



PowerBook Troubleshooting Guide

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This guide will help you diagnose and solve some common problems you may encounter with your PowerBook equipment. It also includes answers to common questions about batteries and traveling with the PowerBook, and a summary describing how to restart, turn off, and reset your PowerBook.

Note: This guide covers all PowerBook models and optional equipment. Some hardware and software features described here may not be available on your PowerBook.

You should be familiar with the basic operation of your PowerBook before using this guide, but you do not need to know anything about computer repair.

If you need additional information about procedures described here, check the documentation or on-screen help that came with your computer and other equipment.

Warning Do not attempt to repair equipment yourself. Doing so may void your warranty. Contact an Apple-authorized dealer or service provider or call the Apple Assistance Center at 1-800-SOS-APPL for assistance.

How to find what you need in this guide

Chapter 1 of this guide, “Common Problems,” is organized into several sections, each covering a specific kind of problem. The table of contents lists the problems addressed in each section. If you can’t find your specific problem in the table of contents, try looking through appropriate sections for information that might relate to your problem.

Chapter 2, “Diagnostic Techniques,” gives you a step-by-step approach to diagnosing and solving problems with system software, hard disk drives, and other equipment. Unless you know that your problem can be solved by using the steps in chapter 2, try first to find your problem in chapter 1.

To help locate your problem in the table of contents, answer these questions:

1. What were you trying to do when the problem occurred (start up the computer, connect additional equipment, use a program)?

If the problem occurs when you’re starting up the computer, look for your problem in the section “Starting Up.”

If the problem occurs when you’re trying to use a program or work with the computer, look for it in the sections “Working With Programs” or “Other Problems While Working.”

2. What equipment is affected by the problem?

If certain equipment (such as the display, keyboard, or external hard disk) is not working properly, look for your problem in the section on that kind of equipment.

The following information may also be helpful, especially if you need to call the Apple Assistance Center:

- What extra equipment is connected to the computer?
- If this is a new problem, have you recently connected any new equipment or installed any new software?
- Did your computer experience a system error or crash prior to the problem’s starting? Write down the error message and error code.
- Does the problem occur only under certain conditions (for example, when you’re using a particular program, or when a particular piece of equipment is connected)?
- What version of system software is on your computer?
- What programs, control panels, and system software extensions do you frequently use?

If you can’t find your problem in this guide, or if the solutions suggested here don’t solve your problem, call the Apple Assistance Center at 1-800-SOS-APPL, or contact a local Apple-authorized service provider.

Calling the Apple Assistance Center

Before you contact the Apple Assistance Center at 1-800-SOS-APPL, please take the time to look up your problem in this guide. This guide contains all the information you need to solve many common PowerBook problems.

If you do need to call, please have at hand your PowerBook, related equipment, and system software disks or backup disks.

What to do if your PowerBook needs repair

The Apple Assurance program, which comes with every PowerBook, offers you a broad platform of support options for as long as you own your computer system.

If your PowerBook needs repair, in or out of warranty, you can take advantage of Apple's mail-in repair service. For more information, call 1-800-SOS-APPL. Repair service is also available from more than 2000 Apple-authorized service providers throughout the U.S.

Common Problems

This chapter describes solutions to problems you may experience with your PowerBook. If the suggestions in this chapter and in the chapter "Diagnostic Techniques" don't solve your problem, contact a local Apple-authorized service provider or call the Apple Assistance Center at 1-800-SOS-APPL.

Starting up

If your PowerBook is connected to any other equipment, and the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

The computer doesn't start up.

- The battery may need recharging. Plug the power adapter into a working outlet and then into the PowerBook. Let the battery recharge for a few minutes.
- Check that the power adapter is plugged into a working outlet. If it's plugged into a power strip, make sure the power strip is turned on.

- The screen brightness may be turned down. Adjust the brightness control (marked with the icon ☀) and contrast control (◐). (Some models don't have a contrast control.)
- Make sure the battery is properly seated in its compartment. The battery door should be firmly closed and the top and bottom seams between the door and the PowerBook should be tight and even.
- Perform a hardware reset. See the Appendix for the procedure to use with your model.
- Perform a power manager reset. See the Appendix for the procedure to use with your model.
- If the above suggestions don't work, see Chapter 2, "Diagnostic Techniques."

The computer makes an unusual sound at startup.

- Some PowerBook models cannot operate without a battery. Make sure a battery is in place and properly seated.
- If you hear four tones, start up the computer with the *Disk Tools* disk that came with your computer. If the computer does not start up, or if the hard disk icon does not appear, the hard disk may need repair. Contact an Apple-authorized service provider, or call the Apple Assistance Center. If the hard disk icon does appear, see the section on reinstalling system software in Chapter 2, "Diagnostic Techniques."If your computer did not come with a *Disk Tools* disk, call the Apple Assistance Center.
- There may be a problem with the information stored in the area called parameter RAM. Reset the parameter RAM (see the section on parameter RAM in Chapter 2, "Diagnostic Techniques").

- If you hear eight tones, there may be a problem with a memory expansion card. If a memory expansion card has been installed in your PowerBook, contact an Apple-authorized service provider or call the Apple Assistance Center.

See also the section "Other Problems While Working" in this chapter.

The computer starts up, but the desktop doesn't appear.

- The screen brightness may be turned down. Adjust the brightness control (☀) and contrast control (◐). (Some models don't have a contrast control.)
- There may be a problem with the display of windows. Restart the PowerBook, and hold down the Option key until the desktop icons appear. (When the desktop appears, all windows will be closed.)
- The PowerBook may be trying to start up using an external hard disk that does not contain the correct system software. See the section on hard disk drives in this chapter.

If the above suggestions don't solve the problem, look through this section for other information that may be related to your problem, and see Chapter 2, "Diagnostic Techniques."

When I start up the computer, I see a message about the system software.

- The system software on the startup disk you're using may be incomplete or damaged, or may be the wrong version. Make sure you're using the correct disk as a startup disk. (See "The computer is using the wrong disk as a startup disk" later in this section.)

- If you're sure you're using the correct startup disk, you may need to reinstall system software. See the section on installing system software in Chapter 2, "Diagnostic Techniques."

The computer displays a flashing question mark icon.



- This icon usually means that the computer can't find an appropriate version of system software on any disks attached to the computer. If the computer is connected to any external hard disks, make sure they are turned on. Then restart the computer. If the problem recurs, the hard disk or its system software may be damaged. See Chapter 2, "Diagnostic Techniques."
- If the computer is connected to a Duo Dock, the dock's hard disk drive may need to be updated. Follow these steps:
 - Start up the computer with the *Disk Tools* disk that came with your computer or your system software upgrade kit.
 - On *Disk Tools*, locate and open the HD SC Setup program.



Apple HD SC Setup

- Click Drive until the name of the dock's hard disk appears. (The dock's hard disk has the SCSI ID number 1). Then click Update.



The computer freezes or displays an error message during startup.

- Turn off the computer, disconnect all external devices except the power adapter, and restart the computer. If the computer starts up, turn to the section on equipment in Chapter 2, "Diagnostic Techniques."
- Start the computer, holding down the Shift key until you see the message "Extensions off" in the Welcome to Macintosh box. If the computer starts up, turn to the section on system software extensions in Chapter 2, "Diagnostic Techniques."
- Scan this section and the section "Problems While Working" for additional information that may be related to your problem.

About the codes in error messages The number codes in error messages are used in software development. Sometimes they can help a technician narrow down the source of a problem. However, the codes are usually too general or technical in nature to help you diagnose a problem yourself.

When the computer starts up, a message says there is not enough memory.

- There may not be enough memory to load all the system software extensions you've installed. Restart the computer, holding down the Shift key until you see the message "Extensions off" in the Welcome to Macintosh box. Then try the following to increase available memory:
 - Reduce the size of the disk cache in the Memory control panel.
 - If you use a RAM disk, reduce its size or turn it off in the Memory control panel.
 - Remove some of the system software extensions from the Extensions folder (inside the System Folder).

You need to restart the computer for these changes to take effect.

- If these suggestions don't work, you can increase memory by having a memory expansion card installed in your computer.

The computer is using the wrong disk as a startup disk.

- See the section on hard disk drives in this chapter.

The computer won't restart.

- If the computer freezes, you can try to "force" the program you're using to quit by simultaneously pressing the keys Command (⌘), Option, and Esc on your keyboard. Then click Force Quit in the dialog box that appears. (*Note:* unsaved changes in your current documents will be lost.) Immediately save all open documents, quit all other open programs, and restart the computer.

- If the force-quit procedure doesn't work, perform a hardware reset. See the Appendix for the procedure to use with your model.
- Perform a power manager reset. See the Appendix for the procedure to use with your model.
- If the problem recurs, perform a hardware reset, then reset the parameter RAM (see the section on parameter RAM in Chapter 2, "Diagnostic Techniques"). If the problem still occurs, see the sections on system software extensions and reinstalling system software in Chapter 2.

Every time the computer starts up, it rebuilds the desktop.

- There may be a folder on your hard disk that has the same name as a file the computer uses to keep track of information on your disks. Use the Find command in the File menu to search for a folder named "Desktop" or "Desktop file." If you find one, rename it "Storage." Then restart the computer.

When the computer starts up, no icons appear in the windows, and the pointer alternates between an arrow and a wristwatch, or an empty flashing box appears.

- There is a problem with the display of windows. Restart the computer, holding down the Option key until the desktop icons appear. (When the desktop appears, all windows will be closed.)

When I start up the computer without the power adapter, it restarts itself.

- Some power-management programs restart the PowerBook at a reduced processor speed when the battery is being used, to conserve battery power. To turn off this feature, see the documentation that came with your power management program.

When I start up the computer, the display lights up for a moment, then shuts down.

- Try recharging the battery for 15 minutes, or install another battery. Some models will not start up with a depleted battery, even when the power adapter is plugged in.
- Make sure you are using the correct power adapter for your PowerBook model.

When I start up the computer, I see an icon with a number in it.



- The PowerBook is in SCSI disk mode. If you want to use the PowerBook normally, turn off the computer, then disconnect the SCSI disk adapter cable from the back panel.
- If you are trying to connect a SCSI device to the PowerBook, make sure you are using the HDI-30 SCSI System Cable, which is light gray, about 18 inches long, and has 29 pins in the connector (one “missing” pin). Do not use the shorter, dark gray HDI-30 SCSI Disk Adapter, which is for SCSI disk mode (connecting your computer to another computer as an external hard disk).

Working with programs

If your PowerBook is connected to any other equipment, and the procedures in this section don’t solve your problem, see the section on equipment in Chapter 2, “Diagnostic Techniques.”

The computer freezes or displays a system error message.

- There may be a temporary software problem. To reset the computer, try the following suggestions in order until the computer starts up normally:
 1. If the computer freezes, you can try to quit the program you’re using by pressing the keys Command (⌘), Option, and Esc on your keyboard. Click Force Quit in the dialog box that appears. (You’ll lose unsaved changes in that program’s documents.)
Immediately save all open documents and quit all open programs, then restart the computer.
 2. If you see a message about a system error, click the Restart button (if there is one) to restart the computer.
 3. Perform a hardware reset. See the Appendix for the procedure to use with your model.
 4. Perform a power manager reset. See the Appendix for the procedure to use with your model.
- If the problem recurs, it may involve one or more of your application programs. See the next section, “The computer exhibits odd behavior, such as many unexplained system failures.”

About the codes in error messages The number codes in error messages are used in software development. Sometimes they can help a technician narrow down the source of a problem. However, the codes are usually too general or technical in nature to help you diagnose a problem yourself.

The computer exhibits odd behavior, such as many unexplained system failures.

- Check for multiple System Folders on your startup disk, using the Find command. Throw away extra System Folders (but do not throw away any System Folders from your RAM Disk Backup folder). The System Folder that your PowerBook is using has a small computer icon on it.



System Folder

- Check for viruses on all your disks, using a virus-detection program. Eliminate any viruses the program finds.
- If a problem recurs when you are using a particular program, try the following:
 - Consult the documentation that came with the program to make sure you are using it correctly.
 - Check for multiple copies of the program on your hard disk. Use the Get Info command to check the programs' version numbers. Keep one copy of the latest version and throw away all other copies.
 - Reinstall the program from a known good source (such as the original program disks).

- Increase the program's memory. Quit the program, select its icon, choose Get Info from the File menu, and type a larger number in the Preferred Size box.
- Contact the manufacturer or vendor of the program to find out whether the program contains software errors or "bugs" and whether an upgrade is available.
- Check that the program is compatible with the version of system software you're using (see the program's documentation, or contact the manufacturer or vendor).
- Make sure your control panels and system software extensions (especially any that you recently added) are compatible with your programs. See the section on system software extensions in Chapter 2, "Diagnostic Techniques."

If these suggestions don't solve the problem, see Chapter 2, "Diagnostic Techniques."

A program won't open.

- There may not be enough memory available to open the program. Quit any programs you're not using and try again. If that doesn't work, try restarting the computer. See also the suggestions in "A message says there is not enough memory," later in this section.
- If the program is on a floppy disk, make sure the disk is unlocked. (You unlock a disk by sliding the tab at the corner of the disk so that it covers the hole.)
- The program may be damaged. Reinstall it from a known good source (such as the original program disks).
- Contact the manufacturer or vendor of the program to see if the program is compatible with the version of system software you're using.

A program suddenly quits or disappears, or a message says a program has quit.

- There may be a temporary software problem. Restart the computer, then try opening the program again.
- The program may have run out of memory. See the suggestions in “A message says there is not enough memory,” later in this section.
- If the problem occurs when you are trying to print, there may not be enough memory for printing. See “Nothing happens, or an error message appears, when I try to print” in the section on printers.
- Contact the manufacturer or vendor of the program to see if the program contains software errors or “bugs” and if it is compatible with the version of system software you’re using.

A program runs very slowly.

- Some programs are slowed by processor cycling or by virtual memory. You can turn off processor cycling in the PowerBook control panel, and you can turn off virtual memory in the Memory control panel. See the documentation or on-screen help that came with your computer for instructions.

A message says there is not enough memory.

- There may be a temporary software problem. Save your work, quit all open programs, and restart the computer. If you can’t use the Restart command, see the suggestions in “The computer freezes or displays a system error message,” earlier in this section.
- If your PowerBook is using more than 8 MB of RAM (including virtual memory), make sure that 32-bit addressing is turned on in the Memory control panel.

- If you get this message when you are trying to open or use a program, follow these steps:

1. Choose About This Macintosh from the Apple (apple) menu. Take note of the number in the “Largest Unused Block” section. This number tells you how much memory is available to open programs.
2. Quit the program if it’s open, select its icon, and choose Get Info from the File menu. Take note of the numbers in the Minimum Size and Preferred Size boxes.
3. If the number in the Minimum Size box is larger than the largest unused block, not enough memory is available to use this program. To free memory, quit open programs or restart the computer. You can also type a smaller number in the Minimum Size box if you want to open the program using less memory. (But some programs don’t work well if you assign them less memory.)
4. If the number in the Preferred Size box is smaller than the largest unused block, you may need to assign more memory to the program. (A program may need more memory if you are working with complex documents.) Type a larger number in the Preferred Size box.

- If you frequently want to open more programs than memory allows, try the following:

- Use the Memory control panel to reduce the size of the disk cache, remove or reduce the size of your RAM disk, and turn on virtual memory.
- Have a memory expansion card installed in your computer.

When I try to open a document, a message says the program can't be found.

- The document may have been created with a program that is not on your hard disk, or with a different version of the program.
- You can try opening the document with another program. To determine whether a program can open a document, drag the document icon onto the program icon. If the program icon highlights, then release the button to open the document with that program.
- You can also open a document from within a program by using the Open command in the File menu. For more information, see the documentation that came with your programs.
- If you know the correct program is on your hard disk, there may be a problem with the information that the computer uses to keep track of files. Restart the computer and hold down the Command (⌘) and Option keys until you see a message asking if you want to rebuild the desktop. Release the keys and click OK.

A window has disappeared.

- Another open window may be covering the one you're looking for. Move, resize, close, or hide windows until you see the one you want.
- The window may be hidden. Choose Show All from the Application menu, then click the window you want, or choose the program from the Application menu.

Other problems while working

The screen went blank.

- Screen dimming may be on. Move the pointer to restore the screen's brightness. You can adjust the interval before screen dimming takes effect, or you can turn screen dimming off, using the PowerBook control panel.
- The computer may have gone to sleep. Press any key (except Caps Lock) on the keyboard to wake it. You can adjust the interval before sleep takes effect, or you can set the PowerBook not to sleep, using the PowerBook control panel.
- The battery may be drained. Install a charged battery, or plug in the power adapter and let the battery charge for a few minutes. Then try to wake or start up the computer.

The system software is using an unusually large amount of memory.

- If you are using more than 8 MB of RAM (including virtual memory), open the Memory control panel and make sure that 32-bit addressing is turned on.

Virtual memory is supposed to be on, but it's off.

- If you set aside space for virtual memory on an external hard disk, or a hard disk in a Duo Dock, virtual memory is not available when you disconnect your computer from that disk. You can use the Memory control panel to set aside virtual memory space on your computer's internal hard disk.

Some icons look different from usual.

- There may be a problem with the information that the computer uses to keep track of files. Restart the computer and hold down the Command (⌘) and Option keys until you see a message asking if you want to rebuild the desktop. Release the keys and click OK.
- You may be using a file-compression program to save space on your disk. Some compression programs change the appearance of icons.

When trying to open or move a font file, I see an error message.

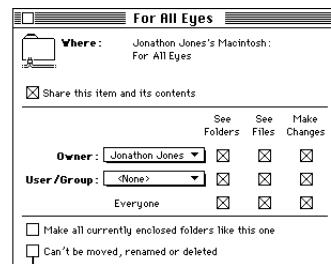
- The font file may be damaged. To remove damaged font files, follow these steps:
 1. Drag the Fonts folder out of the System Folder.
 2. Restart the computer.
 3. Open the Fonts folder that you dragged out, and drag undamaged fonts to the System Folder icon. Respond to the message that appears.
 4. Throw away the old Fonts folder.
 5. Reinstall the damaged font from the original disk.

An icon is blinking in the menu bar.

- A program needs attention. For example, the Alarm Clock may have gone off, or PrintMonitor may be alerting you to a printing problem. Open the menu and choose the program (it may have a diamond by its name). Respond to any messages on the screen. If it's not clear what you should do, consult the documentation that came with the program.

A file can't be thrown away.

- The file may be locked. Choose Get Info from the File menu and click the Locked checkbox to remove the X. You can also delete locked files that are in the Trash by holding down the Option key while you choose Empty Trash from the Special menu.
- An application program may be using the file. Close the file or quit the program.
- If the file is on a floppy disk, the disk may be locked. Unlock the disk by sliding the tab so that it covers the hole at the corner of the disk.
- The file may be in a shared folder that can't be changed. You can throw away the file by turning off file sharing temporarily (click Stop in the Sharing Setup control panel). Or you can select the shared folder, choose Sharing from the File menu, and uncheck the box labeled "Can't be moved, renamed, or deleted" or "Same as enclosing folder."



To throw away a file, make sure this box is not checked.

The computer makes unusual sounds.

- A program may need your attention. If an icon is blinking in the menu bar, open the menu, choose the program (it may have a diamond by its name), and take the necessary action.
- The Alarm Clock may have gone off. Choose Alarm Clock from the Apple (apple) menu.
- Open the Easy Access control panel and check whether any features are turned on.
- Select a different system sound in the Sound control panel.
- The PowerBook speaker periodically turns itself off to save power. Sometimes this causes a clicking or popping noise. This sound is normal.
- Plug in the power adapter. If the sounds go away, they may be related to the battery. Recondition the battery (discharge it completely and recharge it) according to the instructions in Chapter 3, “Battery and Travel Information.”
- Some PowerBooks don’t work properly without a battery installed. You may hear odd sounds if you attempt to use one of these models without a battery installed.
- If the sounds are regular or melodic, they may be caused by interference from electrical equipment. Move the PowerBook farther away from any such equipment.

See also the section “Starting Up,” earlier in this chapter.

I can't access some of the memory on my PowerBook.

- All computers set aside some memory for system overhead. The PowerBook 180, for example, sets aside about 40K of RAM. PowerBook 500 Series computers set aside about 400K of RAM.
- If you want to open more programs than memory allows, you can use the Memory control panel to turn on virtual memory, decrease the size of the disk cache, or remove or decrease the size of the RAM disk (if you’re using one). You can also have a memory expansion card installed in your computer.
- If your PowerBook is using more than 8 MB of RAM (including virtual memory), make sure that 32-bit addressing is turned on in the Memory control panel.

Sleep

Some control panels or system software extensions affect the computer’s sleep feature. If you use such items, check the documentation that came with them.

The computer goes to sleep too often.

- Use the PowerBook control panel to change the battery conservation options.

The computer doesn't go to sleep automatically.

- You may have set the computer not to go to sleep when the power adapter is plugged in. Use the PowerBook control panel to change the battery conservation options.

- The computer may not sleep automatically if any of these conditions applies:
 - You are connected to a shared disk on the network.
 - Your 500-series computer is connected to an Ethernet network.
 - The printer/modem port or internal modem is in use by a communications program or a printer.
 - Application programs are working in the background.
 - AppleTalk is active and the power adapter is plugged in.
 - The computer is connected to a Duo Dock.
 - The computer is connected to a MiniDock and an external monitor is attached.

Battery and power adapter

If the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

Important Make sure always to plug the power adapter into a working electrical outlet *before* plugging it into the PowerBook.

The battery isn't charging.

- Check that the power adapter is firmly connected and plugged into a working outlet. If it's plugged into a power strip, make sure the power strip is turned on.
- If you're using a PowerBook 200 Series computer, make sure you're using the correct software for your battery. Determine which battery type you have, then make sure your System Folder contains the file named in the table.

ENABLER	BATTERY TYPES SUPPORTED*
Enabler 201	Type I
PowerBook Duo Enabler v1.0	Types I and II
PowerBook Duo Enabler v2.0, or Type III Battery extension (in the Extensions folder)	Types I, II, and III

*Type I batteries have an indicator switch on the side. Battery types II and III are so labeled on the battery.

- Make sure that all equipment connected to your PowerBook is low-power equipment or has its own power source. Low-power equipment is marked with this icon: 
- Shut down the computer or put it to sleep, then remove the battery and put it back in the computer. Check that the battery door is firmly closed and make sure that the top and bottom seams (where the battery door and the PowerBook meet) are tight and even.
- If you are charging the battery in a recharger, make sure you have the correct recharger for your type of battery.
- If the above procedures don't fix the problem, try the following to determine the cause of the problem:
 - Try using another battery in the PowerBook. If it charges normally, the original battery is probably damaged or dead.
 - Try using another power adapter (make sure to use an adapter designed for your model). If it works, the problem may be in the original power adapter.

- Try recharging the battery in an external battery recharger (make sure to use a recharger designed for your battery). If that works, there may be a problem with the electrical contacts inside your PowerBook.

If you suspect a problem with your equipment, contact an Apple-authorized service provider or call the Apple Assistance Center.

The computer works only when the power adapter is plugged in.

- Shut down the computer or put it to sleep, then remove and put back the battery. Check that the battery door is firmly closed and that the top and bottom seams (where the battery and the PowerBook meet) are tight and even.
- Let the battery recharge for several hours.
- If you're using a 200-series computer, see the information about battery software in "The battery isn't charging," earlier in this section.
- Try installing a different battery. If that battery works, the original battery may be damaged or dead. If no battery works, your PowerBook may need repair. Contact an Apple-authorized service provider or call the Apple Assistance Center.

The battery is draining too fast.

- Turn down the screen brightness, turn off virtual memory, use the PowerBook control panel to change the battery conservation options, or work with the power adapter plugged in. The documentation or on-screen help that came with your computer has more power conservation suggestions.

- Make sure that all equipment connected to your PowerBook is low-power equipment or has its own power source. Low-power equipment is marked with this icon:  If you are using a MiniDock and an external monitor, SCSI equipment, a printer, or an external modem, you should plug in the power adapter.

- The modem uses power whenever a communications program is open. Quit your communications program if you aren't using it.
- AppleTalk uses power when it is on. If you aren't using network services, turn off AppleTalk in the Chooser.
- Your battery may need to be reconditioned (discharged completely and recharged). See Chapter 3, "Battery and Travel Information," for instructions.
- Make sure you are using a power adapter designed for your model of PowerBook.
- Try using a different battery. If that battery works, the original battery may be damaged or dead.

I can't insert a battery.

- Some batteries have a protective slider that covers the battery contacts for safety when the battery is outside the computer. Move the slider aside to expose the contacts.

Floppy disk drives

If you're using an external floppy disk drive, and the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

When I insert a floppy disk, a message says that it cannot be read, or its icon doesn't appear on the desktop.

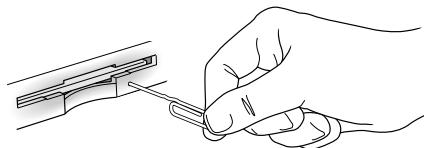


- If the disk is new, it may need to be prepared for storing information. Initialize the disk.
- The disk may have been prepared for use with another type of computer. If you want to use it to store Macintosh files, you can initialize it (which will erase any information that's on it). If you want to use files created on another kind of computer, you may be able to use Macintosh PC Exchange or another translation program to read the files on the disk.
- The disk may not be seated properly in the disk drive. Eject it and insert it again. If the disk is stuck, you may need to eject it manually. See "I can't eject a floppy disk," later in this section.
- Insert a different disk. If the drive recognizes that disk, there may be a problem with the original disk. You may be able to fix it using a disk repair program. Or you can reinitialize the disk. (You will lose any information stored on the disk if you reinitialize it.) If initialization fails, discard the disk.

- Insert the disk in another disk drive. If that drive recognizes the disk, there may be a problem with the original disk drive.
- Restart the computer, holding down the Shift key until you see the message "Extensions off" in the Welcome to Macintosh box. When the computer is finished starting up, insert the disk. If it's recognized, the problem may be related to a system software extension. See the section on system software extensions in Chapter 2, "Diagnostic Techniques."
- Start up the computer with the *Disk Tools* or *Utilities* disk that came with it. If the disk drive ejects it, the drive probably needs repair.
- Initialize an 800K disk and a high-density disk in the drive. If initialization fails, the drive probably needs repair.

I can't eject a floppy disk.

- The disk may be stuck. Restart the computer, holding down the button on your pointing device. If the disk is not ejected, you can eject it manually. Carefully insert the end of a straightened paper clip into the small hole near the disk drive's opening, and push firmly until the disk is ejected.



I can't save or copy files onto a floppy disk.

- The disk may be locked. Unlock it by sliding the tab at the corner of the disk so that it covers the hole.
- The disk may be full. Throw away items on the disk that you no longer need, or save the files on a different disk.
- The disk or disk drive may be damaged. Test it with Disk First Aid (on the *Disk Tools* disk that came with your computer), or use the suggestions in “When I insert a floppy disk, a message says that it cannot be read, or its icon doesn’t appear on the desktop,” earlier in this section. (Some models do not come with a *Disk Tools* disk.)

Hard disk drives

If you’re using an external hard disk or a Duo Dock, and the procedures in this section don’t solve your problem, see the section on equipment in Chapter 2, “Diagnostic Techniques.”

The computer won’t start up from the internal hard disk, or the hard disk icon doesn’t appear on the desktop.

- There may be a temporary software problem. Turn off the computer, wait at least 10 seconds, and then turn it on again.
- If the computer is attached to an external hard disk or a Duo Dock, that hard disk may be selected as the startup disk. You can change this setting in the Startup Disk control panel.

See also “The computer displays a flashing question mark icon” in the section on starting up in this chapter; the section on SCSI equipment in this chapter; and Chapter 2, “Diagnostic Techniques.”

The hard disk keeps stopping and starting again.

- The hard disk may be going to sleep to conserve power. Use the PowerBook control panel to change the power conservation settings.

The computer is using the wrong disk as a startup disk.

- Open the Startup Disk control panel and make sure the correct disk is selected. Then restart the computer.
- If you’re trying to start up from an external hard disk, the computer may not be recognizing the disk. See the section on SCSI equipment in this chapter, and see Chapter 2, “Diagnostic Techniques.”

- There may be a problem with your startup disk or with its system software. See chapter 2, “Diagnostic Techniques.”

Note: If you set your PowerBook to start up from a hard disk in a Duo Dock, it will try to start up from the hard disk in any Duo Dock you use.

An external hard disk doesn’t work.

Most problems with external hard disks are caused by one of the following:

- SCSI ID number conflicts or incorrect SCSI connections (see the section on SCSI equipment in this chapter).
- Damage to the hard disk or to information on it (see the section on hard disks in Chapter 2, “Diagnostic Techniques”).
- Incompatible system software on an external hard disk being used as a startup disk (see “The computer is using the wrong disk as a startup disk,” earlier in this section).
- Outdated hard-disk driver software (see “The computer displays a flashing question mark icon” in the section “Starting Up,” earlier in this chapter).

Trackballs or other input devices

If you're using an external trackball, mouse, or other input device, and the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

The pointer won't move.

- A program may be doing some work. Wait a few moments and then try again.
- A temporary software problem may have caused the computer to "freeze." See "The computer freezes or displays a system error message" in the section "Working With Programs," earlier in this chapter.
- You may have connected the pointing device while the computer was turned on, or the cable may be loose. Shut down or turn off the computer, then disconnect and reconnect the device, and restart the computer.
- Warning** Do not connect or disconnect keyboard or pointing device cables with the computer turned on. You could damage your equipment.
- Check the trackball rollers. Remove the trackball (for instructions, see steps 1–3 in "The pointer sticks or jumps when I use the trackball or trackpad," later in this section). Locate the rollers and turn them with your finger. If the pointer does not move, the trackball may need repair.

The pointer moves too fast or too slowly.

- Adjust the pointer's tracking speed using the Mouse or TrackPad control panel.
- You may have connected the pointing device while the computer was turned on. Shut down or turn off the computer, reconnect the device, and restart the computer.
- Software used by an external trackball may be affecting the PowerBook's trackball/trackpad. Check in the Control Panels folder for any items that might be associated with an external trackball. Remove them from the System Folder, then restart the computer.

The pointer sticks or jumps when I use the trackball or trackpad.

- If you're using a trackpad, make sure to use only one finger on the pad.
- If you're using a trackball, it may need to be cleaned. Follow these steps:
 1. Remove the trackball retaining ring by turning it counterclockwise with your fingers until it pops out.
The mechanism may be tight if the ring has never been removed before.
 2. Remove the trackball by tilting the computer and lifting it out.
 3. Locate the rubber rollers at the left and bottom sides of the trackball cavity.
The rollers look like small rings or wheels.

4. Use a clean, blunt object (such as your fingernail) to scrape debris off the rollers.
If the movement of the roller mechanism makes cleaning difficult, steady the roller by pressing a straightened paperclip or similar object against it.
Do not use any liquid in the trackball cavity.
5. Wipe debris off the three white or red bearings or support posts.
6. Wipe the trackball with a soft, lint-free cloth.
7. Put back the trackball and retaining ring.

I just cleaned the trackball, and it feels worse than before.

- After you use it for a few minutes, the problem should go away.

Keyboards

If you're using an external keyboard, and the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

Typing on the keyboard produces nothing on the screen.

- Make sure the program you're using is set to accept text input. Usually you need to set an insertion point or select some text before typing. If you're using a communications program, you may need to turn on the "local echo" setting.
- Open the Easy Access control panel and make sure Slow Keys is turned off.

- Open Key Caps in the Apple (apple) menu and check whether the PowerBook is recognizing keyboard input. If so, the keys in the Key Caps window will darken when keys are pressed on the keyboard.
- If you're using an external keyboard or a keyboard connected to a dock, shut down the computer, then check the keyboard cable connections.

Warning Do not connect or disconnect the keyboard cable with the computer turned on. You could damage your equipment.

See "A key won't stop repeating," next.

A key won't stop repeating.

- Open Key Caps in the Apple (apple) menu. If any keys in the window are darkened, keys may be stuck down on your keyboard. This problem is sometimes related to an incorrectly installed memory expansion card, especially if it occurs when the computer is in a Duo Dock. Contact an Apple-authorized service provider, or call the Apple Assistance Center.

Some keys don't work.

- If you're using an external keyboard or a keyboard connected to a dock, shut down the computer, unplug the keyboard, restart, and try the PowerBook keyboard. If the problem does not recur, the problem may be in the keyboard, dock, or cables.

PowerBook display

The computer starts up, but the screen is dark.

- Adjust the brightness control (❖) and the contrast control (●). (Some models don't have a contrast control.)
- Perform a power manager reset. See the Appendix for the procedure to use with your model.
- Start up the computer using the *Disk Tools* or *Utilities* disk that came with it. If the screen is still dark, there may be a problem with the display. Contact an Apple-authorized service provider, or call the Apple Assistance Center.

The screen is too dark.

- Adjust the brightness control (❖) and the contrast control (●). (Some models don't have a contrast control.)
- The screen may take several minutes to warm up, especially if you've chosen a high brightness setting or if the computer is cold.
- Screen dimming may be on. Move the pointer to restore the screen's brightness.
- The screen dims automatically when the battery starts to run low. Plug in the power adapter or install a charged battery.

The screen went blank.

- Screen dimming may be on. Move the pointer to restore the screen's brightness.
- The computer may have gone to sleep. Press any key (except Caps Lock) on the keyboard to wake it.
- The battery may need recharging. Plug in the power adapter, let the battery charge for a few minutes, and then try to wake or start up the computer again.

The screen flickers.

- Adjust the brightness control (❖) and the contrast control (●). (Some models don't have a contrast control.)
- Open the Monitors control panel and set the computer to display fewer colors or grays.
- If tilting the display affects the flickering, there may be a loose cable. Contact an Apple-authorized service provider, or call the Apple Assistance Center.

The screen is blurred or out of focus.

- Tilt the display or change your viewing angle.
- Adjust the brightness control (❖) and the contrast control (●). (Some models don't have a contrast control.)

Ghost images, lines, or shadows appear on the display.

- These are limitations of the passive-matrix displays on some PowerBook models. The following suggestions may help:
 - Adjust the contrast control (●).
 - If you have a color or grayscale display, use the B&W setting in the Monitors control panel.
 - Use a desktop pattern that's mostly white or gray.
 - Tilt the display or change your viewing angle.
- When the computer is left on for many hours, temporary images may appear on the screen. Put the computer to sleep. The longer the computer was left on, the longer it will take for the images to fade, but they will eventually disappear.
- If lines are persistent, the display may need repair. Contact an Apple-authorized service provider or call the Apple Assistance Center.

There are black bars at the top and bottom of the PowerBook display.

- If an external monitor is attached, the video mirroring feature may be turned on. You can turn it off using the PowerBook Display control panel.
- Some models (e.g., the PowerBook 270c, 280c, and 540c) use a slightly smaller image area when you display thousands of colors. To use the full display, open the Monitors control panel, click Options, and make sure 640x480 is selected.

Spots appear on the display.

- Individual pixels on active-matrix displays can sometimes fail, creating small spots on the display. If there are more than a few spots, contact an Apple-authorized service provider, or call the Apple Assistance Center.
- Restart the computer and hold down the Command (⌘) and Option keys until you see a message asking if you want to rebuild the desktop. Click OK. This procedure sometimes eliminates spots on the display.

Distortion or lines appear on the display.

- There may be a problem with the display cable or with a memory expansion card. Contact an Apple-authorized service provider, or call the Apple Assistance Center.

The computer freezes when screen dimming takes effect.

- Screen dimming does not work with some programs. Open the PowerBook control panel and turn off screen dimming.

External monitors

If the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

The monitor remains dark.

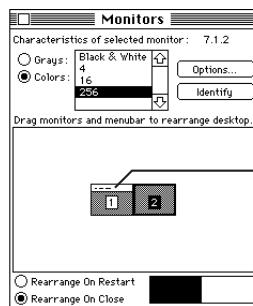
- Shut down the PowerBook, then make sure the monitor is connected to the PowerBook, plugged into an active outlet, and turned on. (Most monitors have a light on the front panel to show whether they are on.)

The monitor is on, but no image appears.

- Screen dimming may be on. Move the pointer to restore the screen's brightness.
- With some models, the monitor needs to be activated each time it's connected to the PowerBook. Open the Monitors control panel, click the icon representing the external monitor, then close the control panel. If only one icon appears, the monitor may not be connected properly.
- The monitor may have been connected while the PowerBook was on. Shut down the PowerBook, reconnect the monitor, and start up the PowerBook.
- Adjust the monitor's brightness and contrast controls.
- Open the Monitor control panel and press the Identify button. The number on each monitor icon should appear on the corresponding screen. If not, there may be a problem with the connection, or the monitor may need repair.

The external monitor does not show the menu bar.

- Open the Monitors control panel and drag the small menu bar to the icon of the monitor that you want to display the menu bar. You may need to restart the computer for the change to take effect.



The pointer won't move from one monitor to another.

- With some models, the monitor needs to be activated each time it's connected to the PowerBook. Open the Monitors control panel, click the icon representing the external monitor, then close the control panel.
- The pointer moves between monitors in the area where the monitor icons touch in the Monitors control panel. Open the Monitors control panel and check that the positions of the monitor icons match the positions of the actual monitors. If not, drag the icons until they are positioned as you want them.

There are black bars at the top and bottom of the monitor screen. The monitor shows the same image as the display.

- The video mirroring feature is turned on. With video mirroring, the monitor shows the same image as the internal display. You can turn it off using the PowerBook Display control panel.

The monitor doesn't work, or the image is distorted.

- Shut down the PowerBook, then make sure the monitor is plugged in, turned on, and connected properly. Check the contrast and brightness controls.
- Make sure you're using the correct adapter. If you are using a monitor from a manufacturer other than Apple, you may need a special adapter.
- To determine the cause of the problem, try the following:

- Connect the monitor to another computer. If it works, there may be a problem with the PowerBook or the dock. If it doesn't work, there may be a problem with the monitor.
- Connect another monitor to the PowerBook. If it works, there may be a problem with the original monitor. If it doesn't work, there may be a problem with the PowerBook or the dock.
- Connect the monitor using a different cable. If it works, the problem may be in the original cable.

Important Make sure that all equipment is turned off before connecting or disconnecting cables.

The monitor goes dark after a few minutes.

- Screen dimming may be turned on. Move the pointer to restore the screen's brightness. You can change the interval before screen dimming takes effect in the PowerBook or PowerBook Display control panel.

The computer freezes when screen dimming takes effect.

- Screen dimming does not work with some programs. Open the PowerBook or PowerBook Display control panel and turn off screen dimming.

There is wavy or jittery interference on the external monitor.

- This interference may be generated by a magnetic field. If the monitor is near another piece of equipment (such as a TV, speakers, or another monitor), move the monitor away from the equipment.

Network and file sharing

Introduction

If you are having problems using the network or file sharing, try the following before attempting further solutions:

- Make sure that AppleTalk is turned on in the Chooser.
- Open the Network control panel and make sure the correct network type is selected.
- Make sure that the network cables are connected properly. A LocalTalk cable should be connected to the printer port or the printer/modem port. An Ethernet cable should be connected to the Ethernet port.

- Make sure that all the network software is installed. The Network and AppleShare extensions should be in the Extensions folder. If you want to use file sharing, the Sharing Setup control panel should be in the Control Panels folder, and the File Sharing extension should be in the Extensions folder. If any of these items is missing, use the system software disks that came with your computer to reinstall network and file-sharing software.



AppleShare



File Sharing Extension



Sharing Setup



Network

- Make sure the network is working by checking in the Chooser for the shared disks and printers you usually use.
- Try connecting to the network from a different location, or connecting a printer or another computer directly to the PowerBook using network cables. If that works, the problem is likely to be in the network. If it doesn't work, the problem may be in the PowerBook or its network software.

Printers and shared disks don't appear in the Chooser.

See the suggestions in "Introduction," earlier in this section.

- If you suspect the problem is in the PowerBook, reset the parameter RAM. (See the section on parameter RAM in Chapter 2, "Diagnostic Techniques.")

The computer I want to connect to doesn't appear in the Chooser.

See the suggestions in "Introduction," earlier in this section.

- Make sure the computer you're trying to connect to is turned on.
- Make sure file sharing is active on the computer you're trying to connect to. (That computer's Sharing Setup control panel should say that file sharing is on.)

I connected to another computer, but the shared disk I want to use is not available.

- You may already be connected to the shared disk. Check for its icon on your desktop.
- You may not have the access privileges you need to use the shared disk. Ask the network administrator or the owner of the shared item to give you access (see the documentation or on-screen help that came with your computer for instructions).

I connected to another computer, but I can't see any files.

- Make sure that files are being shared on the other computer. The File Sharing Monitor control panel on that computer lists the items being shared.
- Make sure you have the access privileges you need to view the files. Ask the network administrator or the owner of the shared item to give you access (see the documentation or on-screen help that came with your computer for instructions).

I can't connect to my computer from another Macintosh.

See the suggestions in "Introduction," earlier in this section.

- Make sure that your computer is turned on, file sharing is active on your computer, you have the correct access privileges, and you entered your name and password correctly (the ones in the Owner section of your Sharing Setup control panel). If you connect as the owner, you automatically have access to all files on your computer (unless you change the owner's access privileges).
- If you're connecting to your computer as a guest or authorized user, make sure that files are being shared on your computer (check the File Sharing Monitor control panel on your computer) and that guests or authorized users have the appropriate access privileges (select the shared items and choose Sharing from the File menu, and check the Users & Groups control panel on your computer).

For more information on these procedures, see the documentation or on-screen help that came with your computer.

A message says that a disk can't be ejected because it's being shared.

- When you have file sharing turned on, you can't eject disks (other than floppy disks) that were connected to your computer when you started it up. You can eject the disk by turning off file sharing in the Sharing Setup control panel. After you've ejected the disk, you can turn file sharing back on.

A message says that a CD-ROM disc can't be shared.

- To share a CD-ROM disc, you must insert it while the computer is starting up. Insert the disc partway into the CD-ROM drive, then restart the computer. Immediately after the computer restarts, insert the disc into the CD-ROM drive.

A message says that file sharing can't be turned on.

- Make sure AppleTalk is turned on in the Chooser.
- Make sure you have at least 400K of available space on your hard disk.
- Some disk-formatting programs don't work with file sharing. If you use such a program, contact the manufacturer or vendor for compatibility information.
- There may be a problem with some of the information your computer uses to start up file sharing. Follow these steps in order until the problem is solved:
 - Open the Sharing Setup control panel and enter new information in the Owner section. Then try again to turn on file sharing.
 - Remove the File Sharing folder from the Preferences folder (inside the System Folder). Then restart the computer and try to turn on file sharing.
 - Reset the parameter RAM. (See the section on parameter RAM in Chapter 2, "Diagnostic Techniques.") Afterward, make sure to turn AppleTalk back on and select the correct network type in the Network control panel.
 - Remove the Users & Groups Data File from the Preferences folder (inside the System Folder). Restart the computer.



Users & Groups Data File

- Reinstall system software. (See the section on system software in Chapter 2, "Diagnostic Techniques.")

A message says that an item can't be shared.

- Make sure you have at least 1 MB of space available on your hard disk.
- Some removable storage devices can't be shared. Check with the manufacturer or vendor for more information.
- Some disk-formatting programs don't work with file sharing. If you use such a program, check with the manufacturer or vendor.

Can System 6 and System 7 users share files?

- System 6 computers with the AppleShare software installed can use the Chooser to connect to System 7 computers that have file sharing turned on. Computers using System 6 cannot be set up as shared disks on the network, but they can be set up as dedicated file servers using the AppleShare Server software.

The file-sharing section doesn't appear in the Sharing Setup control panel.

See the suggestions in "Introduction," earlier in this section.

- You may have turned off AppleTalk or file sharing using an extension management program. Turn them back on.
- If the file-sharing and network software is not in your System Folder, use the system software disks that came with your computer to reinstall file-sharing and networking software.

I can't open a shared disk or folder.

- You may not have the access privileges needed to use the disk or folder. Ask the network administrator or the owner of the shared item to give you access.
- Check with the owner of the item to make sure you are entering your name and password exactly as specified by the owner (including spaces and capitalization) and try again.

Printers

If the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

The computer can't find the printer.

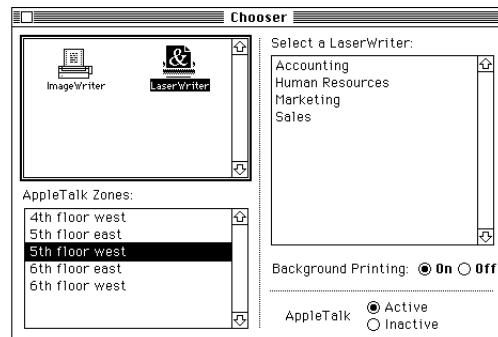
- Make sure the printer is connected and turned on.
- Important** Make sure that all equipment is turned off before connecting or disconnecting cables.
- The printer may not be selected in the Chooser. Open the Chooser and select the printer you want to use. If the printer is connected to a port, make sure the correct port is selected.

- If you have an internal modem, you may need to activate the external printer/modem port. Make sure the external or ("normal") modem port is selected in the control panel, then select the printer and the port in the Chooser. (Depending on your model and system software version, you use the PowerBook, PowerBook Setup, or Express Modem control panel to activate the port.)

- Reset the parameter RAM. See the section on parameter RAM in Chapter 2, "Diagnostic Techniques." Then select the printer in the Chooser and try printing again.

The printer does not appear in the Chooser.

- Make sure you've selected the correct kind of printer on the left side of the Chooser window. For example, if you're using a StyleWriter II, make sure to select StyleWriter II, not StyleWriter.



- Use the scroll bars to look through all the selections in the Chooser windows.

- Check the connections between your computer and the printer, including relevant sections of the network if appropriate. (See the introduction to the networking and file sharing section, earlier in this chapter.)
- Make sure the correct printer software is in the Extensions folder inside your System Folder.
- If you're using a network printer, make sure that AppleTalk is active in the Chooser. If you are using a printer connected directly to your computer, make sure AppleTalk is inactive.
- If your network has zones, make sure the zone containing your printer is selected.

Nothing happens, or an error message appears, when I try to print.

- There may not be enough memory for printing. Try the following:
 - Quit the program immediately after sending the Print command.
 - Increase the amount of memory that PrintMonitor uses. (Quit PrintMonitor if it's open, select it, choose Get Info from the File menu, and type a larger number in the Preferred Size box.)
 - Reduce the amount of memory the program uses.
- Make sure the printer is turned on. Some printers need to warm up for a few minutes after you turn them on.
- The printer may be out of paper or may need attention. Check the printer status lights and any messages on your screen.
- Open the Application menu. If the PrintMonitor program is there, choose it and check for status messages.

- Reinstall your printer software.
- If you're using a printer connected to the printer/modem port on your 200-series computer, or a printer connected to a dock, see also "I can't print to a printer connected to the dock's printer port" in the section on docks.
- Reset the parameter RAM. (See the section on parameter RAM in Chapter 2, "Diagnostic Techniques.")

Docks

If the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

The computer can't be inserted into the Duo Dock.

- Make sure the docking connector door on the PowerBook's back panel is open.
- Make sure the Duo Dock is unlocked. The key should be in the vertical (unlocked) position.
- Make sure the PowerBook is shut down (not in sleep).
- Make sure the PowerBook display is completely closed.
- Make sure nothing is stuck to the bottom of the PowerBook. Even a business card is thick enough to misalign the docking mechanism.
- Unplug the dock and plug it back in again.
- Make sure the top cover of your dock is compatible with your PowerBook. Color models require a taller cover.

The eject button on the Duo Dock doesn't work.

- Make sure the computer is shut down. Some programs don't respond to the Duo Dock's Shut Down command.
- Make sure the Duo Dock is unlocked. The key should be in the vertical (unlocked) position.
- A very heavy object, such as a two-page monitor, on top of the Duo Dock can prevent the computer from being ejected. The documentation that came with your Duo Dock tells you the amount of weight that the dock can support.
- To manually eject the PowerBook, make sure the Duo Dock is unlocked, then insert the key, a small screwdriver, or a similar object into the hole on the left side of the Duo Dock and press gently to release the latches. Pull the PowerBook out of the dock.

When I start up the computer after docking, it's ejected.

- Make sure the computer is shut down (not in sleep).

When I start up the computer in the Duo Dock, nothing happens.

- Try the following suggestions in order:

1. Check that the connections are secure.

Important Make sure that all equipment is turned off before connecting or disconnecting cables.

2. Press the Power On key on the external keyboard.

3. Press the power switch on the back of the Duo Dock. If the computer starts up, open Key Caps in the Apple (apple) menu. If there are darkened keys in the window, your computer may need repair. Contact an Apple-authorized service provider or call the Apple Assistance Center.

- 4. If a hard disk drive was installed in your Duo Dock, it may have been assigned the wrong SCSI ID number. You can check the ID number using the HD SC Setup program on the *Disk Tools* disk that came with your computer. If the ID number of the Duo Dock hard disk is something other than 1, have an Apple-authorized service provider reset the ID number.

See also Chapter 2, "Diagnostic Techniques."

When I start up the computer in the Duo Dock, nothing appears on the monitor.

See the section on external monitors in this chapter.

When I start up a computer connected to a MiniDock, nothing happens.

- Try the following suggestions in order:
 1. Check that the connection is secure.
 2. Press the Power On key on any of your keyboards.
 3. Press the power button on the back of the MiniDock.
 4. Plug in the power adapter, let the battery charge for a few minutes, then try again to start up the computer.
- Connect the computer to another MiniDock. If that works, then there may be a problem with the original MiniDock.

If these suggestions don't solve the problem, see Chapter 2, "Diagnostic Techniques."

The battery drains quickly when the computer is connected to the MiniDock.

- If you are using an external monitor, SCSI equipment, a printer, or an external modem, you should plug in the computer's power adapter.
- If other equipment is connected, make sure that it's low-power equipment or that it has its own power source. Low-power equipment is marked with this icon: 

I can't print on a printer connected to the dock.

- If the printer is connected to the printer port, make sure AppleTalk is inactive. If the printer is connected to the modem port and you have an internal modem, make sure the external or ("normal") modem port is selected in the control panel, then select the printer and the port in the Chooser. (Depending on your model and system software version, you use the PowerBook, PowerBook Setup, or Express Modem control panel to activate the port.)
- Make sure the printer is turned on.
- If the above suggestion doesn't work, try the following:
 1. Shut down the computer and eject or disconnect it from the dock.
 2. Turn off the printer. Disconnect the printer cable and the power cord from the dock. Wait five minutes.
 3. Reconnect the power cord and reinsert or reconnect the PowerBook.
 4. Reconnect the printer cable and turn on the printer.
 5. Start up the computer.
 6. Select the printer and port in the Chooser. Then try to print a document.

If this procedure works, the dock may need repair. Contact an Apple-authorized service provider or call the Apple Assistance Center.

SCSI equipment and SCSI disk mode

If the procedures in this section don't solve your problem, see the section on equipment in Chapter 2, "Diagnostic Techniques."

External SCSI equipment doesn't work, or a hard disk does not appear on the desktop.

- Check that all cables are connected securely, that the devices are plugged into working outlets, and that the devices are turned on.

Important Make sure that all equipment is turned off before connecting or disconnecting cables.
- Make sure that you turn on SCSI equipment before you start up the PowerBook.
- Check that each connected SCSI device has a unique ID number between 1 and 6. (The hard disk in a Duo Dock uses the number 1.)
- If a hard disk drive was installed in your Duo Dock, it may have been assigned the wrong SCSI ID number. You can check the ID number using the HD SC Setup program on the *Disk Tools* disk that came with your computer. If the ID number of the Duo Dock hard disk is something other than 1, have an Apple-authorized service provider reset the ID number.
- A hard disk drive may need to be initialized before you can use it. See the instructions that came with the disk drive.
- The software (driver) needed to run the equipment may not be installed in your System Folder. See the instructions that came with the equipment.

- Make sure that SCSI cable terminators are correctly positioned. Follow these guidelines:
 - Usually a SCSI chain needs two terminators—one at the beginning of the chain and one at the end of the chain. Some computers have internal terminators, but many PowerBooks do not. (Check the documentation that came with your PowerBook.) If your computer does not have an internal terminator, you should add a terminator to the first device in the chain. You should also add a terminator to the last device in the chain, unless it has an internal terminator. (Check the documentation that came with the device.)
 - In most cases, there should be no terminators in the middle of the chain. If you have more than one external device with a terminator, your Apple-authorized service provider can remove extra internal terminators.
 - Some devices work better when they are connected in a particular place in the SCSI chain. Try connecting only the device that you want to use. Then connect other devices one by one until you find a configuration that works.

I can't turn on the computer after connecting a SCSI device.

- Turn on the SCSI equipment first, and then turn on the computer.
- When you use SCSI disk mode, the computer should display an icon with a number in it.



If the computer starts up normally, immediately choose Shut Down (if you can) or turn off the computer. If you don't, you might damage your information or equipment.

- Make sure you are using the correct cable for SCSI disk mode. The HDI-30 SCSI Disk Adapter is about 8 inches long, dark gray, and has 30 pins in the connector (no "missing" pins). Do not use the HDI-30 SCSI System Cable, which is light gray, about 18 inches long, and has 29 pins in the connector (one "missing" pin). That cable is for connecting SCSI equipment to your PowerBook.
 - Check that all cable connections are secure.
- Important** Make sure that all equipment is turned off before connecting or disconnecting cables.
- The PowerBook's battery may be drained. Plug in the power adapter and let the battery charge for a few minutes. Then press the power button on the PowerBook's back panel to restart it, and restart the other Macintosh.
 - Start up the other Macintosh with the *Disk Tools* disk that came with it (do not use the disk that came with your PowerBook). If the connection works, then a system software extension on the other Macintosh may be causing the problem. See Chapter 2, "Diagnostic Techniques."

When I start up the PowerBook, I see an icon with a number in it.

- The PowerBook is in SCSI disk mode. If you want to use the PowerBook normally, turn off the computer, then disconnect the SCSI disk adapter cable from the back panel.

Important Make sure that all equipment is turned off before connecting or disconnecting cables.

- If you are trying to connect a SCSI device to the PowerBook, make sure you are using the HDI-30 SCSI System Cable, which is light gray, about 18 inches long, with 29 pins in the connector (one “missing” pin). Do not use the short, dark gray HDI-30 SCSI Disk Adapter, which is for connecting your computer to another computer.

When I start up using SCSI disk mode, I see a flashing question mark icon.



- Make sure you are using the correct cable for SCSI disk mode. The HDI-30 SCSI Disk Adapter is about 8 inches long, dark gray, with 30 pins in the connector (no “missing” pins). Do not use the longer, light gray HDI-30 SCSI System Cable.
- Make sure terminators are placed correctly in the SCSI chain. See “External SCSI equipment doesn’t work, or a hard disk does not appear on the desktop” earlier in this section for guidelines on placing terminators.

See also Chapter 2, “Diagnostic Techniques.”

When I start up using SCSI disk mode, a message appears on the other Macintosh about the system software version.

- The other Macintosh is trying to use the PowerBook as a startup disk. Follow these steps:
- Restart the other Macintosh using the *Disk Tools* disk that came with it. (Don’t use the *Disk Tools* disk that came with your PowerBook.)

- On the other Macintosh, open the Control Panels folder (inside the System Folder), then open the Startup Disk control panel.



- Select the hard disk of the other Macintosh.
- Restart the Macintosh.

If these suggestions don’t work, see Chapter 2, “Diagnostic Techniques.”

Modems and the Fax Terminal program

If you’re using an external modem, and the procedures in this section don’t solve your problem, see the section on equipment in Chapter 2, “Diagnostic Techniques.”

A modem doesn’t work.

- Check that the modem is connected to a working phone line. If it’s an external modem, make sure it is plugged in and turned on.
- Make sure that the correct modem port (external or internal) is activated. Depending on your model and the version of system software you are using, you use the PowerBook, PowerBook Setup, or Express Modem control panel. (In the PowerBook Setup control panel, the Normal button activates the external port, and the Compatible button activates the internal modem.)
- Make sure the modem software is installed in the System Folder. (See the documentation that came with your modem.)

If your communications program uses the Communications Toolbox, you can use the internal modem even when the external port is activated. See the documentation that came with your communications program for details.

- If you're using an external modem with a 200-series computer, AppleTalk should be turned off.
- Make sure you are using an analog line, not a digital (PBX) line such as those found in many offices or hotel rooms. (If you have to dial a number such as 9 to get an outside line, you may be using a digital line.)

Warning Do not try to use your modem on a digital line. You could damage your equipment.

- Another program may be trying to use the modem. Quit all other programs that use the modem.
- Check the documentation for your communications program or your modem for additional troubleshooting information.

The document "My First Fax" won't open.

- You can open the document using the SimpleText program, or using TeachText version 7.1 or higher. (The version number is listed in the Info window.) If there are extra copies of these programs on your hard disk, you should throw them away. Use the Find command to locate all copies of SimpleText and TeachText. Throw them away, then reinstall the program from the system software disks that came with your computer.
- To make sure the document is opened by the program you want, drag the document icon to the program icon. When the program icon highlights, release the button. Or you can use the Open command in the program's File menu.

Fax Terminal displays the message "No Dial tone."

- Check that the phone cord is plugged into the computer and into a working phone line.
- Reset the parameter RAM (see the section on parameter RAM in Chapter 2, "Diagnostic Techniques").
- Make sure you are using an analog line, not a digital (PBX) line such as those found in many offices or hotel rooms. (If you have to dial a number such as 9 to get an outside line, you may be using a digital line.)

Fax Terminal displays the message "Waiting for modem."

- Another program may be trying to use the modem. Quit all other programs that use the modem.

Fax Terminal dials, but the fax is not received by the fax machine.

- Make sure that the phone cord is plugged into a working phone line and that no one else is using the phone line.
- Make sure you are dialing the correct phone number.
- Some fax machines don't work with Fax Terminal. Try sending a fax to another fax machine. If that works, the problem may be in the original fax machine.

The PowerBook isn't receiving a fax.

- Make sure that Fax Terminal is set to receive a fax (using the Preferences command in the Fax menu). The status window should say "Waiting for call."
- Make sure there is enough space on your hard disk to save the incoming fax (1 MB is recommended).

Apple Remote Access

The Remote Access Setup control panel won't open.

- Make sure that AppleTalk is turned on in the Chooser.
- If you still can't open the control panel, reinstall the Apple Remote Access software.

The modem is not listed in the Remote Access Setup control panel.

- Reinstall the Apple Remote Access software.
- Contact the modem manufacturer to see whether your modem can use the settings for another type of modem.

The modem didn't dial the phone number.

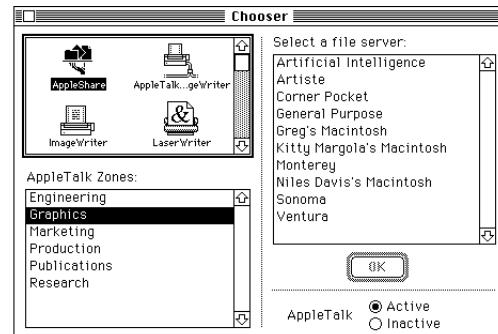
- Check that the phone cord is plugged into the computer and into a working phone line.
- Try dialing the number again. Sometimes there is a temporary connection problem.
- Quit the program and restart it. Sometimes this procedure solves temporary problems with the modem.
- Another program may be using the modem. Quit all other programs that use the modem.
- Try using another communications program or sending a fax. If that works, the problem may be in the Apple Remote Access software. Reinstall the software.

The modem dialed the phone number, but the connection failed.

- Check that the phone cord is plugged into the computer and into a working phone line.
- Check with your Apple Remote Access administrator to make sure your version of Apple Remote Access is compatible with the version on the computer you're calling. If you're using a version of Apple Remote Access higher than 1.0, you can use the Remote Access Setup control panel to set your software to work with version 1.0.

I'm connected via Apple Remote Access but I can't see any shared disks.

- Open the Chooser and click the AppleShare icon. Shared disks should appear on the right side of the Chooser. If you still don't see any shared disks, and your Chooser has a box labeled Zones, choose a different zone (some networks don't have zones).



- If there are still no shared disks, or you can't connect to the one you want, contact your Apple Remote Access administrator or the owner of the computer you want to connect to.

**Whenever I try to use Apple Remote Access,
a message says it's not installed correctly.**

- This message sometimes appears if AppleTalk is turned off.
Make sure AppleTalk is turned on in the Chooser.

2

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Diagnostic Techniques

This chapter provides a step-by-step approach to diagnosing and solving problems involving system software, hard disks, and other equipment.

Startup and system software problems

Go through the steps in this section if your computer does not start up properly, if the computer experiences frequent system errors or “freezes,” or if your hard disk does not appear on the desktop.

Note: If you are using an external hard disk or a hard disk in a Duo Dock, turn first to the section on equipment in this chapter, then come back to this section.

Step 1 Check your system software extensions.

System software extensions are files that add features to your system software. Some extensions are incompatible with one another or with certain programs. To check whether an extension is causing problems, follow these steps:

- 1 Start up the PowerBook while holding down the Shift key. Keep it held down until you see the message “Extensions off” in the Welcome to Macintosh box.

This procedure turns off extensions.

If this procedure solves your problem, then continue with this section. If not, then turn to the next section, on testing your hard disk.

2 Restart the computer while holding down the keys

Command (⌘), Option, P, and R until you hear the startup sound again.

This procedure resets the parameter RAM. For more information, see the section on parameter RAM later in this chapter.

If the problem does not recur, it may involve file sharing, virtual memory, or the disk cache. Turn these features back on one at a time (restarting the computer each time) until the problem recurs. You may be able to fix the problem by making the disk cache smaller or using a smaller amount of virtual memory. If the problem involves file sharing, contact your network administrator to make sure there are no network problems.

3 Remove potentially troublesome extensions from the System Folder. Then restart the computer.

Tips for locating problem extensions:

- If you recently installed a new item in the System Folder, it may be causing the problem. If you recently installed a new application program, a new extension may have been installed along with it. Check for new items in the Extensions folder and Control Panels folder. Also check for items of the kind “extension” or “control panel” in the System Folder itself.

■ If two of your extensions provide similar features (such as two screen savers or two clocks), they may be incompatible with each other. Remove one of the extensions.

■ If the computer is freezing or displaying an error message before it finishes starting up, restart the computer and take note of the icons that appear at the bottom of the screen. Many extensions display an icon as they start up, and extensions start up alphabetically. The last extension that displays an icon, or the one after it alphabetically, may be the problem extension.

4 Drag one extension at a time back to the icon of the System Folder. Restart the computer after each extension and test to see if the problem recurs.

When you have located the problem extension, remove it from the System Folder and contact the developer or vendor for compatibility information.

Step 2 Test your hard disk.

The following steps will help you determine whether you have a problem with your hard disk or a problem with the system software on your hard disk.

1 Start up the PowerBook with the *Disk Tools* disk that came with your computer.

Note: If your computer did not come with a *Disk Tools* disk, call the Apple Assistance Center.

If the computer starts up normally, you may have a problem with the system software on your hard disk. If the computer starts up but you don't see the hard disk icon, you may have a problem with the hard disk.

If the computer doesn't start up normally, you may have a problem with equipment connected to your PowerBook. Turn to the section on equipment later in this chapter.

If nothing is connected, your computer may need repair. Contact an Apple-authorized service provider, or call the Apple Assistance Center.

- 2 If the desktop appears, find and open the program called HD SC Setup.



- 3 Select your hard disk by clicking the Drive button until its name and ID number appear. Then click Test.

The PowerBook's internal hard disk has the ID number 0.

If the hard disk icon didn't appear on the desktop, the program may be able to "find" the hard disk when you click the Drive button.



If testing reveals a problem, you may be able to fix the hard disk using Disk First Aid (on the *Disk Tools* disk), or using another disk repair program.

If you cannot repair the disk, you may need to reinitialize the disk using HD SC Setup program.

Warning Reinitializing the hard disk erases all the information on it. If you don't have a recent backup of your information, an Apple-authorized service provider may be able to recover some of the information before you reinitialize the hard disk.

- 4 If testing indicates that no repair is necessary, but you're still having a problem with your computer, go to the section on reinstalling system software in this chapter.

Step 3 Reset the parameter RAM.

The PowerBook stores certain information in an area called parameter RAM (PRAM). Sometimes this information becomes damaged. Resetting the PRAM (also called "zapping the PRAM") can solve some PowerBook problems.

Resetting the PRAM erases the contents of your RAM disk, if you have one. Resetting the PRAM also restores the default settings in most control panels. After you reset the PRAM, be sure to check the settings for the desktop pattern, memory, network, AppleTalk, pointing device, power conservation, and so forth.

Follow these steps to reset the PRAM:

- 1 Locate the keys Command (⌘), Option, P, and R.
- 2 Make sure the Caps Lock key is not down.

- 3** Restart your Macintosh. Immediately after the startup sound, but before the Welcome to Macintosh screen appears, press the Command (⌘), Option, P, and R keys simultaneously.
- 4** Hold down the keys until you hear the startup sound repeat itself several times. Then release the keys.
- 5** When the computer has finished starting up, restore your control panel and network settings.

Step 4 Reinstall system software.

If you can start up the computer using the *Disk Tools* disk, but testing and repairing the hard disk does not fix your problem, you may be able to solve the problem by reinstalling system software. The procedure described here is called a clean installation.

You will need the system software disks that came with your computer or with your system software upgrade kit (whichever you purchased later). Do not use the system software disks that came with another computer. They may not contain the correct version of system software for your computer.

If you did not receive system software disks with your computer, you can reinstall system software using a backup copy of your System Folder. Consult the documentation that came with your computer for instructions. If you don't have a backup copy of your System Folder, and you didn't receive system software disks, call the Apple Assistance Center.

Important The manual that came with your PowerBook may describe a procedure in which you install system software by connecting the PowerBook to another computer using SCSI disk mode. In some cases, the correct version of system software may not be installed if you use that method.

Follow these steps:

Important If you are sure nothing has been added to your System Folder since you began using your computer, you can skip steps 1-5 and steps 13-14 in this procedure. (Note, however, that when you install or use application programs, items such as preference files and fonts are sometimes added to the System Folder.)

- 1** Start up the computer with the *Disk Tools* disk.
You can also start up the computer by connecting a hard disk that contains the correct version of system software.
- 2** Make sure the PowerBook's hard disk has at least 5 MB of available space. If not, throw away unneeded files or copy files to another disk.
- 3** Create a folder called "Old Finder."
- 4** Open the System Folder on the hard disk and drag the file called Finder to the Old Finder folder.
- 5** Rename the System Folder "Storage."
- 6** Restart the computer. After a few moments you should see a flashing question mark icon.



(If you're starting up from an external hard disk, you won't see this icon.)

If the computer starts up normally, use the Find command in the File menu to check for extra System Folders on the hard disk. Go back to step 3, but this time name the folders "Old Finder 2" and "Storage 2."

7 Insert the first system software installation disk.

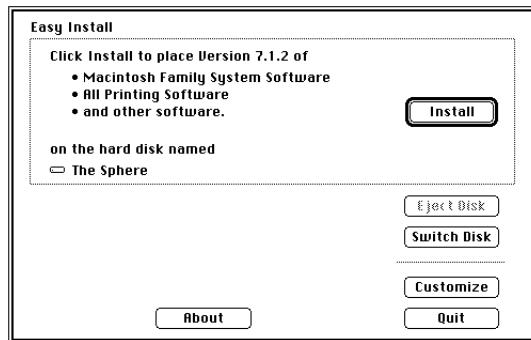
If your computer came with a disk labeled *Install Me First*, insert that disk. Otherwise, insert the *Install 1* disk.

Make sure to use the system software disks that came with your PowerBook or with your system software upgrade kit (whichever you purchased later). Other system software disks may not contain the correct version of system software for your computer.

8 The Installer's Welcome screen appears. Click OK.

If you started up the computer from another hard disk or if you are using SCSI disk mode, the Installer does not open automatically. Locate and open the Installer icon.

9 Make sure that your hard disk is named in the Easy Install dialog box. If not, click the Switch Disk button until the correct disk name appears. Then click Install.



Follow the instructions on screen.

10 When installation is completed, restart the computer.

As the computer starts up, hold down the Option and Command (⌘) keys.

11 You'll see a message asking whether you want to rebuild the desktop. Release the keys and click OK.

12 Use the computer for a while to test for problems.

If there are no problems, you can move items you need from the Storage folder to the new System Folder.

Do not put back items that appear in both folders. However, you can put back the Users & Groups Data File (in the Preferences folder) and you may want to put back the Scrapbook and Note Pad files if you have added information to them.

If you suspect any items in the Storage folder might be damaged, reinstall them from the original disks, rather than moving them from the Storage folder.

13 Move items a few at a time from the Storage folder to the icon of the System Folder. Restart frequently to test for problems. If a problem occurs, one of the files you moved most recently may be causing the problem.

14 When you're finished moving items, throw away the Storage folder.

Problems with equipment connected to your PowerBook

If a problem occurs while your PowerBook is connected to equipment such as a Duo Dock, SCSI equipment, external monitor, modem, or mouse, keyboard, or trackball, these steps may help you determine the source of the trouble:

- 1** Shut down or turn off your PowerBook and anything that's connected to it. Disconnect everything connected to your PowerBook (except the power adapter) and restart the PowerBook.

Note: If you're connected to a network, contact your network administrator or warn other users before disconnecting from the network, because it may interrupt network services.

If the problem does not recur, it is likely to be related to equipment connected to your PowerBook.

- 2** Shut down the PowerBook.
- 3** Reconnect one device.
- 4** Make sure that the device is plugged into a working outlet and turned on, if applicable.
- 5** Start up the PowerBook.
- 6** Repeat steps 2-5 until the problem recurs. The last device you connected may be causing the problem.

3

Battery and Travel Information

This chapter provides tips on maximizing battery life and traveling with the PowerBook.

Maximizing the life of PowerBook batteries

Different models of the PowerBook use different types of batteries. Each battery type requires different care to ensure maximum life.

POWERBOOK MODEL	BATTERY TYPE
<i>PowerBook 100</i>	Lead-acid
<i>PowerBook 140 and later models</i>	Nickel-cadmium (NiCd)
<i>PowerBook 200 Series and 500 Series</i>	Nickel-metal-hydride (NiMH)

Lead-acid

Avoid fully discharging the battery—recharge it as soon as it becomes depleted, and avoid allowing the battery to drain to the point where the PowerBook goes to sleep automatically.

If a lead-acid battery is fully discharged, the battery may be damaged in such a way that it can no longer hold a charge.

Nickel-cadmium

Recharge nickel-cadmium batteries when they become depleted. Fully discharge and recharge the battery once every 90 days.

If a NiCd battery is partially discharged and recharged several times, it will lose capacity. You can recover the battery's full capacity by completely discharging and recharging it.

Nickel-metal-hydride

Recharge nickel-metal-hydride batteries when they become depleted. Fully discharge and recharge the battery once every 30 days.

If a NiMH battery is partially discharged and recharged several times, it will lose capacity. You can recover the battery's full capacity by completely discharging and recharging it.

Some PowerBook 200 Series (PowerBook Duo) batteries have a switch on the side. The switch is for your convenience to remind you if you have recharged the battery. The switch does not affect battery operation.

How to fully discharge NiCd and NiMH batteries

The best way to fully discharge batteries is to use your PowerBook normally, but ignore the low-power messages that appear on the screen. (Be sure to save your work, however.) When the computer goes to sleep automatically, recharge the battery completely before using that battery again.

If you have a PowerBook 100 series computer (other than the PowerBook 100) and an all-in-one recharger, you can also fully discharge a battery by leaving it in the recharger for several hours without plugging the recharger into an outlet.

How long does recharging take?

To be sure that you've allowed a battery time to fully recharge, leave the computer or recharger plugged in overnight.

Battery recharge time depends on the kind of battery and the model of PowerBook you have. The following table gives approximate recharge times for batteries in a recharger or in a computer that's shut down. With some models, you need to allow more time if you are using the computer (or if it is in sleep) while the batteries recharge inside it. Check the documentation that came with your PowerBook for more information.

POWERBOOK MODEL	BATTERY RECHARGE TIME
<i>PowerBook 100 and higher</i>	6–8 hours (if you're using a recharger, it's fastest to recharge one battery at a time)
<i>PowerBook 200 Series</i>	2–4 hours
<i>PowerBook 500 Series</i>	2 hours for 2 batteries

Battery recycling program

PowerBook batteries contain hazardous materials and should not be thrown out in household trash. Contact an Apple-authorized service provider or call the Apple Assistance Center for more information on Apple Computer's battery recycling program.

Traveling with your PowerBook

This section addresses commonly asked questions on traveling with the PowerBook.

Airplanes and airports

Some airlines have reported that use of portable electronic devices may have interfered with the aircraft's flight navigation or communications systems. Many airlines restrict or manage the use of electronic equipment during flights. Please respect the regulations of the airlines.

A properly tuned X-ray machine should cause no damage to your PowerBook. But the motors that drive the belts on some security machines have magnets that can damage your information. To avoid problems, place the PowerBook close to the entrance of the machine and remove it as soon as possible. At most airports you can also have the PowerBook hand-inspected by security personnel.

Metal detectors should not damage the PowerBook.

Security officials may require you to turn the PowerBook on. Make sure you have a charged battery on hand.

International use

The PowerBook AC Adapter can handle a wide range of voltages; a step-down transformer is not required. See the bottom of your power adapter for voltage information, and check local power voltages before using the PowerBook in a location outside the U.S. You may need a plug adapter to fit the adapter to the outlet.

To use a printer or other device in a location outside the U.S., you may need a step-down transformer. Obtain the transformer in the area you're traveling to. It should be able to handle at least 150% of the equipment's power requirements (as stated on the product label or in the technical specifications). You must use the transformer with a grounded outlet. A surge protector is highly recommended.

International repair and service

Apple's global limited warranty covers your Apple products for one year, regardless of where the products were purchased. The Apple-authorized service providers in more than 80 countries can handle most repairs (unless the repair involves a component specific to another area of the world). Bring a copy of your proof of purchase with you.

Because of variations in environment and power supplies, Apple is not responsible for damage to Apple products used outside the U.S.

How to Reset Your PowerBook

Restart

This procedure turns the computer off and then on again. Use this method if your computer “freezes” and you are unable to choose Restart from the Special menu.

Note: You will lose any work you have not saved.

POWERBOOK MODEL	METHOD
100	Press the restart button (⏏) on the left side of the computer.
<i>140 and higher</i>	Use a pen to press the restart switch (⏏) on the back panel. The switch is a small hole located directly next to the power button.
<i>200 Series and 500 Series</i>	Hold down the Command (⌘), Control, and Power On keys simultaneously.

Power off (hardware reset)

Use this procedure to turn off the computer if a problem prevents you from choosing Shut Down from the Special menu, or to reset the computer in case of a hardware problem.

Note: You will lose any work you have not saved.

POWERBOOK MODEL	METHOD
<i>100</i>	Simultaneously press the reset (□) and interrupt (~) buttons on the left side of the computer.
<i>140, 145, 145b, 170</i>	Press the power button (①) on the back panel.
<i>160, 165, 180</i>	Press the power button (①) on the back panel for 5 seconds.
<i>200 Series</i>	Press the power button (①) on the back panel for 5 seconds.
<i>500 Series</i>	Press the Power On (①), Command (⌘), Option, and Control keys simultaneously.

Power manager reset

Use this procedure as instructed by this book or by an authorized service provider or support engineer.

Note: You will lose any work you have not saved, and you will lose the contents of your RAM disk (if you created one).

Follow these steps:

1. Shut down or turn off the computer.
2. Disconnect the power adapter and remove the battery.
3. Use the procedure for your model:

POWERBOOK MODEL	METHOD
<i>100</i>	Hold the reset (□) and interrupt (~) buttons on the left side of the computer for 30 seconds.
<i>140, 145, 145b, 170</i>	Hold the reset (□) and interrupt (~) buttons on the back panel of the computer for 30 seconds.
<i>160, 165, 180</i>	Press the power button (①) on the back panel for 30 seconds.
<i>200 Series</i>	Press the power button (①) on the back panel for 30 seconds.
<i>500 Series</i>	Press the Power On (①), Command (⌘), Option, and Control keys simultaneously.

4. Replace the battery, plug the power adapter into a working outlet and then into the PowerBook, and start up the computer.

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