



PC Compatibility Cards

7" 100 MHz Card, 12" 100 MHz Card,
12" 166-P Card, and 12" PR166 Card





Basics

PC Compatibility Cards





Overview

The PC compatibility cards are for use with Power Macintosh models having peripheral component interface (PCI) expansion slots. They allow MS-DOS and Windows applications to run directly on a Power Macintosh computer.

There are several types of Apple PC Compatibility cards, and installation procedures differ for each:

- 12-inch 100 MHz card: features a 100-MHz Pentium processor
- 7-inch 100-MHz card: features a 100 MHz 5x86 processor
- 12-inch 166 MHz-P card: features a 166 MHz Pentium processor
- 12-inch PR166 card: features a 166 performance rated (PR) 6x86 processor





With each of these cards, the PowerPC processor operates independently of the processor on the PC Compatibility Card so that Macintosh and MS-DOS or Windows applications can run concurrently.





General Compatibility Information

The original 100 MHz PC compatibility cards (7-inch and 12-inch) are compatible with the following software and equipment:

- Microsoft MS-DOS 6.22
- Windows 3.1
- Windows for Workgroups 3.11
- Windows 95 (**not** compatible with WindowNT or OS/2)
- Sound Blaster-16
- Apple displays
- Most third-party VGA and SVGA displays
- Power Macintosh 5400, 6400 (7-inch card only), 7200, 7500, 7600, 8500, and 9500 series computers





The 166 MHz-P and PR166 cards are compatible with the following software and equipment:

- Microsoft MS-DOS 6.22
- Windows 3.1
- Windows for Workgroups 3.11
- Windows 95 (**not** compatible with WindowNT or OS/2)
- Sound Blaster-16
- Apple displays
- Most third-party VGA and SVGA displays

The 166 MHz-P card is compatible with the Power Macintosh 4400, 7220, 7200, 7300, 7500, 7600, 8500, 8600, 9500, and 9600 series computers, while the PR166 card is **only** compatible with the Power Macintosh 4400/200 and 7220/200 (Far East only) computers.





Adding Memory

All Apple PC compatibility cards offer a single DRAM expansion slot. You can install an 8, 16, 32 or 64 MB DRAM DIMM in the expansion slot for a maximum memory configuration of:

- 100 MHz 7-Inch Card: 64 MB (no soldered DRAM)
- 100 MHz 12-Inch Card: 72 MB (8 MB of soldered DRAM)
- 166 MHz-P 12-Inch Card: 80 MB (16 MB of soldered DRAM)
- PR166 12-Inch Card: 80 MB (16 MB of soldered DRAM)





Memory for 100 MHz Cards

The original 100 MHz PC compatibility cards use JEDEC-standard 168-pin DIMM DRAM cards. The DIMMs should be 64-bit-wide, 168-pin fast-paged mode (FPM) with a 70ns access time or faster. DIMMs built with extended data-out (EDO) DRAMs are not supported.

The 100 MHz 12-inch and 7-inch PC compatibility cards support only symmetrical DIMMs with a 2K refresh rate. DIMMs incorporating 4K refresh parts are not supported on the 7-inch PC compatibility card.

Memory for 166 MHz-P and PR166 Cards

The 166 MHz-P and PR166 PC compatibility cards use 168-pin, 60ns or faster, fast-page mode, 64-bit wide, 5 V DRAM DIMMs.





External PC-Formatted SCSI Devices

If you use a dedicated PC-formatted partition or SCSI device instead of a drive container, you may experience some disk read/write errors. Apple recommends using drive containers on Macintosh-formatted partitions or SCSI devices as your primary method of data storage.

Joystick Port Channels

Customers can hook up the enhanced joysticks that are becoming more common (such as, FlightStick Pro, Wingman Extreme, and so on). The joystick port supports both A and B channel, so the enhanced joysticks should work.





Printing

LaserWriter Select 300 and Personal LaserWriter 300 Printers

The LaserWriter Select 300 and Personal LaserWriter 300 printers are not fully supported. Files printed in the PC environment may not print properly on these printer models.

PostScript Printing

When printing to a PostScript printer from the PC environment, be sure to print one file at a time. Printing multiple files may cause a PostScript error. To verify that the file has finished printing, check the Windows 95 Printer queue. Also, some of the settings for the Windows 95





printer driver need to be changed from their defaults. Here are the steps to configure your Windows 95 printer driver properly:

- 1 Open the printer icon for your printer.
- 2 Choose Properties from the File menu.
- 3 Select the tab labeled Details.
- 4 Click Spool Settings.
- 5 Click "Disable bidirectional support for this printer."
- 6 Click OK.
- 7 Click Port Settings.
- 8 Make sure the box labeled "Check port state before printing" is unchecked.
- 9 Click OK.
- 10 Select the tab labeled PostScript.





- 11 Click Advanced.
- 12 Make sure the boxes labeled "Send CTRL+D before Job" and "Send CTRL+D after Job" are unchecked.
- 13 Click OK.
- 14 Close the Properties window.

Epson Emulation

Some documents may not print properly from the PC environment to a non-PostScript printer using Epson emulation. Here are some suggestions for correcting common problems. For additional information, see the section on setting printer options in the PC Compatibility Card User's Manual.

Problem: Text near the top and bottom of each page doesn't print or is cut off, or text that should print at the bottom of





one page prints on the next page.

Solution: Try choosing “No gaps between pages” in the PC Print Spooler Preferences dialog box, and try printing again. (When you print after choosing this option, the PC Print Spooler software will print 66 lines per page instead of 60 lines per page.)

Problem: You have chosen “No gaps between pages” in the PC Print Spooler Preferences dialog box, but text near the top and bottom of each page still doesn't print or is cut off.

Solution: Most laser and ink jet printers cannot print close to the edges of a page. Find out what the minimum margins are for your printer. (Look for this information in the specifications section of the manual that came with your printer.) Then set the top and bottom margins to at least these amounts in the DOS or Windows application from which you are printing.





Video

For best results, use Apple multiple scan monitors with the PC compatibility cards.

Video Driver Switching in Windows 95

Some 16-color 640x480 modes use the Windows 95 video drivers instead of the ATI video drivers. The ATI options will not appear in the control panel when the Windows 95 video drivers are being used. To make the ATI options available, change the color depth to a higher value, such as 256 colors.





Monitor Adapters

Selecting a “pass-through” mode on a monitor adapter may cause the PC compatibility cards to incorrectly sense the monitor. When the PC compatibility cards do not sense the monitor because of an incorrect monitor adapter setting, they will automatically assume that the monitor is a 14-inch RGB monitor and restrict the resolution to 640x480. Make sure that the monitor adapter correctly represents the attached monitor.

AppleVision 1705 Display

The AppleVision 1705 Display will only appear to the PC as a DDC monitor if you use the optional 1705 VGA adapter cable and a VGA-to-Macintosh video adapter to connect the display to a PC compatibility card. Using the standard Apple-supplied cable will result in the monitor being





identified as a 17-inch multiscan monitor. Although the PC Setup control panel lists Multiscan 17-inch in the Display pop-up menu, you should select AppleVision 1705 in the Windows Display control panel.

AppleVision 1710 and 1710AV Displays

If the PC Setup Control Panel indicates an Apple 14-inch monitor when an AppleVision 1710AV monitor is connected, do the following:

- Reinstall the AppleVision software that came with the monitor.
- If you are using only this monitor, or you are connecting two monitors with the AppleVision 1710AV used to view the Macintosh environment, be sure to connect one ADB cable between the monitor and the computer, and another ADB cable between the port on the monitor and the keyboard.





Macintosh 21-Inch Color Display

When using the Macintosh 21-inch Color Display with Windows 95, do not select a 24-bit driver in the Display control panel, even though it is an available selection. Select an 8- or 16-bit driver instead. Choosing a 24-bit driver may cause the PC environment to start up improperly.

Screen Display

When used with some monitors, a particular monitor resolution (such as 640x480) may cause the display to show a smaller viewable area surrounded by a black border. To correct the problem, try selecting a different monitor resolution.





If your PC compatibility card has 1 MB of video memory installed, then the only refresh rates available at 1280x1024 resolution are interlaced display modes. However, Apple multiple scan monitors and many third-party monitors do not support interlaced display modes. To display 1280x1024 resolution, you may have to upgrade the video memory on the 12-inch card to 2 MB, which supports higher refresh rates.

If you are using a third-party monitor and it does not display properly, try these suggestions to correct the problem:

- Use the Windows 95 Display control panel to select the monitor name. If the monitor name is not available, select the SuperVGA monitor option that matches the maximum resolution supported by the monitor.





- Use the ATI FlexDesk or the Windows 95 control panel to set the refresh rate to 60 Hz.
- If the monitor still does not display properly, reduce the resolution.

Fixed Frequency Monitors

Playing a Video for Windows (.AVI) file in full-screen mode may not work properly on a fixed frequency monitor. A multisynchronous or multiple scan monitor will work properly. Refer to the PC Compatibility Card User's Manual for information about supported monitors and video modes.

Fixed frequency monitors do not support video "Mode X" (320x240 resolution), which is primarily used by game programs.





Playing Video Files

When playing real-time based video files or games in the PC environment, you may notice synchronization problems between the audio and video.

Optimizing MPEG Playback in Windows 95

You have three ways to optimize MPEG file playback performance in Windows 95:

- Adjust virtual memory
- Adjust CD-ROM caching
- Adjust ATI MPEG Player settings

There is no single best way to configure the system. The instructions here show you where to find the configuration files you can use to optimize playback for your particular circumstances.





To adjust virtual memory settings, follow these steps:

- 1 Click the Start button, open the Settings menu, and choose Control Panel.
- 2 Double-click the System icon to open it.
- 3 Click the Performance tab, and click the Virtual Memory button. There are a variety of options in the Virtual Memory window. These options allow you to let Windows automatically manage your virtual memory, or allow you to set up virtual memory to try and optimize the performance yourself.
- 4 Click OK when done and close all the open windows.
- 5 Shut down Windows and restart for your changes to take effect.

To adjust CD-ROM caching settings, follow these steps:

- 6 Click the Start button, open the Settings menu, and





- choose Control Panel.
- 7 Double-click the System icon to open it.
- 8 Click the Performance tab, and click the File System button.
- 9 Click the CD-ROM tab.
- 10 Decrease or increase the size of the Supplemental Cache to optimize performance. Also, choose the speed of your CD-ROM drive from the “Optimize access pattern for” pop-up menu.
- 11 Click OK.

To set ATI MPEG Player properties, follow these steps:

- 12 Click the Start button, open the Settings menu, and choose Control Panel.
- 13 Double-click the Multimedia icon to open it.





- 14 Click the Advanced tab.
- 15 Click the plus signs to expand the Multimedia Drivers and Media Control Devices lines.
- 16 Select ATI MPEG MCI Driver line.
- 17 Click the Properties button.
- 18 Click Settings.
- 19 Change the CPU utilization, image size, display, and audio/video options in the MCI ATI MPEG Configuration window.
- 20 Click OK to save the settings.





Technical Support

Apple will provide technical support for Apple-branded software and for DOS 6.22 because it is included with the PC compatibility cards.

If you are troubleshooting one of Apple Computer's 100 MHz PC Compatibility cards and are having a problem with Windows, Windows for Workgroups, or Windows 95, contact Microsoft Product Support. See the support information that came with your Windows package for more information.

If you are troubleshooting one of Apple Computer's 166 MHz-P or PR166 PC Compatibility cards and are having a problem with Windows 95, contact Apple for support. If, however, you are having problems with an earlier version of Windows or Windows for Workgroups, contact Microsoft





Product Support. See the support information that came with your Windows package for more information.





Specifications

PC Compatibility Cards





Microprocessor

7" 100 MHz card	100-MHz 586 processor
12" 100 MHz card	100-MHz Pentium processor
12" 166-P card	166-MHz Pentium processor
12" PR166 card	166 performance rated (PR) 6x86 processor





Memory

7" 100 MHz card

One 8 MB DRAM DIMM installed in one 168-pin DIMM slot,
expandable to 64 MB of local DRAM for MS-DOS and Windows
environments
128K Level 2 cache

12" 100 MHz card

8 MB of DRAM (soldered on card), expandable to 72 MB of local
DRAM (one 168-pin DIMM slot) for MS-DOS and Windows
environments
256K Level 2 cache

12" 166-P card

16 MB of DRAM (soldered on card), expandable to 80 MB of local
DRAM (one 168-pin DIMM slot) for MS-DOS and Windows
environments
256K level 2 cache





12" PR166 card

16 MB of DRAM (soldered on card), expandable to 80 MB of local DRAM (one 168-pin DIMM slot) for MS-DOS and Windows environments
256K level 2 cache





Sound

Includes Sound Blaster 16-compatible support (DOS and Windows environments)

16-bit stereo output





Video Support

Works with all Apple displays as well as with most third-party
VGA and SuperVGA displays (for MS-DOS and Windows)

1 MB DRAM of display support (third-party displays may require
a separate cable adapter)

1 MB Built-In Video Memory Capabilities

Resolution	Maximum Colors
640 x 480	16.7 million
800 x 600	65,536
1024 x 768	256





2 MB Video Memory Capabilities

The 12-inch card has two sockets to increase video DRAM to 2 MB. These sockets accommodate 5V, 256K x 16, 60 ns, standard fast-page mode SOJ package DRAM devices (40 pin).

Resolution	Maximum Colors
640 x 480	16.7 million
800 x 600	16.7 million
1024 x 768	65,536
1280 x 102	256





Networking

Supports Novell NetWare SPX/IPX, TCP/IP, and NETBEUI protocols in MS-DOS and Windows environment using the built-in Ethernet connector and ODI and NDIS 2.0 drivers (client software not included)





Macintosh Operating System Software

7" 100 MHz card

Macintosh system software version 7.5 or higher

12" 100 MHz card

Macintosh system software version 7.5 or higher

12" 166-P card

Macintosh system software version 7.5.3 or higher

12" PR166 card

Macintosh system software version 7.5.3 or higher





Compliance

Compliant with PCI 2.0 requirements





Environmental Requirements

**Operating
Temperature**

50°–95° F (10°–35° C)

**Storage
Temperature**

-40°–116° F (-40°–47° C)

Relative Humidity

5%–95% noncondensing

Maximum Altitude

10,000 ft. (3,048 m)





Physical

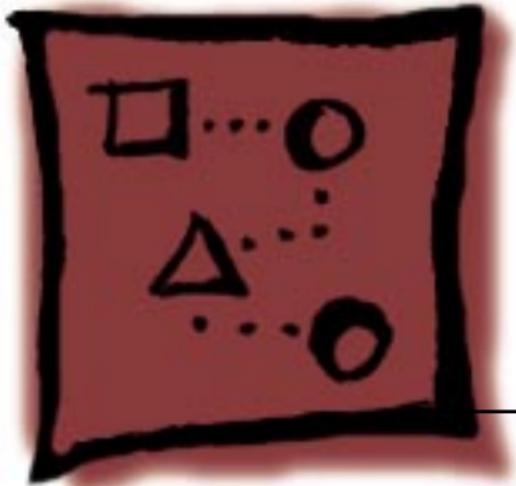
7" card

Size	7-inch card (17.7 cm)
Weight	0.46 lb. (0.21 kg)

12" cards

Size	12-inch card (30.5 cm)
Weight	0.7 lb. (0.32 kg)





7" 100 MHz PC Card

Installation Instructions



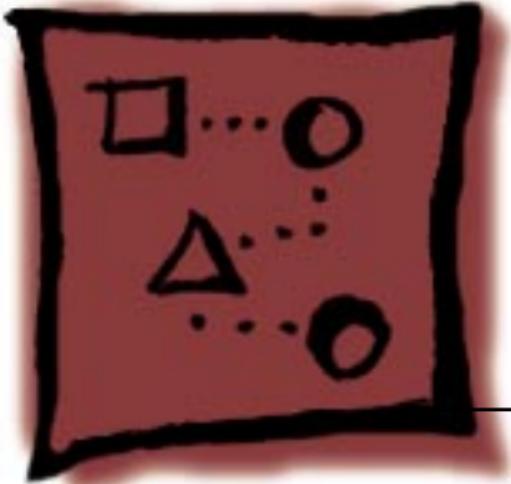


Introduction

The 7" 100 MHz PC Compatibility card is compatible with the Power Macintosh 5400, 6400, 7200, 7300, 7500, 7600, 8500, and 9500 Series computers.

Installation procedures differ depending on which machine the card is being used with. Refer to the machine-specific installation instructions within this chapter (indicated by the bookmarks in the left-hand margin) for complete information.





PM 5400 Series

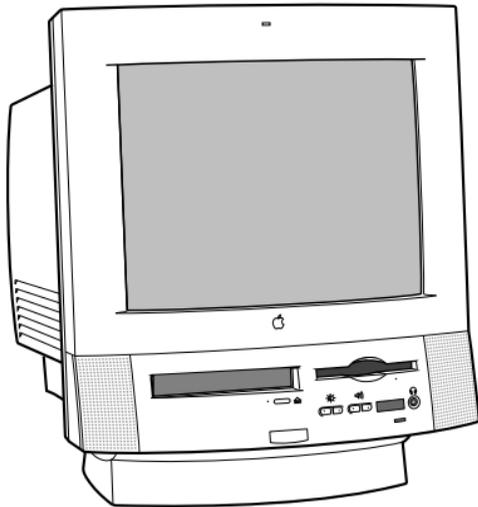
7" 100 MHz PC Card Installation





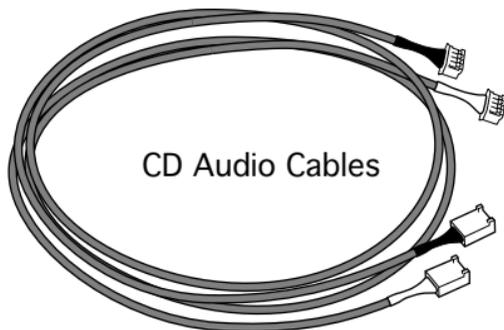
7" 100 MHz PC Card

If you are installing the PC Compatibility hardware in a 5400 series Macintosh computer, such as the Macintosh Performa 5400, 5420 or Power Macintosh 5400, follow the instructions in this section.





Note: Do **not** use the audio cables that come with the PC Compatibility card.

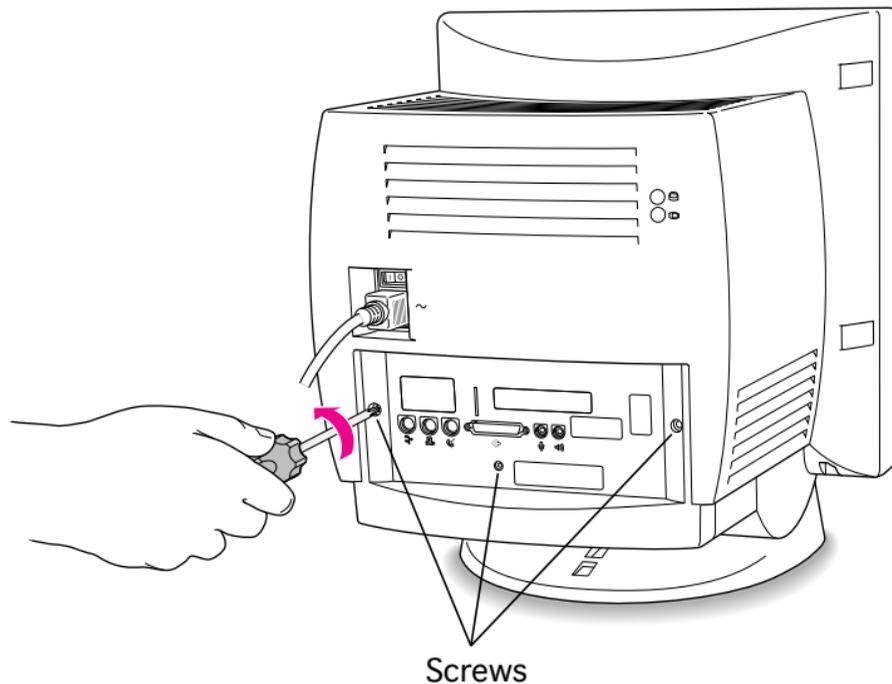




Remove the Logic Board

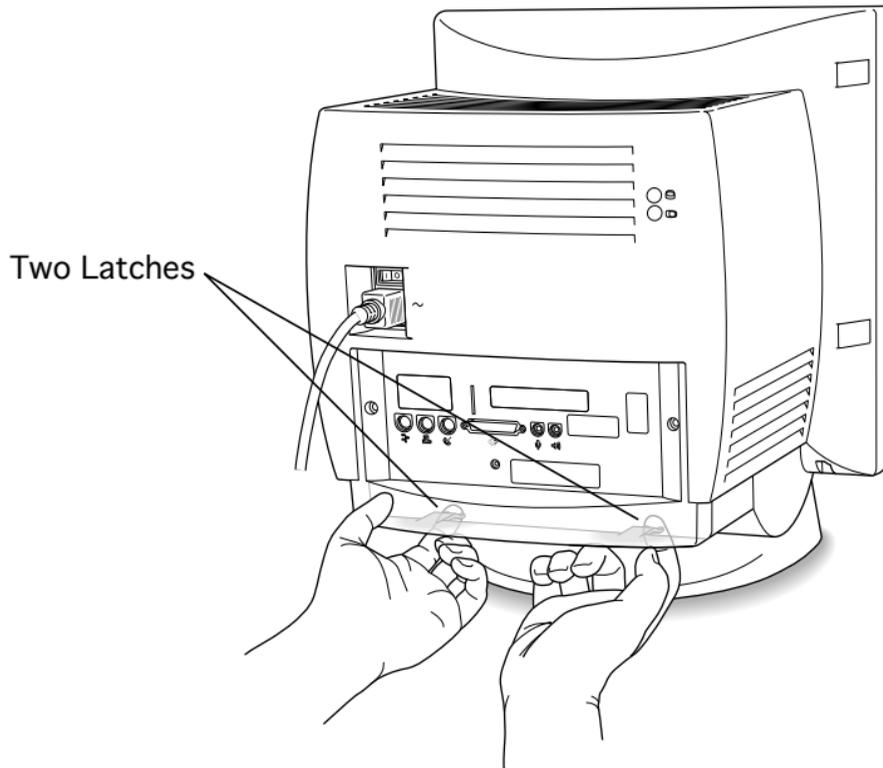
Caution: Review the ESD precautions in Bulletins/ Safety.

- 1 Remove the screws from the I/O door.



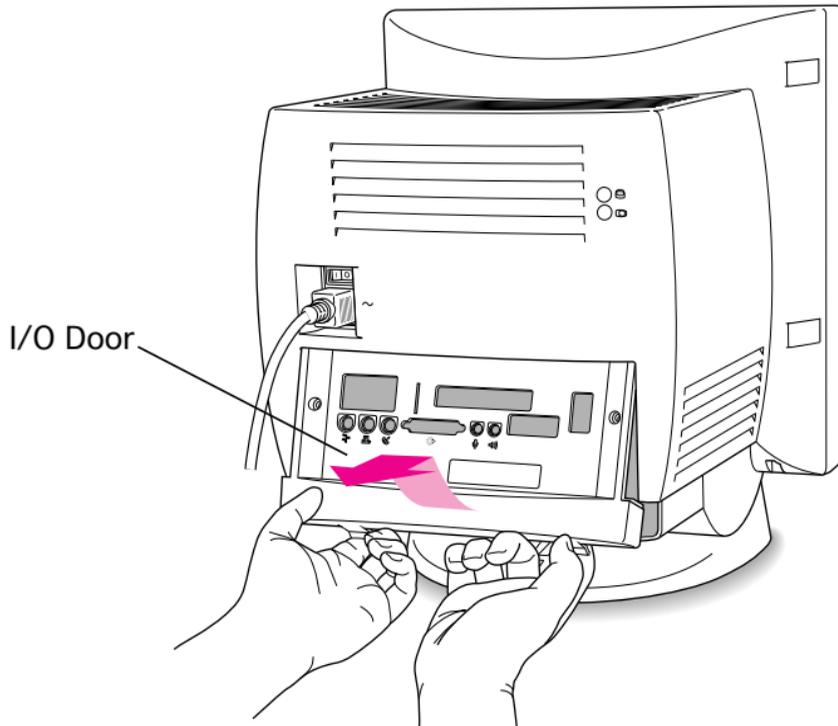


- 2 Using your fingertips, pull gently on the two latches on the underside of the computer case.



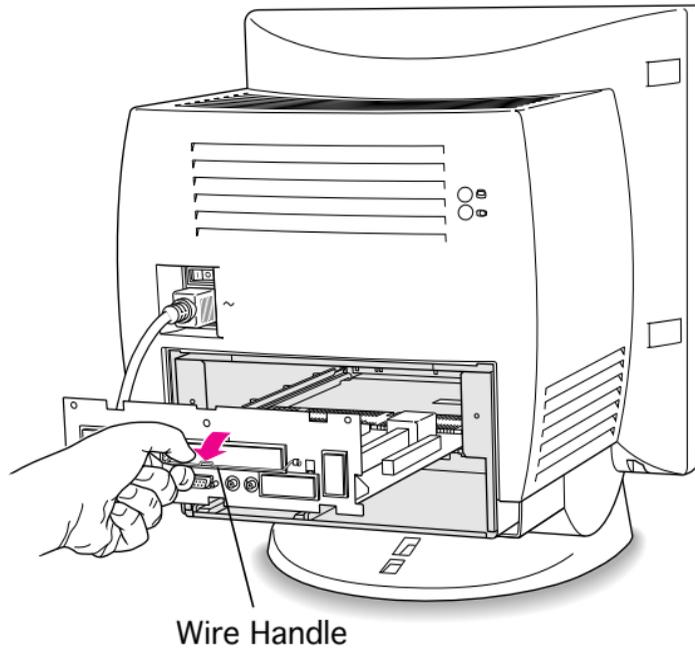


- 3 Swing the door up and off.





- 4 Swing out the wire handle from its storage position.
- 5 Pull out the logic board.



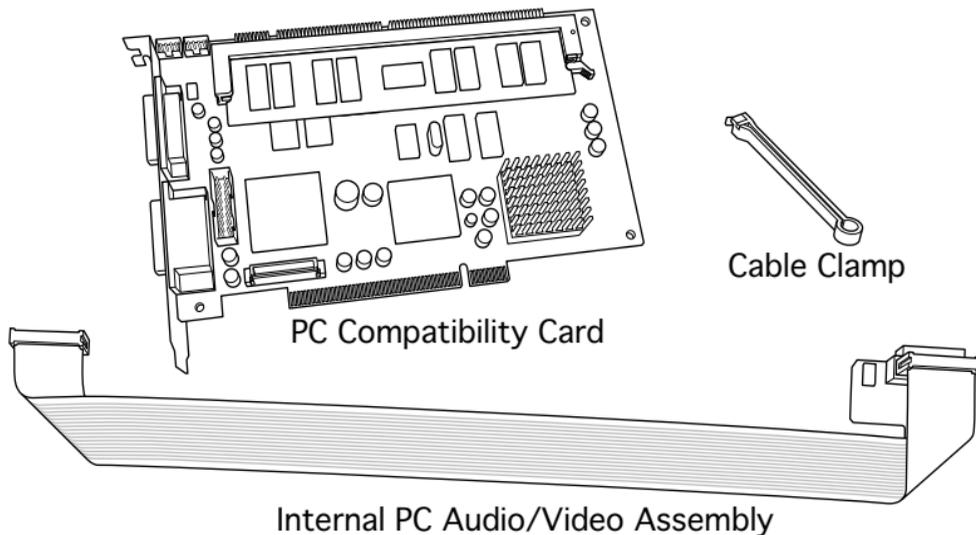


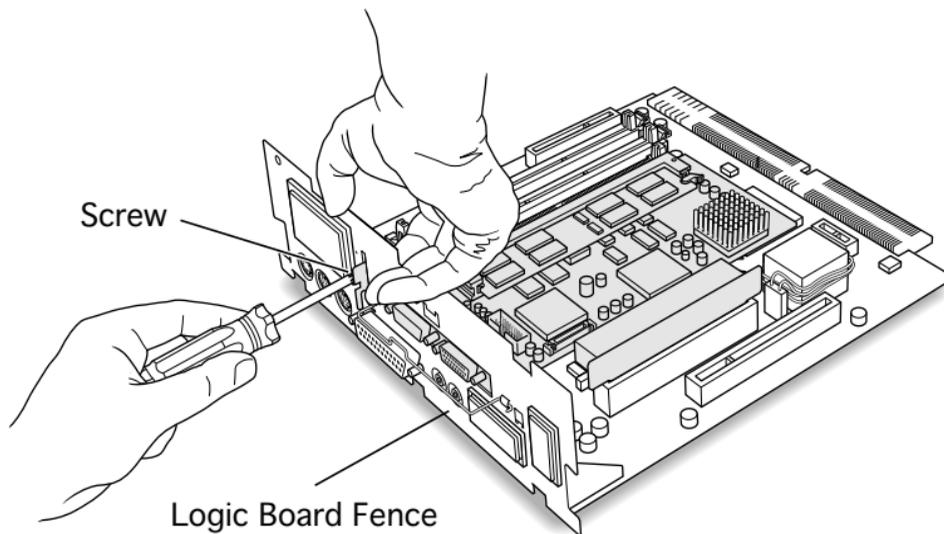
Install the Card

Before you begin, remove the logic board.

Caution: Review the ESD precautions in Bulletins/ Safety.

Important: The Apple external video connector and the PC compatibility card are incompatible and cannot be installed together into a 5400 series Macintosh computer. If you are using the Apple external video connector to attach a second monitor, remove the





external video connector assembly first.

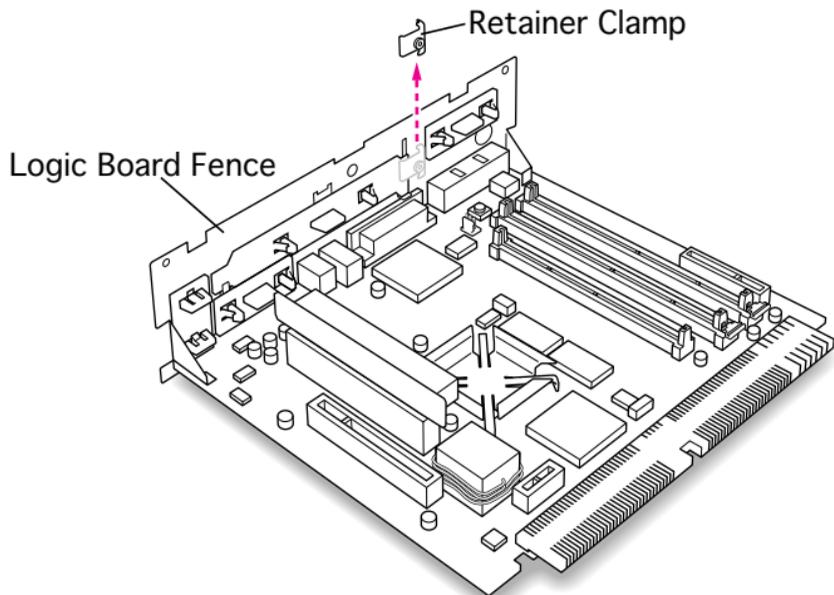
- 1 **Note:** Avoid letting the retainer clamp fall onto the logic board.

While holding the retainer clamp in place, remove the screw that secures the clamp to the logic board fence.



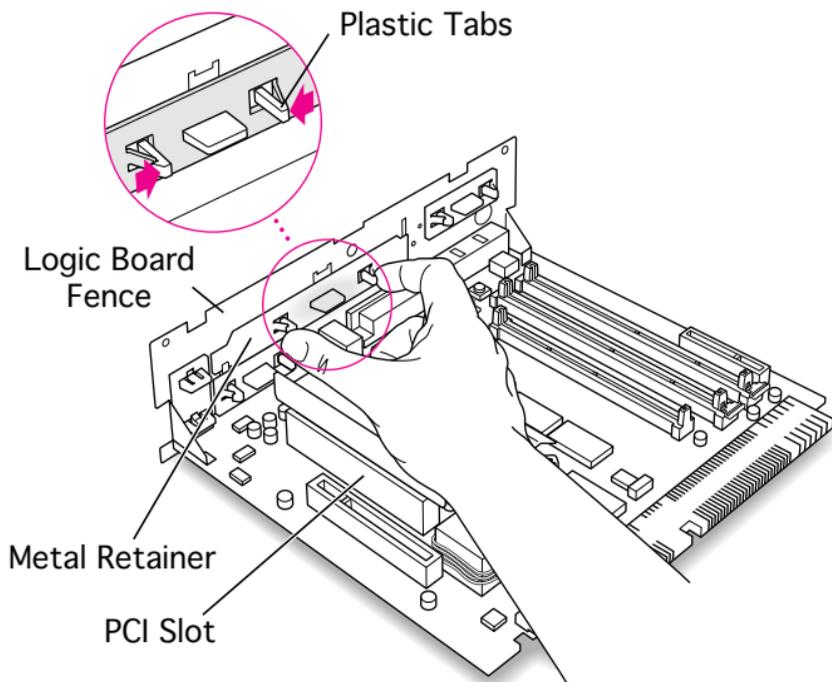


- 2 Remove the retainer clamp and set it aside.





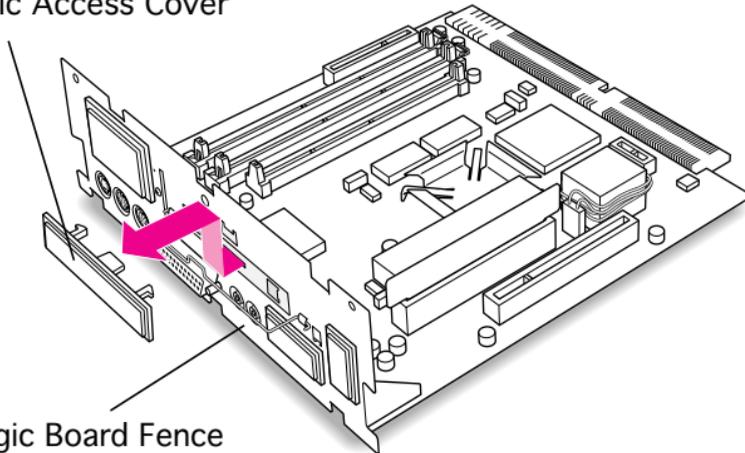
- 3 Inside the logic board fence, press together the two plastic tabs holding the access cover in place.





- 4 Remove the access cover from the outside of the logic board fence.

Plastic Access Cover

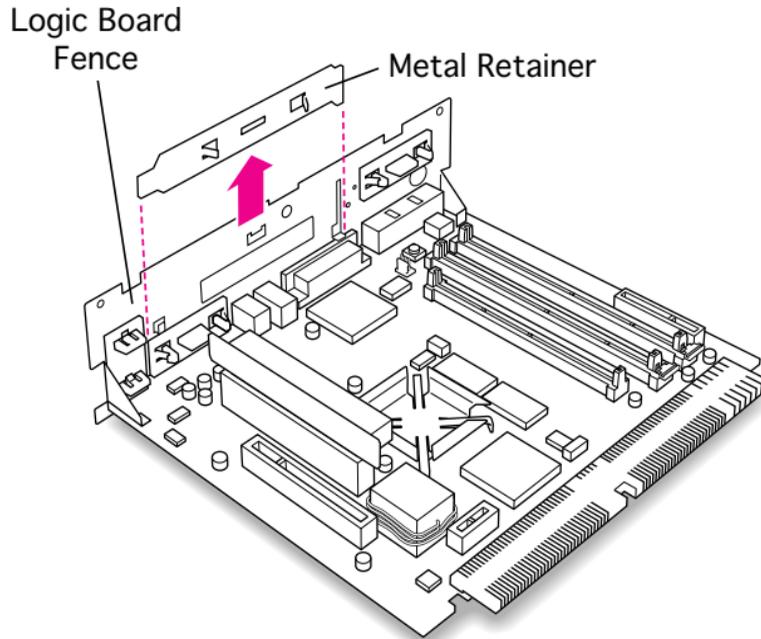


Logic Board Fence



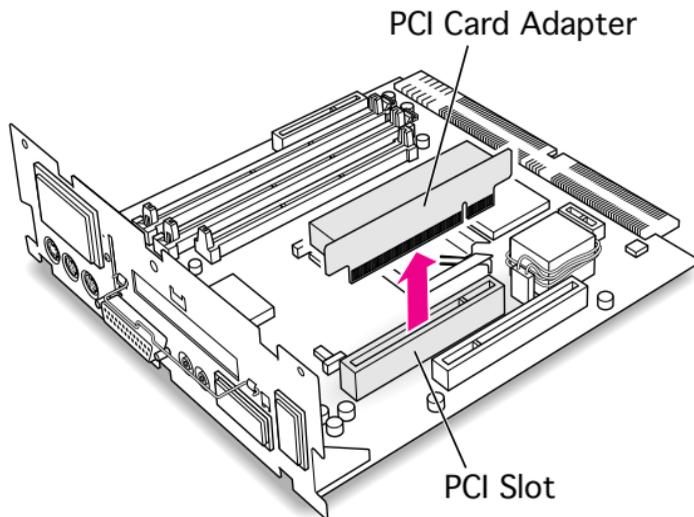


- 5 Remove the metal retainer shield from inside the logic board fence.



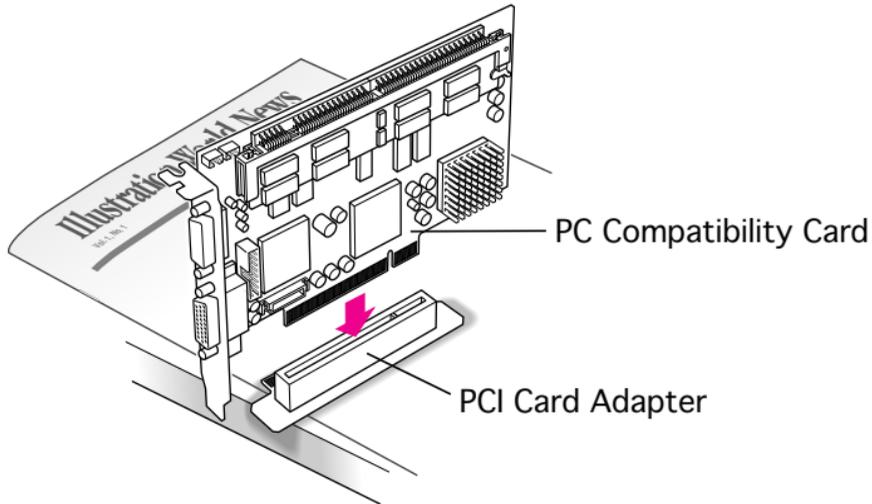


- 6 Remove the PCI card adapter from the logic board.



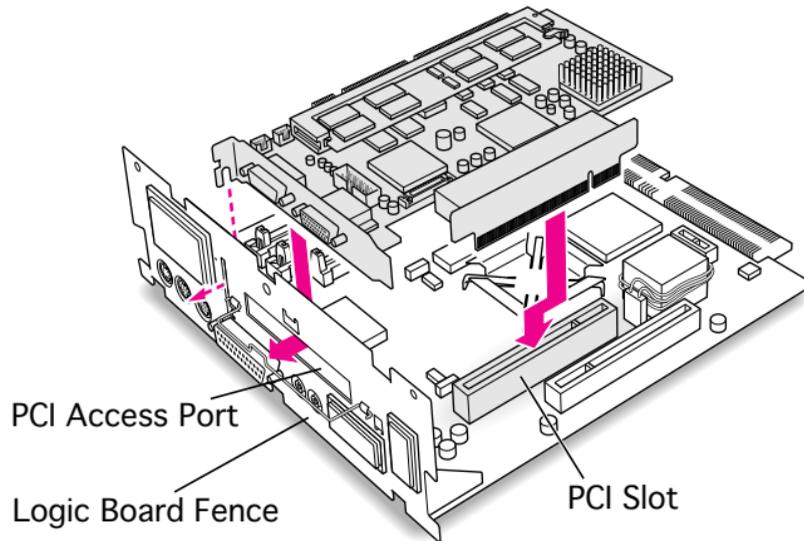


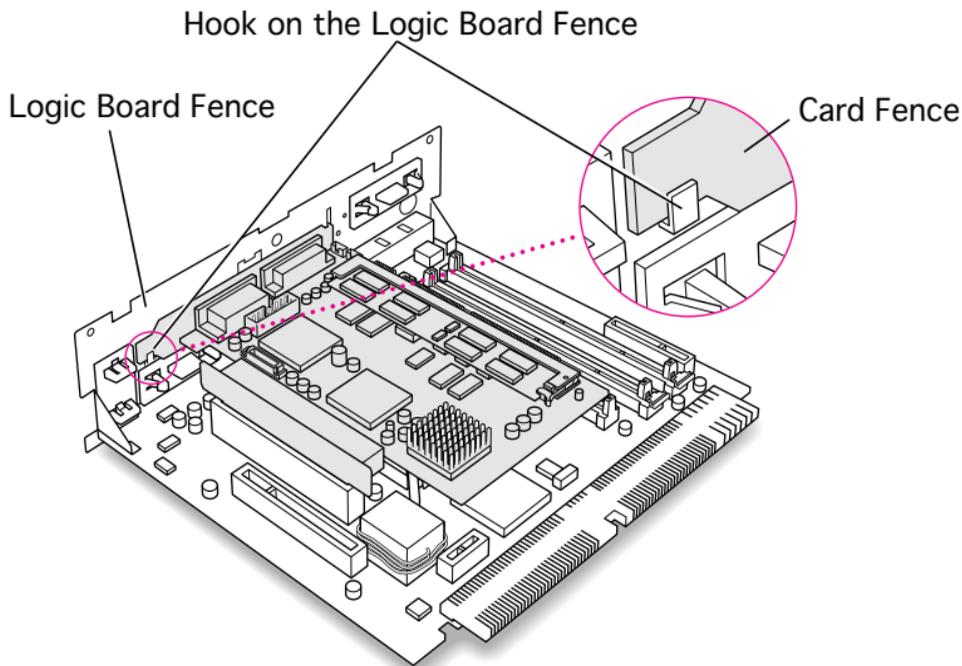
- 7 Connect the PC compatibility card and the PCI card adapter.





- 8 Align the PC compatibility card and adapter over the PCI slot.





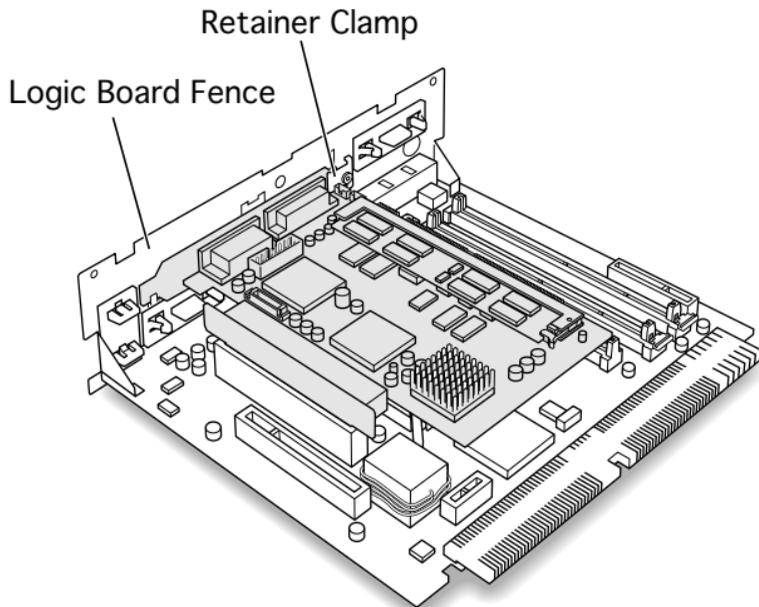
- 9 Insert the adapter into the PCI slot on the logic board. Verify that the metal fence on the PC Compatibility Card engages the hook on the logic board fence and that any connectors on the card protrude through the PCI access port opening.

Note: If you meet resistance, pull the adapter out and try inserting it again. Lift it gently to verify that it will stay in place.



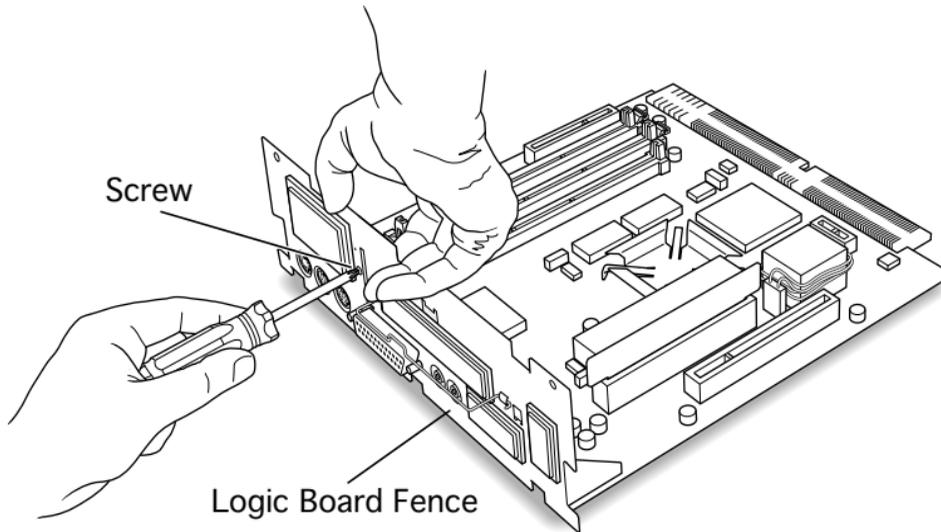


- 10 Replace the retainer clamp on the inside of the logic board fence.





- 11 Hold the retainer clamp in place while replacing the screw.





Install the PC Audio/ Video Assembly

Before you begin, install the PC compatibility card.

Caution: Review the ESD precautions in Bulletins/ Safety.

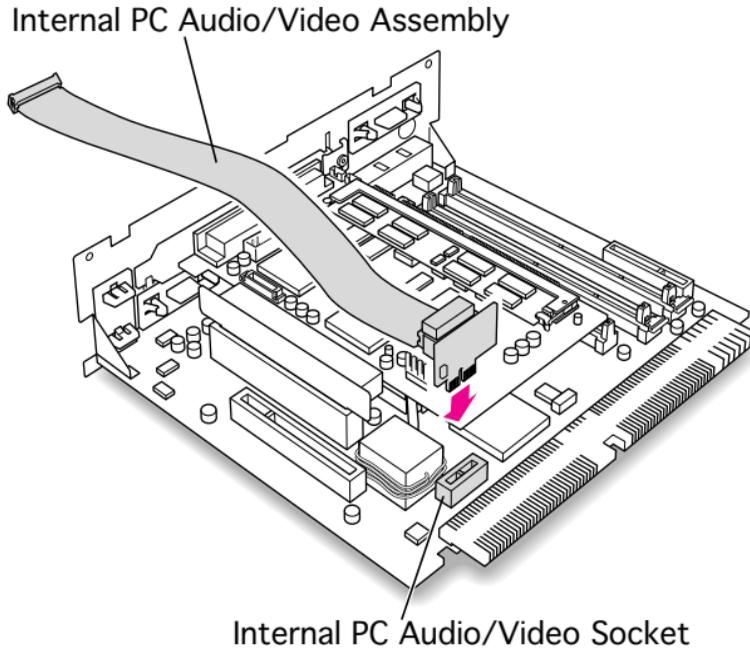


- 1 Unfold the PC audio/video assembly. Be sure the folds near each connector are unfolded and the cable is straight.



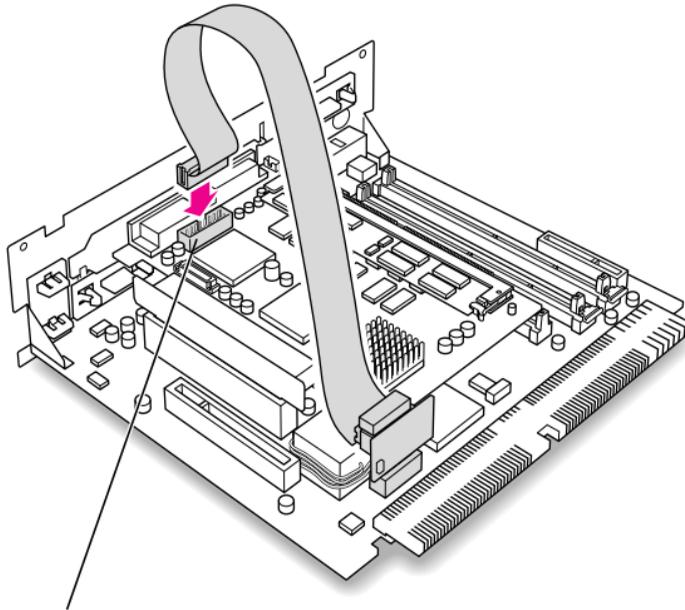


- 2 Plug the large end of the internal PC audio/video connector into the socket on the logic board.





- 3 Insert the small end of the PC audio/video assembly into the socket in the corner of the PC compatibility card.

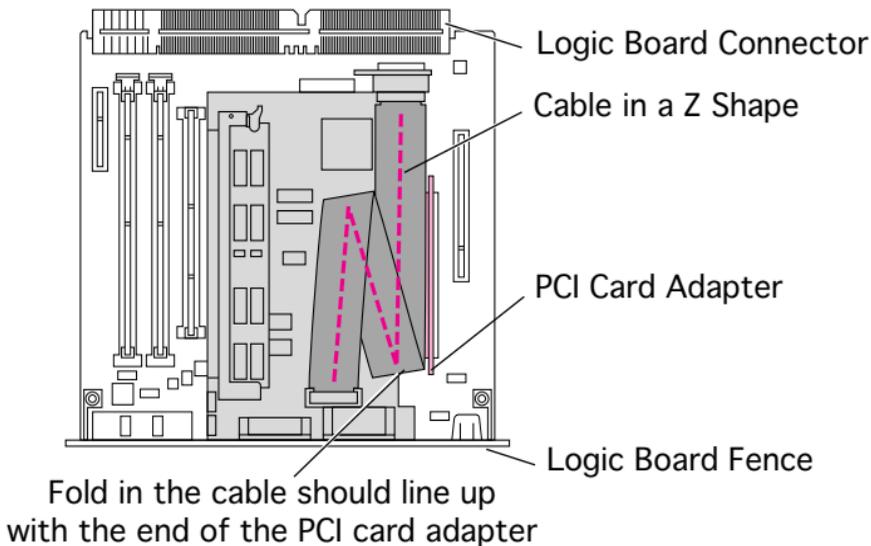


Internal PC Audio/Video Socket





(Top view)



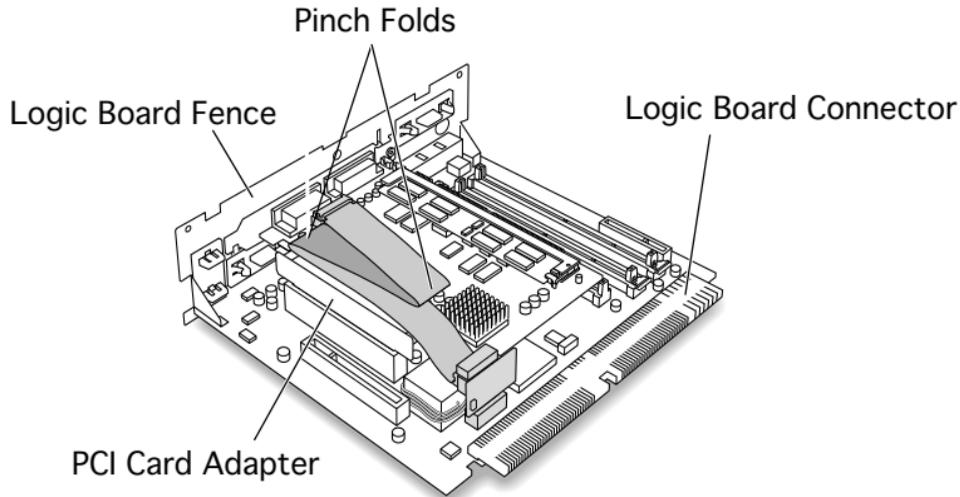
- 4 **Caution:** When folding the cable against the card, be careful not to press down too hard. Applying excessive pressure to the card could damage the card and the logic board.

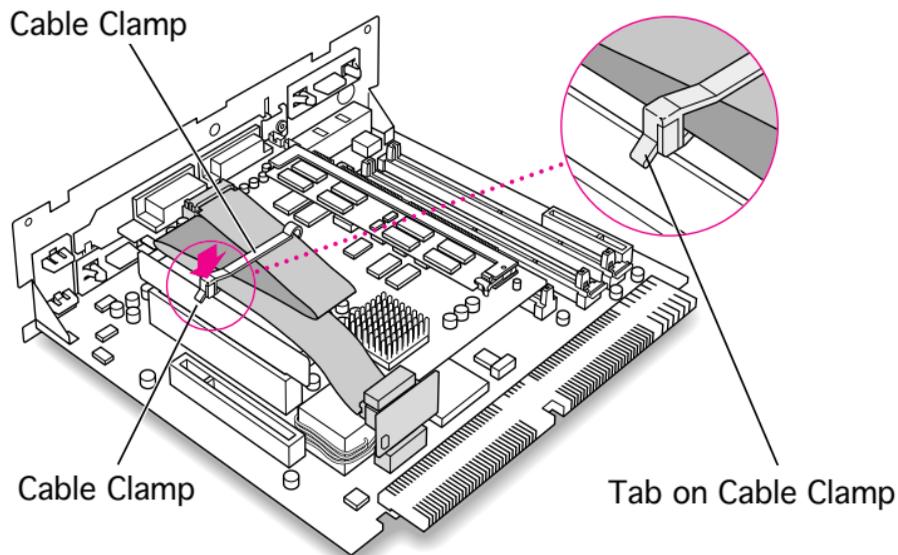
Fold the slack in the PC audio/video assembly cable into a Z shape on top of the card.





- 5 Firmly pinch the new folds so the cable lies flat on top of the card.



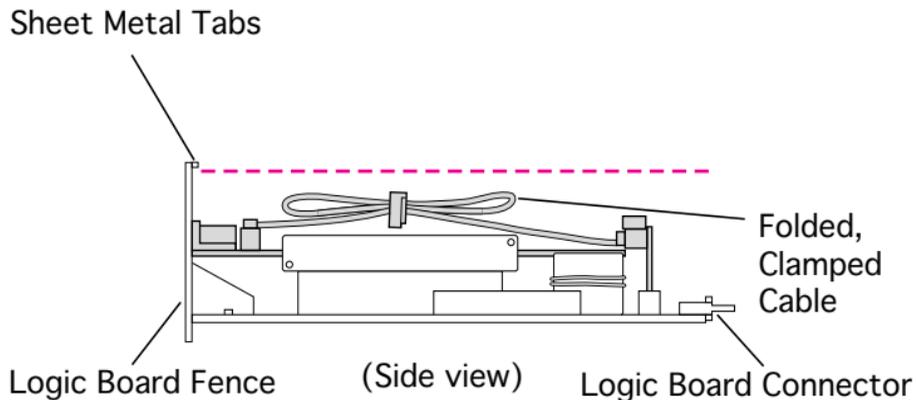


- 6 Slip the cable clamp over the three folds in the PC audio/video assembly cable so that the clamp points down on the side closest to the PCI slot.





- 7 Be sure the cable doesn't rise above the bottom of the sheet metal tabs on the logic board fence.

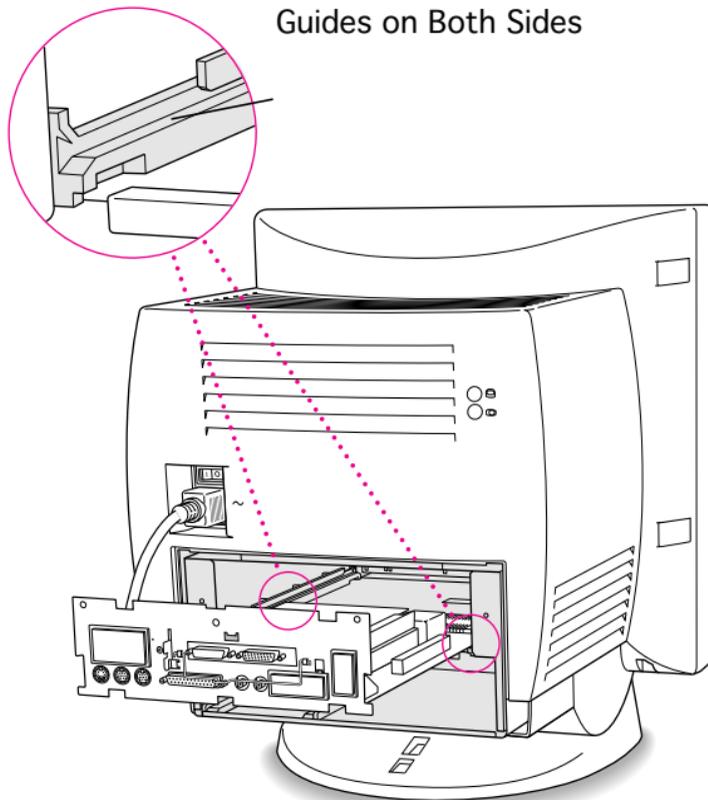


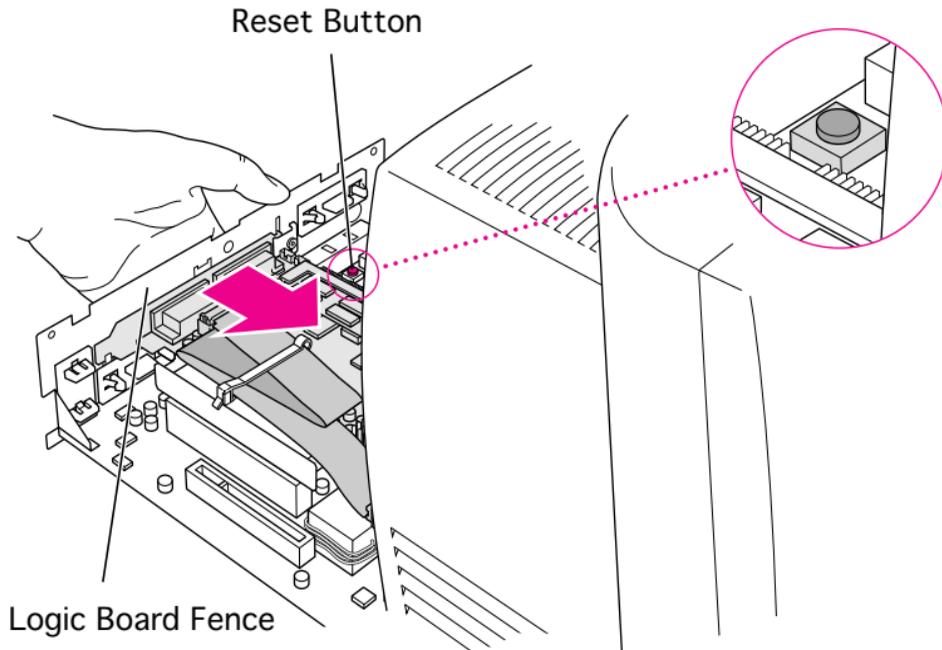


Replace the Logic Board

Caution: Review the ESD precautions in Bulletins/ Safety.

- 1 Align the logic board with the guide rails.



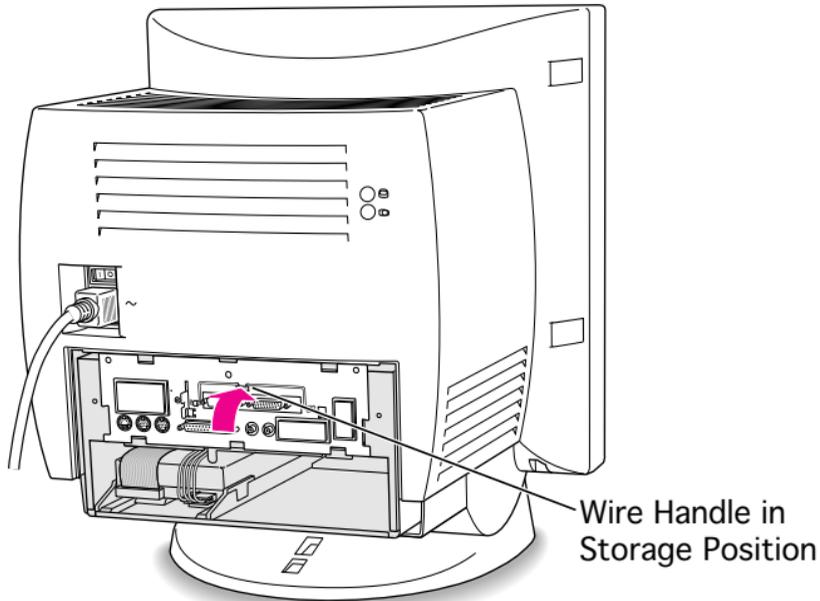


- 2 Press the reset button on the logic board, and slide the logic board back into the computer.



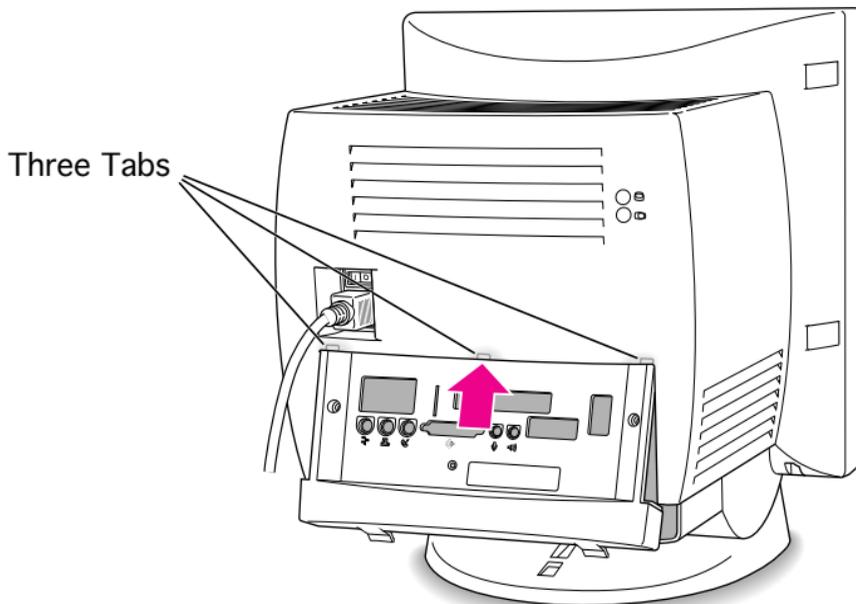


- 3 Swing the wire handle back into its storage position.



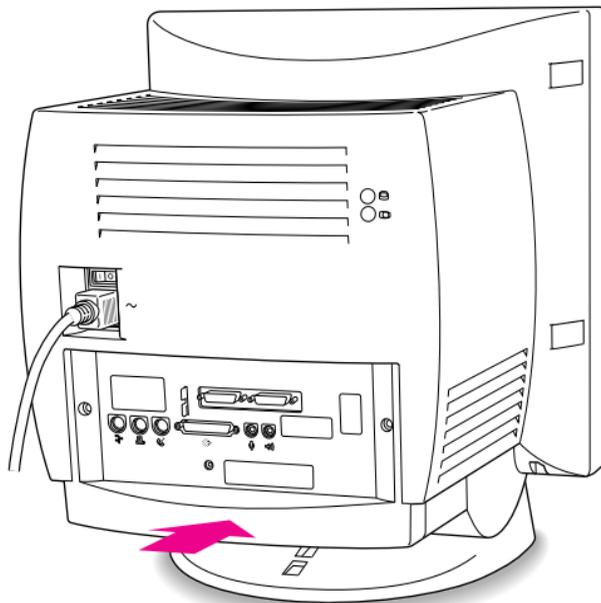


- 4 Slide the three tabs at the top of the I/O door into the grooves in the computer case.



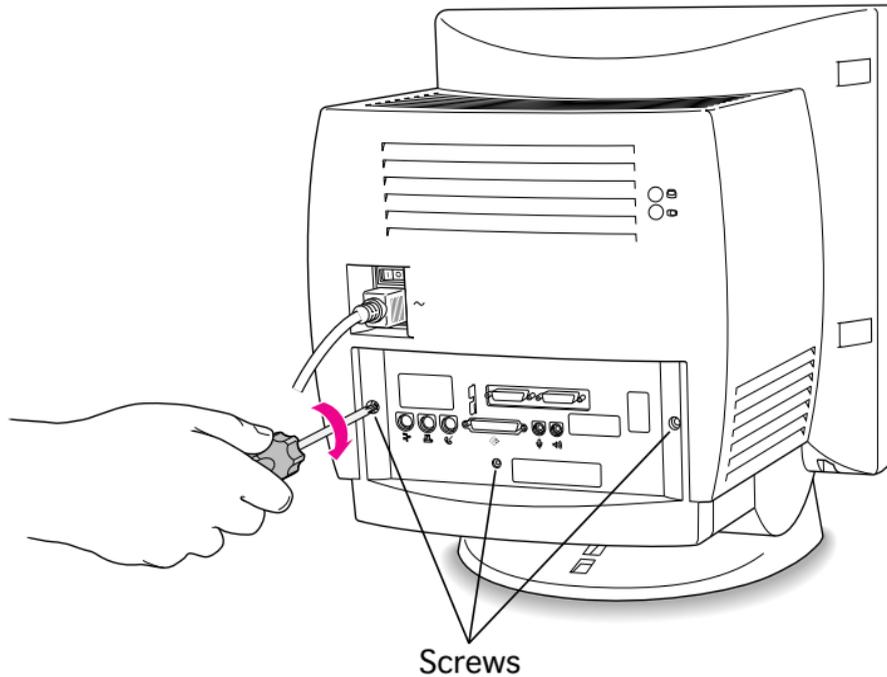


- 5 Press the I/O door firmly into place.





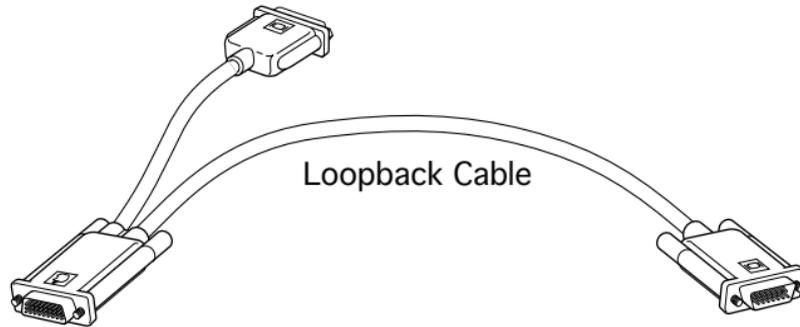
- 6 Replace the screws on the I/O door panel.





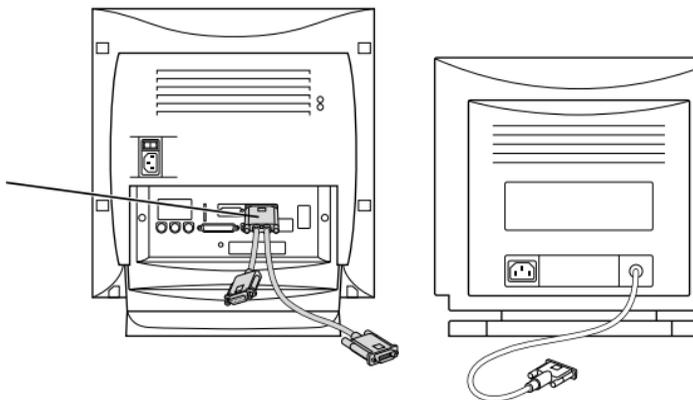
Connect a Monitor

Caution: Do **not** plug a monitor into the joystick port that comes on some models of the PC compatibility card, and do **not** plug a joystick into a monitor port. Serious damage to the equipment can result.





Middle Connector
on the
Loopback Cable

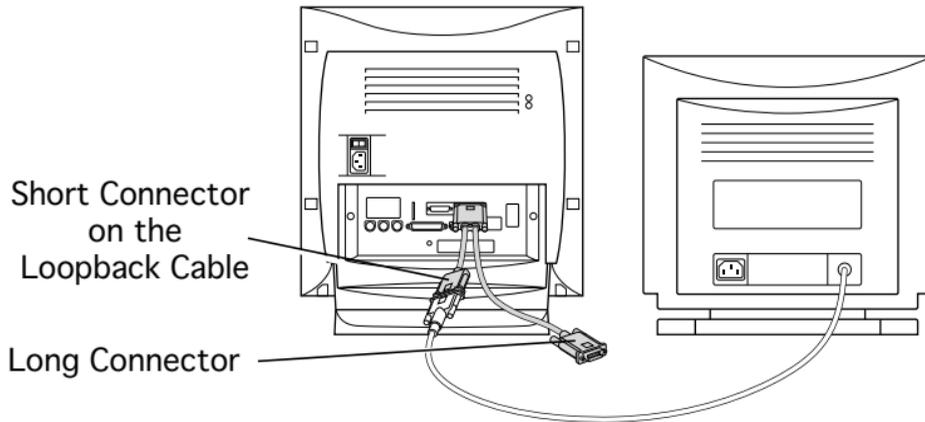


- 1 Plug the middle connector on the loopback cable into the 26-pin port on the PC compatibility card and tighten the thumbscrews.





- 2 Attach the short connector on the loopback cable to the external monitor's cable.



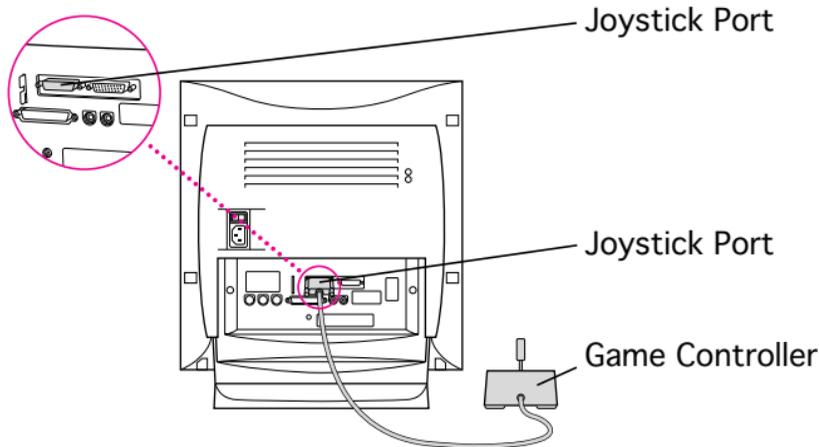


Connect a PC Game Controller

Note: Some models of the PC compatibility card come with a game controller port.

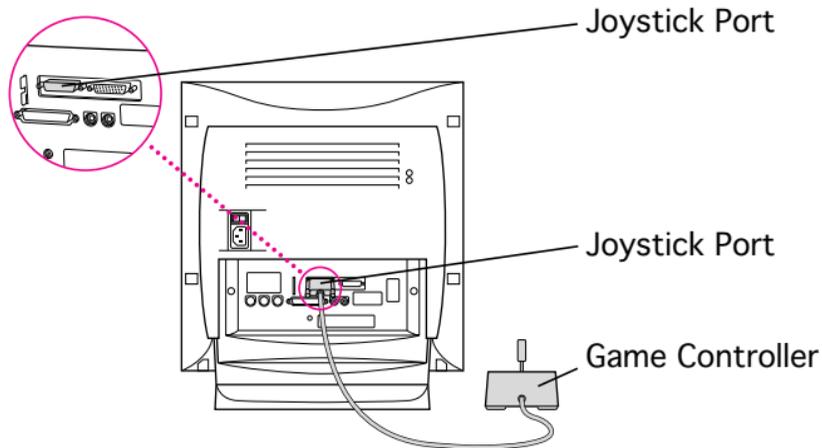
Caution: Do not plug a monitor into the joystick port, and do not plug a joystick into a monitor port. Serious damage to the equipment can result.

- 1 Remove the plastic cover on the game controller port.





- 2 Plug the game controller into the port.





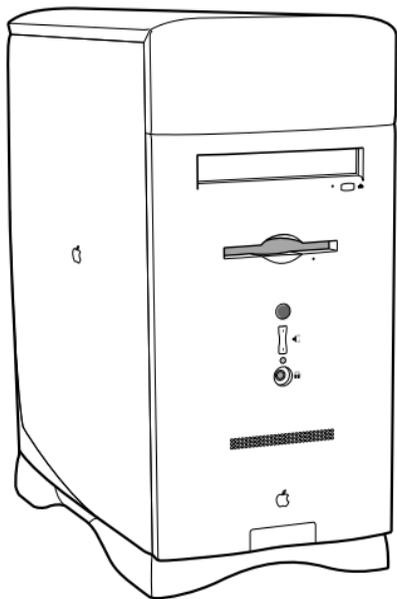
PM 6400 Series

7" 100 MHz PC Card Installation





7" 100 MHz PC Card



If you are installing the PC compatibility card hardware in a 6400 series Macintosh computer (such as the Macintosh Performa 6400), or any two-PCI-slot tower Macintosh computer, follow the instructions in this section.





Note: Do **not** use the cable clamp, CD audio cables, plastic access port, or metal retainer that come with the PC compatibility card.

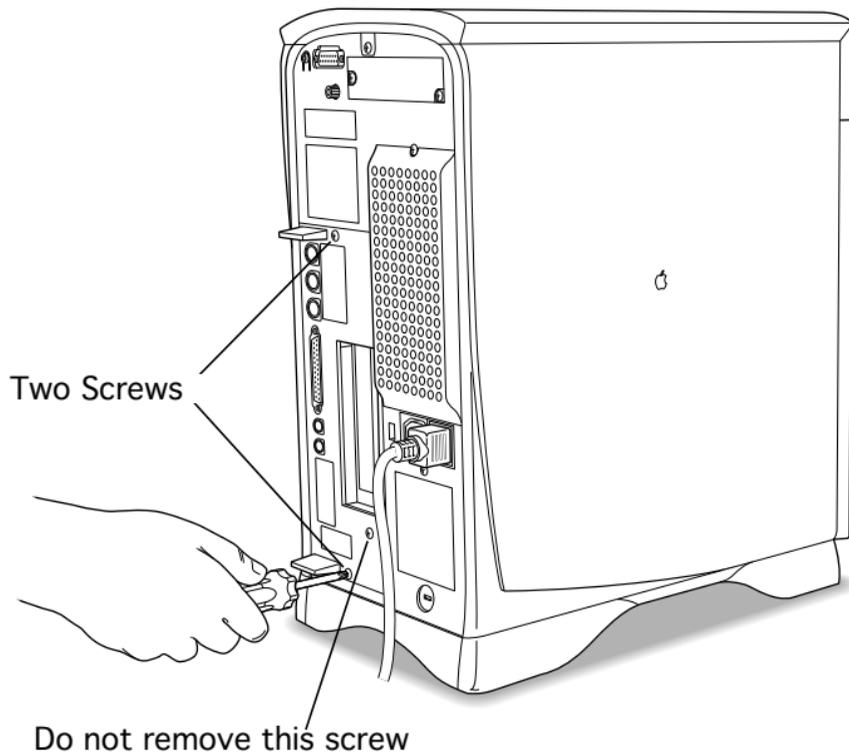




Remove the Logic Board

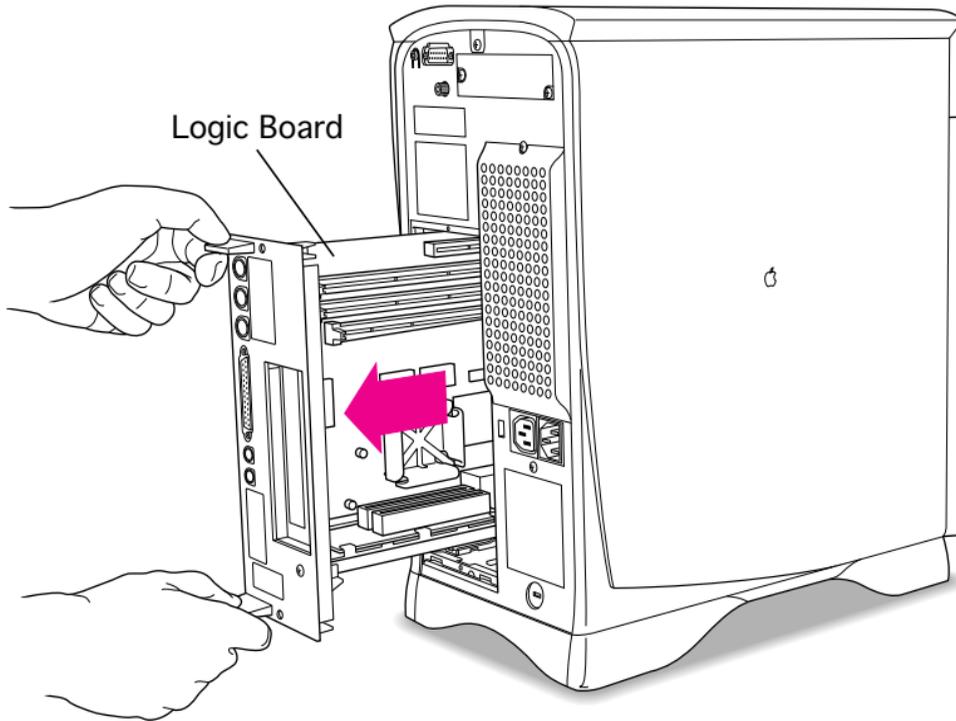
Caution: Review the ESD precautions in Bulletins/ Safety.

- 1 Remove the two screws that secure the logic board fence to the back of the computer.



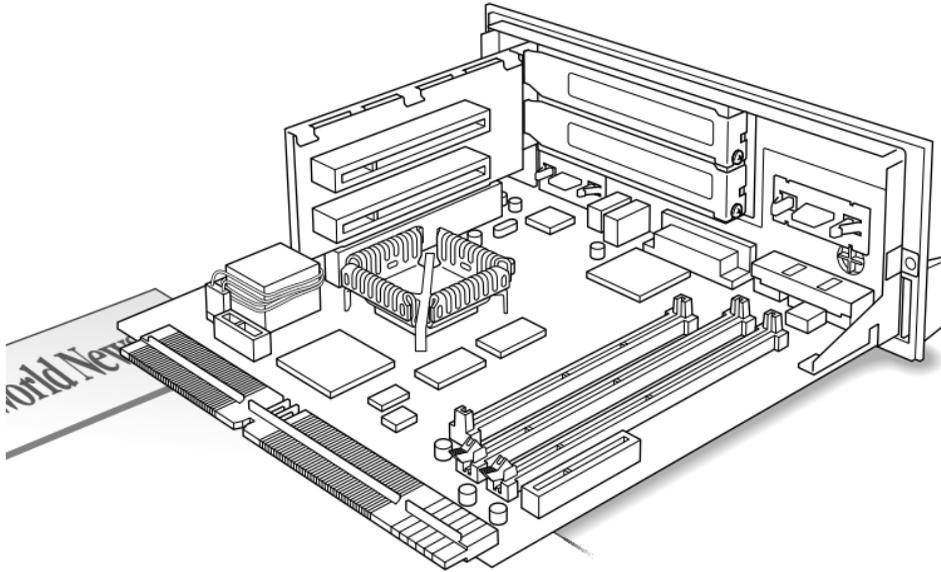


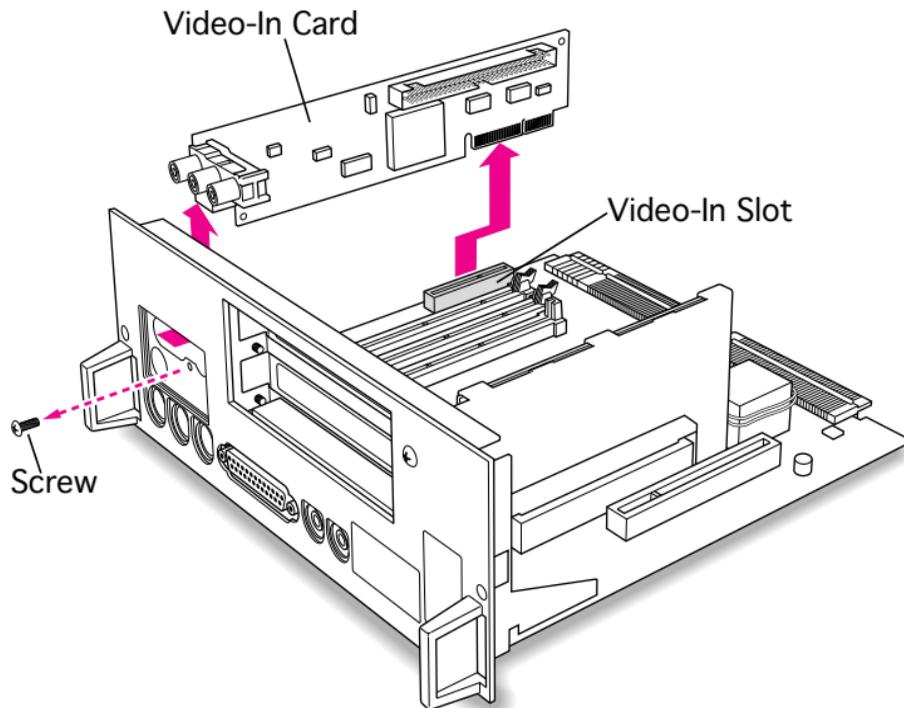
- 2 Grasp the two plastic tabs and pull the logic board out of the computer.





- 3 Place the logic board on a clean, flat surface.





Remove the Video-In Card

If a video-in card is already installed, remove it temporarily to allow enough room for installing the PC compatibility card.

- 1 Remove the screw on the front of the logic board fence that secures the video-in card.
- 2 Remove the video-in card.





Remove the PCI Port Cover

Before you begin, remove the following:

- Logic board
- PCI card installed in lower PCI slot if present

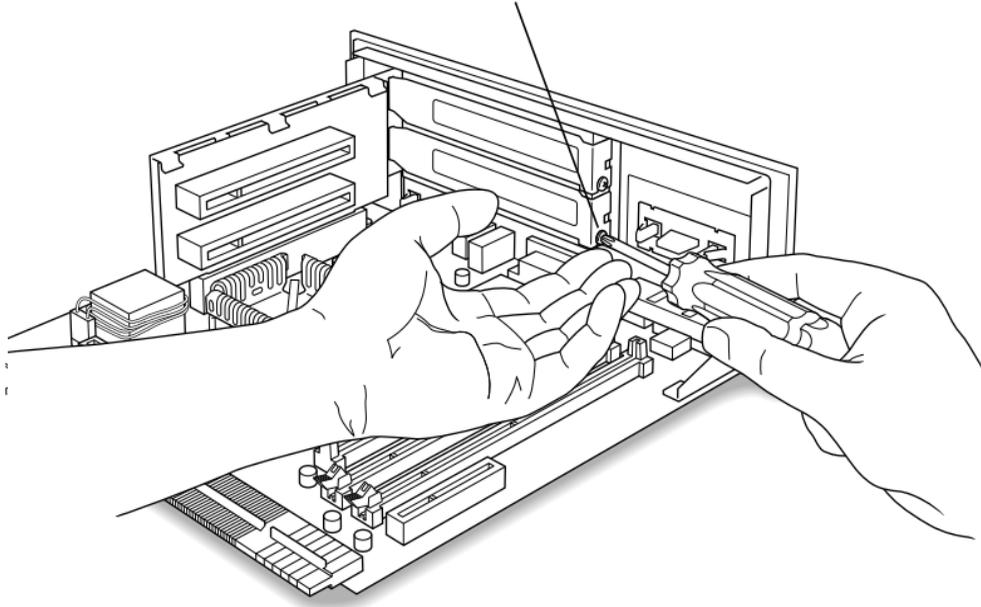
Caution: Review the ESD precautions in Bulletins/ Safety.

Important: Install the PC compatibility card only in the bottom PCI slot. Be sure to remove the lower port cover, not the upper one. If a





Lower Port Cover Screw



PCI card is in the bottom PCI slot, remove it and reinstall it in the top slot after installing the PC compatibility card.

- 1 **Caution:** Avoid letting the screw or port cover drop onto the logic board.

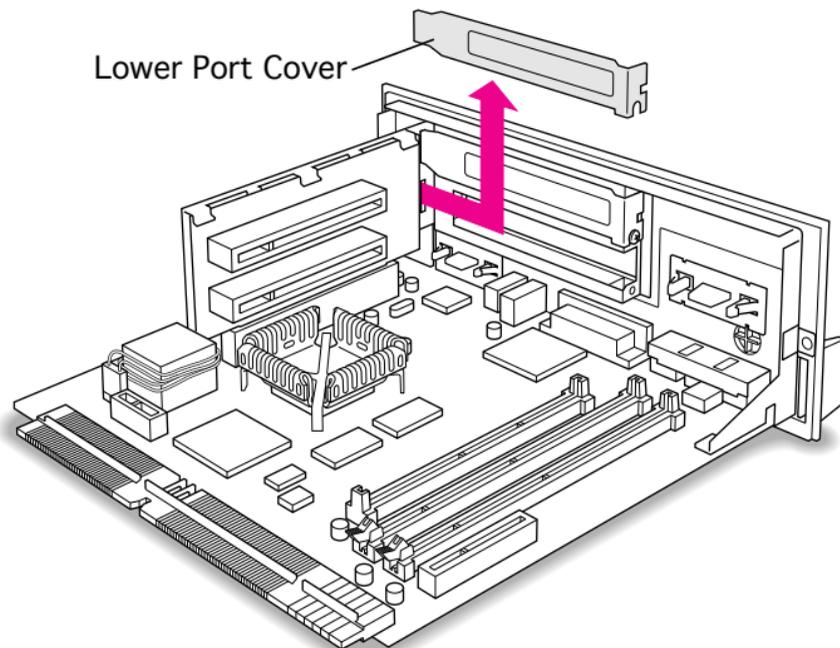
Place one hand under the lower port cover screw to catch the port cover and screw when they come loose.

- 2 Remove the screw that secures the lower port cover.





- 3 Remove the lower port cover.





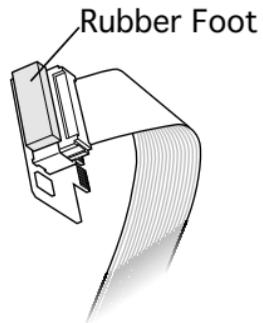
Install the Internal PC Audio/Video Assembly

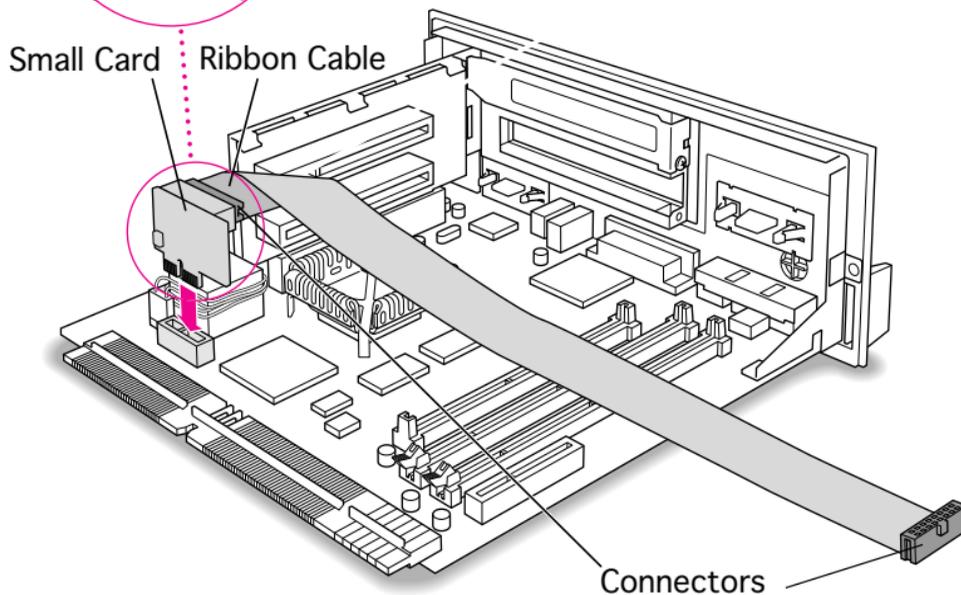
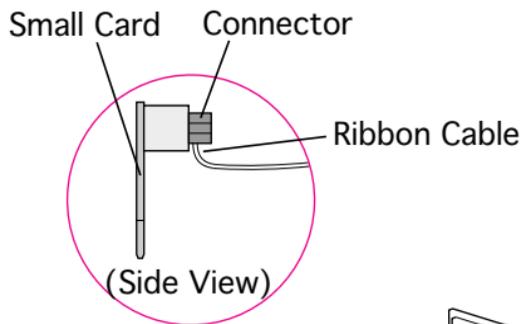
- 1 Unfold the folds near each connector so the cable is straight.





- 2 Peel off the rubber foot from the large end of the PC audio/video assembly.





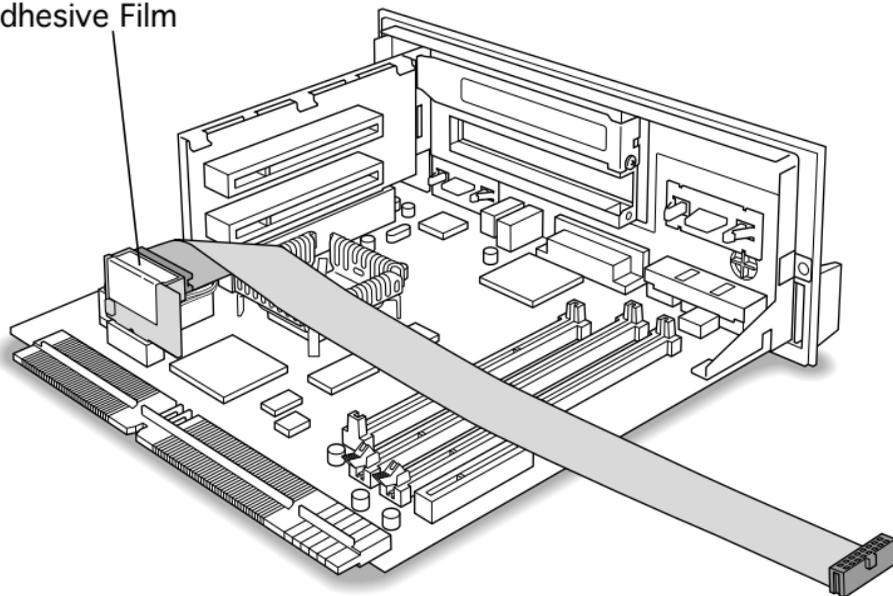
- 3 Plug the large end of the internal PC audio/video connector into the socket on the logic board.
- 4 Fold the cable near the connector and pinch the fold so that the cable lies flat.





- 5 Apply the adhesive film to the top of the small card.

Adhesive Film

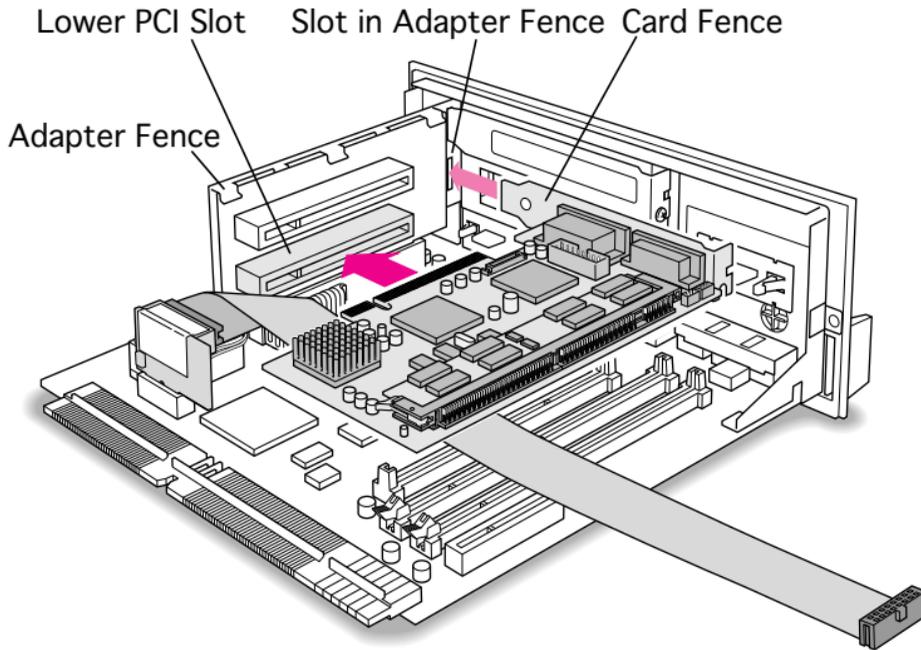


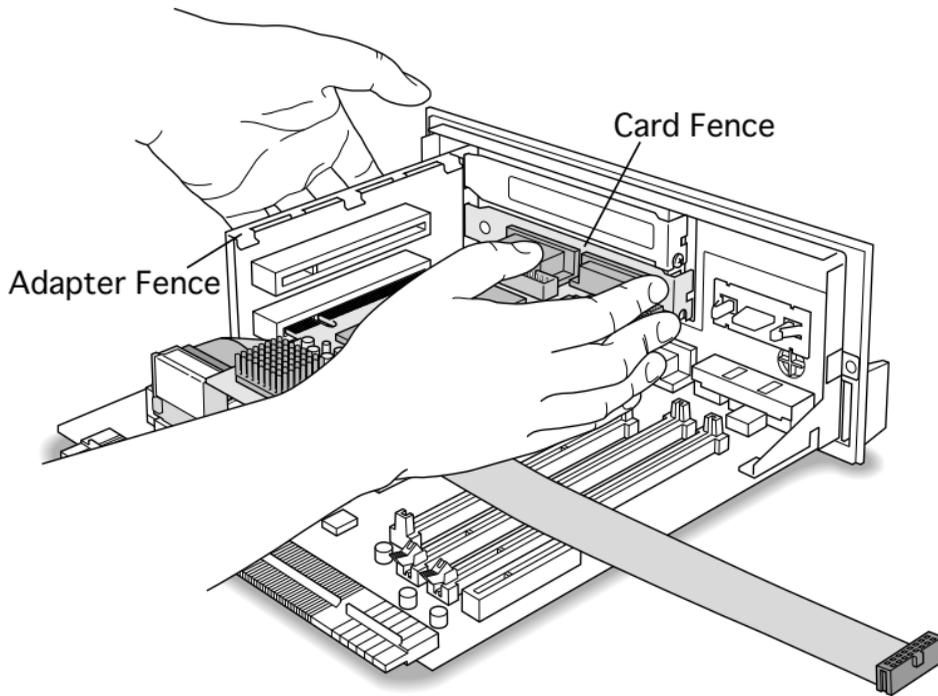


Install the Card

Caution: Review the ESD precautions in Bulletins/ Safety.

- 1 Insert the card into the lower PCI slot. Be sure the PC audio/video cable lies underneath the card, and the card fence matches up to the opening where the port cover was.

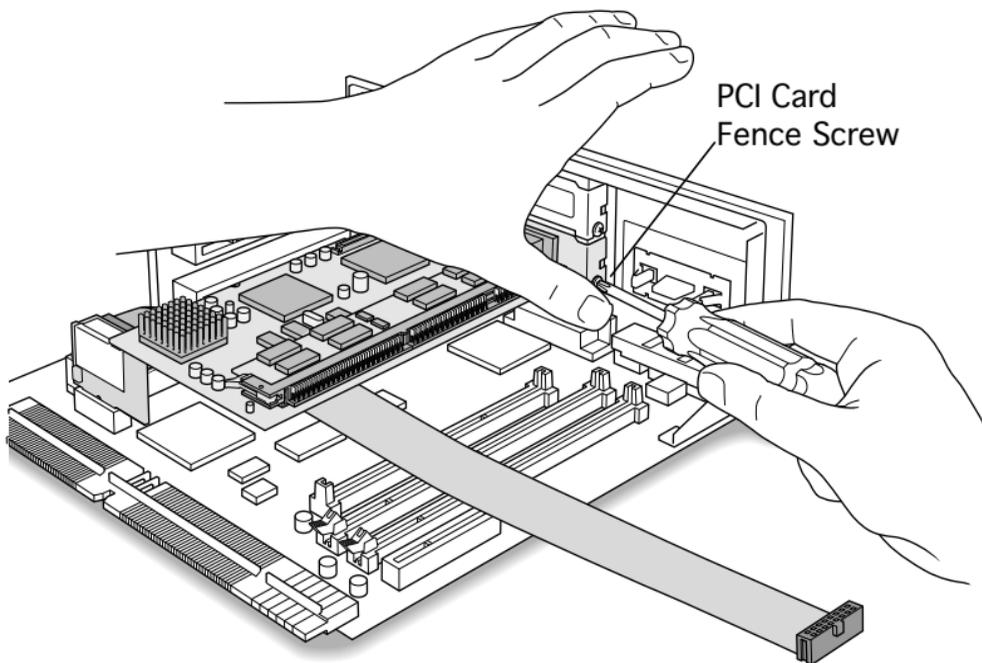




- 2 Support the adapter fence with one hand, and push the card with the other hand until it snaps into place.

Caution: Don't force the card. If it meets resistance, pull the card out and try to insert it again. To see if the card is properly connected, make sure the card's metal fence is flush with the side of the access cover.





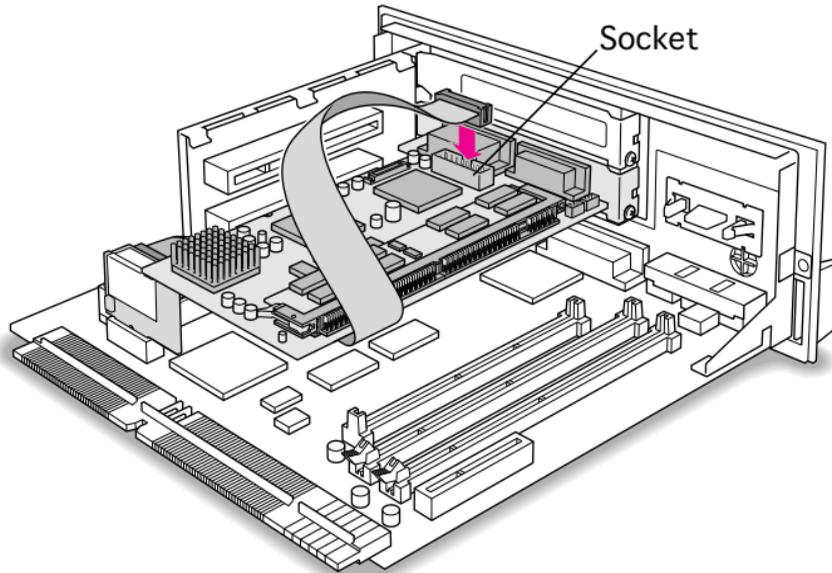
- Note:** To help insert the PCI card fence screw, push the PC compatibility card fence forward with your thumb to align the screw holes.

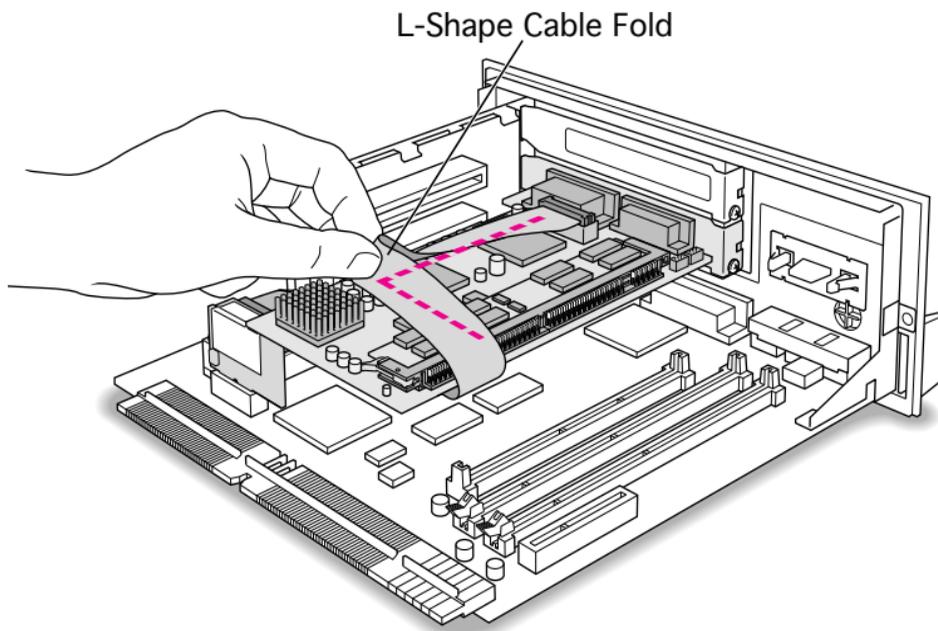
Replace the screw into the PCI card fence.





- 4 Insert the small end of the internal PC audio/video assembly into the socket in the corner of the PC compatibility card.





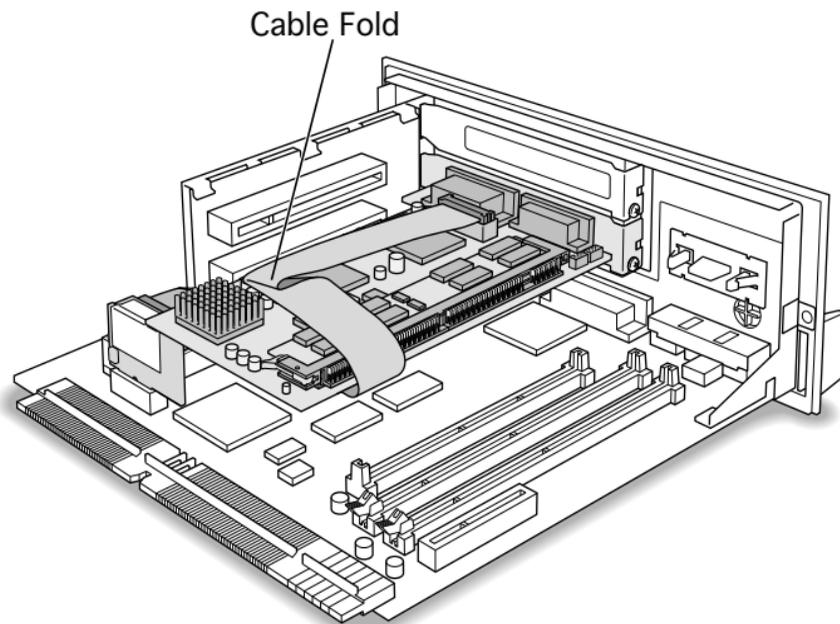
- 5 Caution:** Do not press down too hard on top of the PCI compatibility card. Applying excessive pressure to the PCI compatibility card may damage the card and the logic board.

Fold the slack in the internal PC audio/video assembly into an L shape on top of the card. Firmly pinch the fold.





- 6 Fold again over the fold so the cable lies flat along the top of the card. Pinch both folds together to make the cable lie flat.





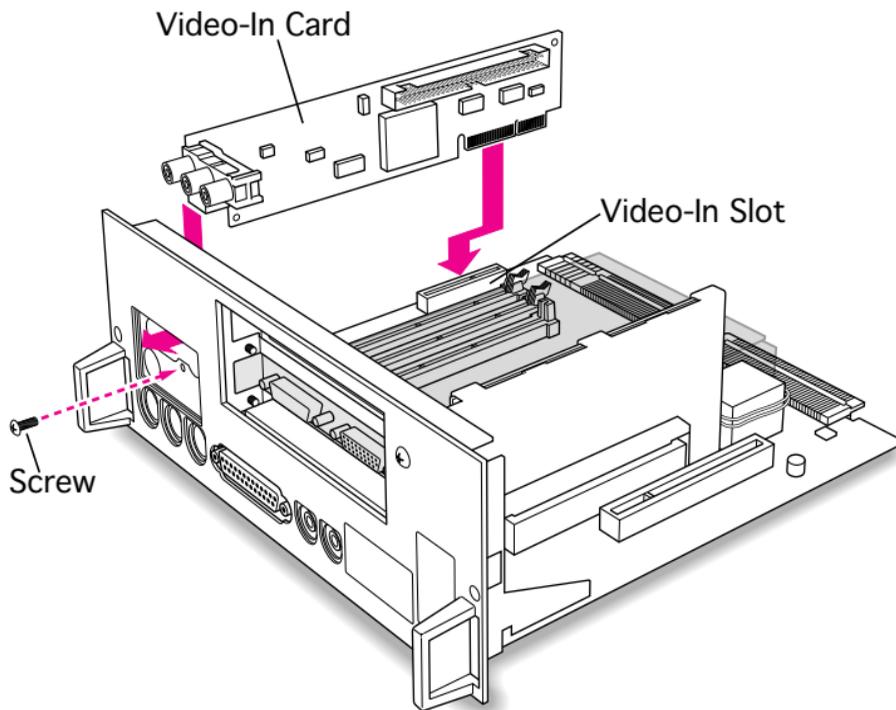
- 7 **Note:** If you removed a PCI card from the lower PCI slot, reinstall it in the upper PCI slot.

Remove the screw that holds the upper port cover, and remove the port cover. Insert the PCI card into the upper PCI slot.





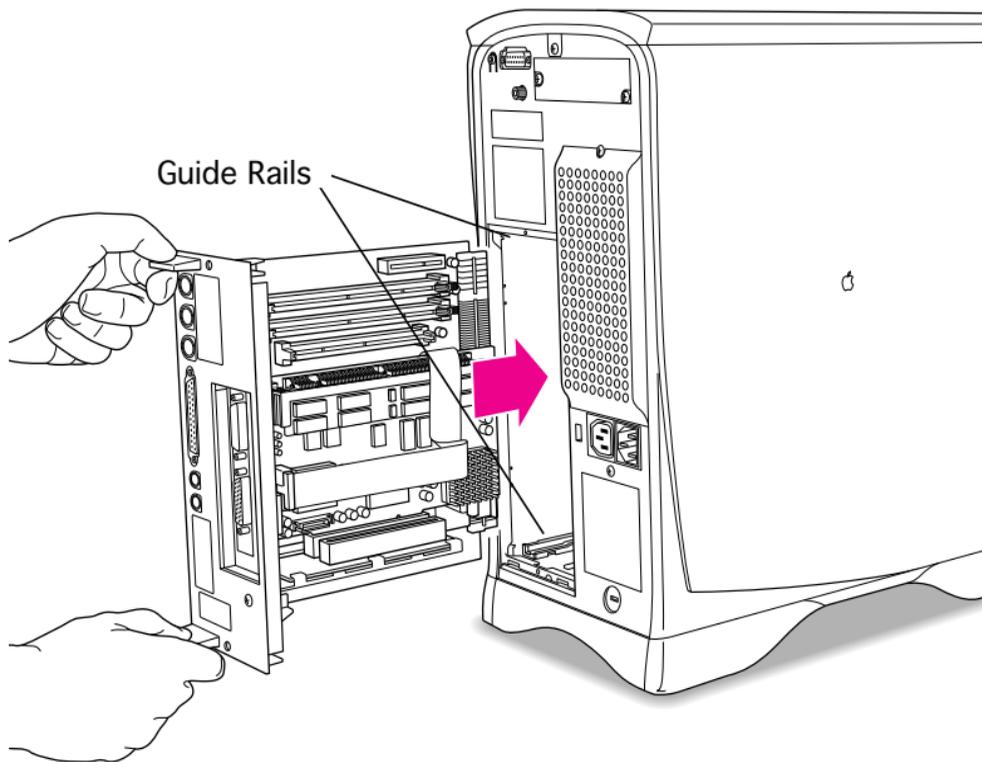
- 8 If you removed a video-in card from the logic board, replace it.

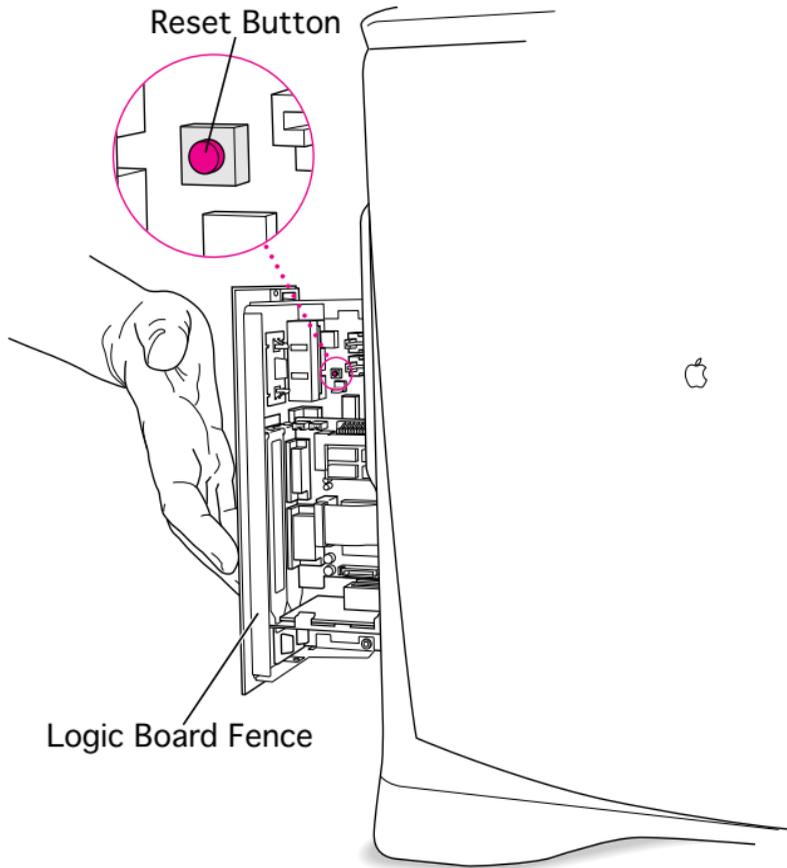




Replace the Logic Board

- 1 Grasp the plastic tabs on the logic board fence, and align the logic board so that it engages the guide rails on the top and bottom of the computer chassis.



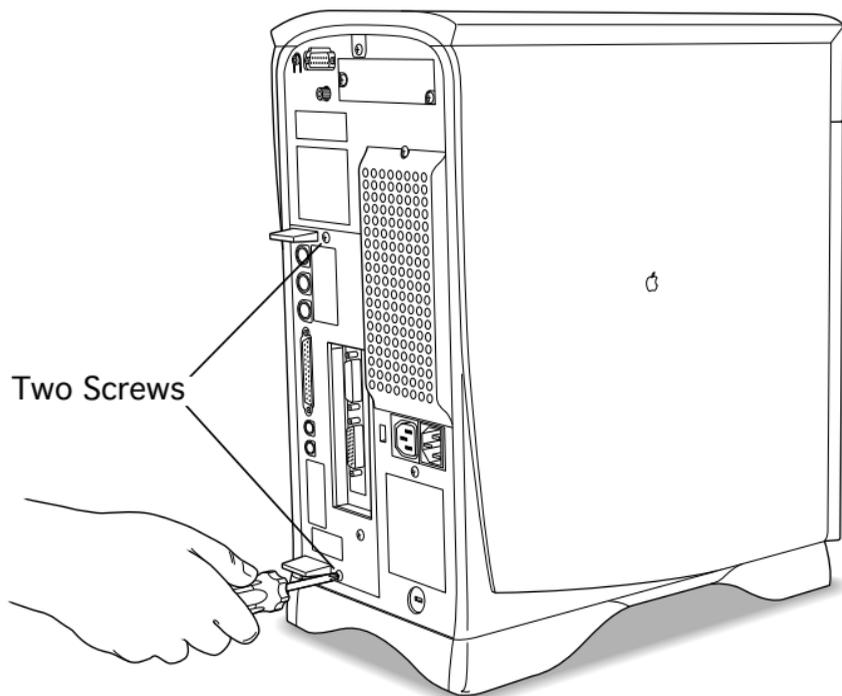


- 2 Press the reset button on the logic board.
- 3 Slide the logic board into the computer.





- 4 Replace the two screws that secure the logic board fence.



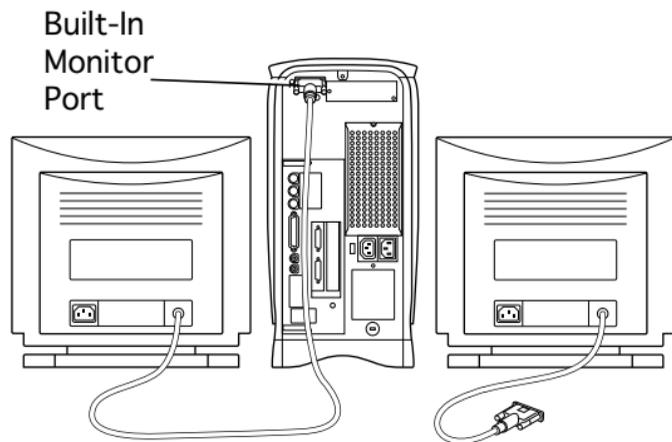


Connect Two Monitors

Connecting two monitors allows displaying the Macintosh OS environment on one monitor and the PC environment on the other.

Note: If a multiple-scan monitor from a manufacturer other than Apple is used to display the PC environment, a VGA-to-Macintosh adapter is required. This adapter is connected between the monitor's cable and the loopback cable.





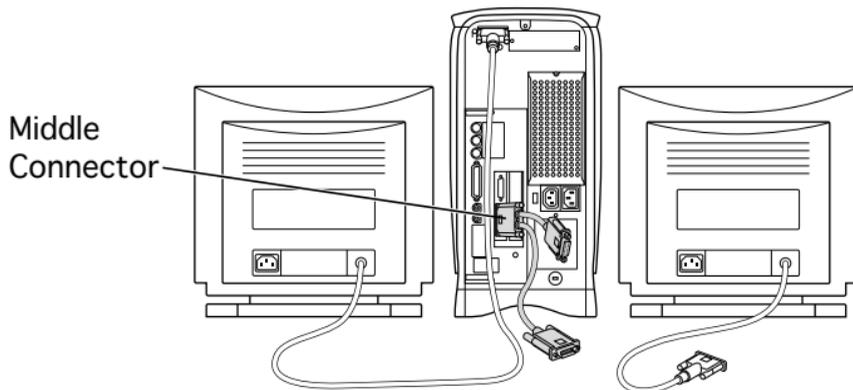
- 1 **Caution:** Do **not** plug a monitor into the joystick port that comes on some models of the PC compatibility card, and do **not** plug a joystick into a monitor port. Serious damage to the equipment can result.

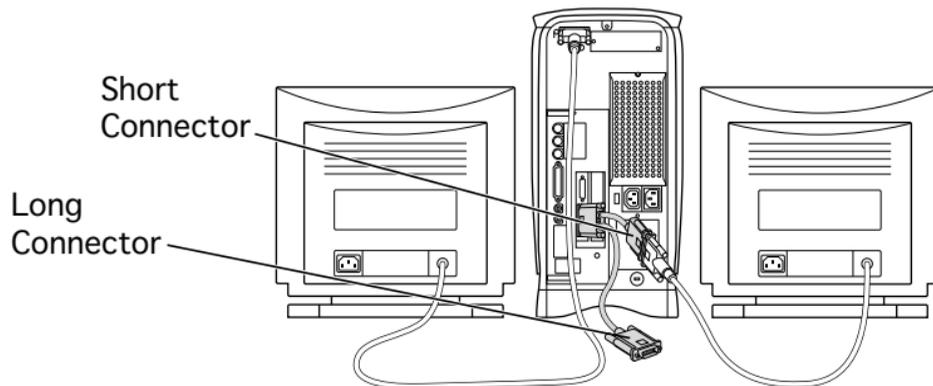
Connect the monitor for the Macintosh OS environment to the monitor port on the back panel of the computer.





- 2 Plug the middle connector on the loopback cable into the port on the PC compatibility card and tighten the thumbscrews.





- 3 Plug the connector on the short end of the cable into the cable for the monitor used for the PC environment.

Note: If the computer has an additional video card installed in the second PCI slot, plug the long connector into it. This allows switching the monitor between the PC environment and the Macintosh OS environment.

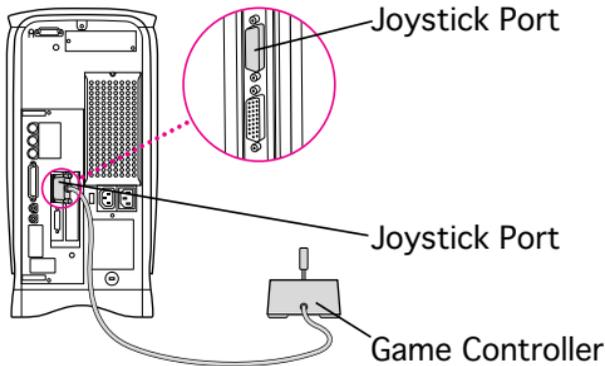




Connect a PC Game Controller

Some models of the PC compatibility card come with a game controller port.

- 1 Remove the plastic cover on the game controller port.





- 2 **Caution:** Do not plug a monitor into the joystick port, and do not plug a joystick into a monitor port. Serious damage to the equipment can result.

Plug the game controller into the port.





PM 7200

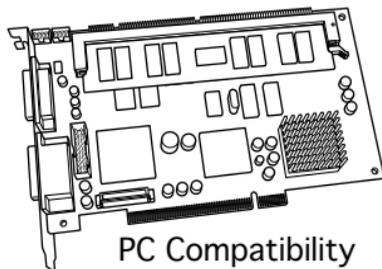
7" 100 MHz PC Card Installation



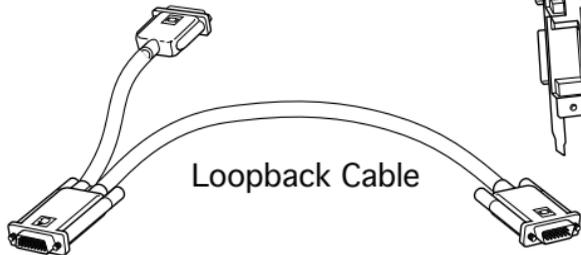


7" 100 MHz PC CARD

The 7" PC Compatibility Card Upgrade kit includes the PC Compatibility card, a loopback cable, an internal PC audio/video cable assembly, and two CD audio cables.



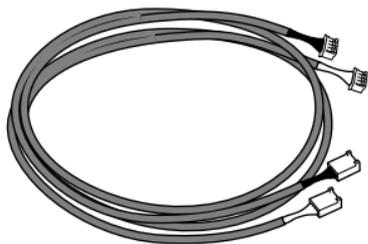
PC Compatibility Card



Loopback Cable



Internal PC Audio/Video Assembly



CD Audio Cables





Note: The PC Compatibility card offers two ways to get video out on the Power Macintosh 7200: 1) via the internal PC audio/video cable assembly or 2) via the external loopback cable.

If the internal PC audio/video cable assembly is installed and you wish to connect a single monitor to the built-in video port on the computer, the loopback cable is not needed. If you wish to connect the monitor to a video card, or if you wish to connect two monitors to the computer, you must use the loopback cable provided.

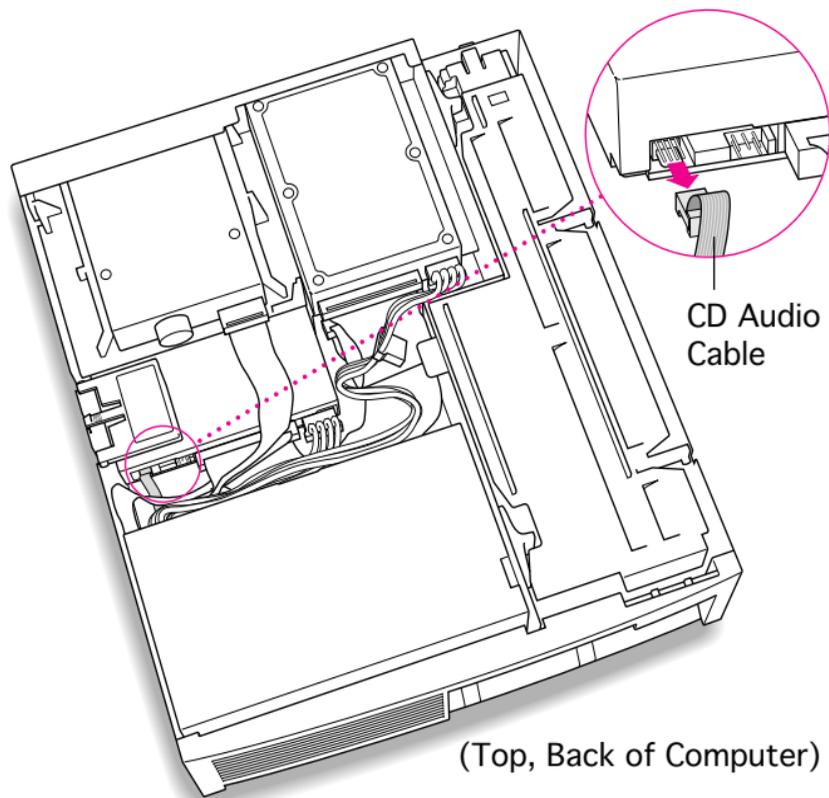
Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors instead of three. That cable does not work with the PC Compatibility Card.





Before you begin, remove the top housing.

- 1 Disconnect the CD audio cable from the CD-ROM drive.

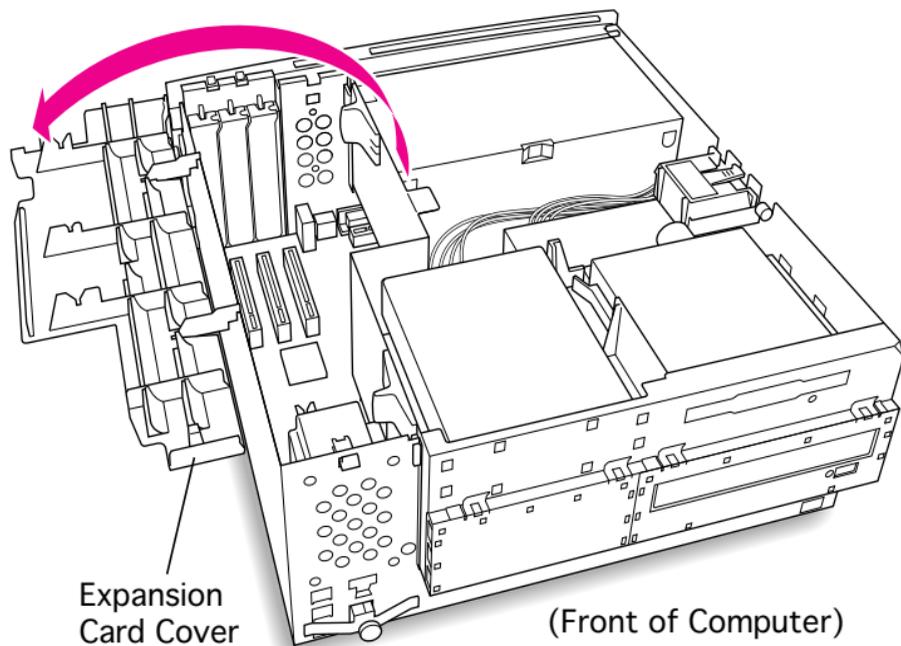


(Top, Back of Computer)



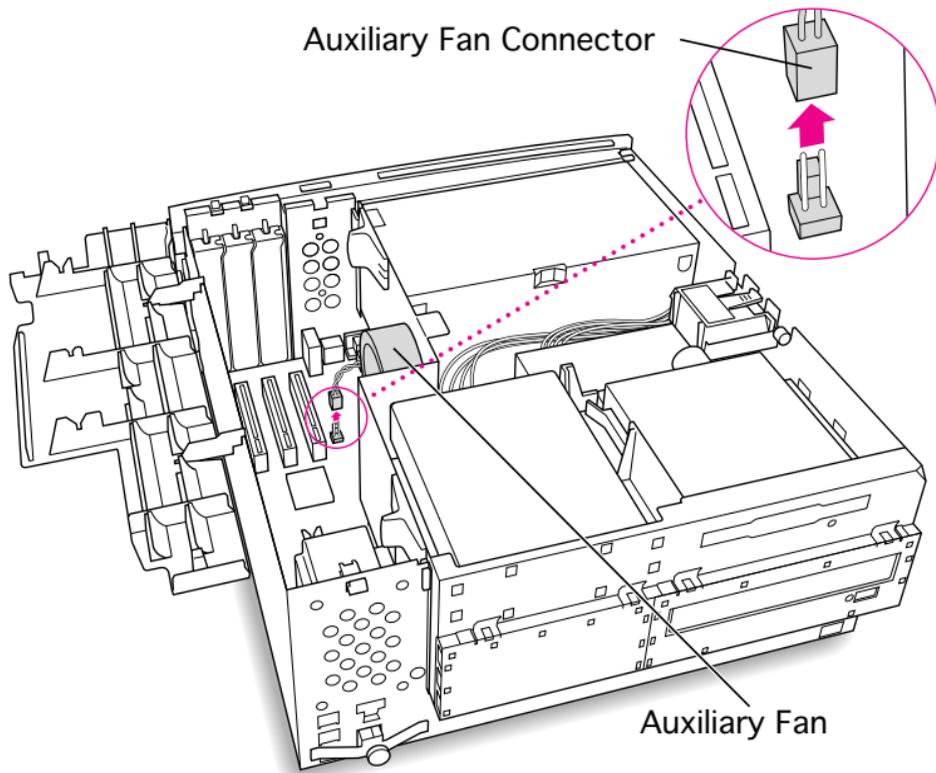


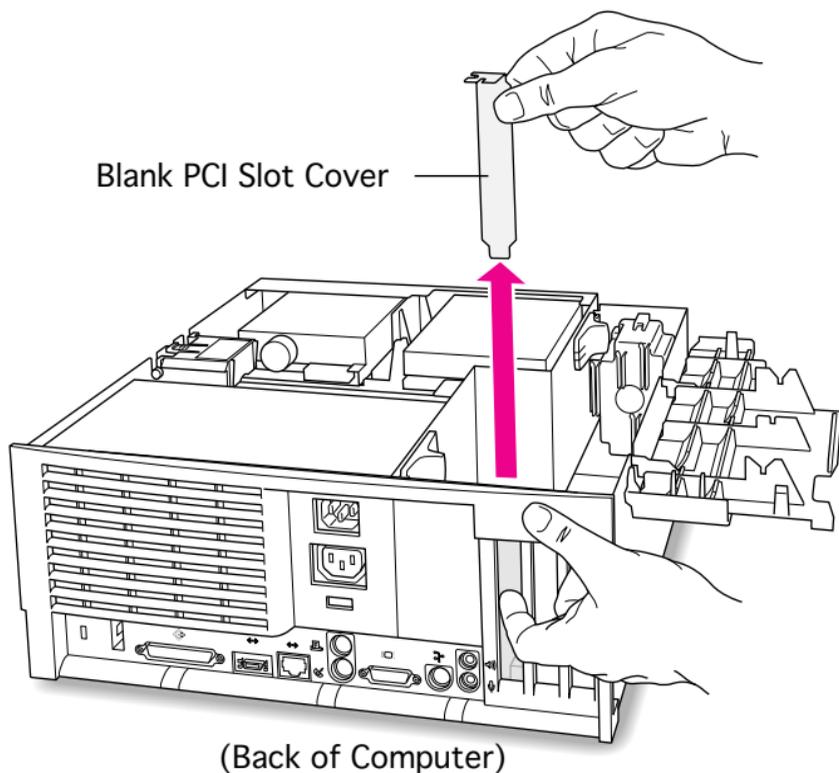
- 2 Flip open the expansion card cover.





- 3 Disconnect the auxiliary fan cable (if present).





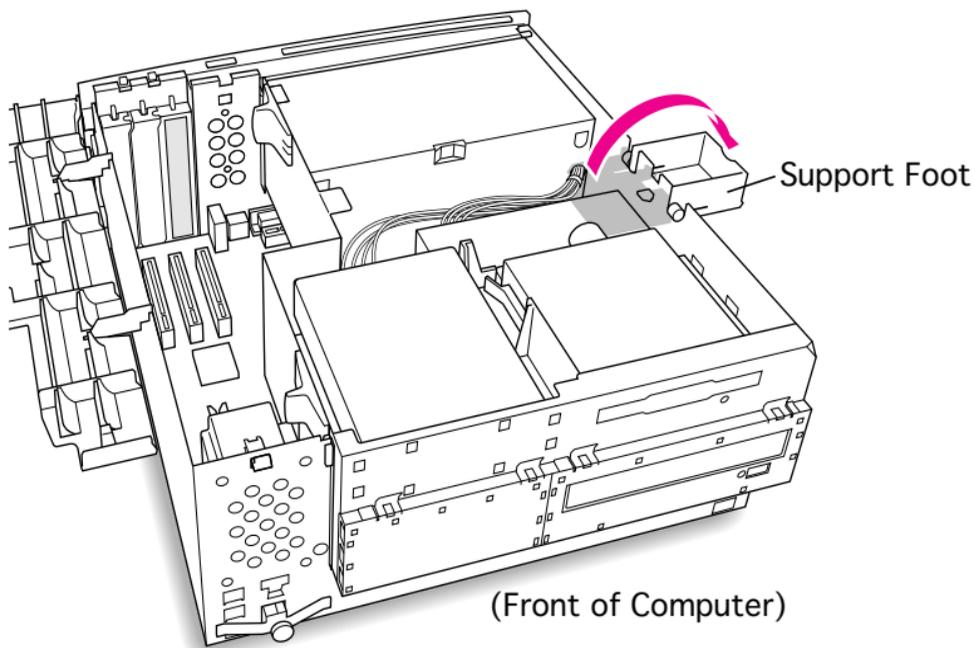
- 4 Remove the first blank PCI slot cover.

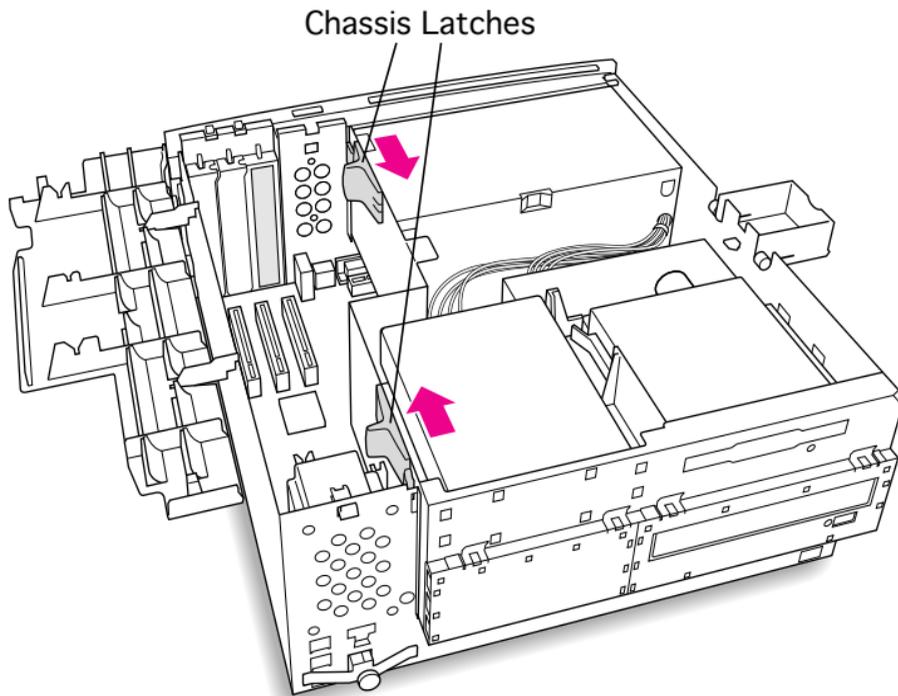
Note: It is recommended that you install the PC Compatibility Card in the first slot (the one closest to the center of the computer). But if that slot is already taken, you can install the PC Compatibility Card in another slot.





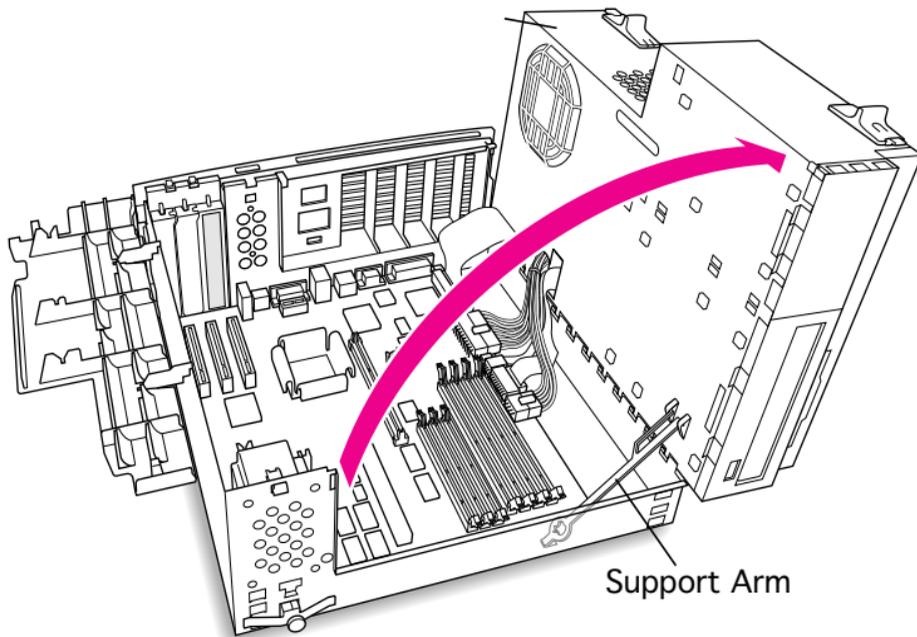
- 5 Flip open the chassis support foot.





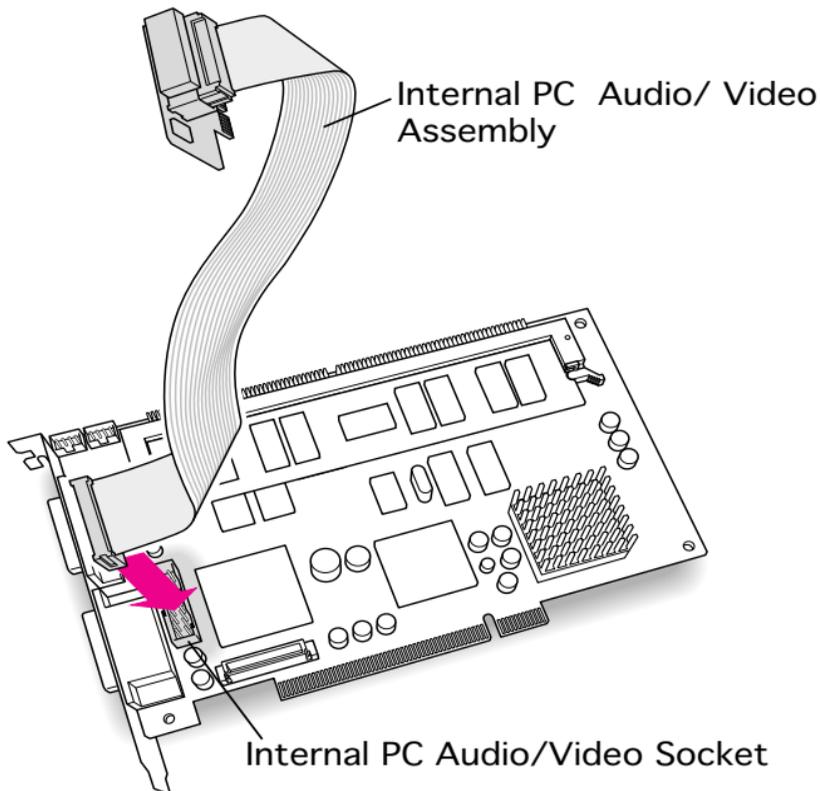
- 6 Release the chassis latches.





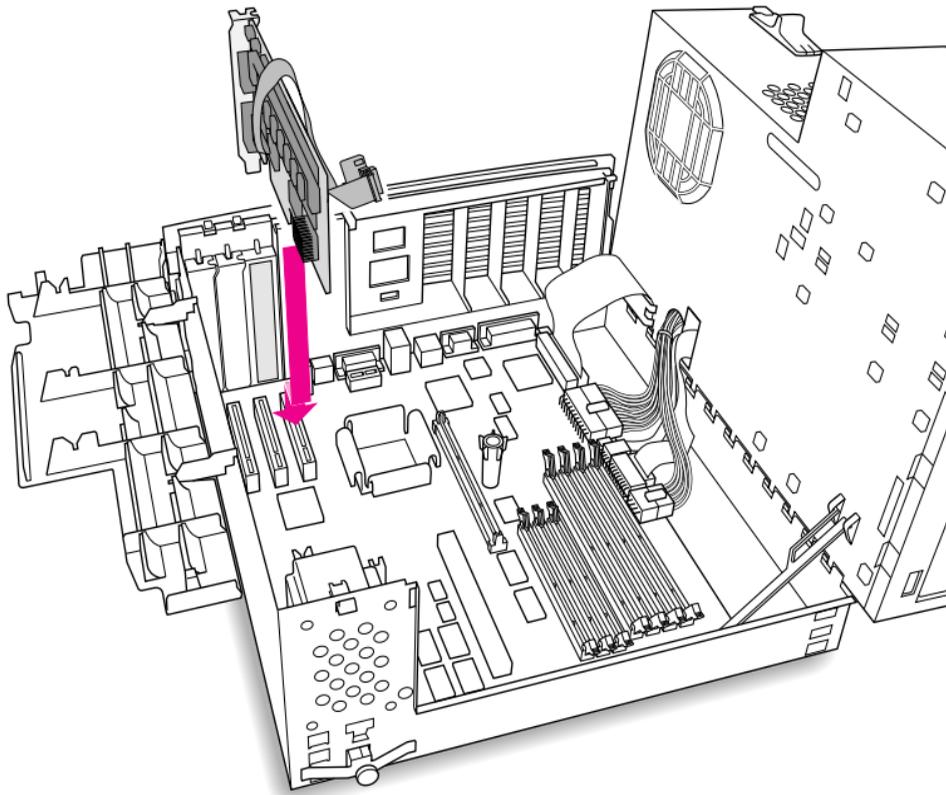
- 7 Swing open the chassis to provide access to the logic board.
- 8 Flip down the chassis support arm. Be sure the support arm engages the hole in the bottom chassis so that the arm locks into place.





- 9 Insert the small end of the PC audio/video cable assembly into the socket on the corner of the PC Compatibility Card. (You will connect the other end to the computer's logic board later.)





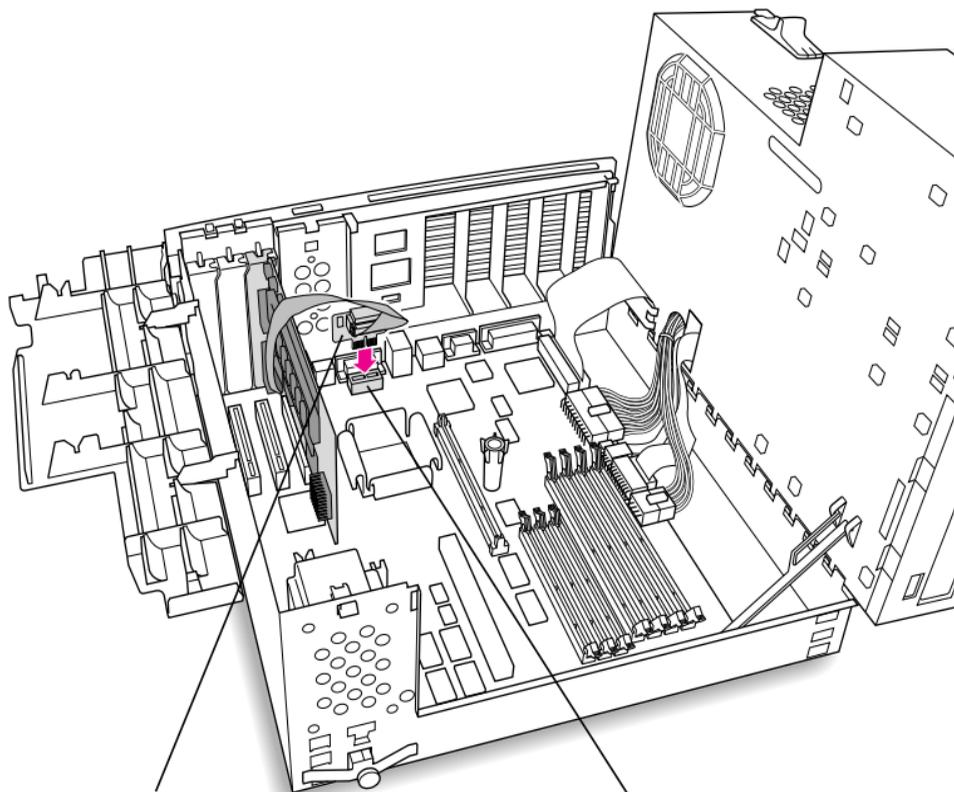
10 Insert the card into the slot whose blank PCI slot cover you removed earlier. Press down firmly on the card until the connector is fully inserted. Don't force the card. If you meet a lot of resistance, pull the card out and try again.

Note: The PC Compatibility card can be installed in any available PCI slot in the Power Macintosh 7200; however, the first slot is preferred.





- 11 Plug the large end of the internal PC audio/video connector into the socket on the logic board.

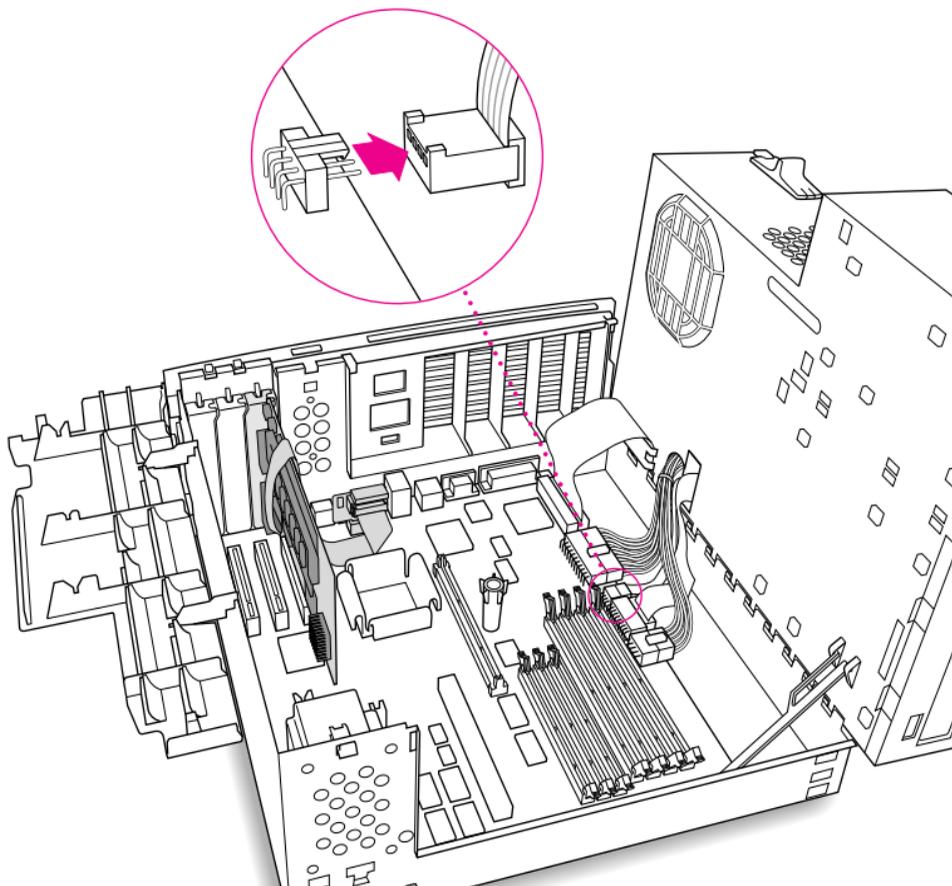


Internal PC Audio/Video Card Internal PC Audio/Video Socket



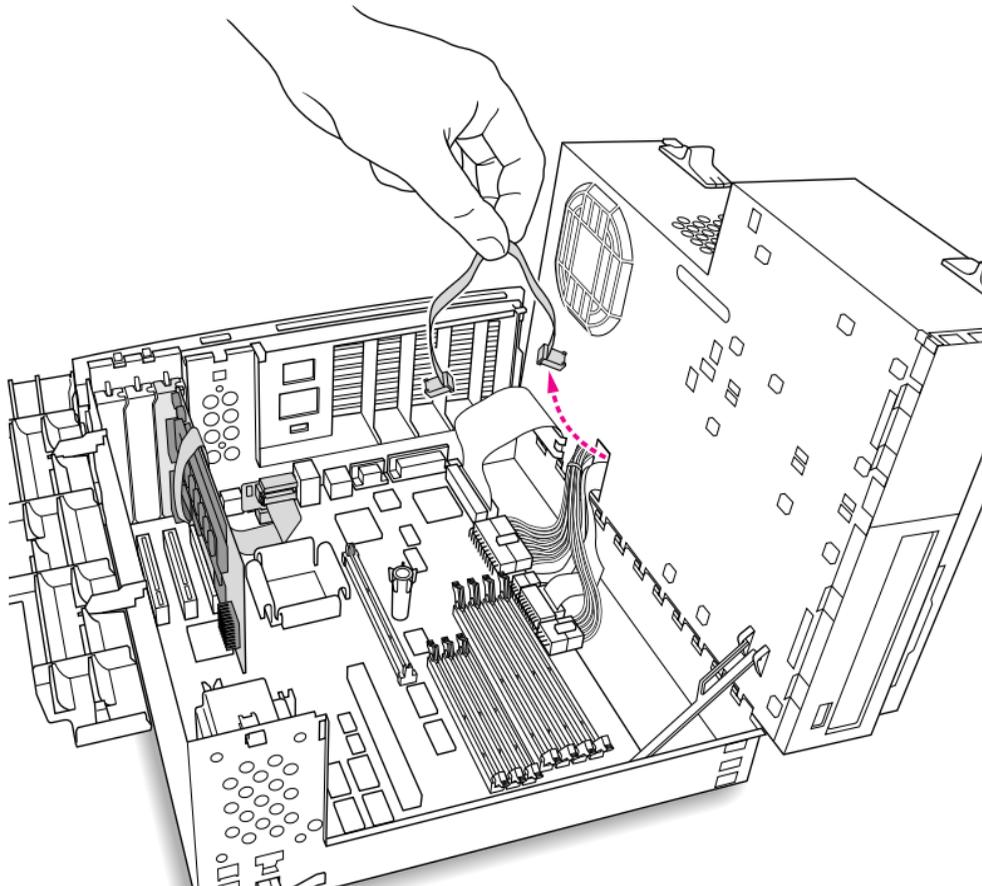


- 12 Disconnect the CD audio cable from the Sound In connector on the logic board.





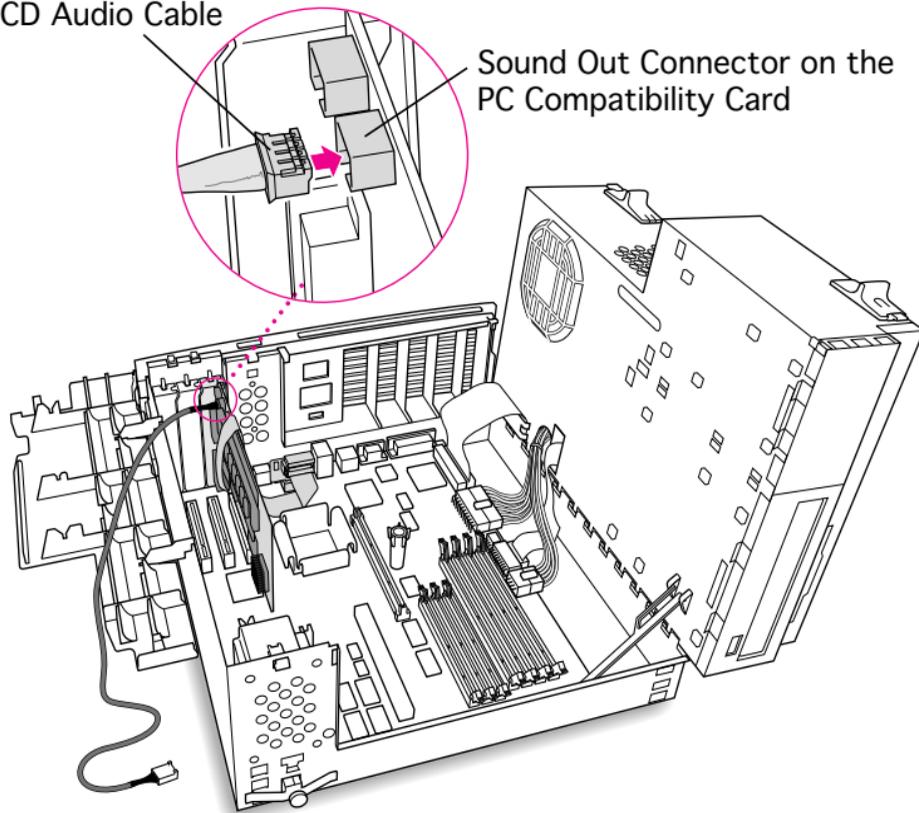
- 13 Pull the cable through the hole in the chassis and set it aside.





CD Audio Cable

Sound Out Connector on the
PC Compatibility Card

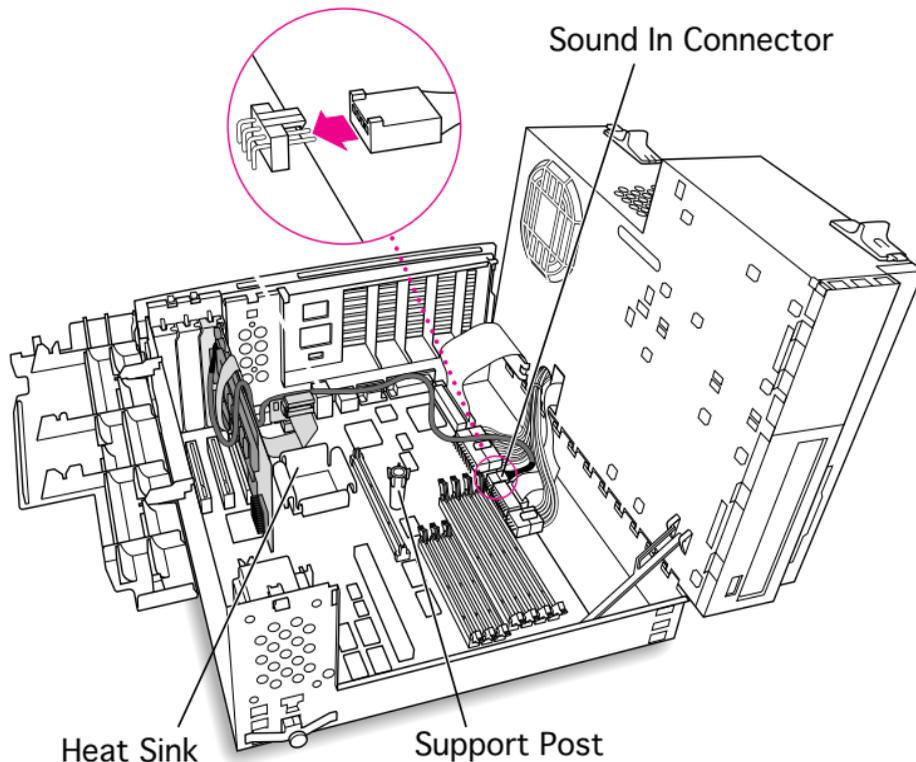


- 14 Plug one of the CD audio cables that came with the PC Compatibility Card into the Sound Out connector on the PC Compatibility Card.

Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.

Note: Two CD audio cables are included in the upgrade kit. They are different colors, but both work the same way.



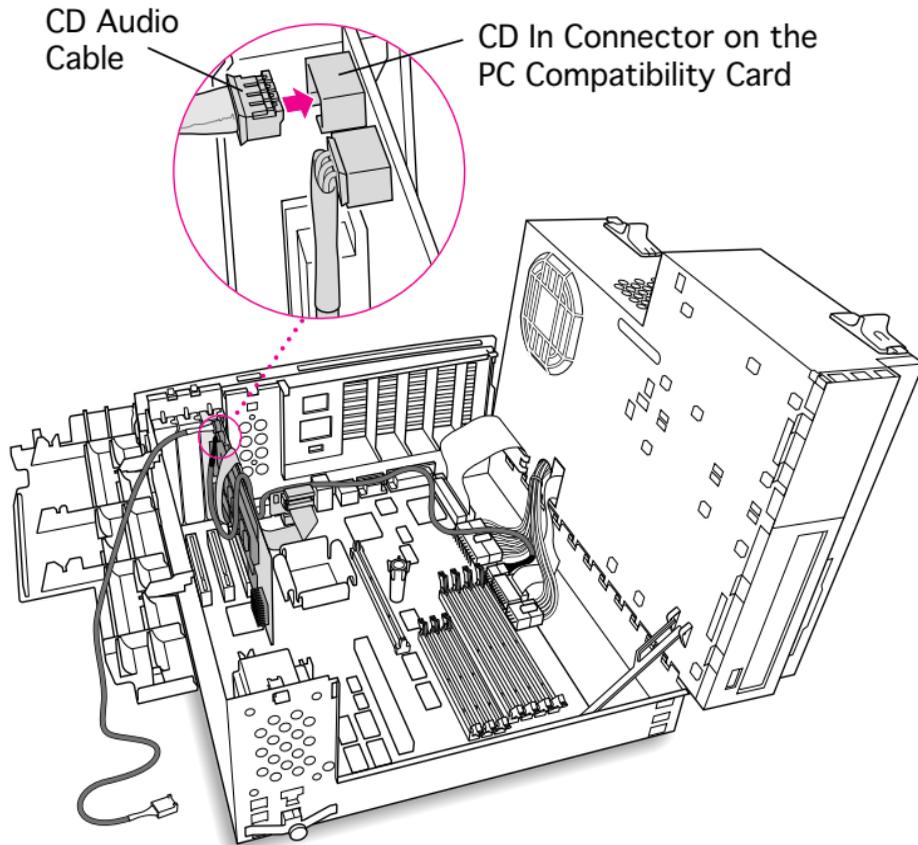


- 15 Route the cable over the top of the card and along the back edge of the computer's logic board.

Note: Keep the cable away from the heat sink and center support post.

- 16 Plug the cable into the Sound In connector on the computer's logic board.

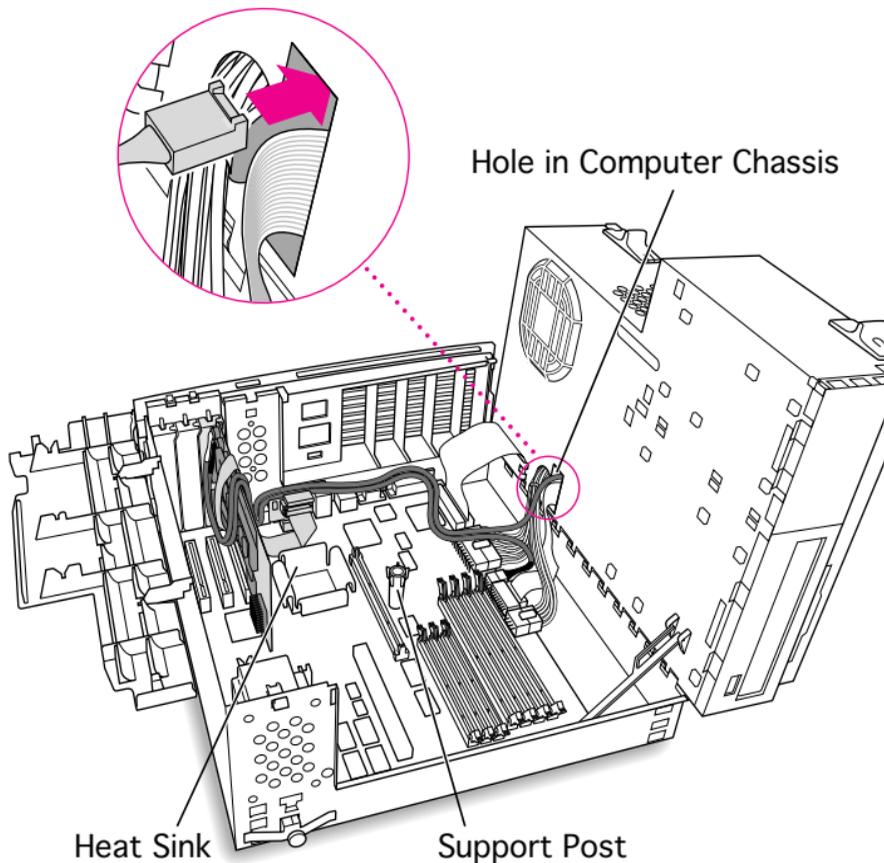




- 17 Connect the second CD audio cable to the CD In connector on the PC Compatibility card.

Note: The CD In connector is in the upper-left corner of the card.

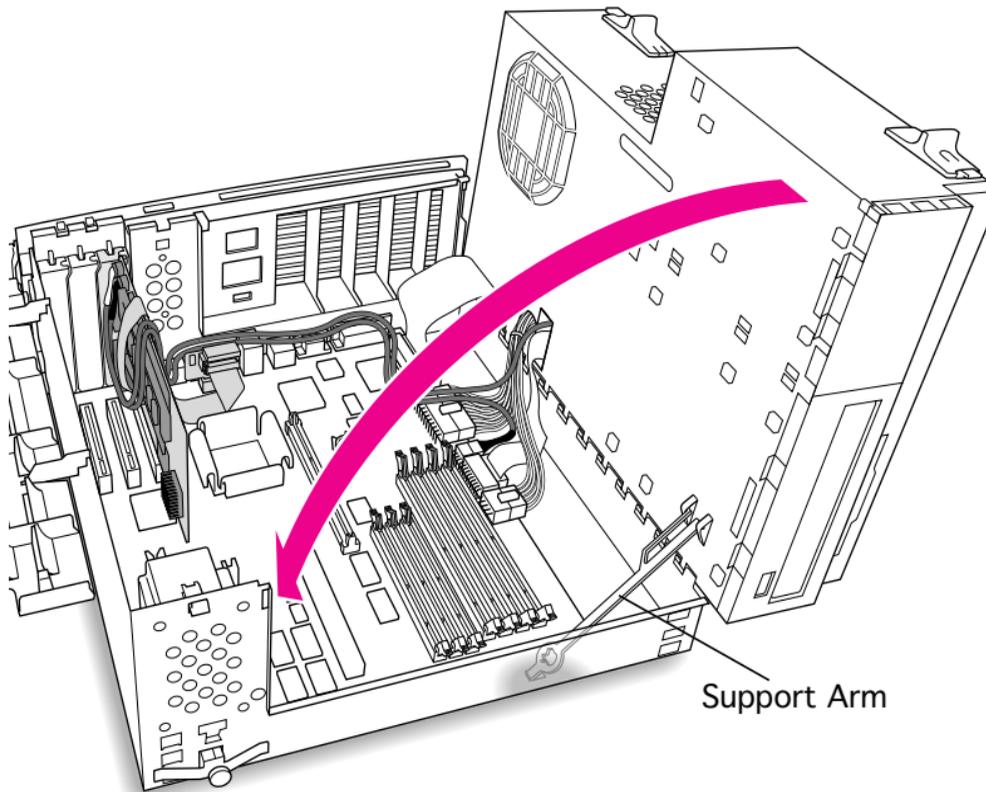




- 18 Route the second cable over the top of the card, along the back edge of the logic board, and through the hole in the computer's chassis.

Note: Keep the cable away from the heat sink and center support post.





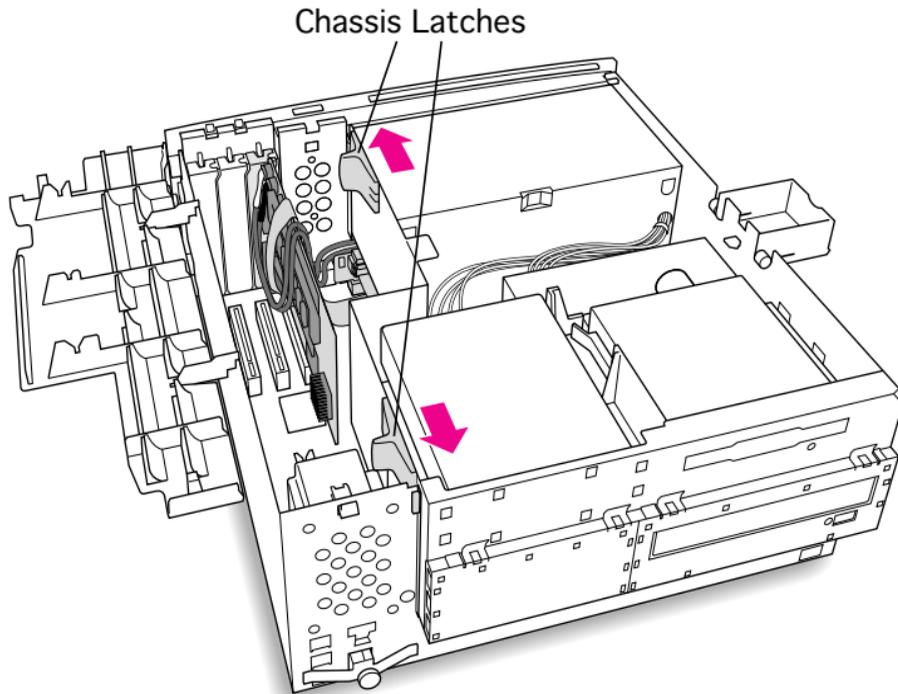
19 Disengage the support arm from the hole in the chassis bottom, and close the computer's upper chassis.

Note: Make sure you don't pinch any of the cables between the upper chassis and bottom chassis.



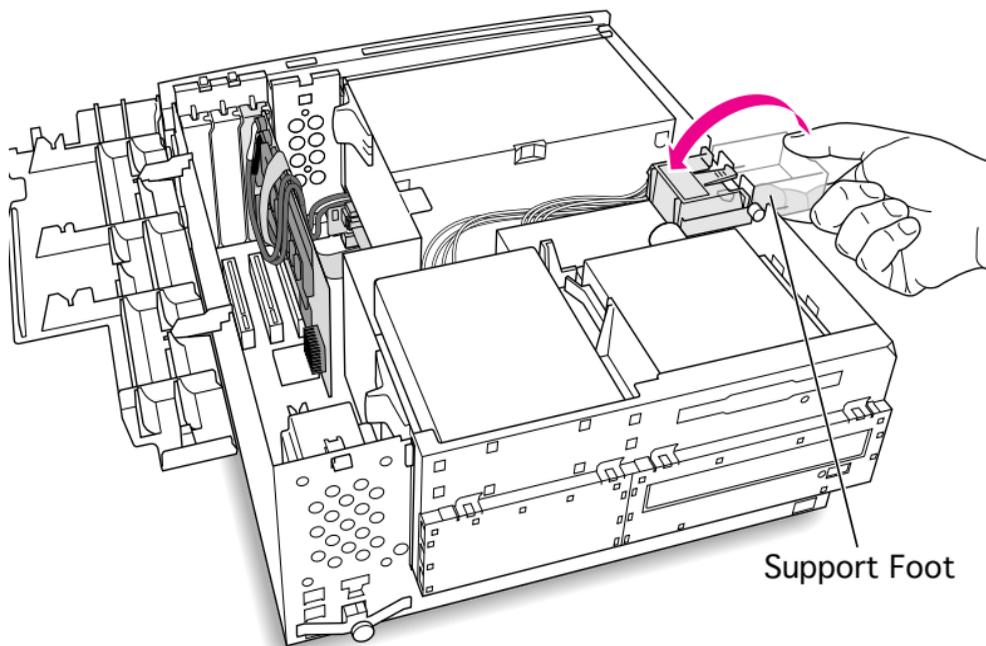


20 Lock the chassis latches.



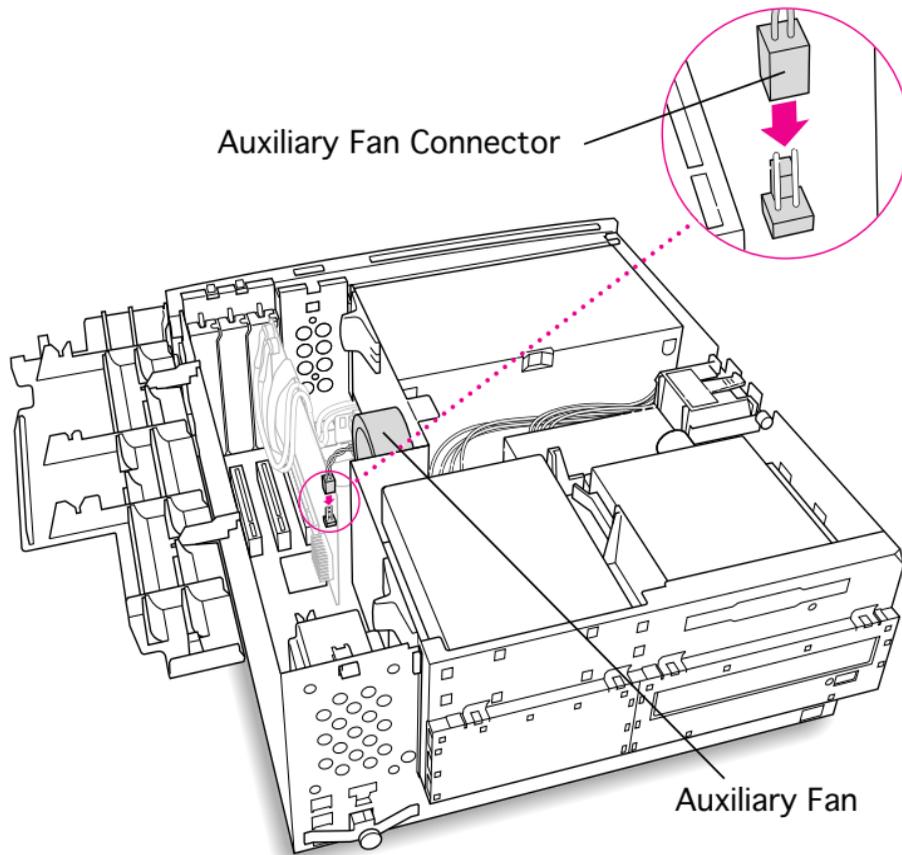


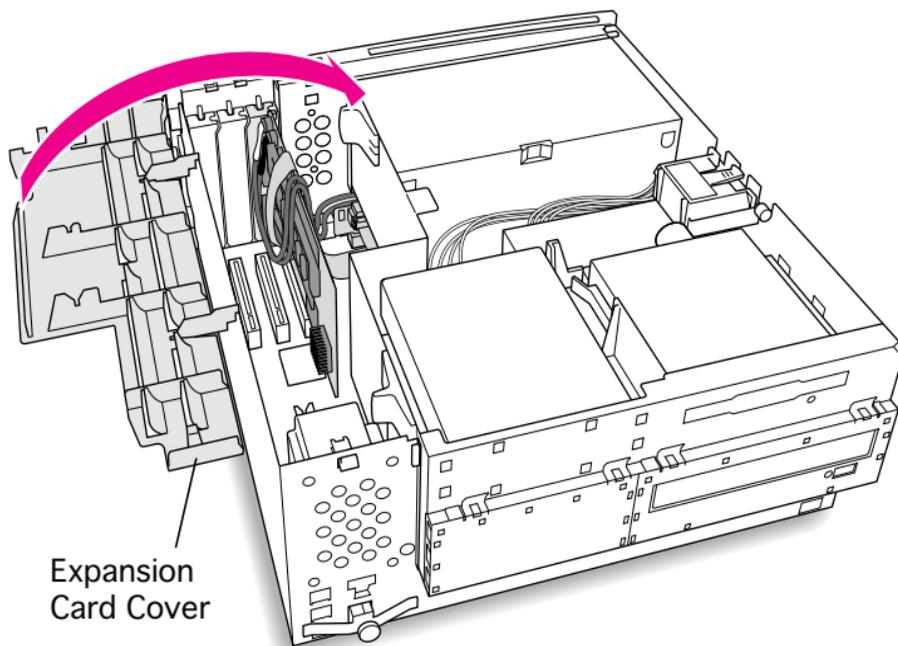
21 Replace the support foot.





22 Reconnect the auxiliary fan (if present) to the logic board.





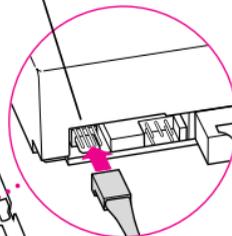
23 Flip the expansion card cover up and snap it back into place. (Be sure to snap the cover back down on both ends.)

Note: If the cover doesn't snap into place easily, make sure no cables are in the way.

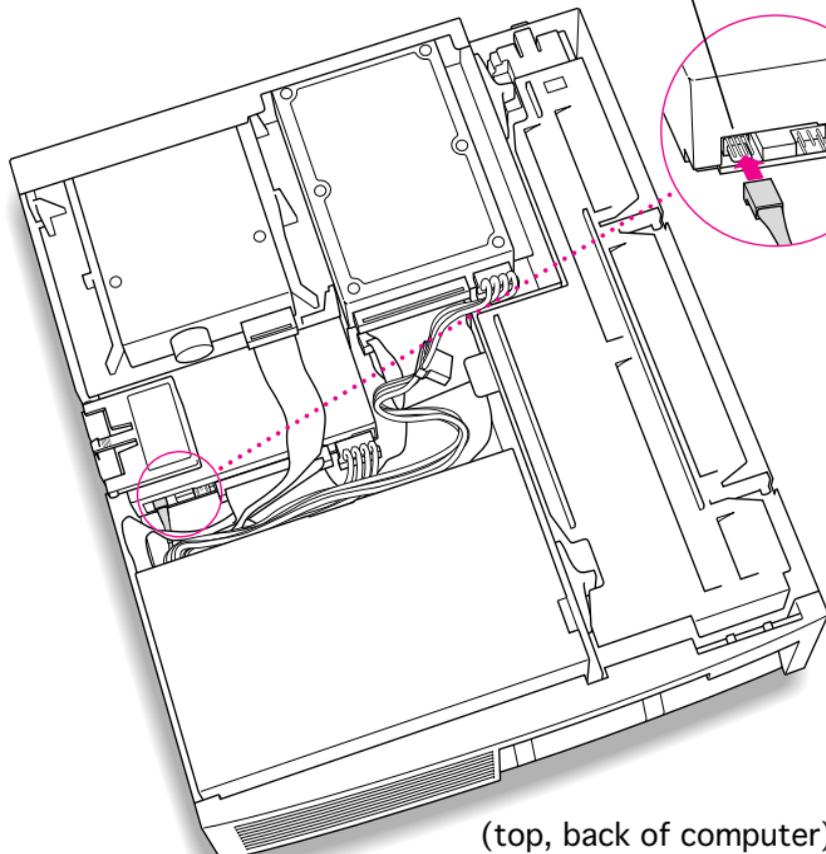




CD Audio Cable

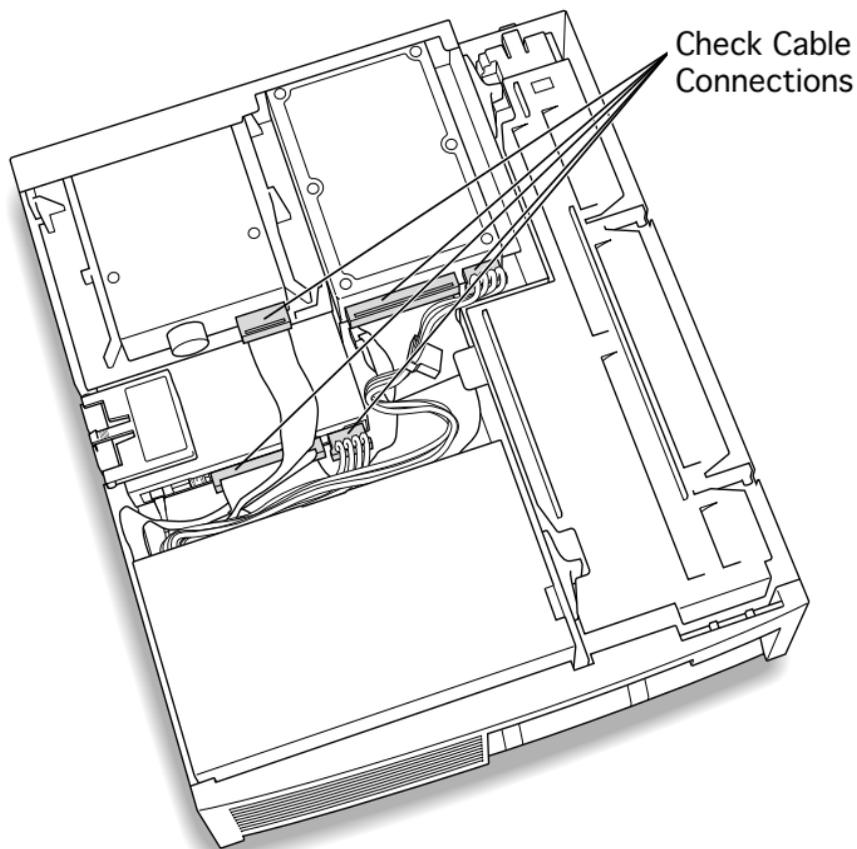


- 24 Connect the CD-ROM cable you threaded through the computer's chassis earlier to the Audio connector on the CD-ROM drive.



(top, back of computer)





- 25 Make sure all cables and cards are firmly connected.
- 26 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



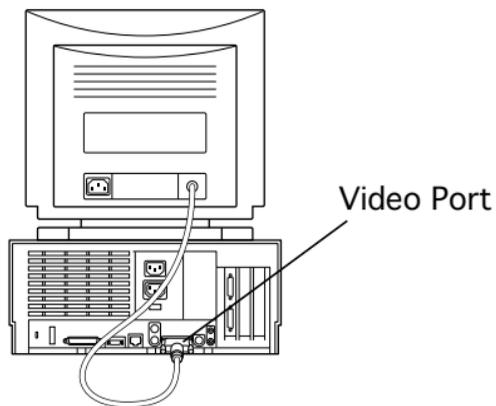


Connecting Monitors

After you have installed the 7" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

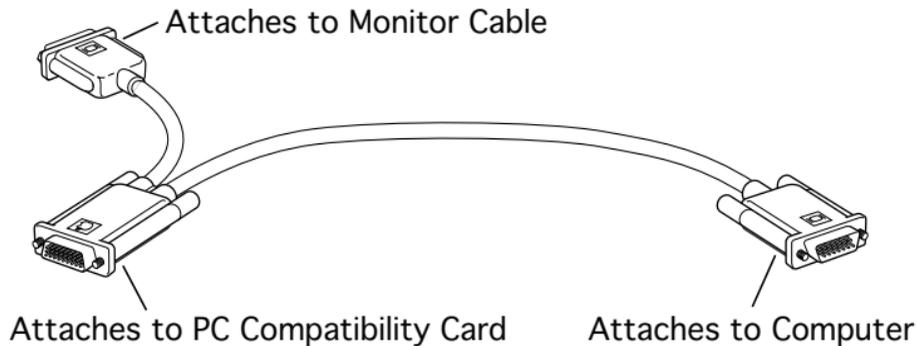




To connect a single monitor to the computer:

- 1 Connect the monitor cable to the computer's built-in video port.

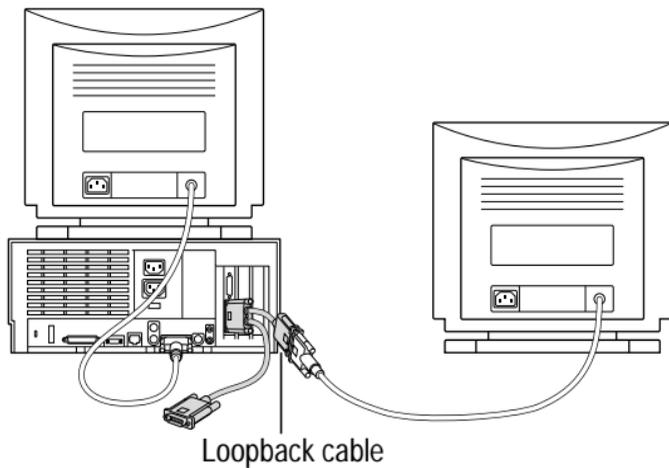




To connect a single monitor to the computer using a video card:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the port on the computer's video card.

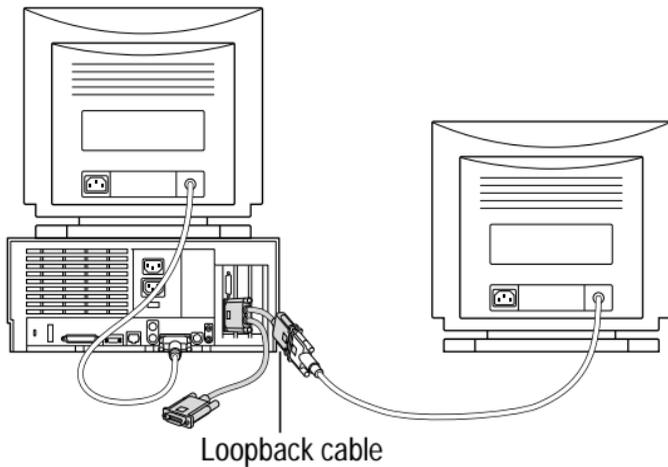




To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.





- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.

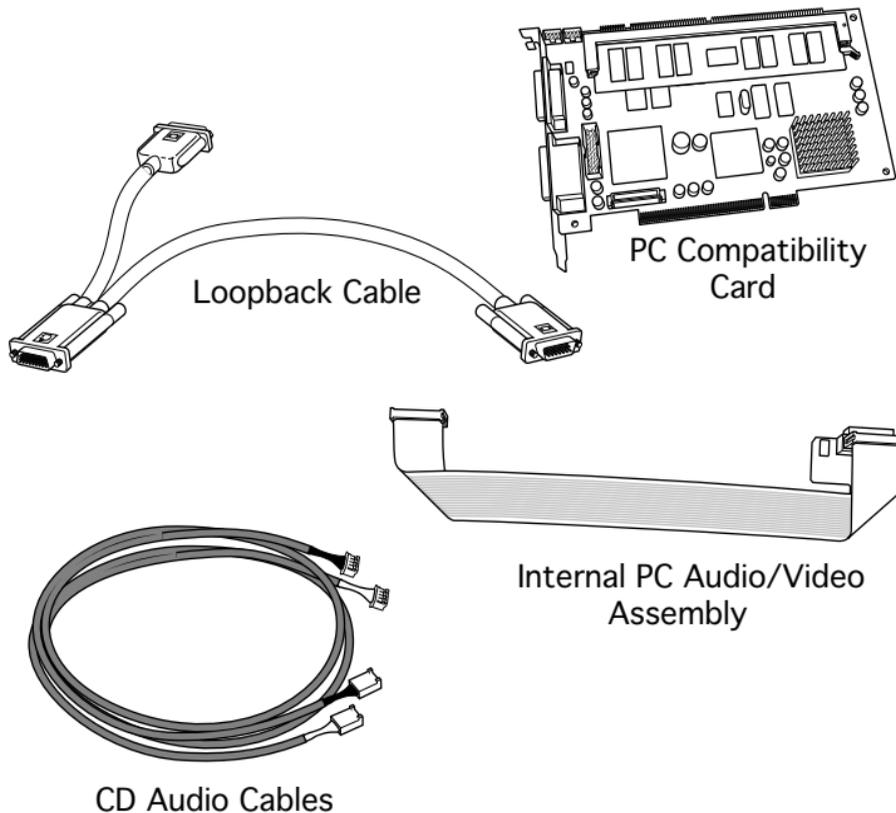




PM 7300/7500/7600

7" 100 MHz PC Card Installation





7" 100 MHz PC CARD

The 7" PC Compatibility Card Upgrade kit includes the PC Compatibility card, a loopback cable, a PC audio/video cable (not used with the Power Macintosh 7500 or 7600), and two CD audio cables.

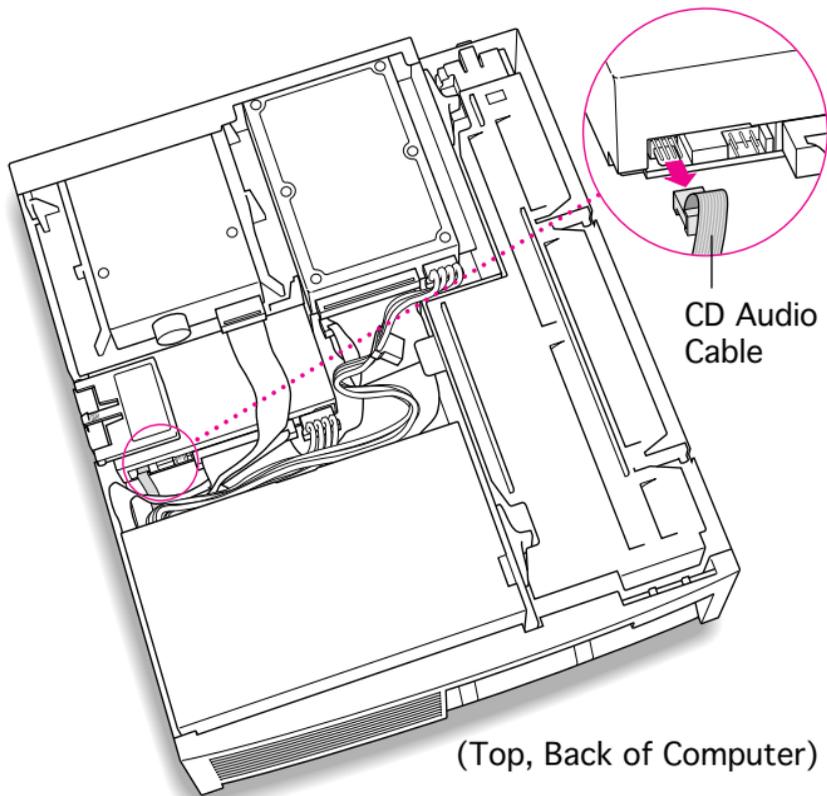
Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors. That cable does not work with the PC





Compatibility Card.





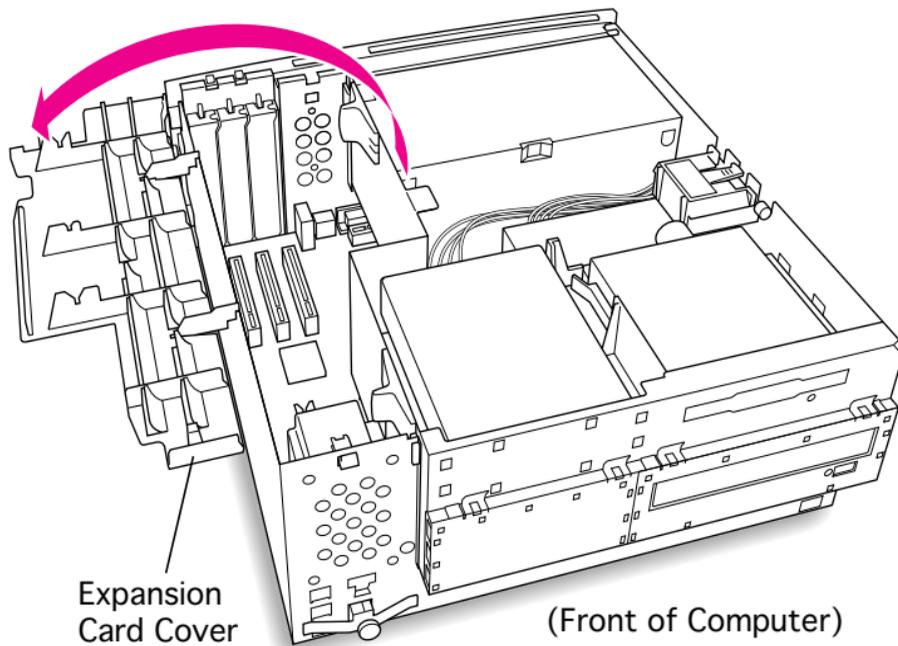
Before you begin, remove the top housing.

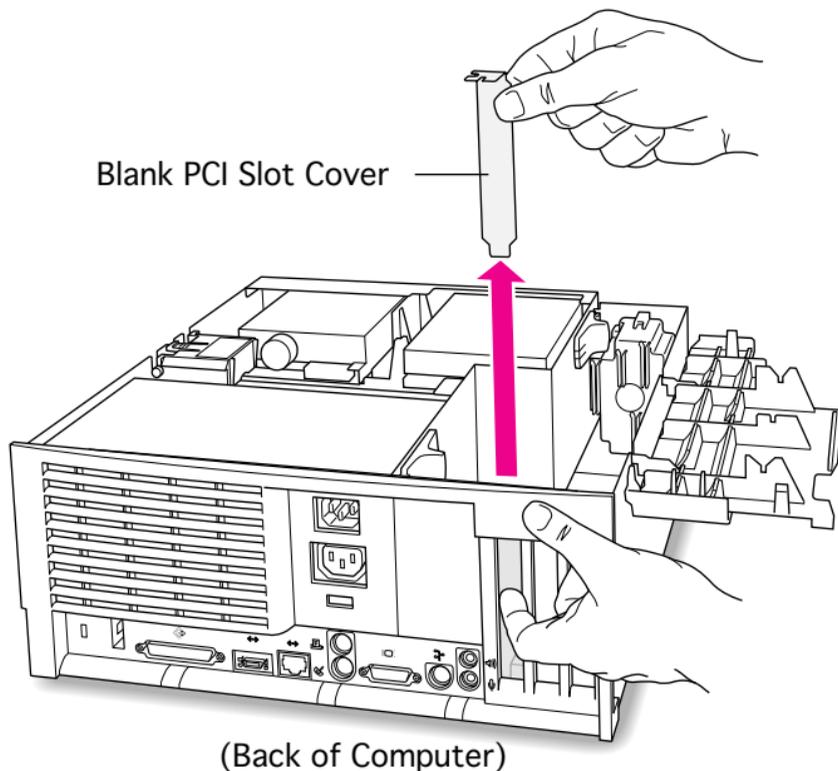
- 1 Disconnect the CD audio cable from the CD-ROM drive.





- 2 Flip open the expansion card cover.





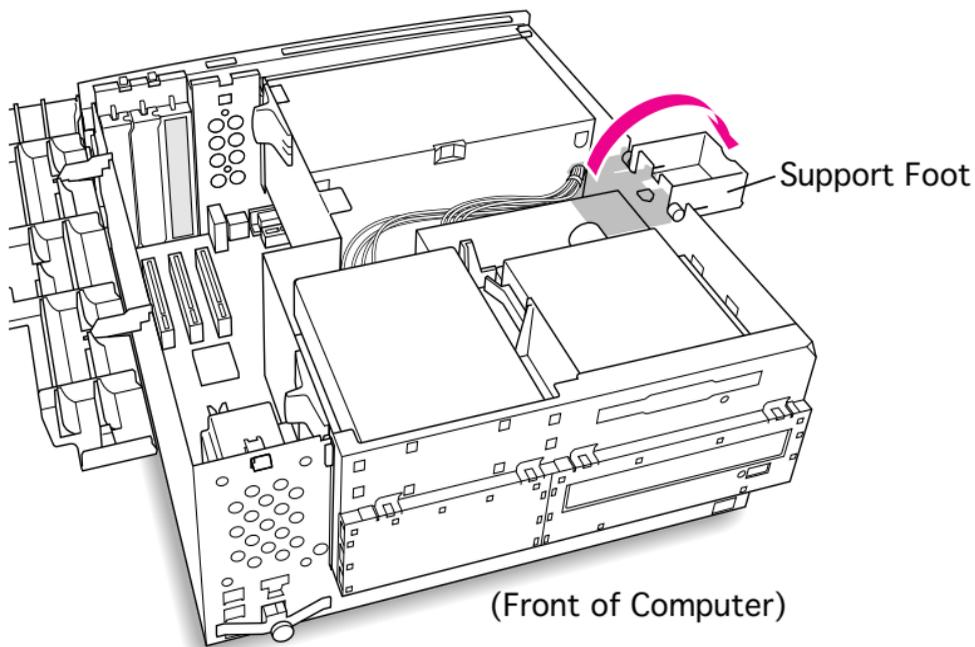
- 3 Remove the first blank PCI slot cover.

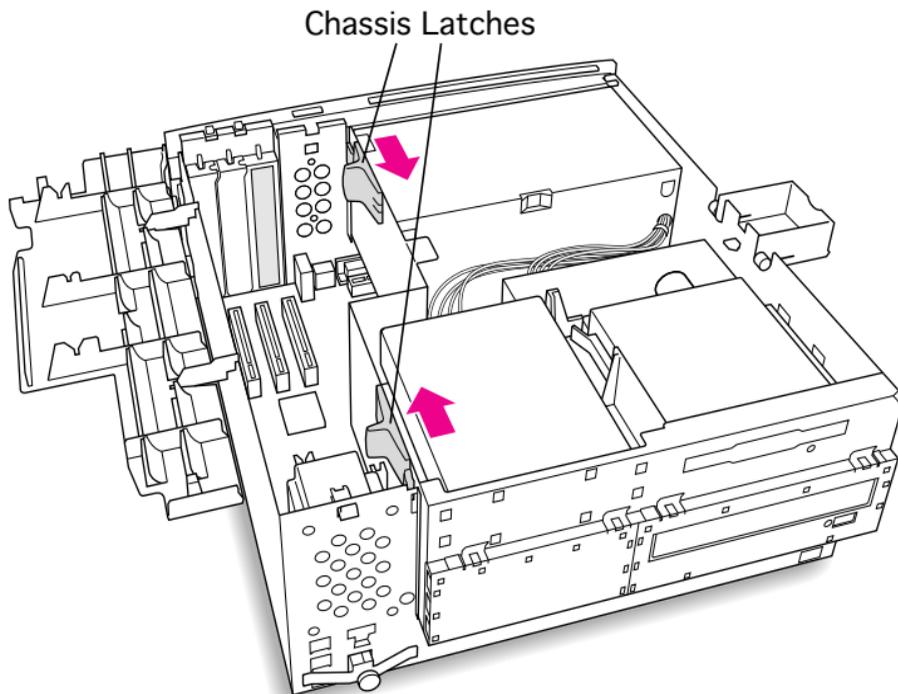
Note: It is recommended that you install the PC Compatibility Card in the first slot (the one closest to the center of the computer). But if that slot is already taken, you can install the PC Compatibility Card in another slot.





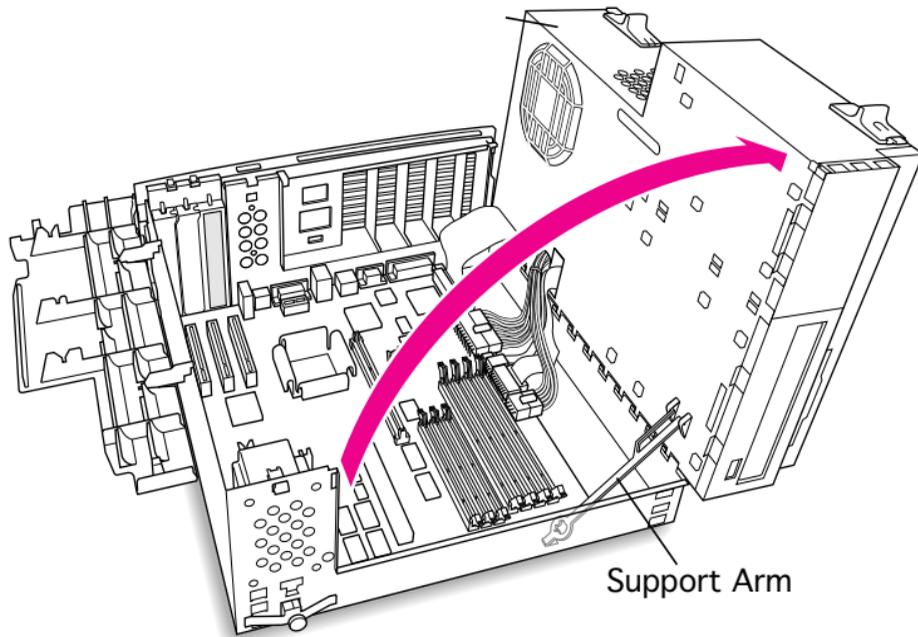
- 4 Flip open the chassis support foot.





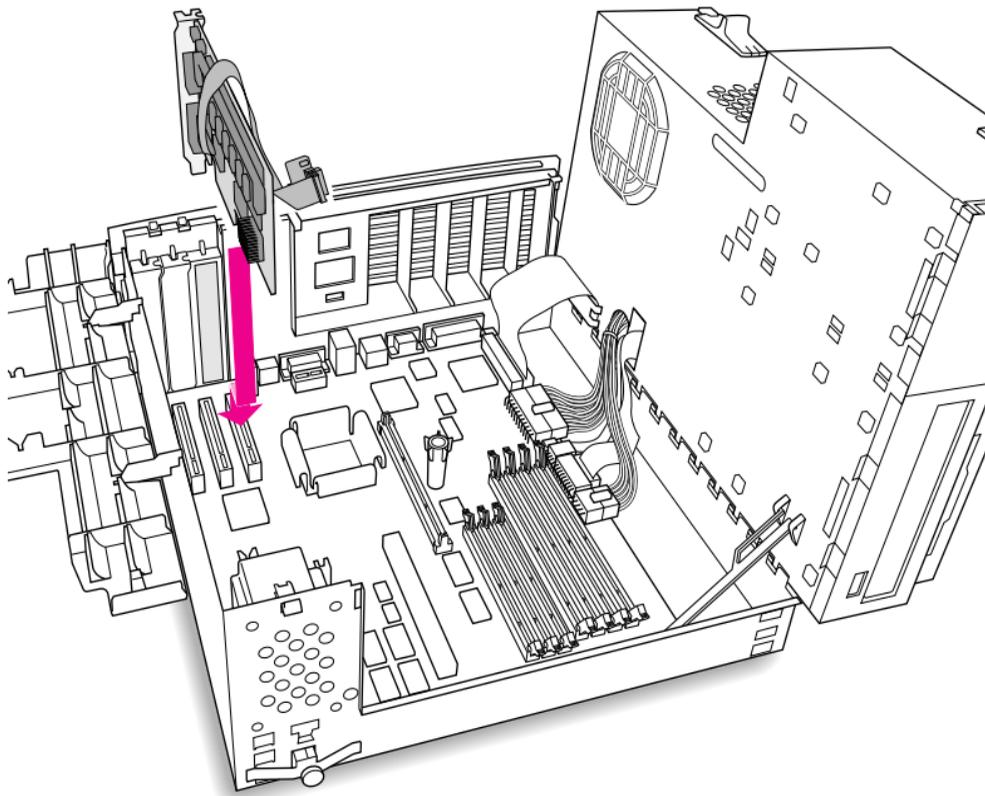
- 5 Release the chassis latches.





- 6 Swing open the chassis to provide access to the logic board.
- 7 Flip down the chassis support arm. Be sure the support arm engages the hole in the bottom chassis so that the arm locks into place.





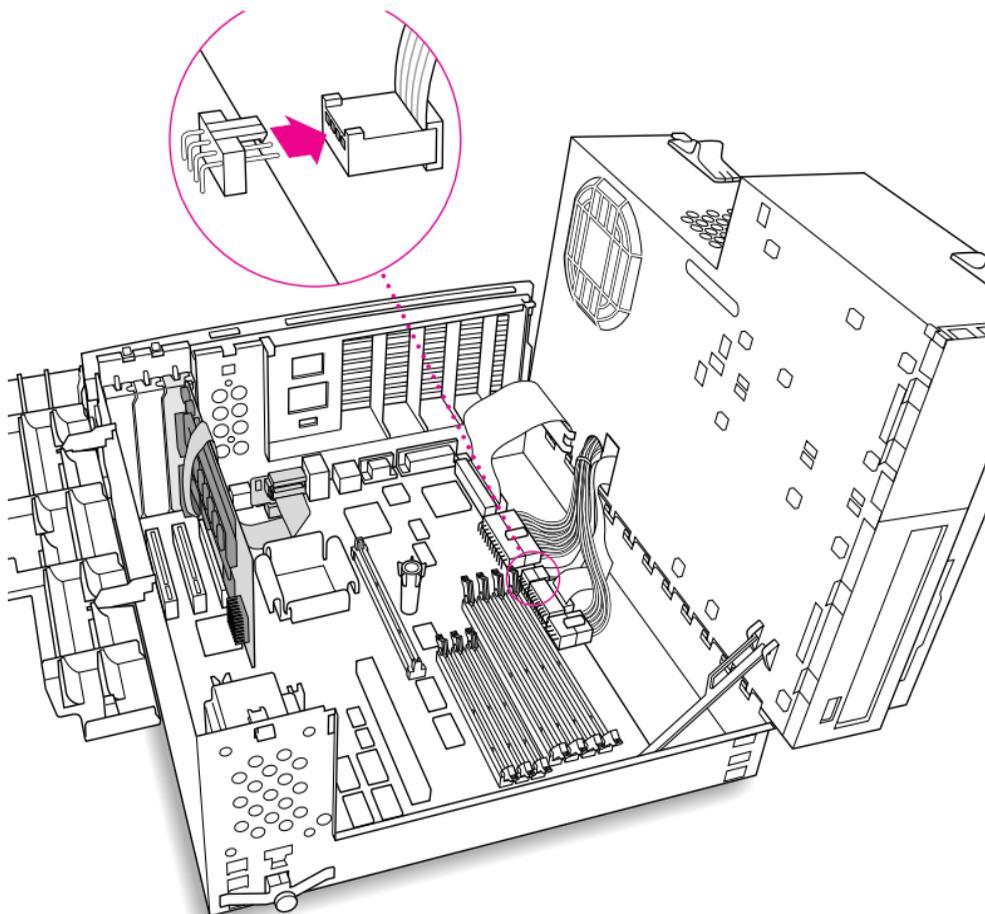
- 8 Insert the card into the slot whose blank PCI slot cover you removed earlier. Press down firmly on the card until the connector is fully inserted. Don't force the card. If you meet a lot of resistance, pull the card out and try again.

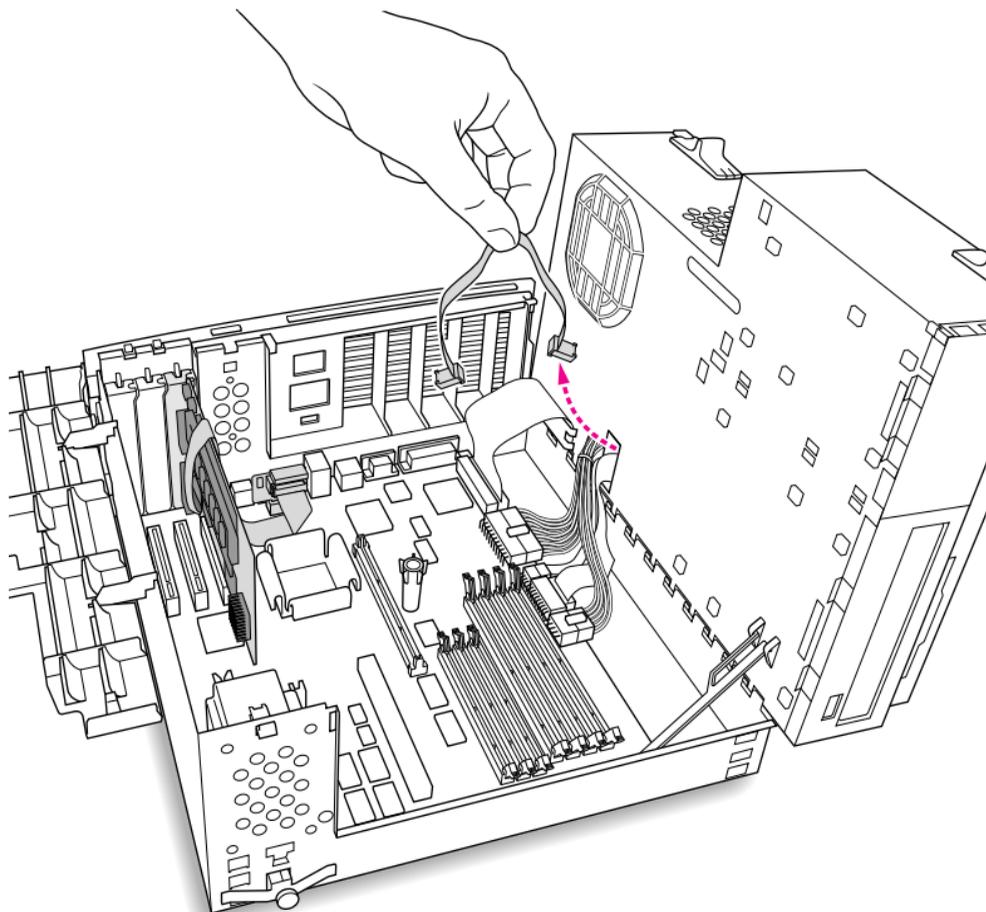
Note: The card can be installed in any available PCI slot in the computer, however, the first slot is preferred.





- 9 Disconnect the CD audio cable from the Sound In connector on the logic board.





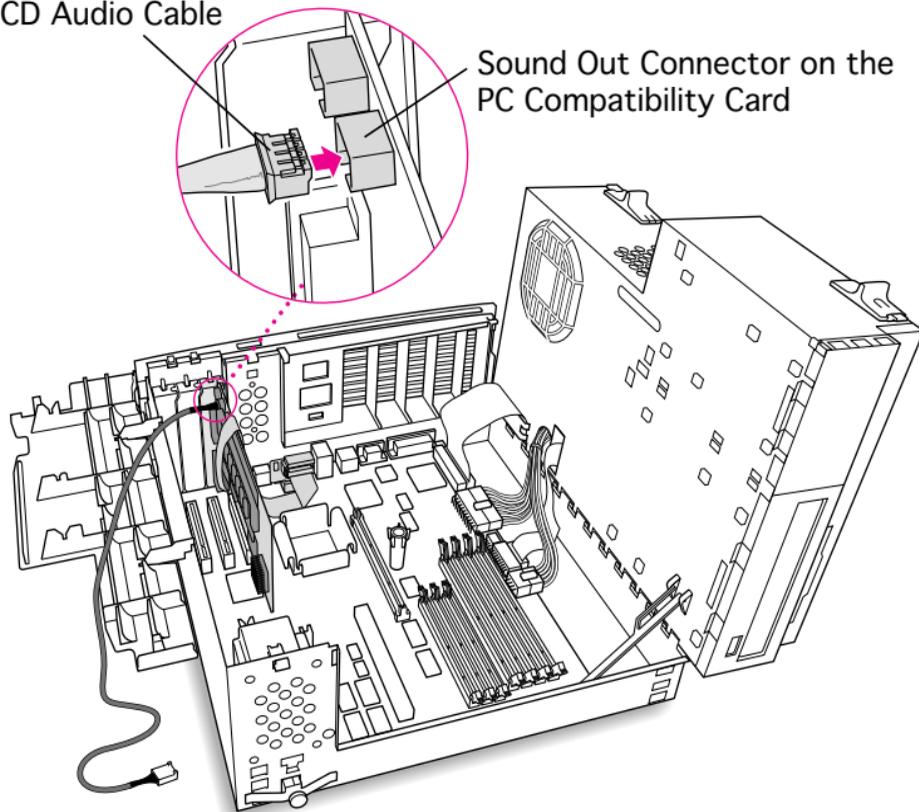
10 Pull the cable through the hole in the chassis and set it aside.





CD Audio Cable

Sound Out Connector on the
PC Compatibility Card

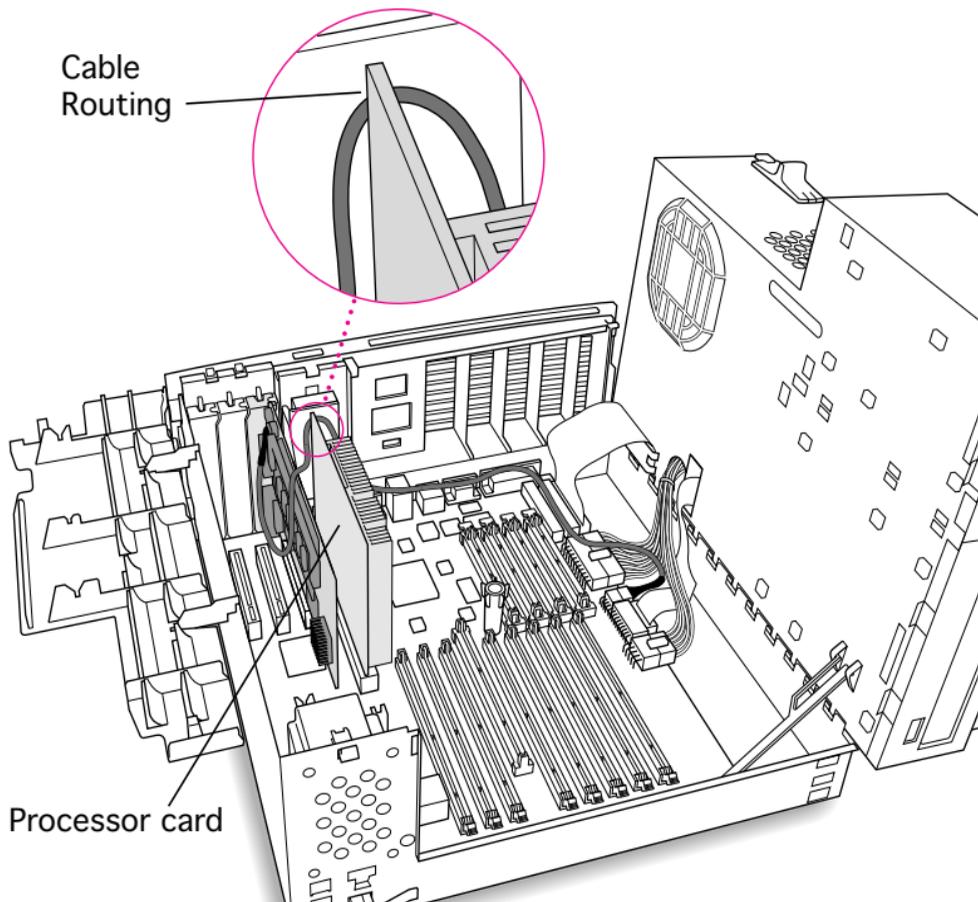


- 11 Plug one of the CD audio cables that came with the PC Compatibility Card into the Sound Out connector on the PC Compatibility Card.

Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.

Note: Two CD audio cables are included in the upgrade kit. They are different colors, but both work the same way.

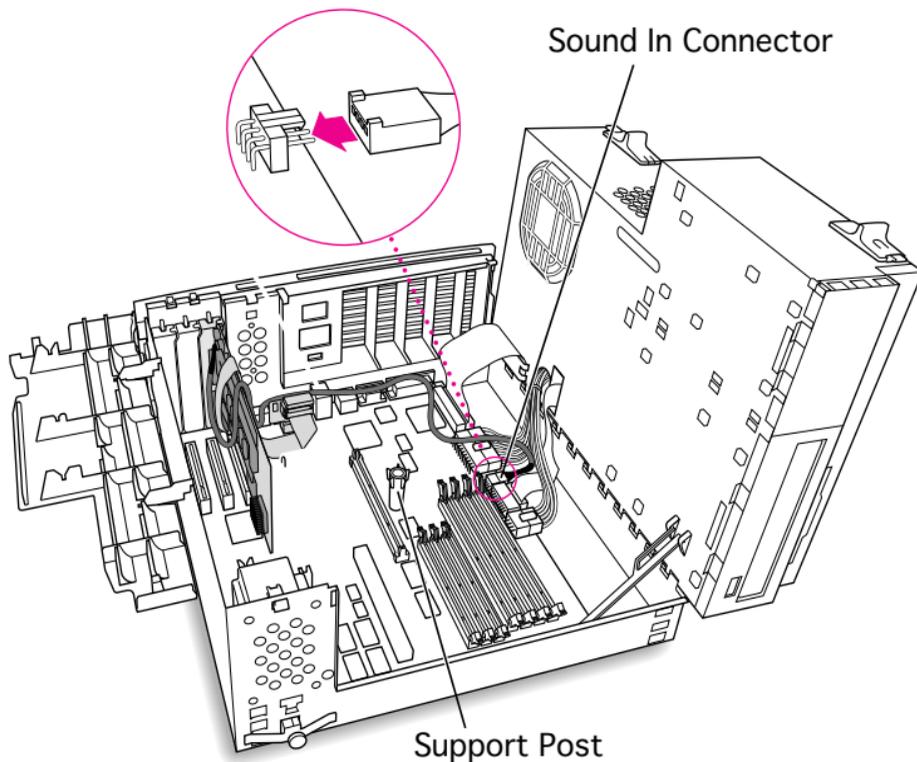




- 12 Route the cable over the top of the PC Compatibility card and along the back edge of the computer's logic board. Be sure to route the cable between the processor card and the back panel (not over the top of the processor card.)

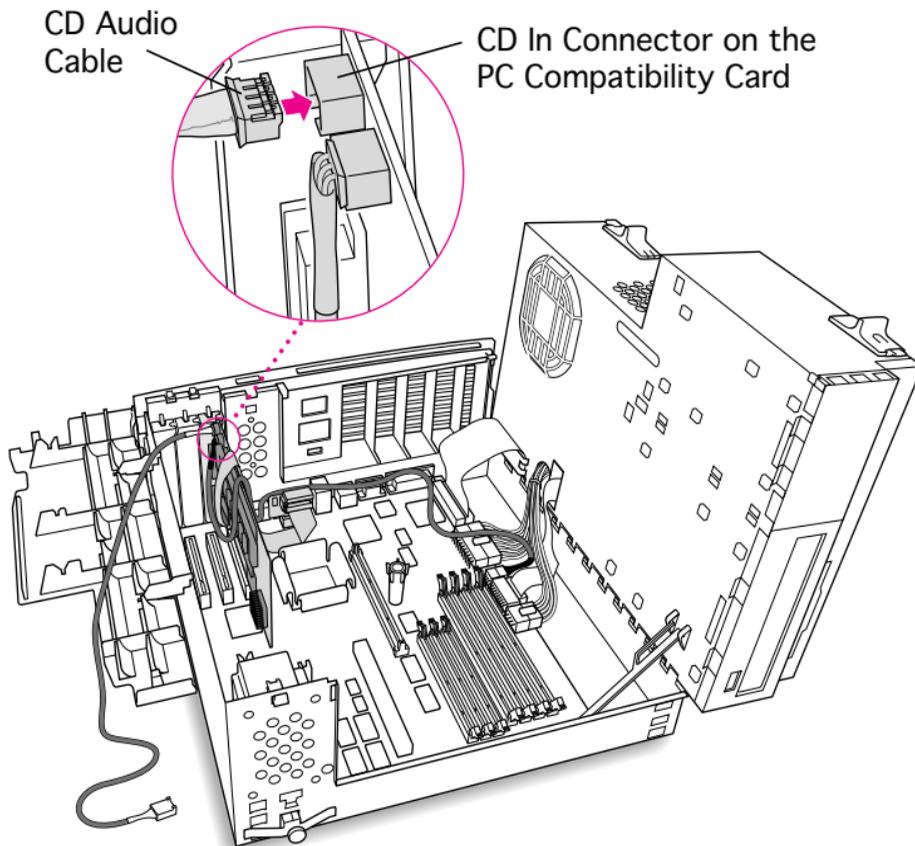
Note: Keep the cable away from the center support post.





- 13 Plug the cable into the Sound In connector on the computer's logic board.





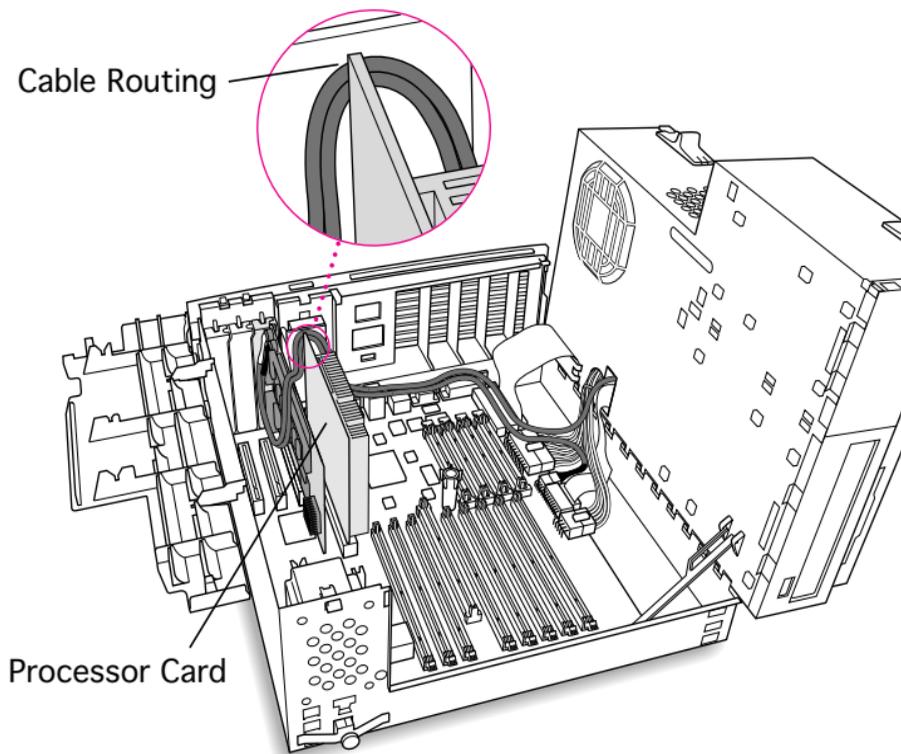
- 14 Connect the second CD audio cable to the CD In connector on the PC Compatibility card.

Note: The CD In connector is in the upper-left corner of the card.





- 15 Route the second cable over the top of the PC Compatibility card and between the processor card and the back panel (not over the top of the processor card). Run the cable along the back edge of the logic board.

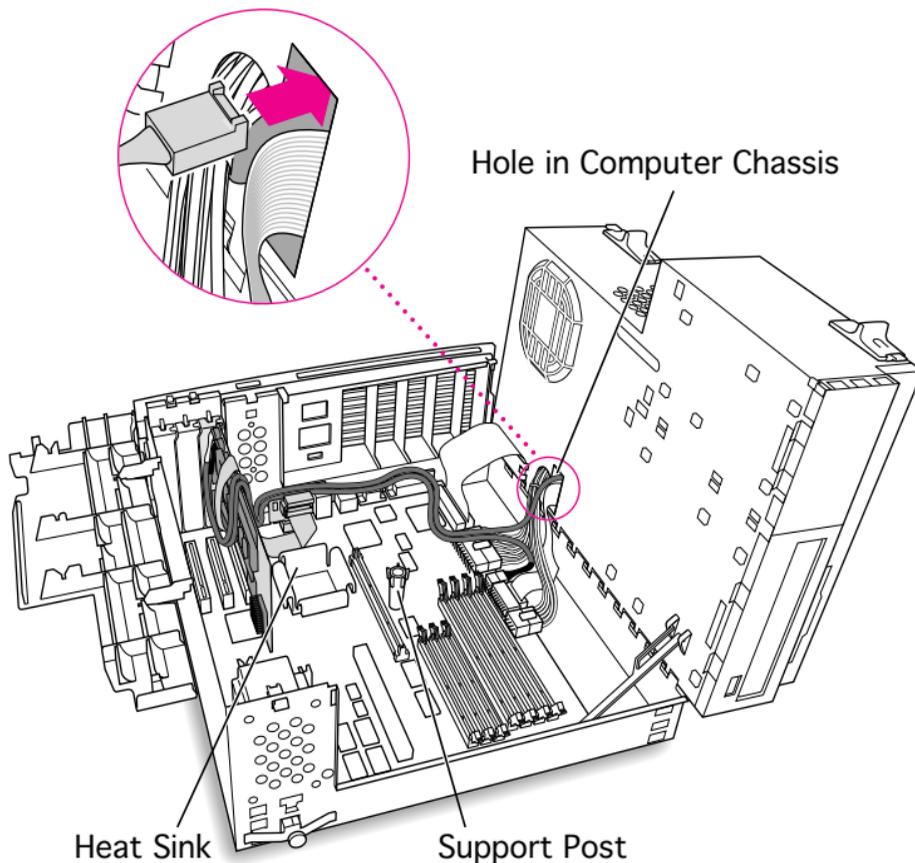


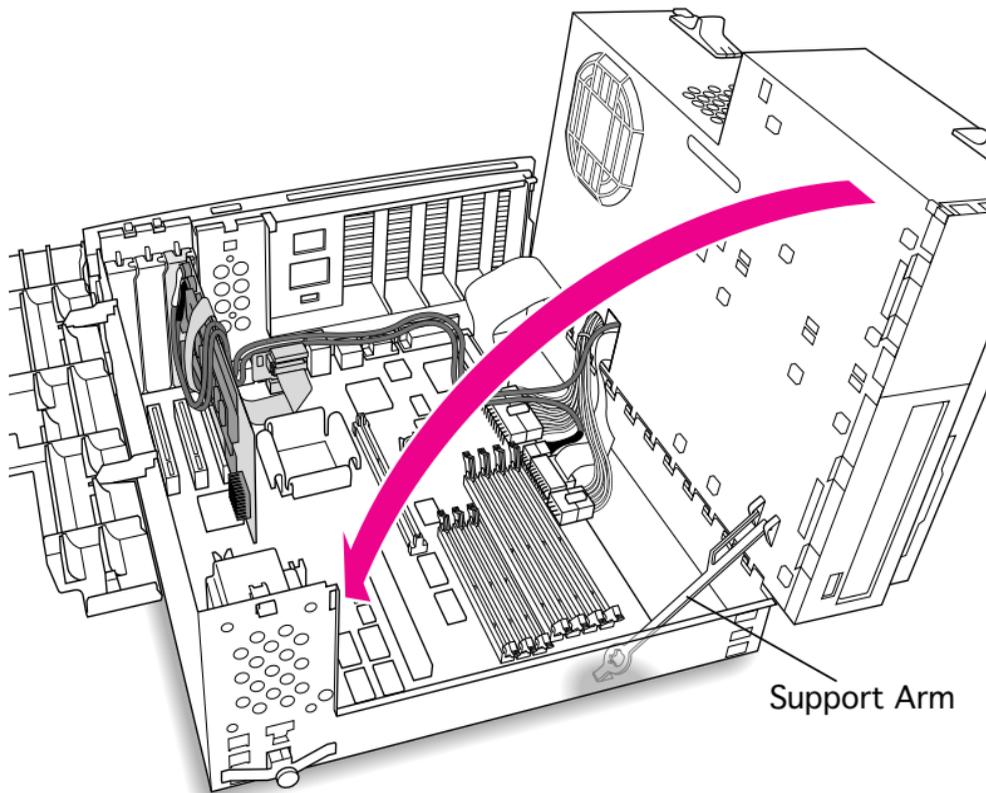
Note: Keep the cable away from the center support post.





- 16 Route the second cable through the hole in the computer chassis.





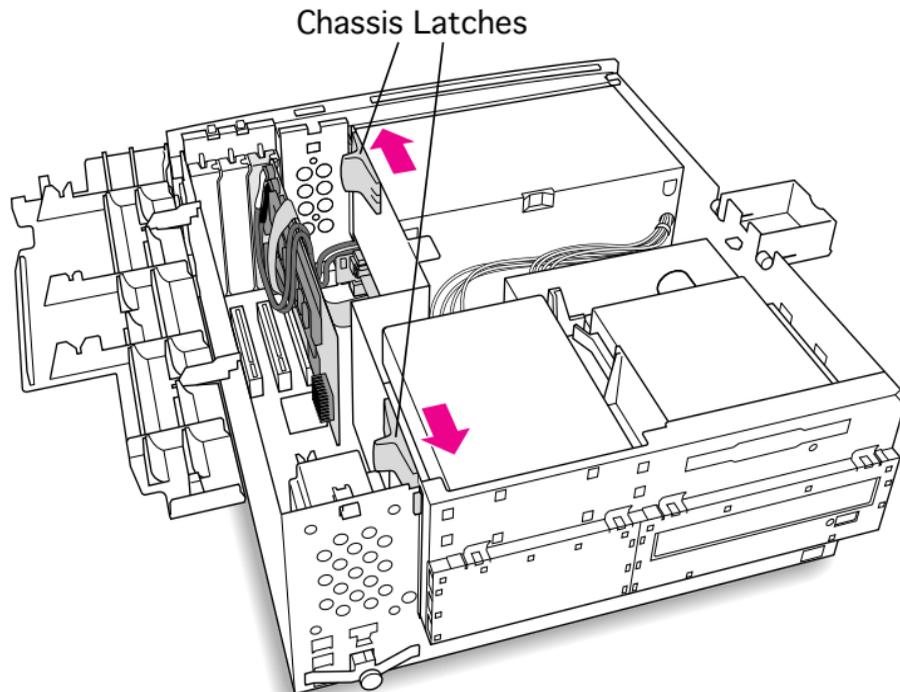
17 Disengage the support arm from the hole in the chassis bottom, and close the computer's upper chassis.

Note: Make sure you don't pinch any of the cables between the upper chassis and bottom chassis.



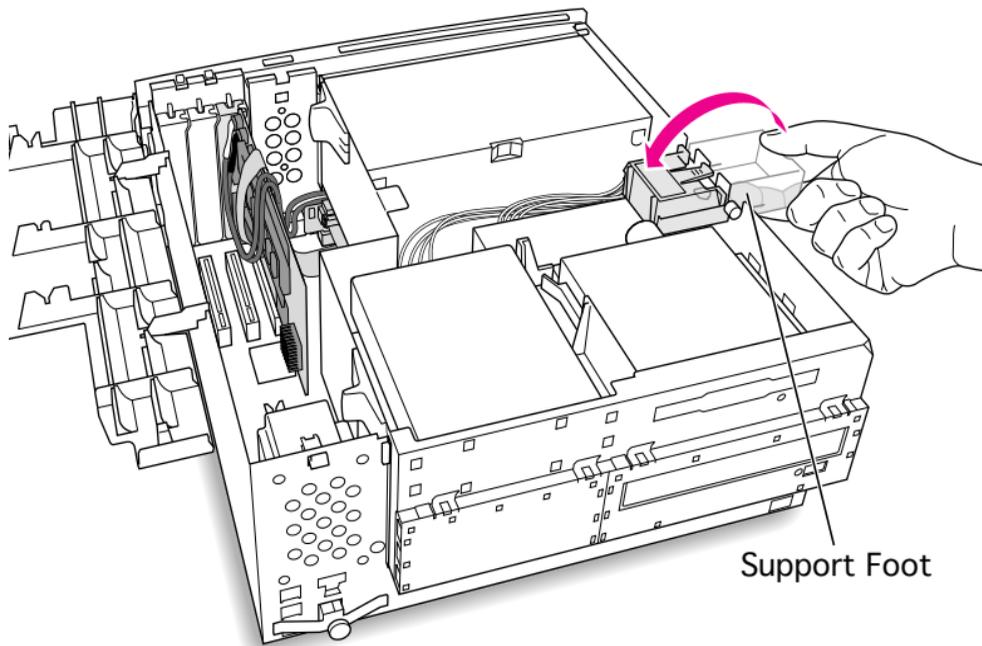


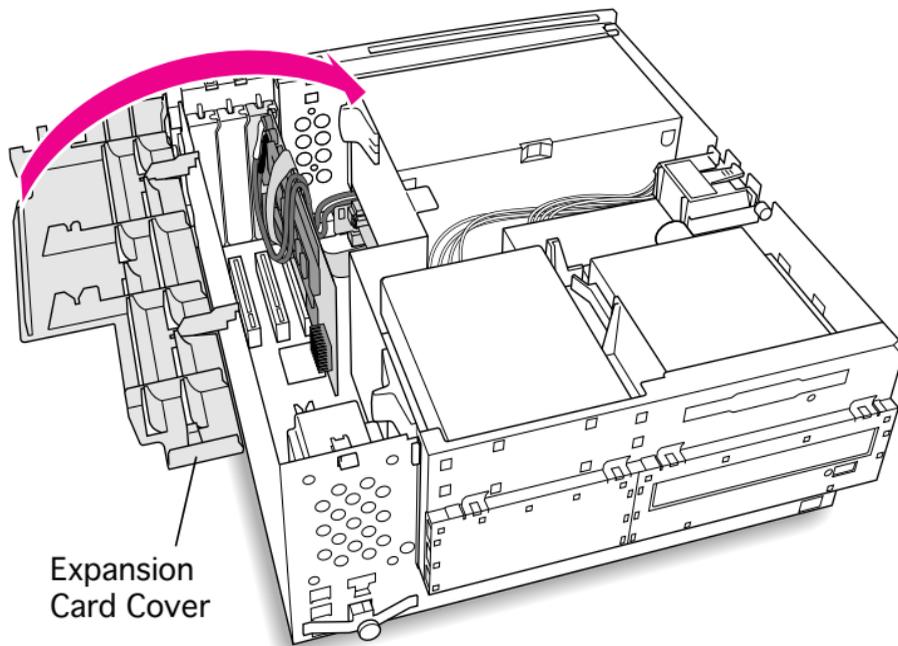
18 Lock the chassis latches.





19 Replace the support foot.





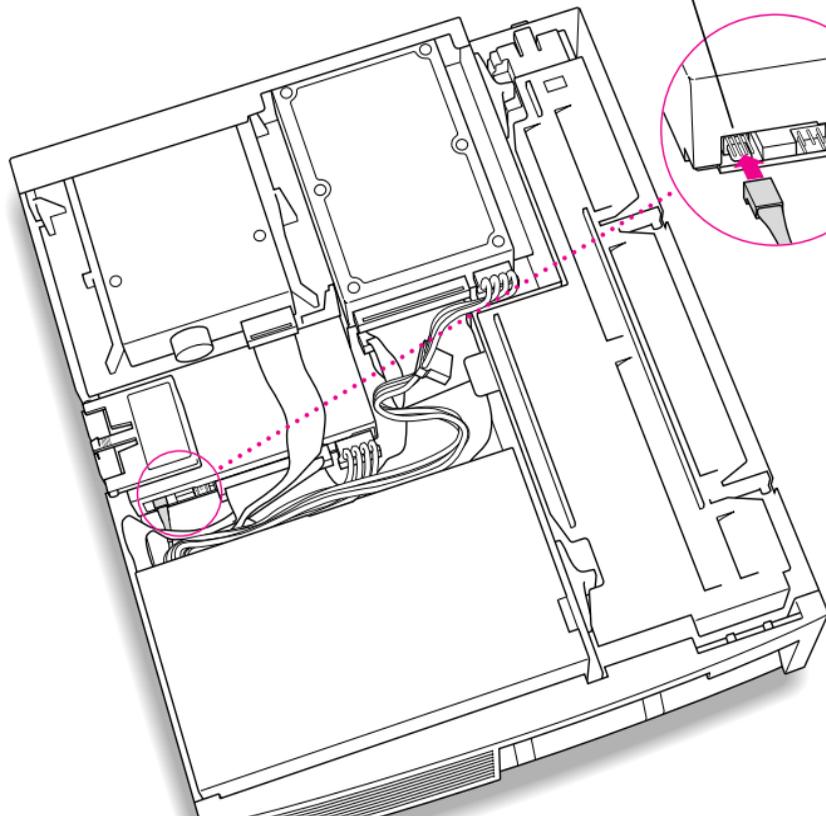
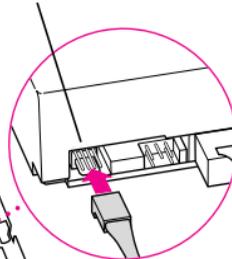
20 Flip the expansion card cover up and snap it back into place. (Be sure to snap the cover back down on both ends.)

Note: If the cover doesn't snap into place easily, make sure no cables are in the way.



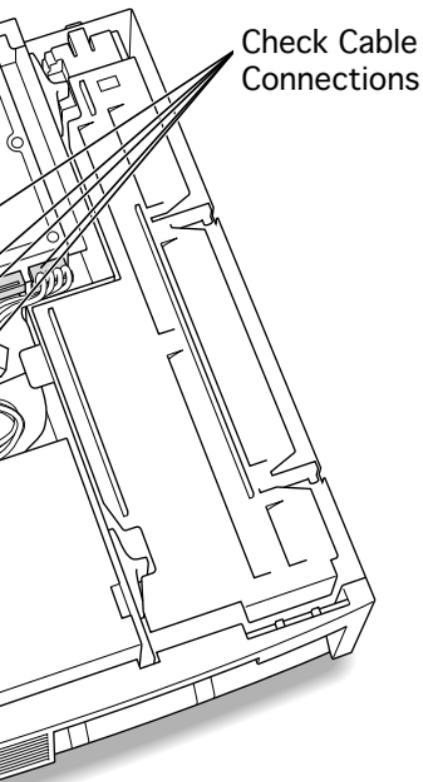


CD Audio Cable



- 21 Connect the CD-ROM cable you threaded through the computer's chassis earlier to the Audio connector on the CD-ROM drive.





Check Cable
Connections

- 22 Make sure all cables and cards are firmly connected.
- 23 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



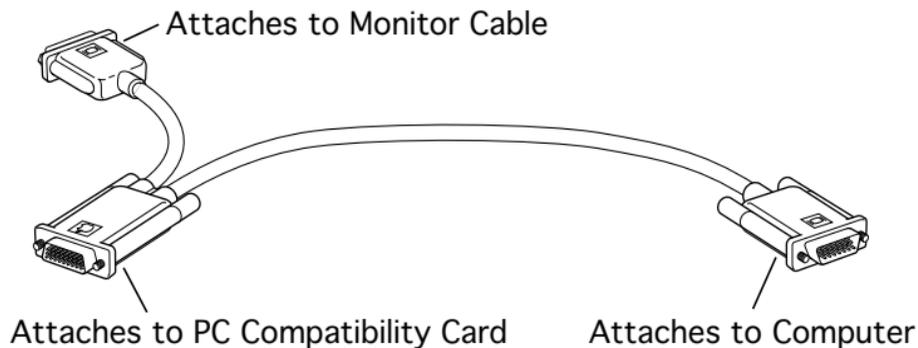


Connecting Monitors

After you have installed the 7" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

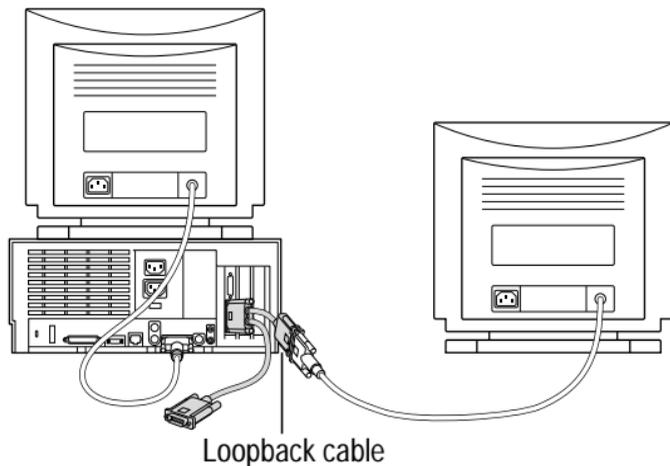




To connect a single monitor to the computer:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the computer's monitor port or video card.

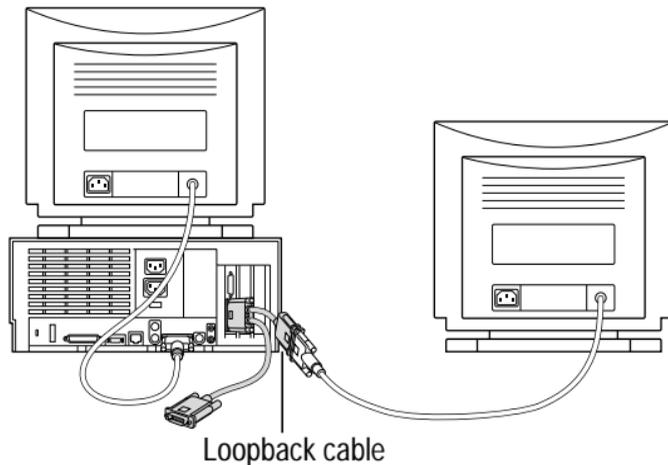




To connect two monitors to the computer:

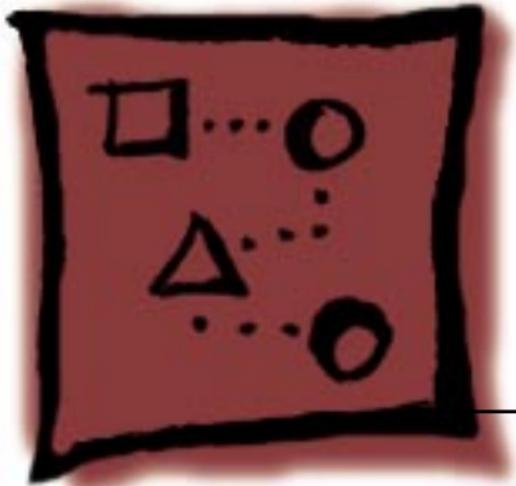
- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.





- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.





PM 8500 Series

7" 100 MHz PC Card Installation

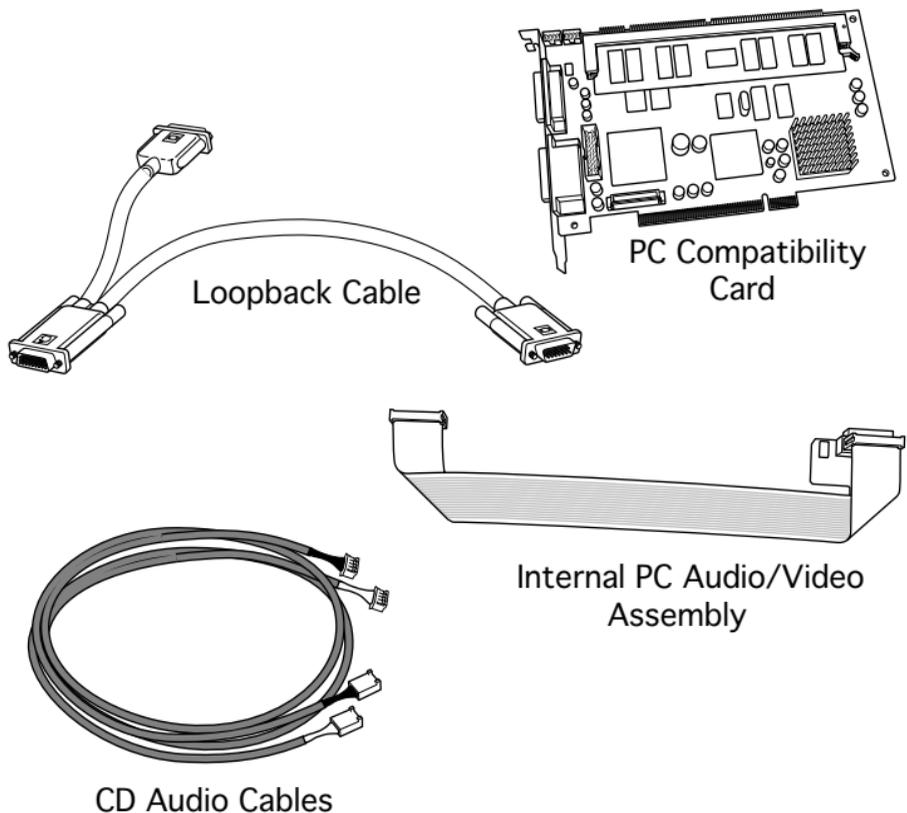




7" 100 MHz PC CARD

The 7" PC Compatibility Card Upgrade kit includes the PC compatibility card, a loopback cable, an internal PC audio/video cable (not used with the Power Macintosh 8500), and the necessary CD audio cables.

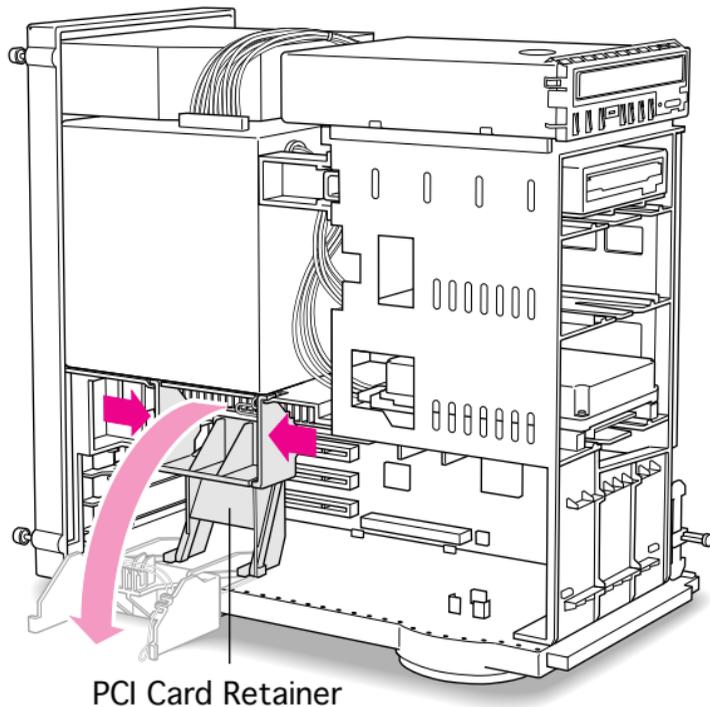
Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors. That cable does not work with the PC





Compatibility Card.

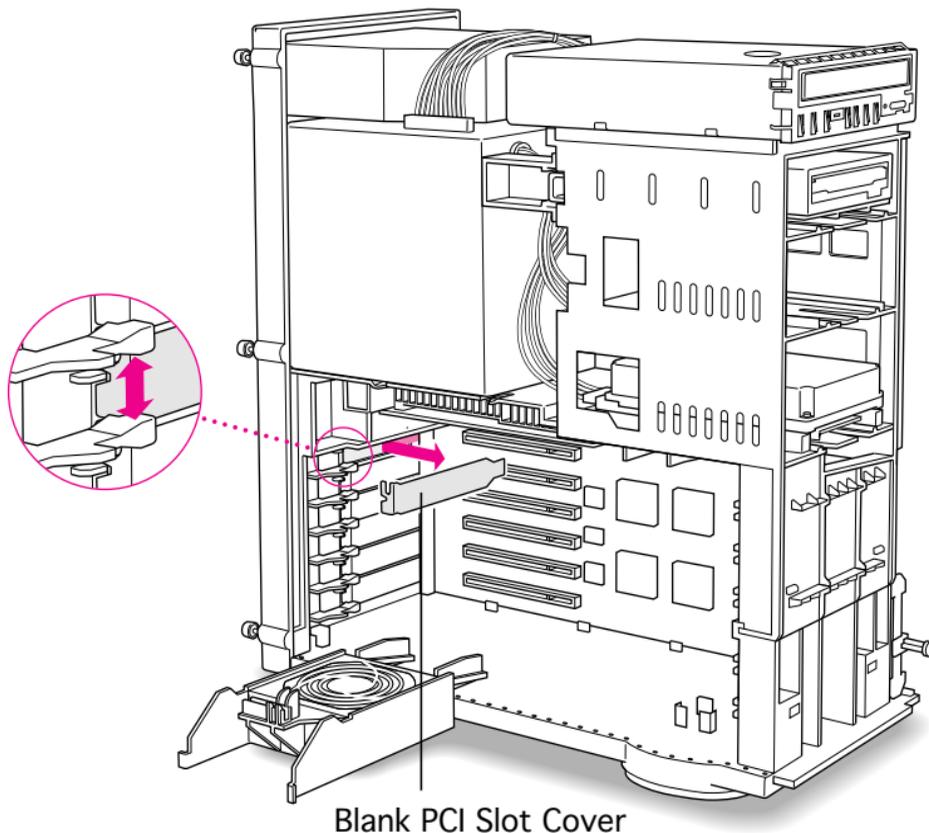




Before you begin, remove the top housing

- 1 Squeeze the sides of the PCI card retainer to unlatch it, and pull down on the retainer to remove it.

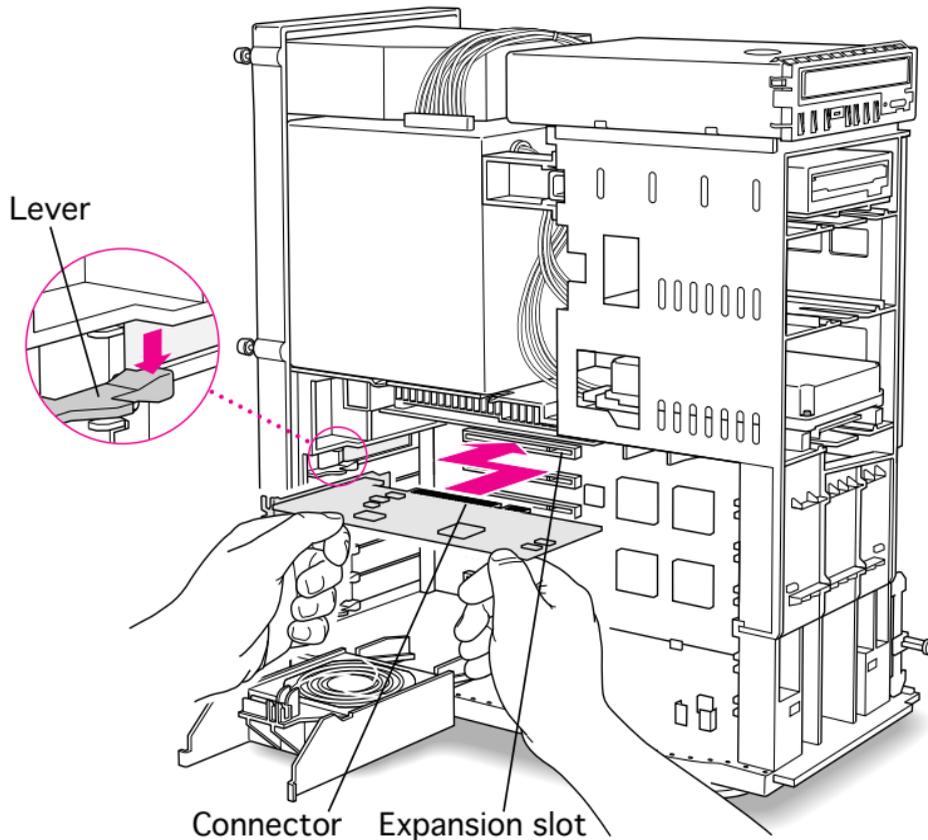




- 2 Pull out the blank PCI slot cover behind the expansion slot closest to the center of the computer.

Note: You can install the PC Compatibility card in any available PCI expansion slot; however, it is recommended that you install this card in the uppermost slot (that is, the one closest to the processor card).

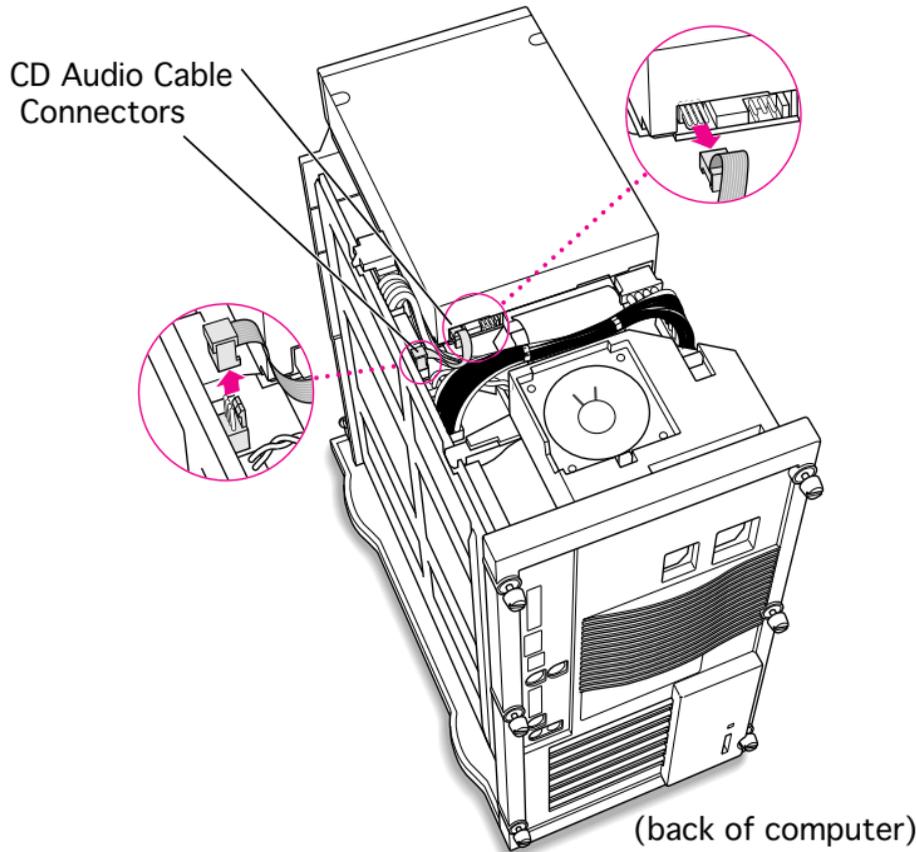




- 3 Line up the connector end of the card with the expansion slot.
- 4 Push down on the lever below the empty PCI access slot and press down firmly on the card until the connector is fully inserted.

Caution: Do not force the card. If you meet a lot of resistance, pull the card out and try again.

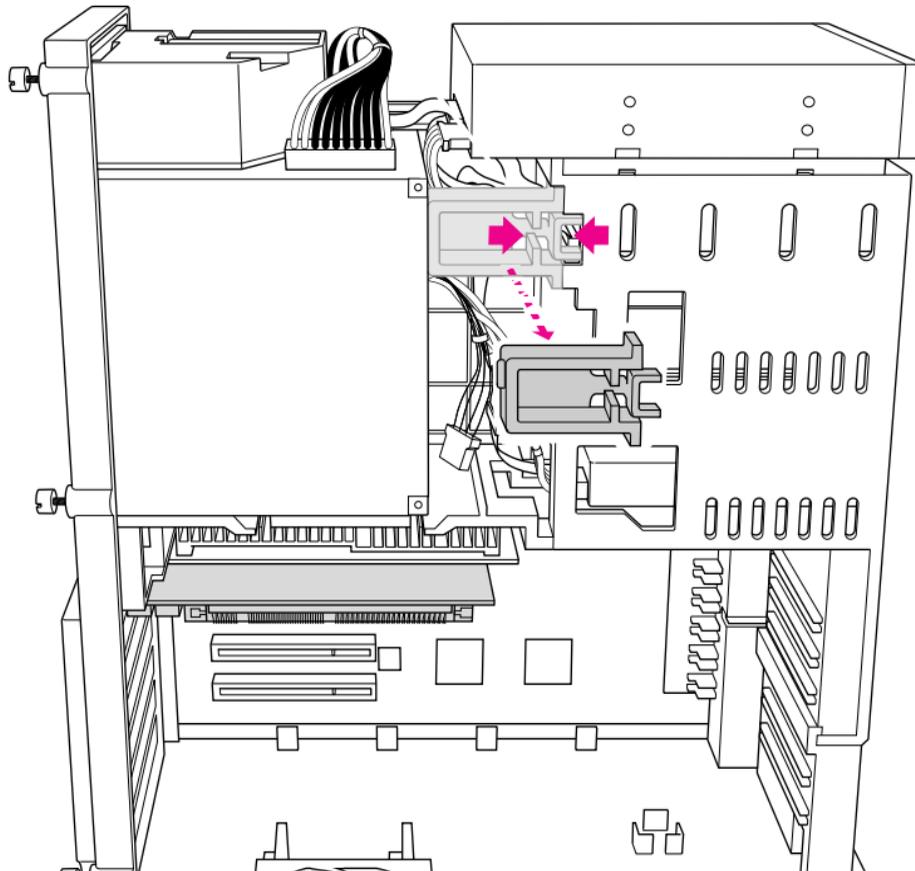




- 5 Unplug the CD audio cable from the computer's logic board and the CD-ROM drive.

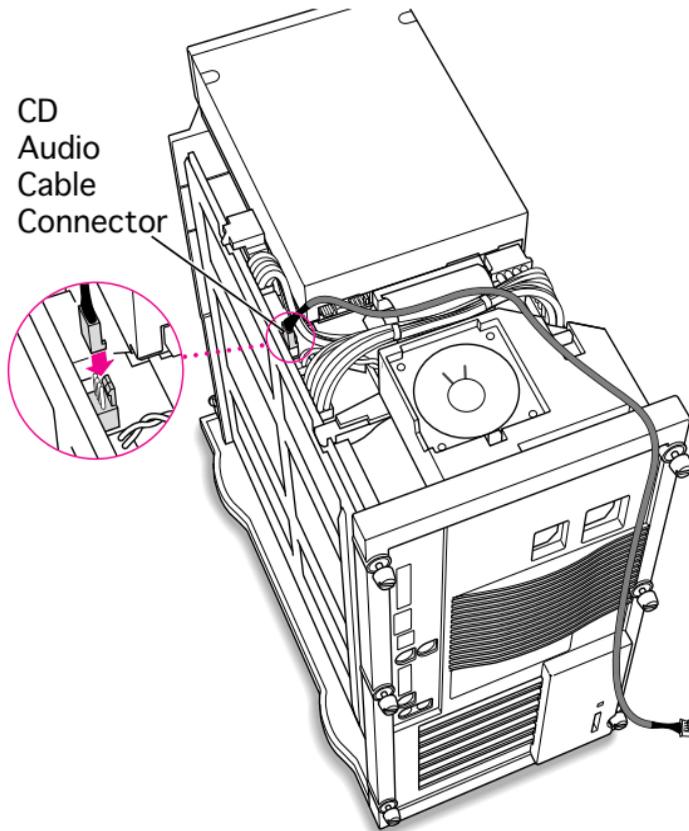
Note: You will be replacing the CD audio cable with one that came with the upgrade kit.





- 6 Squeeze on the chassis support brace and pull to remove it from the chassis.

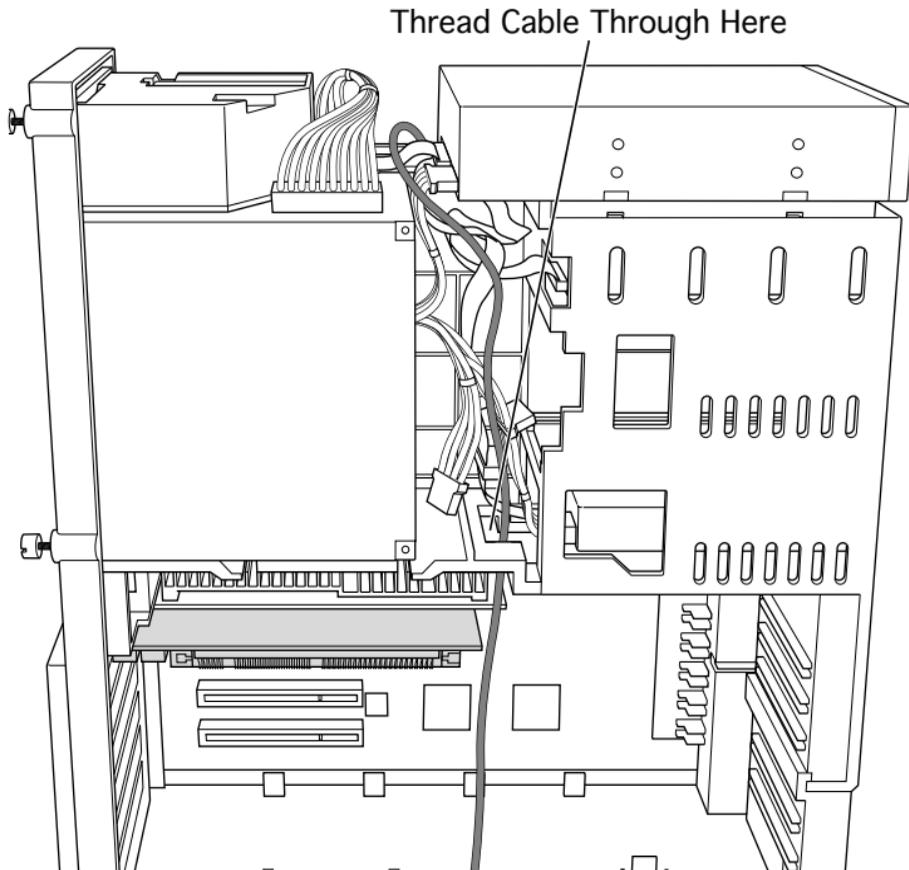




- 7 Plug one of the CD audio cables that came with the upgrade kit into the Sound In connector on the computer's logic board.

Note: Two audio cables are included in the upgrade kit. They are different colors, but both work the same way.



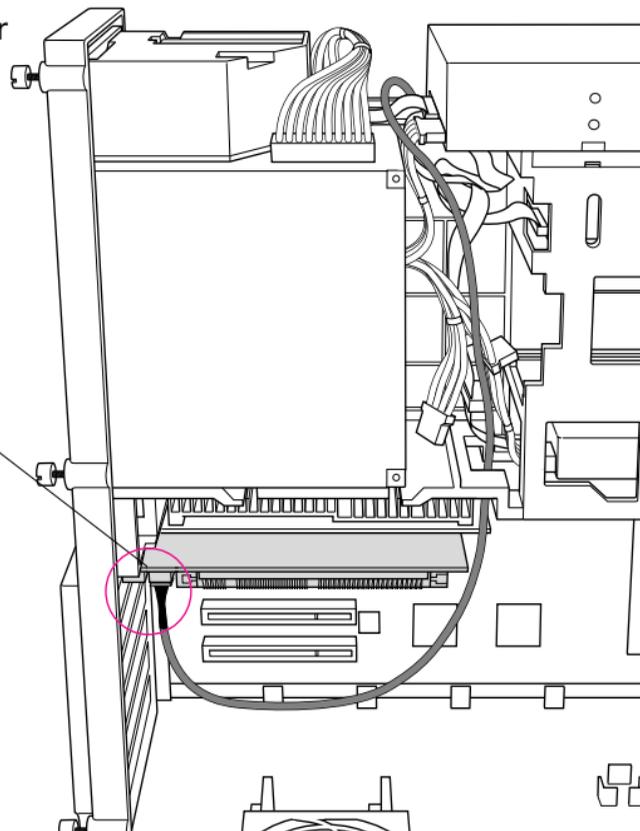
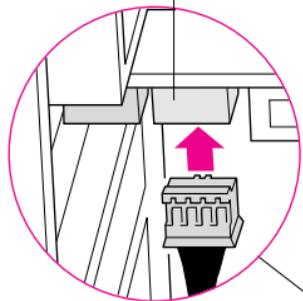


- 8 Thread the cable through the interior of the computer as shown.





Sound Out connector
on the PC
Compatibility Card



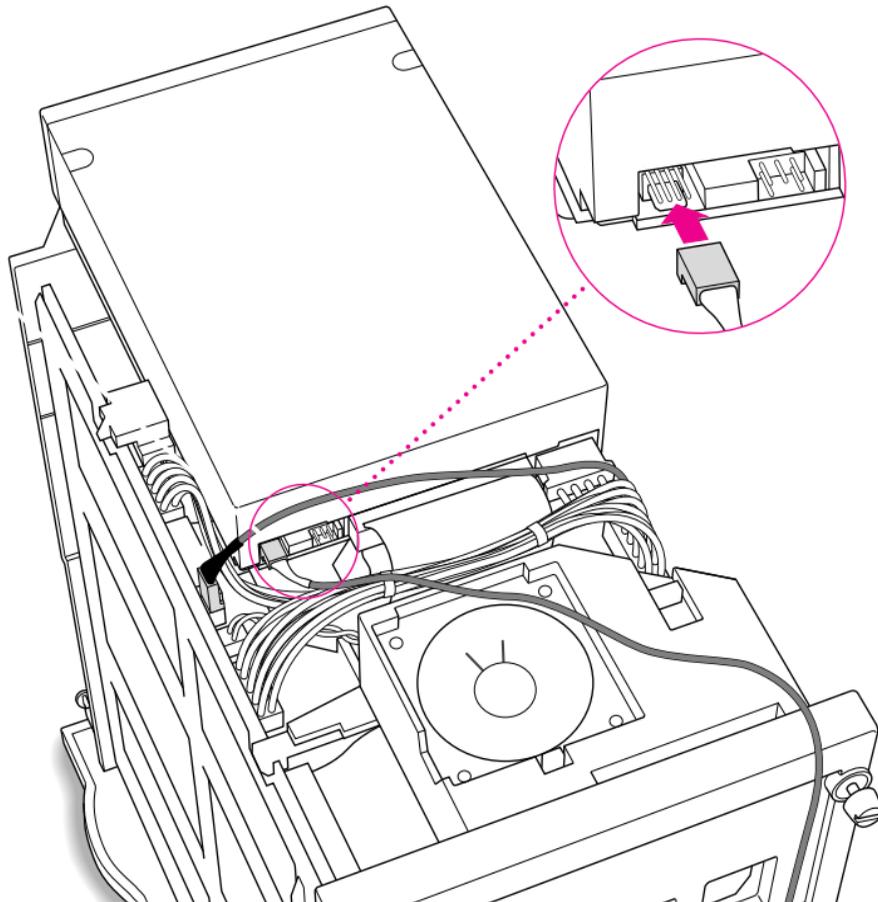
- 9 Plug the other end of the cable into the Sound Out connector on the PC Compatibility card.

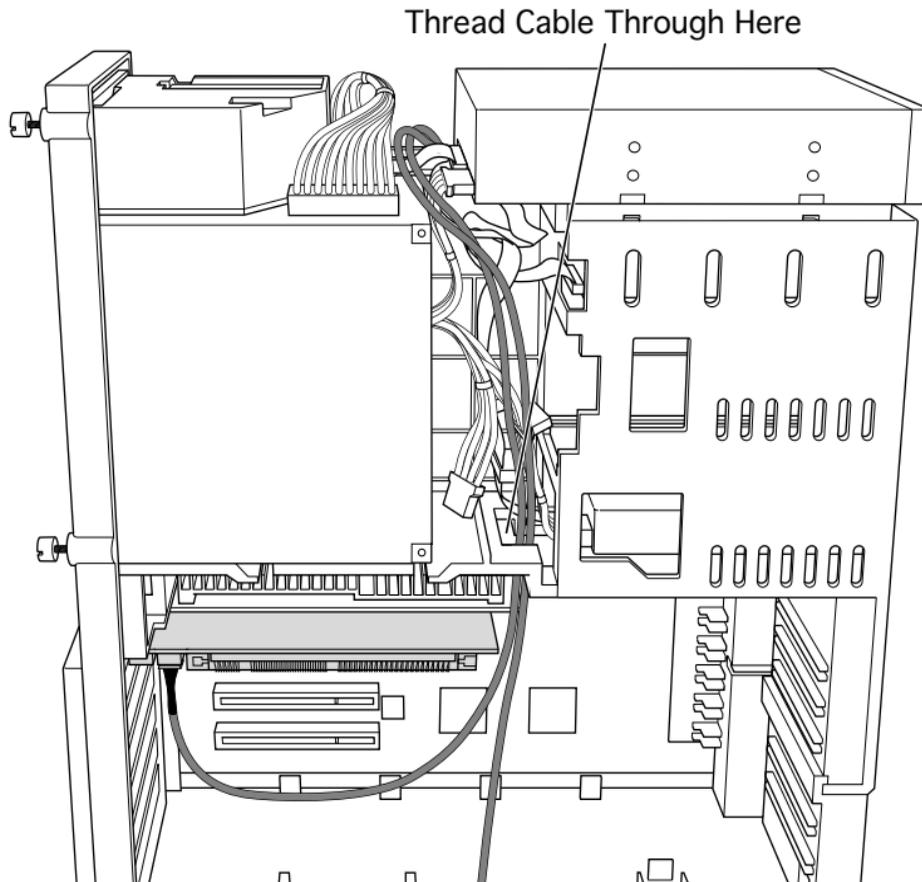
Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.





- 10 Plug the second CD audio cable into the CD Out connector on the CD-ROM drive.



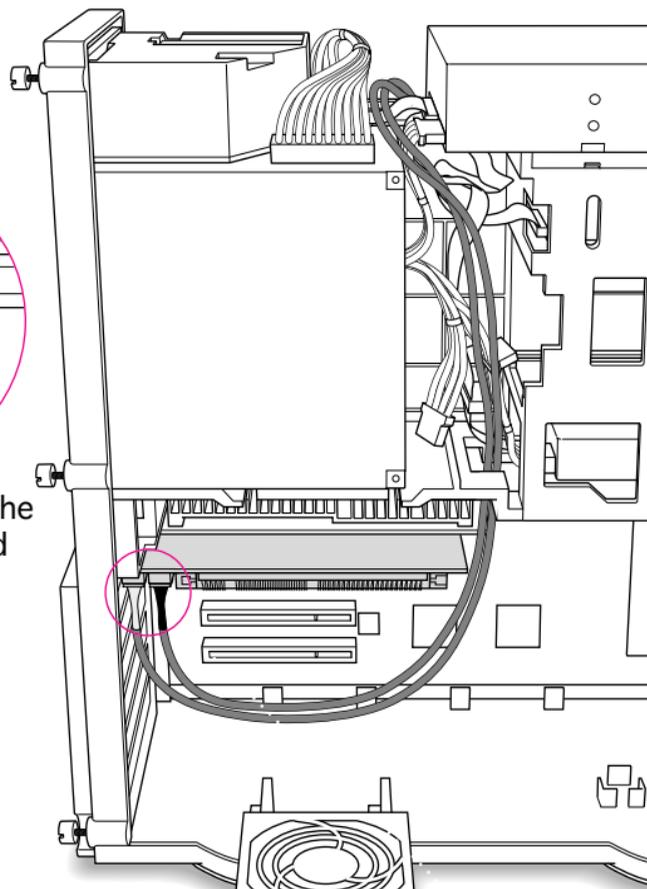


- 11 Thread the second cable through the interior of the computer.





- 12 Plug the other end of the second cable into the CD In connector on the PC Compatibility card.

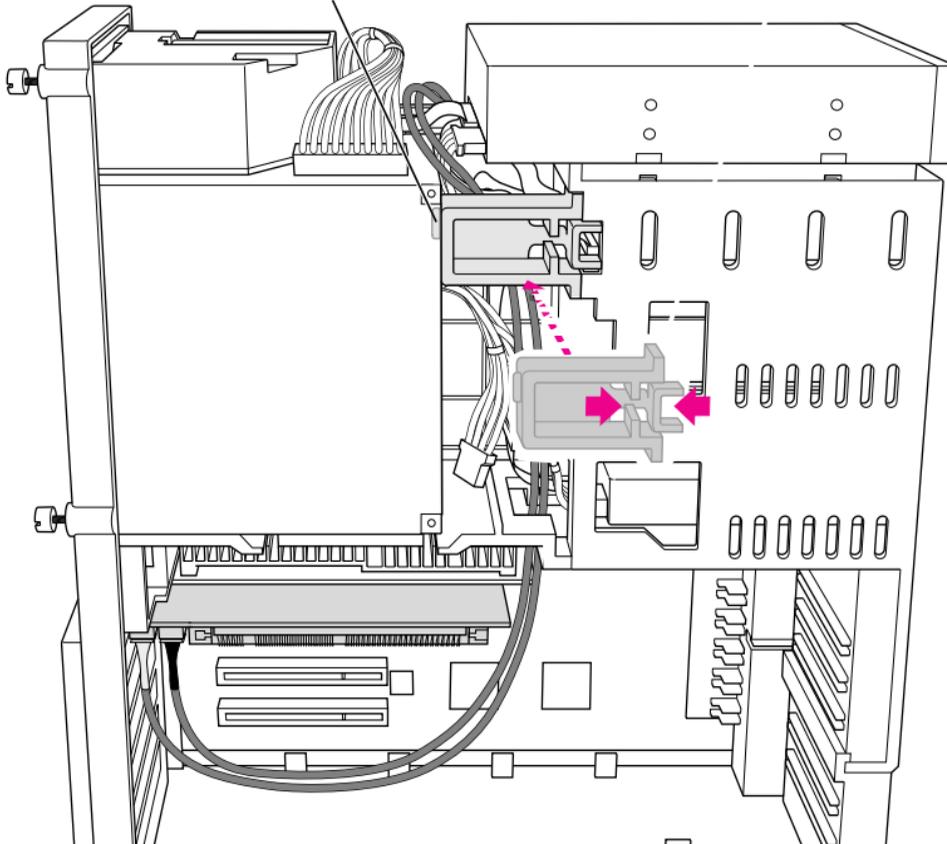


CD In Connector on the
PC Compatibility Card





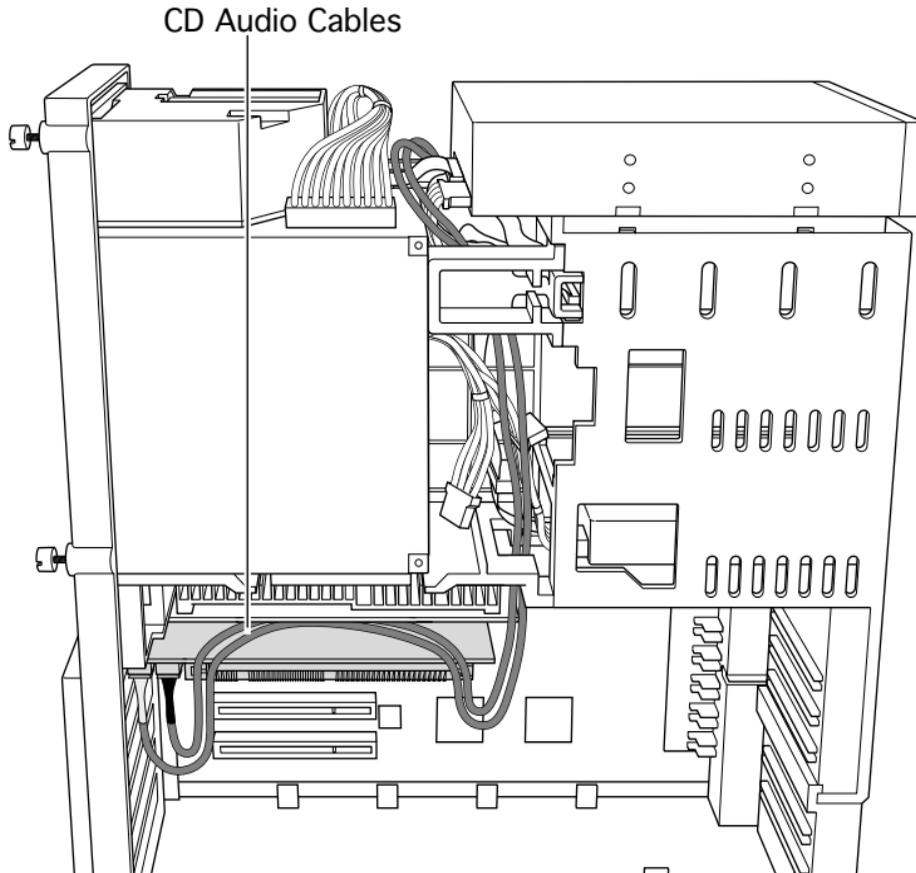
Chassis Support Brace



13 Replace the chassis support brace.

Note: There is a tab on the chassis support brace that fits into a slot in the power supply case.



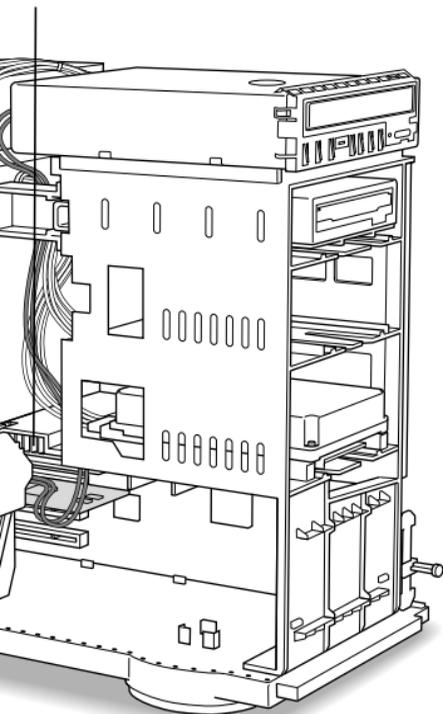


- 14 Lay the CD audio cables on top of the PC Compatibility card so they are out of the way of the PCI retainer.





Processor card



- 15 Make sure all cables are connected and then replace the PCI retainer.

Note: Make sure that none of the cables is squeezed between the retainer and the top of the card.

- 16 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



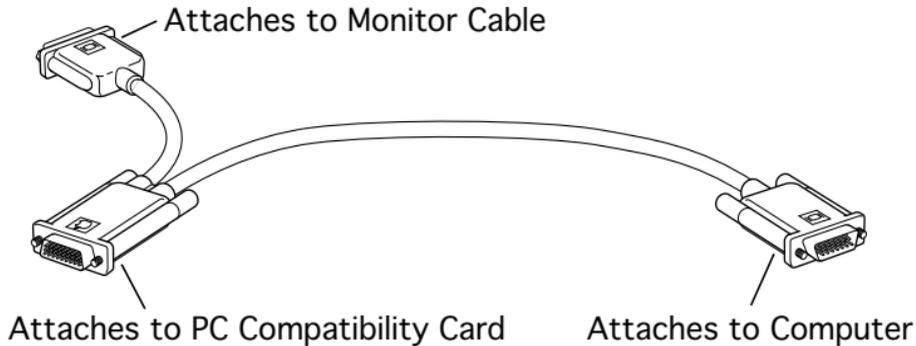


Connecting Monitors

After you have installed the 7" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

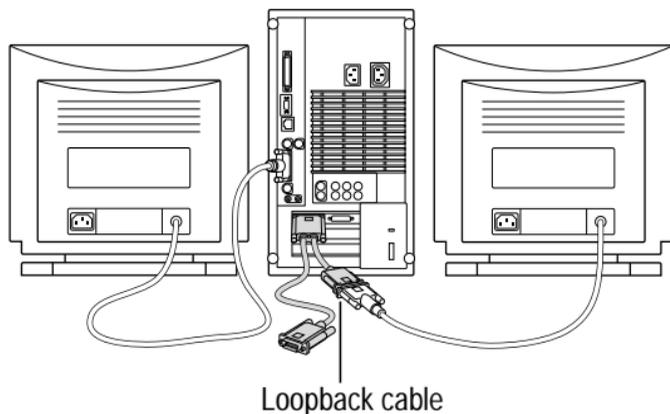




To connect a single monitor to the computer:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the computer's monitor port or video card.

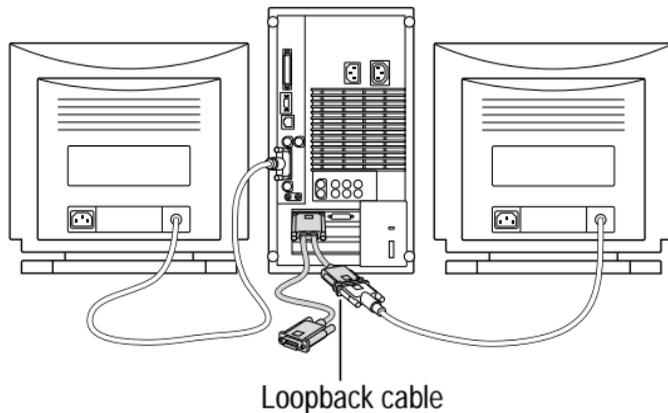




To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.



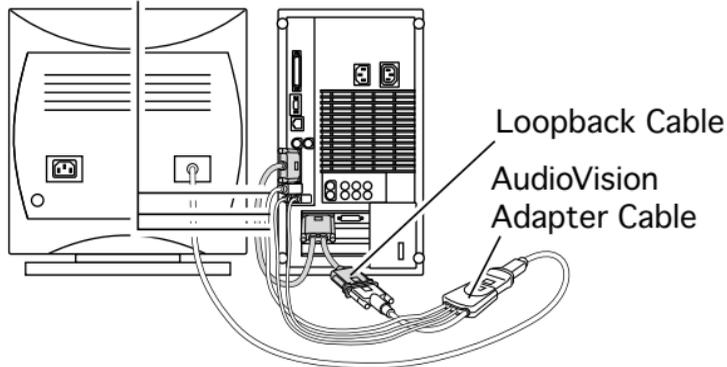


- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.





Plug the ADB (V), sound output (-), and sound input (\approx) cables into the corresponding ports on the back of the computer.



To connect an AudioVision 14Display to the computer:

- 1 Attach the short end of the loopback cable to the AudioVision adapter cable.
- 2 Attach the AudioVision adapter cable to the AudioVision monitor cable.
- 3 Attach the ADB, sound output, and sound input cables from the adapter cable to the corresponding ports on the back of the computer.





PM 9500 Series

7" 100 MHz PC Card Installation

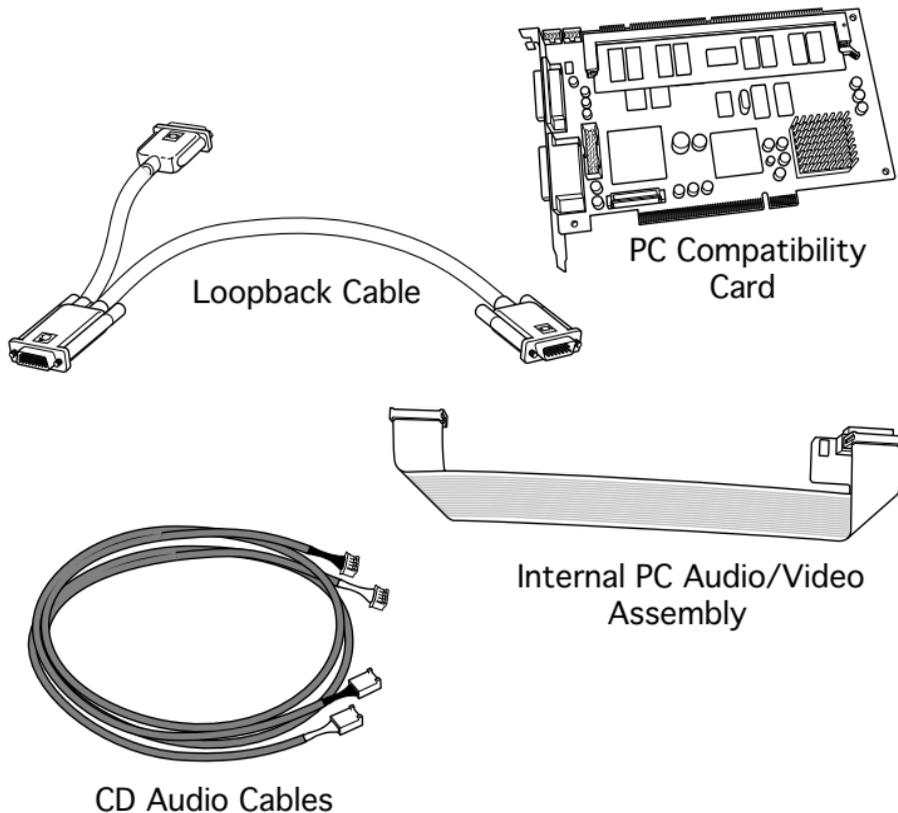


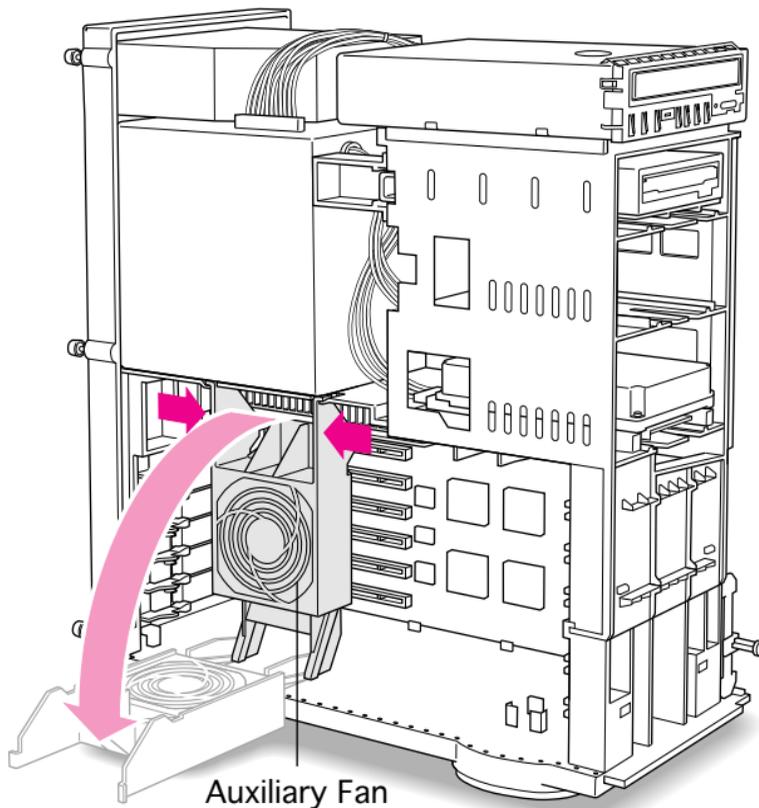


7" PC CARD

The 7" PC Compatibility Card Upgrade kit includes the PC compatibility card, a loopback cable, an internal PC audio/video cable (not used with the Power Macintosh 9500), and two CD audio cables.

Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors. That cable does not work with the PC Compatibility Card.

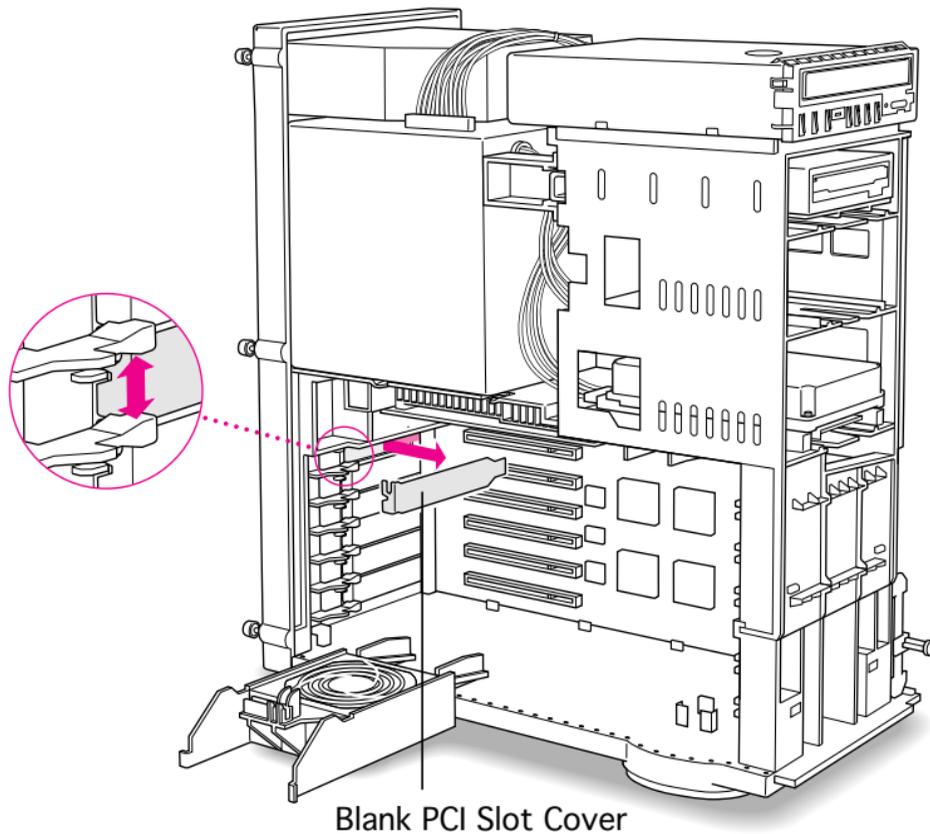




Before you begin, remove the top housing.

- 1 Squeeze the sides of the auxiliary fan to unlatch it, and pull down on the fan to remove it.

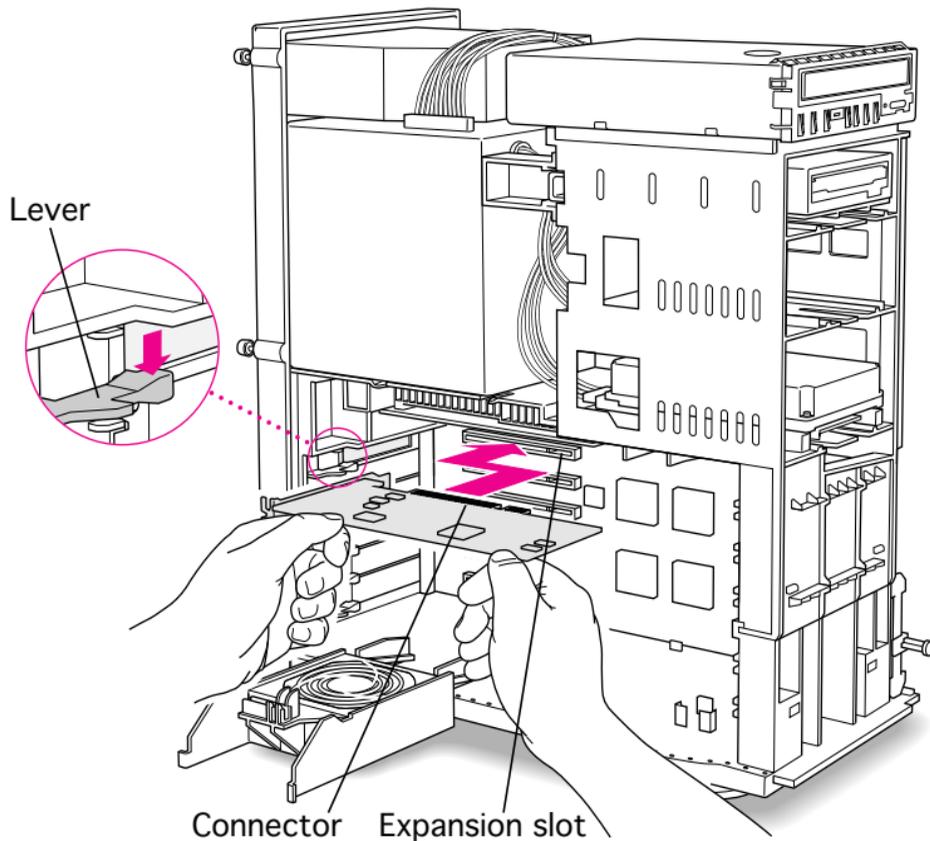




- 2 Pull out the blank PCI slot cover behind the expansion slot closest to the center of the computer.

Note: You can install the PC Compatibility card in any available PCI expansion slot; however, it is recommended that you install this card in the uppermost slot (that is, the one closest to the processor card).

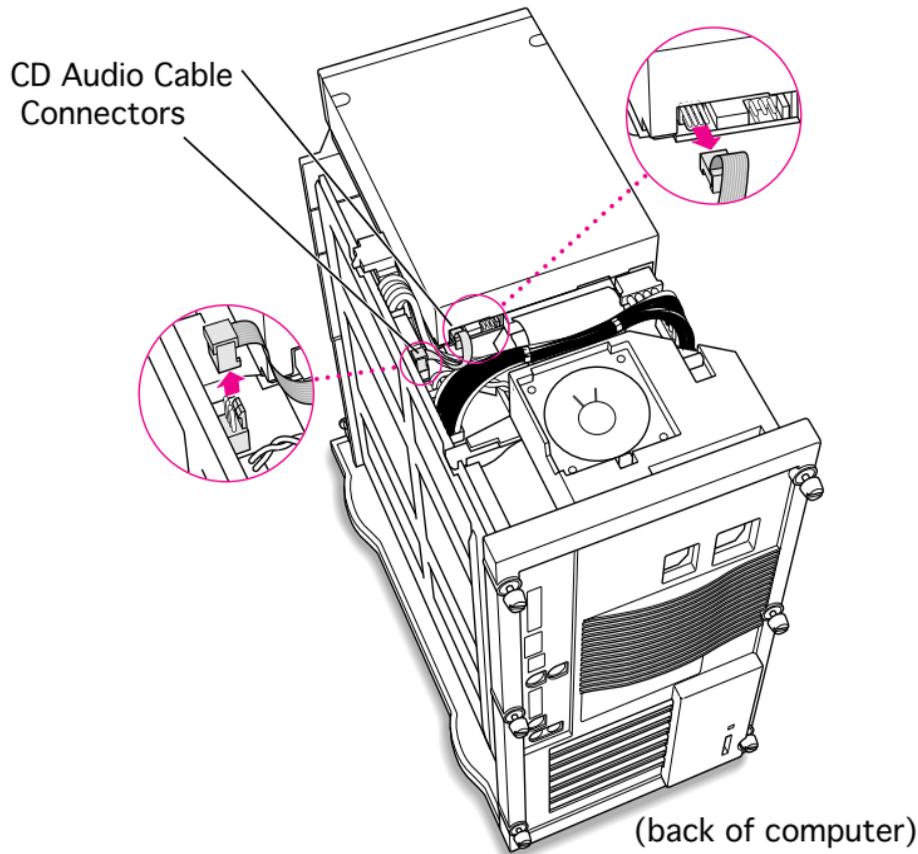




- 3 Line up the connector end of the card with the expansion slot.
- 4 Push down on the lever below the empty PCI access slot and press down firmly on the card until the connector is fully inserted.

Caution: Do not force the card. If you meet a lot of resistance, pull the card out and try again.

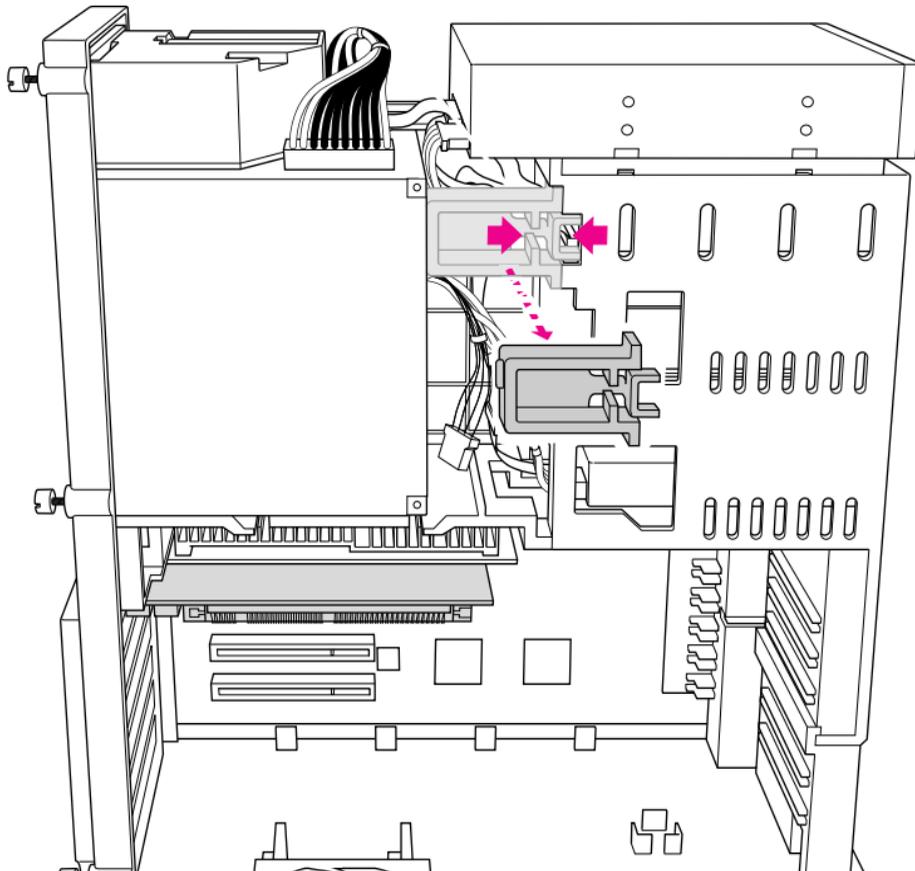




- 5 Unplug the CD audio cable from the computer's logic board and the CD-ROM drive.

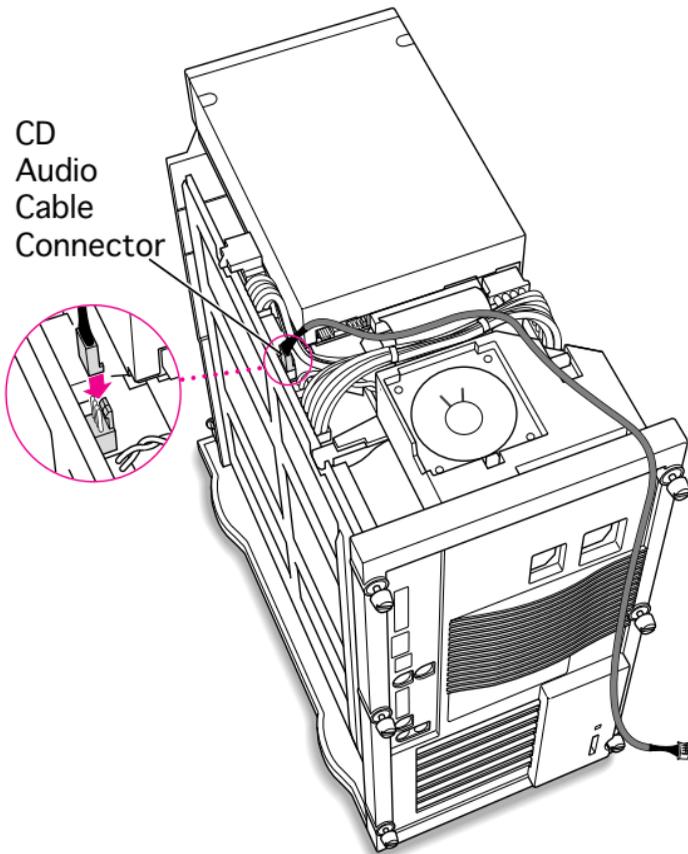
Note: You will be replacing the CD audio cable with one that came with the upgrade kit.





- 6 Squeeze on the chassis support brace and pull to remove it from the chassis.

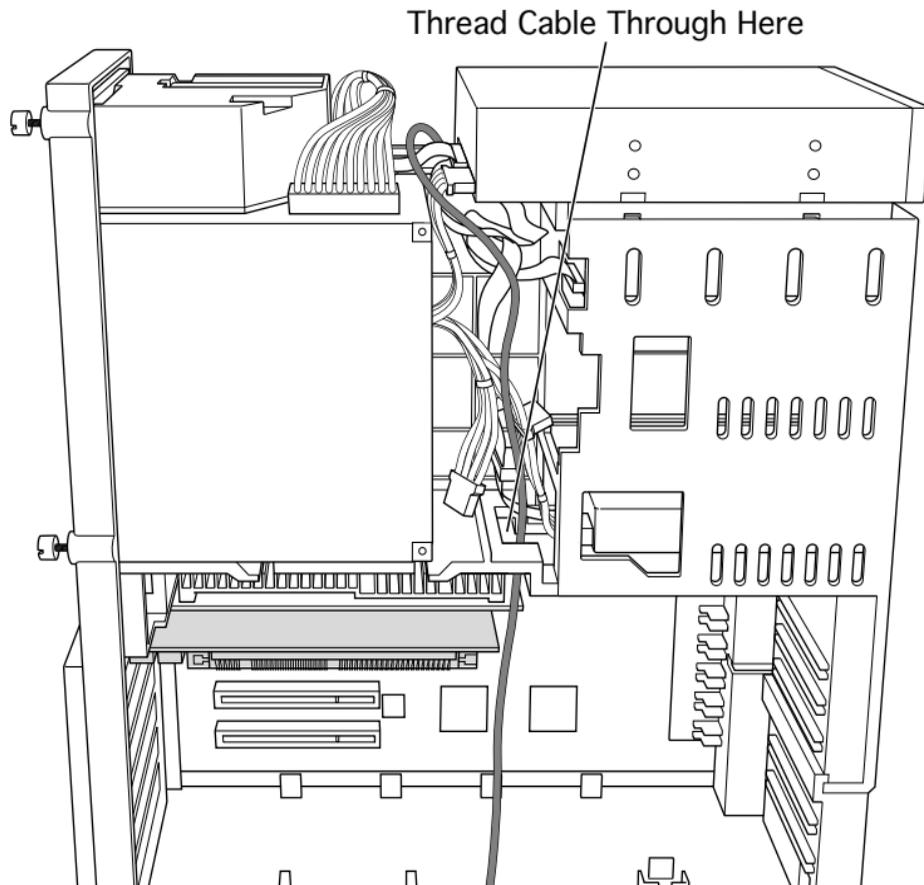




- 7 Plug one of the CD audio cables that came with the upgrade kit into the Sound In connector on the computer's logic board.

Note: Two audio cables are included in the upgrade kit. They are different colors, but both work the same way.



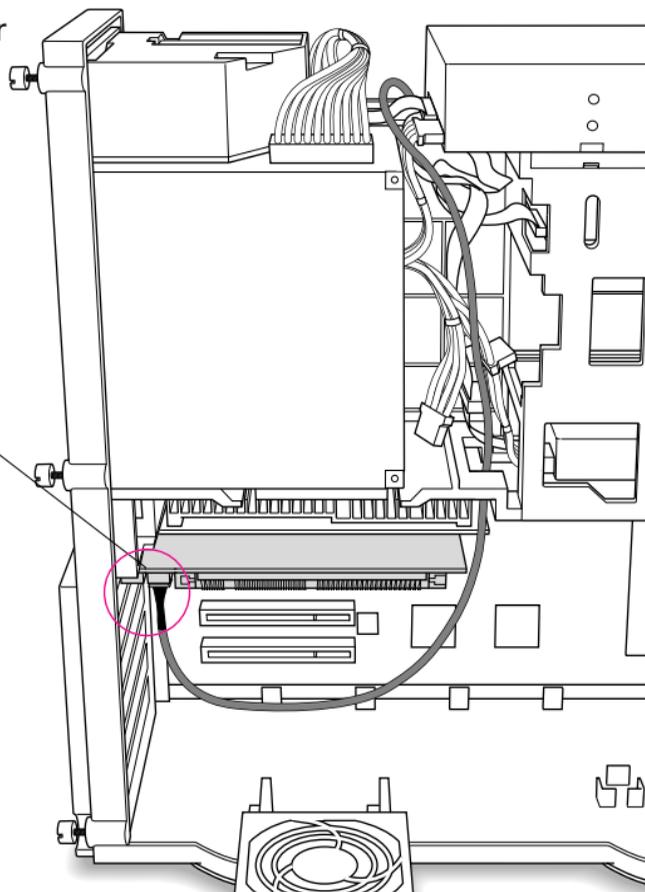
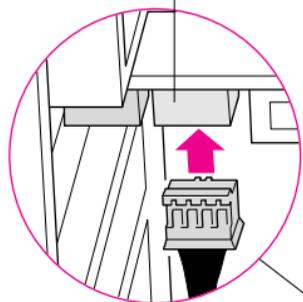


- 8 Thread the cable through the interior of the computer as shown.





Sound Out connector
on the PC
Compatibility Card



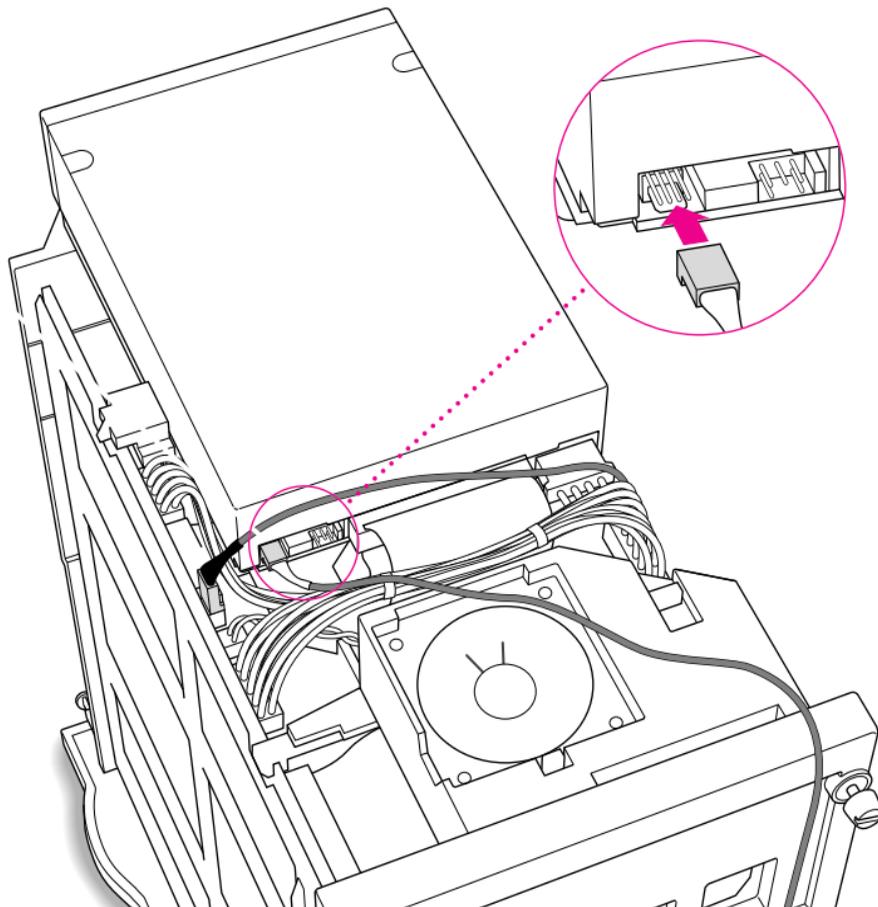
- 9 Plug the other end of the cable into the Sound Out connector on the PC Compatibility card.

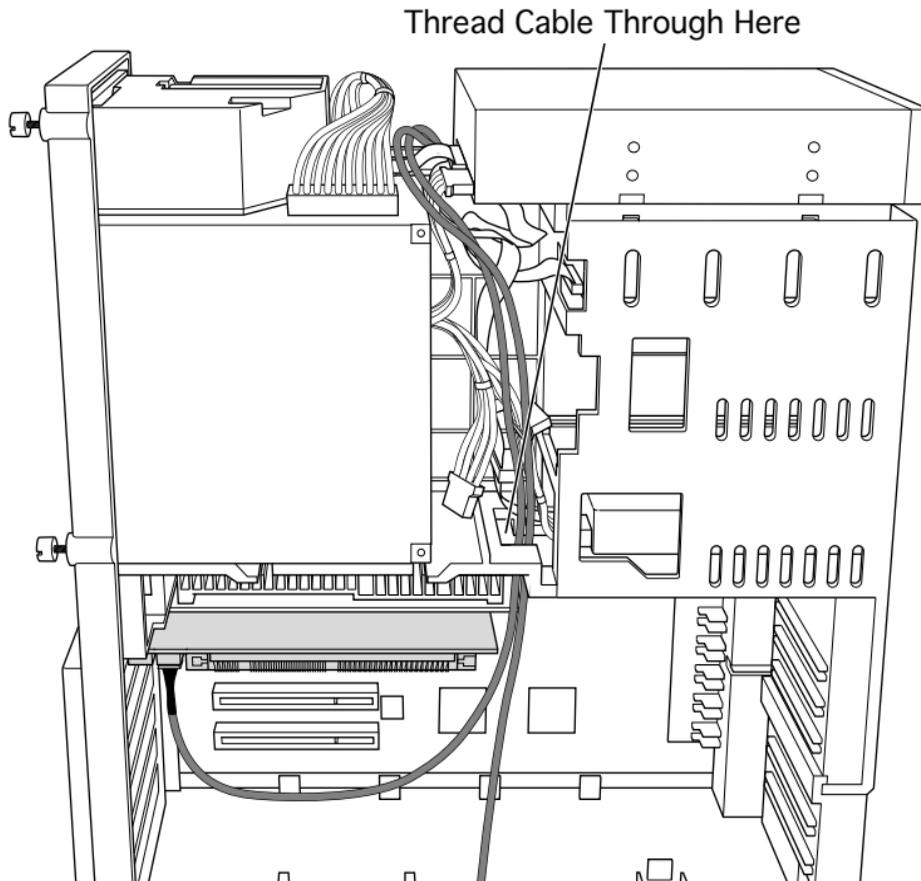
Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.





10 Plug the second CD audio cable into the CD Out connector on the CD-ROM drive.



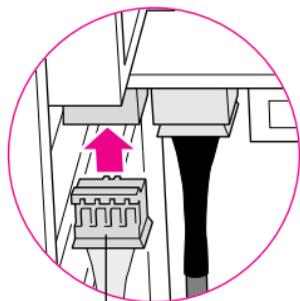


- 11 Thread the second cable through the interior of the computer.

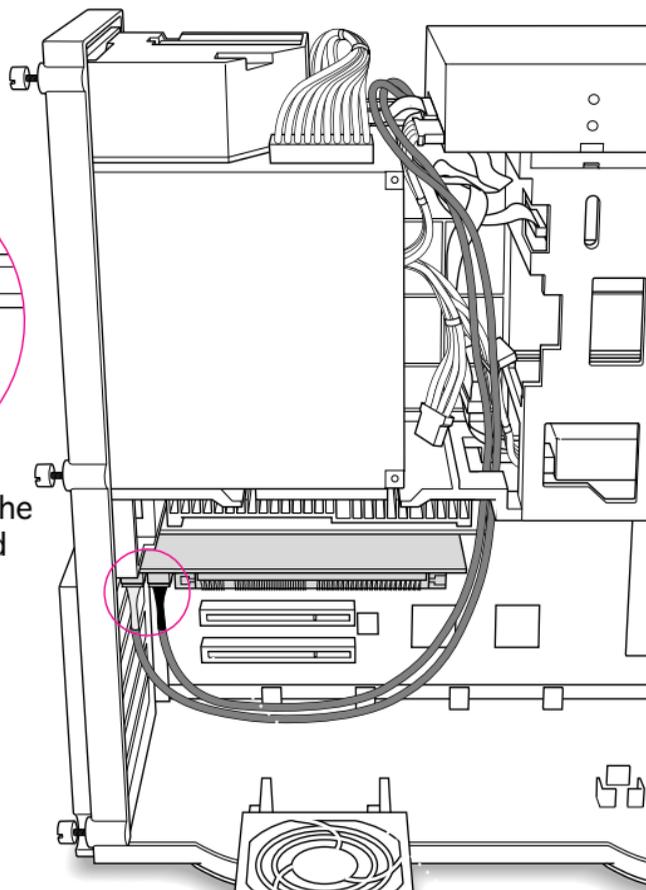


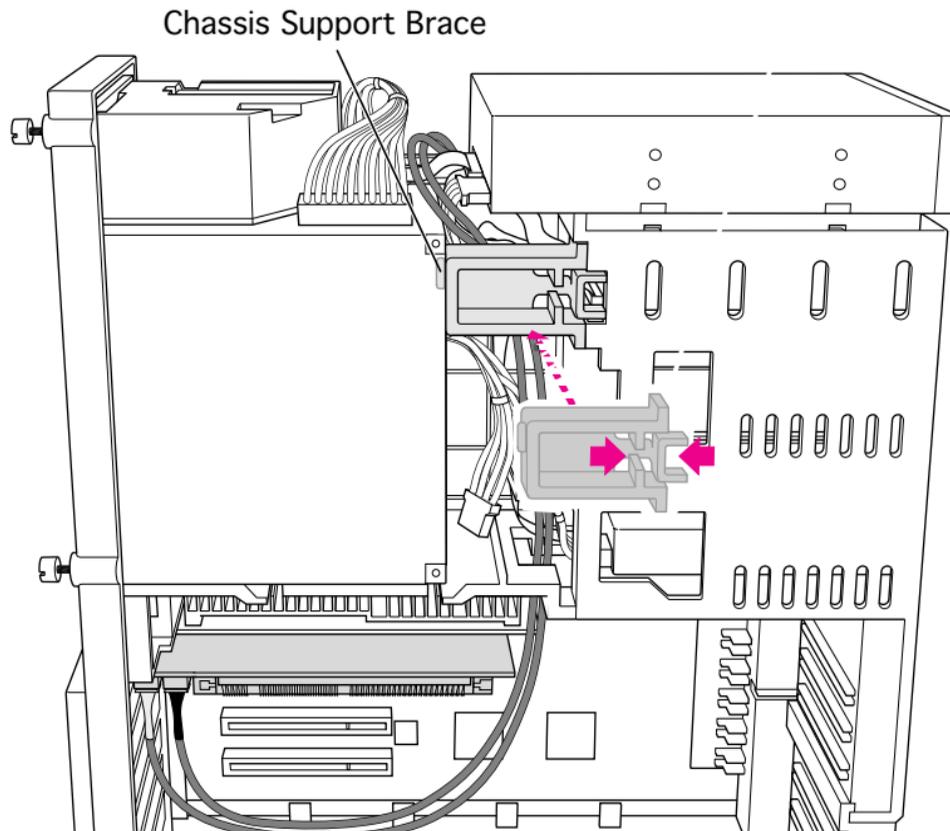


- 12 Plug the other end of the second cable into the CD In connector on the PC Compatibility card.



CD In Connector on the PC Compatibility Card

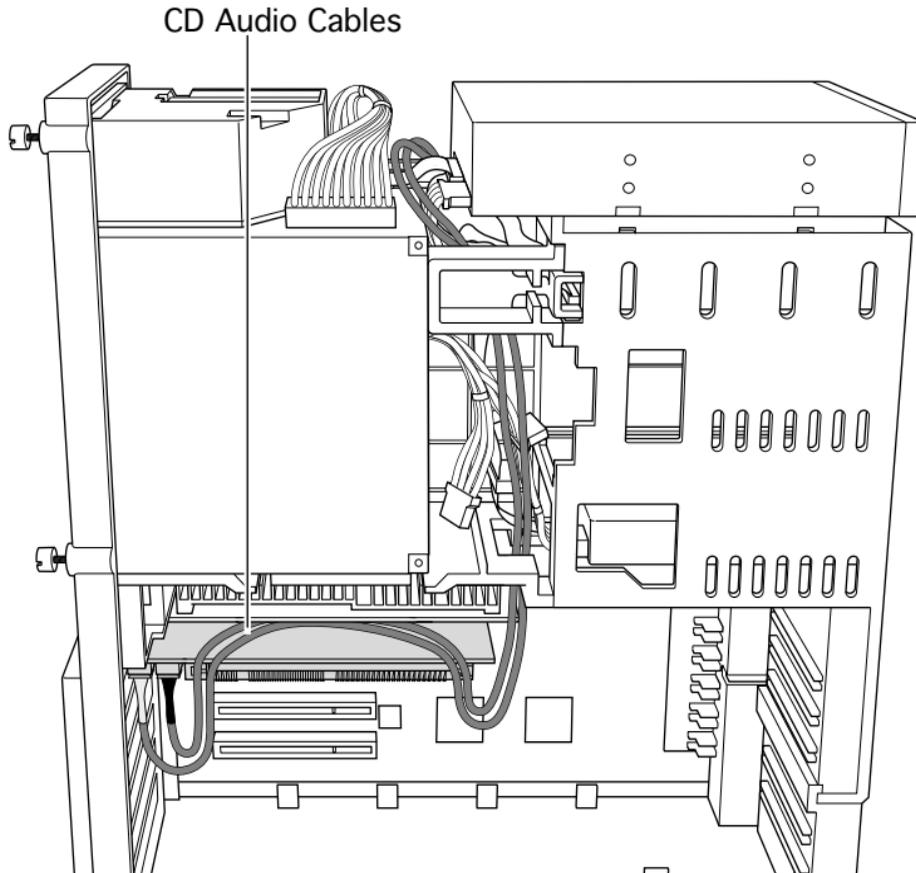




13 Replace the chassis support brace.

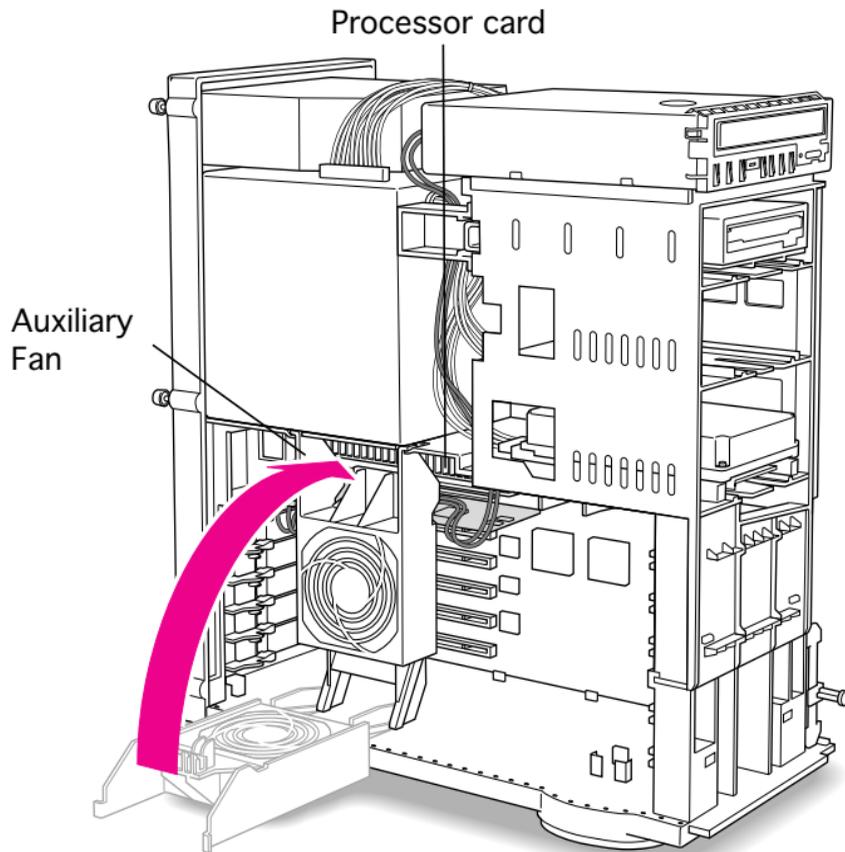
Note: There is a tab on the chassis support brace that fits into a slot in the power supply case.





- 14 Lay the CD audio cables on top of the PC Compatibility card so they are out of the way of the auxiliary fan.





15 Make sure all cables are connected and then replace the auxiliary fan.

Note: Make sure that none of the cables is squeezed between the fan and the top of the card.

16 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



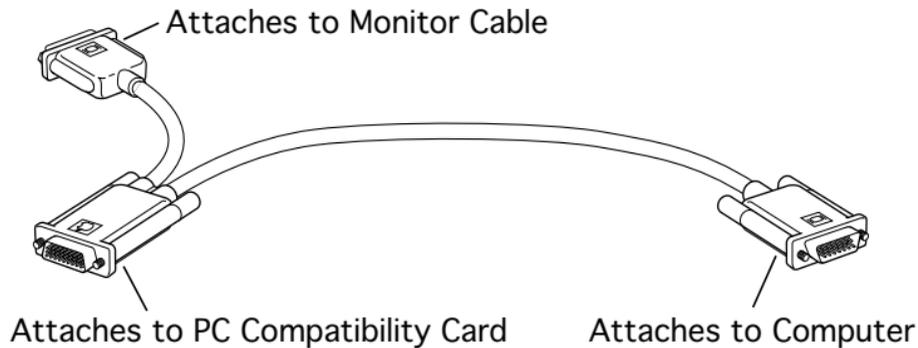


Connecting Monitors

After you have installed the 7" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

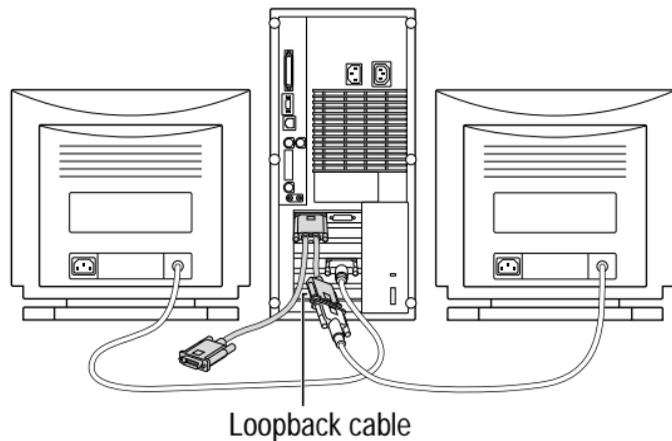




To connect a single monitor to the computer:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the port on the computer's video card.

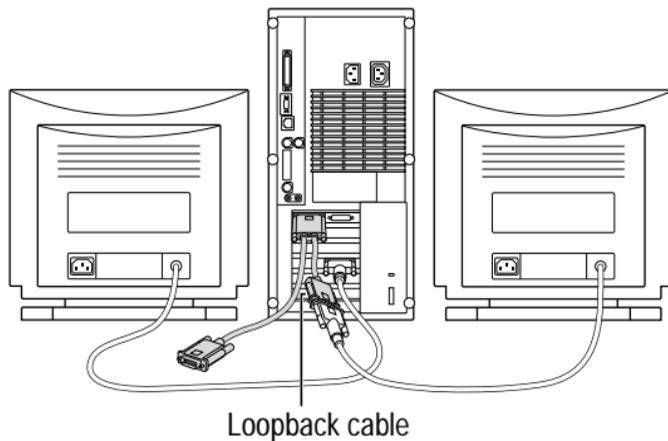




To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.



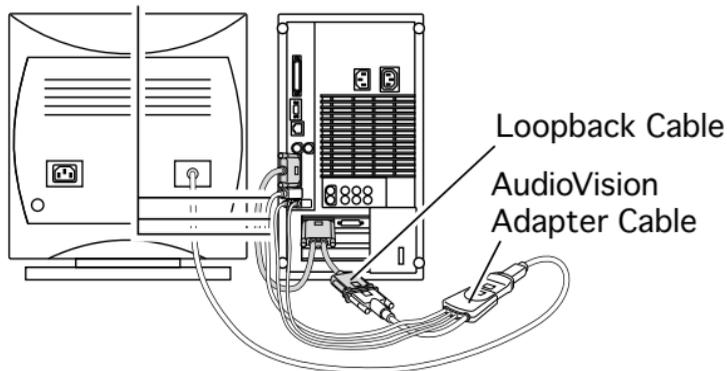


- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.





Plug the ADB (V), sound output (-), and sound input (\approx) cables into the corresponding ports on the back of the computer.



To connect an AudioVision 14Display to the computer:

- 1 Attach the short end of the loopback cable to the AudioVision adapter cable.
- 2 Attach the AudioVision adapter cable to the AudioVision monitor cable.
- 3 Attach the ADB, sound output, and sound input cables from the adapter cable to the corresponding ports on the back of the computer.





12" 100 MHz PC Card

Installation Instructions



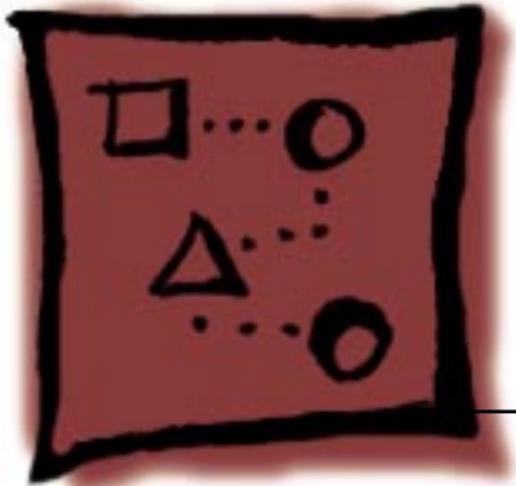


Introduction

The 12" 100 MHz PC Compatibility card is compatible with the Power Macintosh 7200, 7300, 7500, 7600, 8500, and 9500 Series computers.

Installation procedures differ depending on which machine the card is being used with. Refer to the machine-specific installation instructions within this chapter (indicated by the bookmarks in the left-hand margin) for complete information.





PM 7200 Series

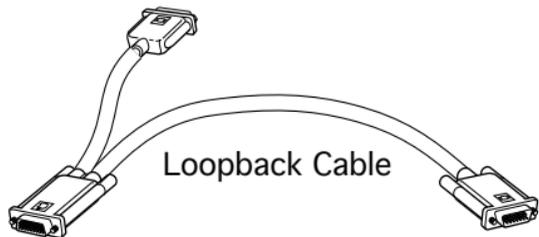
12" 100 MHz PC Card
Installation



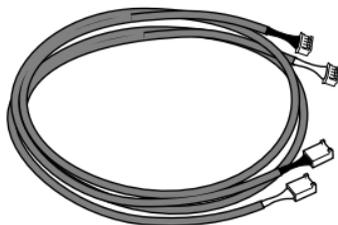


12" 100 MHz PC CARD

The 12" PC Compatibility Card Upgrade kit includes the PC compatibility card, a loopback cable, an internal PC audio/video cable assembly, and two CD audio cables.



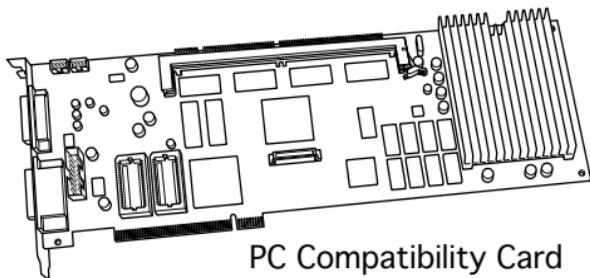
Loopback Cable



CD Audio Cables



Internal PC
Audio/Video
Assembly



PC Compatibility Card





Note: The PC Compatibility card offers two ways to get video out on the Power Macintosh 7200: 1) via the internal PC audio/video cable assembly, which connects from the PC Compatibility card to the logic board, or 2) via the external loopback cable, which connects between the video ports on the computer, the PC Compatibility card, and the monitor. If the internal PC audio/video cable assembly is installed, the loopback cable is not needed.

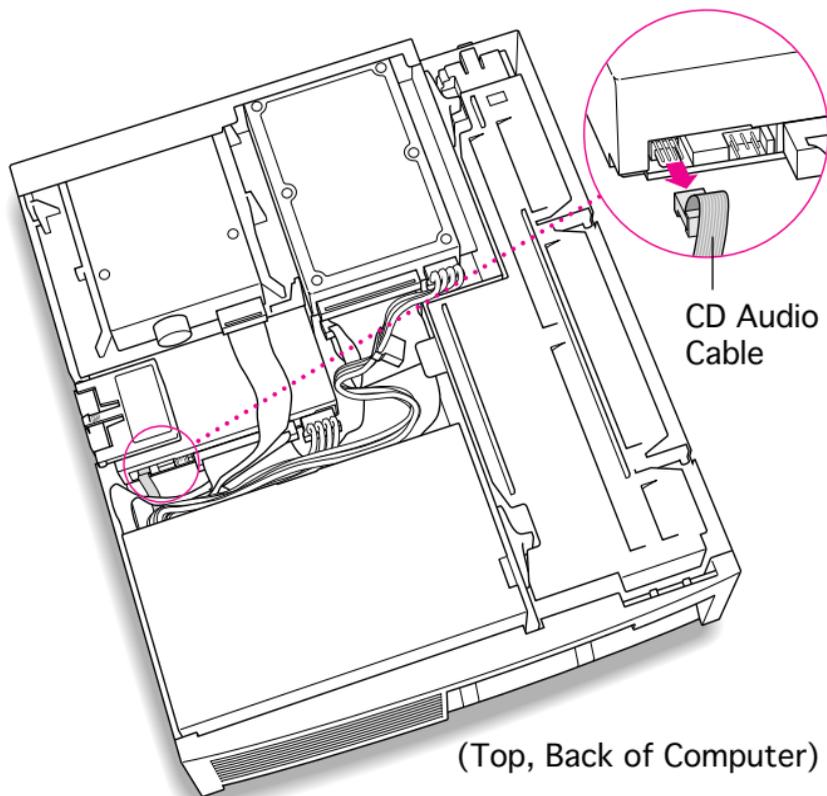
Note: The PC Compatibility card can be installed in any available PCI slot in the Power Macintosh 7200; however, the first slot is preferred.

Before you begin, remove the top housing.



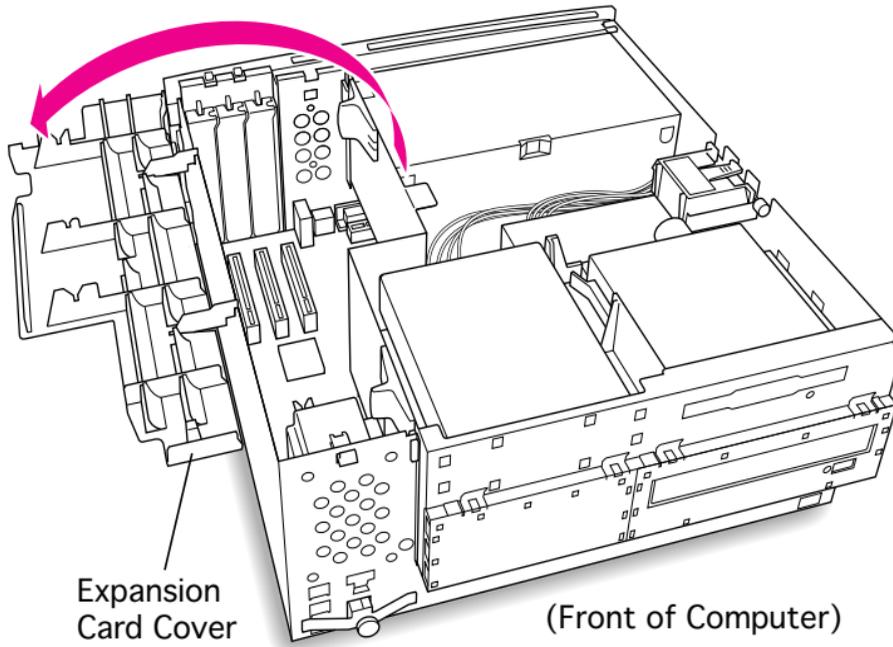


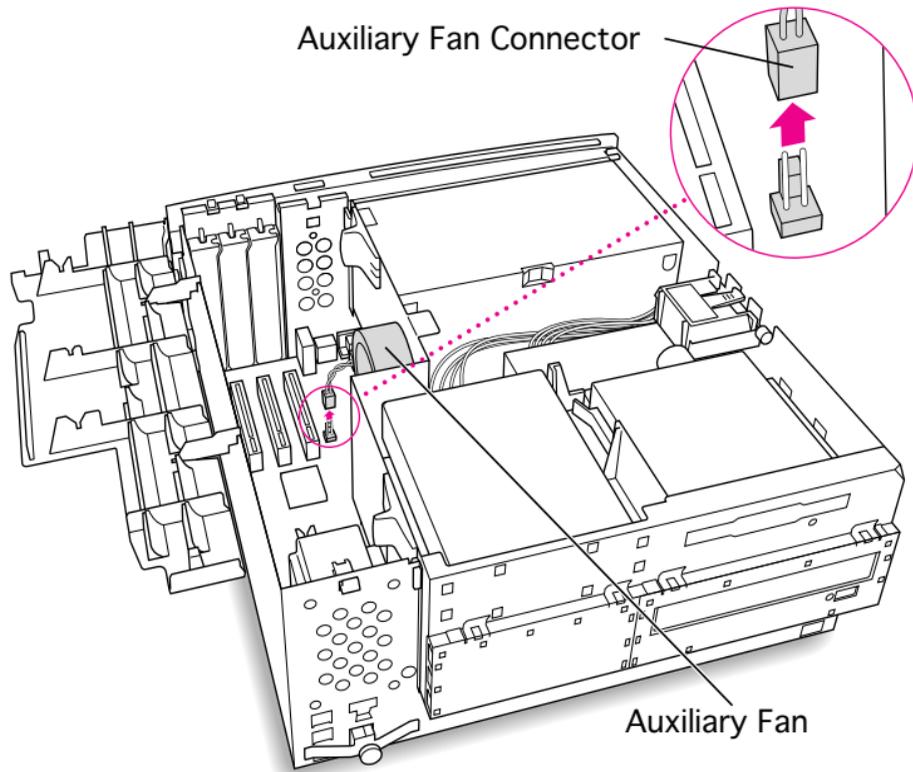
- 1 Disconnect the CD audio cable from the CD-ROM drive.





- 2 Flip open the expansion card cover.



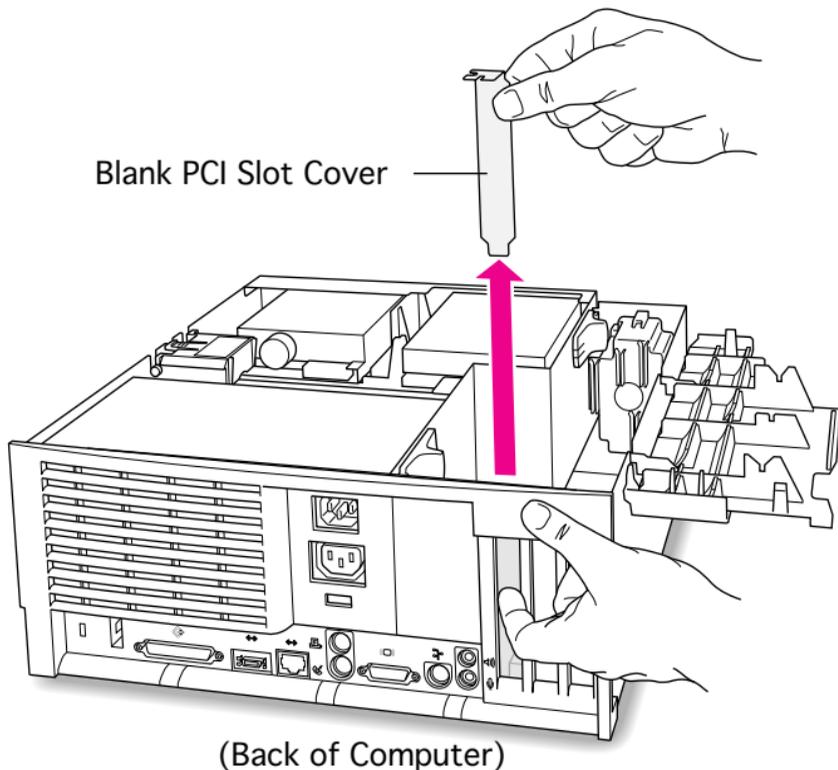


Auxiliary Fan Connector

Auxiliary Fan

- 3 Disconnect the auxiliary fan cable (if present).





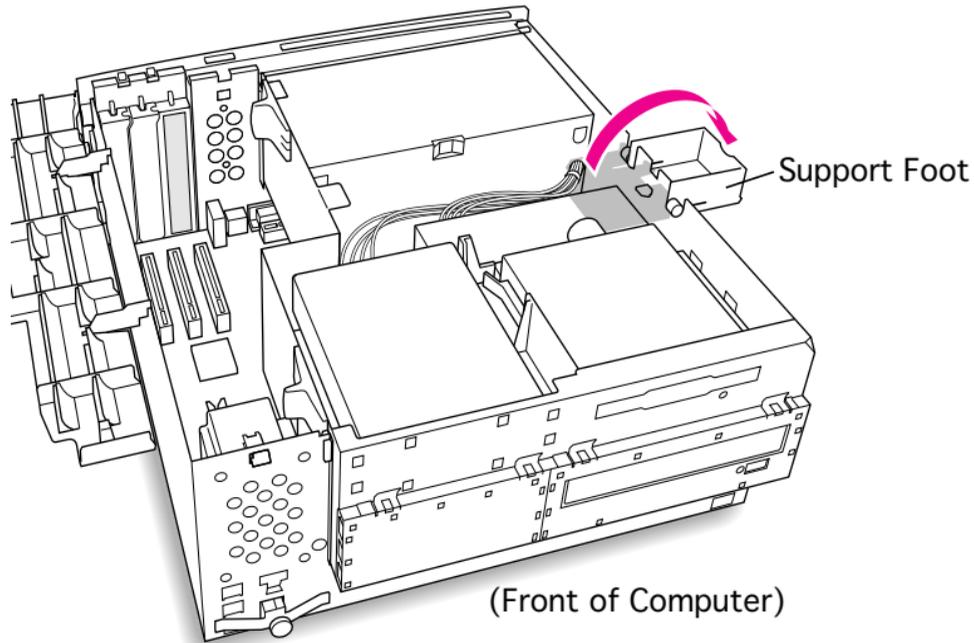
- 4 Remove the first blank PCI slot cover.

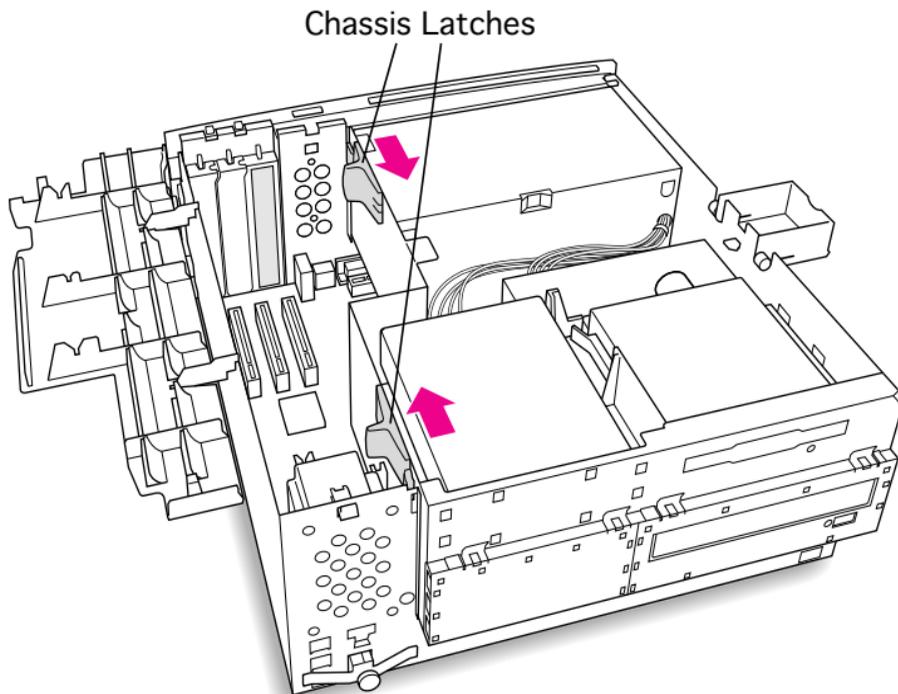
Note: It is recommended that you install the PC Compatibility Card in the first slot (the one closest to the center of the computer). But if that slot is already taken, you can install the PC Compatibility Card in another slot.





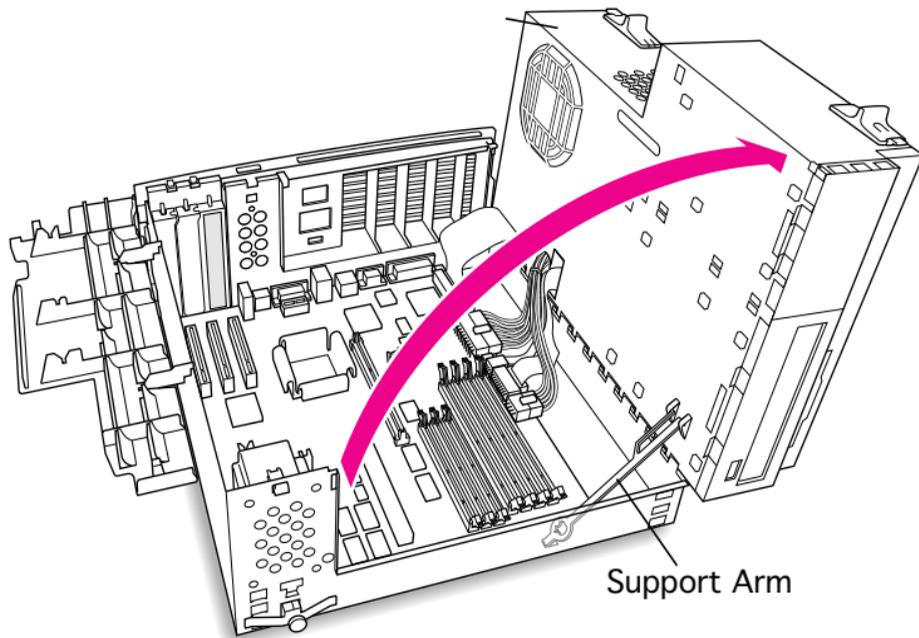
- 5 Flip open the chassis support foot.





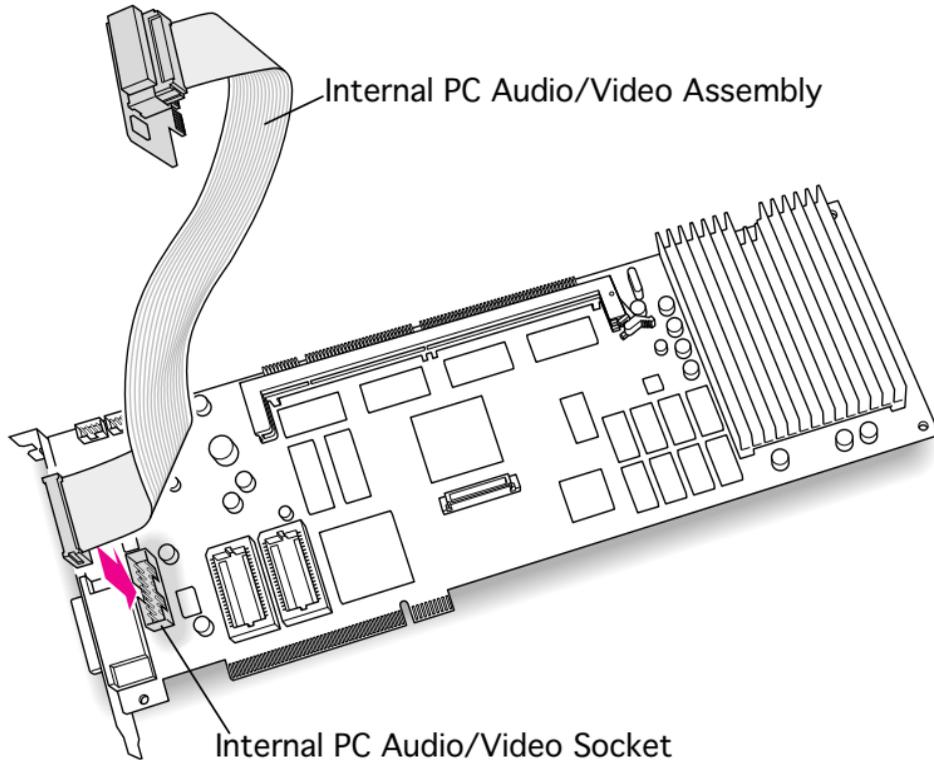
- 6 Release the chassis latches.





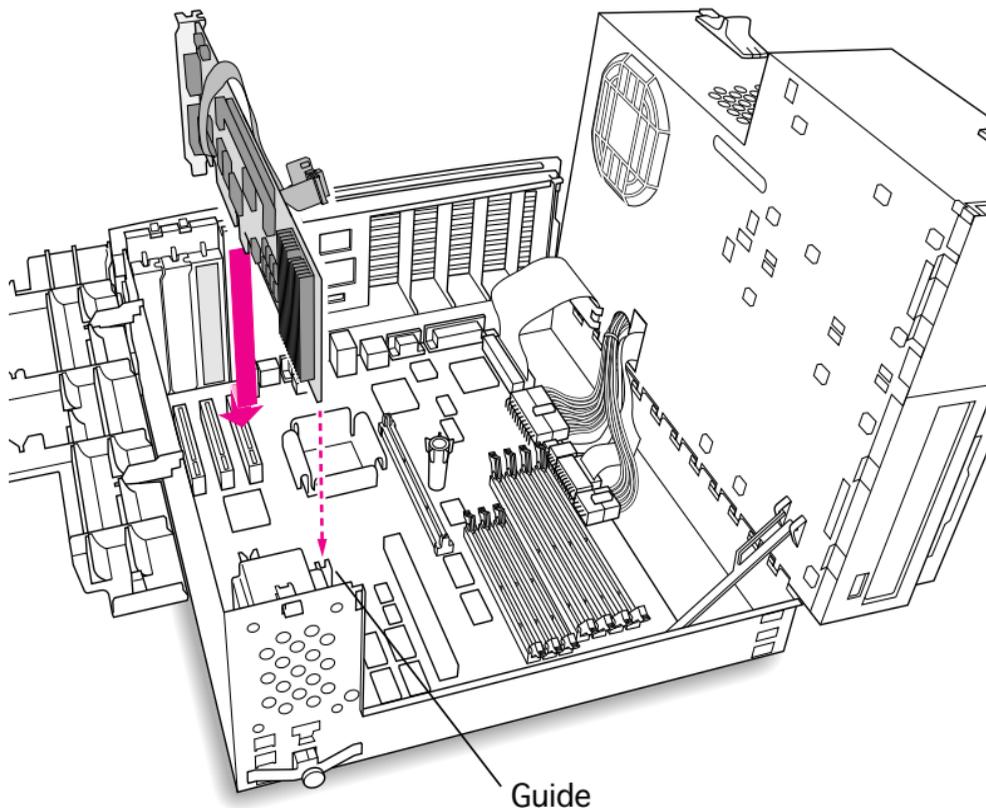
- 7 Swing open the chassis to provide access to the logic board.
- 8 Flip down the chassis support arm. Be sure the support arm engages the hole in the bottom chassis so that the arm locks into place.





- 9 Insert the small end of the PC audio/video cable assembly into the socket on the corner of the PC Compatibility Card. (You will connect the other end to the computer's logic board later.)

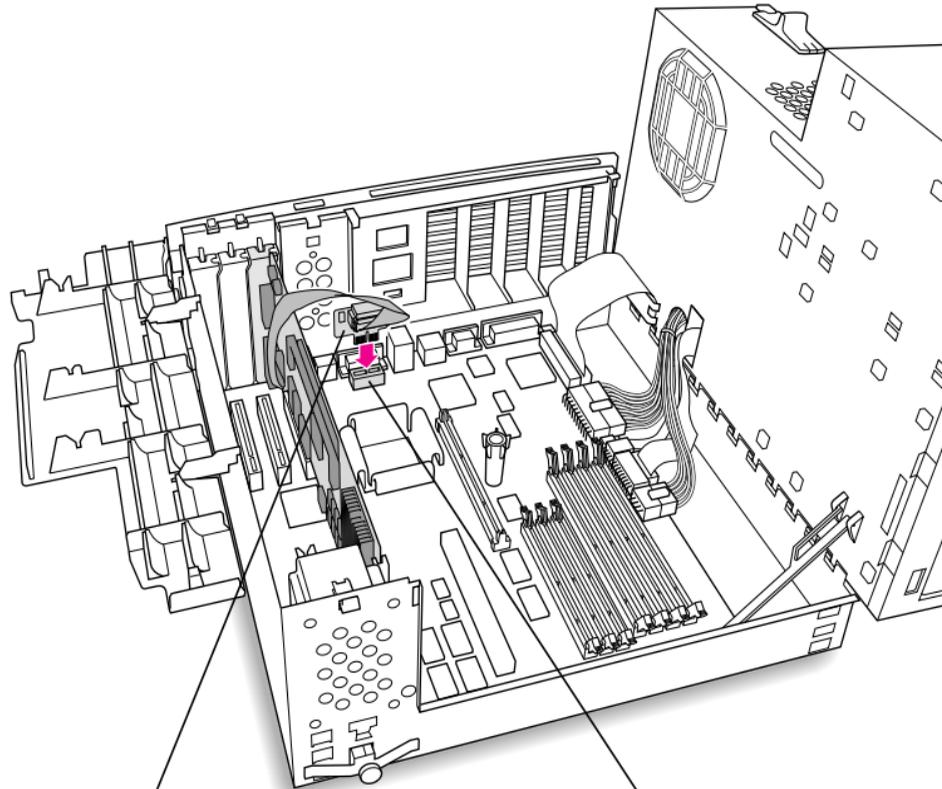




10 Insert the card into the slot whose blank PCI slot cover you removed earlier, making sure that the end of the card fits into the card guide at the front of the computer.

11 Press down firmly on the card until the connector is fully inserted. Don't force the card. If you meet a lot of resistance, pull the card out and try again.





Internal PC Audio/Video Card

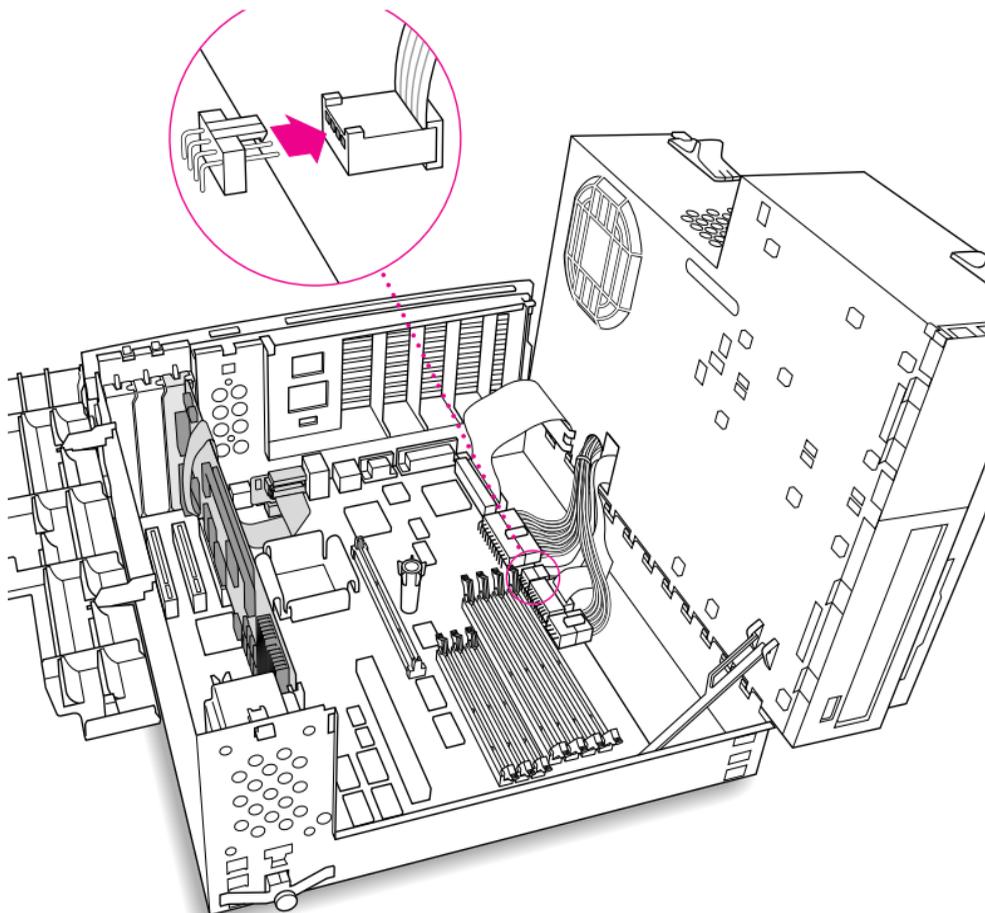
Internal PC Audio/Video Socket

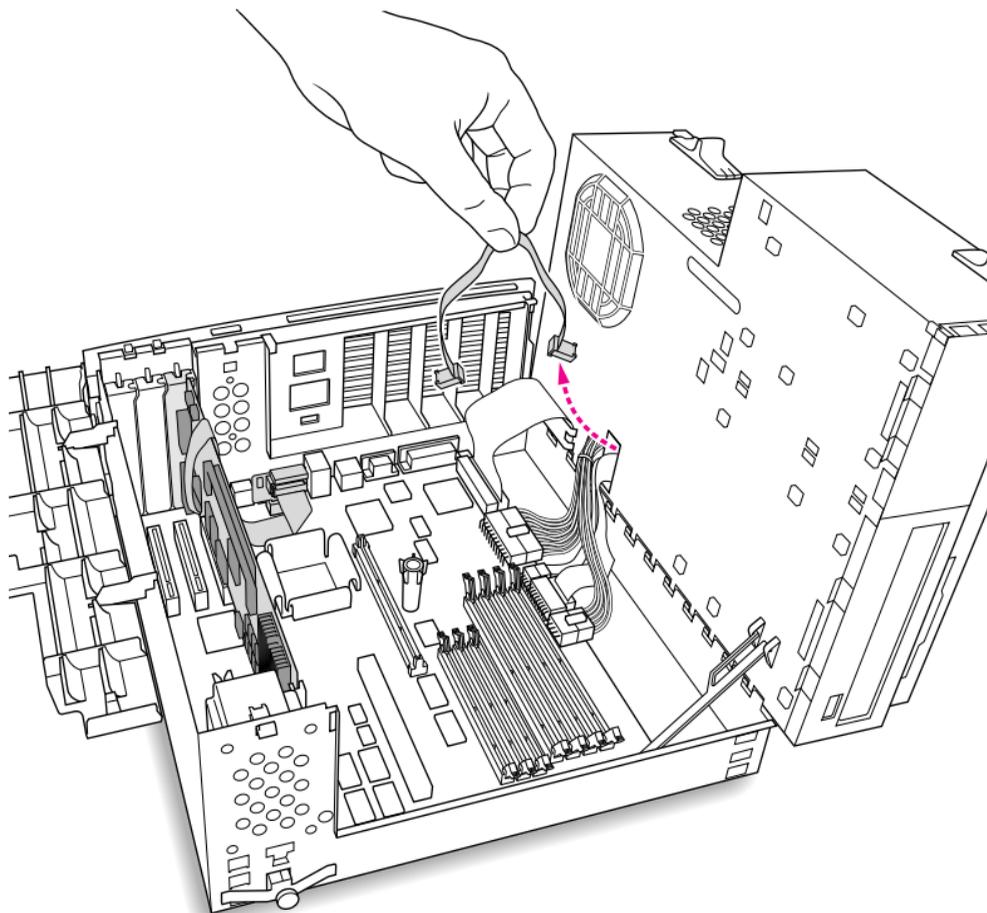
- 12 Plug the large end of the internal PC audio/video connector into the socket on the logic board.





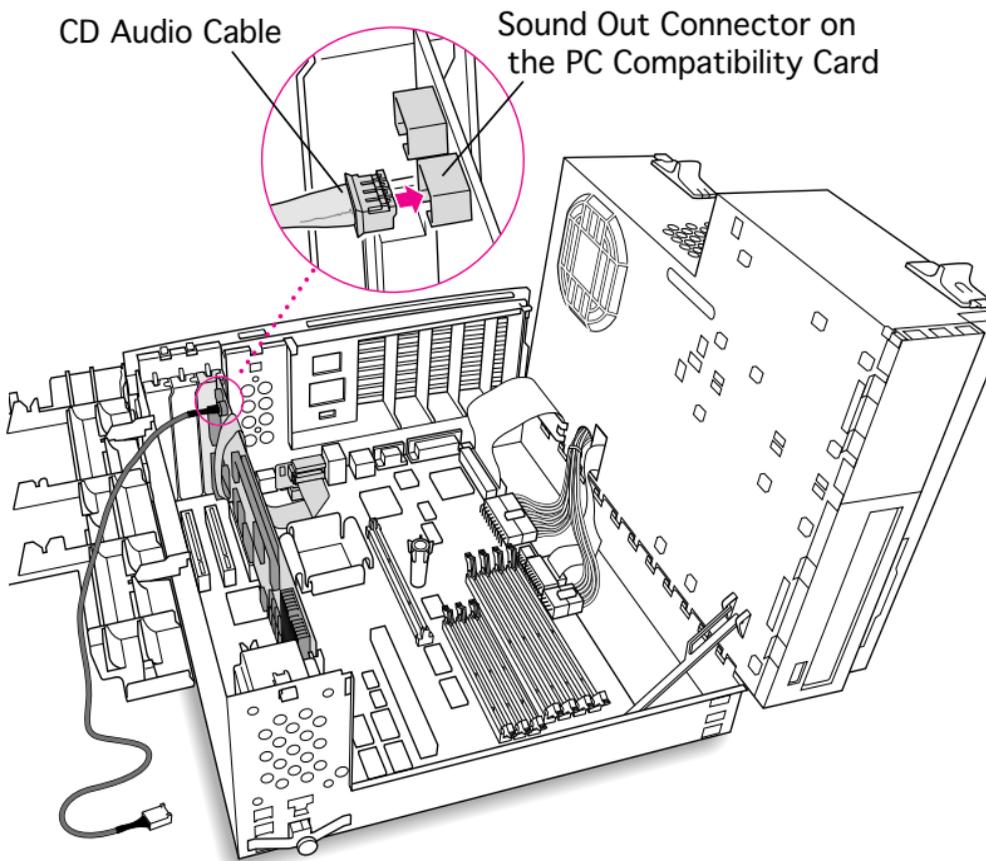
- 13 Disconnect the CD audio cable from the Sound In connector on the logic board.





14 Pull the cable through the hole in the chassis and set it aside.



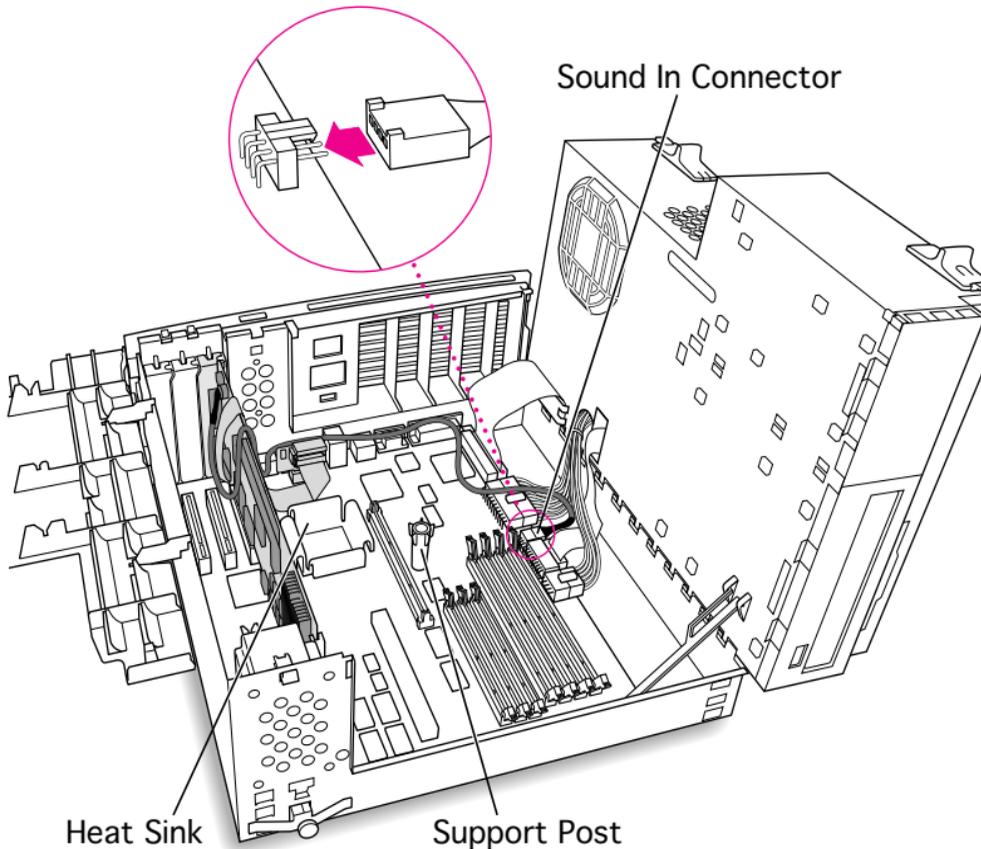


- 15 Plug one of the CD audio cables that came with the PC Compatibility Card into the Sound Out connector on the PC Compatibility Card.

Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.

Note: Two CD audio cables are included in the upgrade kit. They are different colors, but both work the same way.



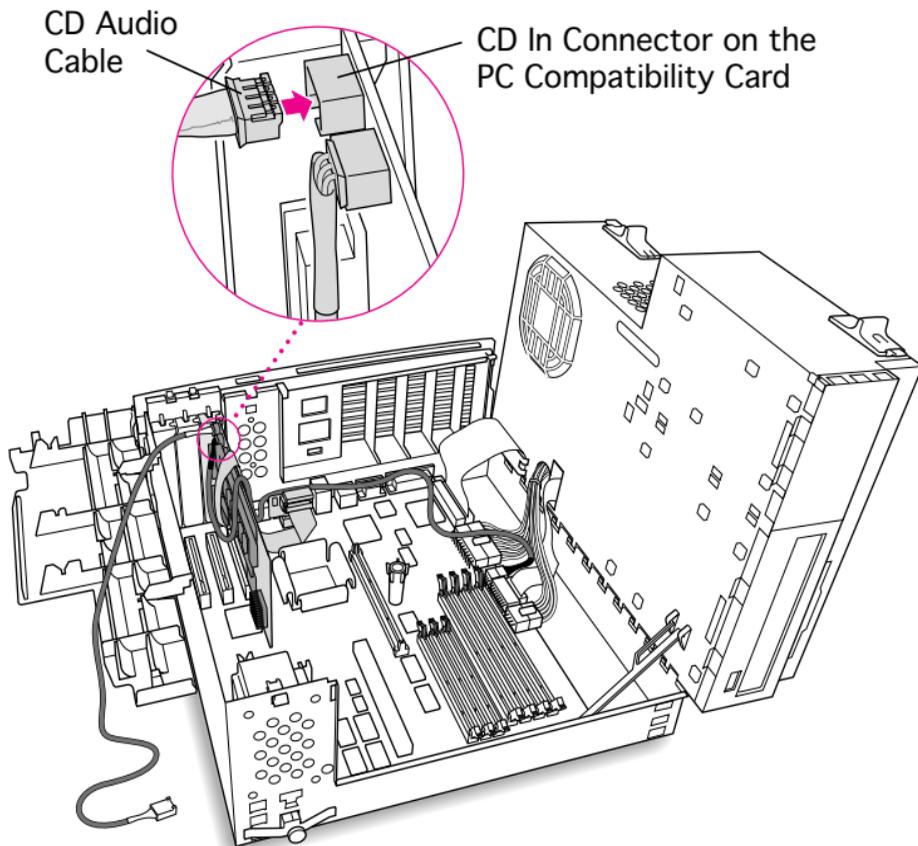


- 16 Route the cable over the top of the card and along the back edge of the computer's logic board.

Note: Keep the cable away from the heat sink and center support post.

- 17 Plug the cable into the Sound In connector on the computer's logic board.

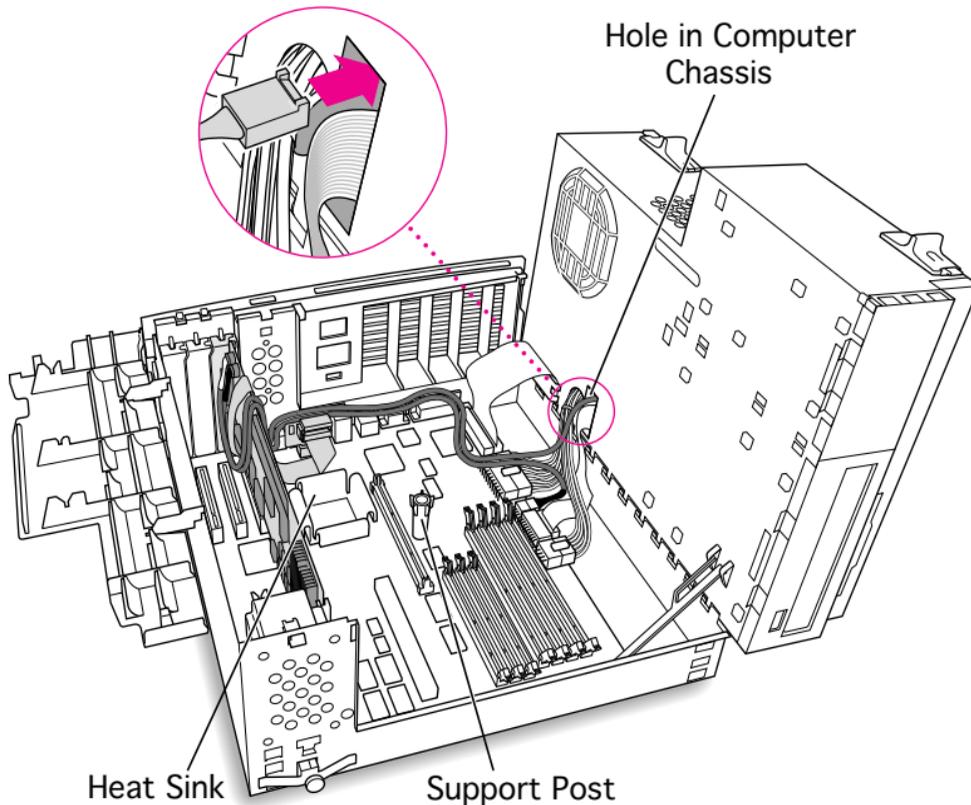




- 18 Connect the second CD audio cable to the CD In connector on the PC Compatibility card.

Note: The CD In connector is in the upper-left corner of the card.

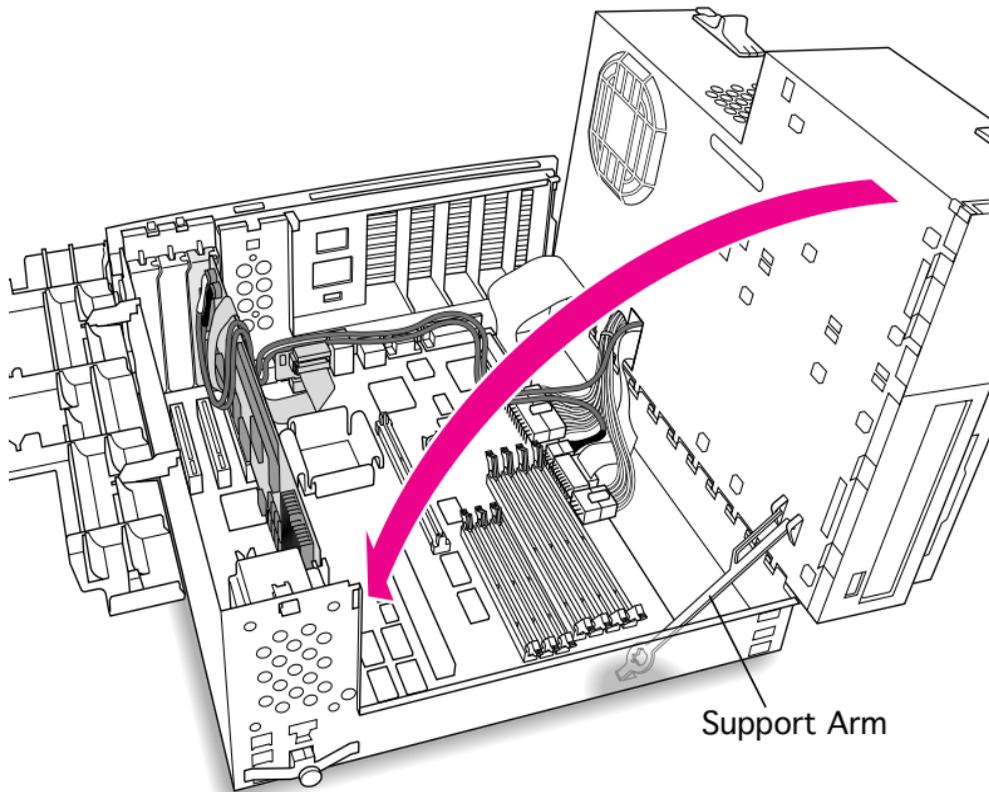




19 Route the second cable over the top of the card, along the back edge of the logic board, and through the hole in the computer's chassis.

Note: Keep the cable away from the heat sink and center support post.





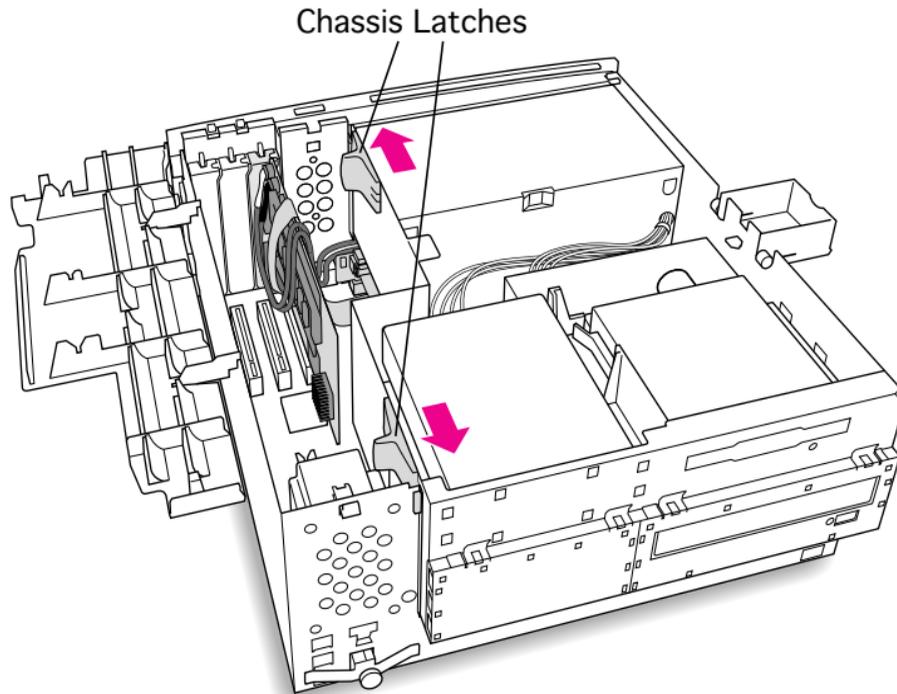
20 Disengage the support arm from the hole in the chassis bottom, and close the computer's upper chassis.

Note: Make sure you don't pinch any of the cables between the upper chassis and bottom chassis.



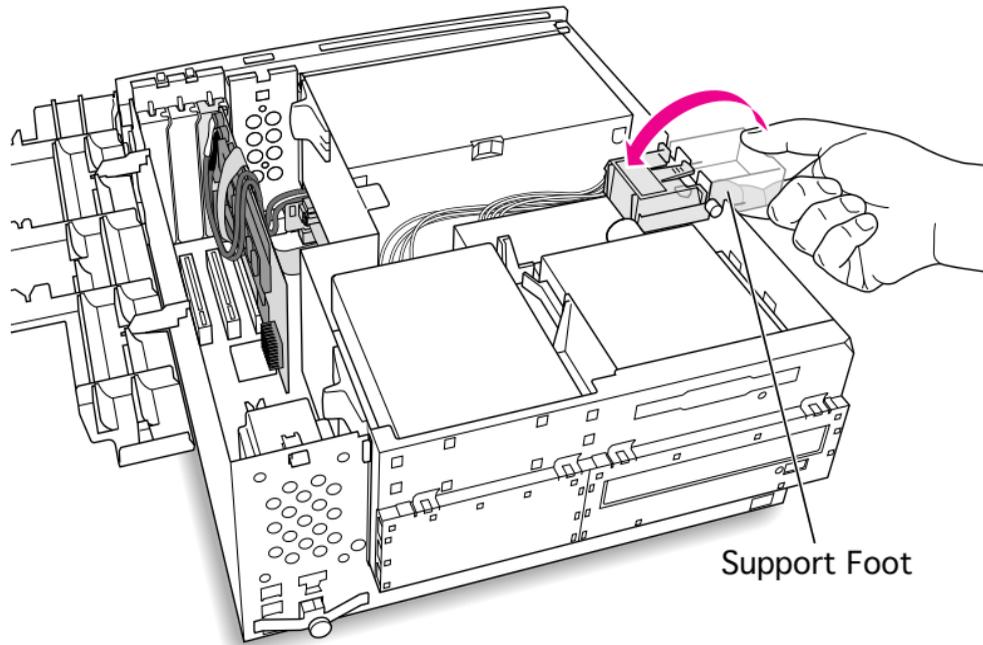


21 Lock the chassis latches.



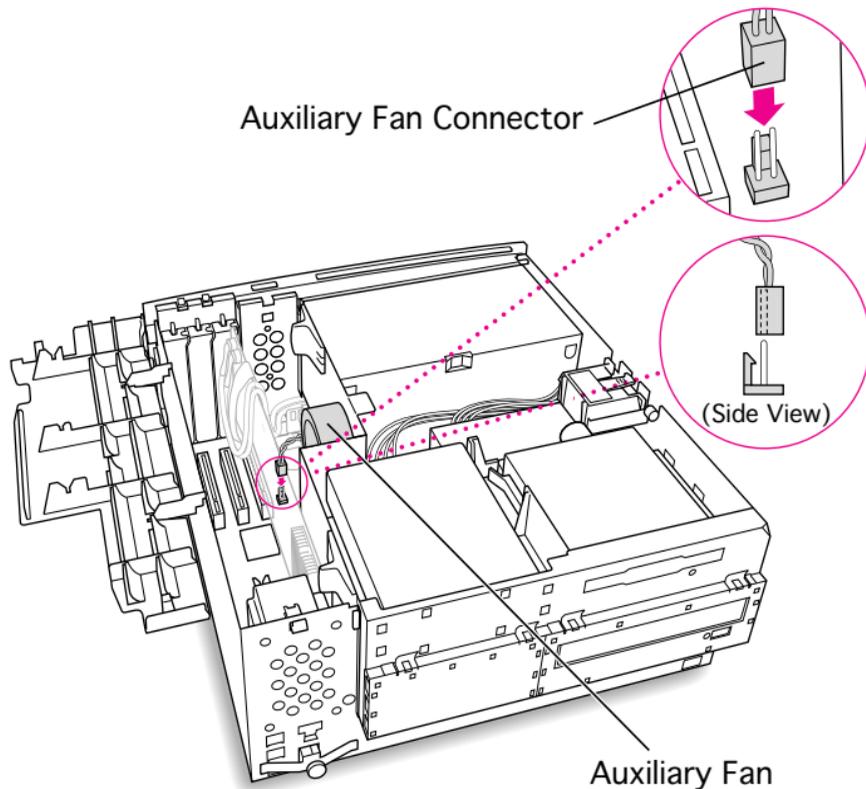


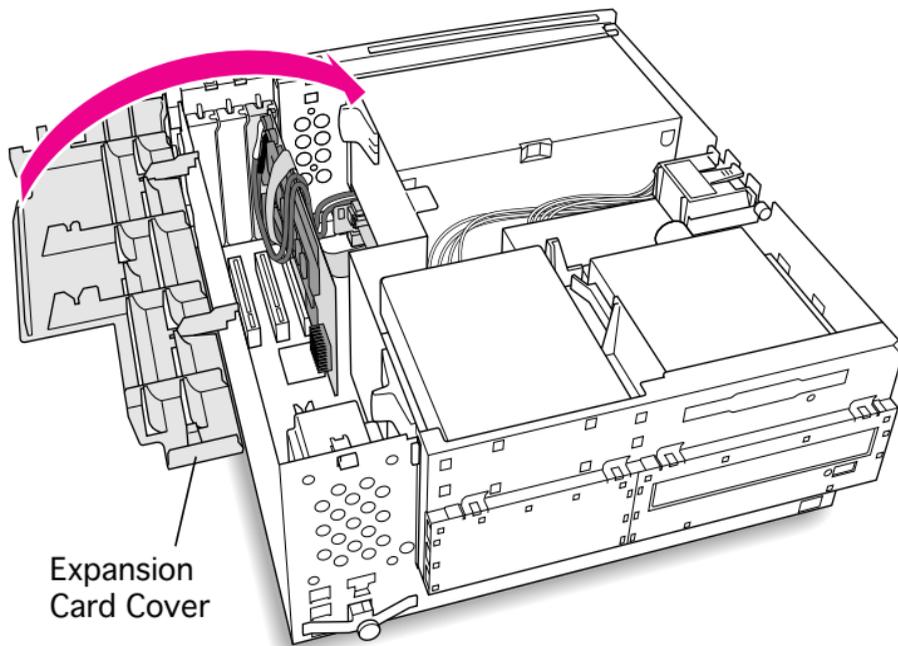
22 Replace the support foot.





23 Reconnect the auxiliary fan (if present) to the logic board.

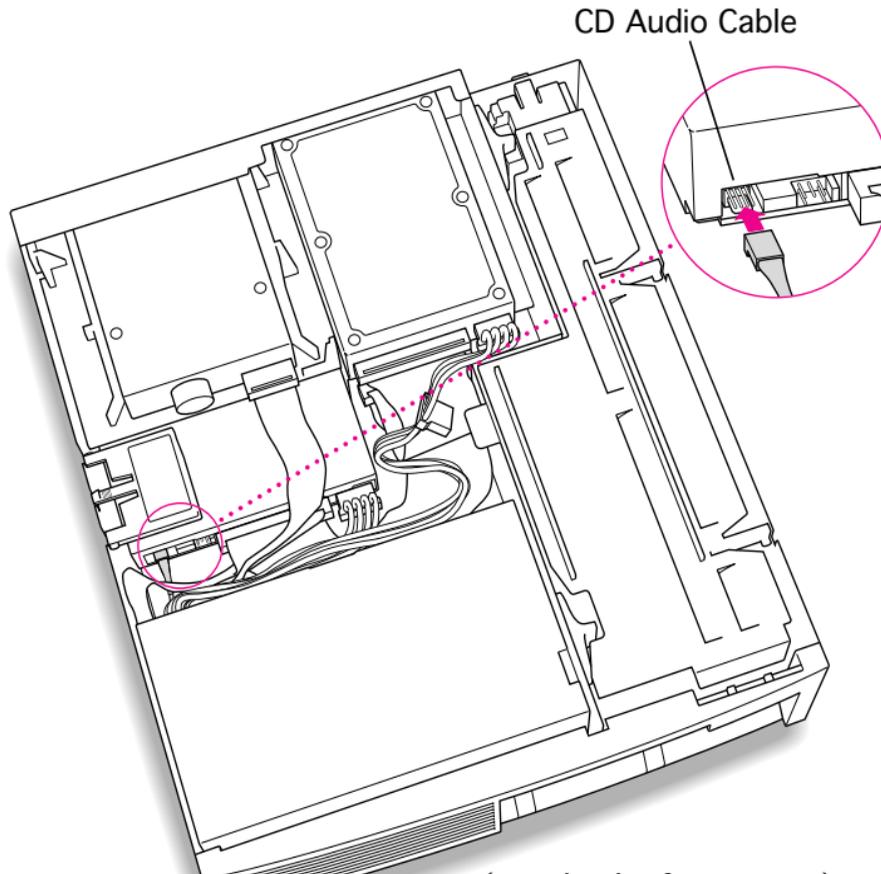




24 Flip the expansion card cover up and snap it back into place. (Be sure to snap the cover back down on both ends.)

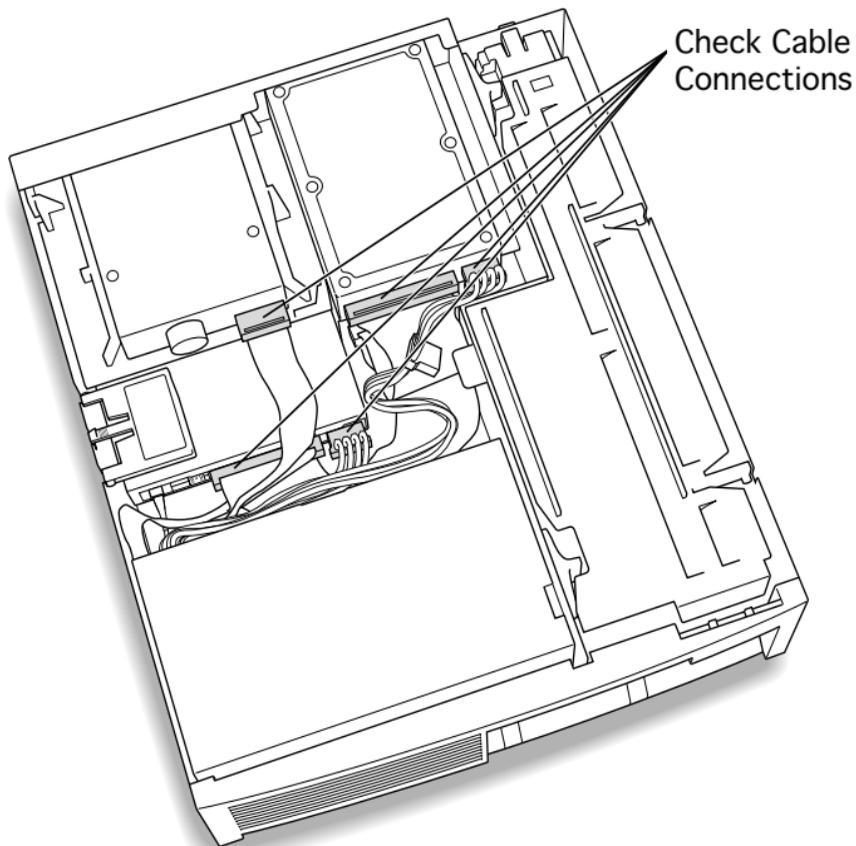
Note: If the cover doesn't snap into place easily, make sure no cables are in the way.





- 25 Connect the CD-ROM cable you threaded through the computer's chassis earlier to the Audio connector on the CD-ROM drive.





- 26 Make sure all cables and cards are firmly connected.
- 27 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



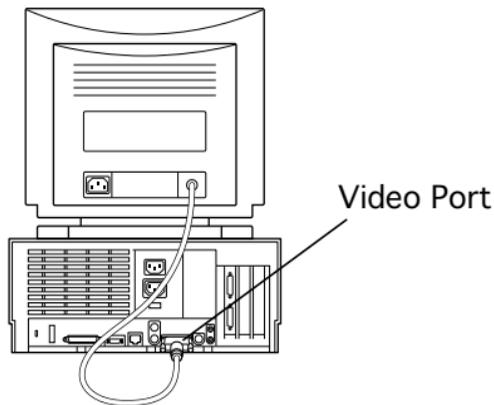


Connecting Monitors

After you have installed the 12" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

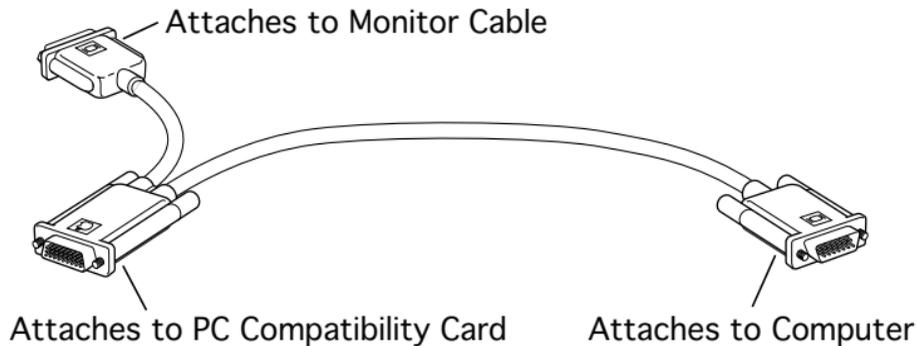




To connect a single monitor to the computer:

- 1 Connect the monitor cable to the computer's built-in video port.

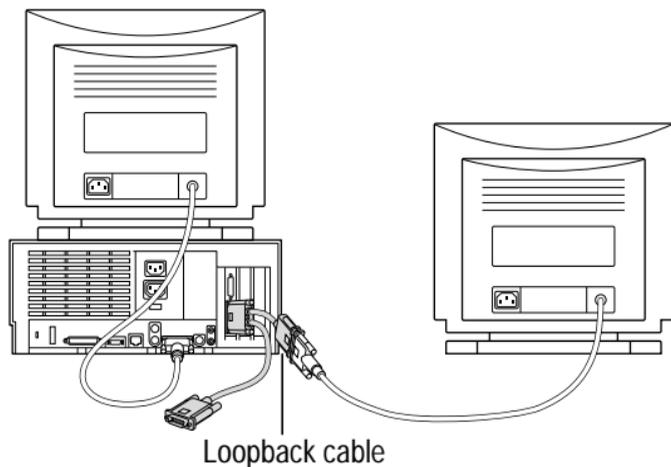




To connect a single monitor to the computer using a video card:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the port on the computer's video card.

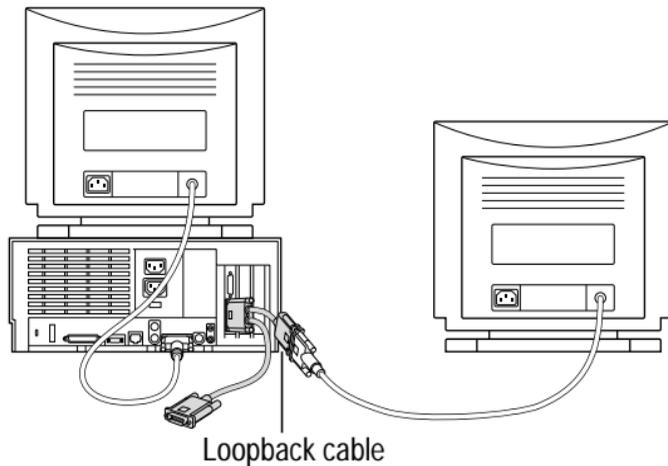




To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.





- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video card or monitor port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.

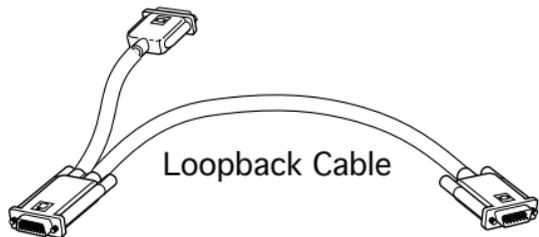




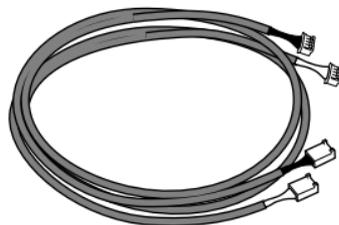
PM 7300/7500/7600

12" 100 MHz PC Card
Installation

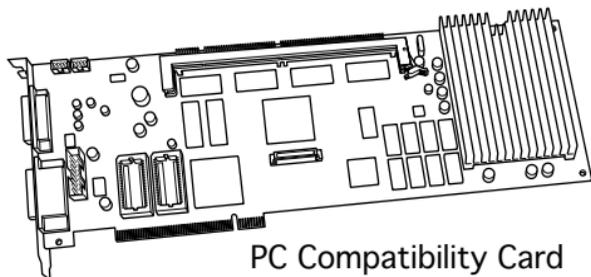




Loopback Cable



CD Audio Cables

Internal PC
Audio/Video
Assembly

PC Compatibility Card

12" 100 MHz PC CARD

The 12" PC Compatibility Card Upgrade kit includes the PC compatibility card, a loopback cable, a PC audio/video cable (not used with the Power Macintosh 7500 or 7600), and the necessary CD audio cables.

Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors. That cable does not work with the PC





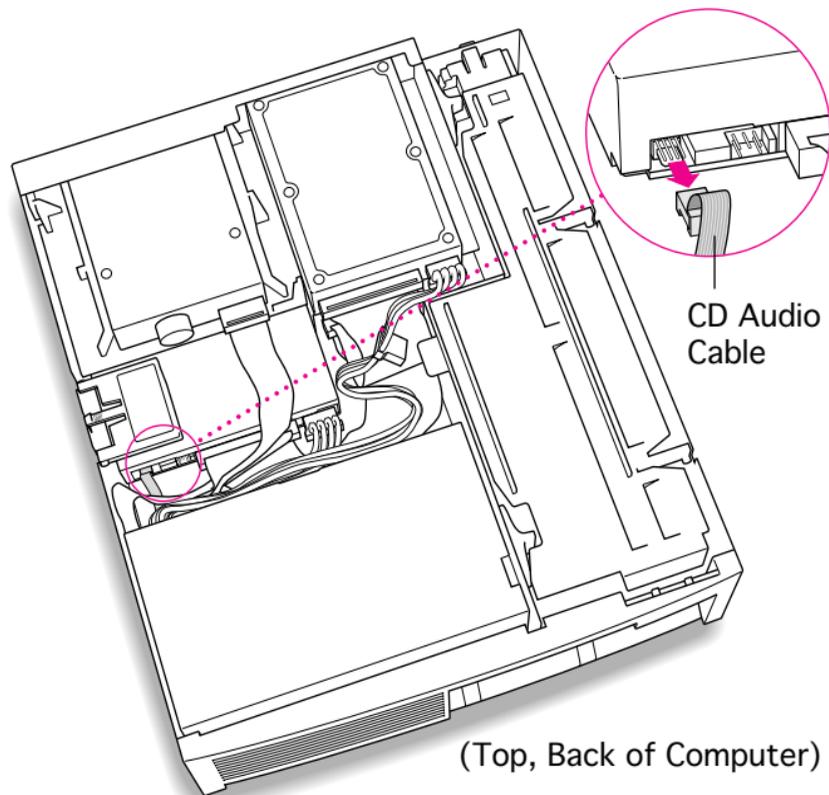
Compatibility Card.

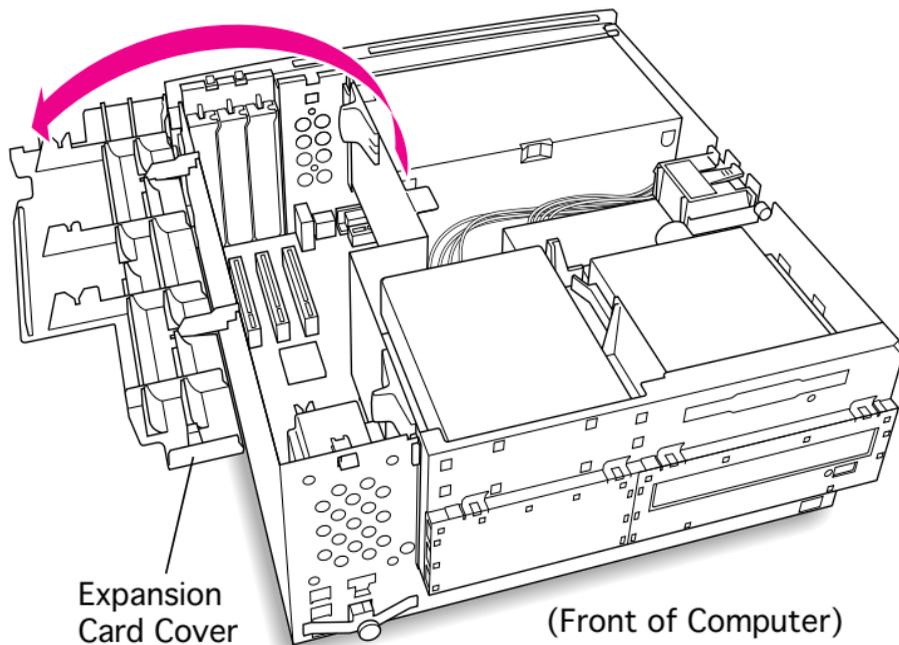




Before you begin, remove the top housing.

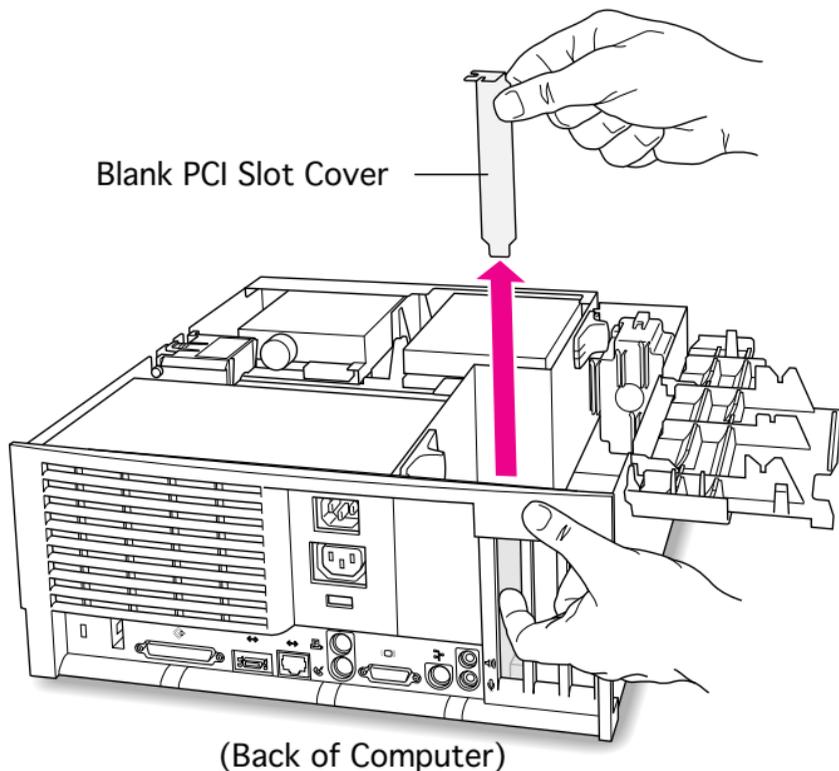
- 1 Disconnect the CD audio cable from the CD-ROM drive.





- 2 Flip open the expansion card cover.





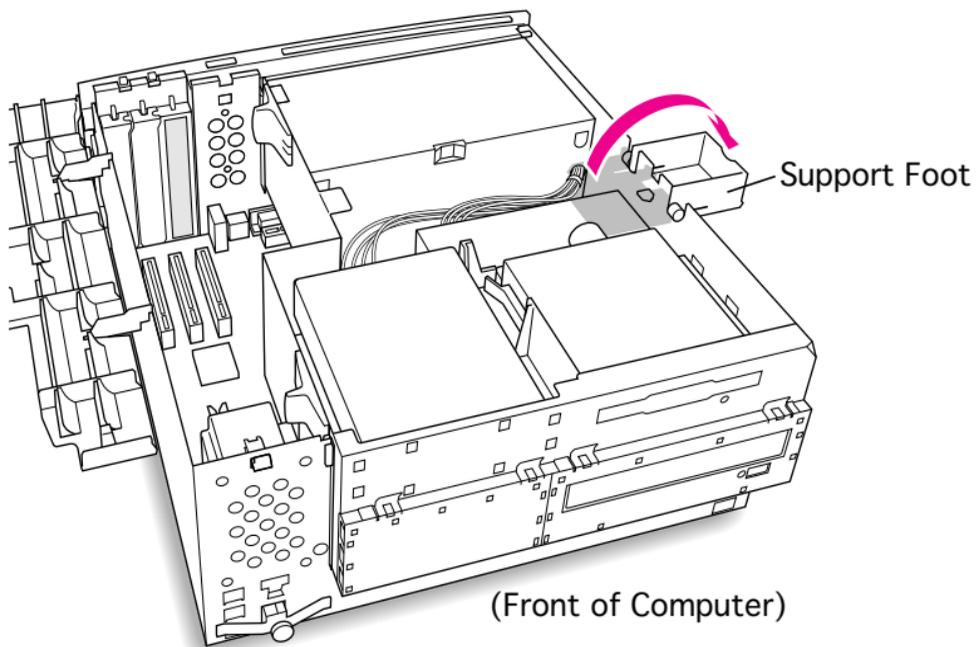
- 3 Remove the first blank PCI slot cover.

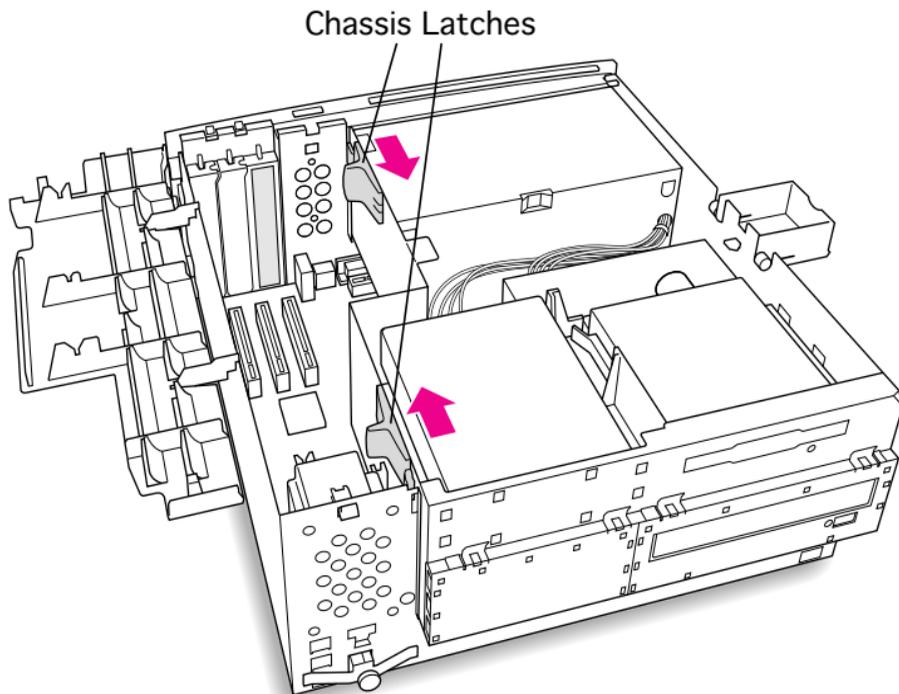
Note: It is recommended that you install the PC Compatibility Card in the first slot (the one closest to the center of the computer). But if that slot is already taken, you can install the PC Compatibility Card in another slot.





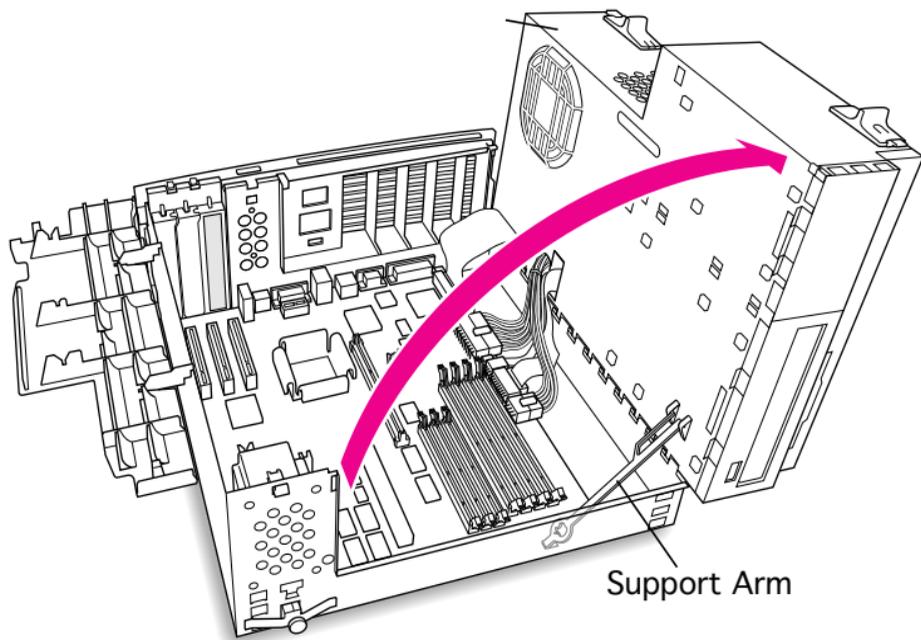
- 4 Flip open the chassis support foot.





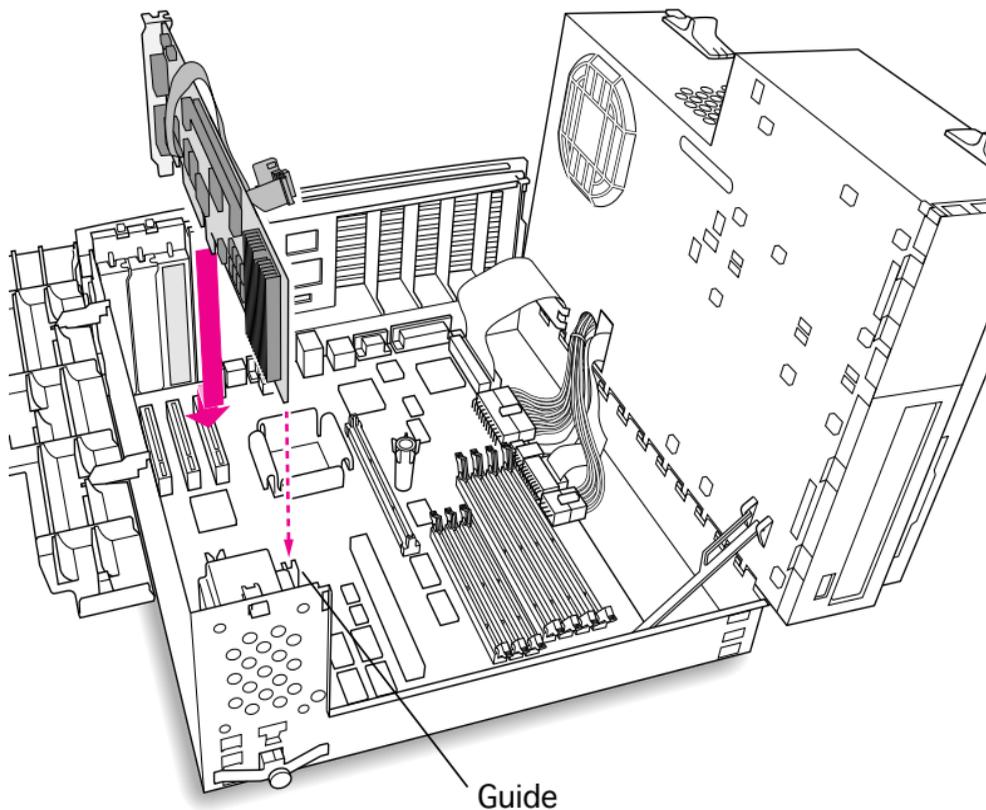
- 5 Release the chassis latches.





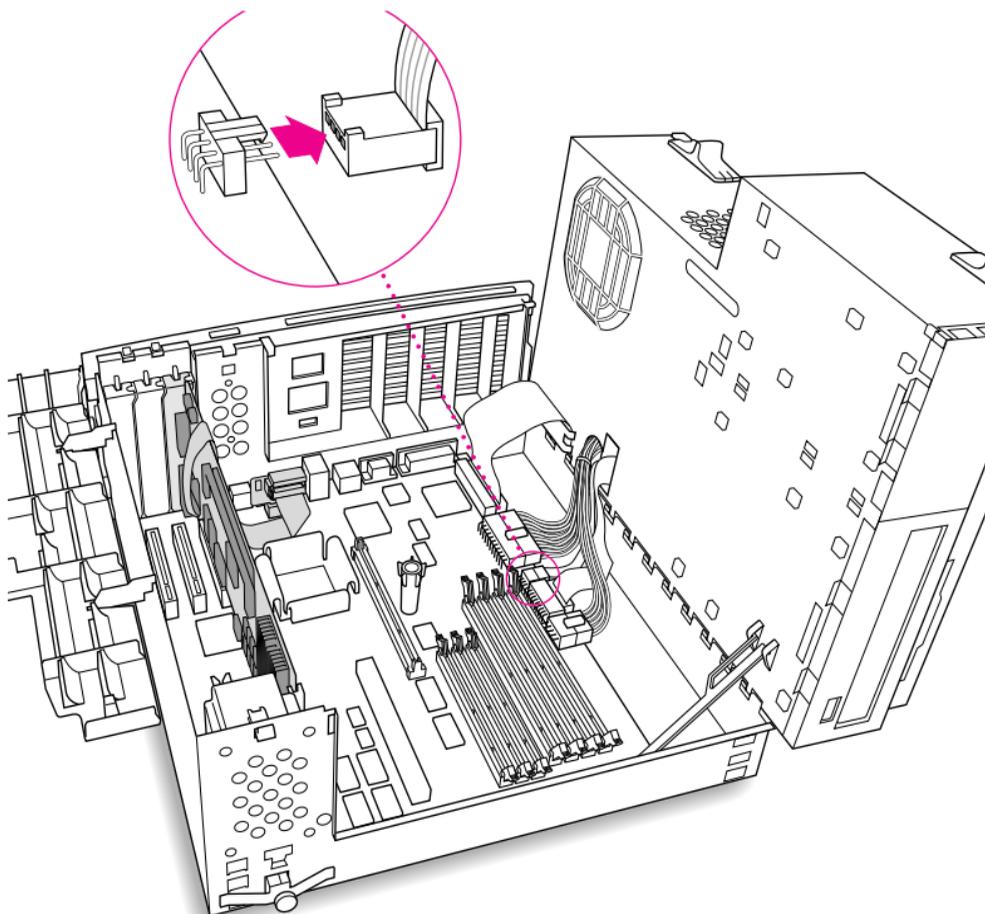
- 6 Swing open the chassis to provide access to the logic board.
- 7 Flip down the chassis support arm. Be sure the support arm engages the hole in the bottom chassis so that the arm locks into place.





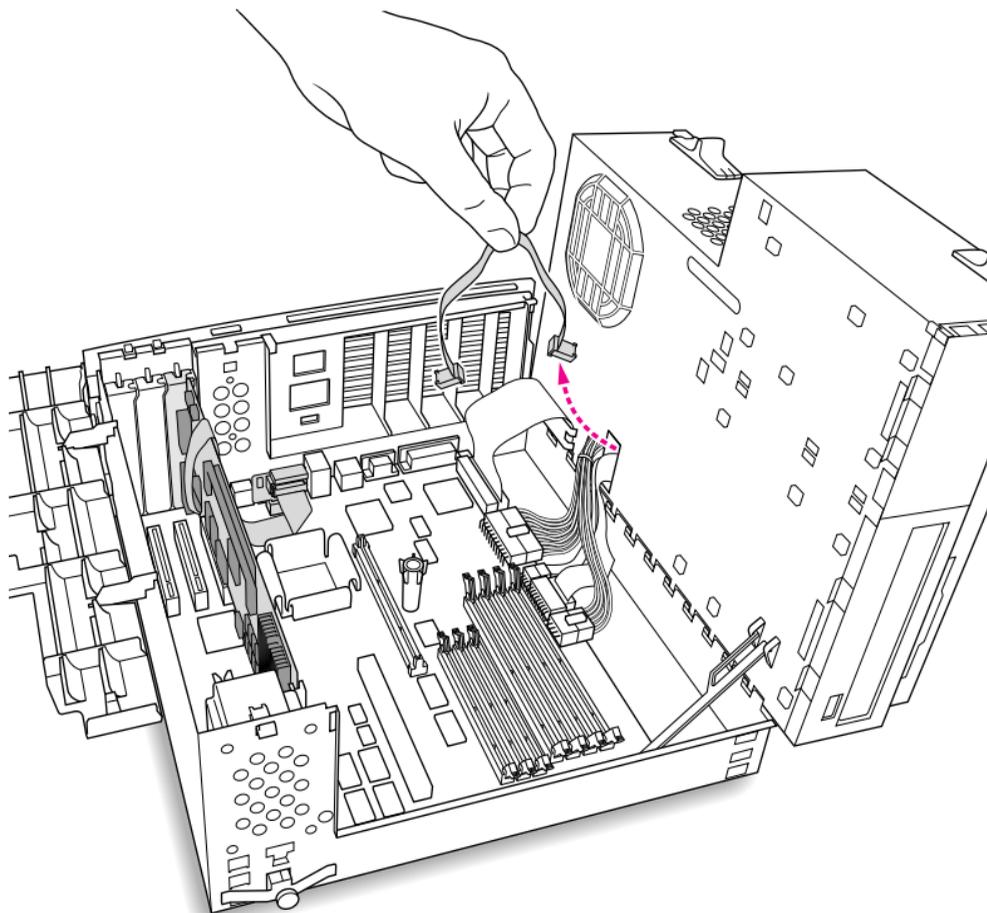
- 8 Insert the card into the slot whose blank PCI slot cover you removed earlier, making sure that the end of the card fits into the card guide at the front of the computer.
- 9 Press down firmly on the card until the connector is fully inserted. Don't force the card. If you meet a lot of resistance, pull the card out and try again.





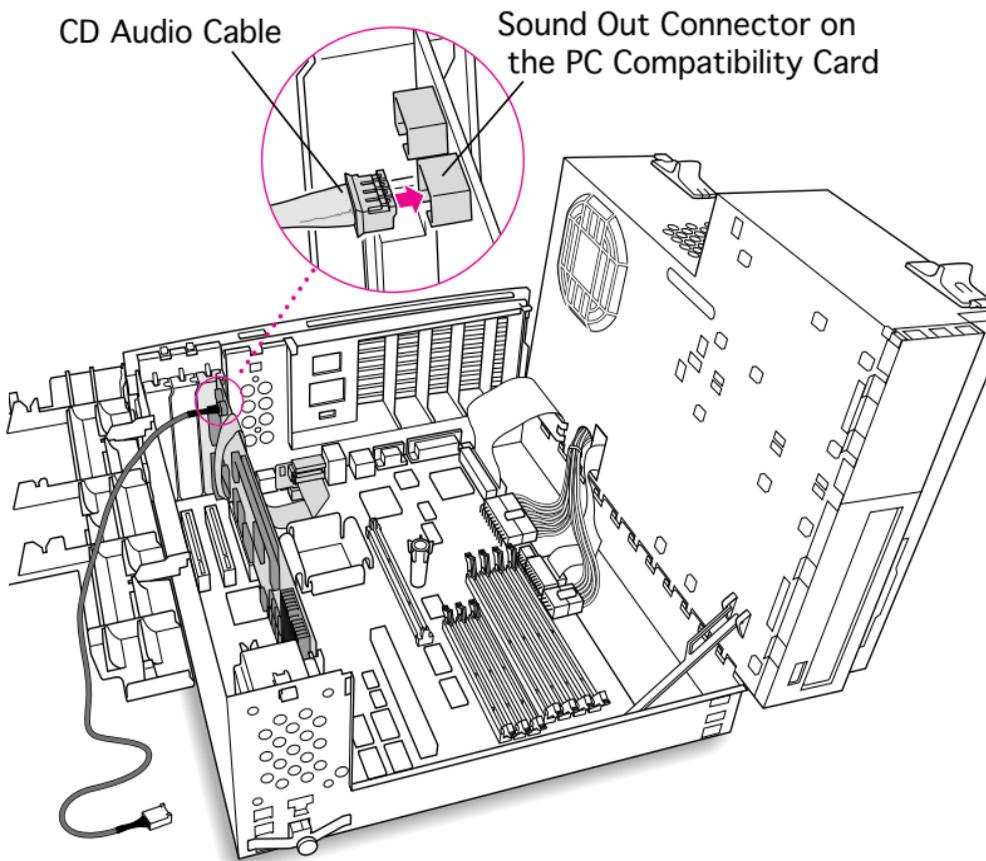
10 Disconnect the CD audio cable from the Sound In connector on the logic board.





- 11 Pull the cable through the hole in the chassis and set it aside.



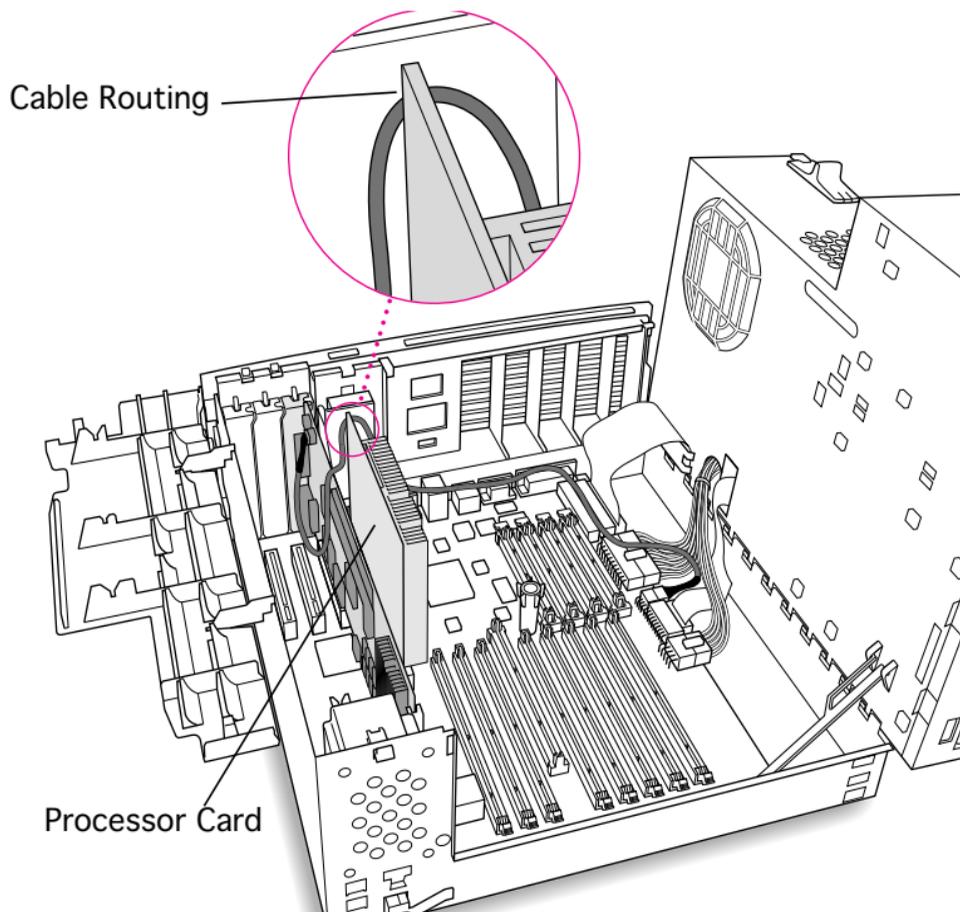


- 12 Plug one of the CD audio cables that came with the PC Compatibility Card into the Sound Out connector on the PC Compatibility Card.

Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.

Note: Two CD audio cables are included in the upgrade kit. They are different colors, but both work the same way.





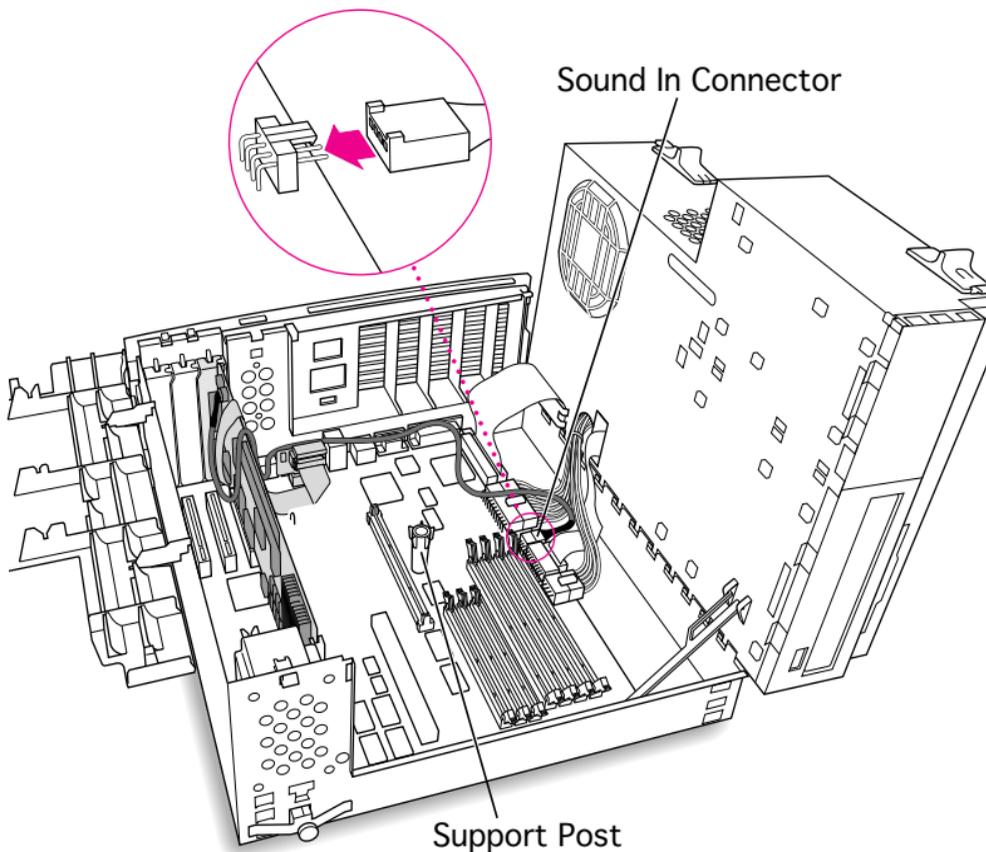
- 13 Route the cable over the top of the PC Compatibility card and between the processor card and the computer's rear panel (not over the top of the processor card). Run the cable along the back edge of the computer's logic board.

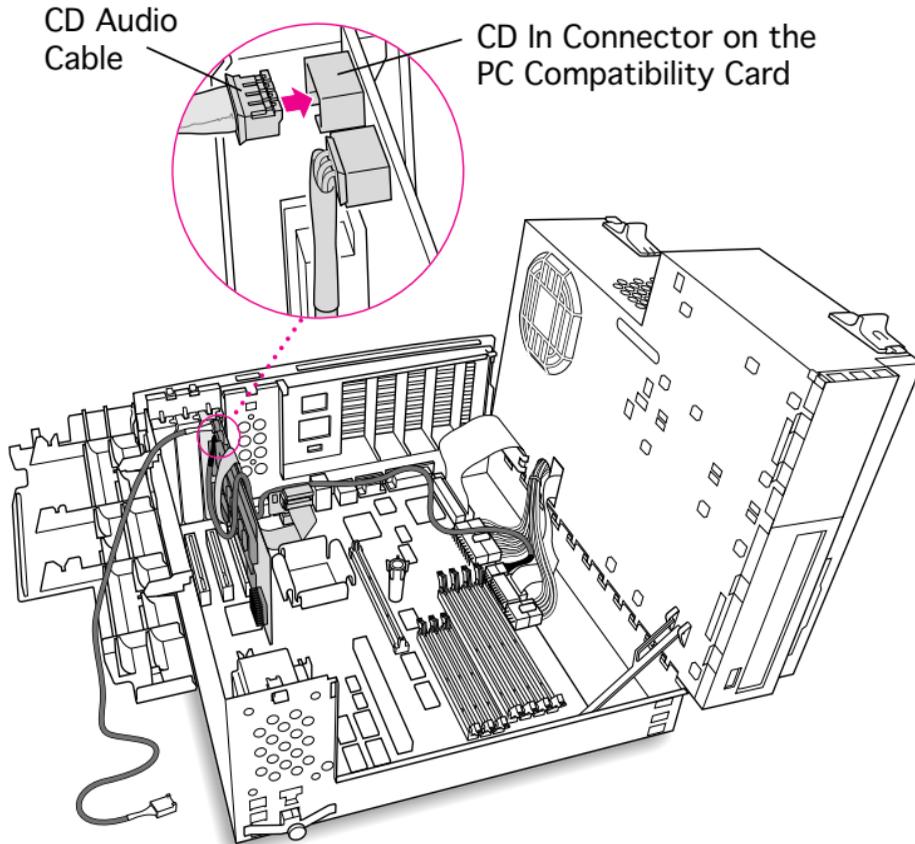
Note: Keep the cable away from the center support post.





- 14 Plug the cable into the Sound In connector on the computer's logic board.

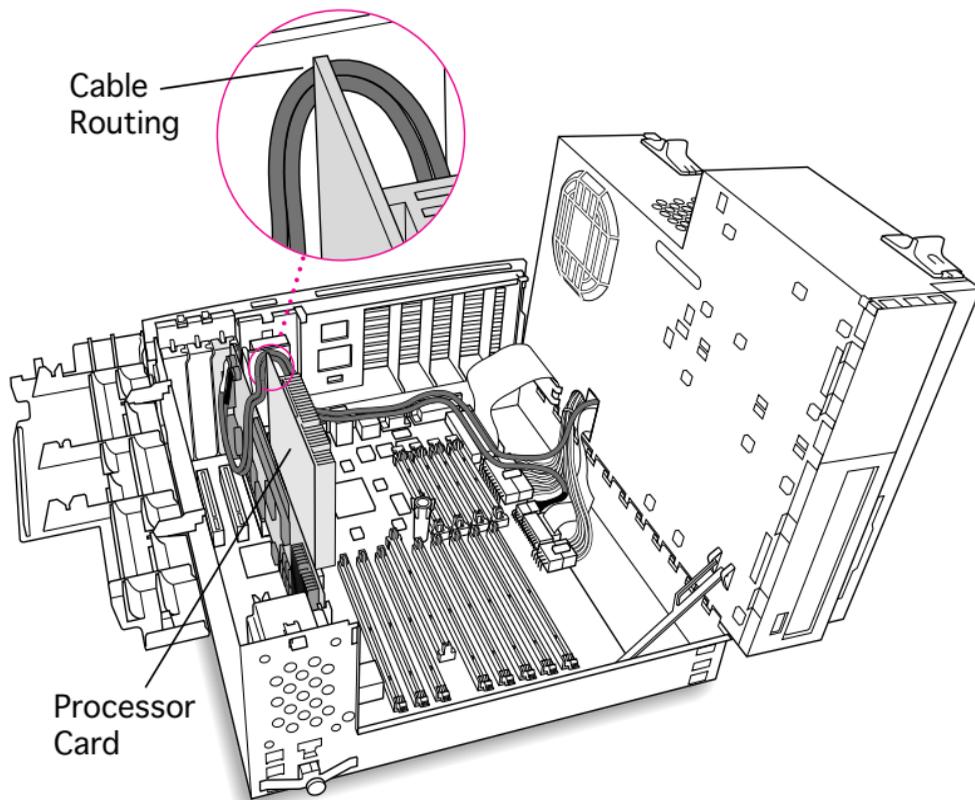




- 15 Connect the second CD audio cable to the CD In connector on the PC Compatibility card.

Note: The CD In connector is in the upper-left corner of the card.





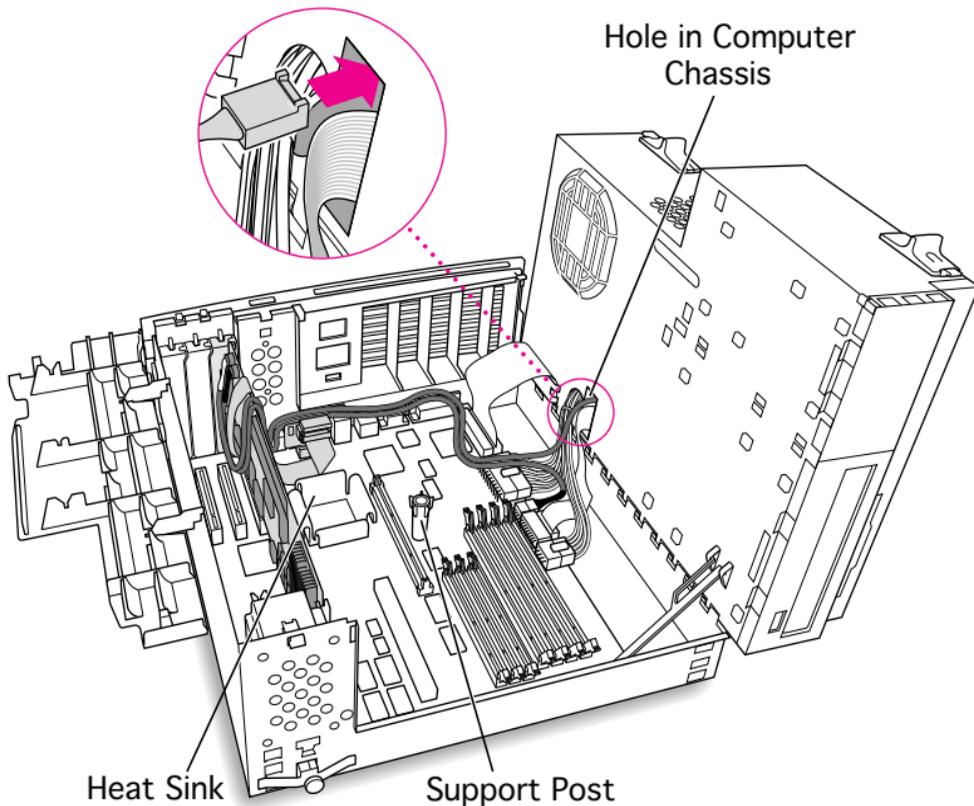
16 Route the second cable over the top of the PC Compatibility card and between the processor card and the computer's rear (not over the top of the processor card). Run the cable along the back edge of the logic board.

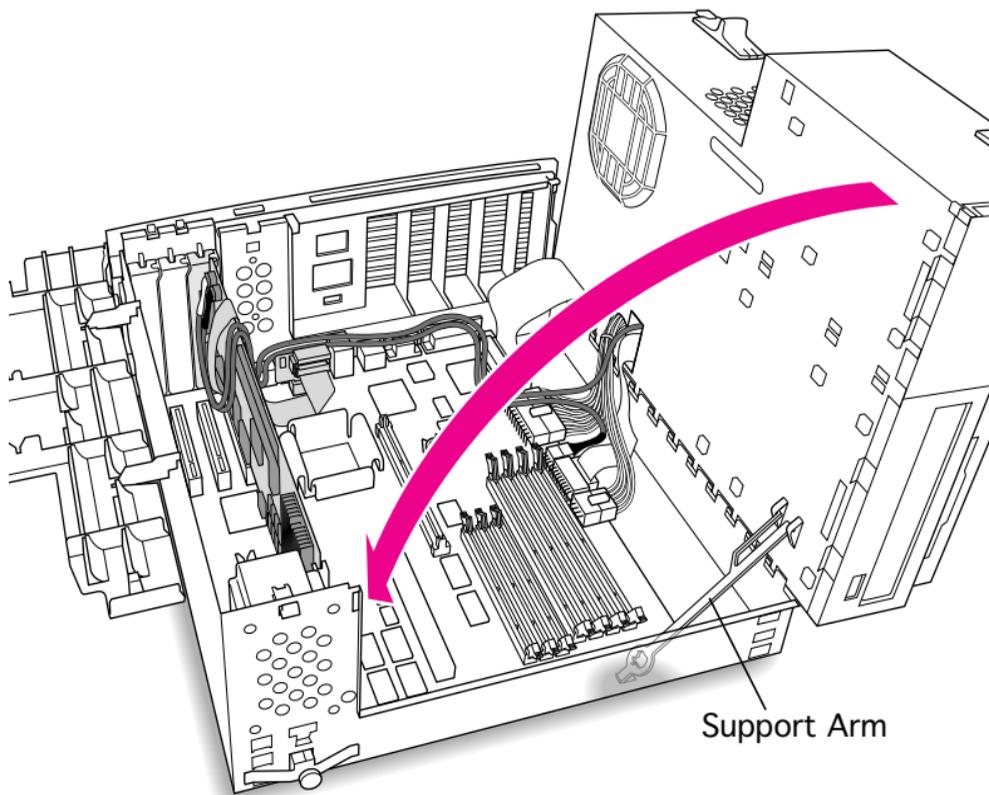
Note: Keep the cable away from the center support post.





17 Route the second cable through the hole in the computer's chassis.





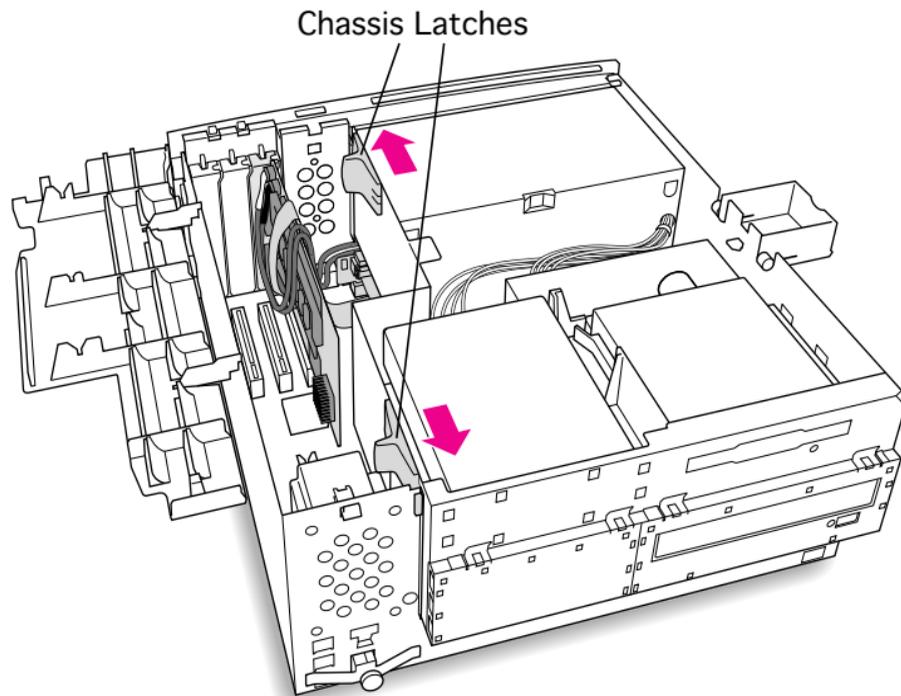
18 Disengage the support arm from the hole in the chassis bottom, and close the computer's upper chassis.

Note: Make sure you don't pinch any of the cables between the upper chassis and bottom chassis.



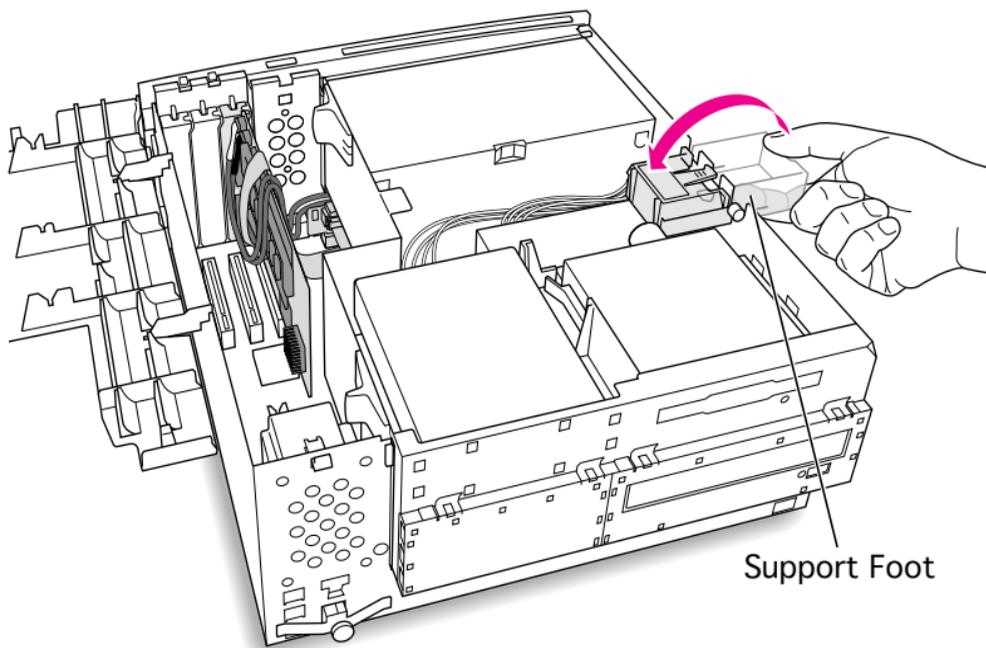


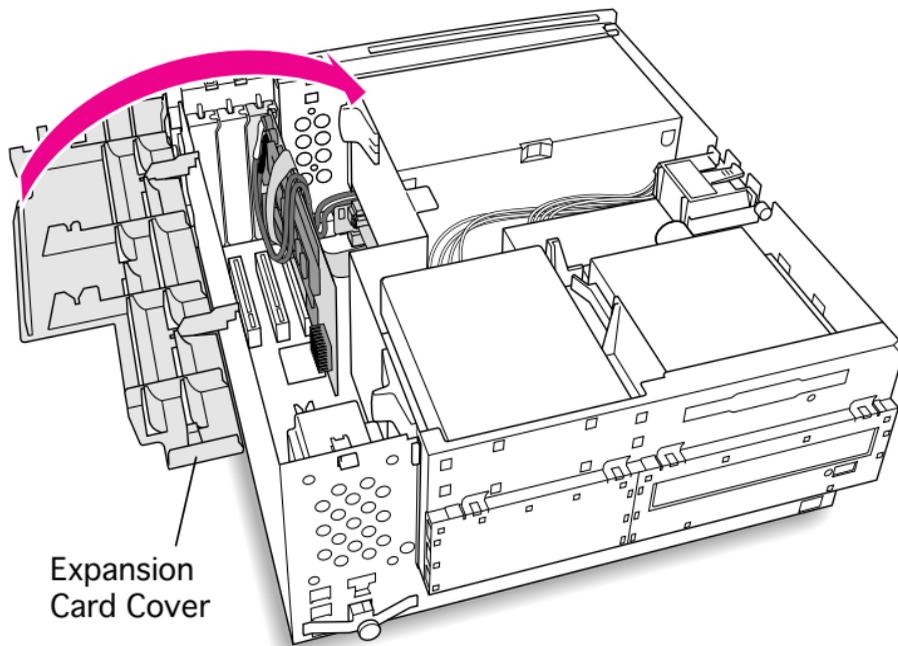
19 Lock the chassis latches.





20 Replace the support foot.

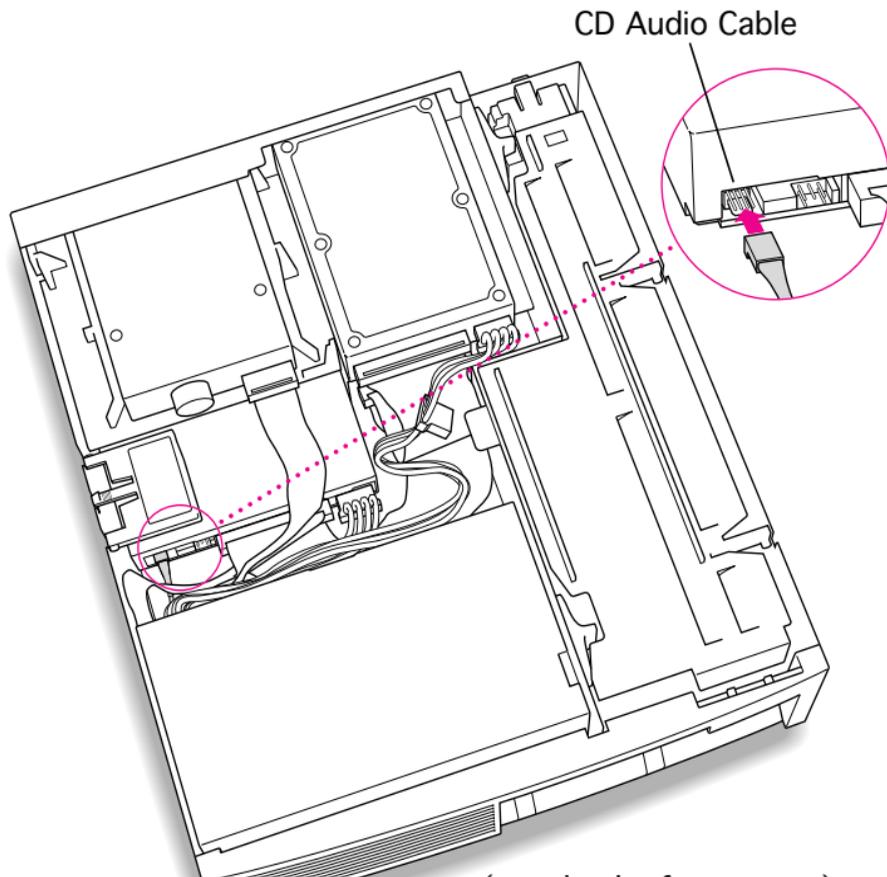




- 21 Flip the expansion card cover up and snap it back into place. (Be sure to snap the cover back down on both ends.)

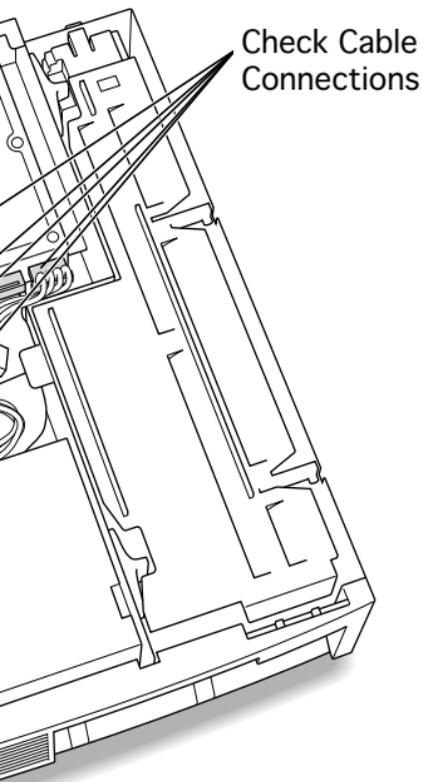
Note: If the cover doesn't snap into place easily, make sure no cables are in the way.





- 22 Connect the CD-ROM cable you threaded through the computer's chassis earlier to the Audio connector on the CD-ROM drive.





Check Cable
Connections

- 23 Make sure all cables and cards are firmly connected.
- 24 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



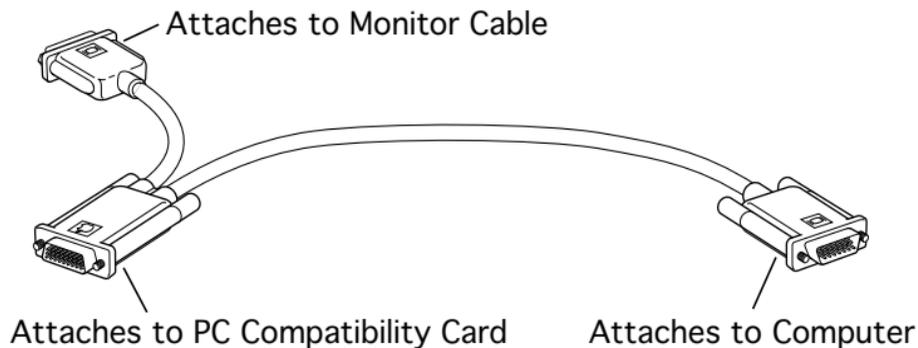


Connecting Monitors

After you have installed the 12" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

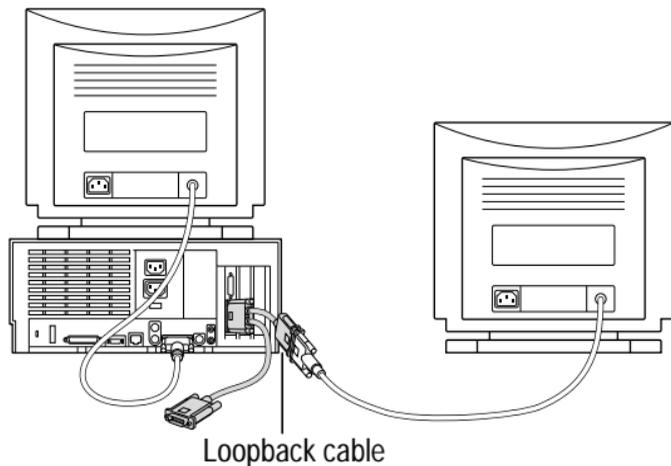




To connect a single monitor to the computer:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the computer's monitor port or video card.





To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.

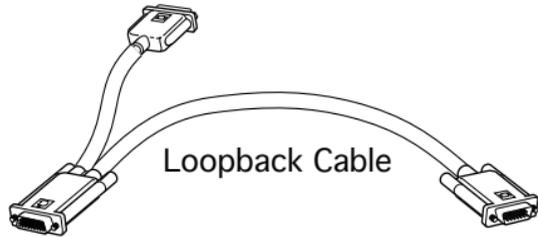




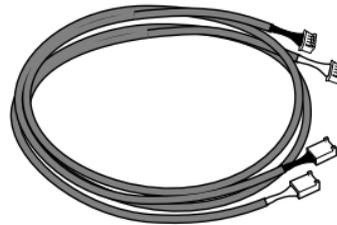
PM 8500 Series

12" 100 MHz PC Card
Installation





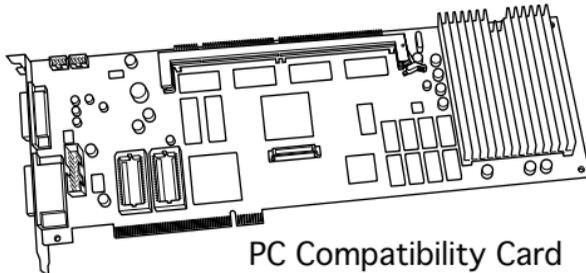
Loopback Cable



CD Audio Cables



Internal PC
Audio/Video
Assembly



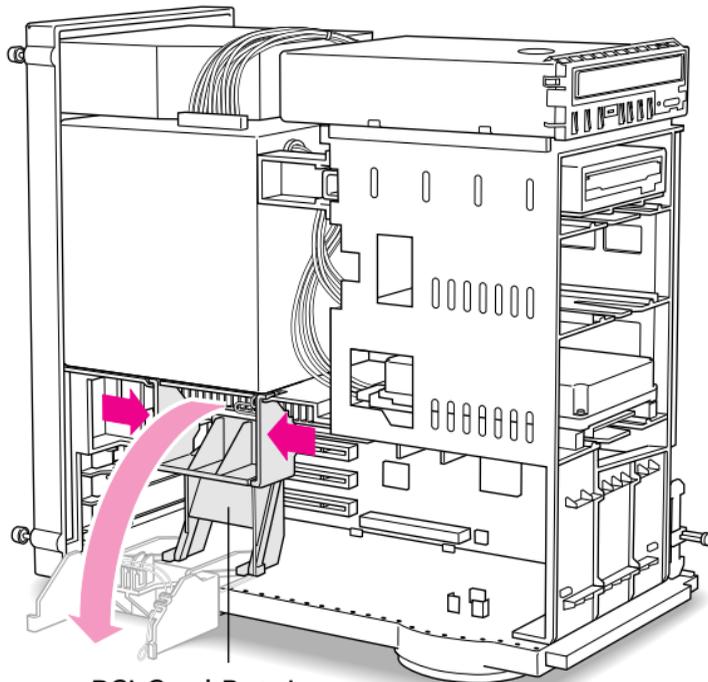
PC Compatibility Card

12" 100 MHz PC CARD

The 12" PC Compatibility Card Upgrade kit includes the PC compatibility card, a loopback cable, a PC audio/video cable (not used with the Power Macintosh 8500), and the necessary CD audio cables.

Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors. That cable does not work with the PC





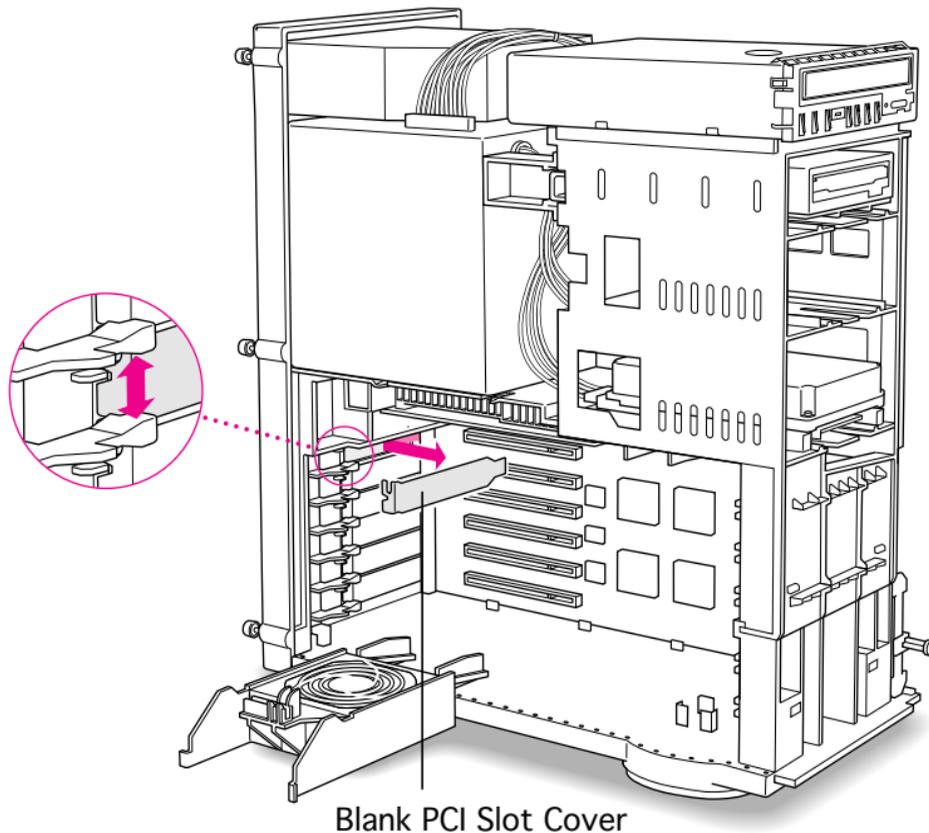
PCI Card Retainer

Compatibility Card.

Before you begin, remove the top housing.

- 1 Squeeze the sides of the PCI card retainer to unlatch it, and pull down on the retainer to remove it.

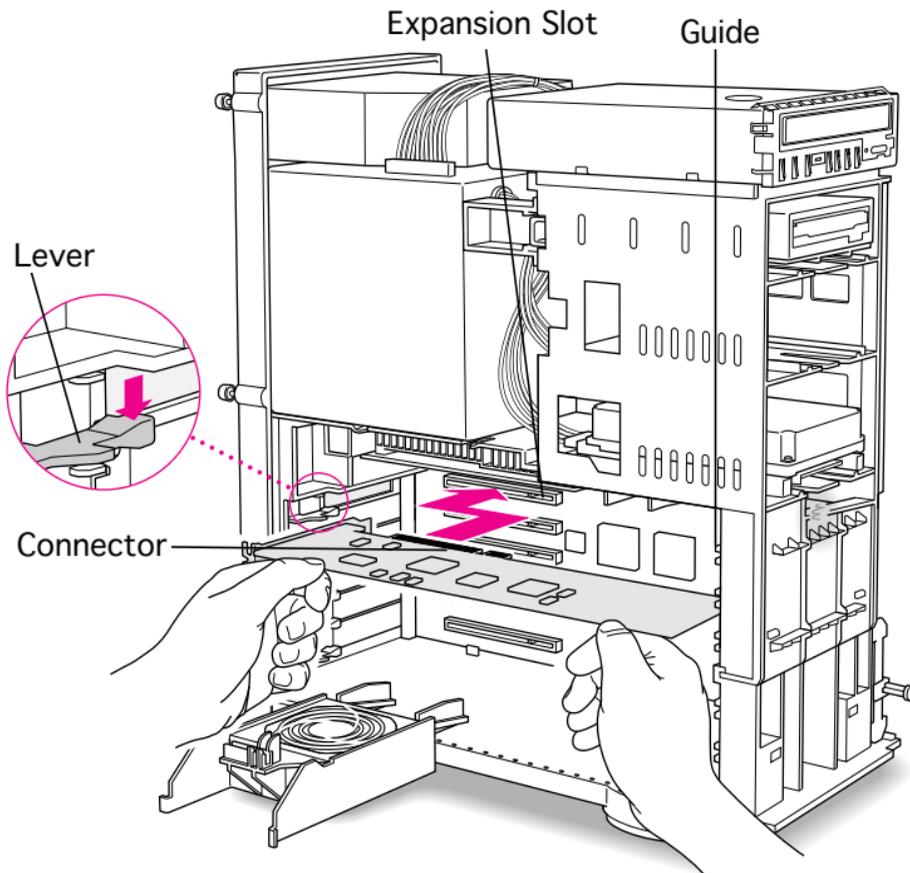




- 2 Pull out the blank PCI slot cover behind the expansion slot closest to the center of the computer.

Note: You can install the PC Compatibility card in any available PCI expansion slot; however, it is recommended that you install this card in the uppermost slot (that is, the one closest to the processor card).

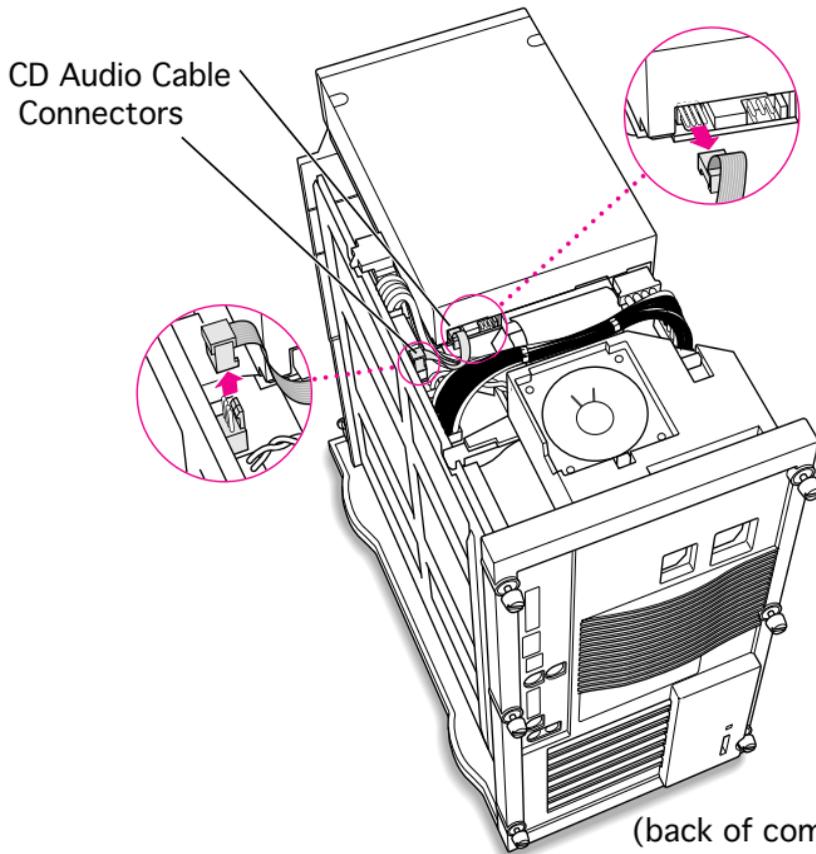




- 3 Line up the connector end of the card with the expansion slot, making sure the right end of the card fits into the card guide in the chassis.
- 4 Push down on the lever below the empty PCI access slot and press down firmly on the card until the connector is fully inserted.

Caution: Do not force the card. If you meet a lot of resistance, pull the card out and try again.

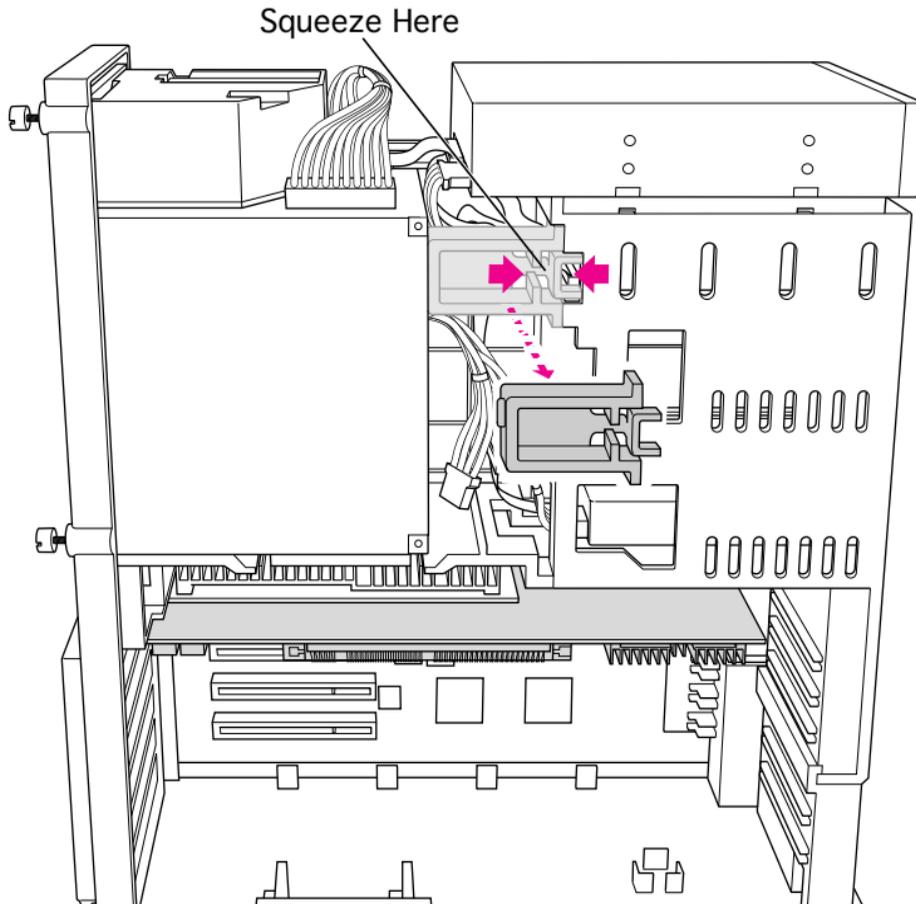




- 5 Unplug the CD audio cable from the computer's logic board and the CD-ROM drive.

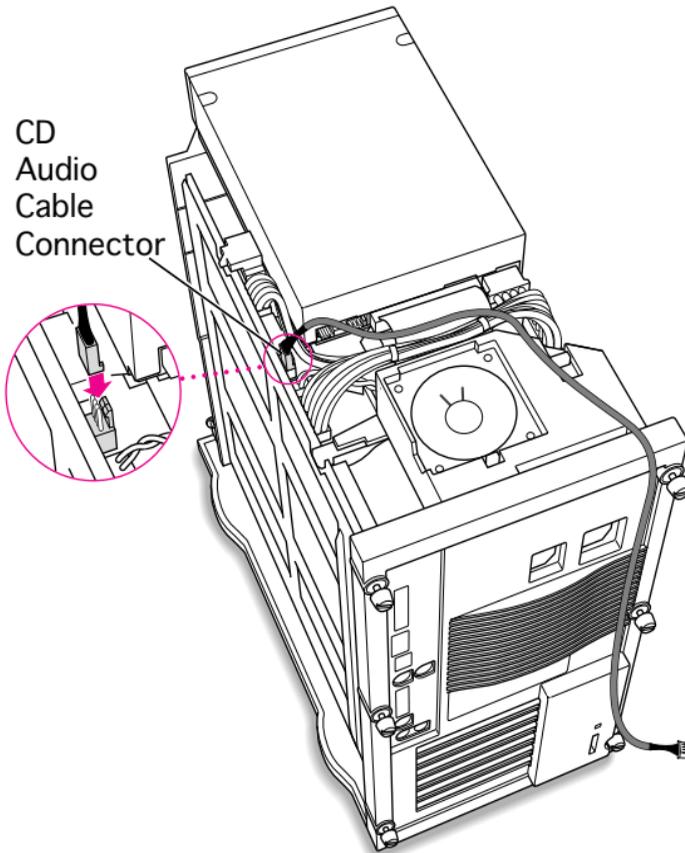
Note: You will be replacing the CD audio cable with one that came with the upgrade kit.





- 6 Squeeze on the chassis support brace and pull to remove it from the chassis.

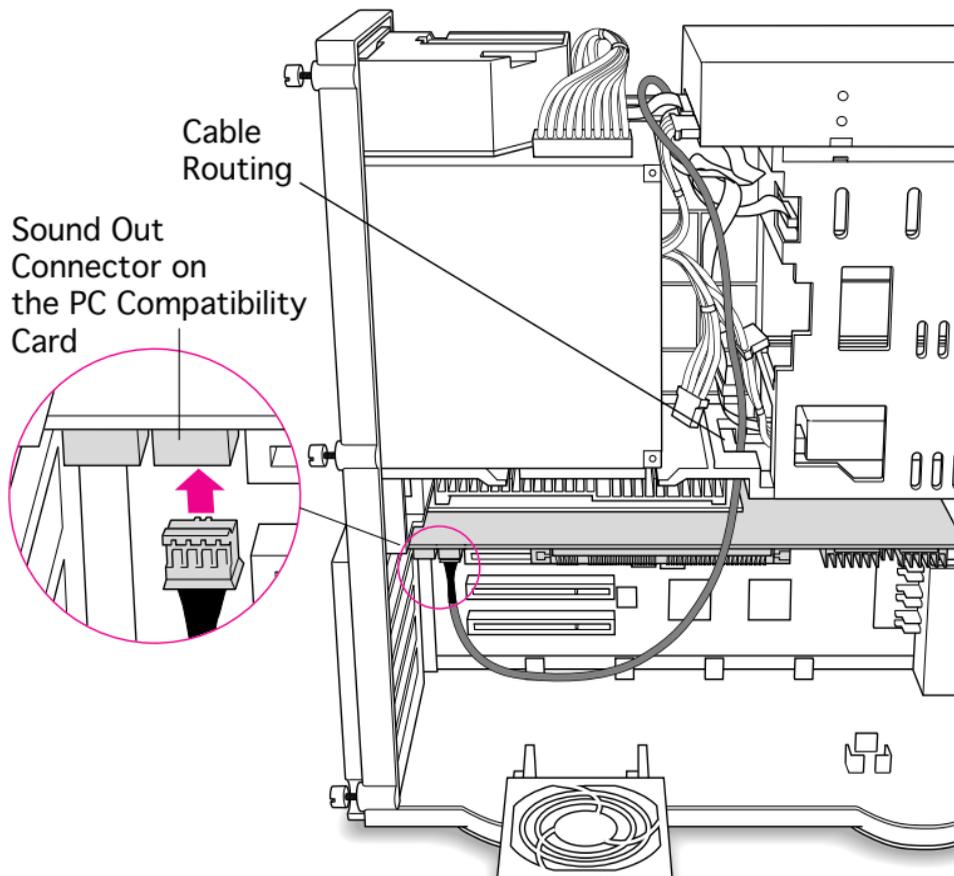




- 7 Plug one of the CD audio cables that came with the upgrade kit into the Sound In connector on the computer's logic board.

Note: Two audio cables are included in the upgrade kit. They are different colors, but both work the same way.

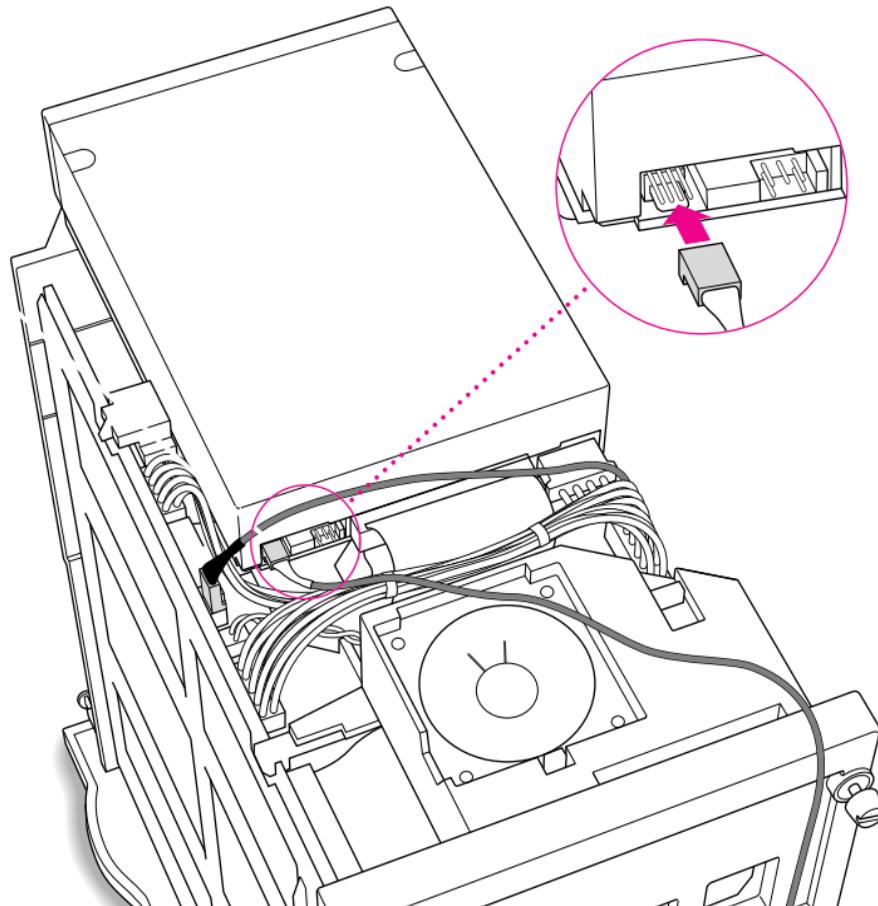




- 8 Thread the cable through the interior of the computer as shown.
- 9 Plug the other end of the cable into the Sound Out connector on the PC Compatibility card.

Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.



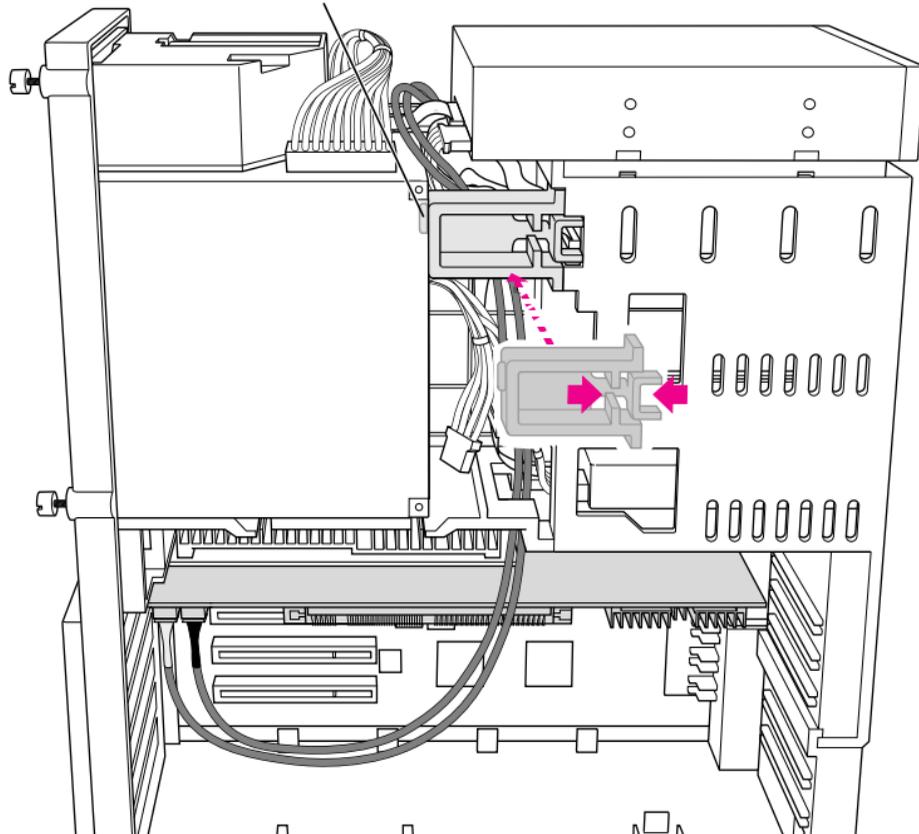


10 Plug the second CD audio cable into the CD Out connector on the CD-ROM drive.





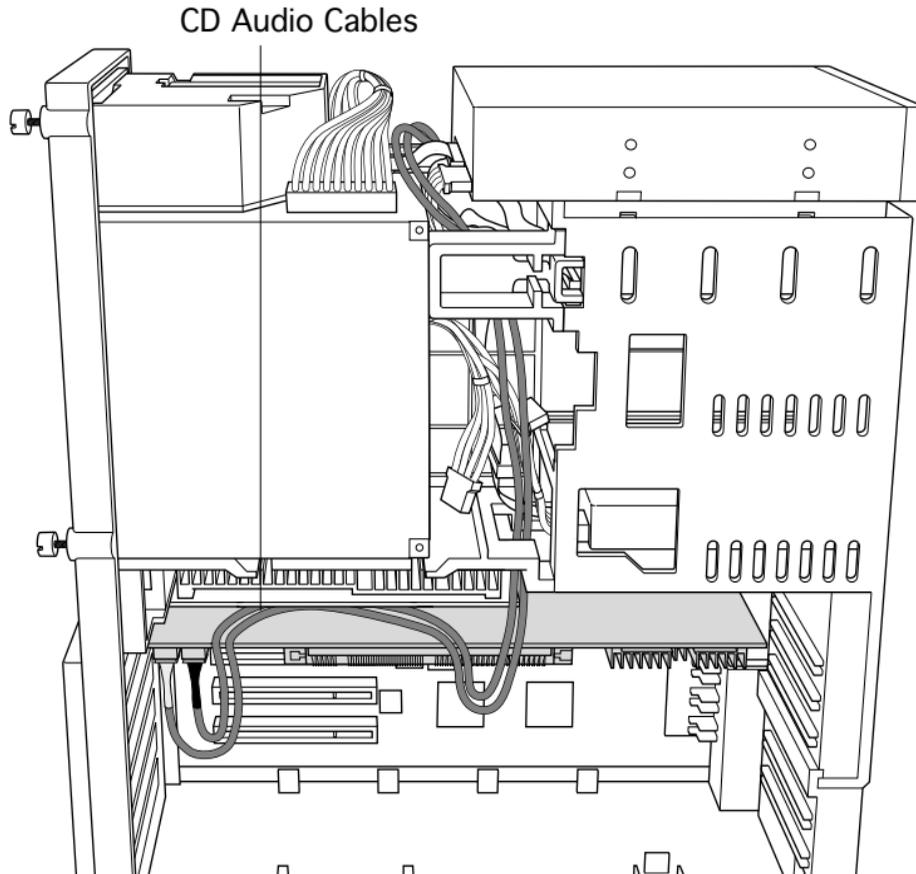
Chassis Support Brace



- 11 Replace the chassis support brace.

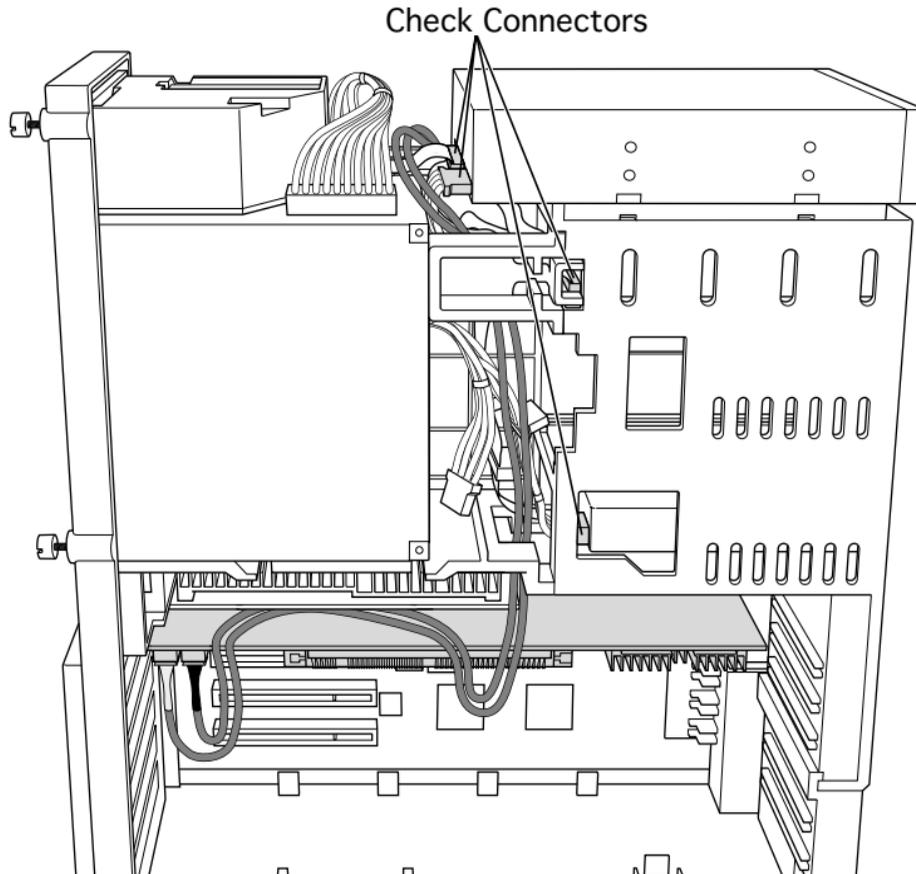
Note: There is a tab on the chassis support brace that fits into a slot in the power supply case.





- 12 Lay the CD audio cables on top of the PC Compatibility card so they are out of the way of the PCI retainer.





- 13 Make sure all cables are connected and then replace the PCI retainer.

Note: Make sure that none of the cables is squeezed between the retainer and the top of the card.

- 14 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



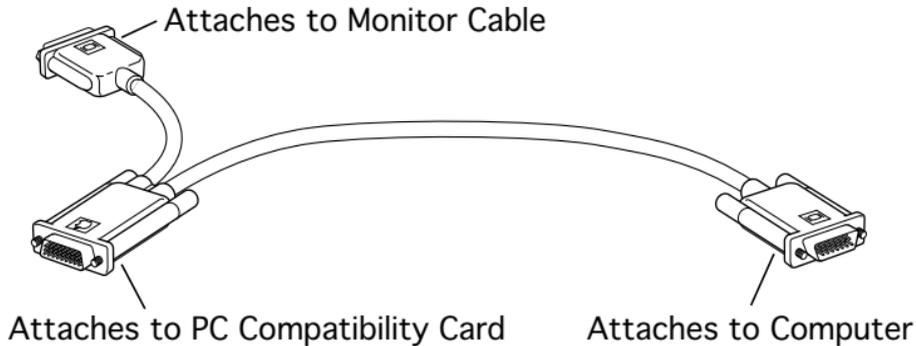


Connecting Monitors

After you have installed the 12" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

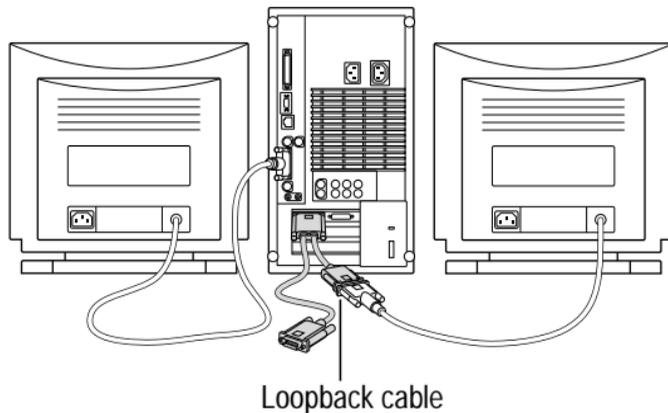




To connect a single monitor to the computer:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the computer's monitor port or video card.

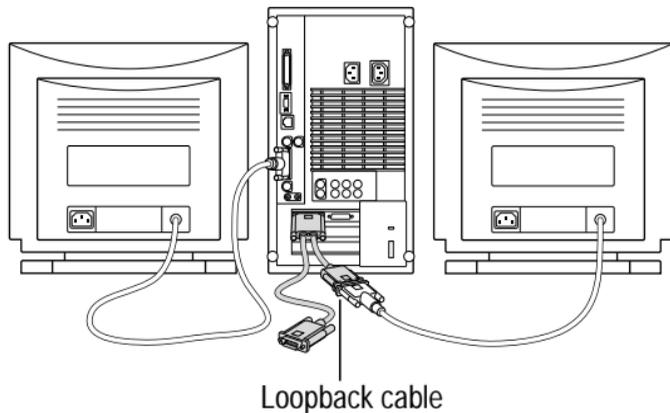




To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.



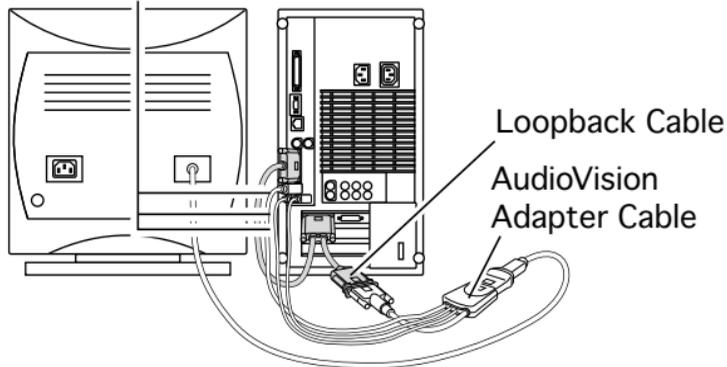


- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.





Plug the ADB (V), sound output (-), and sound input (\approx) cables into the corresponding ports on the back of the computer.



To connect an AudioVision 14Display to the computer:

- 1 Attach the short end of the loopback cable to the AudioVision adapter cable.
- 2 Attach the AudioVision adapter cable to the AudioVision monitor cable.
- 3 Attach the ADB, sound output, and sound input cables from the adapter cable to the corresponding ports on the back of the computer.

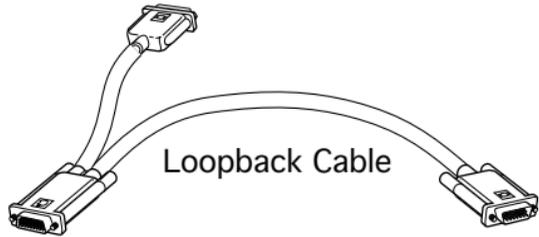




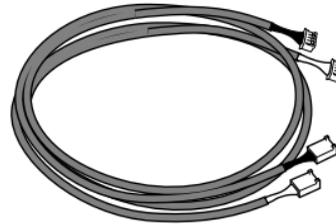
PM 9500 Series

12" 100 MHz PC Card
Installation





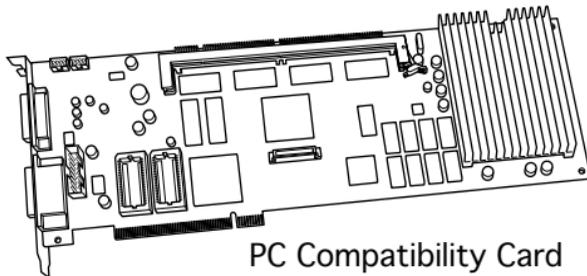
Loopback Cable



CD Audio Cables



Internal PC
Audio/Video
Assembly



PC Compatibility Card

12" 100 MHz PC CARD

The 12" PC Compatibility Card Upgrade kit includes the PC compatibility card, a loopback cable, a PC audio/video cable (not used with the Power Macintosh 9500), and the necessary CD audio cables.

Note: A previous product, the DOS Compatibility Card, came with a different loopback cable that has four connectors. That cable does not work with the PC

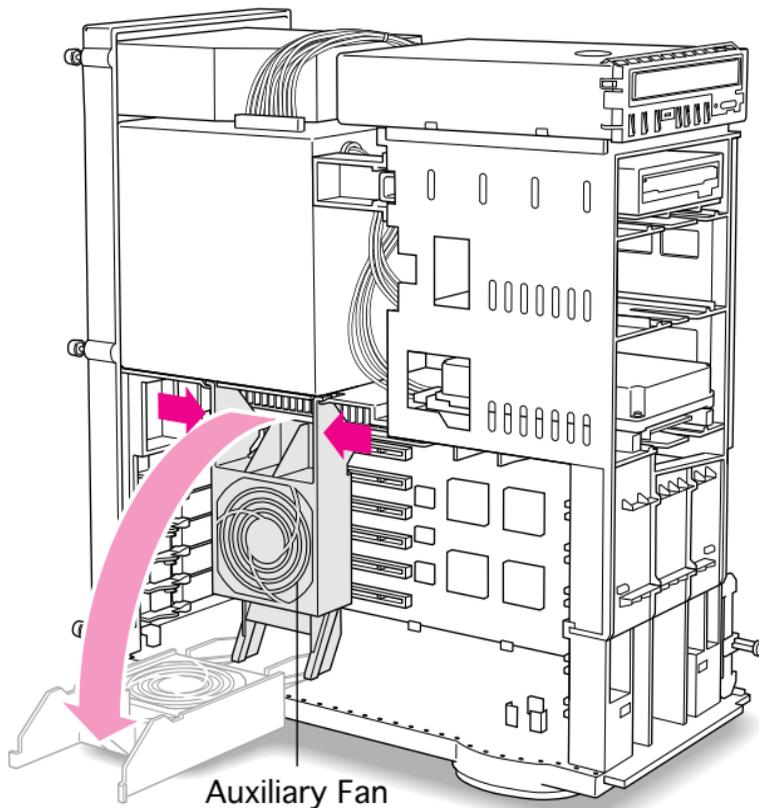


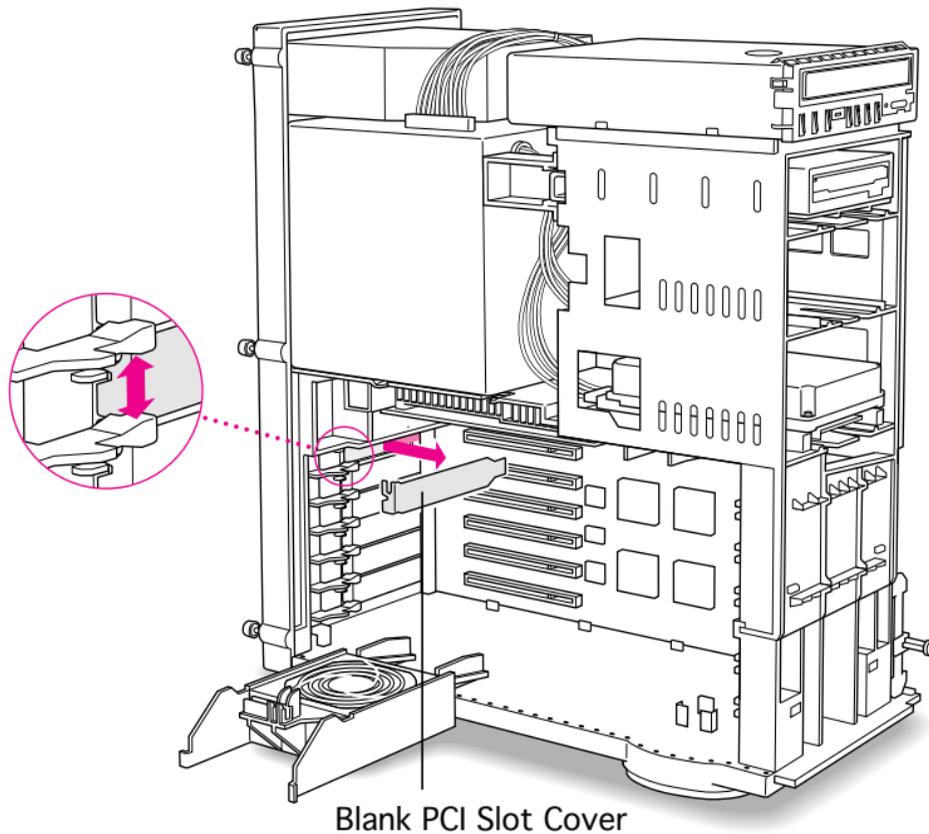


Compatibility Card.

Before you begin, remove the top housing.

- 1 Squeeze the sides of the auxiliary fan to unlatch it, and pull down on the fan to remove it.

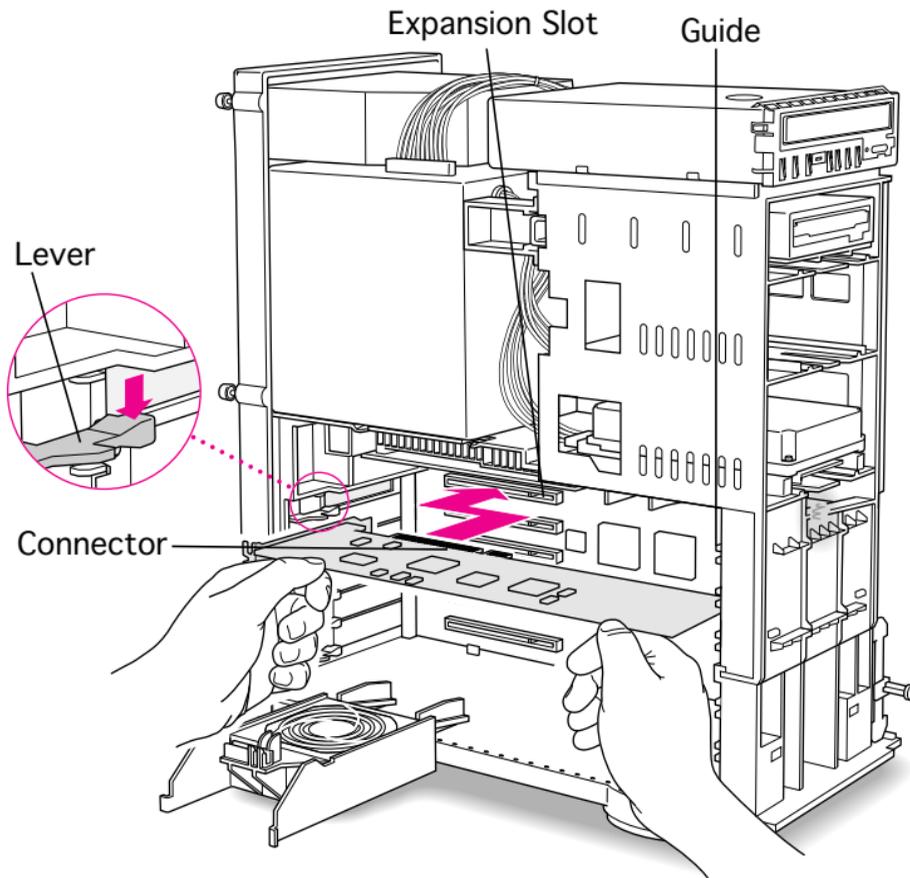




- 2 Pull out the blank PCI slot cover behind the expansion slot closest to the center of the computer.

Note: You can install the PC Compatibility card in any available PCI expansion slot; however, it is recommended that you install this card in the uppermost slot (that is, the one closest to the processor card).

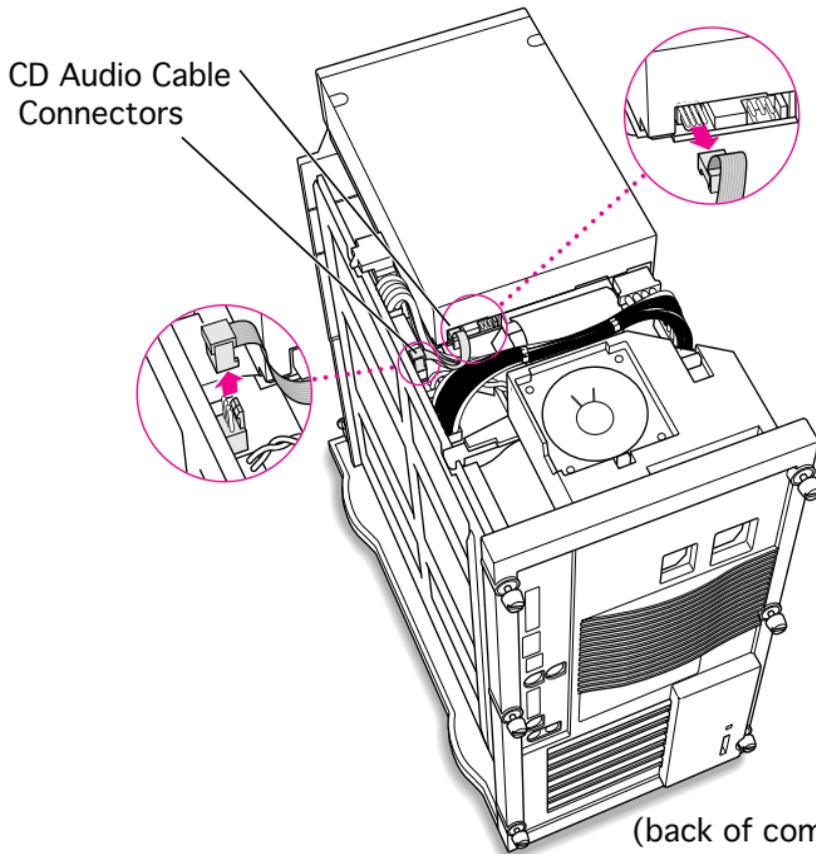




- 3 Line up the connector end of the card with the expansion slot, making sure the right end of the card fits into the card guide in the chassis.
- 4 Push down on the lever below the empty PCI access slot and press down firmly on the card until the connector is fully inserted.

Caution: Do not force the card. If you meet a lot of resistance, pull the card out and try again.

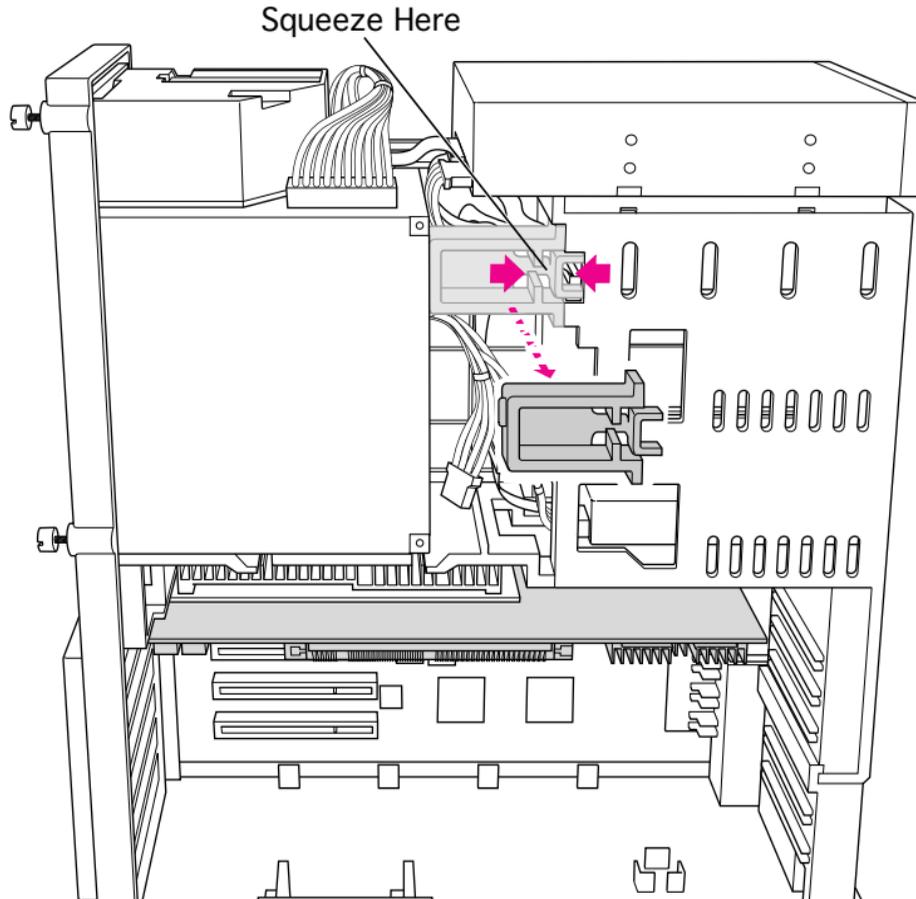




- 5 Unplug the CD audio cable from the computer's logic board and the CD-ROM drive.

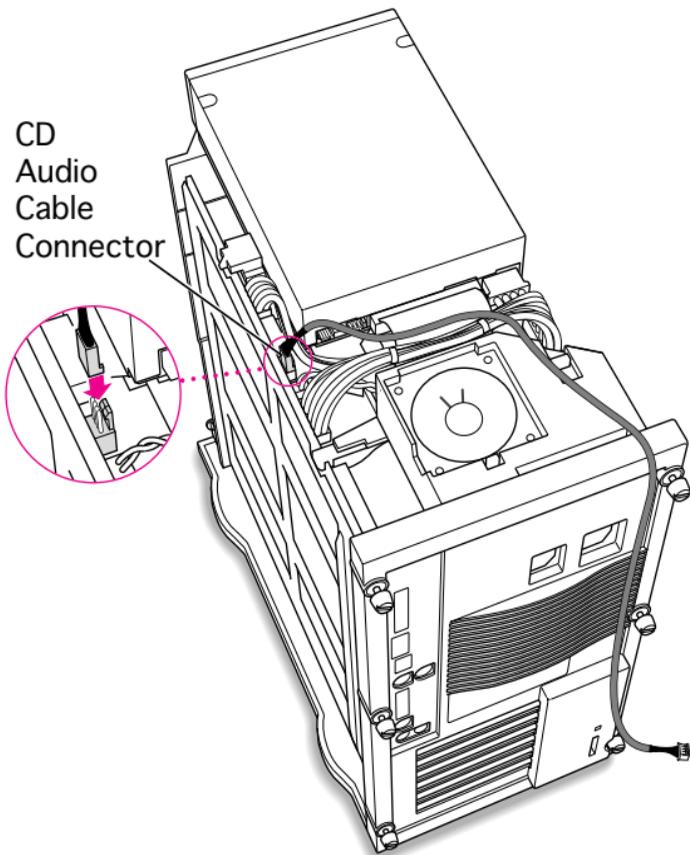
Note: You will be replacing the CD audio cable with one that came with the upgrade kit.





- 6 Squeeze on the chassis support brace and pull to remove it from the chassis.

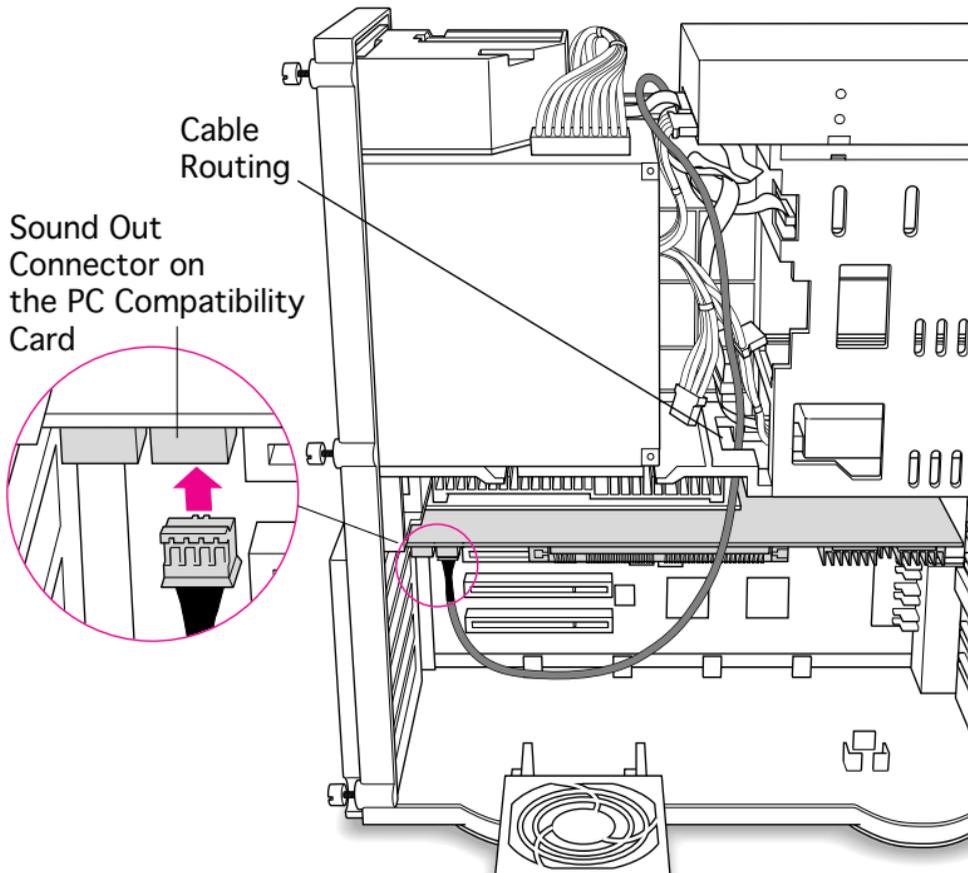




- 7 Plug one of the CD audio cables that came with the upgrade kit into the Sound In connector on the computer's logic board.

Note: Two audio cables are included in the upgrade kit. They are different colors, but both work the same way.





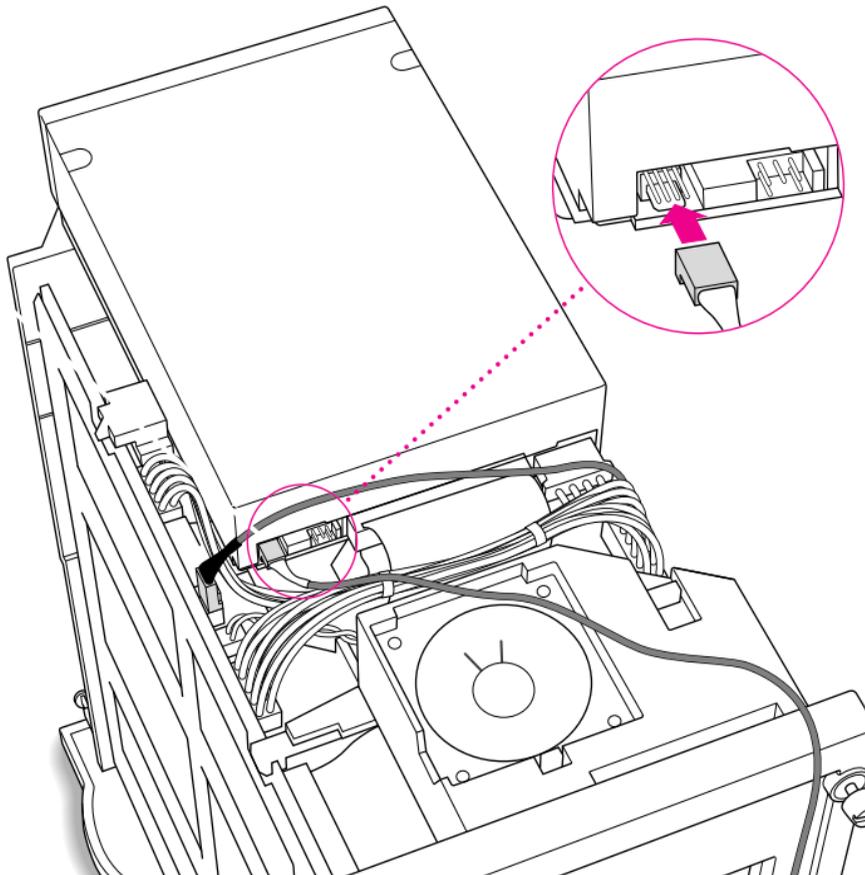
- 8 Thread the cable through the interior of the computer as shown.
- 9 Plug the other end of the cable into the Sound Out connector on the PC Compatibility card.

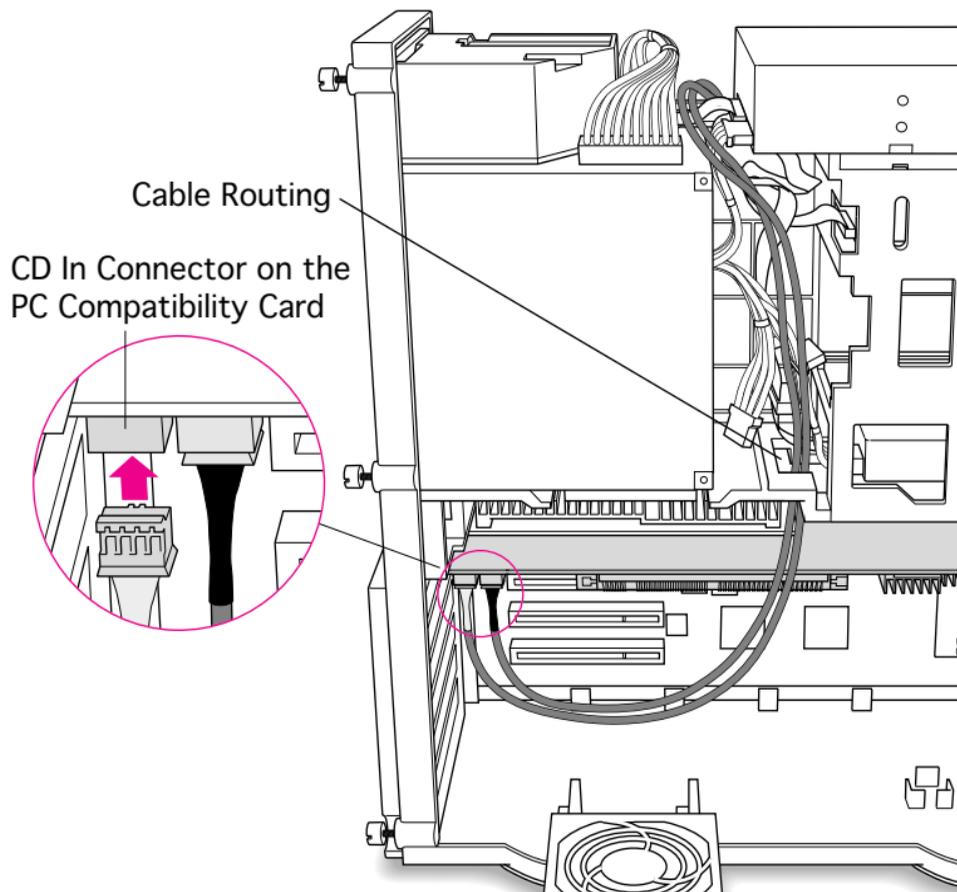
Note: The Sound Out connector is next to the CD In connector, which is at the upper-left corner of the card.





- 10 Plug the second CD audio cable into the CD Out connector on the CD-ROM drive.



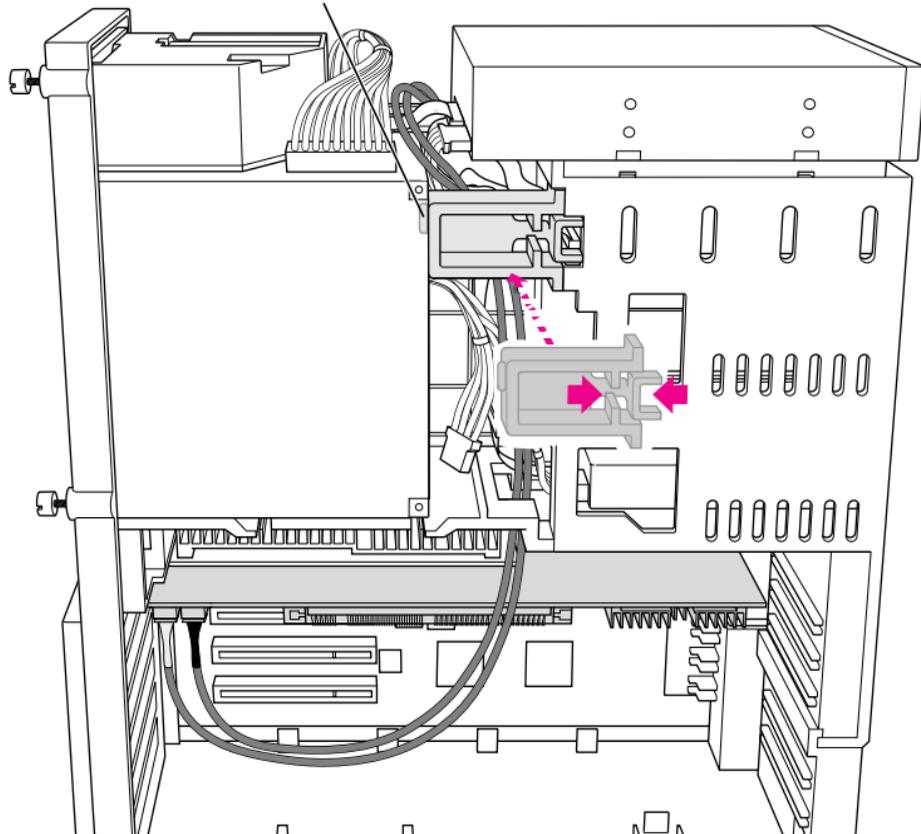


- 11 Thread the second cable through the interior of the computer.
- 12 Plug the other end of the second cable into the CD In connector on the PC Compatibility card.





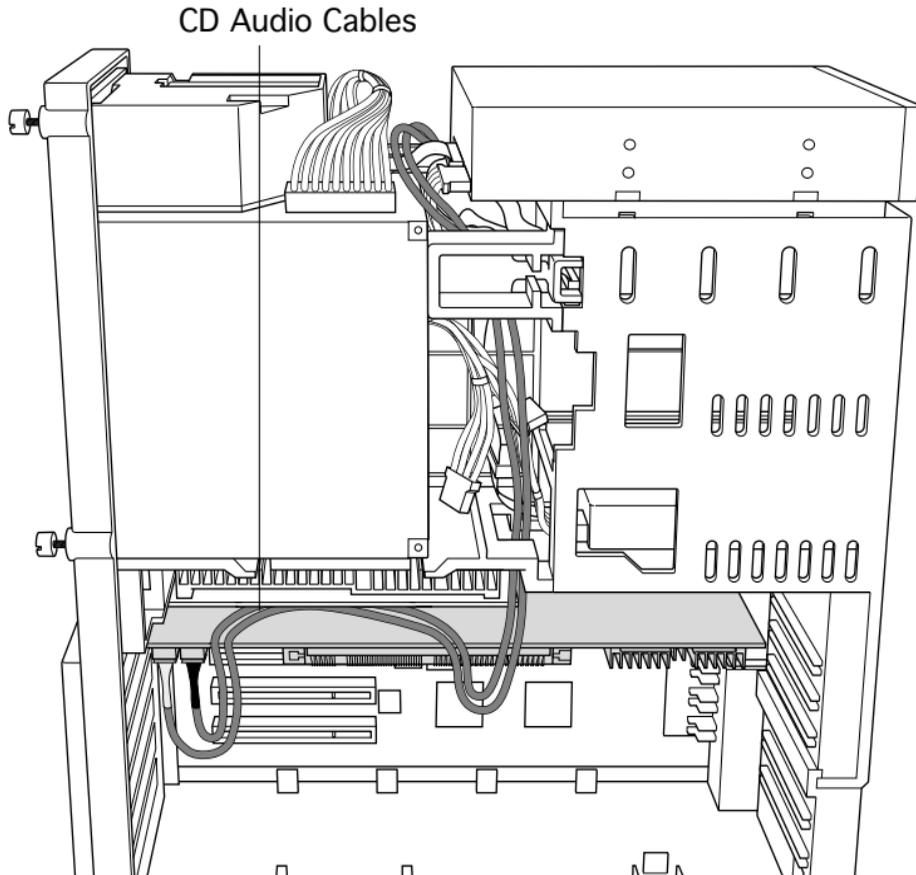
Chassis Support Brace



13 Replace the chassis support brace.

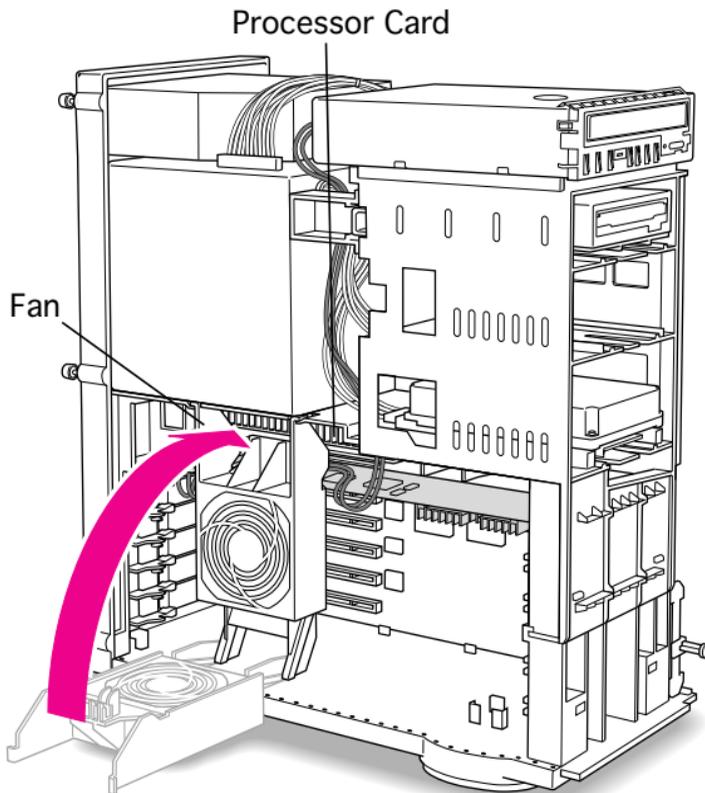
Note: There is a tab on the chassis support brace that fits into a slot in the power supply case.





- 14 Lay the CD audio cables on top of the PC Compatibility card so they are out of the way of the auxiliary fan.





- 15 Make sure all cables are connected and then replace the auxiliary fan.

Note: Make sure that none of the cables is squeezed between the fan and the top of the card.

- 16 Replace the top housing. (Refer to the Take Apart chapter for instructions.)



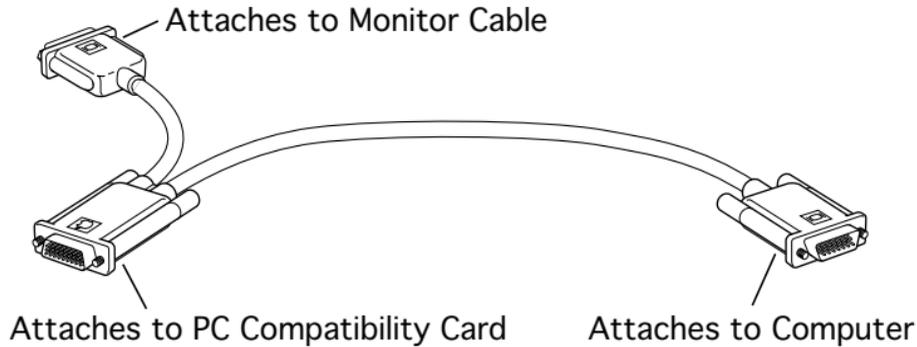


Connecting Monitors

After you have installed the 12" PC Compatibility Card, connect the monitor(s) as follows to display both PC and Macintosh environments.

▲Warning: Do **not** plug a monitor into the joystick port that comes on some models of the PC Compatibility card, and do **not** plug a joystick into a monitor port. Serious damage can result to the equipment.

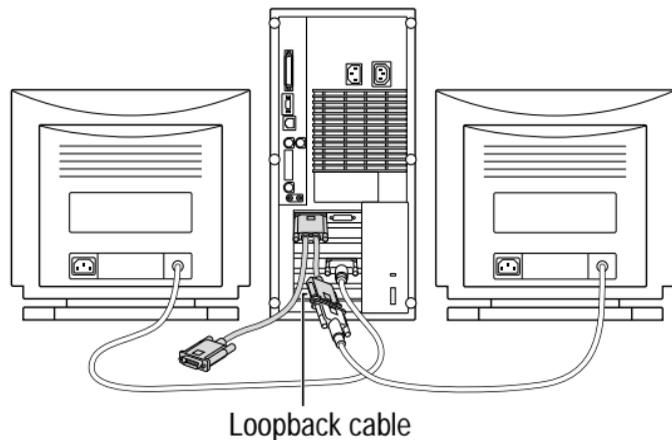




To connect a single monitor to the computer:

- 1 Attach the short connector on the loopback cable to the monitor cable.
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Connect the long connector on the loopback cable to the port on the computer's video card.

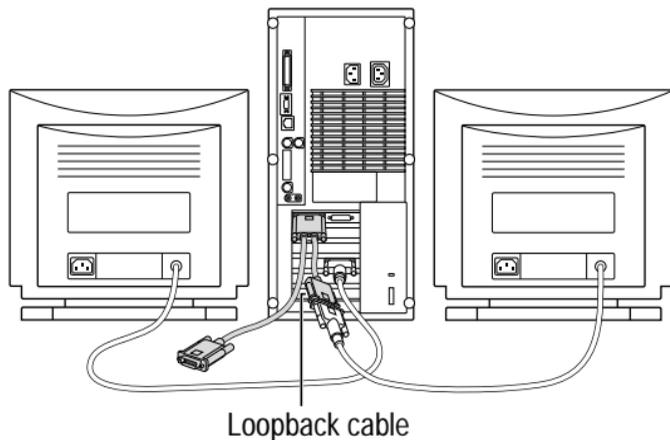




To connect two monitors to the computer:

- 1 Connect the monitor you want to use for the Mac OS environment to the video port on the computer (or to the port on the computer's video card).
- 2 Attach the middle connector on the loopback cable to the PC Compatibility card.
- 3 Attach the short connector on the loopback cable to the second monitor cable.



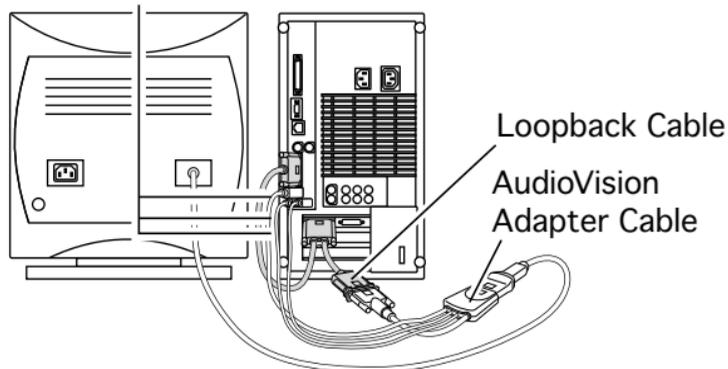


- 4 In most cases, leave the long connector on the loopback cable unplugged. But if the computer has an additional video port, you can plug the long connector into this additional port. Doing so will allow you to switch the monitor between the PC and Mac OS environments.





Plug the ADB (V), sound output (-), and sound input (\approx) cables into the corresponding ports on the back of the computer.



To connect an AudioVision 14Display to the computer:

- 1 Attach the short end of the loopback cable to the AudioVision adapter cable.
- 2 Attach the AudioVision adapter cable to the AudioVision monitor cable.
- 3 Attach the ADB, sound output, and sound input cables from the adapter cable to the corresponding ports on the back of the computer.





12" 166 MHz-P PC Card

Installation Instructions





Introduction

The 12" 166 MHz-P PC Compatibility card is compatible with the Power Macintosh 4400, 7220, 7200, 7300, 7500, 7600, 8500, 8600, 9500, and 9600 Series computers.

Installation procedures differ depending on which machine the card is being used with. Installation instructions from the User's manual for the 12" 166 MHz PC Compatibility Card are included here; refer to the machine-specific installation instructions within this chapter (indicated by the bookmarks in the left-hand margin) for complete information.





1

Installing the Card in a Power Macintosh 4400 or 7220



This chapter describes how to install the PC Compatibility Card hardware in a Power Macintosh 4400 computer—or a Power Macintosh 7220, available in some countries.

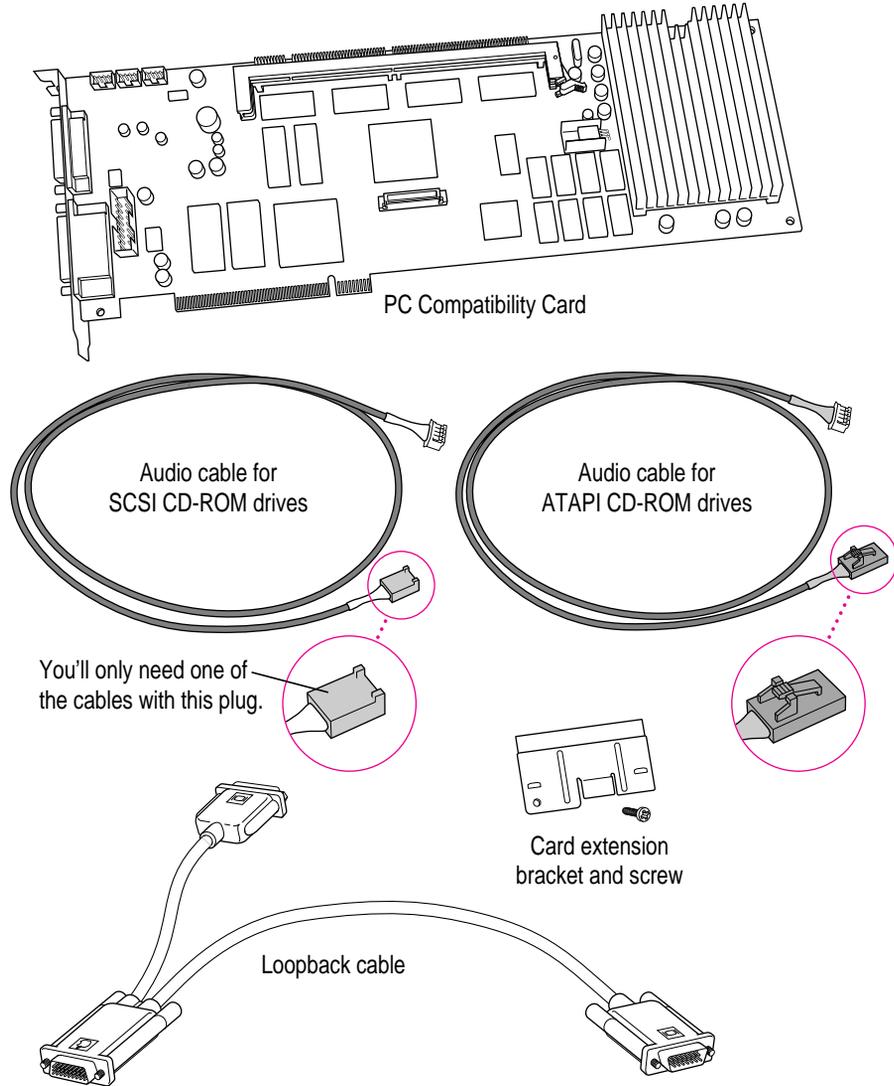
IMPORTANT If you will be installing a PC Serial and Parallel Card with your PC Compatibility Card, it's easiest to install both cards at the same time. The PC Serial and Parallel Card has standard PC ports that allow you to use several kinds of PC-compatible peripherals from the Windows or DOS environment (not from the Mac OS environment). Instructions in this chapter indicate when to see your PC Serial and Parallel Card manual for installation information.

After you install the PC Compatibility hardware, go to Chapter 5, “Connecting Monitors and Other Equipment.” If you want to install additional memory in your card, go to Appendix B, “Adding Memory to Your PC Compatibility Card.” Then turn to Chapters 6 through 9 to learn more about installing and using PC software.

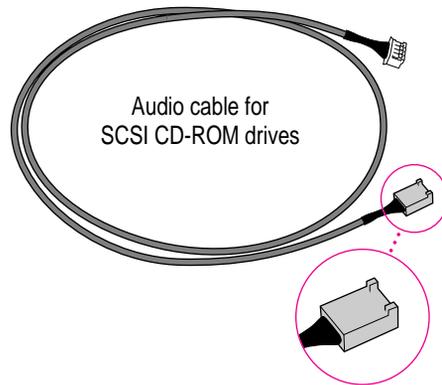
WARNING Shipping your computer with a PC Compatibility Card installed may cause damage to the card. Your PC Compatibility Card should be shipped separately. (See Appendix A for instructions on how to remove the card.)

What you need

Before beginning the installation process, make sure you have all the necessary parts: the PC Compatibility Card, the audio cables, the card extension bracket and screw, and the loopback cable. You'll also need a Phillips screwdriver.



You won't need the other audio cable with the thick plug shown below.



Installing the PC Compatibility Card hardware

WARNING The installation of the PC Compatibility Card is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have the PC Compatibility Card installed by your Apple-authorized dealer (who may charge a fee). If you attempt to install the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to install the card, install memory, or connect the cables without first reading this manual.

There are several steps to installing your PC Compatibility Card hardware:

- opening the computer
- inserting the PC Compatibility Card
- connecting the CD In cable
- connecting the Sound Out cable
- replacing the computer cover

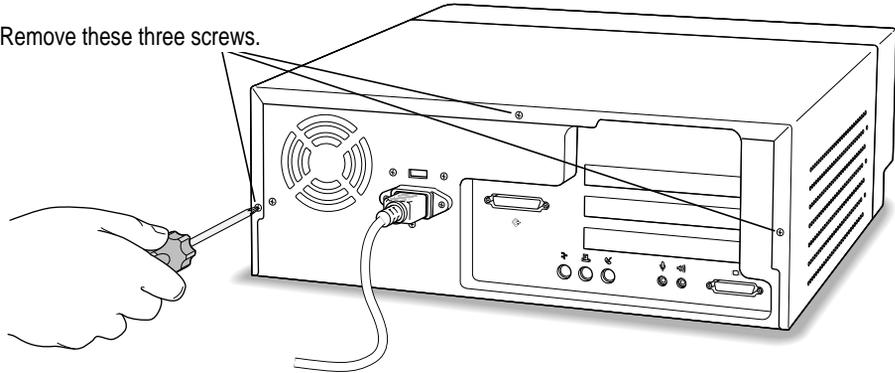
Opening the computer

- 1** Shut down the computer and disconnect all cables from the computer, except for the power cord.

Leave the computer plugged in for now, to ground it and protect its components from static electricity damage.

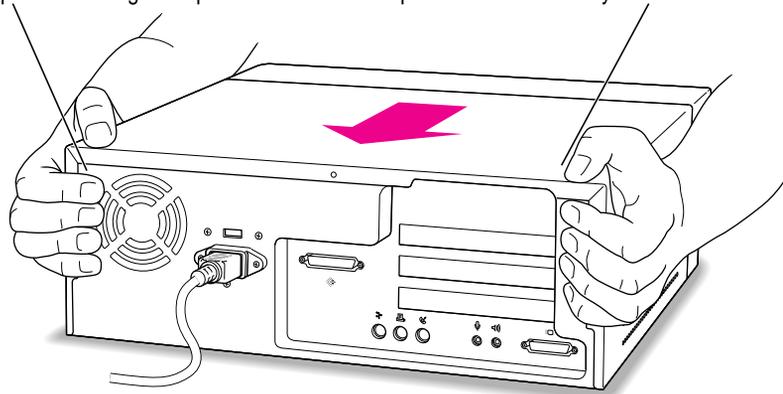
- 2** Remove the three screws as shown from the back of the cover.

Remove these three screws.

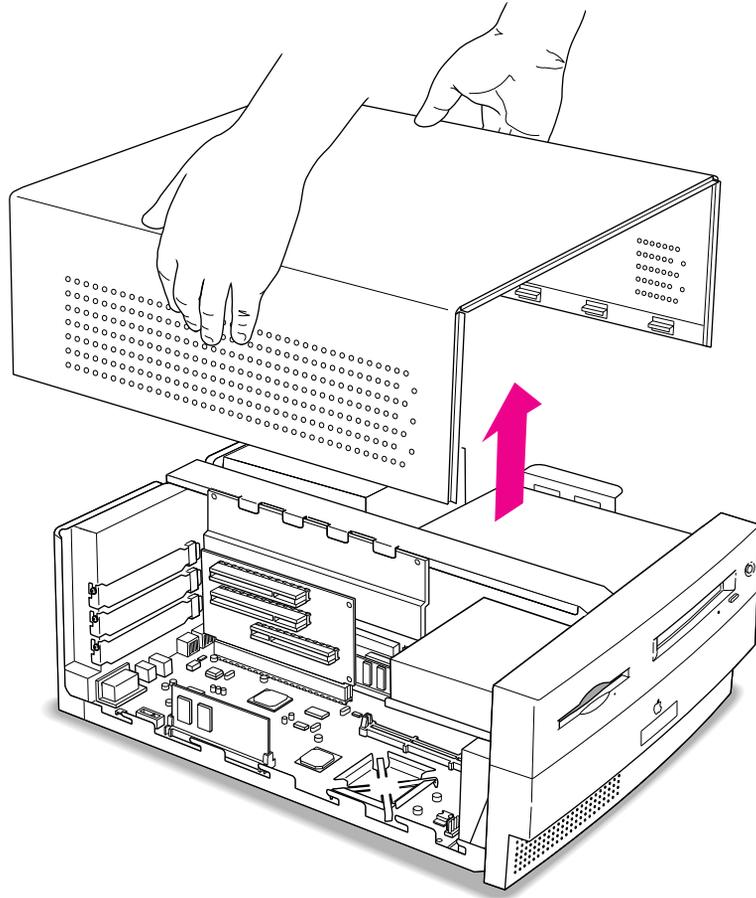


- 3** Position your hands on the unit as shown, and slide the cover back.

Firmly grasp the back of the computer and push in on the rear panel with your fingertips while sliding the top cover back about a quarter of an inch with your thumbs.



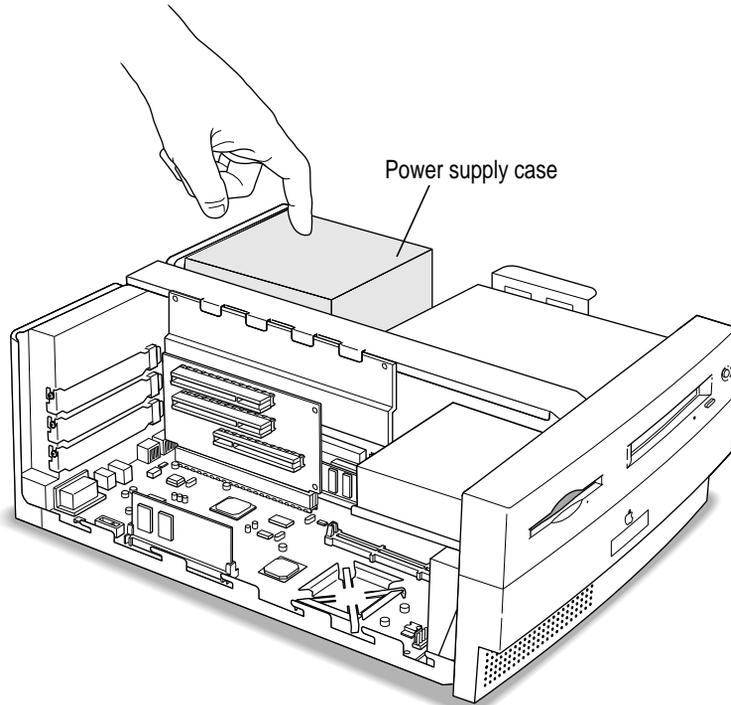
4 Lift the cover up and off of the computer.



5 Touch the metal part of the power supply case inside the computer.

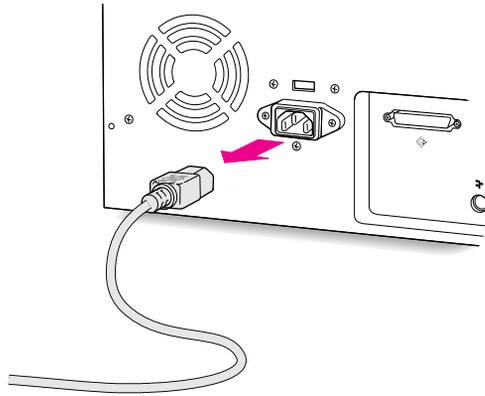
Always do this before you touch any parts, or install any components, inside the computer. Touching the power supply case helps release static electricity from your body and prevent possible damage to internal components.

IMPORTANT You can collect static electricity just by walking away from and then back to your computer. If you need to move away from your computer during installation, remember to touch the metal part of the power supply case again before you continue installing.



6 Disconnect the power cord.

Remove the power cord from the back of the computer.

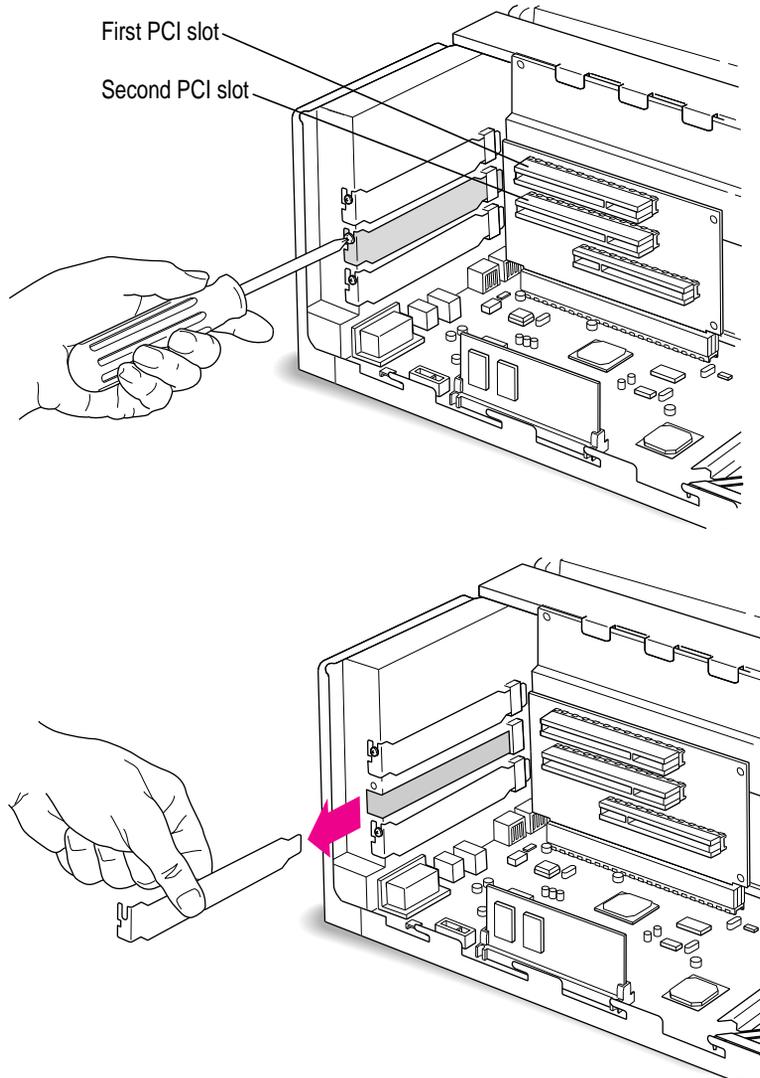


Inserting the PC Compatibility Card

- 7 Unscrew and remove the metal port access covers for the slots you need.

You need to install the PC Compatibility Card in the second PCI slot, just under the top (first) slot. If you are installing a PC Serial and Parallel Port Card, you'll need to install it in the top (first) slot later.

Keep the screws; you will need to reinsert them again later on.

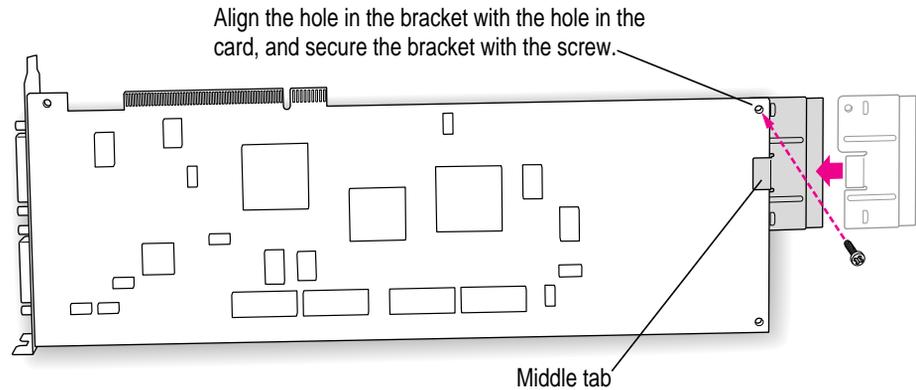


- 8 With the PC Compatibility Card turned over, position the support bracket on the end of the card (opposite the ports).

IMPORTANT Always hold the card by its edges. Don't touch any of the components on the card.

The bracket's middle tab should engage the card on the side facing you, and the hole in the bracket should align with the hole in the card.

- 9 Insert the screw (packaged with the support bracket) and tighten.



What you do next depends on whether you are adding a DIMM (dual inline memory module) to increase the memory available to your PC Compatibility Card, and whether you are installing a PC Serial and Parallel Card.

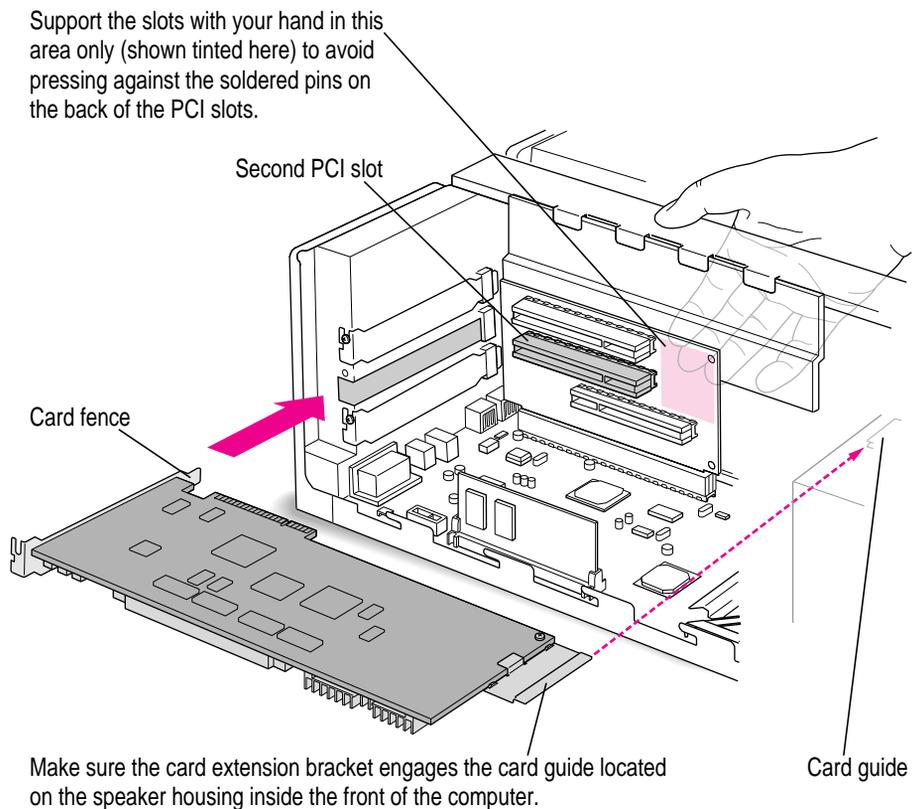
- If you want to add memory to your card, turn now to Appendix B, “Adding Memory to Your PC Compatibility Card.” After you’ve completed the instructions in Appendix B, go on to step 10 in this section.
- If you want to install the PC Serial and Parallel Card, you need to connect the peripheral flex cable to your PC Compatibility Card now. See the PC Serial and Parallel Card manual for complete instructions. Then return to this manual, and go on to the next section, “Connecting the CD In Cable.”

If you don't want to add memory or install the PC Serial and Parallel Card, continue with step 10 of this section.

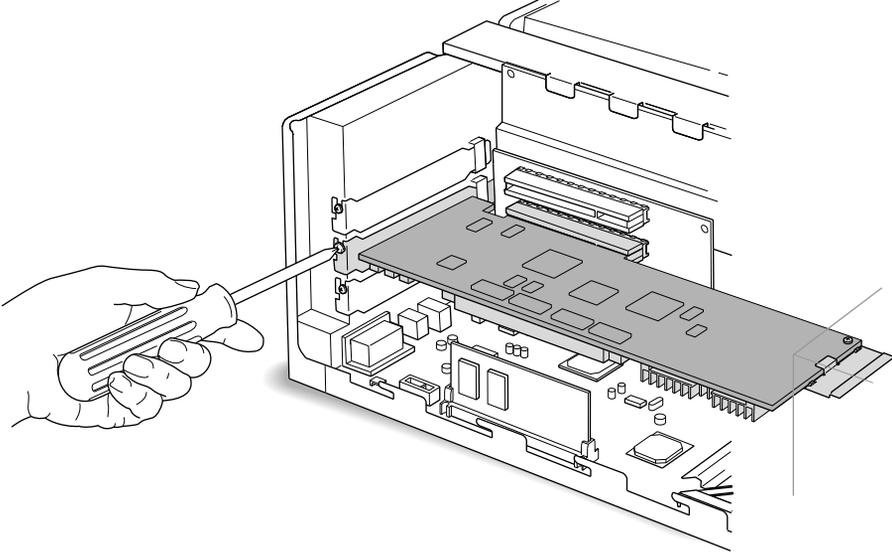
10 Insert the PC Compatibility Card into the second slot.

Place one hand behind the PCI slots in the area indicated below. With your other hand, align the card's connector end (gold in color) with the second PCI expansion slot. The ports on the card should face the port access opening on the computer's back panel. The other end of the card (where the card extension bracket is) should engage the card guide. Press in on the card. When the card is fully inserted, you won't be able to see the gold-colored connector any more.

- Don't rock the card from side to side; press it straight into the slot. Rocking the card can damage the PCI slot.
- Don't force the card. If you meet a lot of resistance, pull the card out and try again.
- To see if the card is connected, pull it gently. If it resists, it is connected.



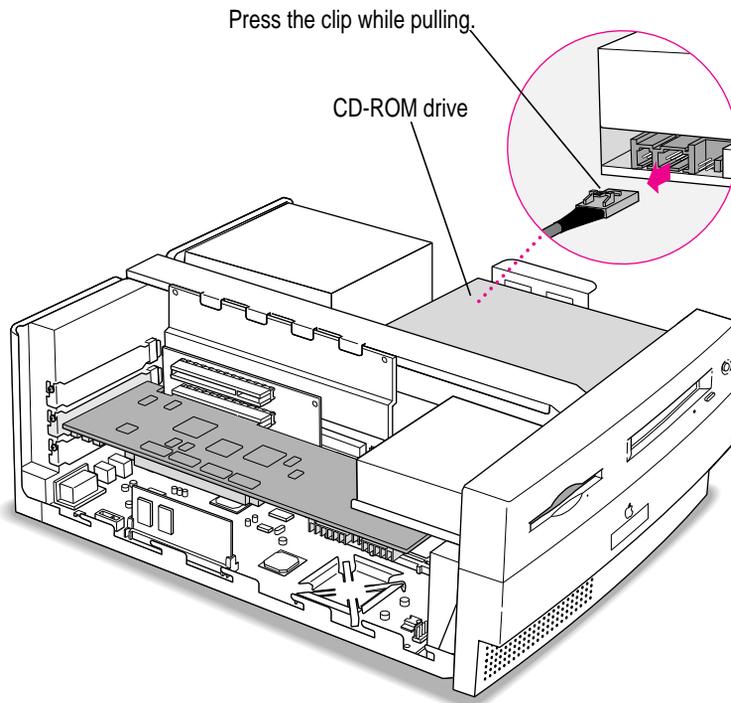
11 Reinsert the screw you removed earlier to secure the card.



Connecting the CD In cable

- 12 Disconnect the audio cable from the back of the CD-ROM drive.

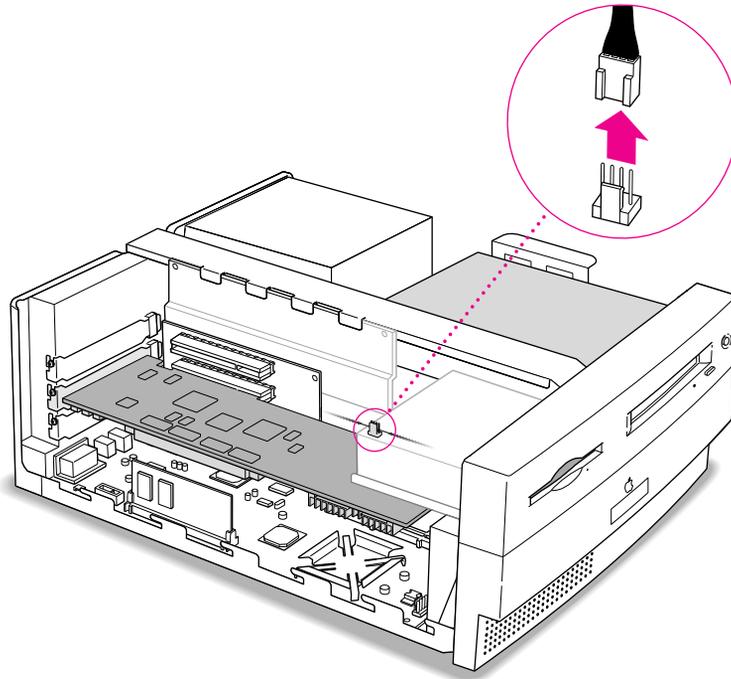
Be sure to pull on the plug, not the cable.



- 13 **Disconnect the other end of the audio cable from the Macintosh logic board, and remove it from the computer.**

This cable is connected near the DRAM DIMM slots. The connector has four pins and may be labeled “CD AUDIO” on the board.

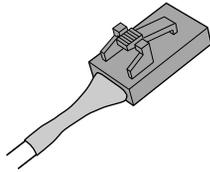
Be sure to pull on the plug, not the cable. After you have disconnected the cable, carefully remove it from the computer. (Keep this cable; you will need to reinstall it if you ever remove your PC Compatibility Card.)



- 14 **Plug the ATAPI audio cable (with the plug shown below) into the back of the CD-ROM drive.**

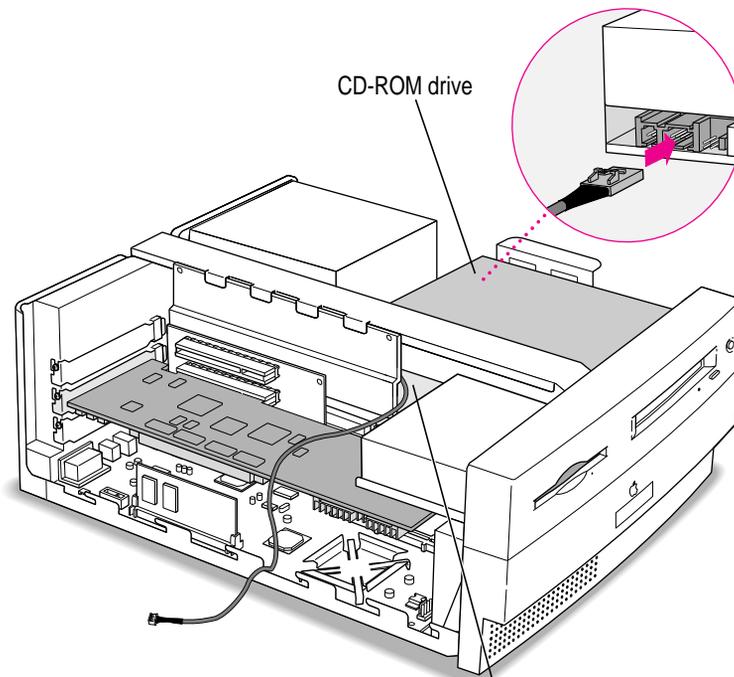
IMPORTANT Use only the cables that came with this PC Compatibility Card. Do not use cables from other models of the card.

Your PC Compatibility Card came with three audio cables. They may have different colors of tubing near the ends to help you tell them apart. You'll only be using two of these cables (the third one is for a different kind of CD-ROM drive). Two of the cables have identical plugs on the ends, and work the same way. The third cable, which is for ATAPI CD-ROM drives, has a different plug on one end, as shown below.



Audio cable plug for
ATAPI CD-ROM drives

Insert this plug into the connector on the CD-ROM drive, where you unplugged the previous audio cable. Then route the cable through the opening, under the support bar in the center of the computer, and over the top of the PC Compatibility Card.

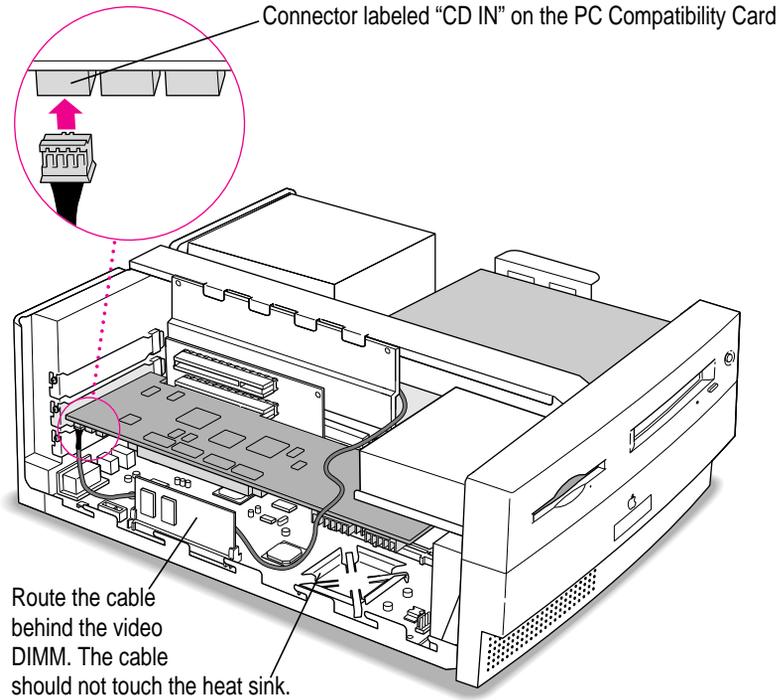


Route the cable so that it passes under the support bar and through the opening.

- 15** Plug the other end of the ATAPI audio cable into the CD In connector in the far upper-left corner of the PC Compatibility card.

The CD In connector is labeled “CD IN” on the underside of the card.

Route the cable so it lies behind the video DIMM and away from the heat sink.

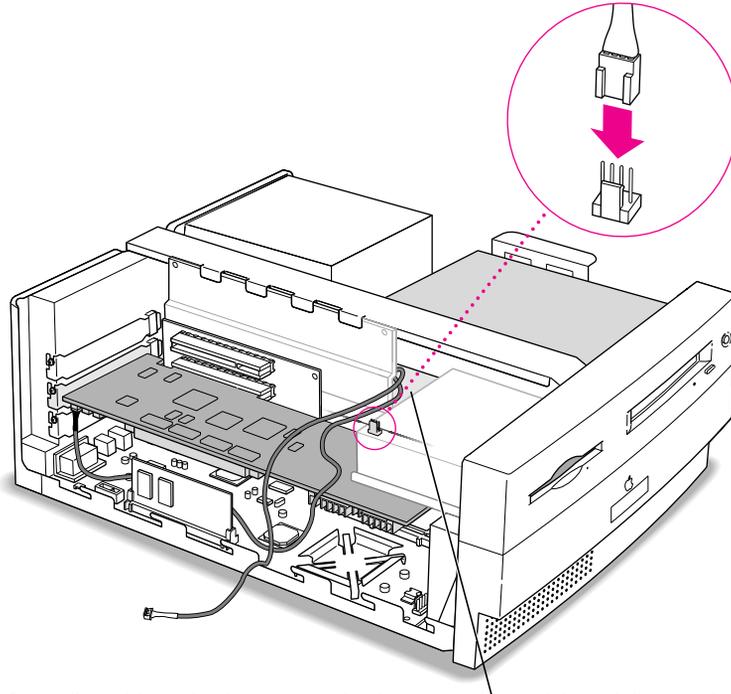


Connecting the Sound Out cable

- 16 Plug one of the other audio cables into the connector near the DRAM DIMM slots on the Macintosh logic board.

You unplugged the original audio cable from this connector in step 13 (the connector may be labeled “CD AUDIO” on the logic board).

You can use either remaining audio cable. Insert the cable’s larger plug into the connector, and route the cable through the opening, under the support bar, and over the top of the PC Compatibility Card.

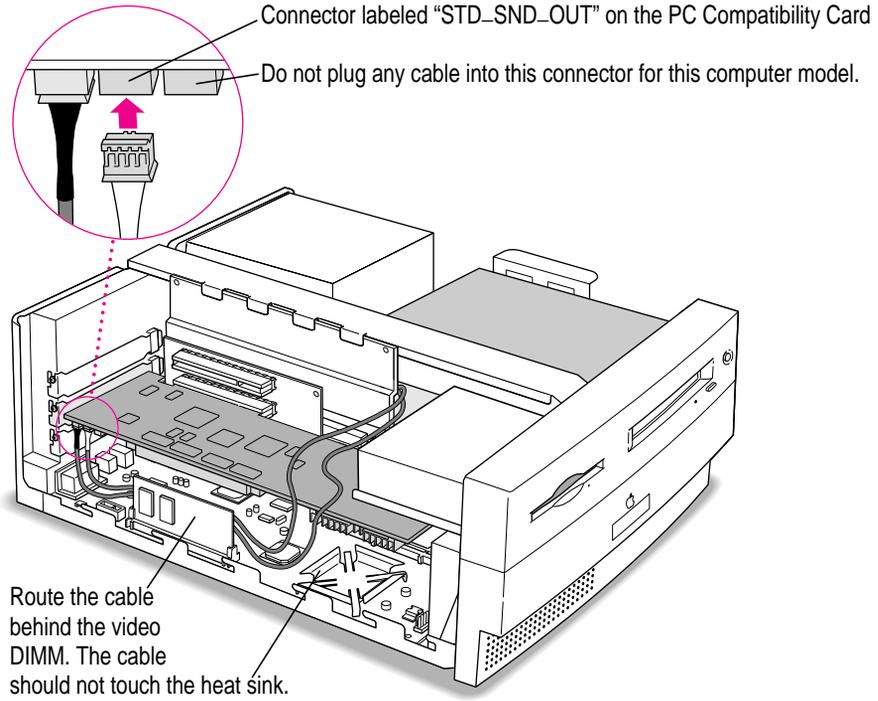


Route the cable so that it passes under the support bar and through the opening.

- 17 Plug the other end of the audio cable into the connector next to the CD In connector on the PC Compatibility Card.**

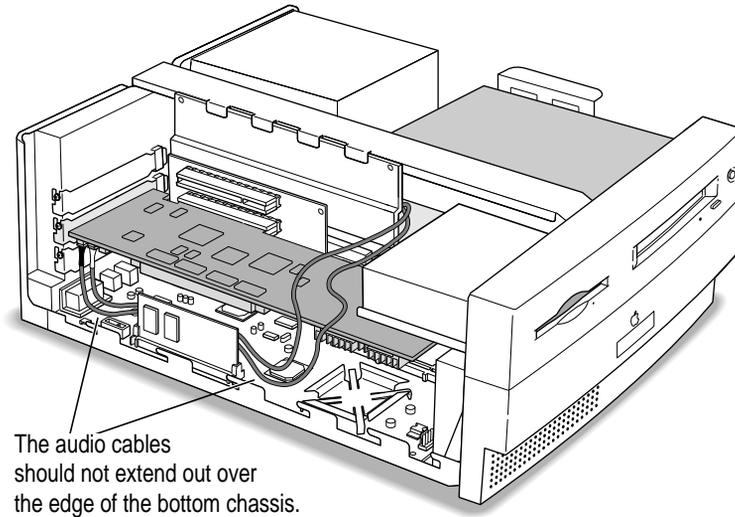
The Standard Sound Out connector, labeled “STD_SND_OUT,” is right next to the CD In connector, in the upper-left corner of the card.

Route the cable so it lies behind the video DIMM and away from the heat sink.



18 Arrange the audio cables as shown below.

The cables should lie in front of the video DRAM DIMM card, and away from the edge of the computer and the heat sink.



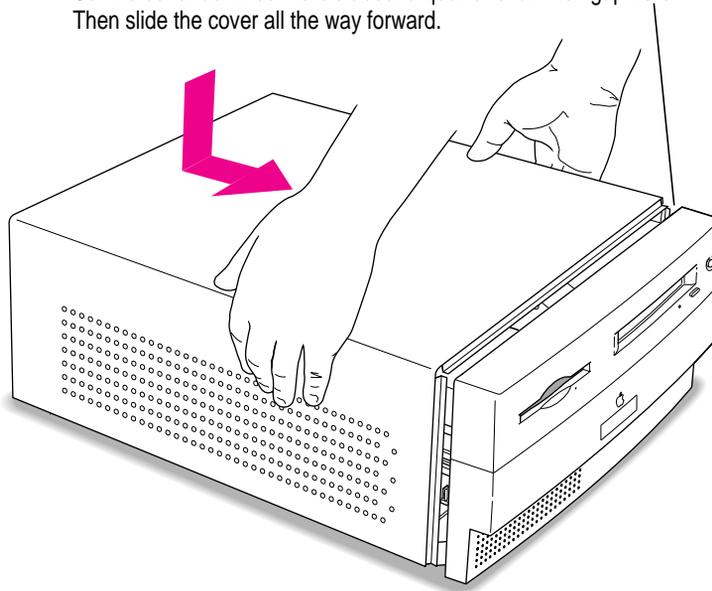
IMPORTANT If you are installing the PC Serial and Parallel Card, you should insert it now. See the PC Serial and Parallel Card manual for instructions.

Replacing the computer cover

- 19 Make sure all cables and cards are firmly connected.
- 20 Replace the computer cover.

Lower the cover onto the computer vertically as shown. Then slide the cover forward until it snaps into place.

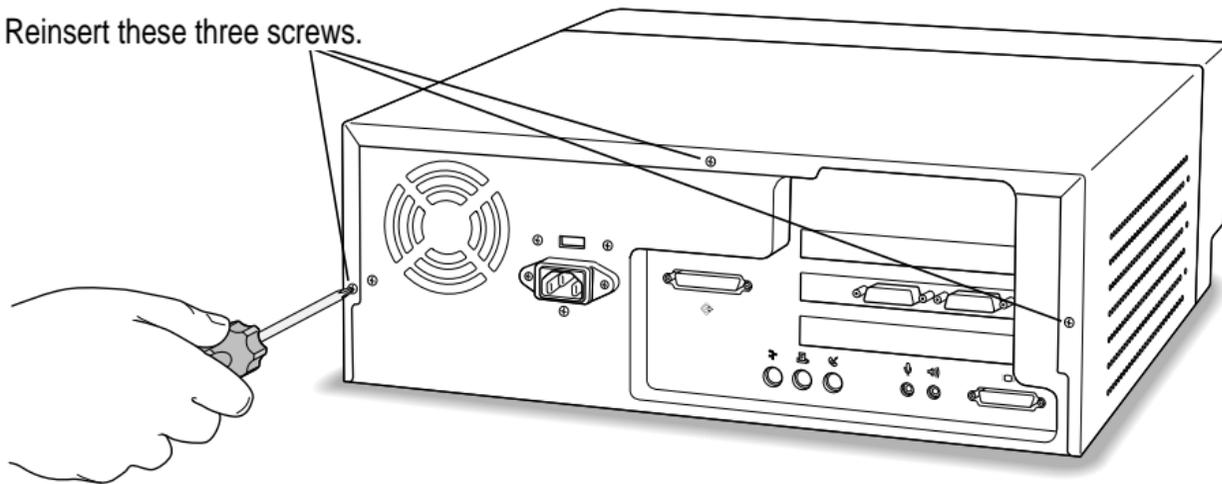
Set the cover down so there's about a quarter of an inch gap here.
Then slide the cover all the way forward.



21 Replace the screws and reconnect all equipment.

Reinsert the three screws you removed earlier into the back of the computer. Then reinsert the power cable and all other equipment cables.

Reinsert these three screws.



You are now finished installing your PC Compatibility Card.

2

Installing the Card in a Power Macintosh 7200, 7300, 7500, or 7600



Except where noted, the illustrations in this chapter show the 7200 model. If you have a 7300, 7500, or 7600 model, some of the illustrations may look slightly different from your computer.

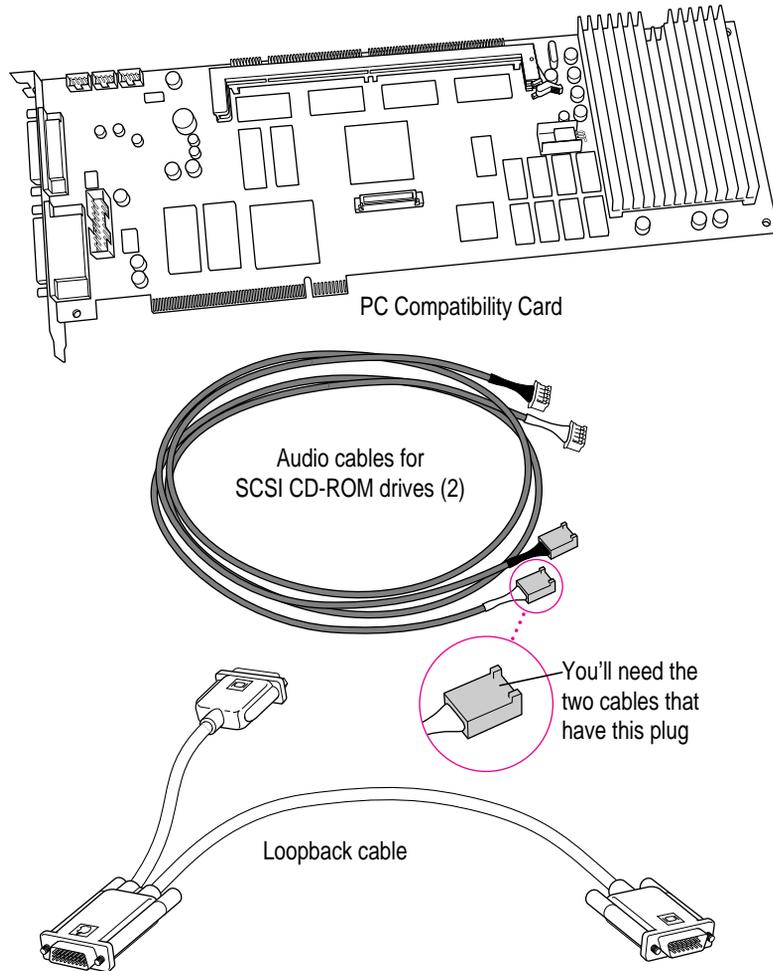
IMPORTANT If you will be installing a PC Serial and Parallel Card with your PC Compatibility Card, it's easiest to install both cards at the same time. The PC Serial and Parallel Card has standard PC ports that allow you to use several kinds of PC-compatible peripherals from the Windows or DOS environment (not from the Mac OS environment). Instructions in this chapter indicate when to see your PC Serial and Parallel Card manual for installation information.

After you install the PC Compatibility hardware, go to Chapter 5, “Connecting Monitors and Other Equipment.” If you want to install additional memory in your card, go to Appendix B, “Adding Memory to Your PC Compatibility Card.” Then turn to Chapters 6 through 9 to learn more about installing and using PC software.

WARNING Shipping your computer with a PC Compatibility Card installed may cause damage to the card. Your PC Compatibility Card should be shipped separately. (See Appendix A for instructions on how to remove the card.)

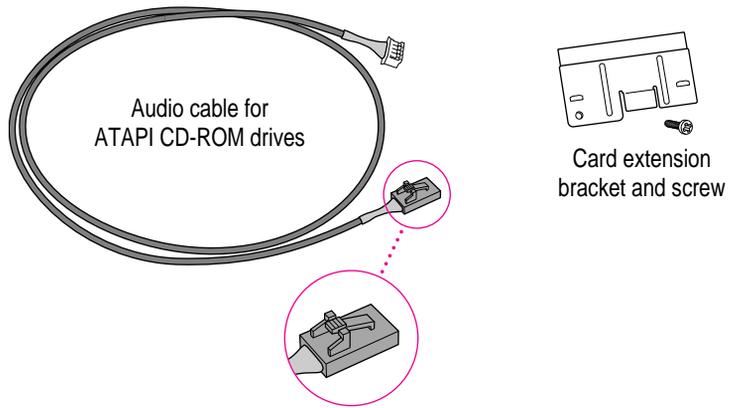
What you need

Before beginning the installation process, make sure you have all the necessary parts: the PC Compatibility Card, the audio cables, and the loopback cable.



You won't need the card extension bracket and screw.

Also, you won't need the audio cable that has a different plug from the other two cables (shown below).



Installing the PC Compatibility Card hardware

WARNING The installation of the PC Compatibility Card is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have the PC Compatibility Card installed by your Apple-authorized dealer (who may charge a fee). If you attempt to install the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to install the card, install memory, or connect the cables without first reading this manual.

There are several steps to installing your PC Compatibility Card hardware:

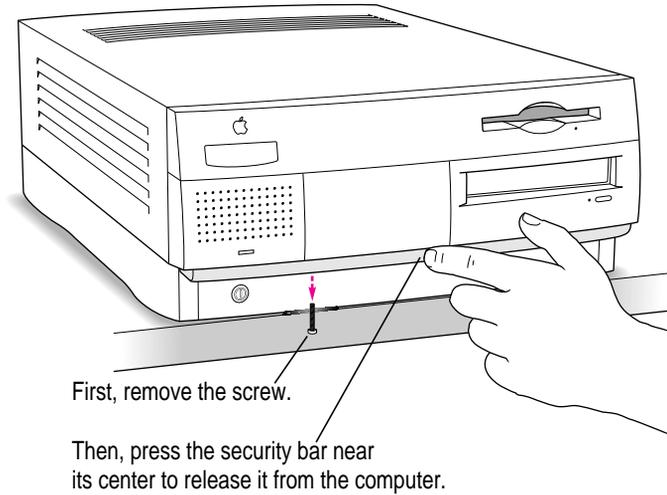
- opening the computer
- disconnecting the CD-ROM audio cable
- opening the expansion card cover and chassis
- inserting the PC Compatibility Card
- connecting the Sound Out cable
- connecting the CD In cable to the card
- replacing the chassis and expansion card cover
- connecting the CD In cable to the CD-ROM drive
- replacing the computer cover

Opening the computer

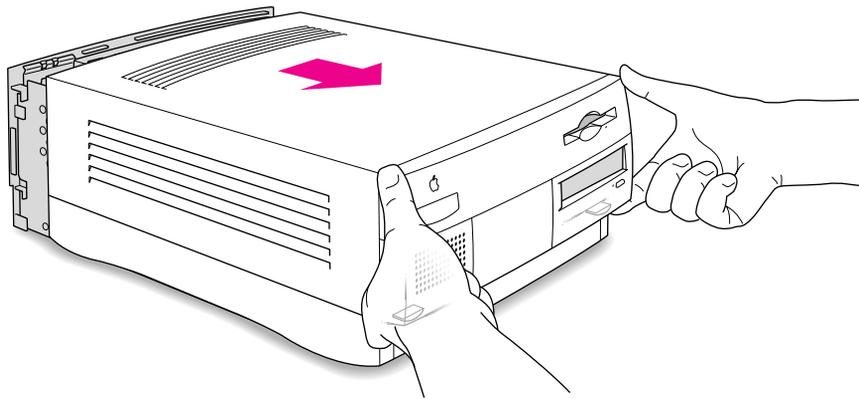
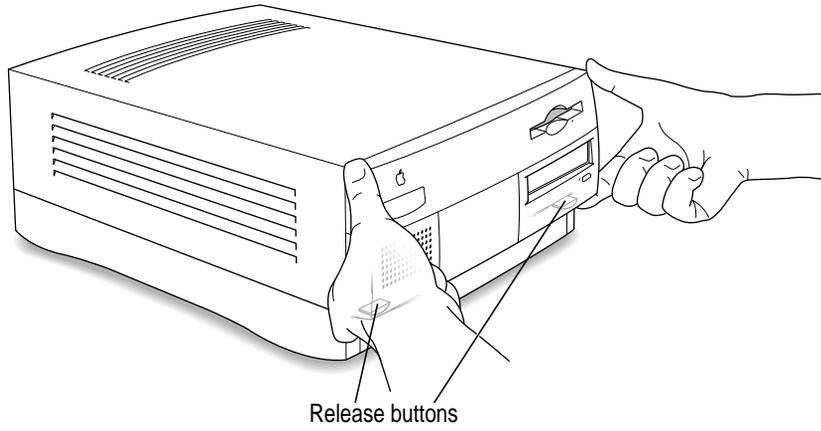
- 1 Shut down the computer and disconnect all cables from the computer, except for the power cord.

Leave the computer plugged in for now, to ground it and protect its components from static electricity damage.

- 2 If the security bar is installed, remove it by removing the screw under the front panel and pressing the center of the bar.

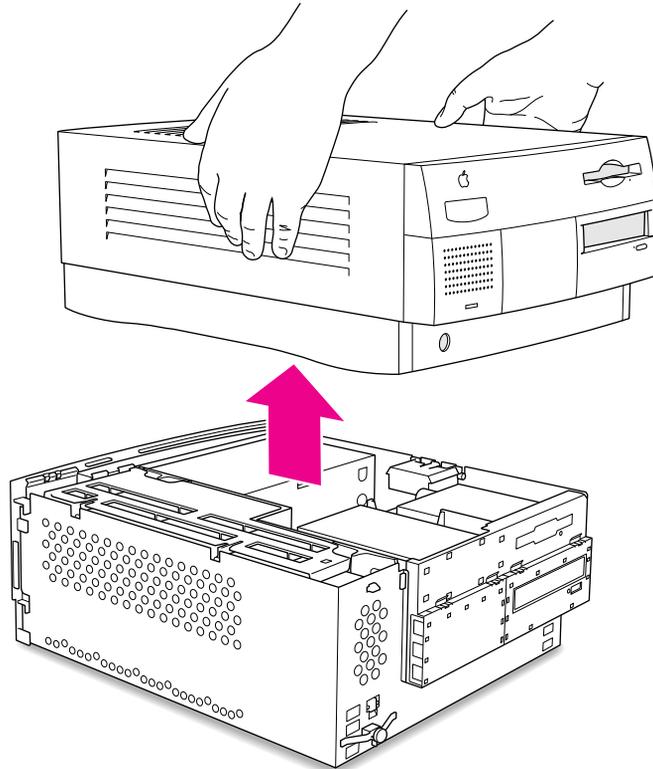


- 3** Press the two release buttons under the front panel and slide the cover toward you approximately two inches.



4 Remove the cover from the computer.

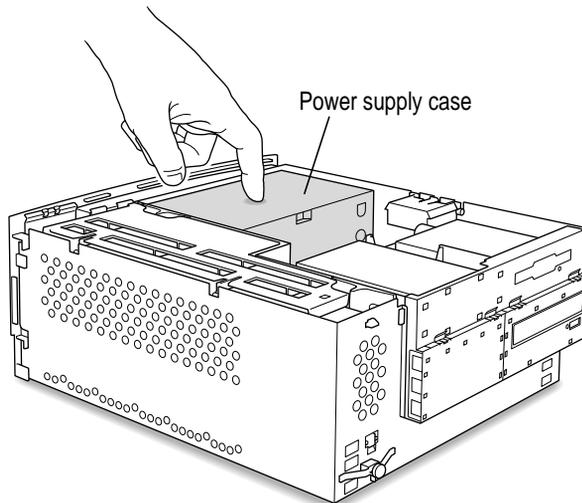
After you've slid the cover forward about two inches, lift it straight up and off the computer.



5 Touch the metal part of the power supply case inside the computer.

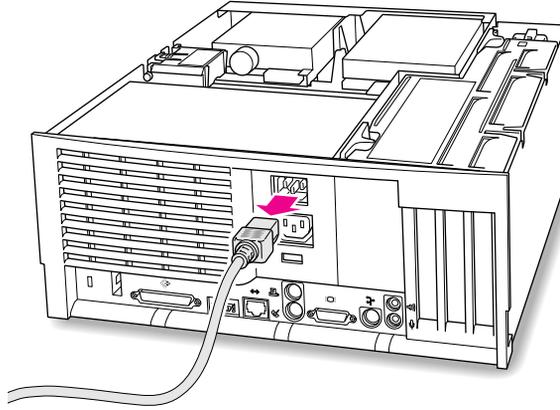
Always do this before you touch any parts, or install any components, inside the computer. Touching the power supply case helps release static electricity from your body and prevent possible damage to internal components.

IMPORTANT You can collect static electricity just by walking away from and then back to your computer. If you need to move away from your computer during installation, remember to touch the metal part of the power supply case again before you continue installing.



6 Disconnect the power cord.

Remove the power cord from the back of your computer.

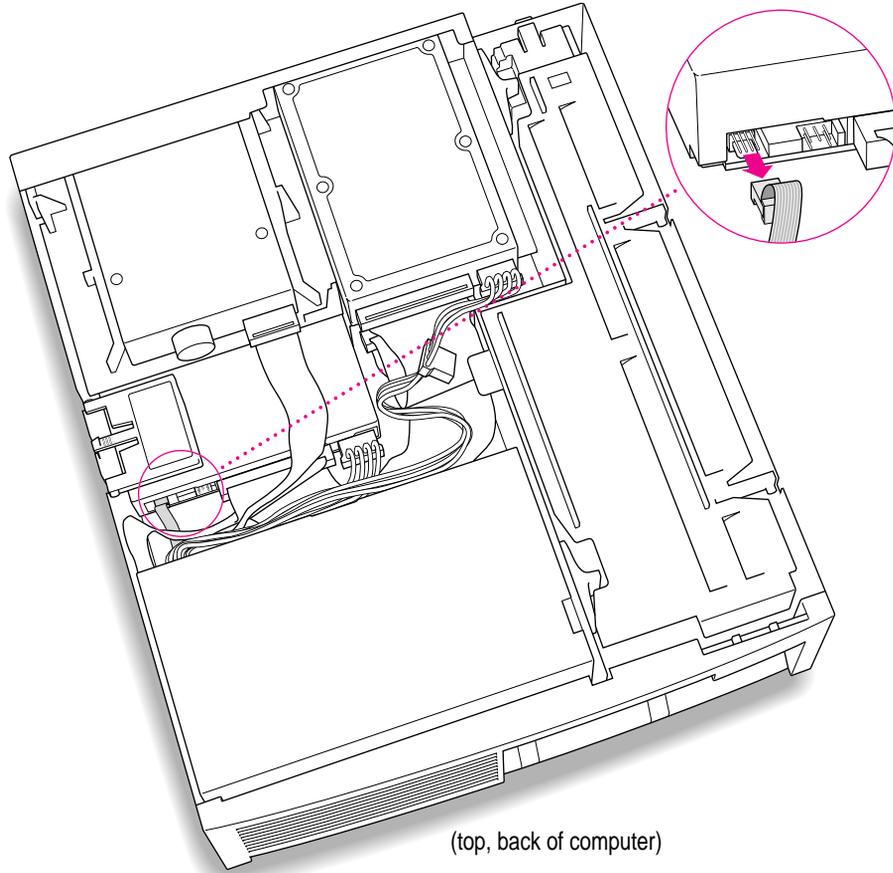


Disconnecting the CD-ROM audio cable

- 7 Disconnect the audio ribbon cable from the CD-ROM drive.

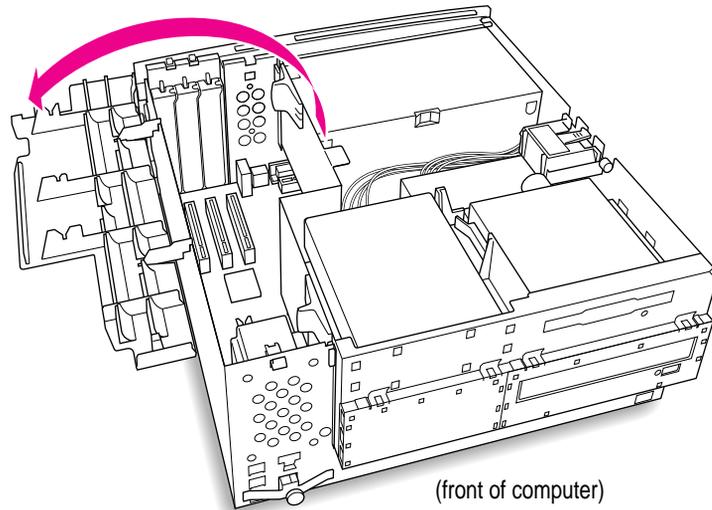
Be sure to pull the plug, not the cable.

Just disconnect this end of the cable for right now. Later you will replace this cable with the new cables that came with your PC Compatibility Card.

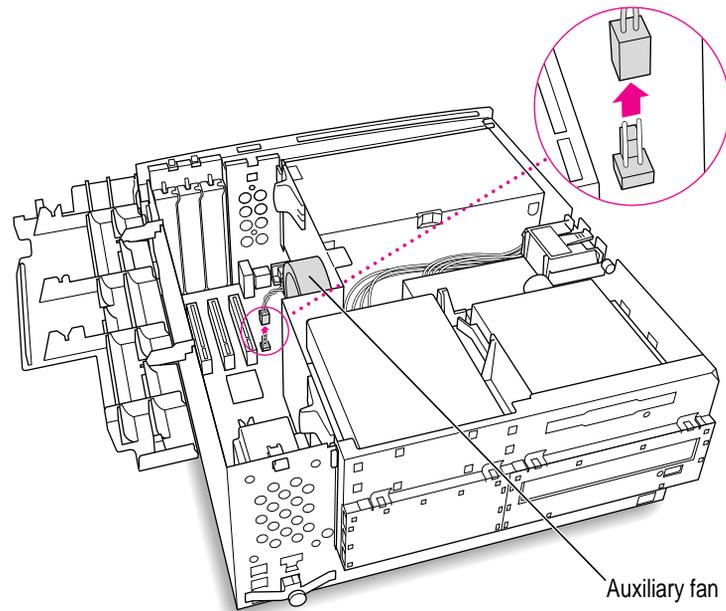


Opening the expansion card cover and chassis

- 8 Flip open the expansion card cover.



- 9 If there is an auxiliary fan, disconnect the fan cable from the Macintosh logic board.
Some computer models do not have a fan.

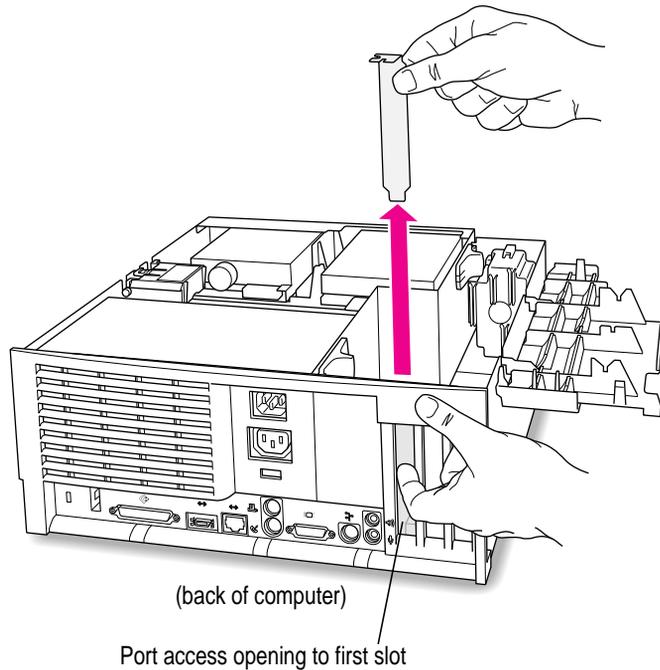


10 Prepare the first PCI expansion slot.

You need to install your PC Compatibility Card in the first PCI expansion slot, the slot closest to the center of the computer. If there is already a card in the first slot, move it to a different slot.

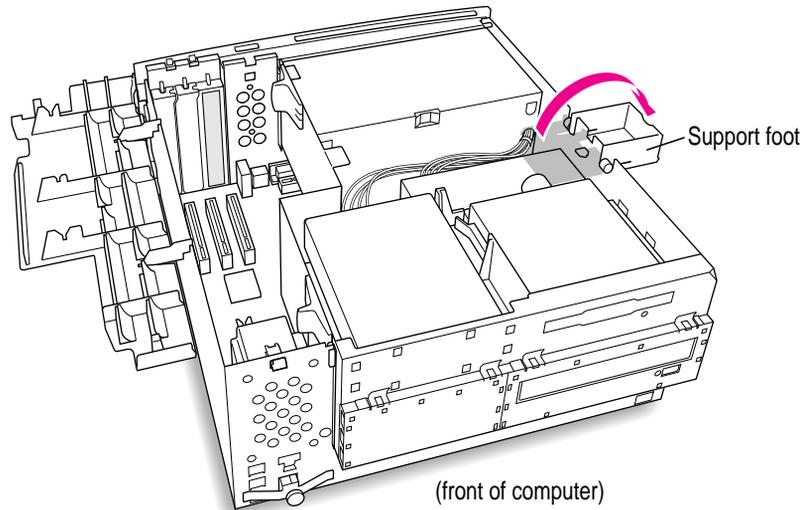
IMPORTANT If you will be installing a PC Serial and Parallel Card, you should also remove any card in the second slot (next to the first slot).

11 Remove the port access cover behind the first expansion slot.



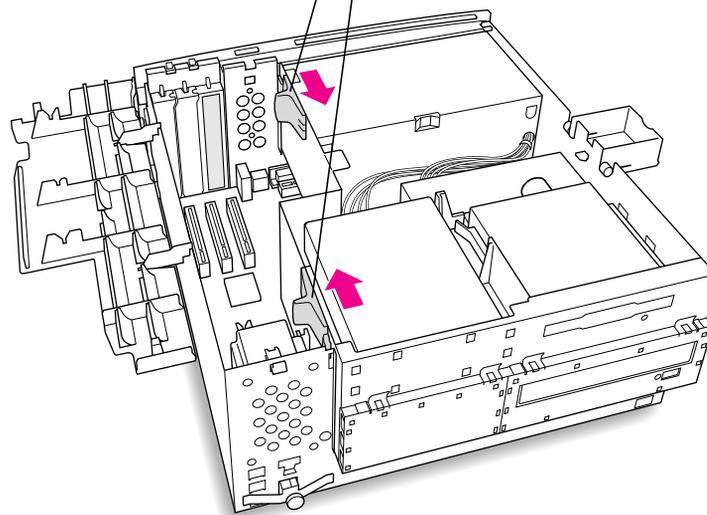
12 Position the support foot.

The support foot holds the computer's chassis when you open it.



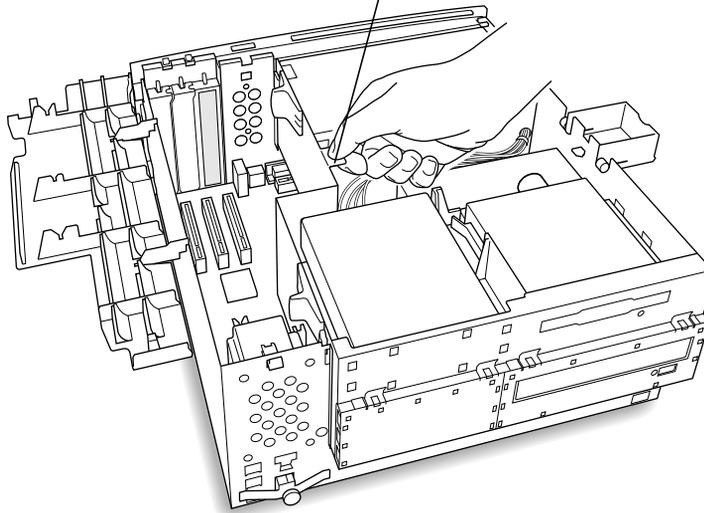
13 Unlock the chassis release switches.

Move the release switches toward the inside of the computer to unlock the top chassis.

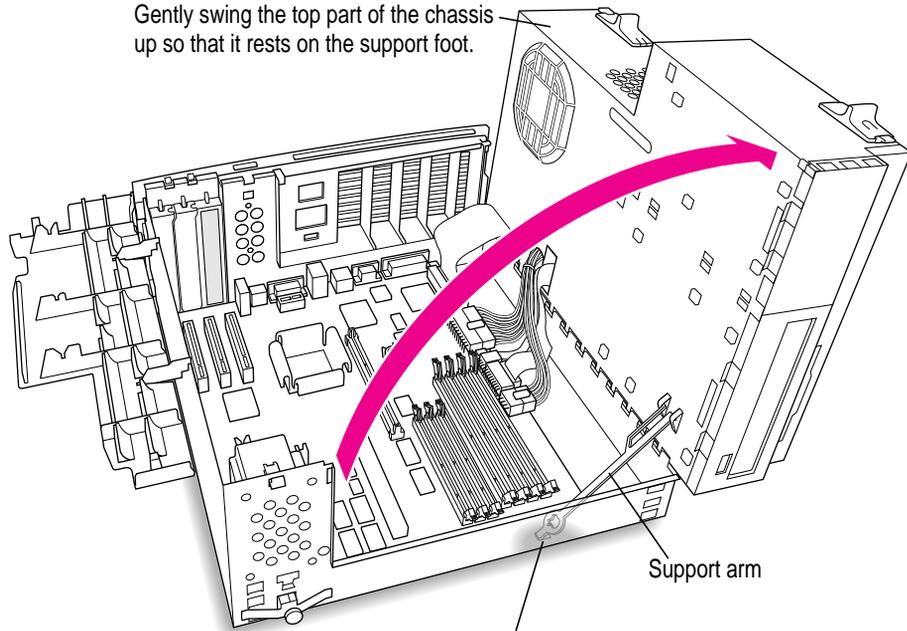


14 Lift the chassis and rest it on the support foot. Make sure the support arm is engaged.

You can use this tab to lift the top chassis.



Gently swing the top part of the chassis up so that it rests on the support foot.



Be sure that the support arm engages this hole on the floor of the bottom chassis so that the top chassis is locked in place.

What you do next depends on whether you are adding a DIMM (dual inline memory module) to increase the memory available to your PC Compatibility Card, and whether you are installing a PC Serial and Parallel Card.

- If you want to add memory to your card, turn now to Appendix B, “Adding Memory to Your PC Compatibility Card.” After you’ve completed the instructions in Appendix B, go on to the next section, “Inserting the PC Compatibility Card.”
- If you want to install the PC Serial and Parallel Card, you’ll need to connect the peripheral flex cable to your PC Compatibility Card now. See the PC Serial and Parallel Card manual for instructions. Then return to this manual, and go on to the next section, “Inserting the PC Compatibility Card.”

If you don’t want to add memory or install the PC Serial and Parallel Card, go on to the next section.

Inserting the PC Compatibility Card

15 Align the card with the first expansion slot.

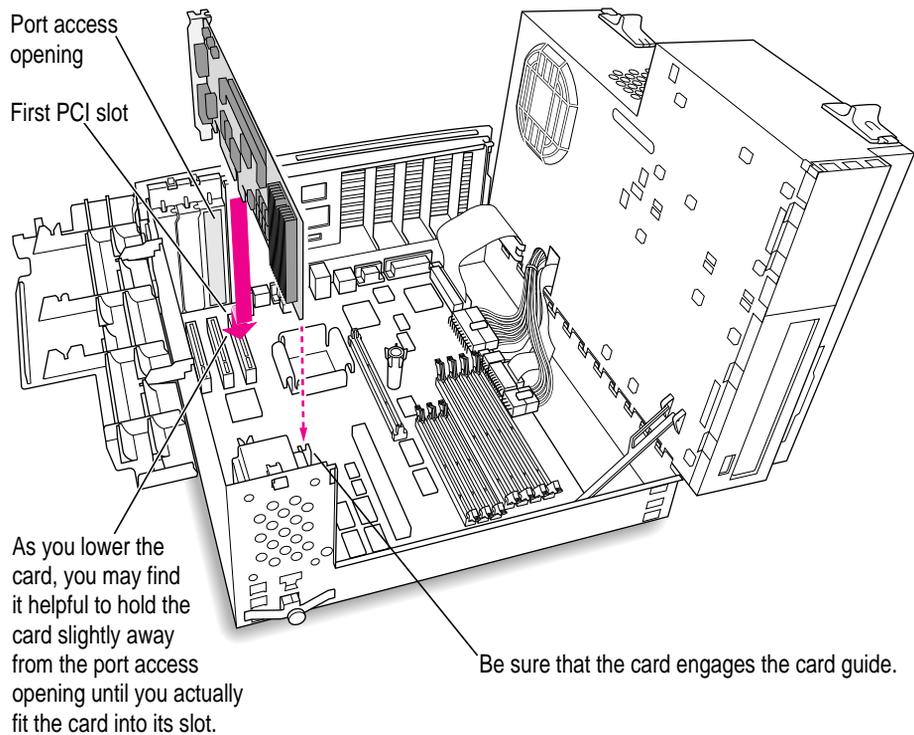
IMPORTANT Always hold the card by its edges. Don’t touch any of the components on the card.

Align the card’s connector end (gold in color) with the first PCI expansion slot. The ports on the card should face the port access opening on the computer’s back panel.

16 Insert the card.

The end of the card should engage the card guide at the front of the computer. Press down on the card. When the card is fully inserted, you won't be able to see the gold-colored connector any more.

- Don't rock the card from side to side; press it straight into the slot. Rocking the card can damage the PCI slot.
- Don't force the card. If you meet a lot of resistance, pull the card out and try again.
- To see if the card is connected, pull it gently. If it resists, it is connected.

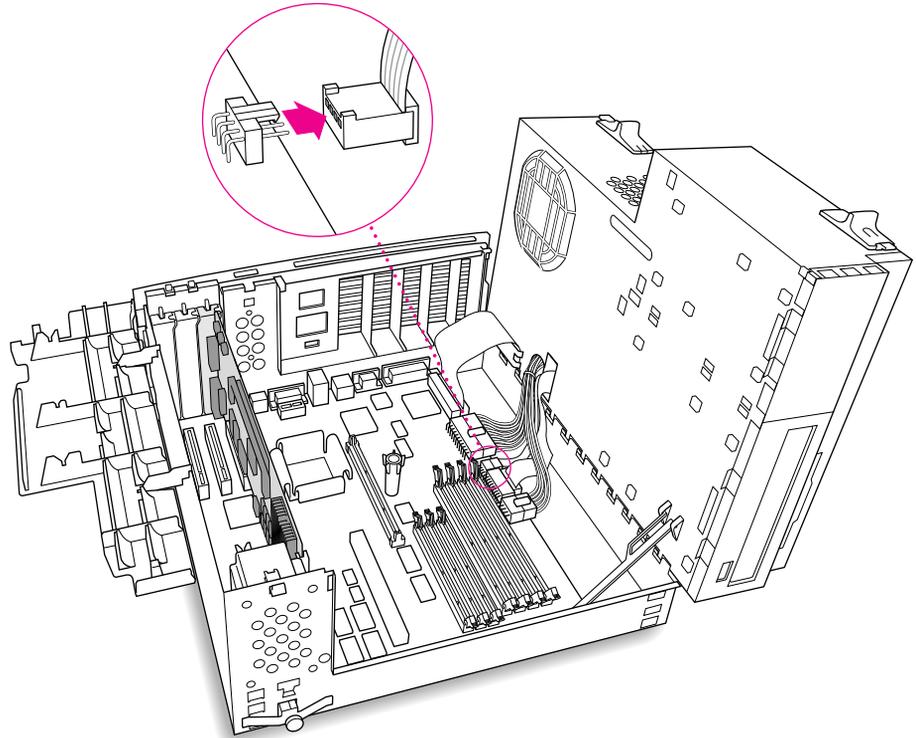


Connecting the Sound Out cable

- 17 **Disconnect the audio ribbon cable from the Macintosh logic board.**

This cable is connected near the DRAM DIMM slots. The connector has four pins and may be labeled “CD AUDIO” on the board.

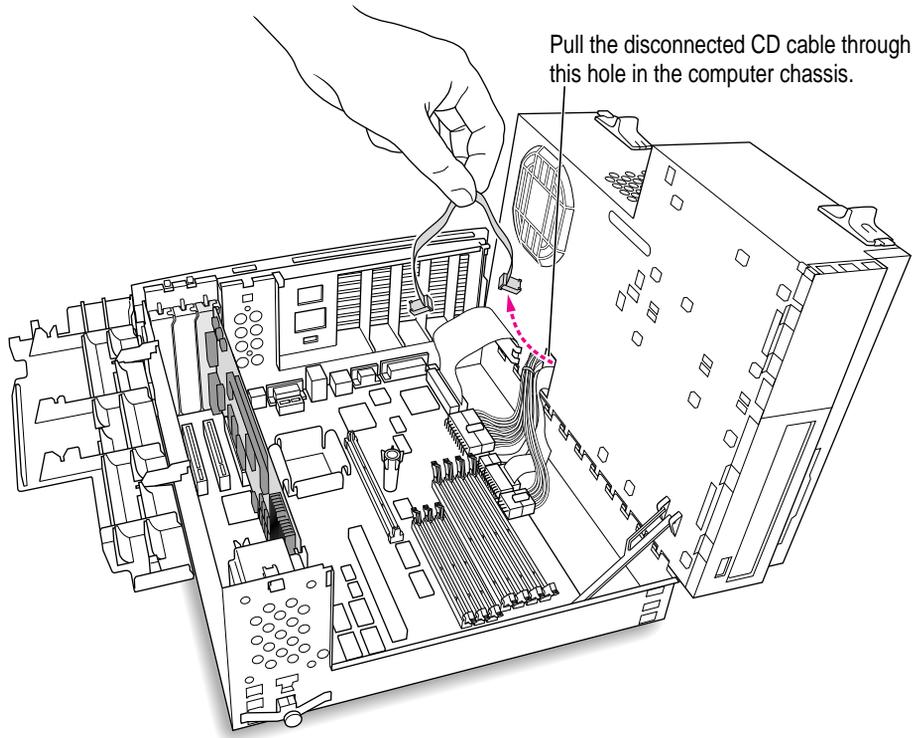
This is the same cable you disconnected from the CD-ROM drive in step 7. You will be replacing it with the cables that came with your PC Compatibility Card.



18 Pull the cable through the hole in the chassis and set it aside.

Don't force the cable. If it resists, jiggle it or feed it back through the hole and try pulling it loose again.

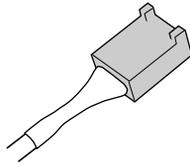
Keep this cable; you will need to reinstall it if you ever remove your PC Compatibility Card.



- 19 **Plug one of the two identical SCSI audio cables into the connector labeled “REV_SND_OUT” (Reversed Sound Out) on the PC Compatibility Card.**

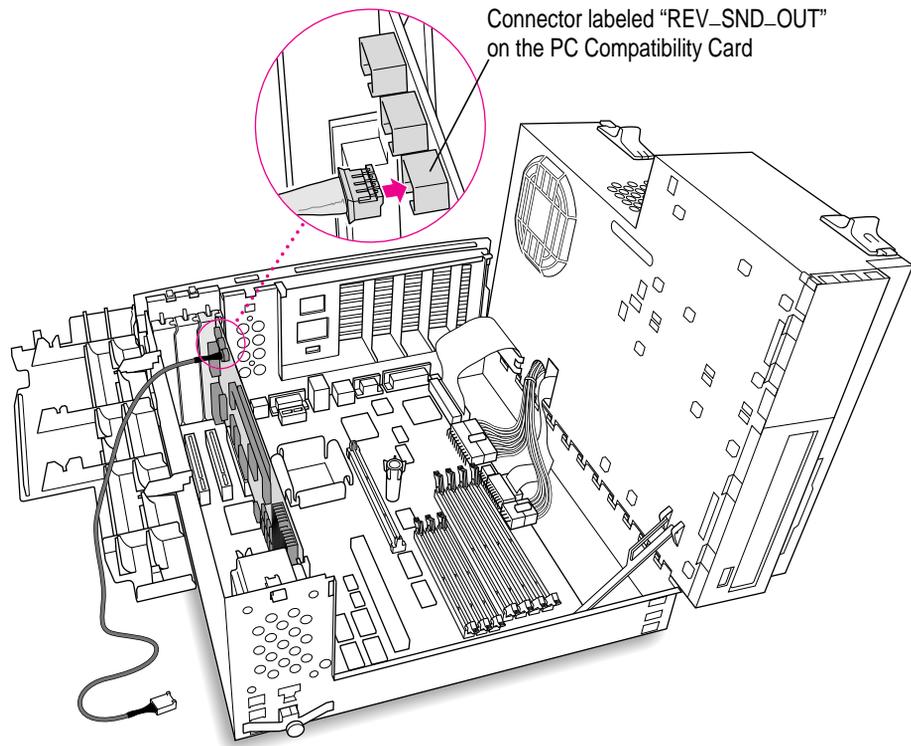
IMPORTANT Use only the cables that came with this PC Compatibility Card. Do not use cables from other models of the card.

Your PC Compatibility Card came with three audio cables. They may have different colors of tubing near the ends to help you tell them apart. You'll only be using two of these cables (the third one is for a different kind of CD-ROM drive). Two of the cables have identical plugs on the end, as shown below. Use one of these two identical cables for this step.



Audio cable plug for
SCSI CD-ROM drives

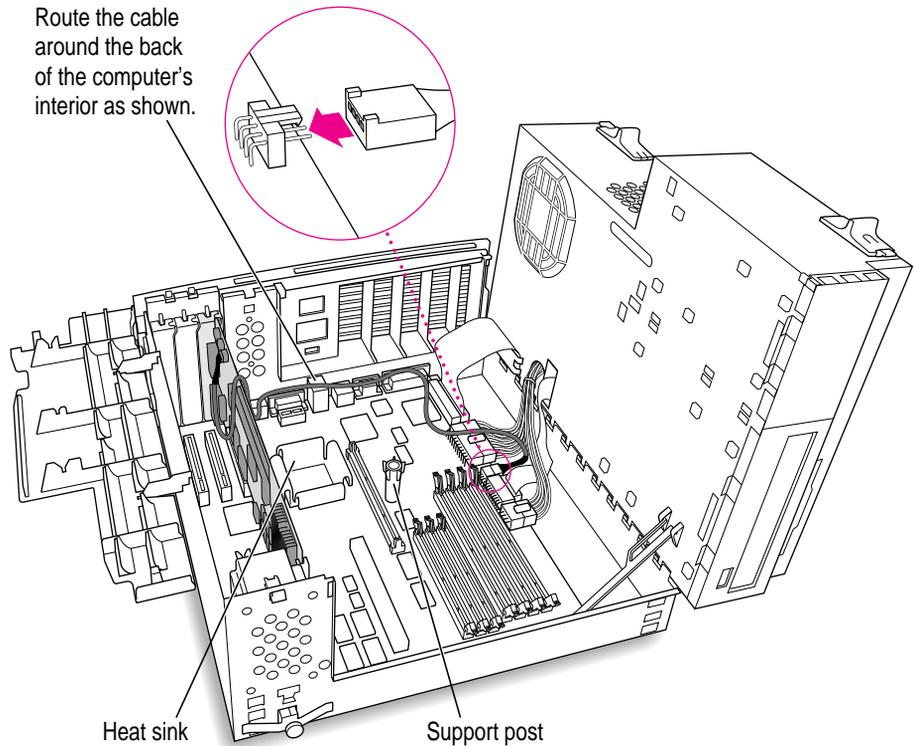
Insert the cable's smaller plug into the Reversed Sound Out connector. This connector is in the upper-left corner of the card, the third connector from the end.



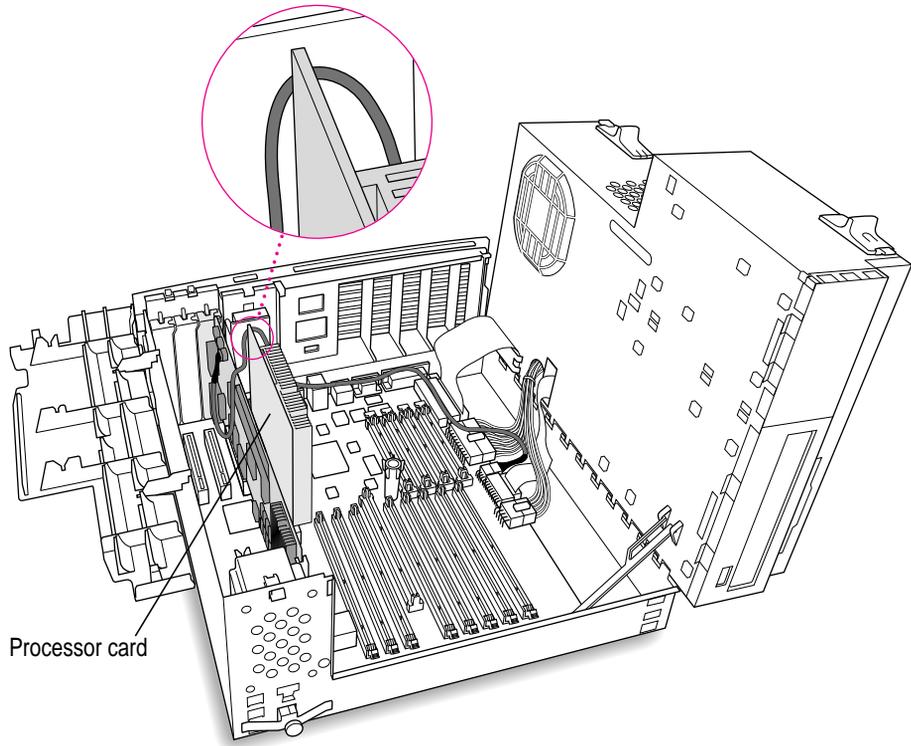
- 20** Route the cable over the top of the card and around the back of the Macintosh logic board. Then plug the cable into the audio connector on the logic board.

Keep the cable away from the heat sink and center support post.

Insert the cable's larger plug into the CD audio connector on the logic board, where you unplugged the ribbon cable in step 17.



If there is a processor card in your computer, route the cable between the processor card and the back panel (not over the top of the processor card).

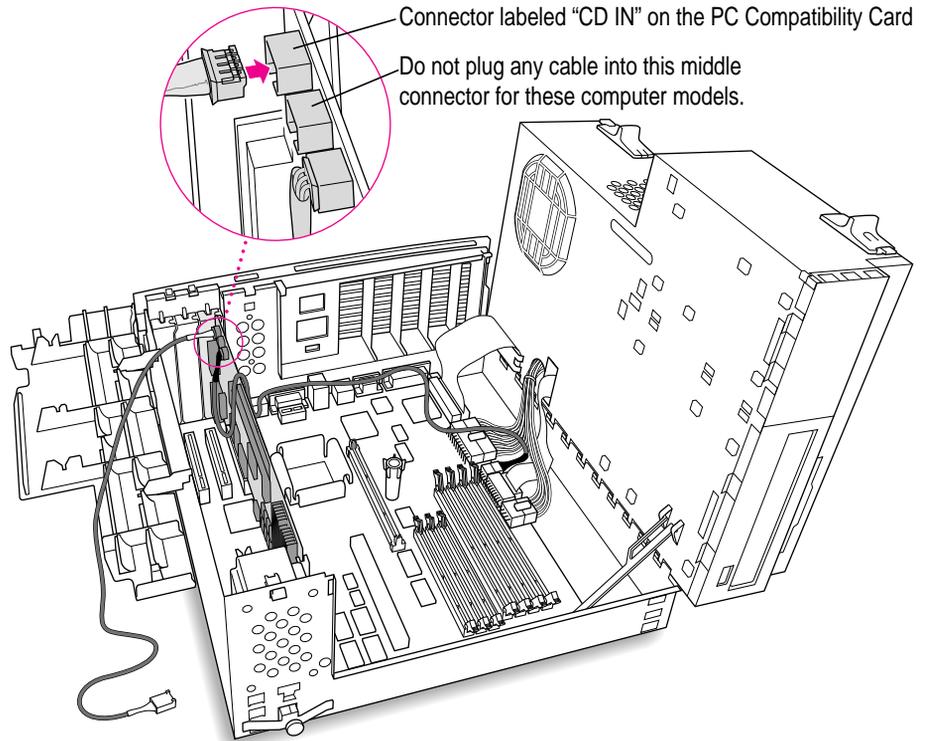


Connecting the CD In cable to the card

- 21 Plug the other SCSI audio cable into the connector labeled “CD IN” on the far upper-left corner of the PC Compatibility Card.

Use the cable with the thick plug that looks identical to the cable you connected to the logic board.

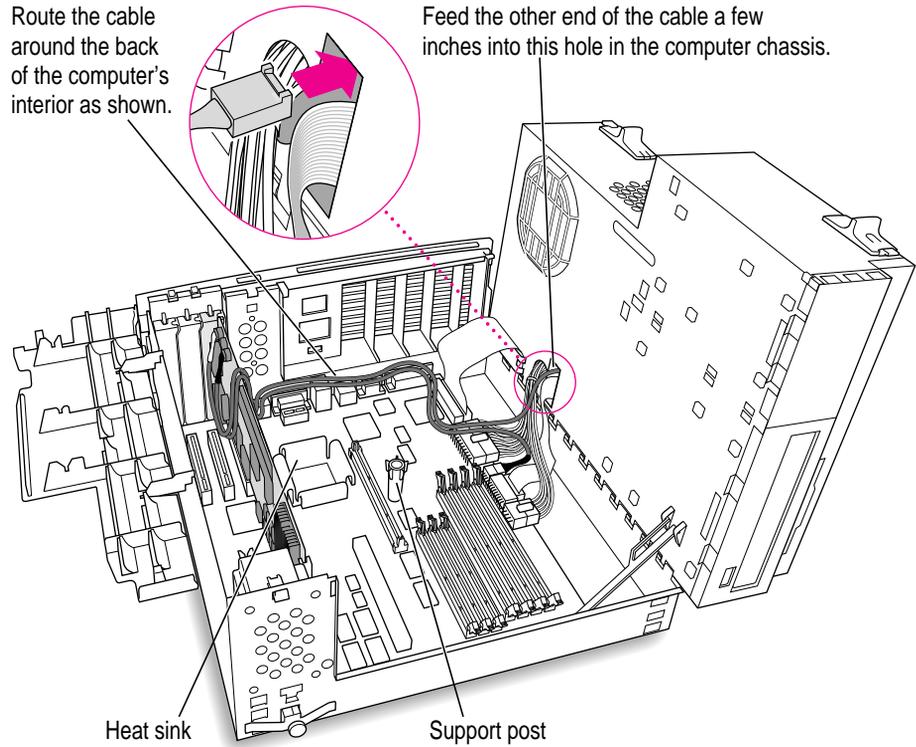
Insert the cable’s smaller plug into the connector labeled “CD IN” on the PC Compatibility Card.



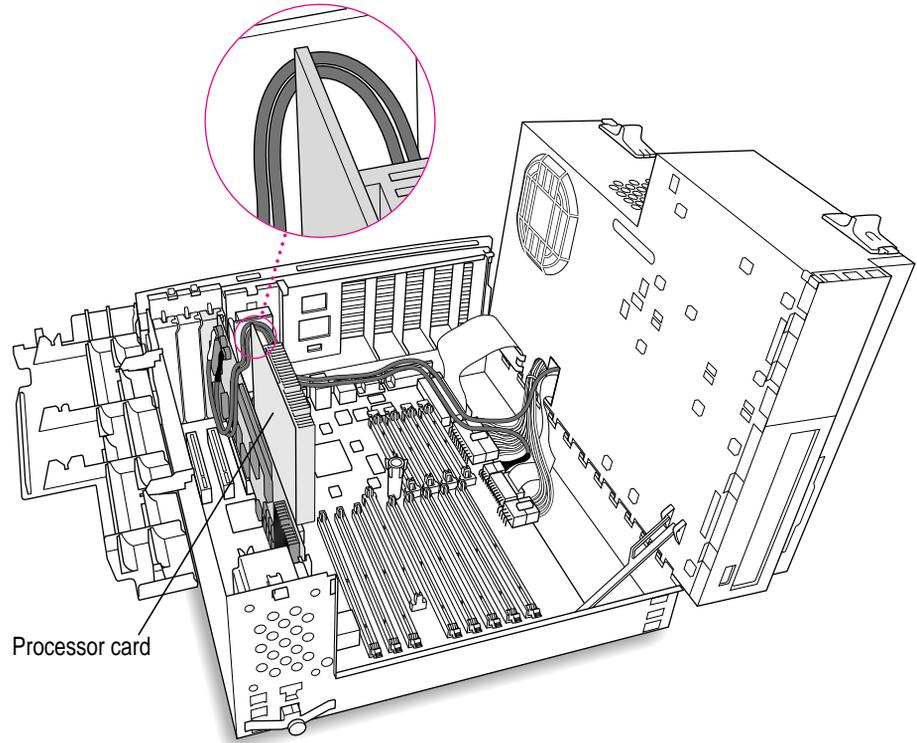
- 22** Route the second cable over the top of the card, around the back of the logic board, and through the hole in the computer's chassis.

Keep the cable away from the heat sink and the center support post.

You'll connect this cable to the CD-ROM drive in step 29.



If there is a processor card in your computer, route the cable between the processor card and the back panel (not over the top of the processor card).

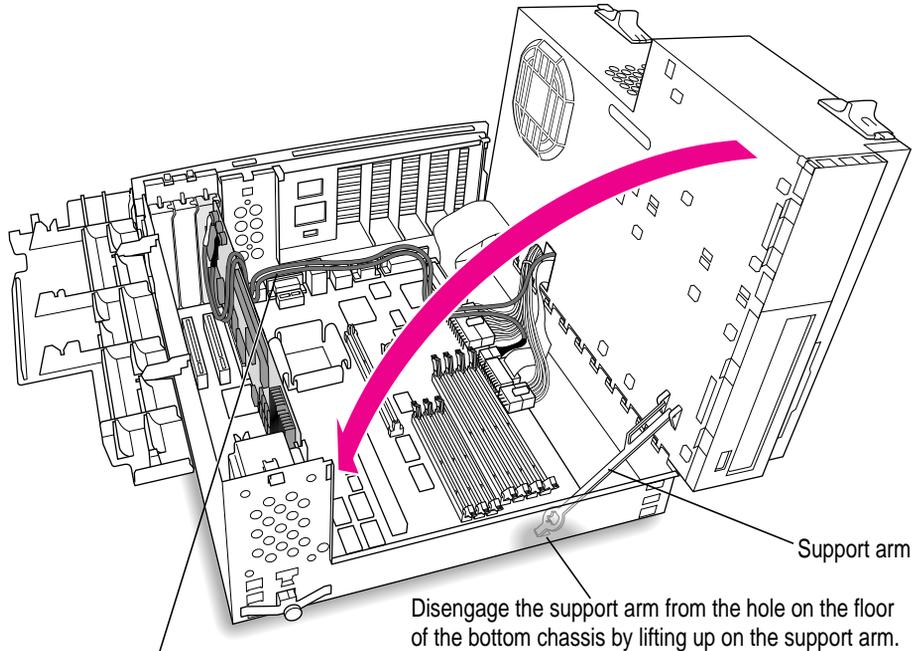


IMPORTANT If you are installing the PC Serial and Parallel Card, you should insert it now. See the PC Serial and Parallel Card manual for instructions.

Replacing the chassis and expansion card cover

- 23 Make sure all cards and cables are firmly connected.
- 24 Disengage the support arm and swing the chassis down, without pinching any cables.

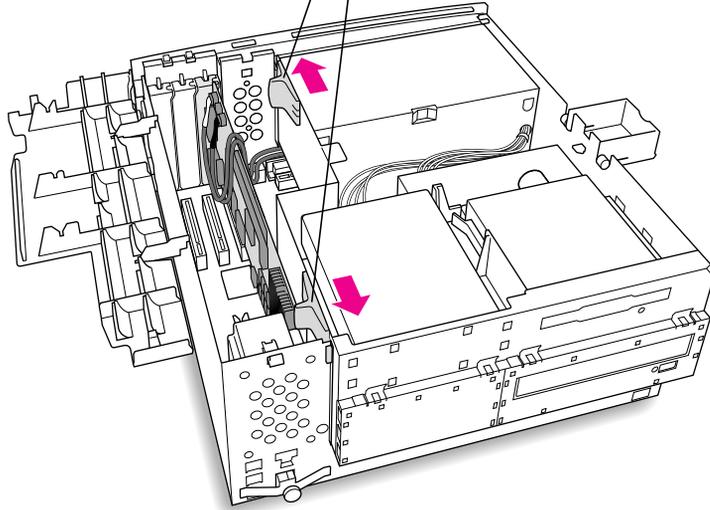
Make sure the cables you connected are away from the heat sink and center support post.



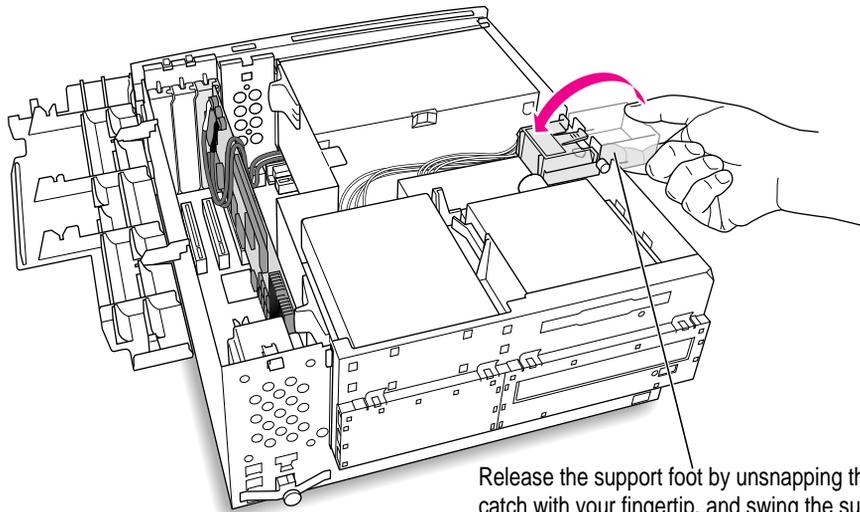
Gently swing the top part of the chassis down until it rests securely on the bottom chassis. Be sure that you don't pinch any of the cables between the top and bottom parts of the chassis.

25 Lock the release switches.

Move the release switches toward the outside of the computer to lock the top chassis.



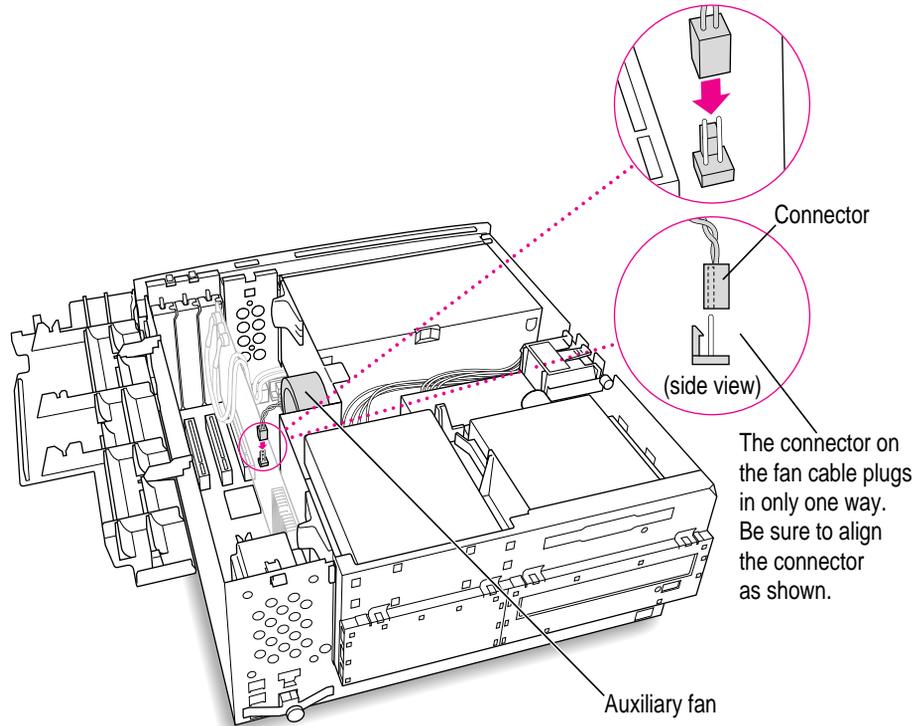
26 Replace the support foot.



Release the support foot by unsnapping the catch with your fingertip, and swing the support foot back inside the chassis.

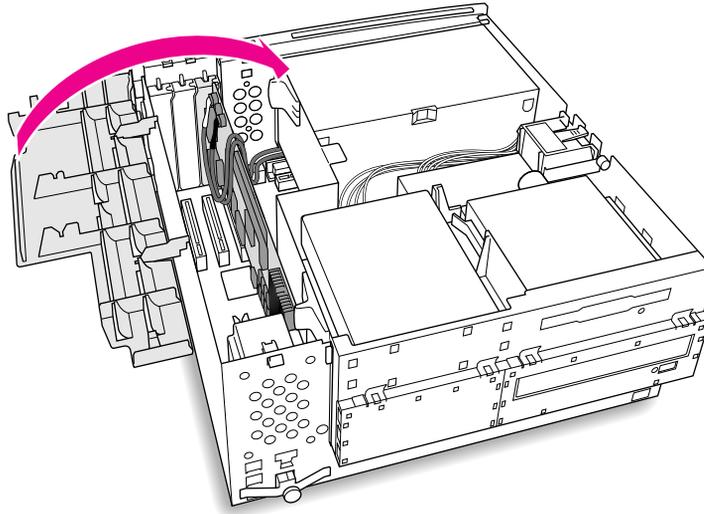
27 If you unplugged the auxiliary fan cable, reconnect it to the Macintosh logic board.

Not all computer models have an auxiliary fan.



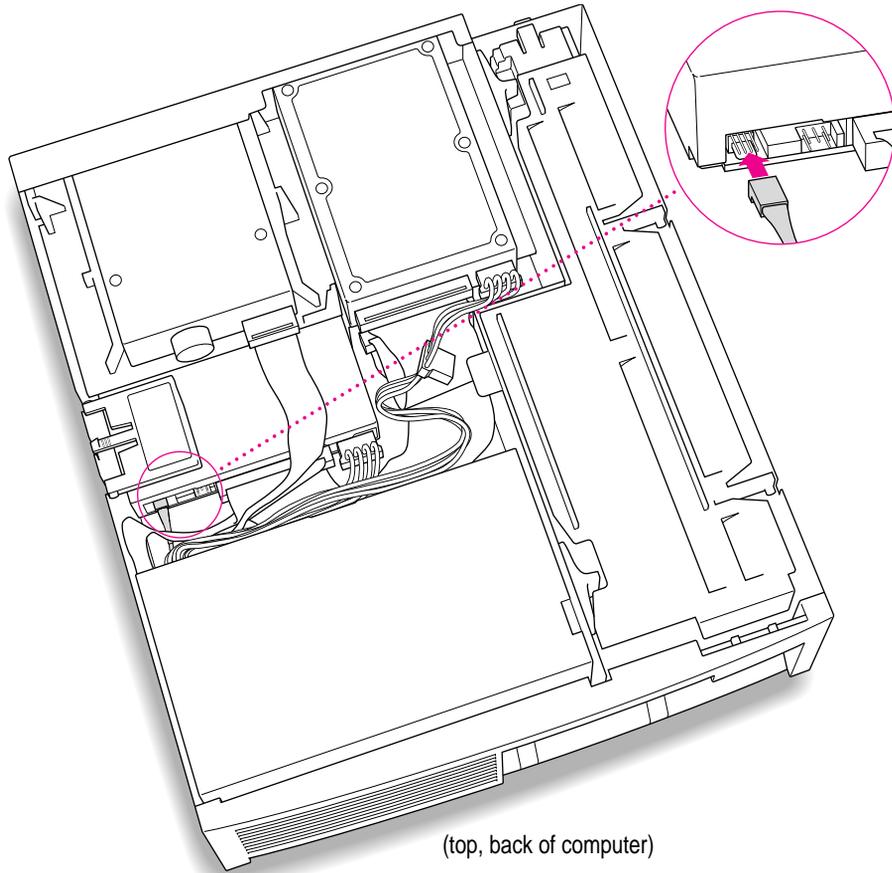
- 28** Flip the expansion card cover up and snap it back into place. (Be sure to snap the cover back down on both ends.)

If the cover doesn't snap into place easily, make sure no cables are in the way.



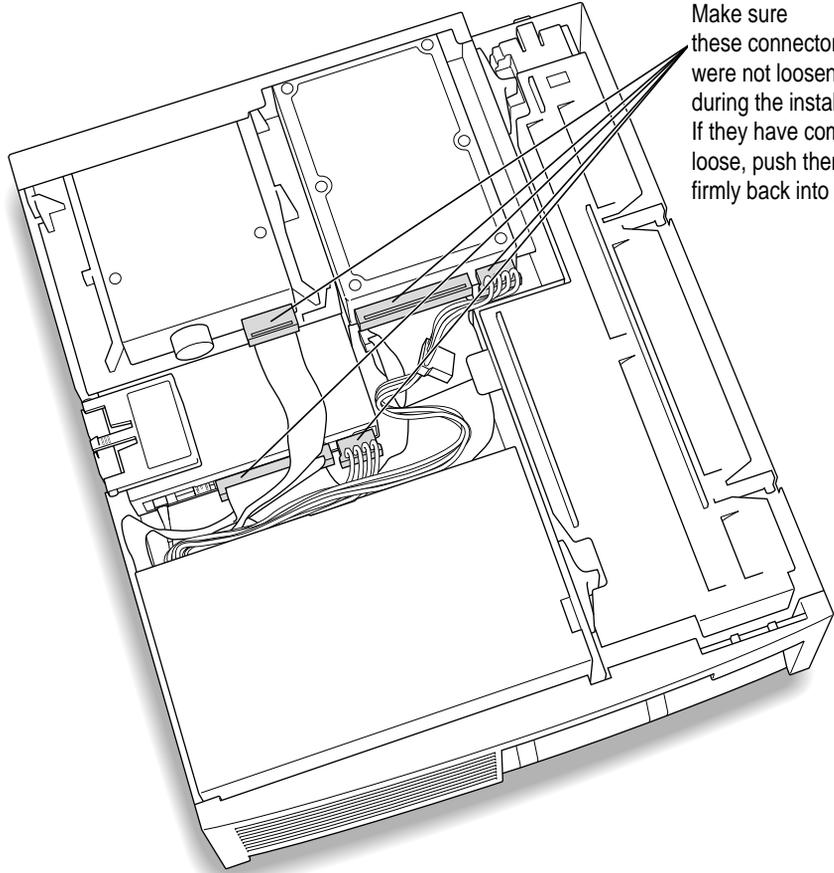
Connecting the CD In cable to the CD-ROM drive

- 29 Plug the audio cable you threaded through the computer's chassis (in step 22) into the back of the CD-ROM drive.



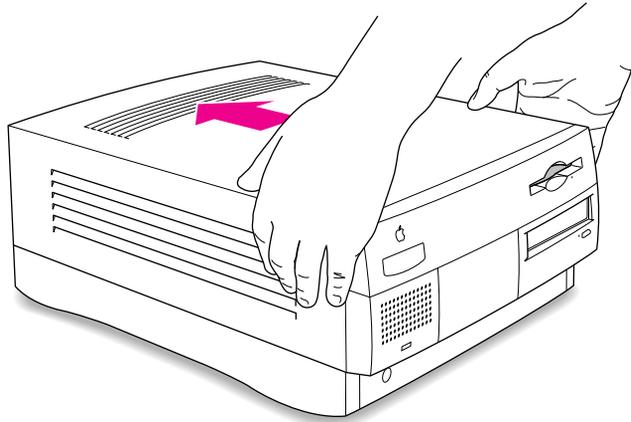
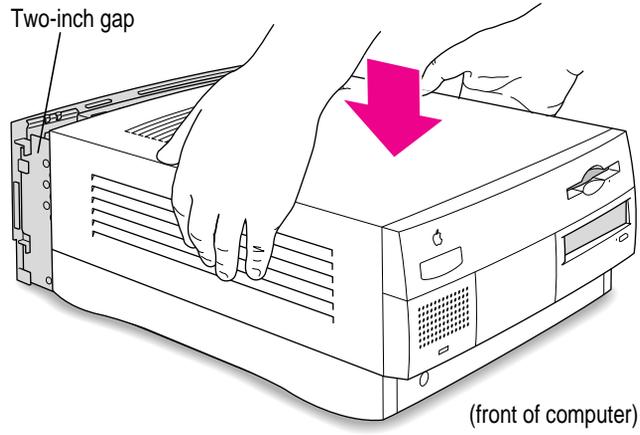
Replacing the computer cover

- 30 Make sure all connectors are firmly attached.



Make sure these connectors were not loosened during the installation. If they have come loose, push them firmly back into place.

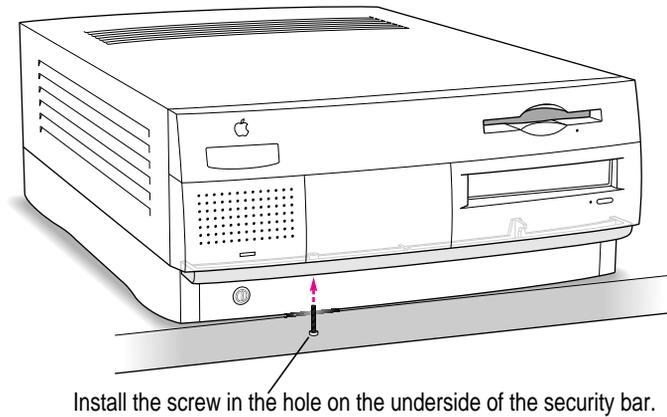
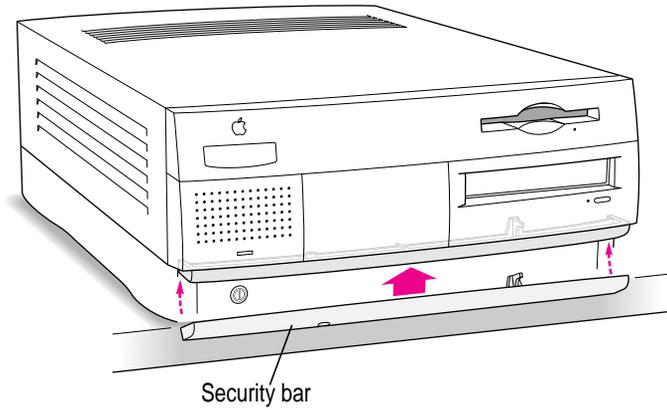
- 31** Lower the cover onto the case, leaving a two-inch gap, and then push the cover back.



32 If you removed the security bar earlier, replace it now.

Place the security bar under the front panel and tilt the bar so that the hook slides into the slot. Then reinsert the screw and tighten it into place.

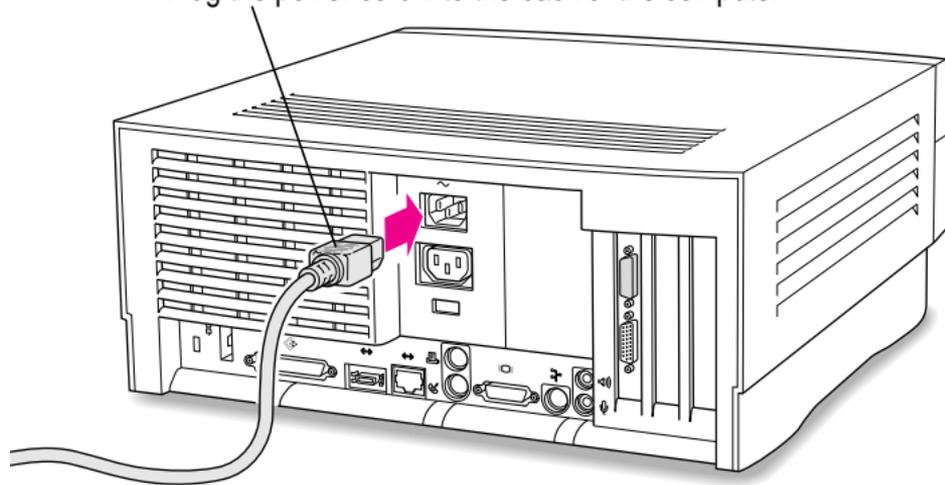
IMPORTANT Do not overtighten the screw.



33 Reconnect all equipment.

Reinsert the power cable and all other equipment cables.

Plug the power cord into the back of the computer.



You are now finished installing the card.

3

Installing the Card in a Power Macintosh 8500 or 9500



Except where noted, the illustrations in this chapter show the 8500 model. If you have a 9500 model, some of the illustrations may look slightly different from your computer.

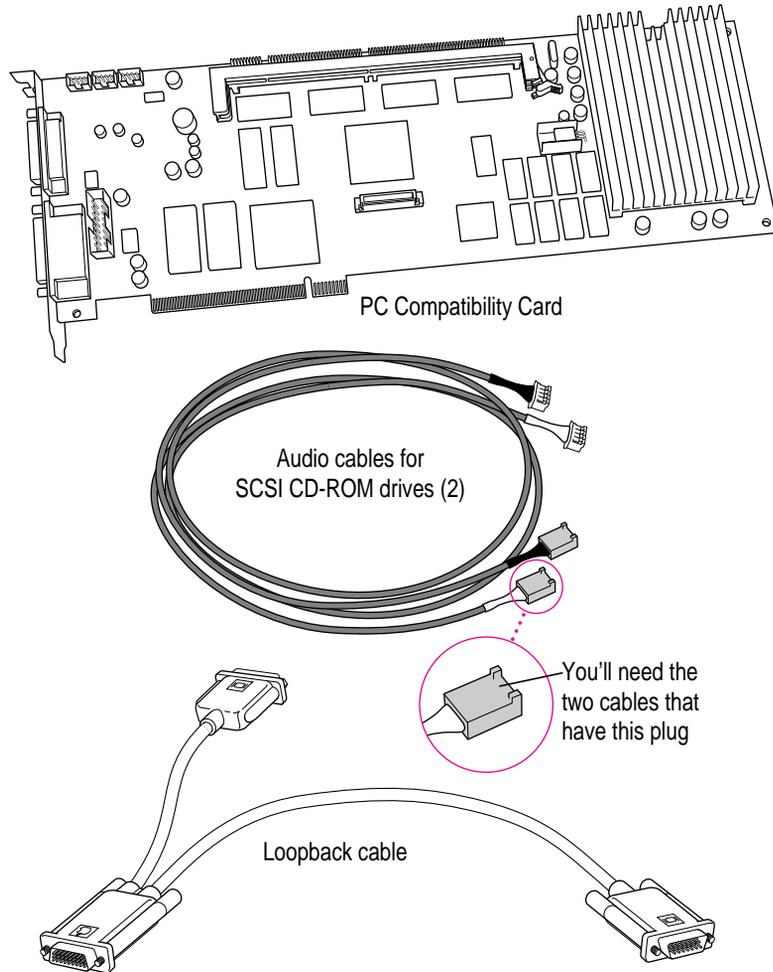
IMPORTANT If you will be installing a PC Serial and Parallel Card with your PC Compatibility Card, it's easiest to install both cards at the same time. The PC Serial and Parallel Card has standard PC ports that allow you to use several kinds of PC-compatible peripherals from the Windows or DOS environment (not from the Mac OS environment). Instructions in this chapter indicate when to see your PC Serial and Parallel Card manual for installation information.

After you install the PC Compatibility hardware, go to Chapter 5, “Connecting Monitors and Other Equipment.” If you want to install additional memory in your card, go to Appendix B, “Adding Memory to Your PC Compatibility Card.” Then turn to Chapters 6 through 9 to learn more about installing and using PC software.

WARNING Shipping your computer with a PC Compatibility Card installed may cause damage to the card. Your PC Compatibility Card should be shipped separately. (See Appendix A for instructions on how to remove the card.)

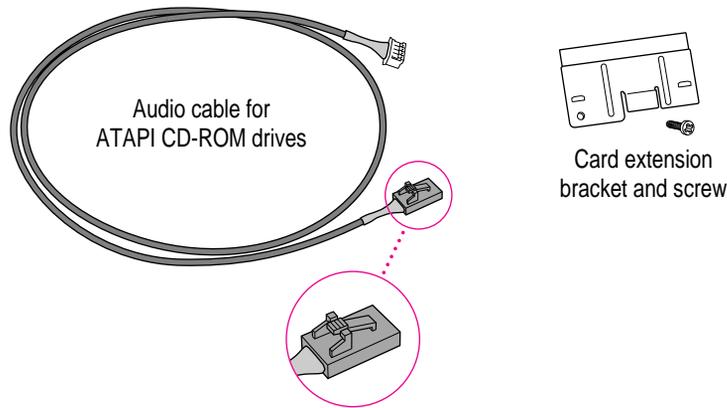
What you need

Before beginning the installation process, make sure you have all the necessary parts: the PC Compatibility Card, the audio cables, and the loopback cable. You'll also need a flathead screwdriver.



You won't need the card extension bracket and screw.

Also, you won't need the audio cable that has a different plug from the other two cables (shown below).



Installing the PC Compatibility Card hardware

WARNING The installation of the PC Compatibility Card is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have the PC Compatibility Card installed by your Apple-authorized dealer (who may charge a fee). If you attempt to install the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to install the card, install memory, or connect the cables without first reading this manual.

There are several steps to installing your PC Compatibility Card hardware:

- opening the computer
- inserting the PC Compatibility Card
- connecting the audio cables
- replacing the computer cover

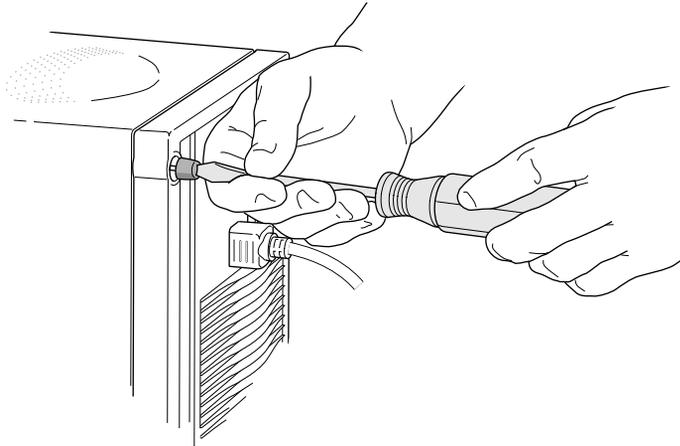
Opening the computer

- 1 Disconnect all the cables from the computer, except for the power cord.**

Leave the computer plugged in for now, to ground it and protect its components from static electricity damage.

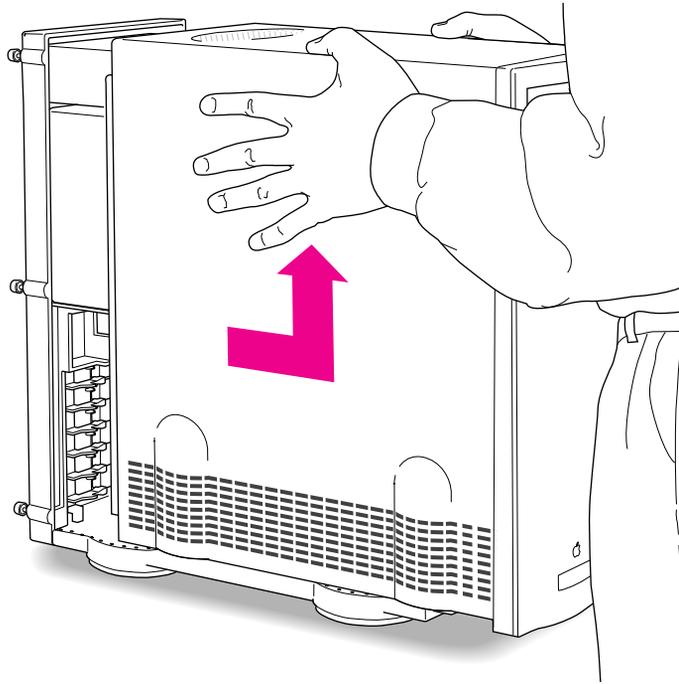
- 2 Loosen the large screws on the back panel.**

If you have a Power Macintosh 8500, there are four screws, one at each corner of the back panel. If you have a Power Macintosh 9500, there are six screws (one at each corner and two on the sides of the back panel). Do not completely remove the screws or the back panel.



3 Remove the cover from the computer.

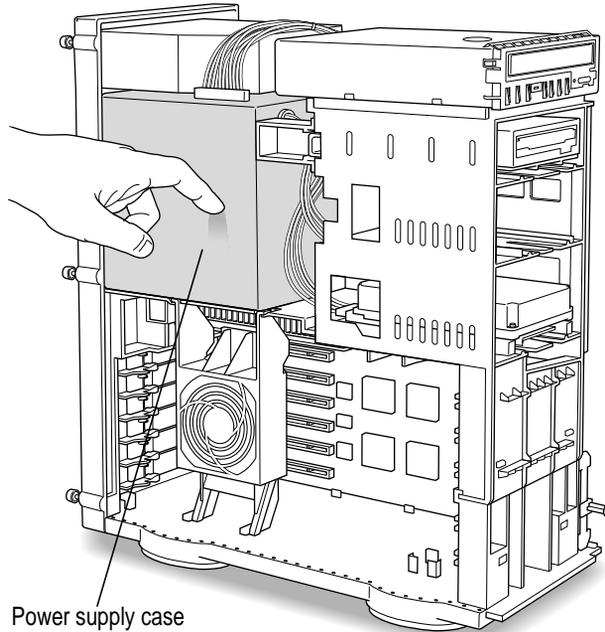
Slide the cover away from the back panel about two inches. Then raise the cover straight up and off the computer.



4 Touch the metal part of the power supply case inside the computer.

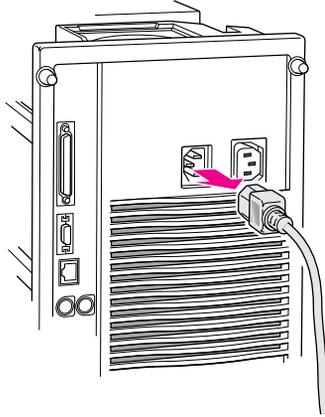
Always do this before you touch any parts, or install any components, inside the computer. Touching the power supply case helps release static electricity from your body and prevent possible damage to internal components.

IMPORTANT You can collect static electricity just by walking away from and then back to your computer. If you need to move away from your computer during installation, remember to touch the metal part of the power supply case again before you continue installing.



5 Disconnect the power cord.

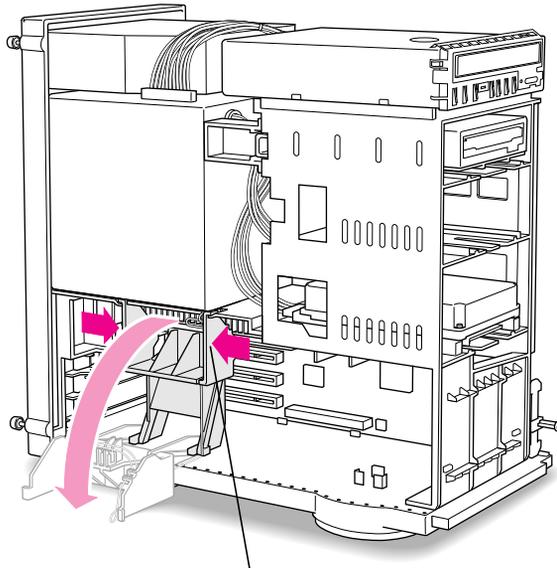
Remove the power cord from the back of the computer.



6 Lower the retainer or auxiliary fan.

Squeeze the sides of the retainer or fan and pull down.

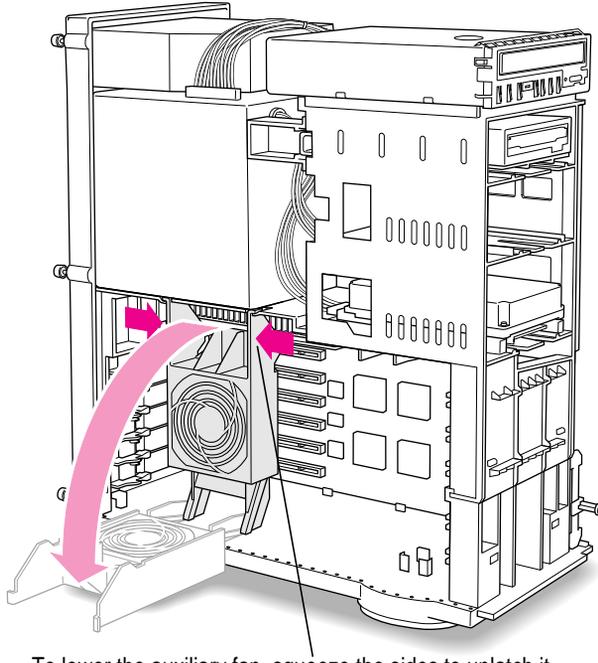
If you have a Power Macintosh 8500, follow this illustration:



To lower the retainer, squeeze the sides to unlatch it.



If you have a Power Macintosh 9500, follow this illustration:

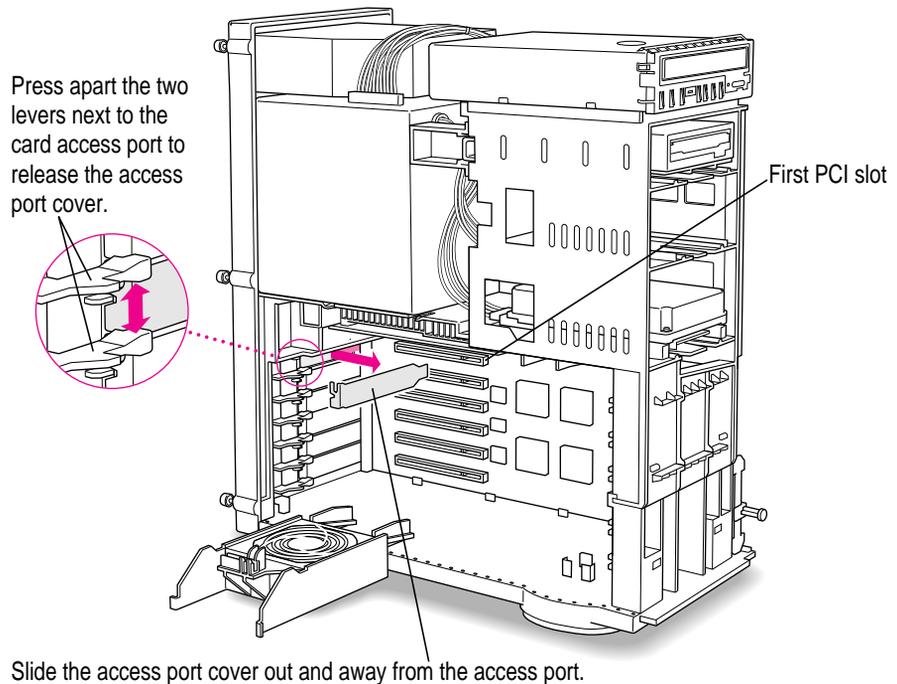


To lower the auxiliary fan, squeeze the sides to unlatch it.

- 7** Pull out the metal access port cover behind the expansion slot closest to the center of the computer.

You need to install your PC Compatibility Card in the first (top) PCI expansion slot, which is the slot closest to the processor card. If there is already a card in the first slot, move it to a different slot.

IMPORTANT If you will be installing a PC Serial and Parallel Card, you should also remove any card in the second slot (below the first slot).



What you do next depends on whether you are adding a DIMM (dual inline memory module) to increase the memory available to your PC Compatibility Card, and whether you are installing a PC Serial and Parallel Card.

- If you want to add memory to your card, turn now to Appendix B, “Adding Memory to Your PC Compatibility Card.” After you’ve completed the instructions in Appendix B, go on to the next section, “Inserting the PC Compatibility Card.”
- If you want to install the PC Serial and Parallel Card, you’ll need to connect the peripheral flex cable to your PC Compatibility Card now. See the PC Serial and Parallel Card manual for instructions. Then return to this manual, and go on to the next section, “Inserting the PC Compatibility Card.”

If you don’t want to add memory or install the PC Serial and Parallel Card, go on to the next section.

Inserting the PC Compatibility Card

8 Align the card with the expansion slot.

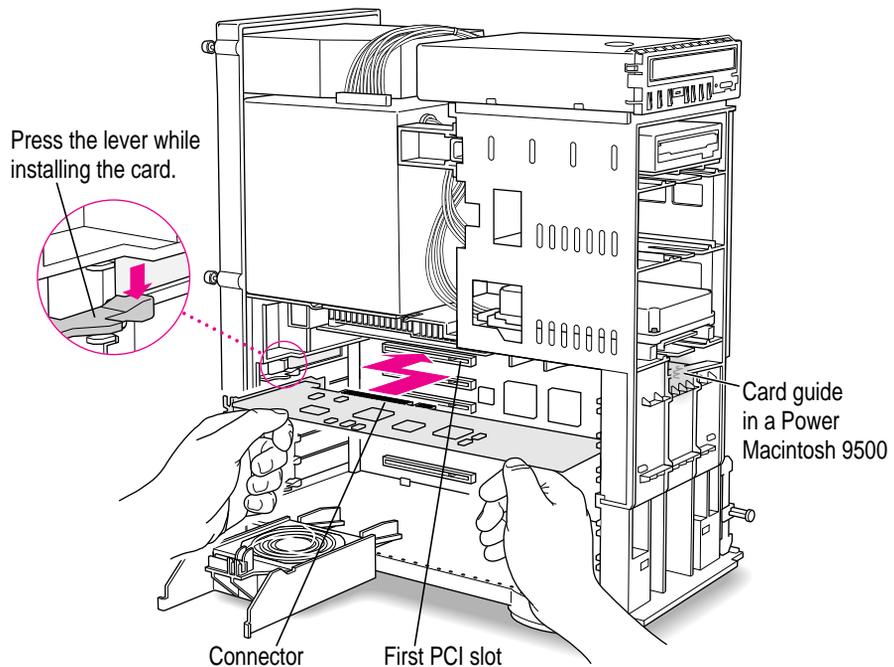
IMPORTANT Always hold the card by its edges. Don't touch any of the components on the card.

Align the card's connector end (gold in color) with the first PCI expansion slot. The ports on the card should face the port access opening on the computer's back panel.

9 Insert the card.

Press the lever near the port access opening and press down on the card. When the card is fully inserted, you won't be able to see the gold-colored connector any more. If you are installing the card in a 9500, the end of the card should engage the card guide at the front of the computer.

- Don't rock the card from side to side; instead, press the card straight into the slot. Rocking the card can damage the PCI slot.
- Don't force the card. If you meet a lot of resistance, pull the card out and try again.
- To see if the card is connected, pull it gently. If it resists, it is connected.

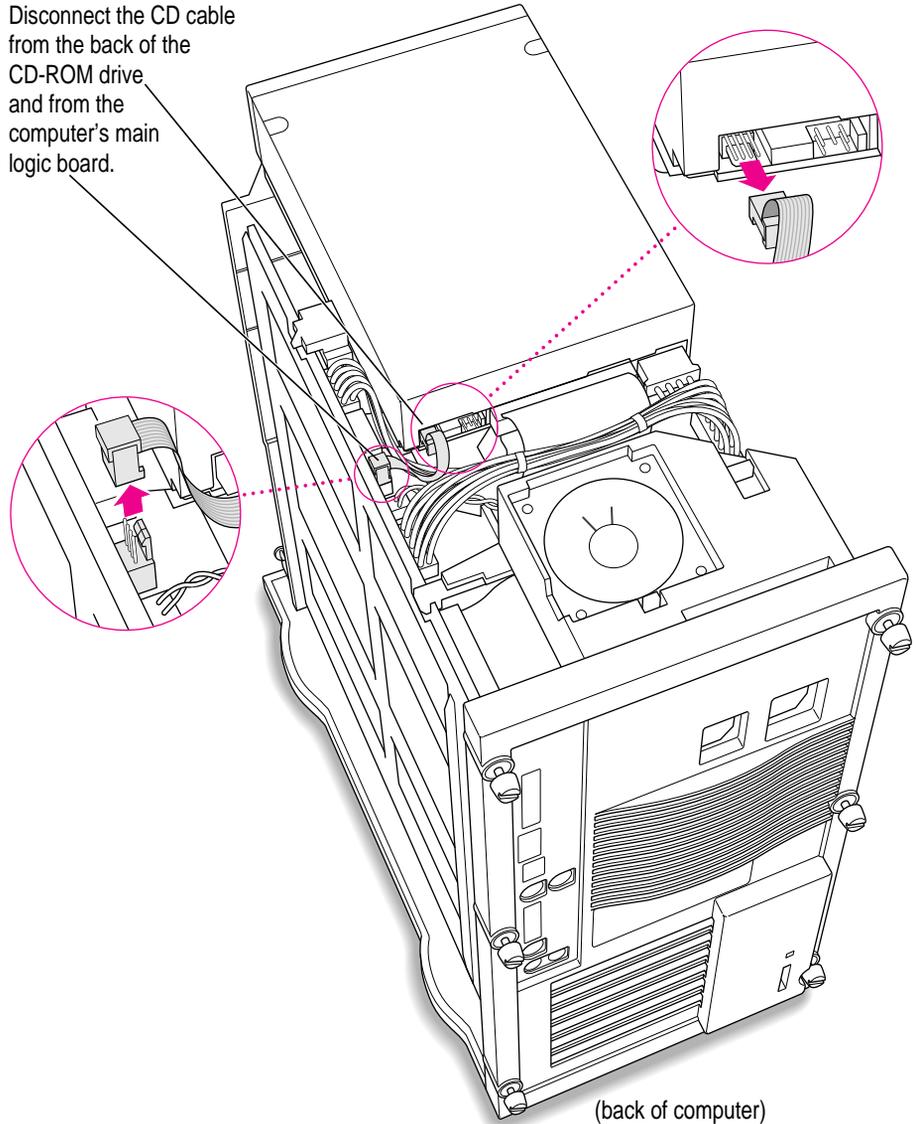


Connecting the audio cables

- 10 Unplug the audio ribbon cable from the computer's CD-ROM drive and the Macintosh logic board.

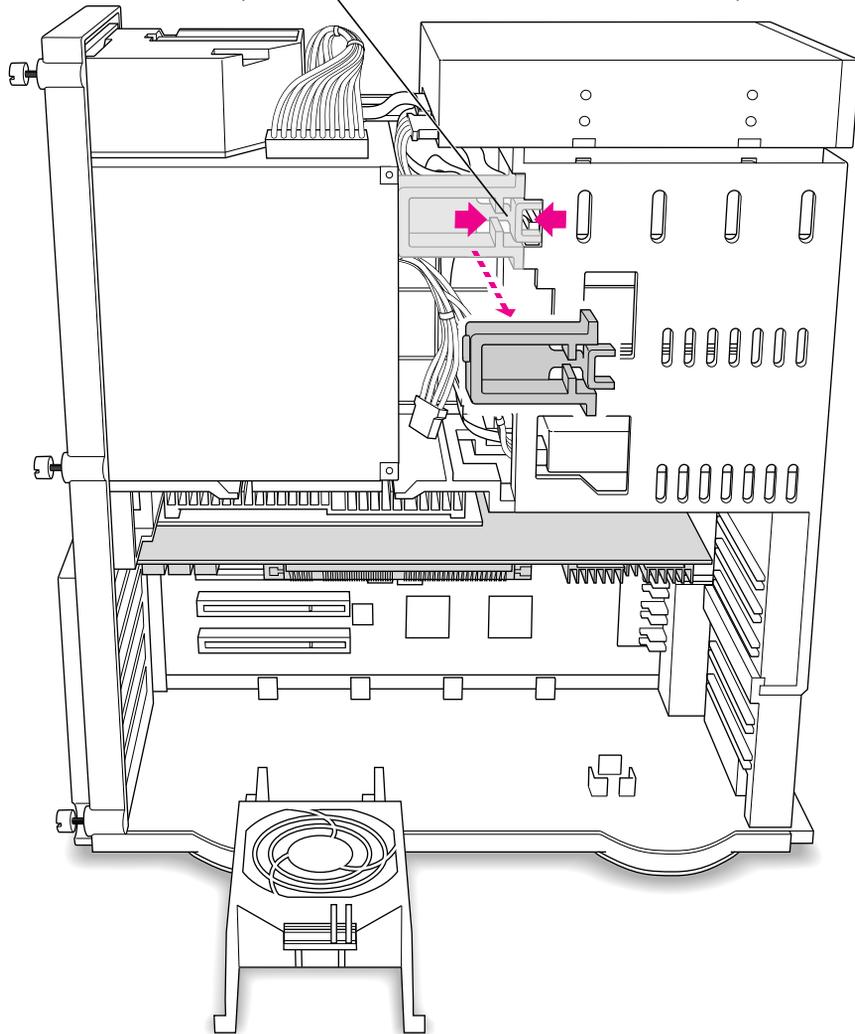
After unplugging this cable, carefully remove it from your computer (keep the cable; you will need to reinstall it if you ever remove your PC Compatibility Card). You will be replacing the ribbon cable with the audio cables that came with your PC Compatibility Card.

Disconnect the CD cable from the back of the CD-ROM drive and from the computer's main logic board.



11 Remove the chassis brace by squeezing and pulling.

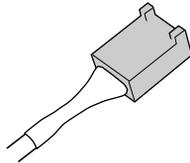
Squeeze here and remove the chassis brace. You will replace it later.



- 12 **Plug one of the two identical SCSI audio cables into the connector on the Macintosh logic board.**

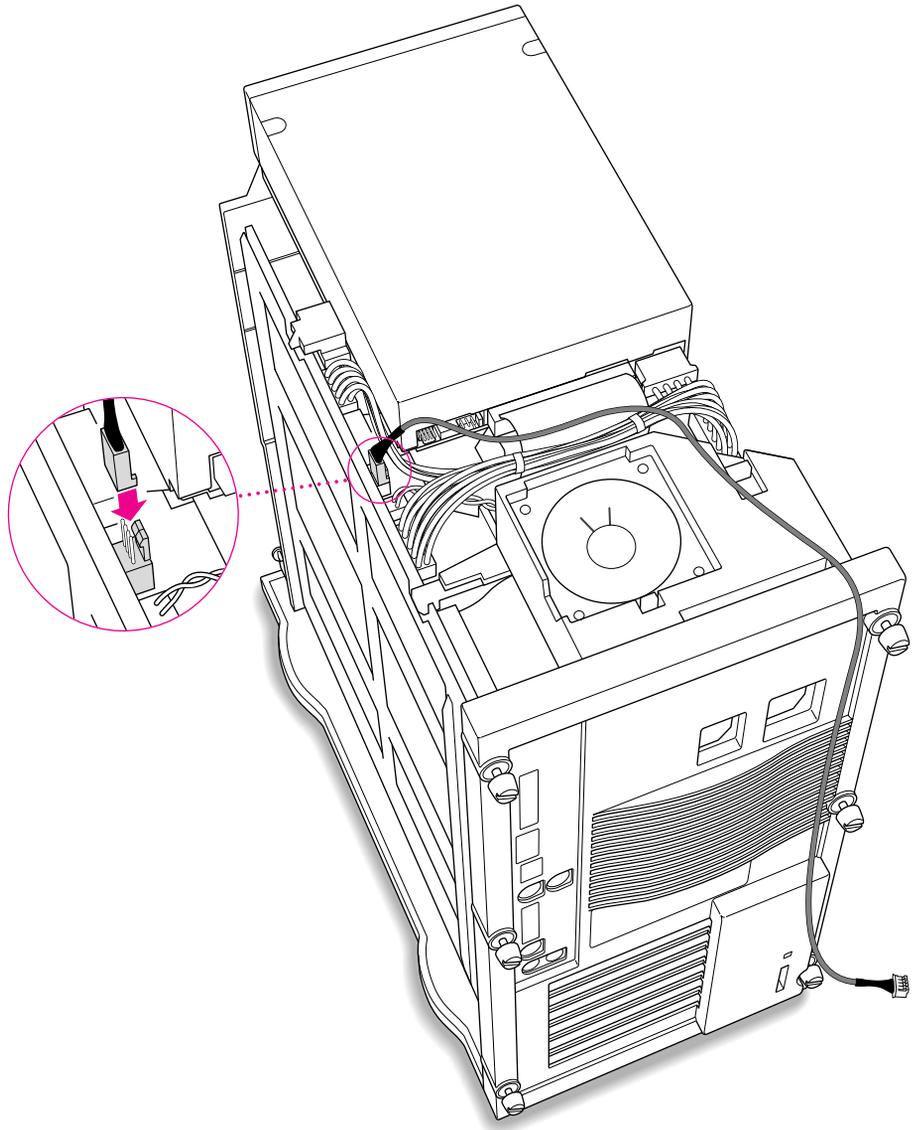
IMPORTANT Use only the cables that came with this PC Compatibility Card. Do not use cables from other models of the card.

Your PC Compatibility Card came with three audio cables. They may have different colors of tubing near the ends to help you tell them apart. You'll only be using two of these cables (the third one is for a different kind of CD-ROM drive). Two of the cables have identical plugs on the end that look like the one shown below. Use one of these two identical cables for this step.



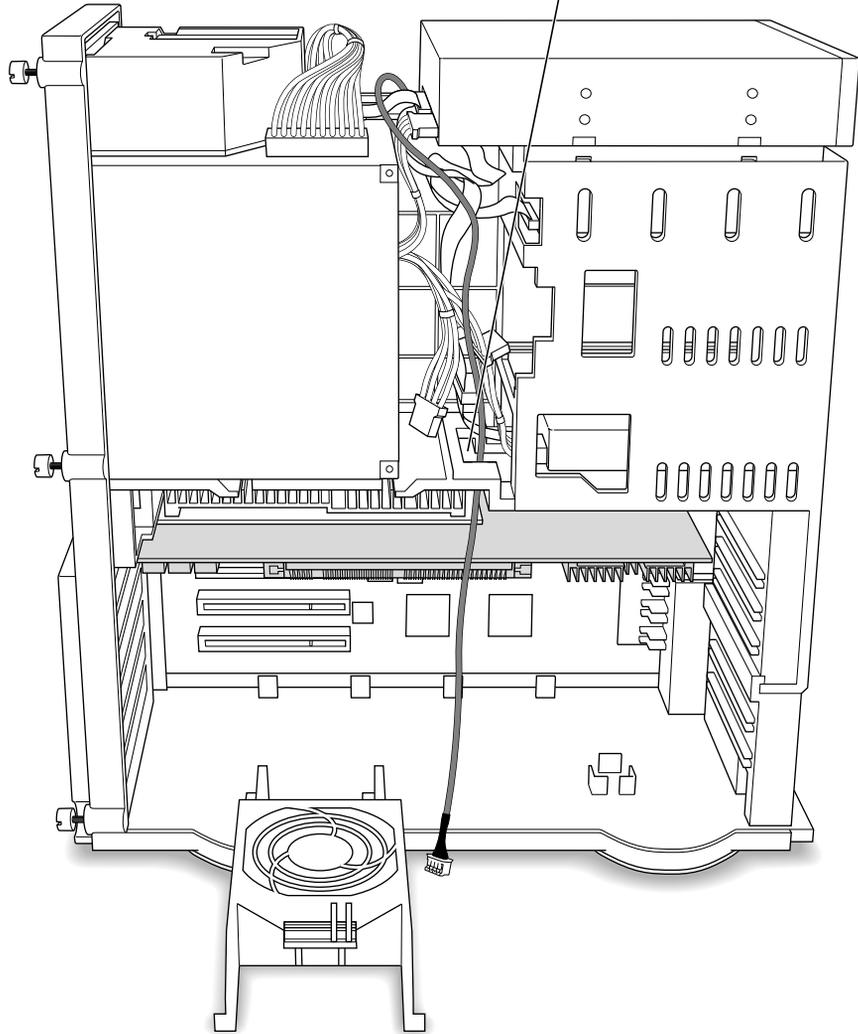
Audio cable plug for
SCSI CD-ROM drives

Insert the cable's larger plug into the connector on the Macintosh logic board, where you just unplugged the ribbon cable (the connector may be labeled "CD AUDIO").



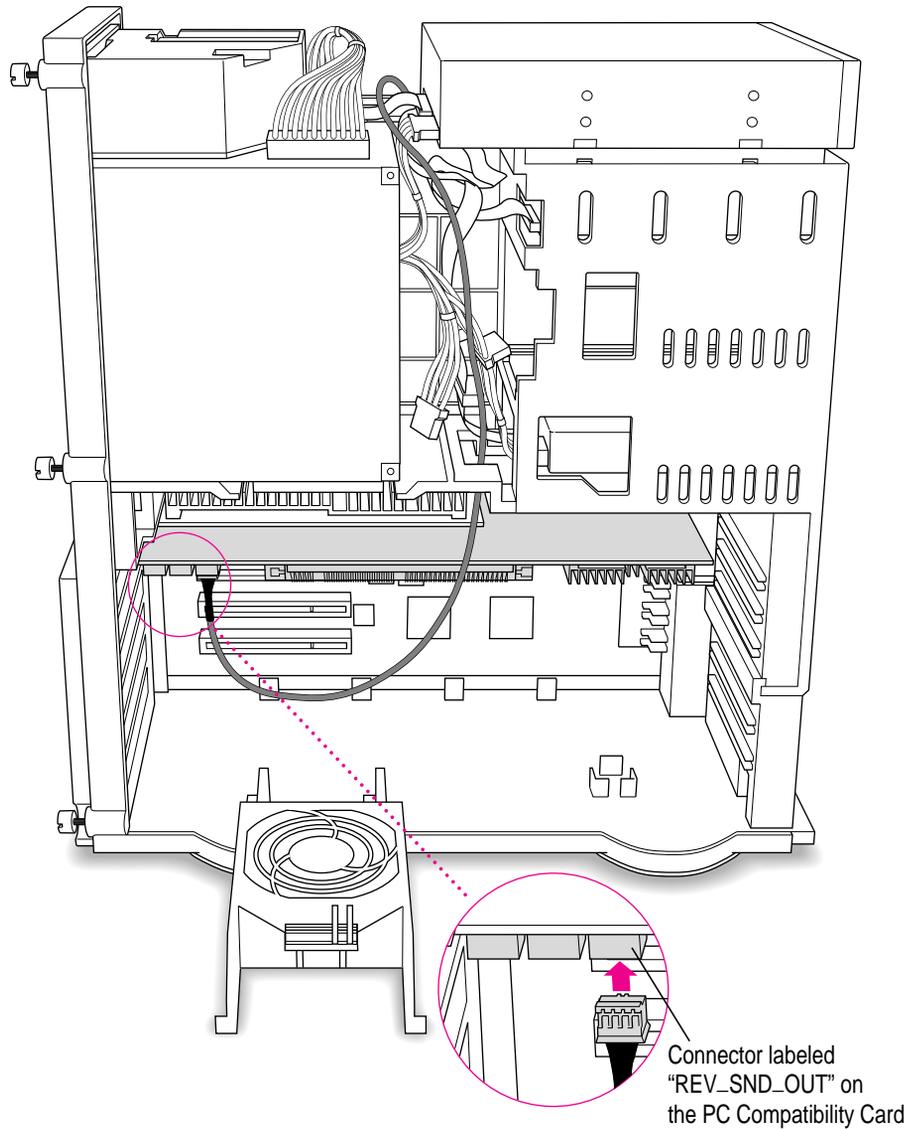
13 Route the cable through the interior of the computer.

Route the cable through this hole in the chassis.



- 14 Plug the other end of the cable into the Reversed Sound Out connector in the upper-left corner of the PC Compatibility Card.

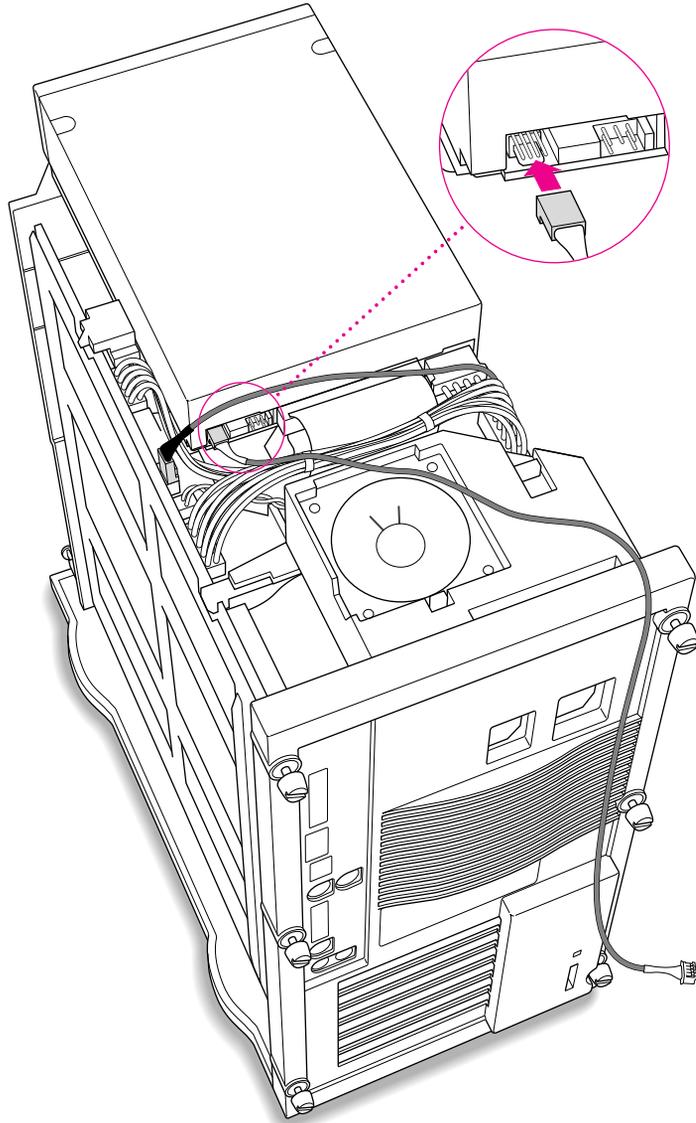
The Reversed Sound Out connector is the third connector from the end, labeled “REV_SND_OUT” on the underside of the card.



15 Plug the other SCSI audio cable into the back of the CD-ROM drive.

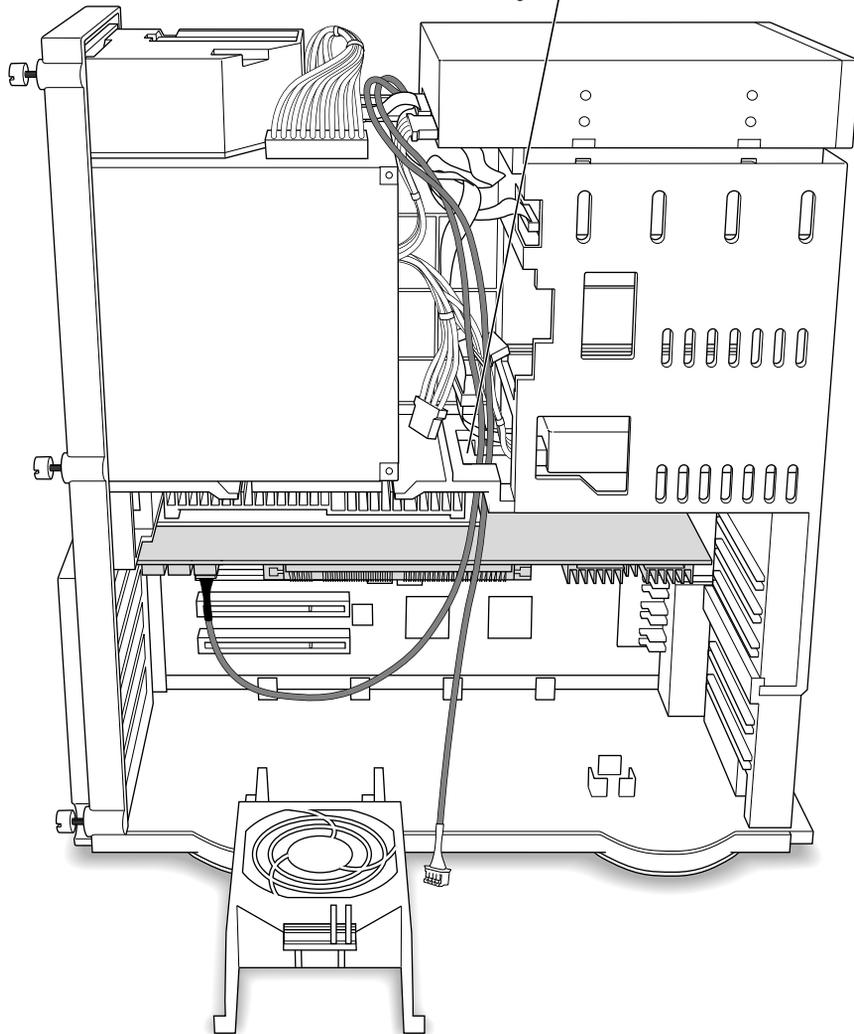
Use the cable with the thick plug that looks identical to the cable you connected to the logic board.

Insert the cable's larger plug into the back of the CD-ROM drive, where you unplugged the ribbon cable in step 10.



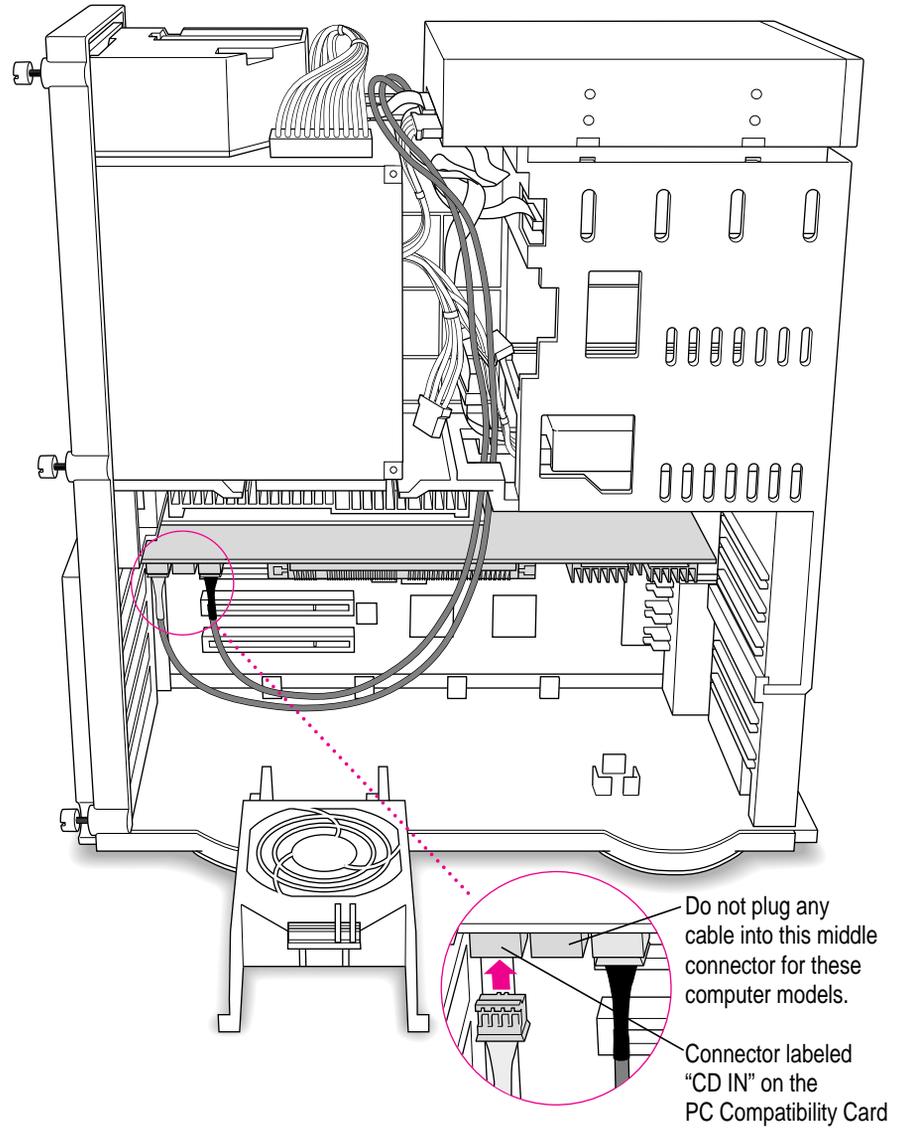
16 Route the cable through the interior of the computer.

Route the cable through this hole in the chassis.



- 17 Plug the other end of the audio cable into the CD In connector in the far upper-left corner of the PC Compatibility card.

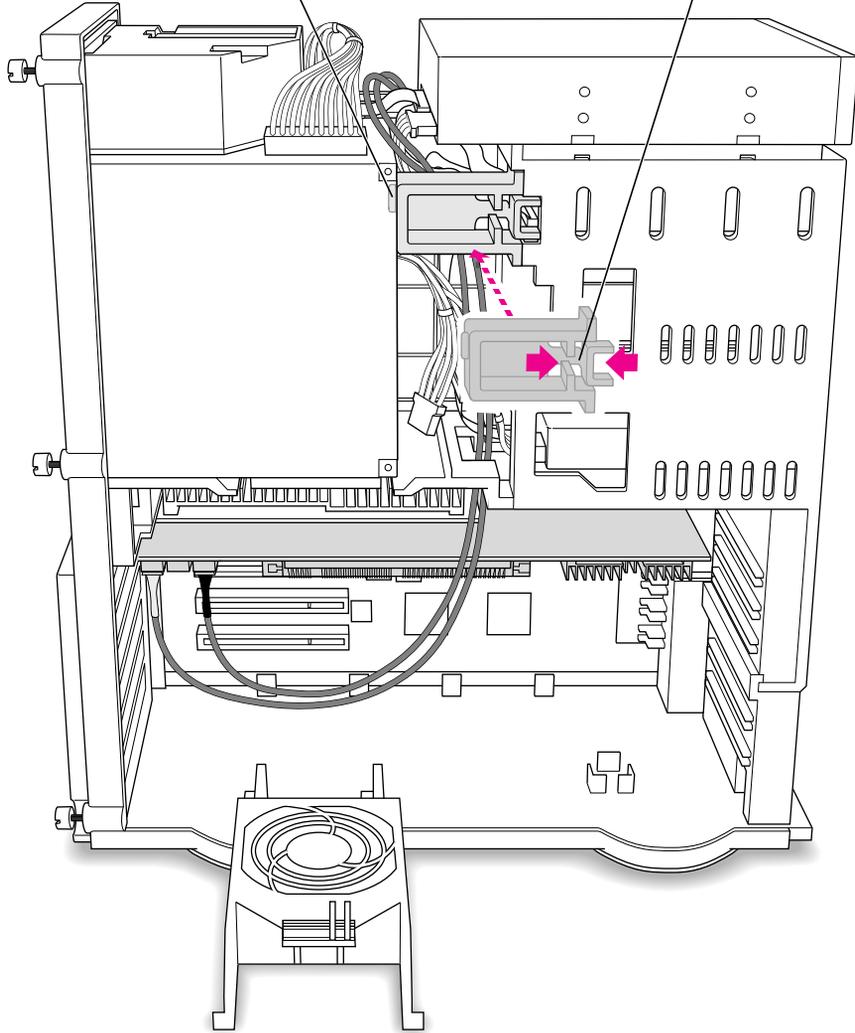
The CD In connector is labeled “CD IN” on the underside of the card.



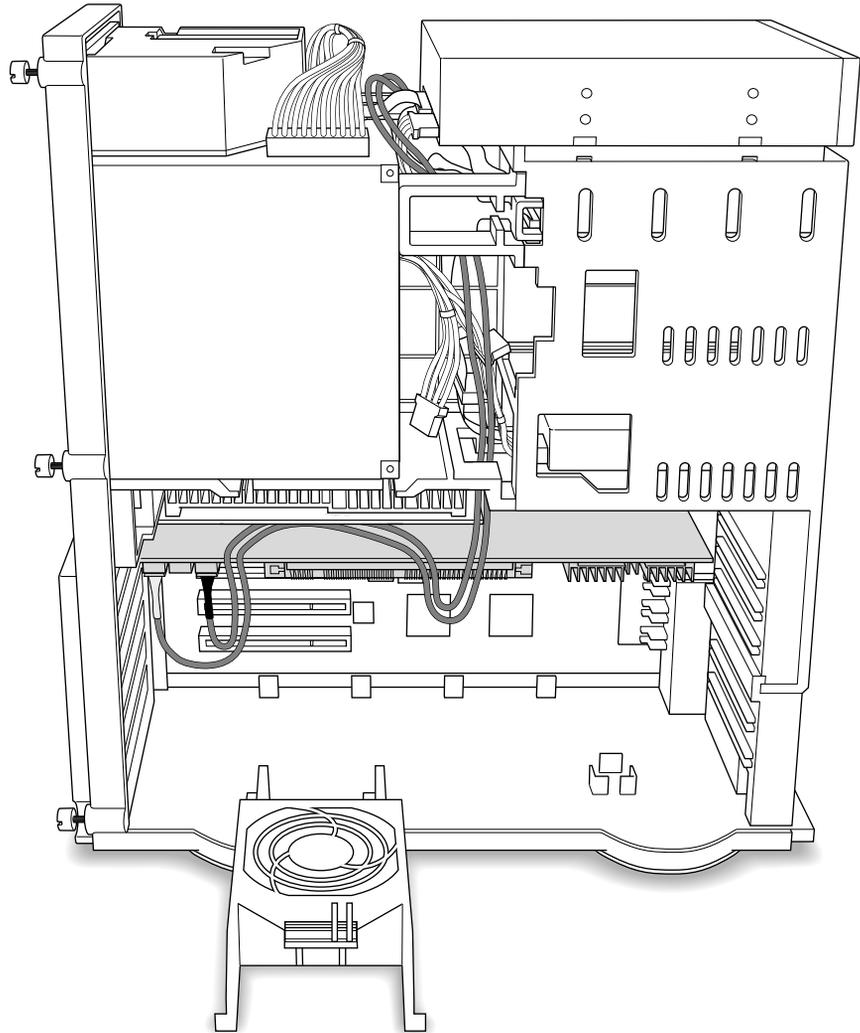
18 Replace the chassis brace.

Squeeze here and reinstall the chassis brace. Be sure not to pinch any of the cables between the chassis brace and the power supply case.

The tab on the chassis brace fits into a slot in the power supply case.



- 19 Tuck the audio cables in on top of the PC Compatibility Card, so that they're out of the way of the retainer or auxiliary fan.



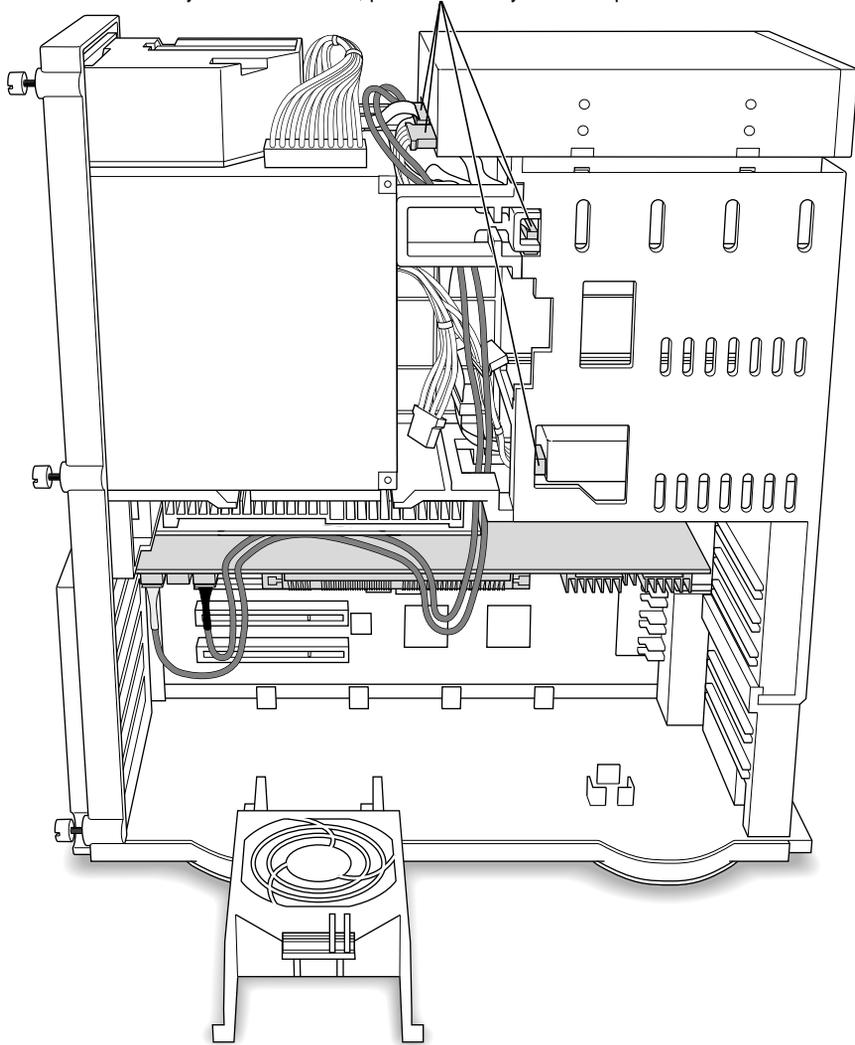
IMPORTANT If you are installing the PC Serial and Parallel Card, you should insert it now. See the PC Serial and Parallel Card manual for instructions.



Replacing the computer cover

- 20 Make sure all cables and cards are firmly connected.

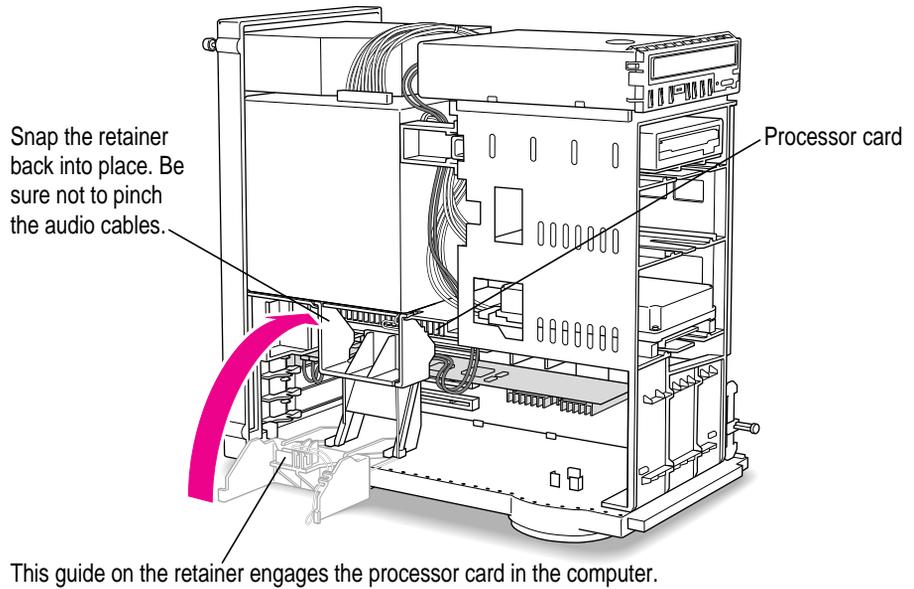
Make sure these connectors were not loosened during the installation. If they have come loose, push them firmly back into place.



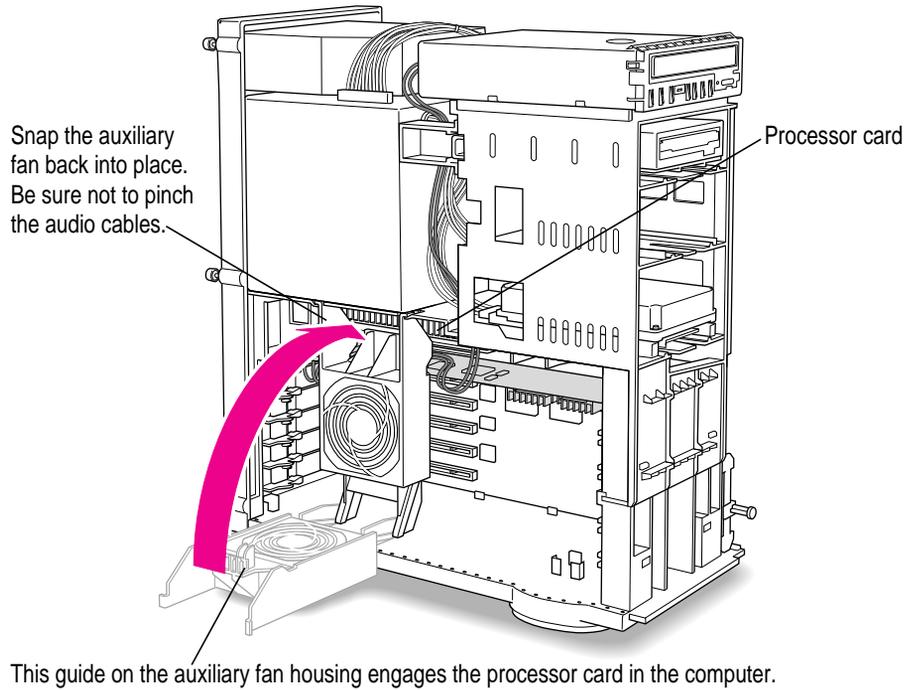
21 Replace the retainer or fan.

Make sure no cables are squeezed between the retainer or fan and the top of the card.

If you have a Power Macintosh 8500, follow this illustration:

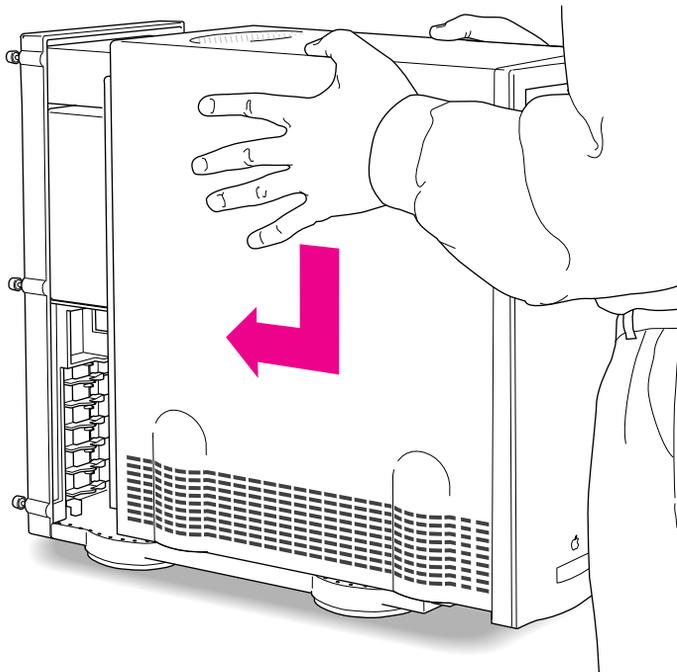


If you have a Power Macintosh 9500, follow this illustration:



22 Replace the cover on the computer.

Lower the cover all the way down onto the case. Push the cover back until it touches the back panel.



23 Tighten the screws on the back panel and reconnect the power cord and other equipment cables.

You are now finished installing the card.

4

Installing the Card in a Power Macintosh 8600 or 9600



The illustrations in this chapter show the 8600 model. If you have a 9600, some of the illustrations may look slightly different from your computer.

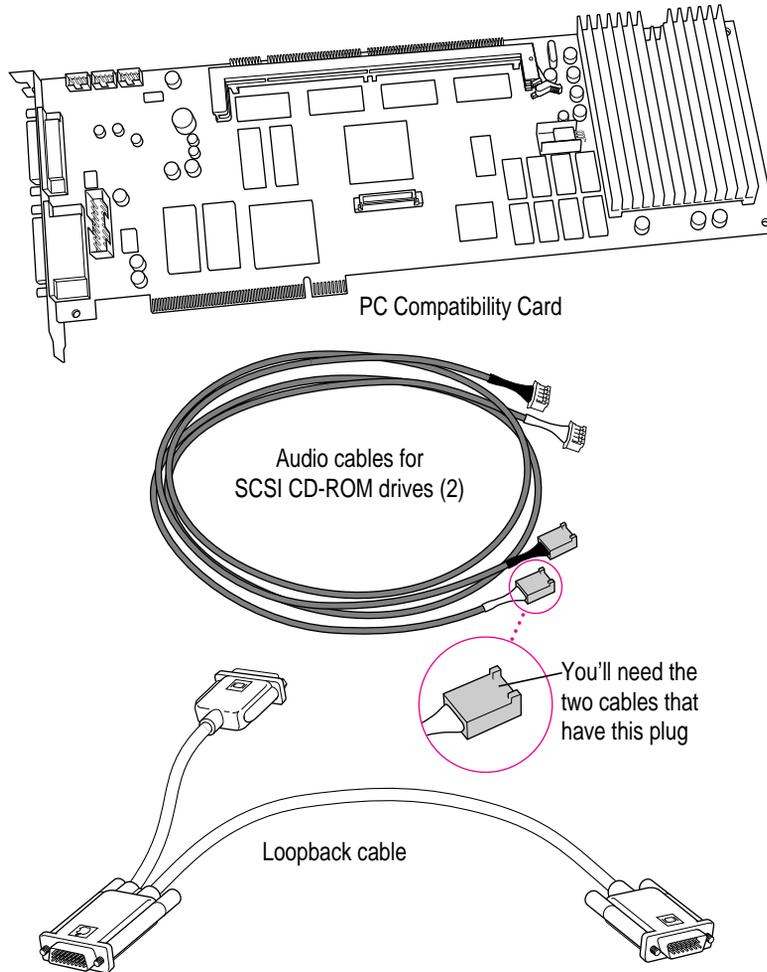
IMPORTANT If you will be installing a PC Serial and Parallel Card with your PC Compatibility Card, it's easiest to install both cards at the same time. The PC Serial and Parallel Card has standard PC ports that allow you to use several kinds of PC-compatible peripherals from the Windows or DOS environment (not from the Mac OS environment). Instructions in this chapter indicate when to see your PC Serial and Parallel Card manual for installation information.

After you install the PC Compatibility hardware, go to Chapter 5, “Connecting Monitors and Other Equipment.” If you want to install additional memory in your card, go to Appendix B, “Adding Memory to Your PC Compatibility Card.” Then turn to Chapters 6 through 9 to learn more about installing and using PC software.

WARNING Shipping your computer with a PC Compatibility Card installed may cause damage to the card. Your PC Compatibility Card should be shipped separately. (See Appendix A for instructions on how to remove the card.)

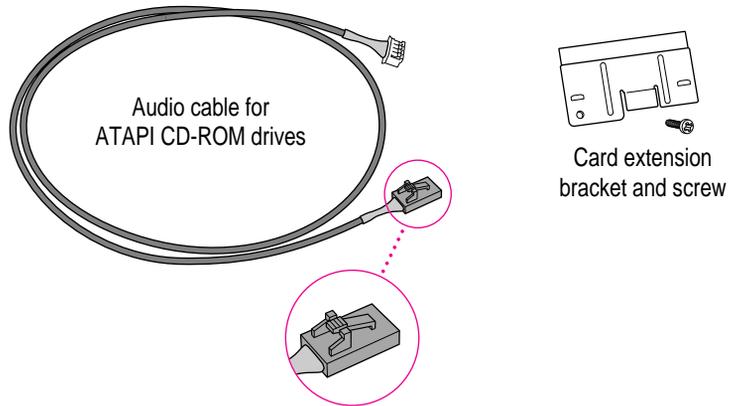
What you need

Before beginning the installation process, make sure you have all the necessary parts: the PC Compatibility Card, the audio cables, and the loopback cable. You'll also need a Phillips screwdriver.



You won't need the card extension bracket and screw.

Depending on what kind of CD-ROM drive your computer has, you may need the audio cable that has a different plug from the other two cables (shown below). Keep it nearby.



Installing the PC Compatibility Card hardware

WARNING The installation of the PC Compatibility Card is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have the PC Compatibility Card installed by your Apple-authorized dealer (who may charge a fee). If you attempt to install the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to install the card, install memory, or connect the cables without first reading this manual.

There are several steps to installing your PC Compatibility Card hardware:

- opening the computer
- inserting the PC Compatibility Card
- opening the chassis
- connecting the Sound Out cable
- replacing the chassis
- adjusting the position of the CD-ROM drive
- connecting the CD In cable
- replacing the CD-ROM drive
- replacing the computer cover

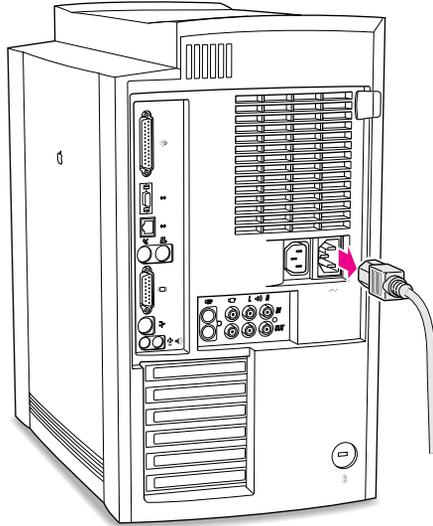
Opening the computer

- 1 If your computer is turned on, shut it down and wait 20 minutes.

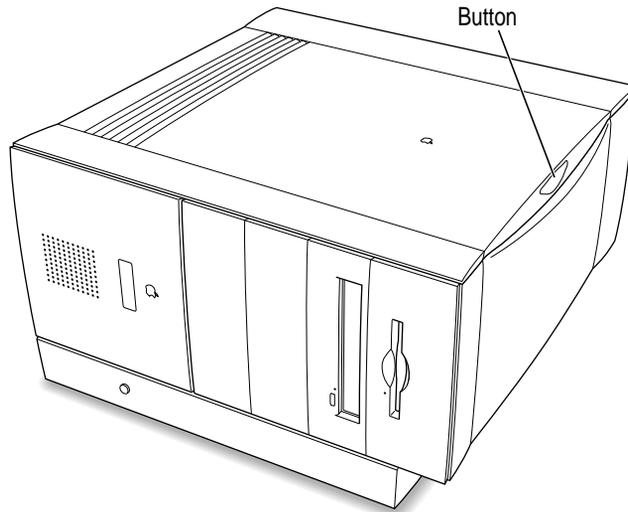
Before proceeding with these instructions, you need to allow the computer's internal components to cool.

- 2 Disconnect all the cables from the computer, including the power cord.

Remove the power cord now so you don't pull it by accident as you turn the computer on its side in the next step. You'll reconnect the power cord in step 4.

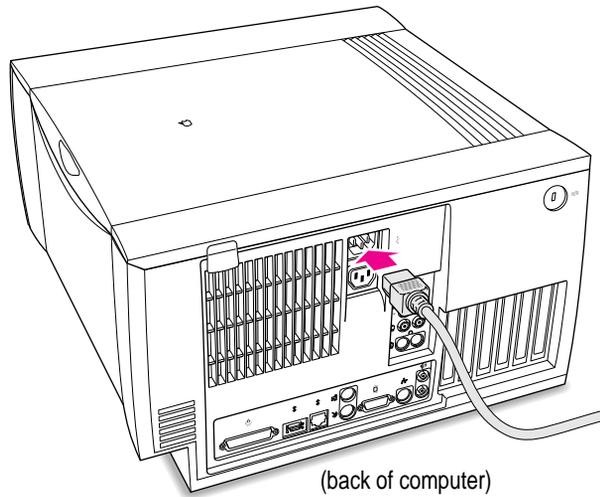


- 3 Carefully lay the computer on its side with the cover and release button facing up.



- 4 Reconnect the power cord.

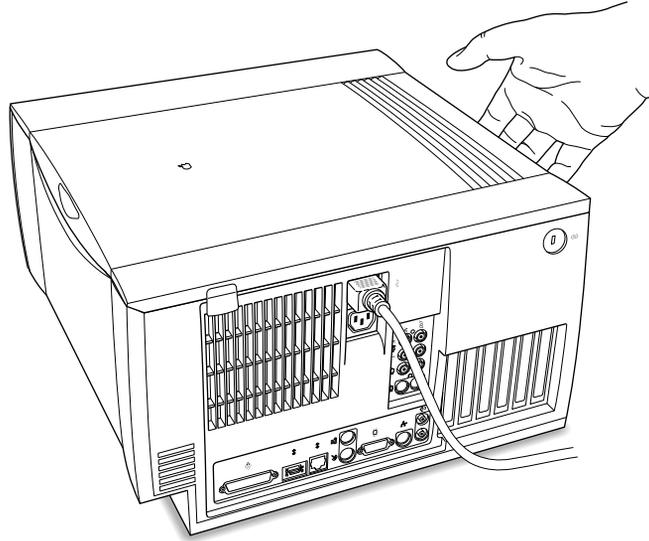
Connect the power cord to your computer and to an AC outlet. This helps protect the computer from damage caused by static electricity.



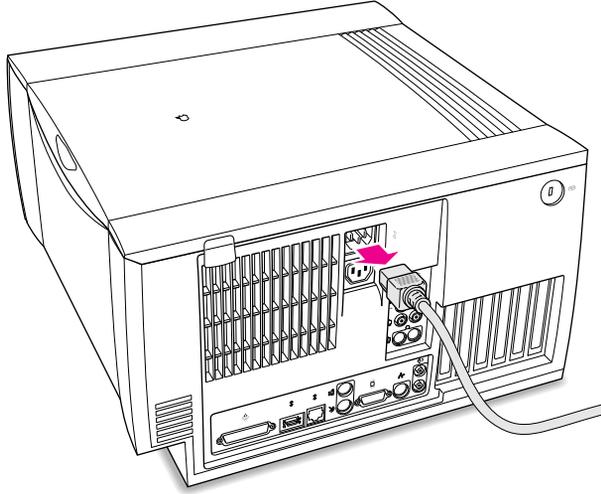
5 Touch the metal on the bottom of the computer.

Always do this before you touch any parts, or install any components, inside the computer. Touching the metal helps release static electricity from your body and prevent possible damage to internal components.

IMPORTANT You can collect static electricity just by walking away from and then back to your computer. If you need to move away from your computer during installation, remember to touch the metal bottom again before you continue installing.

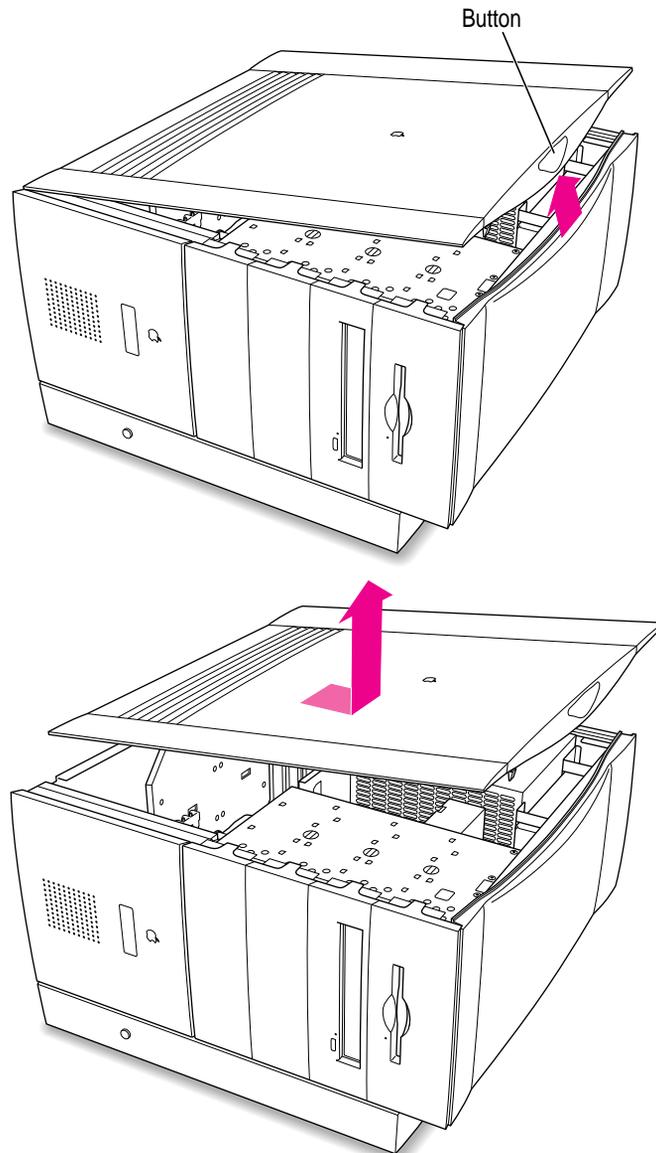


6 Disconnect the power cord again.



7 Remove the computer cover.

Press the release button and lift the cover a few inches. Then slide the cover to the right and lift it off.



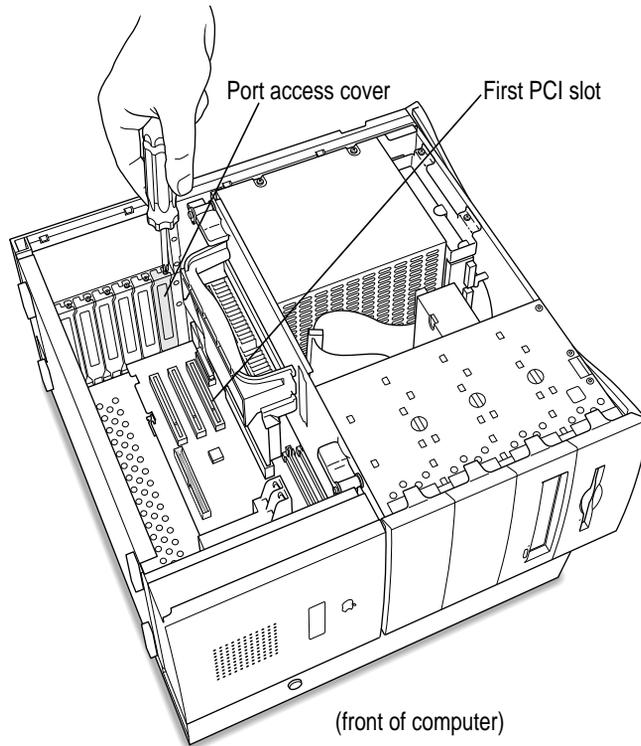
Inserting the PC Compatibility Card

8 Unscrew the metal port access cover on the first slot.

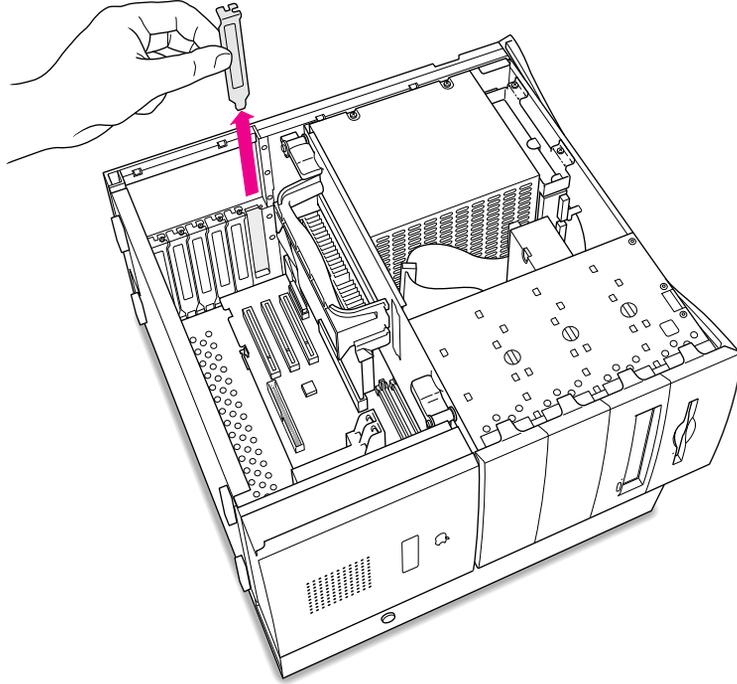
You need to install your PC Compatibility Card in the first PCI expansion slot, the slot closest to the processor card. If there is already a card in the first slot, move it to a different slot. (To remove a card, first remove the screw near the port access opening.)

IMPORTANT If you will be installing a PC Serial and Parallel Card, you should also remove any card in the second slot (next to the first slot).

Keep the screw; you'll reinsert it later.



9 Remove the port access cover.



What you do next depends on whether you are adding a DIMM (dual inline memory module) to increase the memory available to your PC Compatibility Card, and whether you are installing a PC Serial and Parallel Card.

- If you want to add memory to your card, turn now to Appendix B, “Adding Memory to Your PC Compatibility Card.” After you’ve completed the instructions in Appendix B, go on to step 10 in this section.
- If you want to install the PC Serial and Parallel Card, you’ll need to connect the peripheral flex cable to your PC Compatibility Card now. See the PC Serial and Parallel Card manual for instructions. Then return to this manual, and go on to step 10 in this section.

If you don’t want to add memory or install the PC Serial and Parallel Card, go on to step 10.

10 Align the card with the expansion slot.

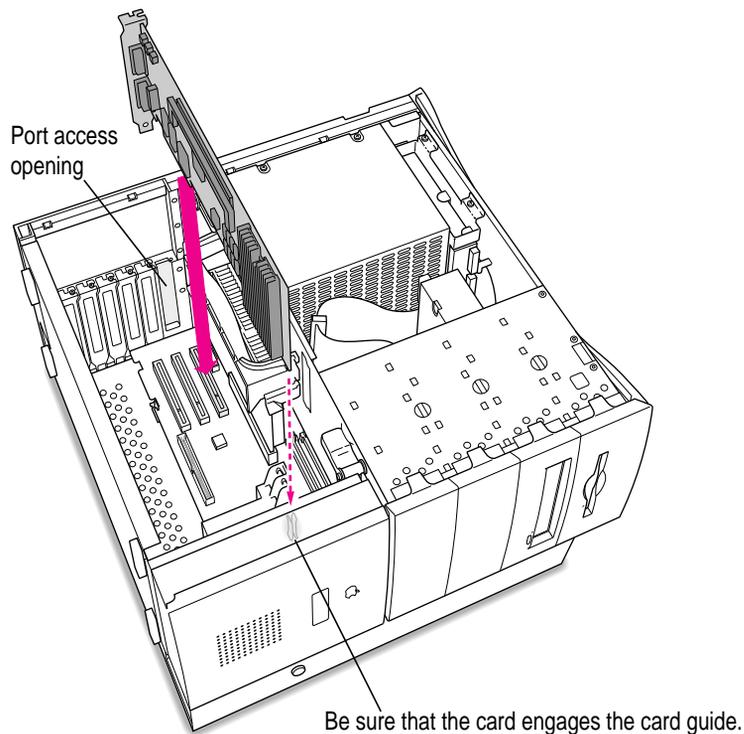
IMPORTANT Always hold the card by its edges. Don't touch any of the components on the card.

Align the card's connector end (gold in color) with the first PCI expansion slot. The ports on the card should face the port access opening on the computer's back panel.

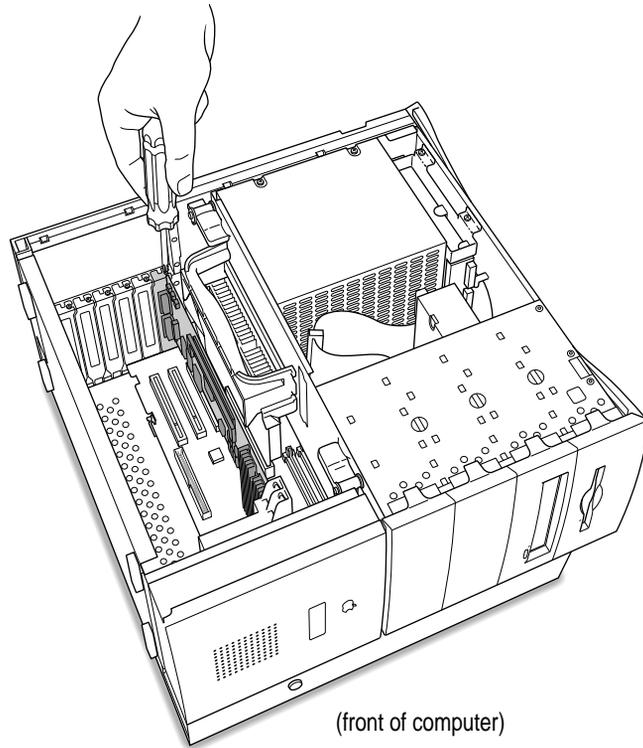
11 Insert the card.

The end of the card should engage the card guide at the front of the computer. Press down on the card. When the card is fully inserted, you won't be able to see the gold-colored connector any more.

- Don't rock the card from side to side; press it straight into the slot. Rocking the card can damage the PCI slot.
- Don't force the card. If you meet a lot of resistance, pull the card out and try again.
- To see if the card is connected, pull it gently. If it resists, it is connected.



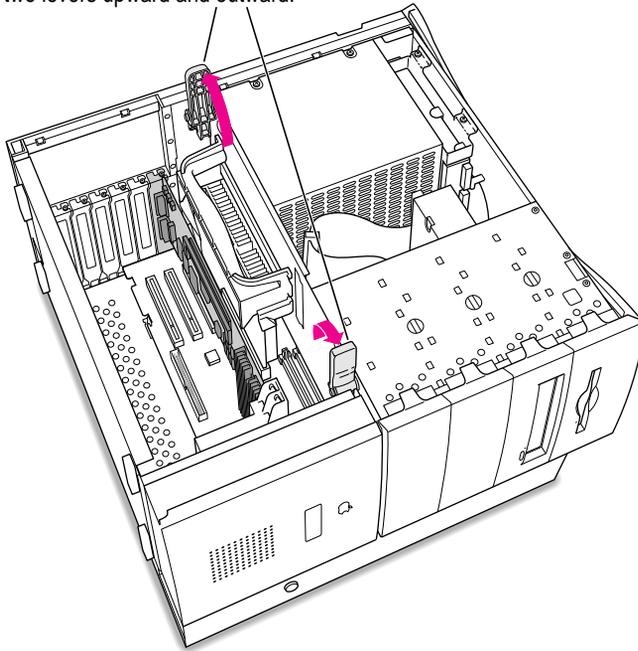
- 12 Reinsert the screw you removed from the port access cover earlier, and tighten it.



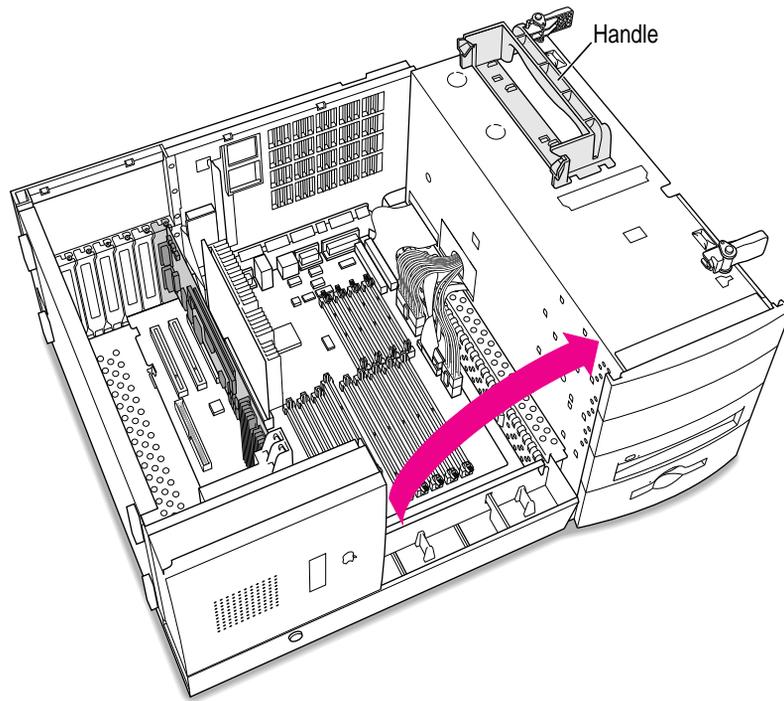
Opening the chassis

- 13 **Unlock the top chassis by moving the levers as indicated below.**

Unlock the top chassis by moving the two levers upward and outward.



- 14** Using the plastic handle, lift the top chassis up and to the side until it rests on your work surface.

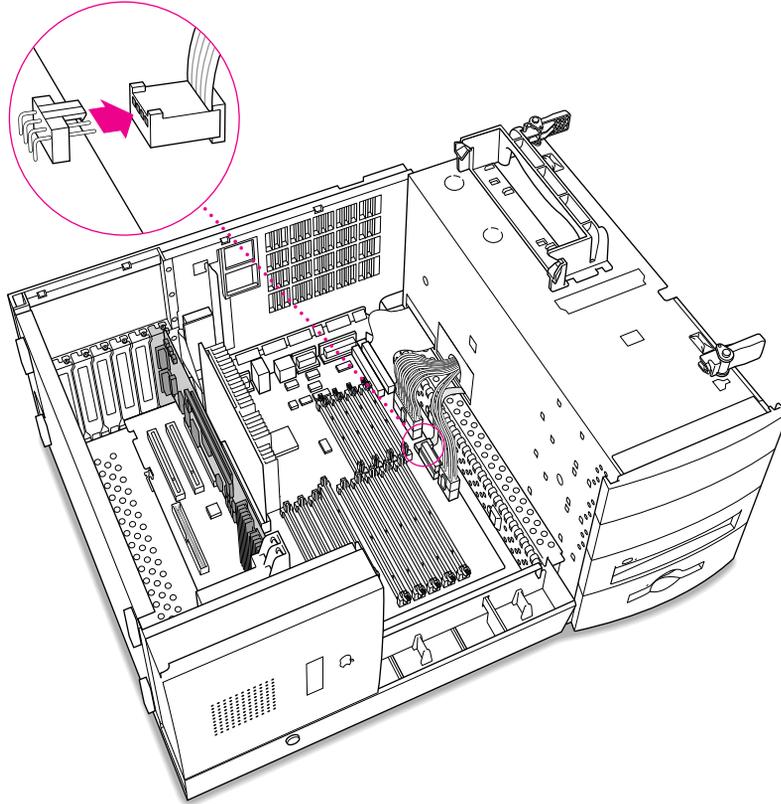


Connecting the Sound Out cable

- 15 **Disconnect the audio ribbon cable from the Macintosh logic board.**

This cable is connected near the DRAM DIMM slots. The connector has four pins, and may be labeled “CD AUDIO” on the logic board.

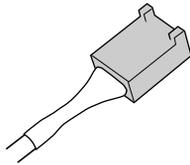
Be sure to pull on the plug, not the cable. After you have disconnected the cable, leave it in place for now.



- 16 Plug one of the two identical SCSI audio cables (with the plug shown below) into the connector on the logic board.

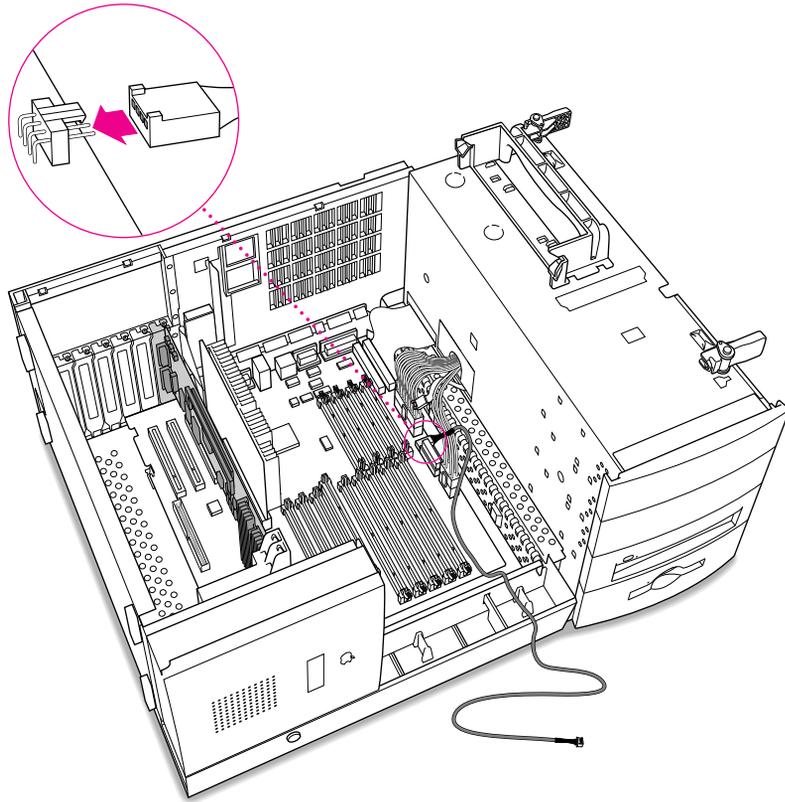
IMPORTANT Use only the cables that came with this PC Compatibility Card. Do not use cables from other models of the card.

Your PC Compatibility Card came with three audio cables. They may have different colors of tubing near the ends to help you tell them apart. You'll only be using two of these cables (the third one is for a different kind of CD-ROM drive). Two of the cables have identical plugs on the end, as shown below. Use one of these two identical cables for this step.



Audio cable plug for SCSI CD-ROM drives

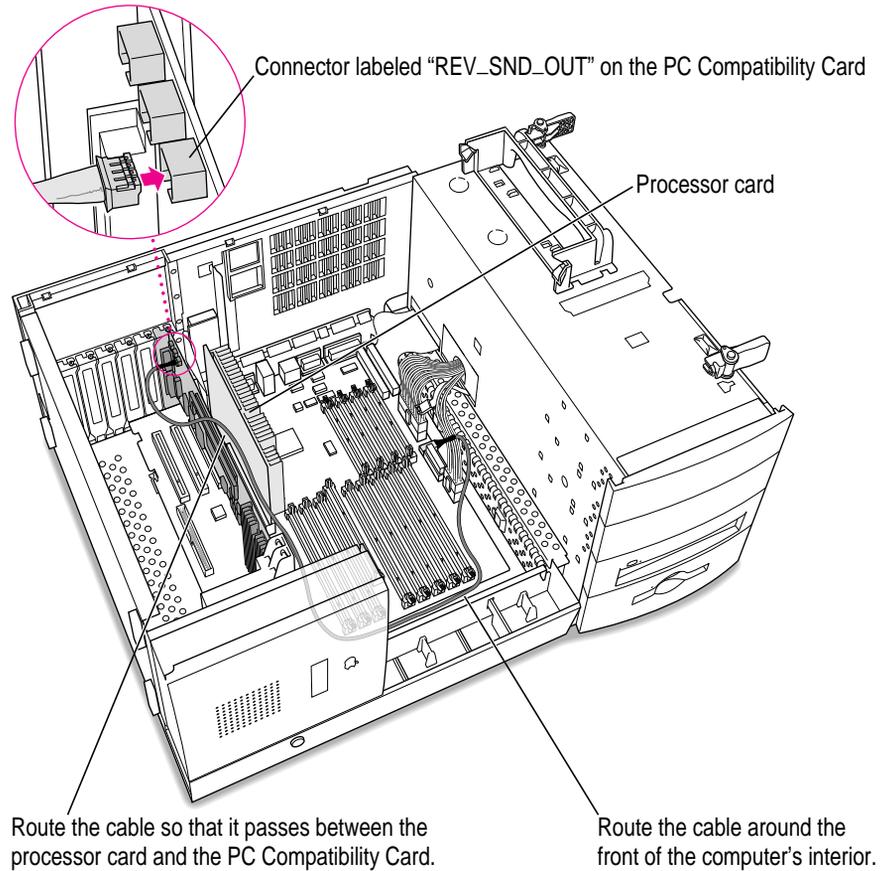
Insert the cable's larger plug into the CD audio connector on the logic board, where you just unplugged the ribbon cable.



- 17** Plug the other end of the SCSI audio cable into the connector labeled “REV_SND_OUT” (Reversed Sound Out) on the PC Compatibility Card.

The Reversed Sound Out connector is in the upper-left corner of the card, the third connector from the end.

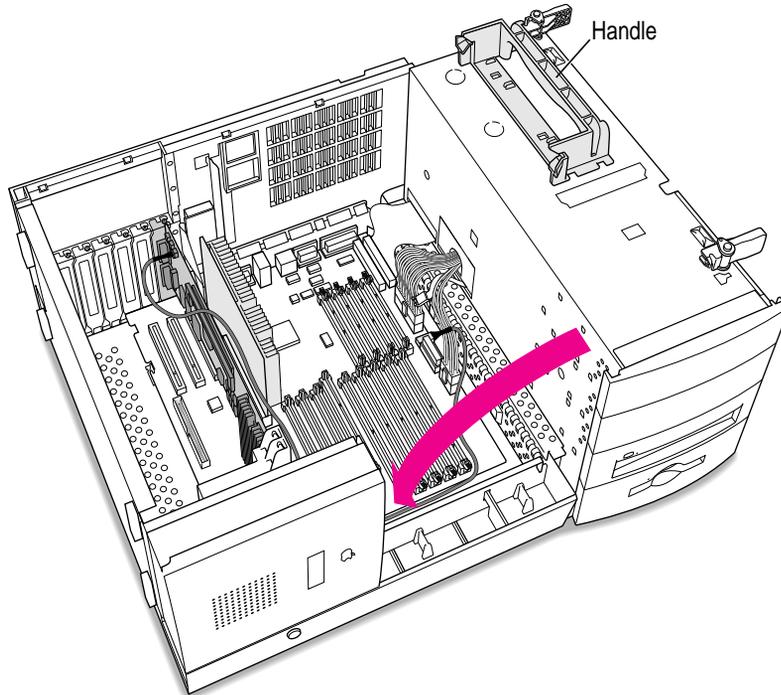
Route the cable between the PC Compatibility Card and the processor card, and toward the front of the interior as shown.



Replacing the chassis

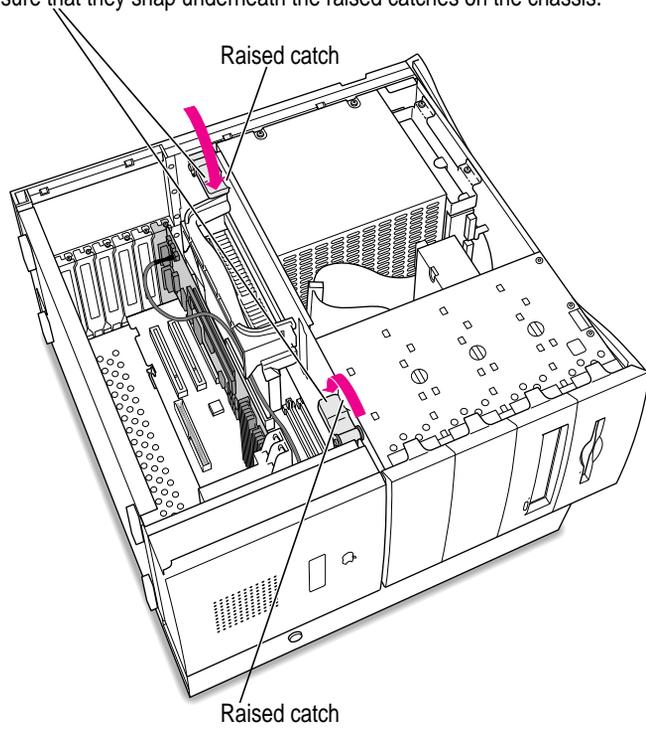
- 18 Grasping the handle, gently swing the chassis back into place.

Make sure the cable you just positioned stays in place and doesn't get pinched by the chassis.



19 Lock the chassis by rotating the levers.

Lock the top chassis in place by moving the two levers inward and downward. Be sure that they snap underneath the raised catches on the chassis.

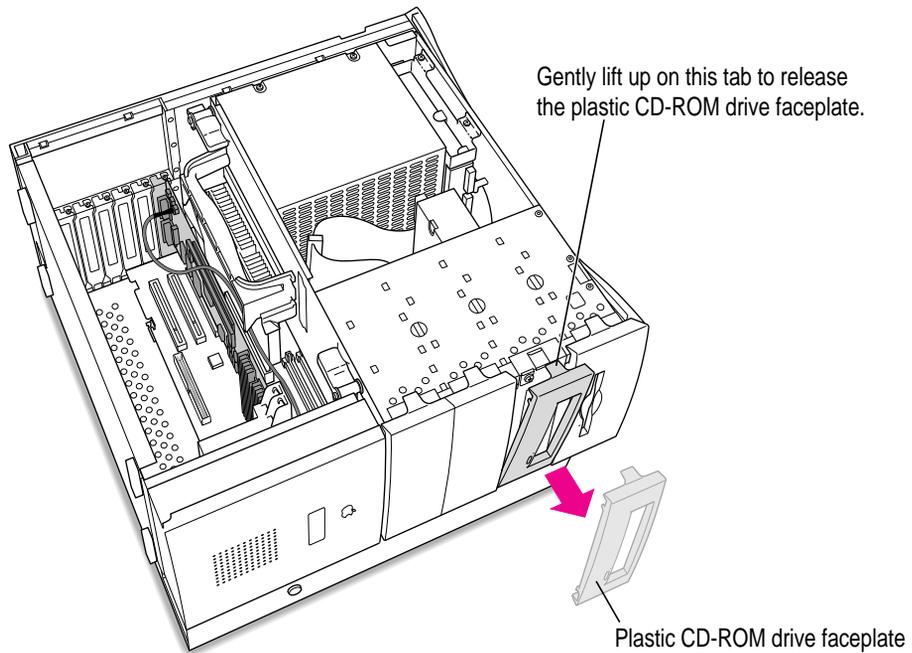


Adjusting the position of the CD-ROM drive

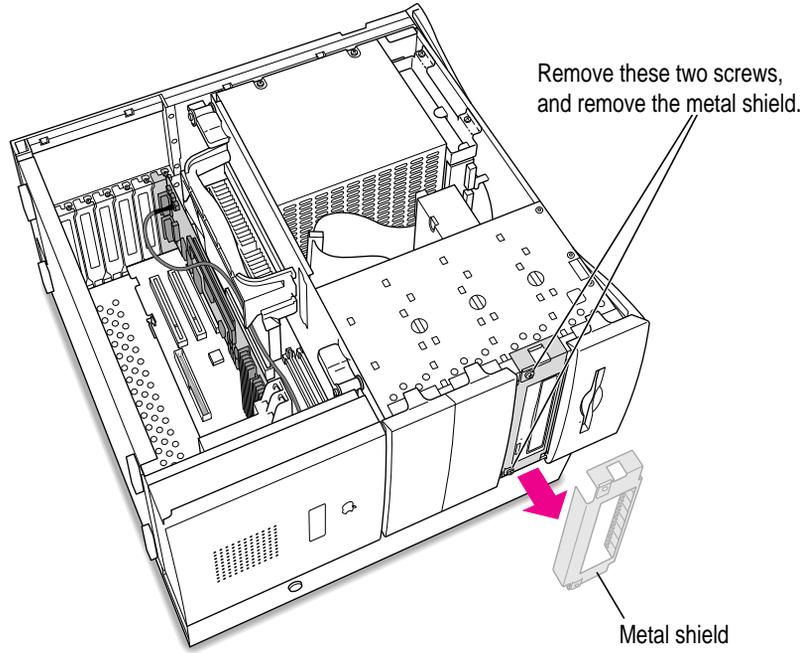
You need to adjust the position of the CD-ROM drive so you'll have room to insert the other audio cable into the back of the drive.

20 Remove the plastic faceplate in front of the CD-ROM drive.

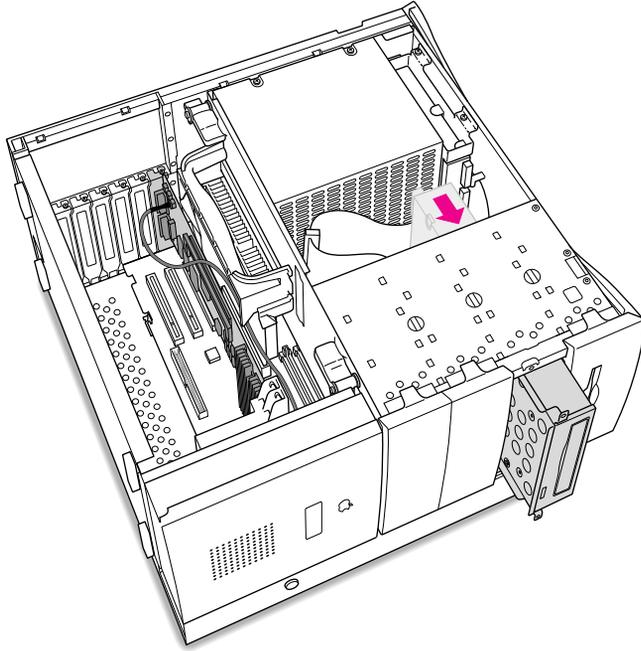
Release the faceplate by lifting up on the tab in front of the CD-ROM drive at the front of the computer.



21 Remove the screws and metal shield in front of the CD-ROM drive.



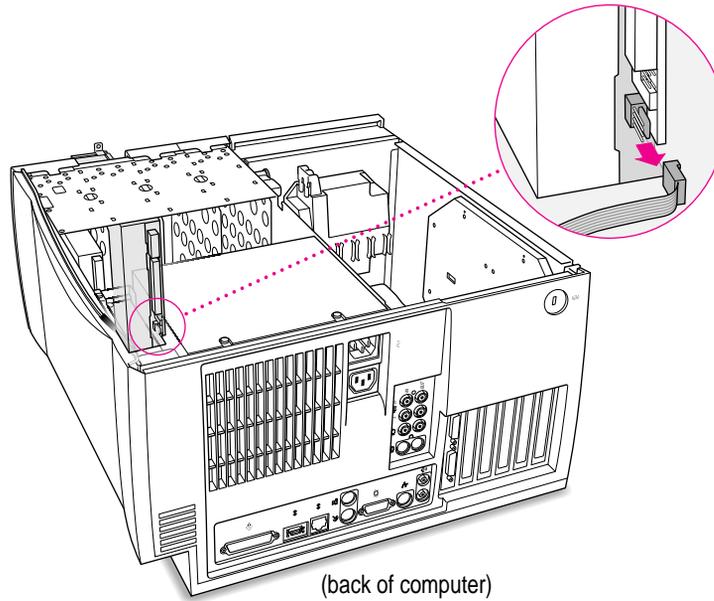
- 22** Push the CD-ROM drive forward until its back end is flush with the edge of the metal plate above the drive.



Connecting the CD In cable

- 23** Disconnect the audio ribbon cable from the back of the CD-ROM drive.

Be sure to pull on the plug, not the cable. Just leave the disconnected cable in the computer; you will need to reinstall it if you ever remove your PC Compatibility Card.

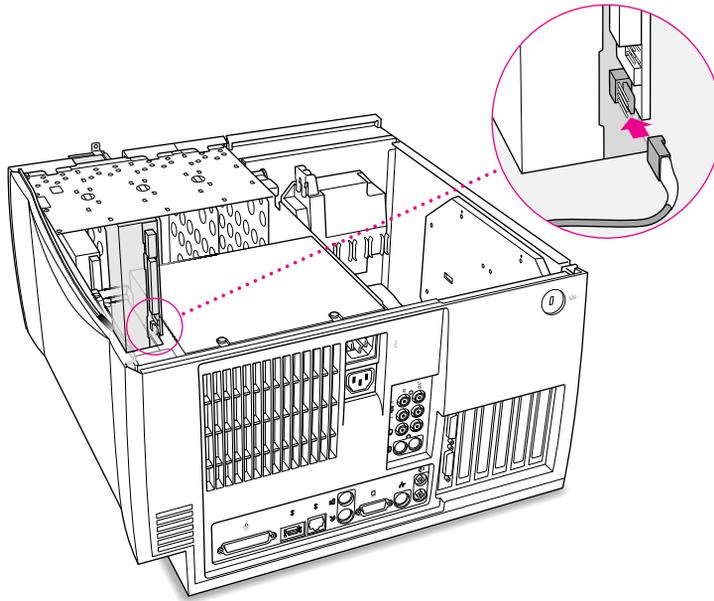


24 Insert the larger plug on the other SCSI audio cable into the back of the CD-ROM drive.

For most models of the 8600 and 9600, you can use the SCSI audio cable, which has a thick plug and looks identical to the cable you connected to the logic board.

Try inserting this plug into the back of the CD-ROM drive, where you just unplugged the ribbon cable.

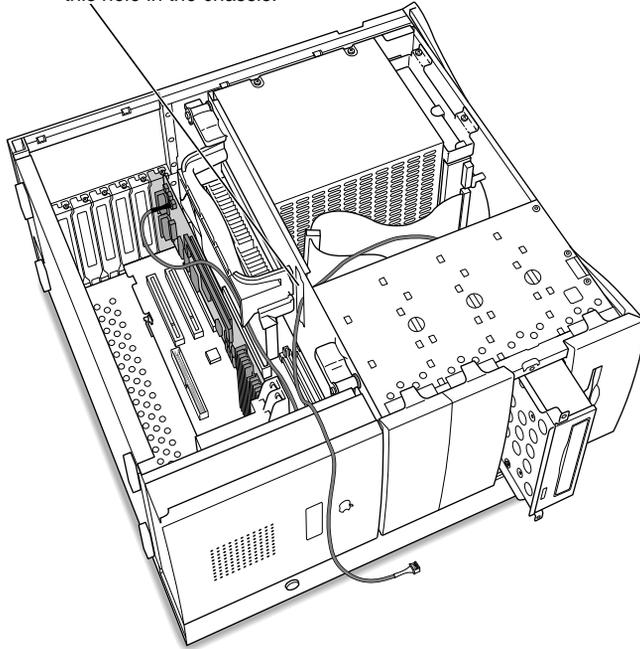
If the plug looks too thick and does not easily fit into the back of the CD-ROM drive, your computer may have a different kind of drive. Try using the ATAPI CD audio cable, with the thinner, slightly smaller plug.



25 Route the cable through the interior of the computer.

Route the audio cable through the metal slot in the chassis.

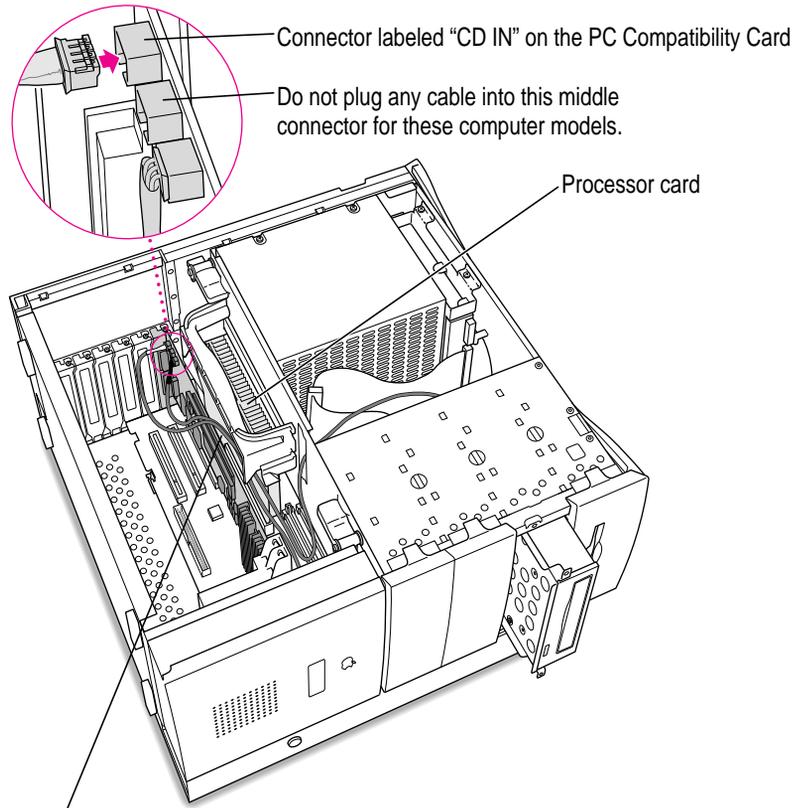
Route the cable through
this hole in the chassis.



26 Plug the other end of the audio cable into the connector labeled “CD IN” on the PC Compatibility Card.

The CD In connector is in the far upper-left corner of the card, next to the Sound Out Connectors.

Position the CD In cable so that it lies next to the Sound Out cable, between the PC Compatibility Card and the processor card.

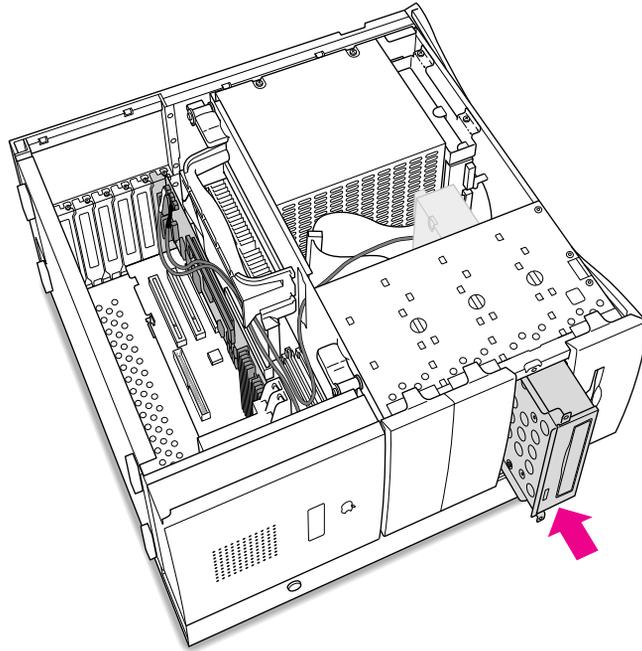


Route the cable so that it passes between the processor card and the PC Compatibility Card.

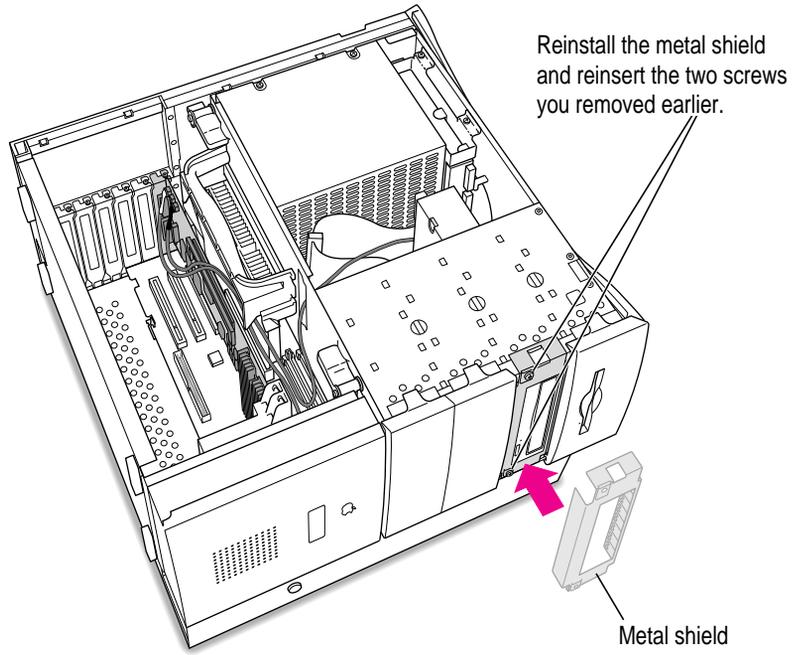
IMPORTANT If you are installing the PC Serial and Parallel Card, you should insert it now. See the PC Serial and Parallel Card manual for instructions.

Replacing the CD-ROM drive

- 27 Slide the CD-ROM drive back into its original position.

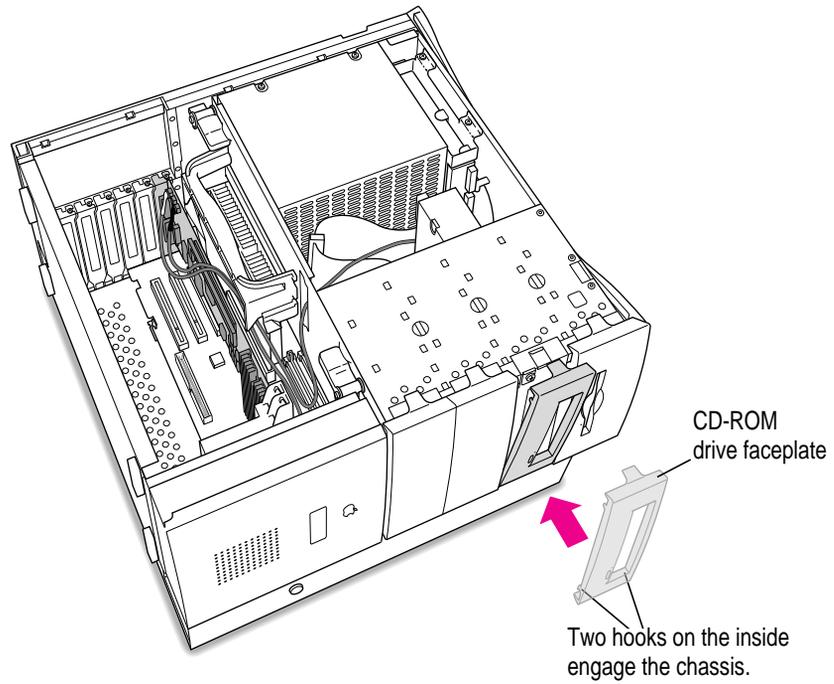


28 Replace the metal shield in front of the CD-ROM drive, and reinsert the screws.



29 Replace the faceplate in front of the metal shield.

Position the faceplate by hooking the tabs into the open slots, and snap the faceplate into place.

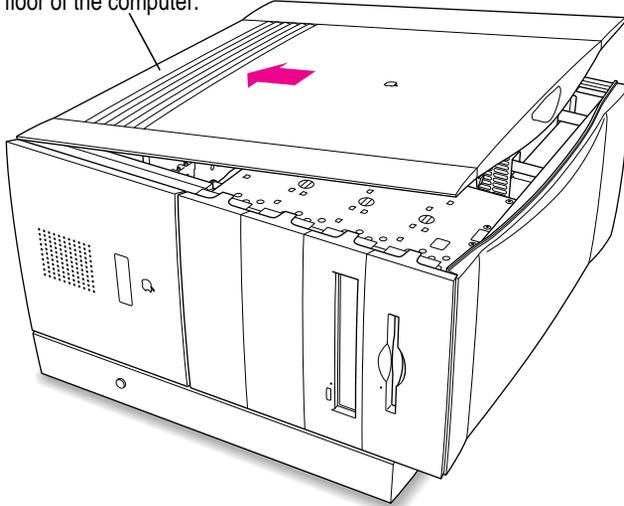


Replacing the computer cover

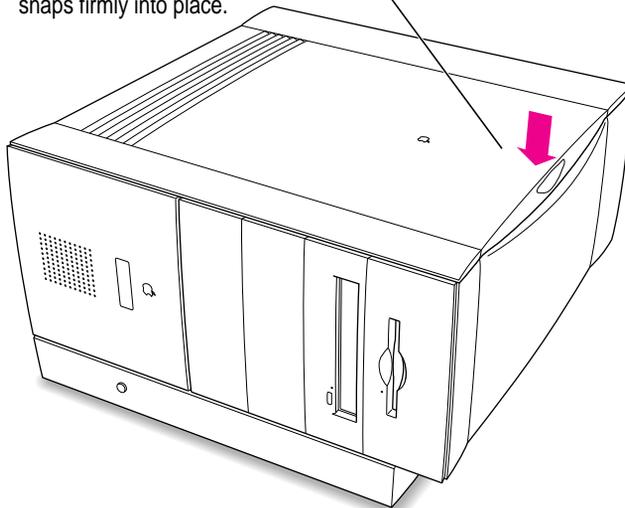
- 30 Make sure all cables and cards are firmly connected.
- 31 Replace the computer cover.

Align the bottom edge of the cover panel with the computer as shown below. Then press down on the cover panel until it snaps into place.

Fit the bottom edge of the cover panel into the floor of the computer.



Press down on the top edge of the cover panel until it snaps firmly into place.



32 Lift up the computer so that it sits upright.

33 Reconnect the power cord and any other equipment cables.

You are now finished installing your PC Compatibility Card.



12" PR166 6x86 PC Card

Installation Instructions





Introduction

The 12" PR166 (6x86) PC Compatibility card was bundled with some configurations of the Power Macintosh 4400/200 and 7220/200 (Far East only) computers. These are the **only** systems with which this particular PC Compatibility card is compatible.

Because the PR166 card uses a different bracket than the 12" 166 Mhz-P card does, the installation procedures differ between the two cards. If you are replacing a PC Compatibility card that was bundled with a PM 4400/200 or 7220/200 (i.e., a PR166 card), refer to the installation instructions in this chapter. If, however, you are replacing a PC Compatibility card that was purchased as a standalone upgrade, refer to the installation instructions for the 12"166 Mhz-P PC Card in the previous chapter.





About This Update



If you received this update with a Power Macintosh 4400 or 7220 computer

Your computer came with a PC Compatibility Card installed, along with all the software you need to use it. Follow the instructions in your *PC Compatibility Card* user's manual to set up and begin using the software.

This update provides instructions on how to remove and reinstall your card, should you ever need to do so. This update replaces any installation or removal instructions for the 4400 or 7220 model in your *PC Compatibility Card* user's manual.

If you received this update with a PC Compatibility Card

This update provides instructions on how to install your card in a Power Macintosh 4400 or 7220 computer and remove it if necessary. This update replaces any installation or removal instructions for the 4400 or 7220 model in your *PC Compatibility Card* user's manual.

WARNING If you've purchased a Power Macintosh 4400 or 7220 PC-compatible computer, your computer's PC Compatibility Card may have been designed to be used only in 4400 and 7220 models. Do *not* install the card in a different model if page 1 of the *Technical Information* booklet that came with your 4400 or 7220 PC-compatible computer states a warning not to do so.



Installing the Card in Your Power Macintosh 4400 or 7220 Computer



This chapter describes how to install the PC Compatibility Card hardware in a Power Macintosh 4400 or 7220 computer.

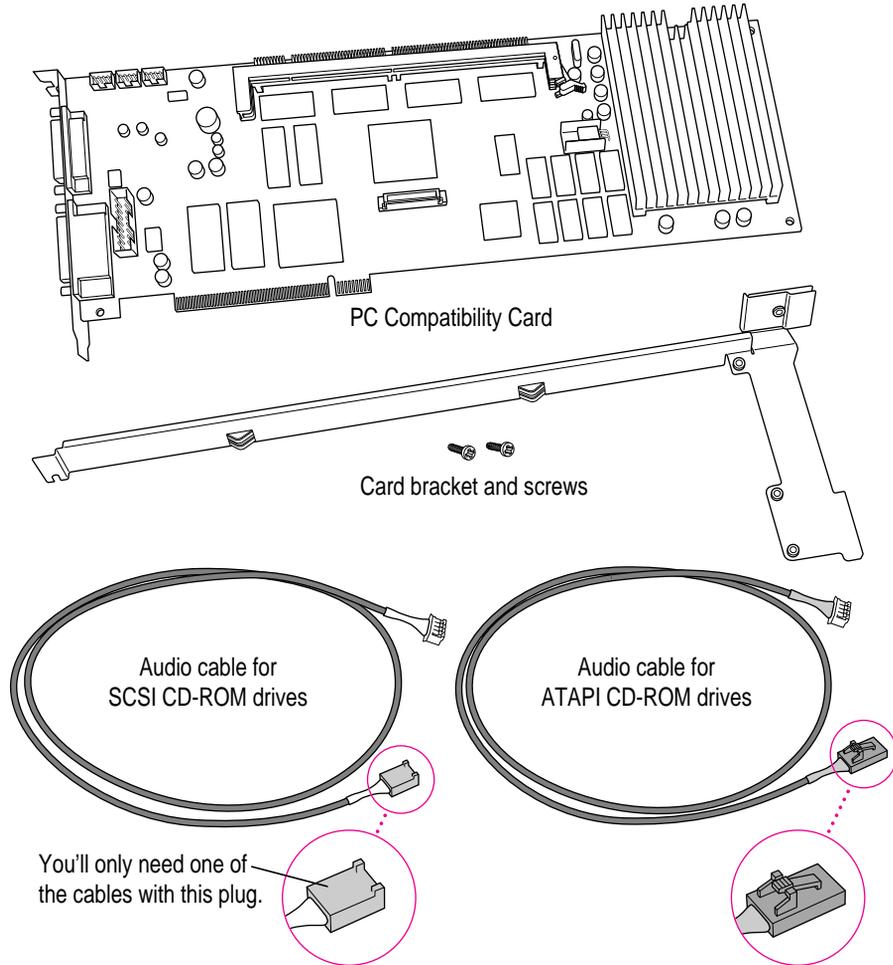
IMPORTANT If you will be installing a PC Serial and Parallel Card with your PC Compatibility Card, it's easiest to install both cards at the same time. The PC Serial and Parallel Card has standard PC ports that allow you to use several kinds of PC-compatible peripherals from the Windows or DOS environment (not from the Mac OS environment). Instructions in this chapter indicate when to see your PC Serial and Parallel Card manual for installation information.

WARNING The installation of the PC Compatibility Card is technically complex. Unless you are comfortable installing components inside computers, Apple recommends that you have the PC Compatibility Card installed by your Apple-authorized dealer (who may charge a fee). If you attempt to install the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to remove the card, add memory, install the card, or connect the cables without first reading this manual.

What you need

Before beginning the installation process, make sure you have the PC Compatibility Card, the card support bracket and screws, and the audio cables.



Installing the PC Compatibility Card hardware

There are several steps to installing your PC Compatibility Card hardware:

- opening the computer
- preparing the PCI expansion slot
- connecting the audio cables
- attaching the support bracket
- inserting the PC Compatibility Card
- replacing the computer's cover

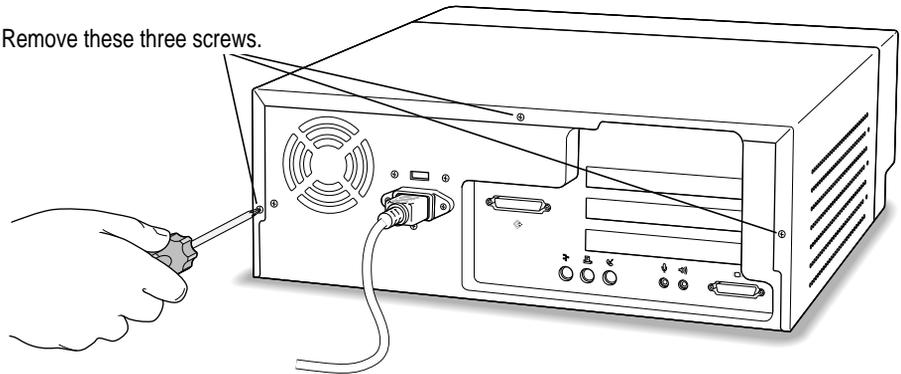
Opening the computer

- 1** Shut down the computer and disconnect all cables from the computer, except for the power cord.

Leave the computer plugged in for now, to ground it and protect its components from static electricity damage.

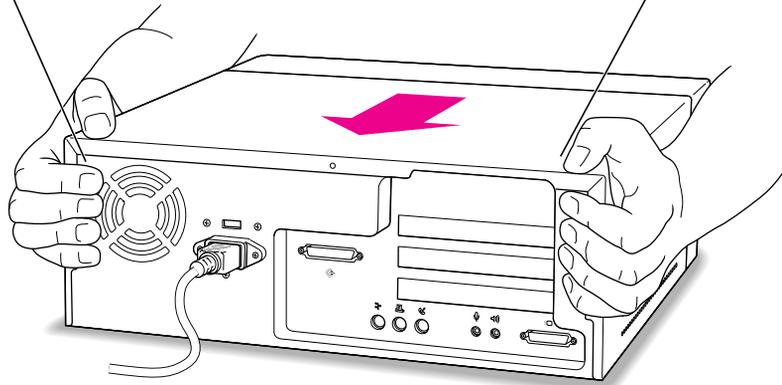
- 2** Remove the three screws as shown from the back of the cover.

Remove these three screws.



- 3** Position your hands on the unit as shown, and slide the cover back about a quarter of an inch.

Firmly grasp the back of the computer and push in on the rear panel with your fingertips while sliding the top cover back about a quarter of an inch with your thumbs.

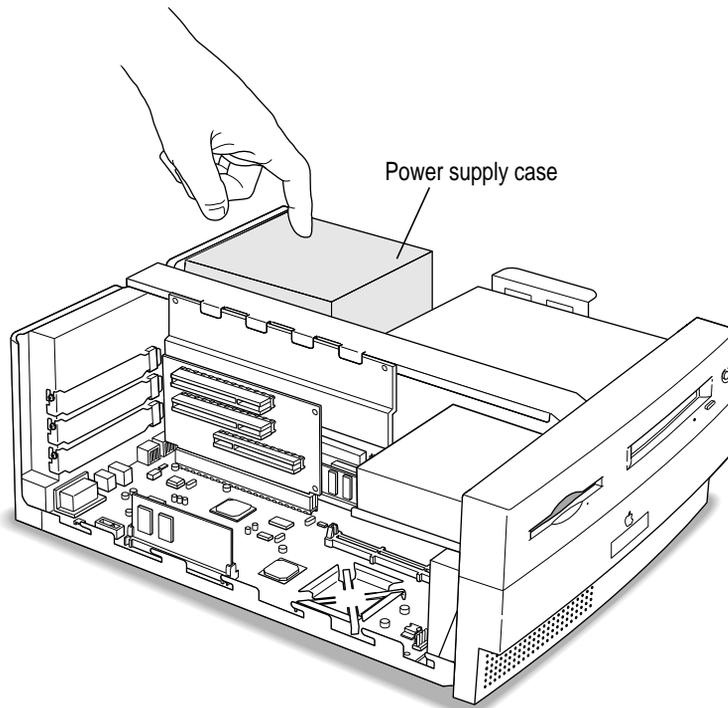


- 4** Lift the cover up and off the computer.

5 Touch the metal part of the power supply case inside the computer.

Always do this before you touch any parts, or install any components, inside the computer. Touching the power supply case helps release static electricity from your body and prevent possible damage to internal components.

IMPORTANT You can collect static electricity just by walking away from and then back to your computer. If you need to move away from your computer during installation, remember to touch the metal part of the power supply case again before you continue installing.



6 Remove the power cord from the back of the computer.

Preparing the PCI expansion slot

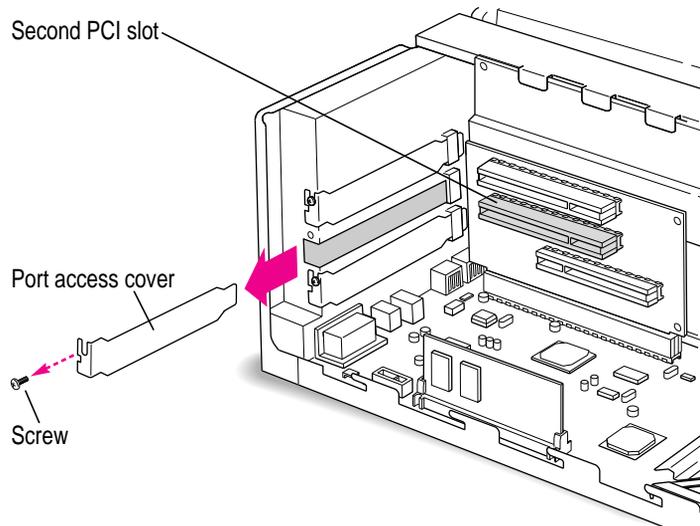
7 Prepare the second PCI expansion slot.

You need to install your PC Compatibility Card in the second PCI expansion slot, just under the top (first) slot.

- If there is already a card in the second slot, move it to a different slot. If you will be installing a PC Serial and Parallel Card, you should also remove any card in the first slot.

IMPORTANT Always hold PCI cards by their edges. Don't touch any of the components on the cards.

- If there is a port access cover installed, remove the screw and slide the cover out. Keep the screw; you will install it again later.

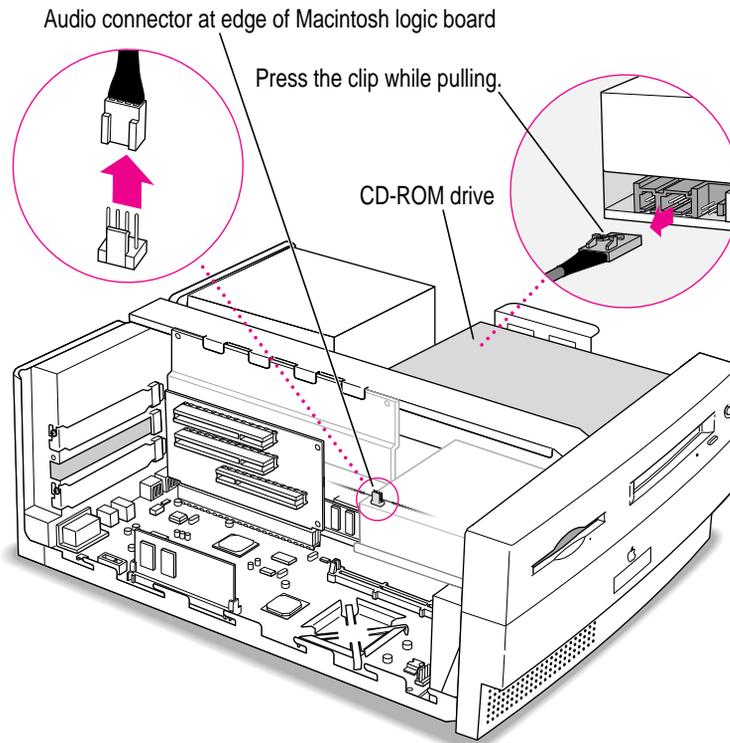


Connecting the audio cables

- 8 **Disconnect the audio cable from the back of the CD-ROM drive and from the Macintosh logic board, and remove it from the computer.**

On the logic board, this cable is connected near the DRAM DIMM slots. The connector has four pins and may be labeled “CD AUDIO” on the board. Be sure to pull on the plug, not the cable.

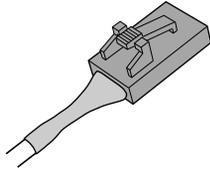
Keep this cable after you remove it; you will need to reinstall it if you remove your PC Compatibility Card.



- 9 **Plug the end of the audio cable shown on the next page into the back of the CD-ROM drive. Then route the cable as shown, and plug the other end into the “CD IN” connector in the left corner of the PC Compatibility Card.**

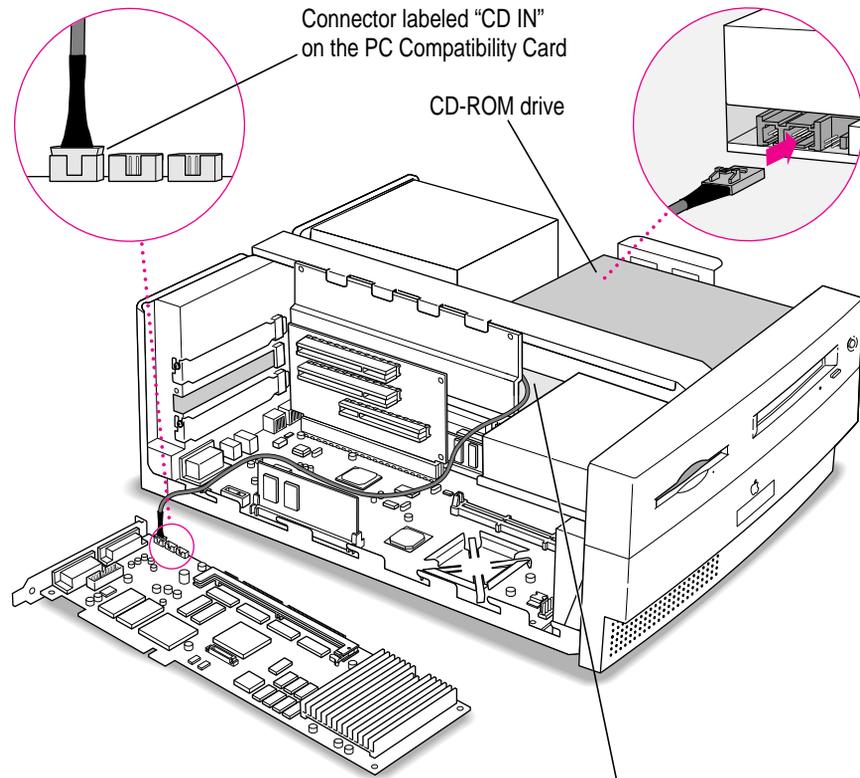
IMPORTANT Use only the cables that came with this PC Compatibility Card. Do not use cables from other models of the card.

Your PC Compatibility Card came installed with two different audio cables. One cable has a slightly smaller plug that looks like the illustration below. Use this cable.



After you plug the cable into the CD-ROM drive, route the cable under the support bar and through the opening in the chassis as shown.

Then plug the other end of the cable into the connector labeled “CD IN” on the card.

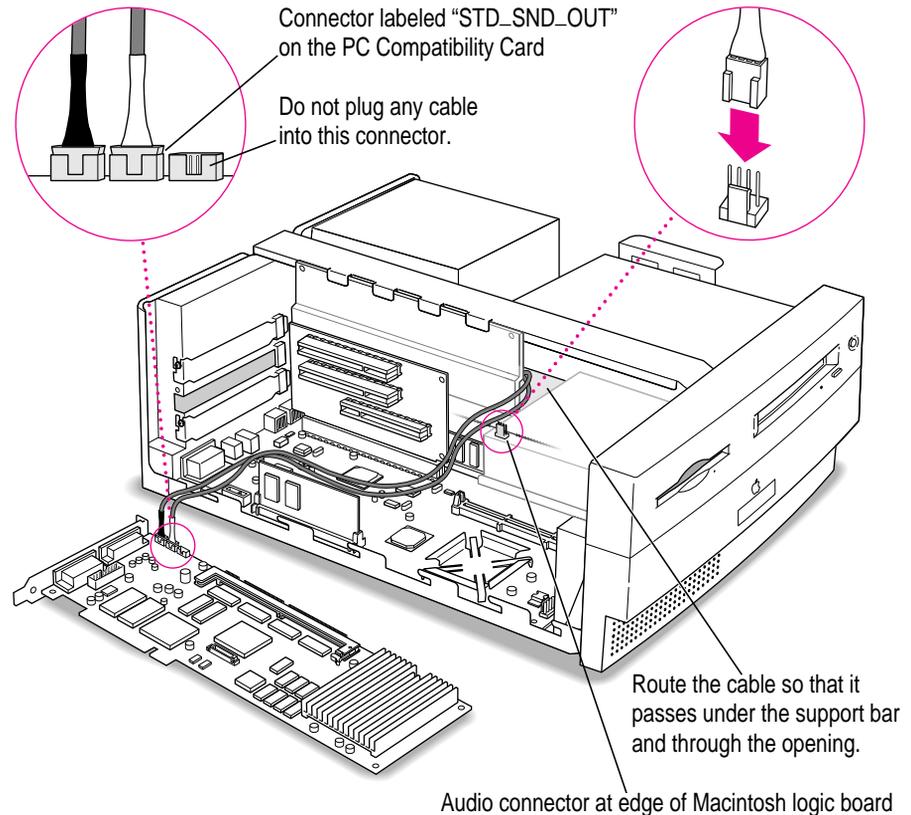


Route the cable so that it passes under the support bar and through the opening.

- 10** Plug the other audio cable into the CD Audio connector on the Macintosh logic board. Then route the cable as shown and plug the other end into the Standard Sound Out connector on the PC Compatibility Card.

Insert the cable's larger plug into the connector on the logic board (this is the connector from which you removed the audio cable in step 8). Route the cable under the support bar and through the opening in the chassis as shown.

Then plug the other end of the cable into the Standard Sound Out connector, labeled "STD_SND_OUT," right next to the CD IN connector, in the left corner of the card.

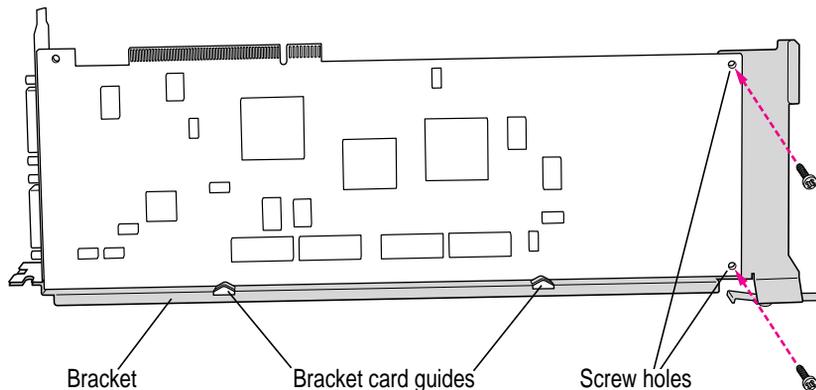


Attaching the support bracket

- 11 Turn the PC Compatibility Card over (with its components face down) and position the support bracket as shown below. Then insert the screws and tighten them.

IMPORTANT Always hold the card by its edges. Don't touch any of the components on the card.

The bottom edge of the card should engage the card guides on the bracket. The screw holes at the end of the card should align with the bracket's screw holes underneath.



What you do next depends on whether you are installing a PC Serial and Parallel Card.

- If you want to install a PC Serial and Parallel Card, you need to connect the peripheral flex cable to your PC Compatibility Card now. See the PC Serial and Parallel Card manual for instructions. Then return to this manual and go on to step 12.
- If you don't want to install a PC Serial and Parallel Card, go on to step 12.

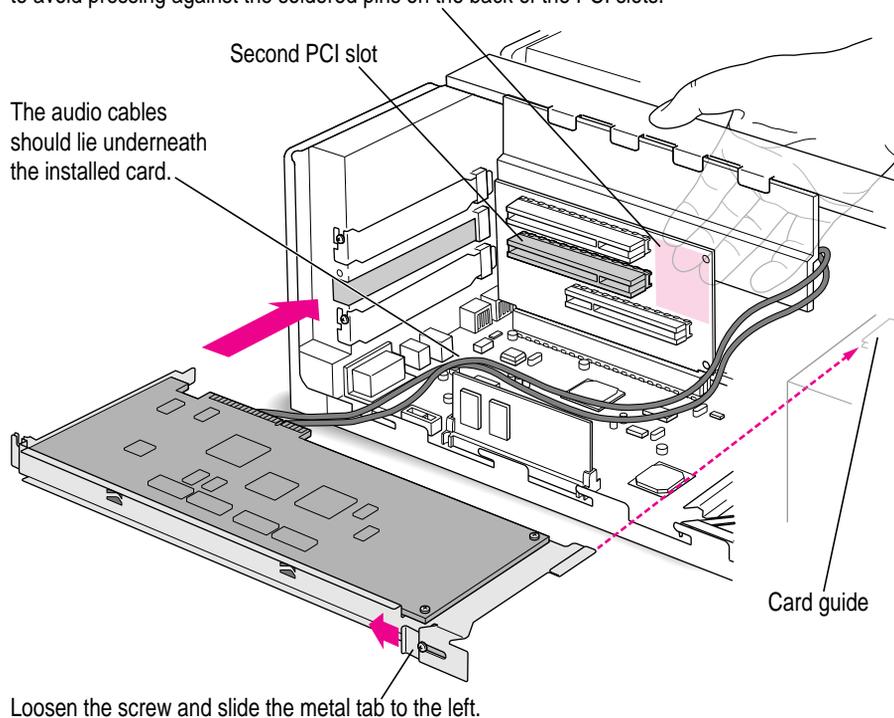
Inserting the PC Compatibility Card

- 12** Turn the PC Compatibility card over again, loosen the screw on the bracket's sliding tab, and slide the tab to the left. Then insert the card into the second PCI slot.

To insert the card, place one hand behind the PCI slots in the area indicated below. With your other hand, align the card's connector end (gold in color) with the second PCI expansion slot. The ports on the card should face the port access opening on the computer's back panel. The other end of the card (where the bracket is) should engage the card guide. Press in on the card. When the card is fully inserted, you won't be able to see the gold-colored connector any more.

- Don't rock the card from side to side; press it straight into the slot. Rocking the card can damage the PCI slot.
- Don't force the card. If you meet a lot of resistance, pull the card out and try again.
- To see if the card is connected, pull it gently. If it resists, it is connected.

Support the slots with your hand in this area only (shown tinted here) to avoid pressing against the soldered pins on the back of the PCI slots.

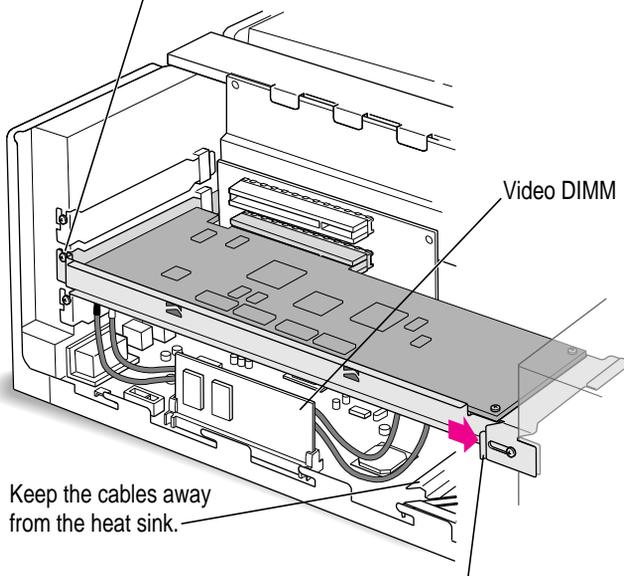


13 Secure the card and route the cables in their correct position.

Install and tighten the screw you removed at the port end (left end) of the card. Then slide the metal tab on the bracket to the right (so it engages the speaker housing) and tighten the screw.

Route the audio cables behind the video DIMM and away from the heat sink. Keep the cables inside the edge of the computer case.

Install the screw you removed earlier and tighten it to secure the card and bracket assembly to the computer.



Slide the metal tab to the right and tighten the screw.

IMPORTANT If you are installing the PC Serial and Parallel Card, you should insert it now. See the PC Serial and Parallel Card manual for instructions.

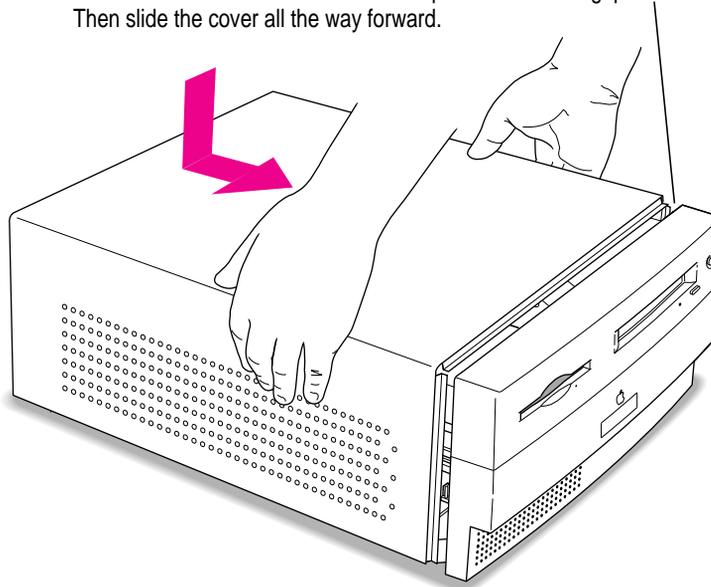


Replacing the computer's cover

- 14 Make sure all cables and cards are firmly connected.
- 15 Replace the computer's cover.

Lower the cover onto the computer vertically as shown. Then slide the cover forward until it snaps into place.

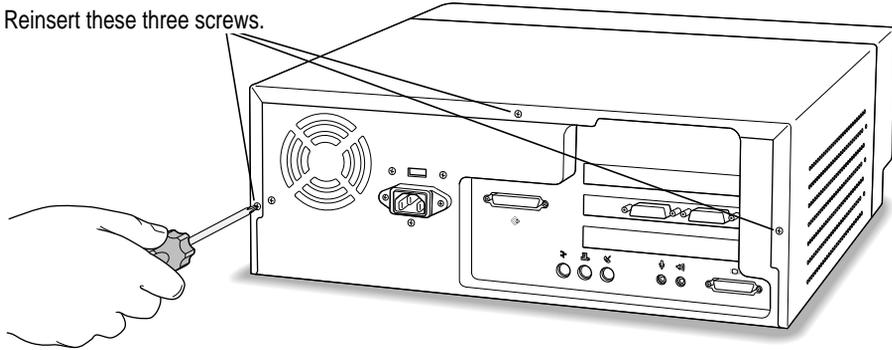
Set the cover down so there's about a quarter of an inch gap here.
Then slide the cover all the way forward.



16 Replace the screws and reconnect the power cord.

Reinsert the three screws you removed earlier into the back of the computer. Then reinsert the power cord.

Reinsert these three screws.



You are now finished installing the card. To learn how to connect your monitors and other equipment, see the chapter titled “Connecting Monitors and Other Equipment” in your *PC Compatibility Card* user’s manual.





Removing the PC Compatibility Card From Your Power Macintosh 4400 or 7220 Computer



To remove your PC Compatibility Card hardware from your Power Macintosh 4400 or 7220 computer, follow the instructions in this chapter.

WARNING If you've purchased a Power Macintosh 4400 or 7220 PC-compatible computer, your computer's PC Compatibility Card may have been designed to be used only in 4400 and 7220 models. Do *not* install the card in a different model if page 1 of the *Technical Information* booklet that came with your 4400 or 7220 PC-compatible computer states a warning not to do so.

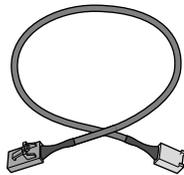
WARNING The removal of the PC Compatibility Card is complex. Unless you are comfortable working with components inside computers, Apple recommends that you have the PC Compatibility Card removed by your Apple-authorized dealer (who may charge a fee). If you attempt to remove the card yourself, any damage you may cause to your equipment will not be covered by the limited warranty on your computer.

Do not attempt to remove the card, install memory, install the card, or connect the cables without first reading this manual.

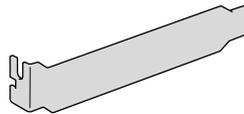
What you need

You'll be removing your PC Compatibility Card and audio cables. For your audio to work correctly, you need to install the audio cable, shown below, that came with your computer. You also need the metal port access cover, shown below, to cover the open port on the back of your computer.

You also need a Phillips screwdriver.



Audio cable for Power Macintosh
4400 and 7220 computers



Port access cover

Removing the PC Compatibility Card hardware

Opening the computer

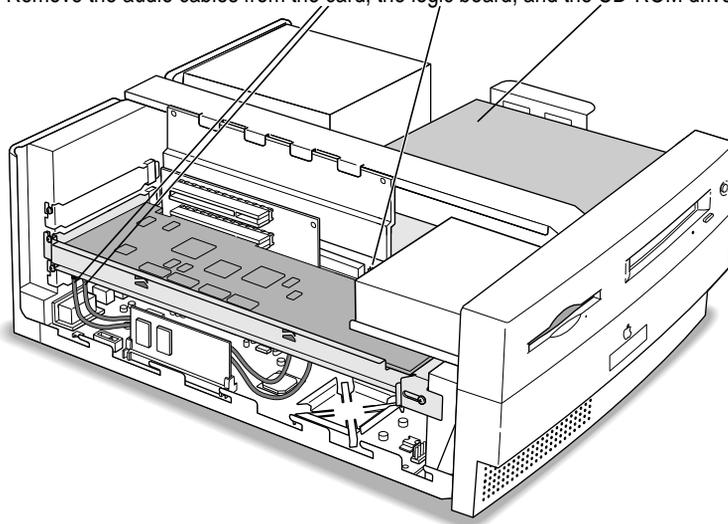
For detailed instructions on opening your computer, including important precautions, see the previous chapter, “Installing the Card in Your Power Macintosh 4400 or 7220 Computer.”

Disconnecting the cables

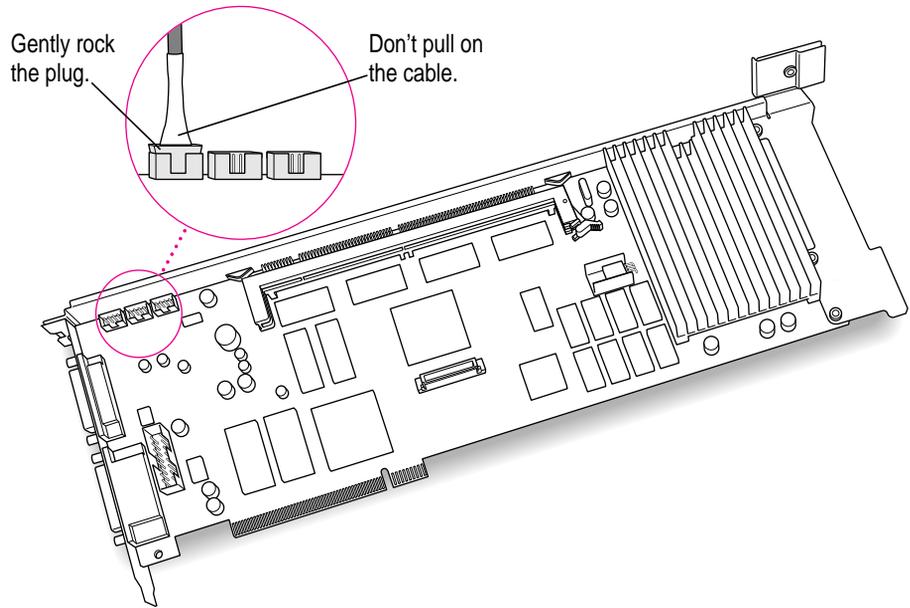
- 1** Unplug the audio cables from the PC Compatibility Card, the Macintosh logic board, and the CD-ROM drive.

Be sure to pull the plugs, not the cables.

Remove the audio cables from the card, the logic board, and the CD-ROM drive.



To remove the cables from the card, grasp the sides of the plug and pull firmly. It may help to gently rock the plug from side to side as you pull.



Do not use pliers to remove the plugs; you may damage the plugs, the card, or your computer.

2 Remove any other cables from the PC Compatibility Card.

If you have not already done so, remove the loopback cable and the PC game controller cable (if one is attached) from the ports on the back of the PC Compatibility Card.

If you are removing a PC Serial and Parallel Card also, detach the peripheral flex cable from the PC Compatibility Card.

Removing the card

3 Remove the screw from the card's port fence (which faces the back of the computer).

4 Loosen the screw at the right of the bracket and slide the metal tab to the left.

5 Grasp the card by its edges (without touching any components on the card) and pull it straight out of the slot.

IMPORTANT Do not rock the card from side to side as you remove it. Doing so may break the card or damage the slot.

Installing the port access cover

- 6** Slide the port access cover into the port opening, to cover the open slot.

Use the port access cover that came with your computer (shown at the beginning of this chapter).

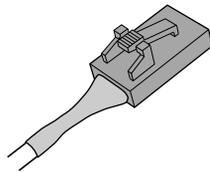
- 7** Reinsert the screw into the port access cover, and tighten.

Installing the audio cable

- 8** Plug the cable's smaller connector into your CD-ROM drive.

Use the audio cable that came with your computer (shown at the beginning of this chapter).

Your cable has two different connectors. The smaller connector looks like the illustration below. Plug this connector into your CD-ROM drive.

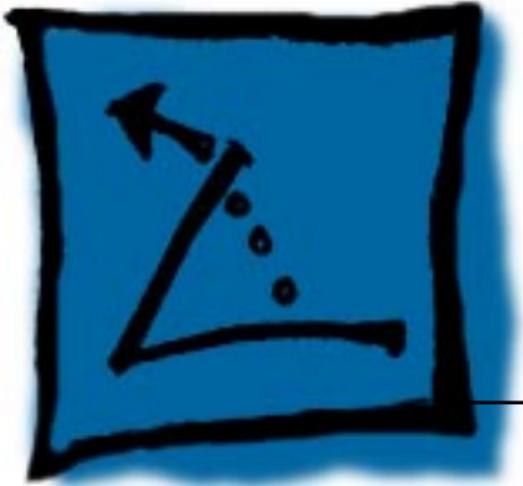


- 9** Plug the other end of the cable into the CD Audio connector on the Macintosh logic board.

This connector is near the DRAM DIMM slots, at the edge of the Macintosh logic board, where you unplugged one of the audio cables in step 1. It may be labeled “CD AUDIO” on the logic board.

Replacing the computer's cover

Replace the computer's cover by following the instructions in the previous chapter, in the section “Replacing the Computer's Cover.”



Additional Procedures

PC Compatibility Cards





System Software

Use system software version 7.5.3. System 7.5 Update 2.0 is on the PC Compatibility Card Mac OS Software CD. To install the update, follow the instructions in the PC Compatibility Card User's Manual.





Installing Windows 95 Operating System

Follow these guidelines when you install Windows 95 on your system:

- Lock your installation disks.
- Select “Continue” instead of “Retry” at the end of disk 2.
- If you choose to make a startup disk, make sure the disk is already formatted. An unformatted disk will not be recognized.
- After you are done with the installation, refer to the PC Compatibility Card User’s Manual for information about setting up printing.
- During installation, do not print the test page when you are prompted to do so.





Mouse Drivers 9.01

For PC Compatibility Card users, Mouse Drivers 9.01 is available on the PC Utilities CD. To install the mouse drivers, run SETUP.EXE in the MSMOUSE directory. If you are using Windows 3.1 or Windows for Workgroups, install both the DOS and Windows mouse drivers. If you are using Windows 95 or DOS 6.22, install the DOS mouse driver only.

When you install the DOS mouse driver, the installer may display an error message indicating that it could not find a mouse attached to the computer. You can ignore the message if your mouse is properly connected to an ADB port on the computer or keyboard.





Online Help in the PC Environment

You can install online Help for the PC environment when you install the support software. If you install Help, it will be available in the PC environment in the HELP directory in the directory where Apple software is installed.

To start Help in Windows 95

- 1 Open “My Computer.”
- 2 Open the C drive.
- 3 Open the Apple software folder. (The default folder name is “Apple.”)
- 4 Open the Help folder.
- 5 Double-click the SETUPHELP application.





To start Help in Windows

- 1 In the Program Manager, choose Run from the File menu.
- 2 Type C:\APPLE\HELP\SETUPHLP.EXE and then click OK.





Third-Party Applications

Connectix RAM Doubler

Do **not** use RAM Doubler and the PC Compatibility Card software together. They are not compatible.

Symantec AntiVirus for Macintosh

If Symantec AntiVirus for Macintosh (SAM) is installed and you mount a drive container, your screen may appear to freeze for a few minutes while SAM scans the container for viruses. The drive container will mount once the scan is complete.





Microsoft Backup

In Windows 95, you cannot use Microsoft Backup because it needs a PC floppy drive controller that does not exist in your Macintosh. Instead, use a Macintosh backup program to back up your PC container file.

However, you can use Microsoft Backup in Windows 3.1 or Windows for Workgroups. To do so, configure the backup manually by following these steps:

- 1 Add the following line to the [386enh] section of your SYSTEM.INI file:

```
device=vfintd.386
```

Your SYSTEM.INI file is in the WINDOWS directory.

- 2 Start the Microsoft Backup program.





- 3 Click “No” in the Auto-configure dialog box.
- 4 In the Configuration Window, select “1.44 Mb 3.5” in the Drive A: list box.

You may also click “Configure” from the standard toolbar at the top. Do not click the Compatibility Test button because it may cause a system “freeze.”

- 5 Click Backup on the standard toolbar.
- 6 If you are backing up to floppy disks, choose “MS-DOS Path” from the Backup To: list box. Type “A:\” in the second list box that appears.

You can type a different path to back up to a network device.

- 7 Continue with your back up.





When you use the Compare or Restore options, you must choose “MS-DOS Path” in the Compare From and Restore From list boxes, respectively.

Insignia SoftWindows and Soft PC

You can use drive containers created with SoftWindows or Soft PC, but you will not be able to boot from them. When you select a container created with SoftWindows or Soft PC, be sure to choose a drive letter other than C.





Windows PaintBrush

Prior to switching to the Macintosh environment, make sure that a menu is not pulled down in either PaintBrush for Windows 3.1 or PaintBrush for Windows for Workgroups. When you switch back to the PC environment, the portion of a menu that overlaps your painting may inadvertently get incorporated into the painting.





Other Programs

Apple recommends using only the memory management programs that are included with DOS or Windows. Do not use third-party memory management programs.

A program that attempts to directly control the floppy controller (such as a backup program) will not work properly.

Any program that sends data to the parallel port during setup or initialization may cause a blank page to print on your printer.

Some utility programs may incorrectly report the clock speed of the Cyrix 5x86 microprocessor on the 7-inch PC Compatibility Card. This may occur on any PC that uses this microprocessor.





PC System

Shut Down and Start Up Properly

Important: Be sure to quit all open PC applications and exit Windows or shut down Windows 95 before shutting down the PC or the Macintosh. Failing to do so will result in the loss of any unsaved data and might result in corruption of the drive container or partition.

If you have set an idle time in the Energy Saver control panel for the Macintosh to shut itself down automatically, you must be sure to also click the “Shut down instead of sleeping” checkbox in the Energy Saver control panel.

When you need to reboot the PC in the PC environment, use the “warm boot” keyboard shortcut instead of the “cold boot” shortcut whenever possible. You should only cold boot





the PC environment when warm booting doesn't work. Cold-booting erases cached data and may corrupt disk data.

To warm boot the PC, press Control-Alt (Option)-Del. To cold boot the PC, press Command-Control-Alt-Del.

Symantec Norton AntiVirus for Windows 95

Before you change the number of display colors in the Display Settings control panel, turn off Norton AntiVirus Auto-Protect by double-clicking its icon in the Task bar and clicking Disable in the dialog box that appears.

Formatting disks or creating a Rescue disk may not work properly if Norton AntiVirus is installed. If you encounter a problem, do the following:

- 1 Double-click the "Norton AntiVirus Auto-Protect" icon in the Task bar.





- 2 Click Options, and then click Advanced.
- 3 Change the “Low-level format of hard disk” option to “Allow,” and then click OK.

QuickTime for Windows

When playing QuickTime movies in the PC environment, you may notice synchronization problems between the audio and video.

International Keyboard Support

If you are using an international keyboard, be sure to install and use the keyboard files on the PC Utilities CD. The supported languages vary from country to country. The keyboard files that come with Windows and Windows 95 may not work with your keyboard.





Using a CD-ROM Drive

Currently, the PC Compatibility Card only recognizes the following types of CDs: PC format (ISO 9660), dual format (disks formatted for both the Macintosh and PCs), and audio. Some specialized formats are not supported.

Using a Modem

If you are having problems using a modem with Windows 95, you may be able to correct the problems by disabling the “Use flow control” or “Use error control” options for the modem. To do so, follow these steps:

- 1 Click the Start button, choose the Settings menu item, and then choose Control Panel.
- 2 Double-click the Modem icon.
- 3 Click the Properties button.





- 4 Select the Connection tab in the dialog box that appears.
- 5 Click the Advanced button
- 6 Turn off the “Use flow control” or “Use error control” options, and click OK.

Also, make sure to set the modem speed to 19,200 baud or less.





Macintosh System

Starting Up the PC and Macintosh Environments

Allow the Macintosh to completely finish rebuilding the desktop before attempting to switch to the PC environment. If you switch during the rebuilding of the desktop, a system “freeze” could occur.

Also, the Energy dialog box may appear each time you start your Macintosh; you can turn off this message at startup by opening and closing the Energy Saver control panel.

If you set up your Macintosh to switch to the PC environment on startup, disable the shut down warning in the General Controls control panel. Otherwise, you may have to wait for your Macintosh to start up when you switch back to the





Macintosh environment.

To disable the shut down warning:

- 1 Choose Control Panels from the Apple menu.
- 2 Double click General Controls to open it.
- 3 In the Shut Down Warning area, turn off the “Warn me if computer was shut down improperly” checkbox.
- 4 Close the General Controls window.





Working with Locked PC Containers

You cannot boot from a locked PC container, a PC container that is open on your desktop, or a PC container that is on a write-protected file server.

You may not be able to mount a locked PC container if file sharing is turned on. You can correct the problem by either unlocking the PC container or turning off file sharing.





Configuring Serial Ports in PC Setup Control Panel

After mapping and remapping a PC COM port to one of the Macintosh serial ports, you may have to restart the PC and the Macintosh for the remapping to take effect.

If you are using Apple Remote Access (ARA) 2.0 or 2.0.1, you may not be able to start your Macintosh properly after mapping a PC COM port to a Macintosh serial port. To correct the problem, restart while holding down the Shift key to temporarily turn off all system extensions. Then remove the Serial Port Arbitrator from the Extensions folder inside your System Folder, and restart your computer. (Prior to using ARA, unmap the PC COM port and restart your Macintosh.) You can also correct this problem by upgrading to ARA 2.1 when it is available.





Apple LaserWriter Driver

If you are using a PostScript printer, you should install and use the most recent version of the Apple LaserWriter printer driver software. The current version number is 8.3. Older versions may generate inverted images when printing from the PC environment. Apple LaserWriter 8.3 comes with System 7.5 Update 2.0. It is also available separately on the Apple World Wide Web site.





Windows 95 Add Printer Wizard

When you use the Add Printer Wizard to set up a printer, do not print a test sheet until the printer is configured according to the instructions in your user's manual. Then you can print a test sheet by doing the following:

- 1 In the Printers window, click the icon of the printer you just added.
- 2 Choose Properties from the Printer menu.
- 3 In the dialog box that appears, click Print Test Page.





Printers that Support the “Printer Specific” Option

If you are using the PowerPrint package from GDT Softworks to print on a PC-compatible parallel printer, you should choose Printer Specific in the PC Print Spooler Preferences dialog box. Currently, the PowerPrint package is the only printer driver that supports the “Printer Specific” option.

Saving a Printer File

To save a printer file such as a PostScript file in the PC environment, use the option in your Windows printer driver to print to a file. Do not map a PC COM port to a text file in the PC Setup control panel, and then print to that port in the PC environment.





Networking

Windows for Workgroups TCP/IP and Windows 95

When upgrading from Windows for Workgroups to Windows 95, make sure to install the Windows 95 TCP/IP stack. You may have problems using the Windows for Workgroups TCP/IP stack with Windows 95.

Network Drivers

The MacODI and MacNDIS drivers are in the root directory on the PC Software floppy disk.





Windows 95 PROTOCOL.INI File

If an error message appears stating that there are illegal decimal characters in the PROTOCOL.INI file, the Windows 95 Network control panel may have incorrectly removed some of the double quotes necessary within the file. (The MacNDIS\$ section in PROTOCOL.INI has some lines with double quotes, placed there by the SETNET utility.) If you modify network settings with the Network control panel, it removes the double quotes from the file. To correct the problem, restore the double quotes in the file.

Use MacODI with Netware Client 32

In Windows 95, use the MacODI driver to connect a Netware 32-bit client to a Netware 4.1 server.





Using ODI with Windows 95

You may experience system “freezes” if you are using NetBEUI or TCP/IP with ODI in Windows 95. To correct this problem, delete the following line from the STARTNET.BAT file in the NWCLIENT directory:

```
C:\WINDOWS\ODIHLP.EXE
```

Also, add the above line to the end of your AUTOEXEC.BAT file.





Shared Folders and Disks

Sharing Floppy Disks and CDs is not supported. A floppy disk or a CD should not be set up as a shared folder between the Macintosh and PC environments. This is unsupported and can cause unpredictable results.

Adding/Removing Shared Folders in Windows 95

When you add or remove a Shared Folder, the View in “My Computer” does not immediately change. It requires two refreshes to correctly update the Shared Folder status.

Opening or Saving Shared Folder Files

With some Windows 95 programs, you may not be able to open or save files in a shared folder. You may have to move a file out of the shared folder before you can open it, or save a file to a different location and then move it into the shared





folder.

In Windows 3.1 or Windows for Workgroups, you cannot save a file to a shared folder that is empty. To work around this problem, type a full path and filename into the Save As dialog box, or keep at least one file in a shared folder.

Naming Shared Folders

When you name a folder in the Macintosh environment that you intend to share with the PC environment, you may want the name to be within the DOS 8.3 character filename guidelines. Otherwise, the sharing software will truncate and translate the filename to fit the guidelines. For more information about naming files, see your DOS manual.

Network Disks as Shared Folders

If you set up a shared disk on a network as a shared folder





and later the network configuration changes, you may continue to be prompted with a dialog box at startup to mount a shared disk that no longer exists on the network. To prevent the dialog box from appearing, reassign the drive letter to a new drive. If you cannot remember the drive letter, drag the PC Setup Preferences file to the Trash.

PC Clipboard

Using Compressed Images in the Clipboard

In some cases, you may need to expand a compressed image file in the Macintosh environment to correctly transfer the image to the PC environment.

Tips

If you are having trouble copying and pasting text or images





between the Macintosh and the PC environments, try the following tips:

- Instead of using the Paste command, use the Paste Special command if it is available in the application you are pasting into.
- If you cannot paste an image into a word processing program in the PC environment, try pasting the image into a graphics program, such as PaintBrush. Then, copy the image to the Clipboard from the graphics program and try pasting into your word processing program.
- Instead of copying and pasting, use a shared folder to transfer an entire file from one environment to another. Some Macintosh and Windows programs can open files created on other platforms. For example, ClarisWorks for Windows can open ClarisWorks files created on a Macintosh, and vice versa. Even if you are using two different programs, you may be able to save a file in a common file format that both programs understand, such





as RTF for text, and EPS or TIFF for graphics. (Check the manuals that came with your programs to see if they support common file formats.)

- If you must use the Clipboard to transfer a lot of data or a large graphic, try transferring the data in smaller pieces or making more memory available to the application. For more information on increasing a program's memory, see the "Memory" topic of Macintosh Guide, available in the Guide (?) menu.
- If you are copying and pasting a PhotoCD image, make sure you are copying an expanded version of the image.





Large Bitmap Transfers

If you are transferring large bitmap images from the PC to the Macintosh environment, you may have to increase the memory allocated to the PC Clipboard application. To increase the memory allocation:

- 1 Open the System Folder, then open the Extensions folder.
- 2 Select the PC Clipboard icon, open the File menu, and choose Get Info.
- 3 In the Preferred Size text box, enter a larger memory allocation, such as 1000K.
- 4 Close the PC Clipboard Info window.





Pasting Graphics Created in Microsoft Word 6.0 for Macintosh

If you have difficulty copying a graphic from a Microsoft Word 6.0 document in the Macintosh environment and pasting it into the PC environment, try this method instead:

- 1 Select the graphic in Word 6.0 and choose Cut from the Edit menu.
- 2 Place an insertion point in the Word 6.0 document, open the Edit menu, and choose Paste Special.
- 3 In the Paste Special dialog box, select Picture format and click OK.
- 4 Select the graphic you just pasted, and choose either Cut or Copy from the Edit menu.
- 5 Switch to the PC environment, and try pasting the graphic.





Troubleshooting

12" 166 Mhz-P and PR166 PC
Compatibility Cards





General

The following troubleshooting information for the 12" 166 Mhz-P and PR166 PC Compatibility cards is from the User manual that ships with the cards.

Use the arrows at the top of the page to navigate between pages.



9

Troubleshooting



Consult this chapter when you have questions about using the PC environment on your Macintosh.

If you have questions about using DOS, Windows, or PC application programs, see the manuals that came with your operating system software or programs.

Apple will provide technical support for Apple-branded software and for DOS because it is included with the PC Compatibility Card. If you are having a problem with Windows, Windows for Workgroups, or Windows 95, contact Microsoft Product Support. See the support information that came with your Windows package for more information.

WARNING If you have a problem with your PC compatibility hardware or software and nothing presented in this guide solves it, consult the service and support information that came with your computer for instructions on how to contact an Apple-authorized service provider or Apple for assistance. If you attempt to repair the PC compatibility hardware yourself, any damage you may cause will not be covered by the limited warranty. Contact an Apple-authorized dealer or service provider for additional information about this or any other warranty question.

The Macintosh “freezes” during startup.

Restart the computer while holding down the Shift key. This turns off extensions. After the computer starts up, restart the computer again. If the computer still doesn't start up, consult the troubleshooting information that came in its user manual.

The PC Setup icon has a red slash through it at startup.

The PC setup extension did not load.

You may have started up the computer holding down the Shift key, which turns off extensions. Restart the computer without holding down the Shift key.

A RAM disk or RAM cache in the Mac OS may be using too much memory. Reduce the size of the RAM disk or RAM cache, and restart the computer.

There may be a problem with the PC Setup Prefs file (in the Preferences folder within the System Folder). Remove the file and restart the Macintosh. Then use the PC Setup control panel to recreate your settings. If this doesn't work, try reinstalling the PC software (see Chapter 6, “Installing the PC Compatibility Card Software”).

The Mac OS software for the PC Compatibility Card doesn't seem to be installed.

See Chapter 6, “Installing the PC Compatibility Card Software,” for a list of the Mac OS software that is required for the PC Compatibility Card. If any of these items is missing, and you are having trouble using the PC Compatibility Card, try reinstalling the software, following the instructions in Chapter 6.

The PC didn't start up.

Open the PC Setup control panel. If drive C is not assigned to a drive container or hard disk drive, you will see a question mark icon in the C drive box. In this case, either assign drive C to an existing drive container or create a new drive container (see “Creating a Drive Container” in Chapter 6).

In the PC Setup control panel, make sure the On button is selected. If it is, click Start PC at the bottom of the control panel. If it's not selected, click it; then restart your Macintosh. Open the PC Setup control panel again and click Start PC.

If the On button is selected and you have restarted the Macintosh, but the “Switch to PC,” Start PC, and Shut Down PC buttons are not available, there may be a problem with your PC Compatibility Card. Consult your Apple-authorized service provider.

There may be a problem with an additional DIMM installed on your PC Compatibility Card. Open the PC Setup control panel and check the RAM portion of the control panel. If no DIMM is indicated and you have installed an additional DIMM, remove it and restart the computer. If a DIMM is detected by the PC Setup control panel, you can still remove it and restart the computer. For more information on adding and removing DIMMs, see Appendix B, “Adding Memory to Your PC Compatibility Card.”

When I start up the computer it goes directly into the PC environment.

If you don't want the PC environment to start automatically, return to the Mac OS environment by pressing ⌘-Return. Open the PC Setup control panel and make sure the “Switch at Startup” box is not checked.

DOS begins to start up but then the screen freezes. The cursor blinks, but I cannot type anything.

Press ⌘-Control-Alt-⌘ to restart the PC. (If you do not have the ⌘ key on your keyboard you can substitute the period key on the numeric keypad.) When you see the message “Starting MS-DOS” or “Starting Windows 95,” follow this step to bypass your CONFIG.SYS and AUTOEXEC.BAT files:

DOS or Windows: Press and hold the Shift key.

Windows 95: Press and hold the F5 key.

After the PC has started up, check the CONFIG.SYS and AUTOEXEC.BAT files, change any incorrect lines, and then restart the PC.

Switching to and from the PC

I can't remember the command I set to switch back from the PC environment to the Mac OS.

In the PC environment, you can always use ⌘-Return to switch back to the Mac OS environment. To change the switch command, see “Switching Between the Mac OS and PC Environments” in Chapter 8.

There is a delay when switching between environments.

There is a delay when you switch to the PC immediately after starting it or when you use the ⌘-Control-Alt-⌘ command to perform a hard restart. The PC is performing some system configuration tasks.

When switching would interfere with a Mac OS system task, there is a slight delay until the task is completed.

There also may be a delay while a large amount of Clipboard information is transferred.

If you are switching to the PC immediately after starting up the computer, make sure the Shut Down Warning is turned off in the General Controls panel in the Mac OS. If it is on, you may not be able to switch back to the Mac OS for several minutes after switching to the PC.

When I switch to the Mac OS from the PC environment, a message appears: “PC Clipboard requires additional system services in order to function. Please ensure that the PC Compatibility Card is successfully installed.”

Macintosh Easy Open (Mac OS Easy Open) software may be turned off or may not be installed. Restart the computer, open the Macintosh Easy Open (Mac OS Easy Open) control panel, and make sure the software is turned on. If you can't find the control panel, you need to reinstall it.

In the PC environment, I see the message “Non-system disk or disk error. Replace and strike any key when ready.”

The PC Compatibility Card can't find operating system software such as DOS or Windows.

A nonbootable floppy disk may be in the floppy disk drive. Press ⌘-E to eject the disk; then press any key to continue or try restarting the PC again.

Also, make sure drive C is assigned to a drive container or hard disk drive that contains DOS or Windows software.

If you can't find a drive container, it may have been installed on an external drive that is not turned on, or on removable media that is not available. Or, the drive may have been thrown away or never created. (See Chapter 6, "Installing the PC Compatibility Card Software," for more information on drive containers.)

My monitor flashes oddly when I switch environments.

When you are using a single monitor for both environments, there is a flash when you switch from one environment to the other. If you prefer not to see the flash, select the Fade Screens option in the PC Setup control panel.

Monitor problems

See also the troubleshooting section in Appendix D, "Configuring Video Software."

When I try to switch to the PC environment, my screen is blank or garbled.

Open the PC Setup control panel and check the Monitor portion of the control panel.

If you see the message "Not Supported," your monitor may not be compatible with the PC Compatibility Card. Refer to Appendix D, "Configuring Video Software," for monitor specifications and video modes, and check with your monitor vendor to see if your monitor conforms to these specifications.

If you see the message "No Monitor," your monitor may not be connected properly. Make sure your monitor is connected according to the instructions in the chapter for installing the card in your computer model and Chapter 5, "Connecting Monitors and Other Equipment."

If you're using a VGA monitor connected to a VGA-to-Macintosh adapter, you may be able to reconfigure the adapter to identify itself to the PC Compatibility Card and Macintosh. Check the documentation that came with your monitor and adapter.

Make sure that you've configured your video software correctly. The PC Compatibility Card does not support resolutions greater than 1280 x 1024. For more information, see Chapter 6, "Installing the PC Compatibility Card Software," and Appendix D, "Configuring Video Software."

The PC Setup Prefs file may be damaged. Locate the file (in the Preferences folder inside the System Folder) and drag it to the Trash; then restart the Macintosh. When the Mac OS starts up, open the PC Setup control panel and reconfigure your settings.

I tried configuring my display and now it won't work properly.

In Windows 95, if you choose a configuration that doesn't display properly, follow these steps to correct the problem:

1. Switch to the Mac OS by typing ⌘-Return.
2. In the PC Setup control panel, click Restart PC.
3. Switch to the PC.
4. When you see the message "Starting Windows 95," press F8 to enter Safe Mode.
5. When Windows 95 starts up, click Start, choose the Settings menu item, and click Control Panel.
6. Double-click the Display icon.
7. Click the Settings tab, and select a correct monitor setting in the list that appears (such as 640 x 480). Then restart Windows.

My monitor flashes oddly when I switch environments.

When you are using a single monitor for both environments, there is a flash when you switch from one environment to the other. If you prefer not to see the flash, select the Fade Screens option in the PC Setup control panel.

When I start up certain software in the PC environment, my monitor shows a jumbled or rolling image.

You may have selected the wrong monitor type when configuring your video software. For more information, see Chapter 6, "Installing the PC Compatibility Card Software."

Some application programs that write directly to the hardware (especially games) may not work with some monitors. Contact the software company and ask if the software has a switch to force it to make BIOS calls.

The PC Setup control panel does not report the correct monitor type.

Hold down the Option key and open the Monitor pop-up menu. Choose “Sense Display Type.” If that does not solve the problem, hold down the Option key and open the Monitor pop-up menu. Choose the monitor that most closely matches your monitor.

You may have a VGA-to-Macintosh adapter that is set incorrectly.

If you are using the AppleVision 1710 or 1710AV display, make sure that the AppleVision software is installed in the Mac OS environment and that the monitor’s ADB cable is connected to the Macintosh ADB port. For more information, see Chapter 5, “Connecting Monitors and Other Equipment.”

If you are using a non-Apple monitor, it may report the incorrect monitor type. If you are using a multiscan monitor you may want to turn off autosensing in the PC Setup control panel. Hold down the Option key, open the Display pop-up menu, and choose the monitor that most closely matches your monitor.

PC Setup seems to detect my monitor correctly, but when I switch to the PC environment the image is jumbled or rolling.

If you are using a VGA-to-Macintosh adapter, check whether you can control the “sync” pulse on one or more signals going to the display. If so, try changing the “sync” pulse and see if this solves the problem.

My non-Apple display does not seem to work correctly in the PC environment.

- Use the Windows 95 Display control panel to select your monitor name. If your monitor name is not available, select the SuperVGA monitor option that matches the maximum resolution supported by your monitor.
- Use the ATI FlexDesk or the Windows 95 control panel to set the refresh rate to 60 Hz. For more information, see Appendix D, “Configuring Video Software.”
- If the monitor still does not display properly, reduce the resolution.

Problems using a modem

My modem is not working correctly in Windows 95.

Try disabling the “Use flow control” or “Use error control” options for the modem. To do so, follow these steps:

1. In Windows 95, click the Start button, choose the Settings menu item, and then choose Control Panel.
2. Double-click the Modem icon.
3. Click the Properties button.
4. Click the Connection tab in the dialog box that appears.
5. Click the Advanced button.
6. Deselect the “Use flow control” or “Use error control” options, and click OK.

If you are having trouble connecting at higher baud rates, try setting the modem speed to 19200 baud or less.

When I try to use my Mac OS communications software, I get an error that says the selected port is in use.

Your Mac OS communications software may be trying to use a port that is assigned to the PC Compatibility Card. Open the PC Setup control panel and unassign the selected port by setting it to none.

After I assigned a PC COM port to a Macintosh serial port, my computer did not start up properly.

This problem can occur if you are using Apple Remote Access (ARA) 2.0 or 2.0.1. To correct the problem, restart while holding down the Shift key to temporarily turn off all system extensions. Then remove the Serial Port Arbitrator from the Extensions folder inside your System Folder, and restart your computer. (Prior to using ARA, unassign the PC COM port and restart the Mac OS environment.) You can also correct this problem by upgrading to ARA 2.1.

Problems with files and disks

I can't eject my floppy disk or CD when I am in the PC environment.

To eject a floppy disk in the PC environment, press ⌘-E. To eject a CD in the PC environment, press ⌘-Y.

If you are unable to eject the disk using the keyboard combination, the disk may be in use. Close all open applications in both environments and then try to eject the disk from the Mac OS environment.

I want to assign a drive container to the C or D drive, but I can't find the drive container in the dialog box.

The drive container may be assigned to another drive letter. Check the C: and D: pop-up menus.

The drive container may be on an external hard drive. Make sure that the drive is connected correctly and the power is on. If it is not connected, shut down the computer, reconnect it, and then restart.

I want my drive container to have more than one partition.

Create a new drive container following the instructions in “Creating a Multiple Partition/Bootable Drive Container” in Chapter 7. Initialize the drive container in DOS using the FDISK and FORMAT commands.

I can't share all the folders I want.

Make sure that you have sufficient drive letters assigned in your CONFIG.SYS file's LASTDRIVE statement. The PC reserves the letters A–E; other letters are available to be assigned to shared folders or volumes.

Novell NetWare may reassign drive letters even if you have assigned them to shared folders. Try reserving additional drive letters and reassigning your shared folders.

I inserted a floppy disk in the PC environment and it was ejected.

The disk may have been formatted for the Mac OS. Switch to the Mac OS and try inserting the disk again.

I want to change the size of my drive container.

Once a drive container is created, its size cannot be changed. If you need to increase the size of your drive container in order to install more applications or files, you can create another drive container and assign it to drive D.

I inserted a PC-formatted disk in the Mac OS and an initialization message appeared.

PC Exchange may not be installed in the Control Panels folder. If you don't find it, you can reinstall it using your system software CD-ROM disc.

The disk may be damaged. Try inserting another disk. If that works, test the original disk in the PC environment using a disk repair utility.

I can access a floppy disk from one environment but not the other.

Only a locked floppy disk can be accessed in both environments simultaneously. Eject, lock, and reinsert the disk, or eject the disk, switch to the environment you want to use it in, and reinsert the disk. The disk must be formatted for the PC if you want to use it in the PC environment.

I switched to the Mac OS, and I don't see the floppy disk I was using.

The floppy disk may not have been locked. To use an unlocked PC-formatted floppy disk in the Mac OS, you must switch to the Mac OS before inserting the disk. To use a disk in both environments, lock the disk.

Shared folders don't get updated in Windows 95.

Sometimes you need to refresh shared folders manually in Windows 95. Click "My Computer," click View, then click Refresh.

In some Microsoft applications, a shared drive icon looks like a floppy disk or CD icon.

The shared drive is still usable.

I can't access my Zip or Syquest drive while in the PC environment.

While in the PC environment, you can't access removable media directly the same way you access the floppy disk drive. However, you can set up a shared folder in the Mac OS environment and then transfer information to and from the removable media. For more information see "Using Shared Volumes" in Chapter 7, "Setting Up the PC Environment."

I am unable to use Microsoft Backup.

In Windows 95, you cannot use Microsoft Backup because it needs a PC floppy drive controller that does not exist in your Macintosh. You can use a Mac OS backup program to back up your PC container file.

You can use Microsoft Backup in Windows 3.1 or Windows for Workgroups. To do so, configure the backup manually by following these steps:

1. Add the following line to the [386enh] section of your SYSTEM.INI file:

```
device=vfintd.386
```

Your SYSTEM.INI file is in the WINDOWS directory.
2. Start the Microsoft Backup program.
3. Click No in the Auto-configure dialog box.
4. In the Configuration window, select “1.44 Mb 3.5” in the Drive A list box.
You may also click Configure from the standard toolbar at the top. Do not click the Compatibility Test button because it may cause a system “freeze.”
5. Click Backup on the standard toolbar.
6. If you are backing up to floppy disks, choose MS-DOS Path from the Backup To list box. Type “A:\” in the second list box that appears.
You can type a different path to back up to a network device.
7. Continue with your backup.

When you use the Compare or Restore options, you must choose MS-DOS Path in the Compare From and Restore From list boxes.

I can't start up the PC from a drive container created in Insignia SoftWindows or SoftPC.

You can use drive containers created with SoftWindows or SoftPC, but you will not be able to start up from them. When you select a container created with SoftWindows or SoftPC, be sure to choose a drive letter other than C.

If SoftWindows or SoftPC is running, you cannot access the drive containers.

In the PC environment, the CD-ROM drive doesn't recognize some CDs.

The PC Compatibility Card only recognizes the following types of CDs: PC format (ISO 9660), dual format (disks formatted for both the Macintosh and PCs), and audio. Some specialized formats are not supported.

Problems with information transfer

Copying and pasting between environments isn't working.

Only certain kinds of information can be copied and pasted. See “Copying and Pasting Information Between the Mac OS and Windows Environments” in Chapter 8 for more information.

Copying and pasting between Mac OS and Windows works only if the PC Clipboard extension is installed in the Extensions folder inside the System Folder (in the Mac OS) and WINCLIP is installed in the Windows environment.

Check the Control Panels folder in your System Folder to make sure that the Macintosh Easy Open (Mac OS Easy Open) control panel is installed. Make sure the Automatic Document Translation option is turned on.

If Macintosh Easy Open (Mac OS Easy Open) is not available, you can install it from your system software CD.

Windows must be running before you begin to copy and paste.

You cannot copy and paste between the Mac OS and DOS.

The PC Setup Prefs file may be damaged. Locate the file (in the Preferences folder inside the System Folder) and throw it away; then restart the Macintosh. When the computer starts up, open the PC Setup control panel and reconfigure your settings.

Tips for copying and pasting images

If you are having trouble copying and pasting text or images between the Mac OS and PC environments, try the following tips:

- Instead of using the Paste command, use the Paste Special command if it is available in the application you are pasting into.
- If you cannot paste an image into a word-processing program in the PC environment, try pasting the image into a graphics program, such as PaintBrush. Then, copy the image to the Clipboard from the graphics program and try pasting it into your word-processing program.

- Instead of copying and pasting, use a shared folder to transfer an entire file from one environment to another. Some Macintosh and Windows programs can open files created on other platforms. For example, ClarisWorks® for Windows can open ClarisWorks files created in the Mac OS environment, and vice versa. Even if you are using two different programs, you may be able to save a file in a file format that both programs understand, such as RTF for text, and EPS or TIFF for graphics. (Check the manuals that came with your programs to see if they support common file formats.)
- If you must use the Clipboard to transfer a lot of data or a large graphic, try transferring the data in smaller pieces or making more memory available to the application. For more information on increasing a program's memory, see the "Memory" topic area of Macintosh Guide (Mac OS Guide), available in the Guide (🔍) menu.
- If you are copying and pasting a PhotoCD image, make sure you are copying an expanded version of the image.

I can't copy graphics from a Microsoft Word 6.0 document in the Mac OS environment.

Try this method instead:

1. Select the graphic in Word 6.0 and choose Cut from the Edit menu.
2. Open the Edit menu and choose Paste Special.
3. In the Paste Special dialog box, select Picture format and click OK.
4. Select the graphic you just pasted, and choose either Cut or Copy from the Edit menu.
5. Switch to the PC environment, and try pasting the graphic.

I can't copy files from the Mac OS environment to a drive container.

To copy files to a drive container, the drive container file has to be mounted on the desktop and the PC must be shut down.

I cannot open or save my files in a shared folder.

With some Windows 95 programs, you may not be able to open or save files in a shared folder. You may have to move a file out of the shared folder before you can open it, or save a file to a different location and then move it into the shared folder.

Communication and network problems

I can't connect to a network in the PC environment.

Make sure that your networking software is properly installed and configured (see the section on installing network support for Windows or Windows 95 in Chapter 6, “Installing the PC Compatibility Card Software,” and see Appendix C, “Installing Network Client Software”).

Make sure the network is up and running (check the Chooser and check with your network administrator).

My PC communications software doesn't work.

The Macintosh serial port does not have the same interface as the PC does and some commands do not work. See “Setting Up a Modem or Other Serial Device” in Chapter 7.

I get an error message associated with my Windows 95 PROTOCOL.INI file.

If an error message appears stating that there are illegal decimal characters in the PROTOCOL.INI file, the Windows 95 Network control panel may have modified some of the lines. To correct this problem, run the SETNET utility. For more information, see Appendix C, “Installing Network Client Software.”

My system “freezes” when I am using ODI with Windows 95.

You may experience system “freezes” if you are using NetBEUI or TCP/IP with ODI in Windows 95. To correct this problem, delete the following line from the STARTNET.BAT file in the NWCLIENT directory:

```
C:\WINDOWS\ODIHELP.EXE
```

After deleting the line, you should then add it to the end of your AUTOEXEC.BAT file.

When I start up in the PC environment I get a message that a shared volume no longer exists.

Reassign the drive letter to a new drive. If you cannot remember the drive letter, drag the PC Setup Preferences file to the Trash, open the PC Setup control panel, and reconfigure your settings.

Configuration problems

I can't assign a COM port to a Macintosh serial port.

COM ports cannot be assigned to Macintosh serial ports that are in use by an application or network software.

If you assign a COM port to a Macintosh serial port, the serial port cannot be used by the Mac OS until you unassign the COM port.

When I try to use my Mac OS communications software, I get an error that says the selected port is in use.

Your Mac OS communications software may be trying to use a port that is assigned to the PC Compatibility Card. Open the PC Setup control panel and unassign the selected port by setting it to none.

Sound problems

I can't hear PC sounds.

PC sound may be turned off in the PC Setup control panel.

If you can't hear sound from a CD, make sure that the internal audio cables are installed according to the instructions in the chapter on installing the PC Compatibility Card in your computer model.

The PC Compatibility Card can play sound only from the CD-ROM drive with the lowest SCSI ID number. If you're using another CD-ROM drive, you won't hear sound when you switch to the PC environment.

If you are using DOS or Windows, increase the speaker volume with the Sound Blaster Mixerset application. To run the Mixerset application from DOS, change to the VIBRA16 directory, type `mixerset`, and press Return.

Check that the AUTOEXEC.BAT and CONFIG.SYS files contain the following lines:

AUTOEXEC.BAT (for Windows 95)

```
SET SOUND=C:\PROGRA~1\CREATIVE\CTSND
SET BLASTER=A220 I5 D1 H5 P330 T6
SET MIDI=SYNTH:1 MAP:E
```

AUTOEXEC.BAT (for Windows)

```
SET SOUND=C:\VIBRA16
SET BLASTER=A220 I5 D1 H5 P330 T6
SET MIDI=SYNTH:1 MAP:E
C:\VIBRA16\DIAGNOSE /S
C:\VIBRA16\MIXERSET.EXE /P /Q
```

CONFIG.SYS (for Windows 95 or Windows)

```
DEVICE=C:\VIBRA16\DRV\VIBRA16.SYS /UNIT=0 /BLASTER=A:220
I:5 D:1 H:5
DEVICE=C:\VIBRA16\DRV\CTMMSYS.SYS
```

CD sound went away when I switched environments.

If you are playing an audio CD when you start the PC and switch environments, there is a delay in the sound while the PC completes some system configuration tasks.

Check that the CONFIG.SYS file contains this line:

```
DEVICEHIGH=C:\APPLE\CDDROM.SYS/D:CDDRVR
```

Check that the AUTOEXEC.BAT file contains this line:

For Windows 95:

```
LOADHIGH C:\WINDOWS\COMMAND\MSCDEX.EXE /D:CDDRVR /L:E
```

For Windows:

```
LOADHIGH C:\DOS\MSCDEX.EXE /D:CDDRVR /L:E
```

I'm using Windows or Windows for Workgroups, and I can't play audio CDs with the Media Player or CD utilities.

Reinstall the MCI CD Audio driver from your original Windows installation disks. To install this driver, open the Control Panel icon in the Main program group. Double-click the Drivers icon, select [MCI] sound driver and click the Add button in the window that appears. Select [MCI CD Audio] from the scroll list and click OK. Insert the specific Windows installation disk if necessary.

Printing problems

Printing doesn't work.

Make sure that you've selected the correct preferences in PC Print Spooler (in the Extensions folder inside the System Folder). If your printer does not support PostScript, choose Epson.

Make sure that you have chosen appropriate printer drivers in your DOS applications and your Windows environment. If you have a PostScript Level 1 printer, you must choose a PostScript Level 1 printer driver in Windows—a driver for a Level 2 printer will not work.

Make sure a printer is selected in the Macintosh Chooser.

If you're using Windows, make sure that bidirectional printing and the "Check port before printing" options are turned off. If you're printing to a PostScript printer, make sure that the "Send Ctrl+D" feature is turned off.

For more information, see "Setting Printer Options" in Chapter 7.

When I try to print from the DOS prompt, I get an error message.

If you're using a PostScript printer driver, open PC Print Spooler in the Extensions folder (inside the System Folder). Choose Preferences from the File menu. Make sure the checkbox labeled "Allow DOS Text Printing" has an X in it. Switch to DOS and try printing again (or move the spool file from the Spooler Rejected folder to the Spooler folder).

When I print a document in the PC environment, the top and bottom get clipped.

If you're using Epson emulation, open PC Print Spooler in the Extensions folder, choose Preferences from the File menu, and select "Gaps between pages." In the PC environment, configure your applications to print to a 60-line page.

When I print a document from a DOS application, the fonts don't look right.

Try choosing different fonts. If you're using Epson fonts instead of bitmap fonts, use monospace fonts for best formatting results.

If you're using Epson emulation, you may have chosen Faster Printing in the Preferences dialog box of the PC Print Spooler, which prints the whole document using a single font. Choose Better Quality and try printing again.

You may have selected a proportional space font as your default font in the PC Print Spooler. If you select a proportional space font, the formatting of your files may change. Try selecting a monospace font such as Courier or Monaco or using the graphical fonts available in your DOS application.

When I print a document in the PC environment, text doesn't print or is cut off, or text that should print at the bottom of one page prints on the next page.

Try selecting "No gaps between pages" in the PC Print Spooler Preferences dialog box, and try printing again. (When you print after choosing this option, the PC Print Spooler software will print 66 lines per page instead of 60 lines per page.) For more information, see "Setting Printer Options" in Chapter 7, "Setting Up the PC Environment."

I selected "No gaps between pages" in the PC Print Spooler Preferences dialog box, but text near the top and bottom of each page still doesn't print or is cut off.

Most laser and ink jet printers cannot print close to the edges of a page. Find out the minimum margins for your printer in the specifications section of the manual that came with your printer. Then reset the top and bottom margins in the application from which you are printing.

When printing multiple files in Windows 95, I keep getting PostScript errors.

Print one file at a time. Printing multiple files may cause a PostScript error. To verify that the file has finished printing, check the Windows 95 printer queue.

I can't print a test page in Windows 95.

When you use Add Printer Wizard to set up a printer, do not print a test page until the printer is configured according to the instructions in “Setting Up Printing in Windows 95” in Chapter 7, “Setting Up the PC Environment.” Then you can print a test sheet by doing the following:

1. In the Printers window, click the icon of the printer you just added.
2. Choose Properties from the Printer menu.
3. In the dialog box that appears, click Print Test Page.

When I print from Windows 95 to my Hewlett Packard PostScript printer, I get several pages of strange text.

This occurs with some Hewlett Packard printers that support both PCL and PostScript, including the following printers:

- LaserJet 6 Series w/ PostScript
- LaserJet 5 Series w/ PostScript
- LaserJet 4 Series w/ PostScript
- DeskJet 1600C/CM
- DeskJet 1200C/PS

The Windows 95 printer drivers for these printers include non-PostScript information called a PJJ (Printer Job Language) header that causes the PC Compatibility Card to incorrectly print the PostScript code.

If the first line of every print job contains the letters PJJ, you are experiencing this problem. Configure the printer driver not to send a PJJ header by setting the printer driver to “archive format.” To do so, follow these steps:

1. Open the Properties window for the HP printer driver.
2. Select the PostScript tab.
3. Change the “PostScript output format” option to “Archive format.”
4. Click OK.

Other problems

I'm running applications in both environments and they seem sluggish.

Significant drive access in one environment (including file sharing) can cause a slowdown in the other.

The PC environment is frozen, and pressing Control-Alt- doesn't reset the system.

Try restarting by pressing -Control-Alt-period (the decimal point on the numeric keypad) or -Control-Alt-. If you can, switch to the Mac OS and click Restart PC in the PC Setup control panel. If these options don't work, restart the Macintosh using the Reset key or keyboard command.

I can't configure my pointing device.

You don't need to configure some pointing devices.

If you have a two-button ADB pointing device, you may be able to use its software to map the = (equal) key on the numeric keypad to the right button. This lets the device behave like a standard PC device.