, the incidence of RSI has been associated with a variety of risk factors, including:

- Too many uninterrupted repetitions of an activity or motion.
- Performing an activity in an awkward or unnatural posture.
- Maintaining static posture for prolonged periods.
- Failing to take frequent short breaks.
- Other environmental and psychosocial factors.

In addition, there have been reports associating the occurrence of RSI with the use of computer keyboards, mice, and other input devices. Also, certain medical conditions, such as rheumatoid arthritis, obesity and diabetes, may predispose some people to this type of injury.

What can I do to avoid RSI?

Some people who use computers may experience physical discomfort during their use. This discomfort may be a symptom of a repetitive strain injury. Properly setting up and using computing equipment can help to minimize your chances of experiencing this discomfort. Well-designed and properly adjusted equipment alone may not be sufficient to eliminate all potential problems. Maintaining good posture and positioning when working on computers also has a significant bearing on your comfort.

What if I experience discomfort?

If you are experiencing any discomfort, seek professional medical advice immediately. Typically, the earlier a problem is diagnosed and treated, the easier it is to resolve.

Preparing Your Work Environment

When using HP computing equipment, it is important that your work environment contribute to your comfort and productivity.

Your Chair

It's very important that your chair provides a comfortable sitting position and offers the following features:

- **A stable base, such as five legs with casters.** Make sure the casters are designed for the type of floor you have in your workspace, whether it is bare or carpeted.
- **A height- and tilt-adjustment feature.** It should be easy to adjust your chair height from 40 cm to 52 cm (15.5 inches to 20.5 inches) as measured from the top of the seat pan to the floor. If you are much taller or shorter than average, you may need a chair that can be adjusted beyond this range. Adjust your chair so that the work surface or keyboard tray is at elbow height and your feet are flat on the floor with your knees slightly bent below your hips. Ideally, the seat pan should be able to tilt both forward (minimum of 5 degrees) and backward (minimum of 10 degrees). If the chair has an adjustable seat pan, inclining the seat slightly forward will transfer some of the pressure from the spine to the thighs and feet. This will relieve pressure on your back.
- **A curved seat edge.** The front of the seat should be curved and finished in a “waterfall” edge.
- **An adjustable back support in both height and forward and backward tilt.** It is important that the backrest correctly supports the lower part, or lumbar curve, of the back.
- **A freely rotating swivel** so you can move easily from side-to-side.
- **Fully adjustable and padded armrests.** The chair arms should not interfere with adjusting the chair or moving it close to your work surface.

3 Working in Comfort



Your Work Surface

Ideally, you should be able to adjust the height of your work surface.

A simple way to ensure your work surface is at the correct height is to first adjust the height of the seat-pan of your chair. With your chair properly adjusted and your feet firmly on the floor, adjust the work surface height until your forearms are parallel to the floor when you have your fingers on the keyboard or other input device.

Your Work Posture

Sitting in one position for long periods can be uncomfortable. To minimize the potential for physical discomfort or injury, it's important that you maintain proper posture.

- **Back** - While sitting at your work surface, make sure your back is supported by the chair's backrest in an erect position or angled slightly backwards.
- **Arms** - Your arms should be relaxed and loose, elbows close to your sides, with forearms and hands approximately parallel to the floor.
- **Wrists** - Your wrists should be as straight as possible while using the keyboard, mouse or trackball. They should not be bent sideways, or more than 10 degrees up or down.

- **Legs** - Your thighs should be horizontal or angled slightly downward. Your lower legs should be near a right angle to your thighs. Your feet should rest flat on the floor. If necessary, use a footrest, but double check that you have your seat height adjusted correctly before getting a footrest.
- **Head** - Your head should be upright or tilted slightly forward. Avoid working with your head or trunk twisted.
- **Overall** - Change your position frequently and take regular breaks to avoid fatigue.



Setting Up Your HP Computing Equipment

Make sure that all the elements of your HP computer system—monitor, document holder, keyboard, mice and other input devices, and headphones and speakers—are optimally arranged and adjusted to meet your personal requirements. The recommendations that follow will help you achieve this.

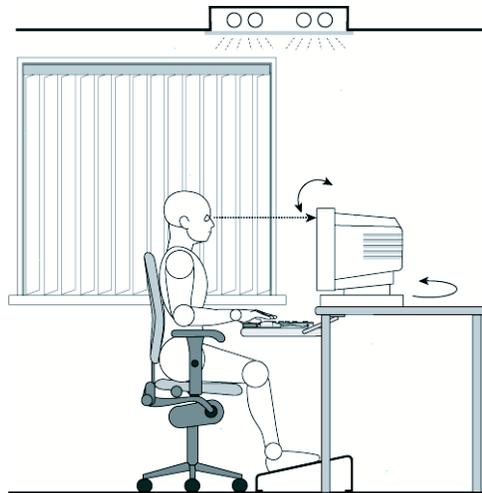
Your HP Monitor

It is important that your monitor screen be clean and positioned correctly to improve readability and help you work comfortably. Glare, high contrast, reflections, dirt and dust will interfere with what you see on the screen. The recommendations that follow can help you achieve a comfortable arrangement.

- The top of your monitor screen should be at or slightly below eye level. Most HP monitors come with a tilt-and-swivel feature that makes it easy to adjust the screen position.
- To avoid obscuring your view, the screen should be positioned perpendicular to your line of sight; that is, straight on.
- To avoid glare or reflection, try to position the monitor so the screen is at a right angle to your window rather than in front of it. If reflection or glare persists, tilting the screen forward may help.

3 Working in Comfort

- Maintain a comfortable viewing distance to the screen. Most people prefer a viewing distance of approximately 46 to 76 cm (18 to 30 inches), depending on monitor size. Character size and the amount of space available on the work surface can affect this distance.
- Text should be easy to read. To help ease eyestrain, adjust text attributes such as character size, spacing, and color. In addition, you will need to use the controls provided with your monitor to adjust the visual settings so that contrast and brightness levels are comfortable for you. High contrast and low brightness is usually the preferable combination.
- The monitor should be free from flicker. If the image on your screen is not stable, the monitor may require repair or adjustment.
- When possible, use a program that has a simple user interface, such as easily identifiable icons and pull-down menus. Also, screen information should be displayed in a structured and well-organized way.



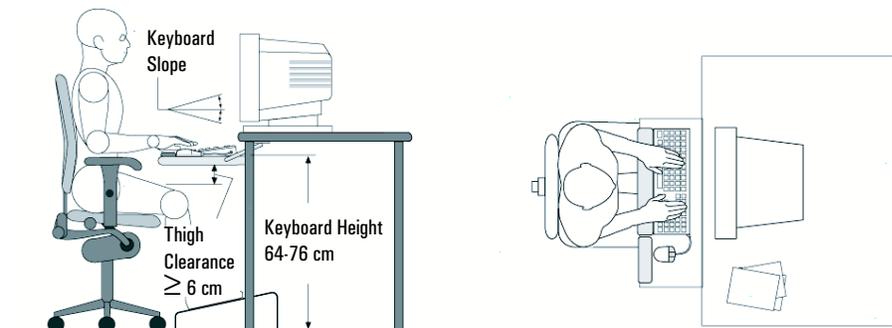
Monitor Use Specifications

- When viewing your monitor, your head should not be tilted more than 15 degrees forward.
- You should not have to look up more than 5 degrees above horizontal or down more than 30 degrees below horizontal for normal work tasks, such as typing or reading.

Document Holders

When keying in data from a hard-copy document, placing it in a document holder rather than on a flat surface will make it easier to read. The following recommendations should be observed when using a document holder:

- The document holder should be at approximately the same height and distance from your eyes as the screen, and as close to the monitor as possible to prevent neck twisting. Some users prefer a document holder mounted to the monitor while others prefer the document holder positioned between the screen and keyboard.
- If the primary task is to view documents rather than using the monitor, the document holder may be placed directly in front of the keyboard with the monitor slightly to the side.
- To help reduce stress on your neck and prevent eye fatigue, try to minimize the movement of your head and eyes while using a document holder.

Your HP Keyboard

The proper positioning and use of your HP keyboard is important when using HP computing equipment. Be sure to observe the following recommendations to optimize your comfort and safety:

- We recommend you place your keyboard in front of the screen or document holder, whichever is viewed the most. Your HP keyboard has long cables so you can place it in the position that is most comfortable for you while you are using your system.
- Because HP keyboards vary in depth, you'll want to be sure that your work surface or keyboard tray has sufficient room to accommodate your model. The keyboard tray should be wide enough to hold both the keyboard and mouse or trackball: 66 to 71 cm (26 to 28 inches).

3 Working in Comfort

- Your HP keyboard may have a kickstand that can be opened or closed to raise or lower the keyboard angle. If you are in the correct sitting position with your elbows at about the same level as the work surface, you may not need to use it. However, if your elbows are below the work surface, you may wish to use the kickstand to raise the back of the keyboard.
- An adjustable keyboard tray may be useful if you cannot adjust your chair or work surface to the proper height for typing. It should adjust in height from 64 to 76 cm (25 to 30 inches) above the floor and tilt forward and backward to help you find the most comfortable position. Note that research has shown that there may be less muscle tension in shoulders and forearms with the keyboard tilted away from you.
- When using your HP keyboard, remember it takes very little pressure or force from your fingers to activate the keys. Improper typing style—the use of too much force—can place unnecessary stress on the tendons and muscles in your hands, wrists, and forearms.
- Make sure that your hands are in a neutral position when you use your keyboard. This means that your forearms, wrists, and hands should be in a straight line.
- The keyboard has a low profile to help prevent excessive bending of your wrists while typing. Literature suggests that you should not bend your wrists sideways or more than 10 degrees up or down. Keep your wrists straight by moving your entire hand and forearm over to use the function keys or numeric keypad.
- You may use a palm rest to help keep your hands and wrists in a comfortable and neutral position when you are not typing. Some HP keyboards come with an integrated palm rest. If you use a palm rest, see that it is rounded and padded, and flush in height with the front edge of the keyboard. Note that your palms—not your wrists—should rest on the palm rest. If you don't have a palm rest, try not to rest your wrists on a sharp edge, such as a work surface edge.

Mice and Other Input Devices



Various aspects of using mice and other input devices may increase your risk of discomfort or injury. Observing the following recommendations may reduce that risk:

- As with the keyboard, try to keep your hand, wrist and forearm in a neutral position while using your mouse or other input device.
- When using a stylus or light pen with a graphics tablet, don't grip the stylus tightly. Keep your hand and fingers relaxed and try to maintain a neutral posture in your hand, wrist and forearm.
- If you use your thumb to rotate the ball on a trackball or spaceball, keep it in a relaxed, natural shape, and maintain a neutral posture in your hand, wrist and forearm.
- Hold the mouse gently by draping your fingers over it. Keep your hand relaxed and fingers loose. Do not grip the mouse tightly.
- It takes very little pressure or force from your fingers to activate the buttons or scroll wheel on your mouse, scrolling mouse, trackball or other input device. Using too much force can place unnecessary stress on the tendons and muscles in your hands, wrists and forearms.
- If you are using a scrolling mouse, be sure to keep your fingers and hand in a relaxed, neutral position when activating the scroll wheel. Also, this type of mouse features software that can minimize the number of mouse movements or button clicks.
- When using a mouse, trackball, stylus and graphics tablet, or other input device, position it as close to the keyboard as possible, and keep it at the same level so you do not have to stretch while using it.
- Use a good quality mouse pad to enable the mouse to work most effectively and reduce unnecessary hand and wrist movements.
- Be sure to keep your mouse and trackball clean. Regular removal of accumulated dust and dirt helps ensure proper tracking and reduces unnecessary hand and wrist motions.

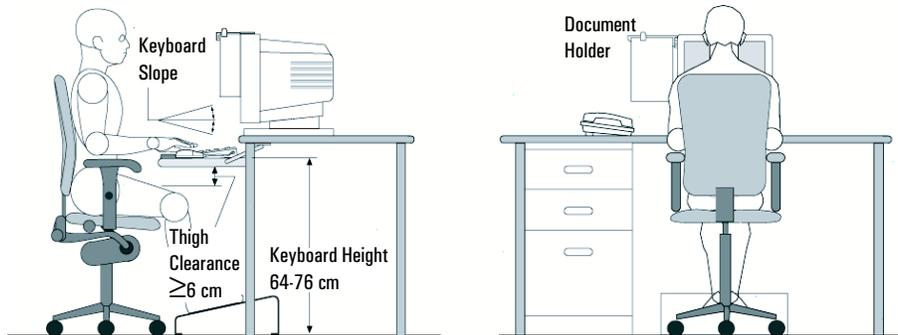
3 Working in Comfort

WARNING

If your PC is multimedia or if you add a sound card to your PC, always turn the volume down before connecting headphones or speakers, to avoid discomfort from unexpected noise or static. Listening to loud sounds for prolonged periods of time may permanently damage your hearing. Before putting on headphones, place them around your neck and turn the volume down. When you put on the headphones, slowly increase the volume until you find a comfortable listening level. When you can hear comfortably and clearly, without distortion, leave the volume control in that position.

Comfort and Safety Checklist

These recommendations are drawn from the latest available international ergonomic standards and recommendations, including ISO 9241 and ANSI/HFS 100-1988.

*General*

- **Work Surface Height** - Adjust either your seat height, work surface or both, to position the work surface at approximately elbow height.
- **Work Surface Arrangement** - Make sure frequently used equipment is within easy reach. For example, if you are primarily using the keyboard, place it directly in front of you, not to the side. If you are primarily using the mouse, place it in front of your hand or arm. If you are using both a mouse and keyboard, place them both at the same work surface height and close together. If a palm rest is used, the height should be flush with the front edge of the keyboard. Other items, such as your telephone or notepad, also should be considered.
- **Monitor** - Place your monitor so that the top of the screen is at, or slightly below, eye level (up to 15 degrees).
- **Head** - Do not tilt your head forward by more than 15 degrees, and try not to turn your head toward the side.

- **Back** - While sitting at your work surface, make sure your back is supported by the chair's backrest in an erect position or angled slightly backwards.
- **Arms** - Make sure your arms and elbows are relaxed and loose, with your upper arm perpendicular to the floor or slightly forward. Keep your forearms and hands approximately parallel with the floor with elbows bent between 70 and 115 degrees. Keep your elbows close to your sides (less than 20 degrees away from your body).
- **Legs** - Your thighs should be horizontal or angled slightly downward. Your lower legs should be near a right angle to your thighs. Make sure there is sufficient room under the work surface for your legs.
- **Feet** - If after adjusting your chair you cannot rest your feet comfortably on the floor, use a footrest, preferably one that can be adjusted in height and angle.

Overall

- Look away from the screen from time-to-time to help reduce eyestrain. Focus on distant objects briefly, and blink periodically to lubricate your eyes. You also should have your eyes checked on a regular basis and ensure your eyeglass prescription is suitable for working on a monitor screen.
- Remember to occasionally shift position and move your body. Keeping your body in one position for long periods is unnatural and stressful. When prolonged work is required, take frequent short breaks. As a rule of thumb, a five or ten minute break every hour is a good idea. Short frequent breaks are more beneficial than longer less frequent breaks. Data show that people who work for long periods of time without a break may be more prone to injury.
- Changing tasks frequently will help prevent muscle stiffness. Examples: alternating between keyboarding, reading, writing, filing, and moving around in your work environment, helps you maintain a relaxed posture. Occasionally stretch the muscles in your hands, arms, shoulders, neck and back. You should stretch at least as often as you take brief task breaks—at least once every hour.
- Discomfort may be alleviated by using alternative ergonomic designs and accessories such as ergonomically personalized chairs, palm rests, keyboard trays, alternative input devices, prescription eyeglasses, anti-glare screens, and more. Seek additional information from the sources available to you, including your employer, doctor, local office supply store, and the *Information Sources* listed in the online version of *Working in Comfort*, preloaded on the hard disk of your HP computing equipment.

3 Working in Comfort

Regulatory Information

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

Manufacturer's Name: HEWLETT-PACKARD France S.A.S

Manufacturer's Address: 5 Avenue Raymond Chanas
38320 Eybens, FRANCE

Declares that the products:

Product Name: Personal Computer

Model Number: HP Small PC 20
HP NetPC 20

Conforms to the following Product Specifications

SAFETY

International: IEC 60950:1991 + A1 + A2 + A3 + A4 / GB4943-1995

Europe: EN 60950:1992 + A1 + A2 + A3 + A4

EMC

CISPR 22:1993 / EN 55022:1994 Class B/ GB9254-1988

EN 50082-1:1992

IEC 801-2:1992 / prEN 55024-2:1992 - 4kV CD, 8kV AD

IEC 801-3:1984 / prEN 55024-3:1991 - 3V/m

IEC 801-4:1988 / prEN 55024-4:1992 - 0.5 kV Signal Lines,
1 kV Power Lines

IEC 555-2:1982 + A1:1985 / EN60555-2:1987

IEC 1000-3-3:1994 / EN61000-3-3:1995

Supplementary information: the product herewith complies with the requirements of the EMC Directive 89/336/EEC and the Low Voltage Directive 73/23/EEC, both amended by the Directive 93/68/EEC and carries the CE marking accordingly.



Grenoble
15 September 1998

Jean-Marc JULIA
Product Quality Manager

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

Manufacturer's Name: HEWLETT-PACKARD France
Manufacturer's Address: 5 Avenue Raymond Chanas-Eybens
38053 Grenoble Cedex 09 - FRANCE

Declares that the products:

Product Name: Personal Computer
Model Number: HP N-30

Conforms to the following Product Specifications

SAFETY

- **International:** IEC 60950:1991 + A1 + A2 + A3 + A4 / GB4943-1995
- **Europe:** EN 60950:1992 + A1 + A2 + A3 + A4

EMC

- CISPR 22:1993 + A1 + A2/ EN 55022:1994 + A1 + A2 Class B ¹⁾
- EN 50082-1:1992
 - IEC 801-2:1992 / prEN 55024-2:1992 - 4kV CD, 8kV AD
 - IEC 801-3:1984 / prEN 55024-3:1991 - 3V/m
 - IEC 801-4:1988 / prEN 55024-4:1992 - 0.5 kV Signal Lines,
1 kV Power Lines
- IEC 555-2:1982 + A1:1985 / EN60555-2:1987
- IEC 1000-3-3:1994 / EN61000-3-3:1995

- GB9254-1988
- FCC Title 47 CFR, Part 15 Class B ²⁾
- ICES-003, Issue 2
- VCCI-B
- AS / NZ 3548:1992

Supplementary information: The product herewith complies with the requirements of the following Directives and carries the CE-marking accordingly: EMC directive 89/336/EEC and Low Voltage Directive 73/23/EEC, both amended by the Directive 93/68/EEC.

¹⁾ The product was tested in a typical configuration with Hewlett-Packard Personal Computer Systems.

²⁾ This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Grenoble
February 1999


Jean-Marc JULIA
Quality Manager

For Compliance Information ONLY, contact:
USA Contact: Hewlett-Packard Company, Corporate Product Regulations Manager, 3000 Hanover Street, Palo Alto, CA 94304.
(Phone: (415) 857-1501)

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, 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 FCC Compliance 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 complies with Canadian ICES-003.

Cet appareil numérique de la Class B est conforme à la norme NMB-003 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.

For your safety, never remove the PC's cover without first removing the power cord and any connection to a telecommunication network. Always replace the cover before switching on again.

Si le cordon secteur n'est pas livré avec votre ordinateur, utiliser un cordon secteur en accord avec votre code électrique national.

USA: utiliser un cordon secteur "UL listed", de type SVT.

Canada: utiliser un cordon secteur certifié CSA.

Pour votre sécurité, ne jamais retirer le capot de l'ordinateur sans avoir préalablement débranché le cordon secteur et toute connexion à un réseau de télécommunication. N'oubliez pas de replacer le capot avant de rebrancher le cordon secteur.

Changing a battery

There is a danger of explosion if the battery is incorrectly installed. For your safety, never attempt to recharge, disassemble or burn the old battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. The battery in this PC is a lithium battery which does not contain heavy metals, nevertheless, in order to protect the environment, do not dispose of batteries in household waste. Please return used batteries to the shop from which you bought them, to the dealer from whom you purchased the PC, or to Hewlett Packard, so that they can either be recycled or disposed of in an environmentally sound way. Returned used batteries will be accepted free of charge.

Changement de la pile

Il y a danger d'explosion lorsque la pile n'est pas installée correctement. Pour votre sécurité, ne jamais essayer de recharger, de démonter ou de brûler l'ancienne pile. Remplacer uniquement avec une pile du même type ou d'un type équivalent recommandé par HP. La pile de cet ordinateur est une pile au lithium qui ne contient pas de métaux lourds, néanmoins, afin de protéger l'environnement, il ne faut pas la jeter dans les ordures ménagères mais la rendre au magasin où vous l'avez achetée, ou revendeur où vous avez acheté l'ordinateur, ou à Hewlett Packard, pour qu'elle soit recyclée, ou stockée de manière qui ne nuit pas à l'environnement. Les piles usées seront acceptées gratuitement.

Notice for the Netherlands



Bij dit apparaat zijn batterijen geleverd. Wanneer deze leeg zijn, moet U ze niet weggoien maar inleveren als KCA.

Hinweis für Deutschland: Geräuschemission

Lärmangabe nach Maschinenlärmmittelverordnung - 3 GSGV (Deutschland):
LpA < 70 dB am Arbeitsplatz bei normalem Betrieb nach DIN 45635 T.19
(under normal use in the workplace, as per ISO 7779).

Warnung

Wenn die Batterie nicht korrekt eingebaut wird, besteht Explosionsgefahr. Zu ihrer eigenen Sicherheit sollten Sie nicht versuchen, die Batterie wiederaufzuladen, zu zerlegen oder die alte Batterie zu verbrennen. Tauschen Sie die Batterie nur gegen den gleichen oder ähnlichen Typ aus, der vom Hersteller empfohlen wird. Bei der in diesem PC integrierten Batterie handelt es sich um eine Lithium-Batterie, die keine Schwermetalle enthält. Batterien und Akkumulatoren gehören nicht in den Hausmüll. Sie werden vom Hersteller, Händler oder deren Beauftragten kostenlos zurückgenommen, um sie einer Verwertung bzw. Entsorgung zuzuführen.

Notice for Japan

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取り扱い説明書に従って正しい取り扱いをして下さい。

This equipment is in the Class B category information technology equipment based on the rules of the Voluntary Control Council For Interference by Information Technology Equipment (VCCI). Although aimed for residential area operation, radio interference may be caused when used near a radio or TV receiver. Read the instructions for correct operation.

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.

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.

HP Software Product License Agreement and Software Product Limited Warranty

Your HP NetVectra PC contains preinstalled software programs. Please read the Software License Agreement before proceeding.

CAREFULLY READ THIS LICENSE AGREEMENT AND LIMITED WARRANTY STATEMENT 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 WITH THE TERMS OF 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. PROCEEDING WITH CONFIGURATION SIGNIFIES YOUR ACCEPTANCE OF THE LICENSE TERMS.

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PRODUCT RECOVERY CD-ROM. If your computer was shipped with a product recovery CD-ROM: (i) The product recovery CD-ROM and/or support utility software may only be used for restoring the hard disk of the HP computer with which the product recovery CD-ROM was originally provided. (ii) The use of any operating system software by Microsoft contained in any such product recovery CD-ROM shall be governed by the Microsoft End User License Agreement (EULA).

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HP Software Product Limited Warranty

THIS HP SOFTWARE PRODUCT LIMITED WARRANTY SHALL COVER ALL SOFTWARE THAT IS PROVIDED TO YOU, THE CUSTOMER, AS PART OF THE HP COMPUTER PRODUCT, INCLUDING ANY OPERATING SYSTEM SOFTWARE. IT SHALL SUPERSEDE ANY NON-HP WARRANTY TERMS THAT MAY BE FOUND ONLINE, OR IN ANY DOCUMENTATION OR OTHER MATERIALS CONTAINED IN THE COMPUTER PRODUCT PACKAGING.

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 software will be uninterrupted or error free. In the event that this software product fails to execute its programming instructions during the warranty period, HP will provide the Customer with non-defective software along with re-installation instructions or assistance.

HP Software

For the applicable Warranty specified in the HP Warranty Card included with your product, HP warrants preloaded HP software against defects in material and workmanship that may result in the failure of HP software to execute when the HP product and HP software are used properly. Except as expressly provided above, HP does not warrant that any HP software will operate uninterrupted or error-free.

If HP receives notice of a defect in an HP software product during the software product's warranty period, HP will, at its option and according to the specified warranty:

1. assist in the re-installation of non-defective software *OR*
2. provide the end-user customer with non-defective software along with written re-installation instructions.

Reloading of the bundled, preloaded HP or non-HP software by HP or any of its designates is not covered by the HP warranty.

Should HP be unable to replace the software within a reasonable amount of time, the Customer's alternate remedy shall be a refund of the purchase price upon return of the product and all copies. Unless otherwise stated or agreed upon in writing with HP, bundled or pre-installed software may not be returned for *refund* separate from the return of the entire bundled or pre-installed system.

Non-HP Software

All pre-installed and bundled *Non-HP* software is warranted by the software vendor and is *not* warranted by HP.

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 non removable 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.

Limitation of Liability and Remedies. THE REMEDIES PROVIDED ABOVE ARE CUSTOMER'S SOLE AND EXCLUSIVE REMEDIES. IN NO EVENT SHALL HP BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFIT) WHETHER BASED ON WARRANTY, CONTRACT, TORT OR ANY OTHER LEGAL THEORY. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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.

FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND: THE WARRANTY TERMS CONTAINED IN THIS STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT, OR MODIFY BUT ARE IN ADDITION TO THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF THIS PRODUCT TO YOU.

(Rev. 16/03/98)

Physical Characteristics

For more information, refer to the PC's data sheet in the library on HP's web site www.hp.com/go/thinclientsupport

Characteristic	Description
Weight (excluding display and keyboard)	5.3 kg (11.7 pounds)
Dimensions	Width: 310 mm (12.2"), Height: 90mm (3.6"), Depth: 320 mm (12.6")
Storage temperature	-40 °C to 70 °C
Storage humidity	0% to 85%
Operating temperature	5 °C to 35 °C (32 °F to 104 °F)
Operating humidity	0% to 80% RH (noncondensing)
Acoustic noise emission:	LwA ≤ 37 dBA
Power supply	Input voltage: 100 - 240V ac (voltage selection switch) Input frequency: 47 to 63 Hz Maximum output power: 90 W (nominal)

Power Consumption

Power Consumption	Windows NT 4.0		Windows 98	
	110V	230V	110V	230V
Operating without I/O	≤27.1 W	≤27.3 W	≤47.3 W	≤45.9 W
Suspend	≤27.1 W	≤27.3 W	≤25.0 W	≤23.5 W
Off	≤2.91 W	≤2.85 W	≤2.91 W	≤2.85 W

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. The 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.

Error Messages	Recommended Action
C:DRIVE ERROR	Check hard disk type in <i>Setup</i> .
C:DRIVE FAILURE	Replace hard disk.
CH-2 TIME ERROR	Replace system board.
CMOS CHECKSUM ERROR	Run <i>Setup</i> , replace battery if error persists.
CMOS SETTINGS WRONG/CMOS DISPLAYTIME WRONG	
CMOS CHECKSUM BAD	
CMOS SYSTEM OPTIONS NOT SET	
CMOS TIME AND DATE NOT SET	
DISK BOOT FAILURE, INSERT SYSTEM DISK AND PRESS ENTER NON SYSTEM DISK OR DISK ERROR	Insert system disk in A: / and press Enter . When booting from hard disk, check hard disk controller installation and cables.
DISK DRIVES OR TYPES MISMATCH ERROR - RUN SETUP CMOS	Check drive type in <i>Setup</i> . Change jumper setting if necessary.
DISPLAY SWITCH IS SET INCORRECTLY	Check video setting in <i>Setup</i> .
DISPLAY TYPE HAS CHANGED SINCE LAST BOOT	Check video setting in <i>Setup</i> .
ERROR ENCOUNTERED INITIALIZING HARD DISK DRIVE/ ERROR INITIALIZING HARD DISK CONTROLLER	Check hard disk controller installation, cables and jumper configuration. Check disk type in <i>Setup</i> .
HDD CONTROLLER FAILURE	
FLOPPY DISK CNTRLR ERROR/ NO CNTRLR ERROR/ NO CNTRLR PRESENT	
FDD CONTROLLER FAILURE	Check FDD controller installation. If no FDD is installed, run <i>Setup</i> and disable floppy drive.
KEYBOARD ERROR/ NO KEYBOARD PRESENT	Check keyboard is correctly connected. Make sure no keys are pressed during boot.
KB/ INTERFACE ERROR	Check keyboard is correctly connected.
PS/2 MOUSE ERROR	Check mouse is correctly connected.
MEMORY SIZE HAS CHANGED SINCE LAST BOOT	Check memory size in <i>Setup</i> .
MEMORY VERIFY AT...	Use specified location to locate bad memory module.
MEMORY PARITY ERROR AT...	
I/O CARD PARITY ERROR AT...	Use specified location to locate expansion card failure.
PRESS A KEY TO REBOOT	An error has occurred, press any key to reboot.
PRESS F1 TO DISABLE NMI, F2 TO REBOOT	BIOS detects NMI (Non-Maskable Interrupt). Press F2 to reboot or F1 to disable NMI.
RAM- CHECKING FOR SEGMENT...	Change bad RAM module.
SYSTEM HALTED, (CTRL-ALT-DEL) TO REBOOT	Boot attempt aborted. Press Ctrl + Alt + Del to reboot.
The computer beeps...	You should...
1,2 or 3 times	Reset memory DIMMs, replace it if necessary.
5 times	Reset the processor, replace it if necessary.
6 times	Change the keyboard or replace the fuse if applicable.
9 times	Replace system board.
4,7,8,10 times	Replace the system board or video controller.



Paper not bleached with chlorine

Part Number D8041-90001
Printed in



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