

# CRESCENDO™/7200 G3

Processor Upgrade Card for Power Macintosh® 7200/8200 Computers

## Quick Start Guide for Crescendo™/7200

### System Compatibility

At this printing, Crescendo/7200 processor upgrade cards are compatible with System 7.5.3 through Mac® OS 9.1. For up-to-date Mac OS compatibility, check our website.

Remember to register your product online at <http://registration.sonnettech.com> to be informed of future upgrades and product releases.

### You Should Have

The following items should be included in your product package:

- Crescendo/7200 processor upgrade card
- Crescendo/7200 Install diskette
- *Powered by Sonnet* label

The following items may be required for installation:

- Medium Phillips screwdriver
- Flat blade screwdriver
- Pliers

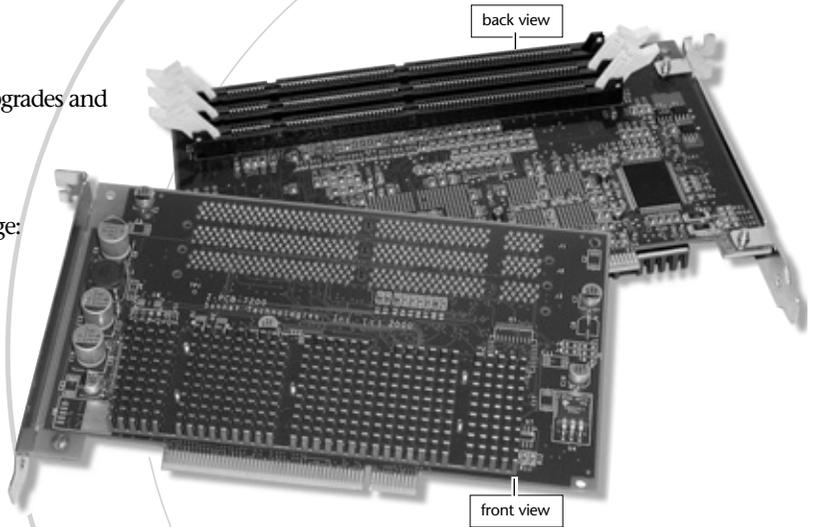
You may need the following items:

- Additional physical RAM (5V, 64-bit-wide, 168 pin, fast-paged mode, 70 ns DIMMs)

### System Requirements

The Crescendo/7200 requires the following in order to operate in your system:

- One available PCI slot
- Minimum of 16MB physical RAM for System 7.5.3 through Mac OS 8.6 (8MB RAM minimum left on the logic board), 32 MB for Mac OS 9.0 and Mac OS 9.1 (8MB RAM minimum left on the logic board.) You must also install enough additional RAM on the Crescendo/7200 to meet the minimum requirements of the Mac OS version you are using. In all cases, the more RAM installed on the Crescendo/7200, the better.



**Support Note:** We recommend you make a backup of important information on your system's hard drive(s) prior to installing new hardware or software. When handling computer products, you must take care to prevent components from being damaged by static electricity. Always ground yourself by touching a grounded metal part of the computer such as the power supply's metal case and work in an area free of static electricity; avoid carpeted areas. Handle the Crescendo/7200 only by its edges and avoid touching connector traces, component pins on PCI cards and other components inside the computer.

**WARNING—You must install the Crescendo/7200 Software before installing the Crescendo/7200 card!**

**SONNET™**  
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[www.sonnettech.com](http://www.sonnettech.com)

Remember to register your product online at <http://registration.sonnettech.com> to be informed of future upgrades and product releases.

Software updates and links are available from the Sonnet web site at [www.sonnettech.com](http://www.sonnettech.com). • Online support form available at <http://supportform.sonnettech.com>. Sonnet Technologies Customer Service hours are Mon.-Fri., 7 a.m.-5 p.m. Pacific Time • Customer Service Phone: 1-949-472-2772 • E-mail: [support@sonnettech.com](mailto:support@sonnettech.com) Sonnet Technologies, Inc., 15 Whatney, Irvine, California 92618-2808 USA • Tel: 1-949-587-3500 Fax: 1-949-457-6350

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## Software Installation

### Install Mac OS 9 or 9.1 (if necessary)

If you are upgrading to Mac OS 9.x as part of this installation, do so now. Please note, however, *it is not necessary to upgrade to Mac OS 9 to take advantage of the Crescendo's features and speed.* If you are not upgrading your Mac OS software at this time, skip to the next section, "Install Sonnet Software."

1. Start up your computer from the Mac OS 9.x CD and double-click the Mac OS Install icon. In the *Select Destination* window, click the Options button and click the Perform Clean Installation check box that appears in the subsequent screen. Click the Select button. Proceed through the next several screens until you reach the *Install Software* window. Click OK, Start, then Continue, and complete the installation. After the software is installed, quit the Mac OS Install application and restart your computer from the hard drive where Mac OS 9.x is installed

### Install Sonnet Software

You *must* install the Sonnet software before you install the Crescendo/7200. Otherwise, your computer will not operate with the Crescendo/7200 installed.



**Support Note:** The following two steps involve downloading software from Apple's website and installing it in your system, but only if you are using a version of Mac operating system software prior to Mac OS 8.6. The application, Apple System Profiler 2.1.2, enables you to determine the size and slot locations of your DIMMs (memory). *You do not have to download and install this software*, but you may not be able to determine whether your system meets the memory requirements until after you have opened the computer.

1. If you are now using Mac OS 8.6 or later, proceed to step 3. Otherwise, log onto the internet and type in the following: [www.sonnettech.com/support/crescendo7200](http://www.sonnettech.com/support/crescendo7200). Read the information on the page, then click on the link to download the *ASP 2.1.2.smi* (Apple System Profiler) file.
2. Install the Apple System Profiler software.
3. Open Apple System Profiler from the Apple menu. Select the *System Profile* tab, then click on the arrow next to *Memory overview*. Click on the arrow next to *Built-in memory* and look at the information listed under *Location* and *Size*; write down this information (Figure 1). Confirm that your system will meet the memory requirements for the version of operating system software you are using (Figure 2).
4. Insert the Crescendo/7200 Install diskette into the floppy disk drive. Double-click the Crescendo/7200 Install icon. Review the Read Me screen for any known configuration issues with the current software release. By default, with "Easy Install" selected from the pop-up menu, the required software will be installed into the active System Folder on the boot drive. If this is ok, click the Install button; otherwise, select "Custom Install" from the pop-up menu for more options or select another drive to install the software. The installer will install the appropriate software into the System Folder of your computer. If the installation was successful, a dialog box will appear. Click Quit to leave the installer, then shut down your computer.

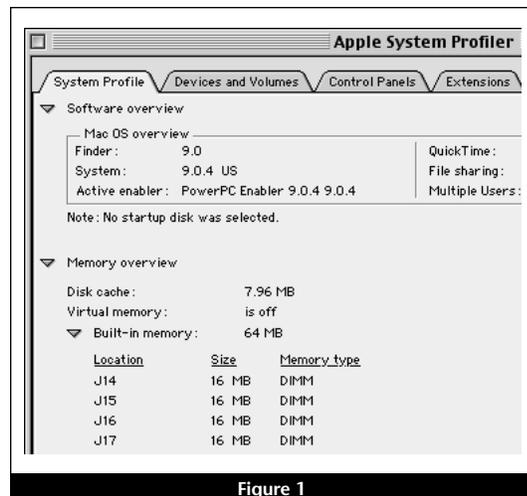


Figure 1

Minimum Memory (Physical RAM) Requirements by OS	
System 7.5.3 through Mac OS 8.6	8MB on computer's logic board, any size DIMMs, PLUS 8MB on Crescendo/7200 card, any size DIMMs, 16MB minimum RAM*
Mac OS 9 and OS 9.1	8MB on computer's logic board, any size DIMMs, PLUS 24MB on Crescendo/7200 card, any size DIMMs, 32MB minimum RAM*

\* In all cases you must have a minimum of 8MB of memory installed on the logic board, and enough additional memory installed on the Crescendo/7200 to meet the minimum memory requirements specified above.

Figure 2

## Hardware Installation—Power Mac 7200, 7215, WGS 7250

This section covers the configuration and installation of the Crescendo/7200 into the Power Macintosh 7200, 7215 and Workgroup Server 7250. If you are installing the Crescendo card into a Power Macintosh 8200, skip to page 6.

1. Shut down your computer. If the computer has been on for any length of time, wait a few minutes for it to cool before beginning the installation.
2. With the front of the computer facing you, remove the case cover. Locate the two switches on the underside of the front cover, depress them, and slide the cover forward and off the computer (**Figure 3**).
3. Touch the power supply metal shielding (**Figure 4**) to discharge any potential damaging static electricity, then disconnect the power and peripheral cables from the back of the computer.



**Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Crescendo/7200 and close the computer.

4. Rotate the expansion card cover up and to the left (**Figure 4**).
5. Release the two latches that lock the internal assembly for the drive bay and power supply in place (**Figure 5**).

6. Lower the assembly support stand (**Figure 6**).

7. Rotate the internal assembly out of the case (**Figure 7**).



Figure 3

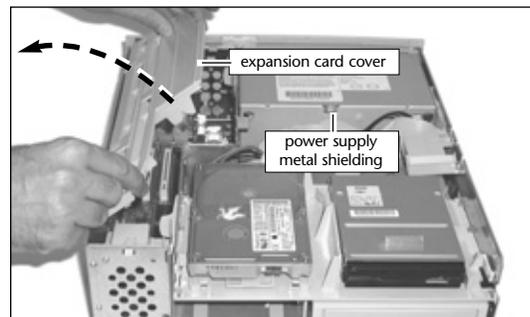


Figure 4

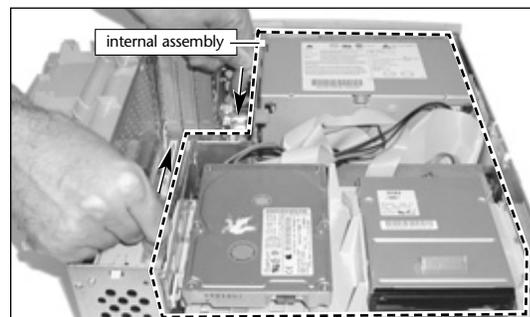


Figure 5

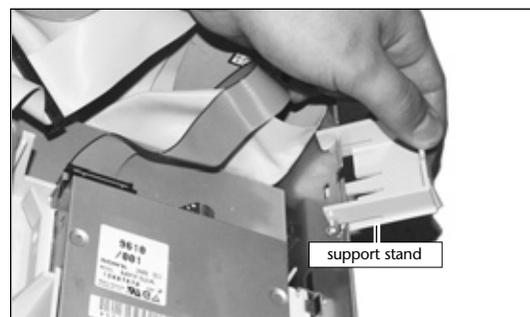


Figure 6

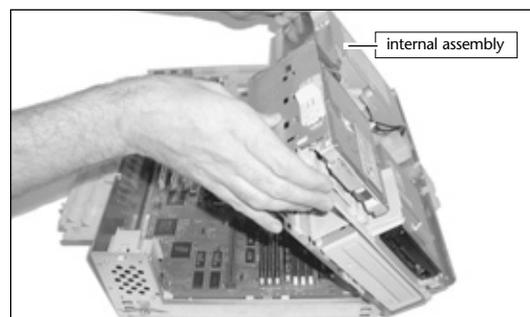


Figure 7

## Hardware Installation—Power Mac 7200, 7215, WGS 7250 (continued)

8. If your computer's expansion card cover does not resemble the one shown in **Figure 8**, go to the next step. If your expansion card cover has three notched baffles as shown in **Figure 8**, you must break off the two rear baffles so they will not touch the Crescendo/7200 card when the cover is closed. Use a pair of pliers to break off the tabs.



**Support Note:** When you remove the Crescendo/7200 card from its anti-static package, you may notice that a *DIMM ejector appears to be missing*; **do not be concerned**. The top right DIMM ejector has been removed to enable easier installation into all Power Macintosh 7200/8200 models.

9. Remove the Crescendo/7200 from the anti-static package, making sure to handle the card by its edges, and lay the card on a flat, static-free surface (**Figure 9**).



**Support Note:** Do not touch the DIMMs' connectors; always handle DIMMs only by their edges. Please note that DIMMs are designed to fit into the slot only one way; be sure to align the DIMMs' notches with the small guides inside the slot.

10. If you going to install, remove, or swap memory on the logic board, do so now. Using the information obtained from Apple System Profiler, determine which DIMMs you will remove or swap from, or install into the logic board's DIMM slots (**Figure 10**), which are labeled J14 - J17. To remove the DIMMs, push outward and down on the DIMM ejectors. To install DIMMs, align the notches of a DIMM over the guides of a DIMM slot, then gently, but firmly press the DIMM straight into the slot until the ejectors snap completely closed.



**Support Note:** Remember, you must leave at least 8MB of memory installed on the system's logic board, and install a minimum of 8MB of memory on the Crescendo/7200 if you are using System 7.5.3 to Mac OS 8.6. For Mac OS 9 and OS 9.1, you must leave at least 8MB of memory installed on the system's logic board, and install a minimum of 24MB of memory on the Crescendo/7200.

11. Orient the Crescendo card so the DIMM slots are face up and the bracket is on the right (**Figure 11**). Add some support, such as a piece of cardboard, under the upper left corner of the Crescendo card to keep it level. Align the notches of a DIMM over the guides of the bottom DIMM slot on the Crescendo card. Gently, but firmly press the DIMM straight into the slot until the ejectors snap completely closed. Repeat as necessary with any remaining DIMMs.



**Support Note:** You may install the Crescendo in any of the three PCI slots, but because of the amount of space occupied by the card with DIMMs installed, we recommend installing it into the slot labeled A1. If you install it into either slot A2 or A3, you will not be able to utilize all three PCI slots in your system.

12. Locate the PCI slot labeled A1 and remove its port access cover (**Figure 12**).

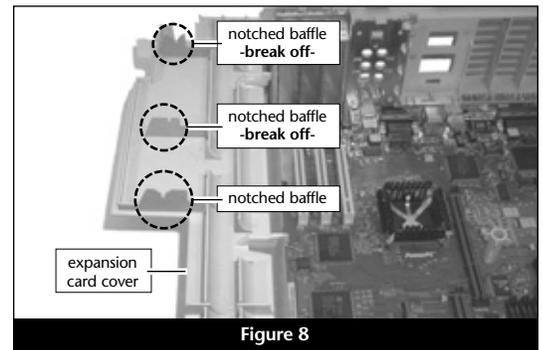


Figure 8

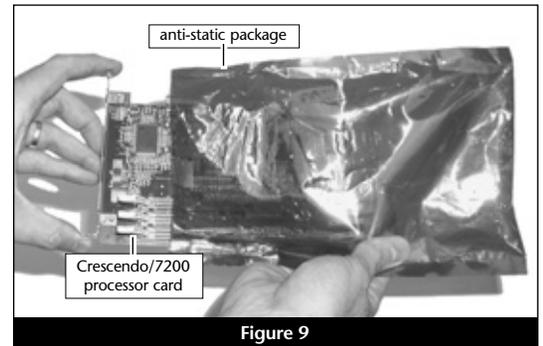


Figure 9

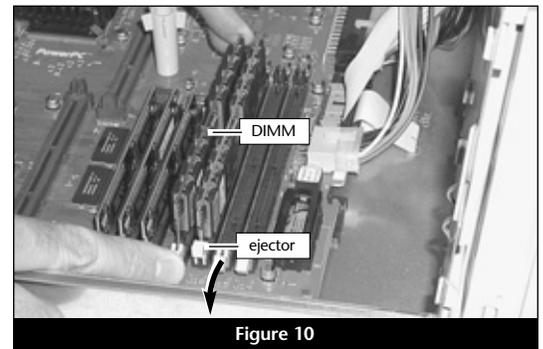


Figure 10

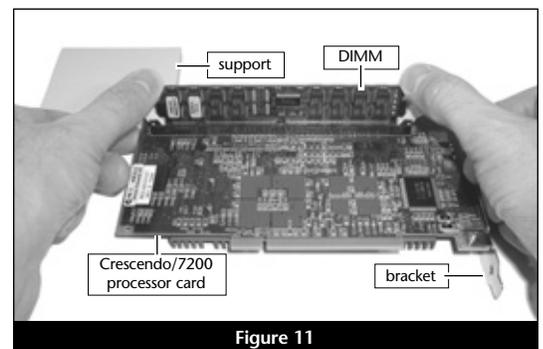


Figure 11

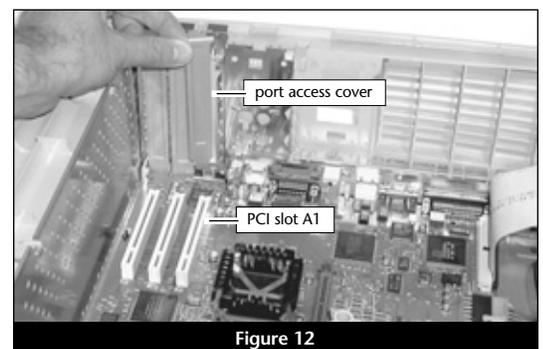
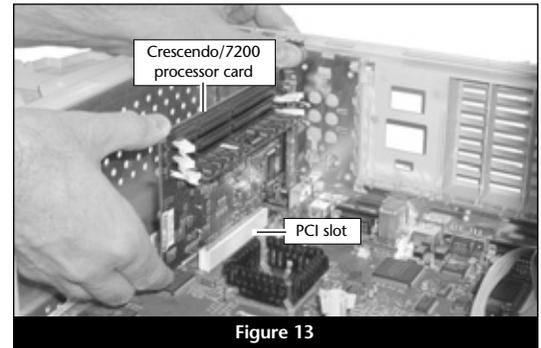


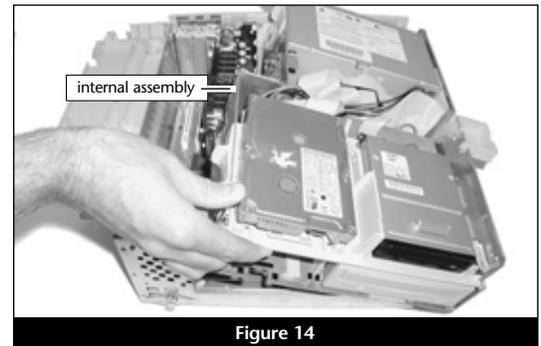
Figure 12

## Hardware Installation—Power Mac 7200, 7215, WGS 7250 (continued)

13. Align the Crescendo/7200 over the PCI slot (Figure 13). Gently press down on the card until it is firmly seated.



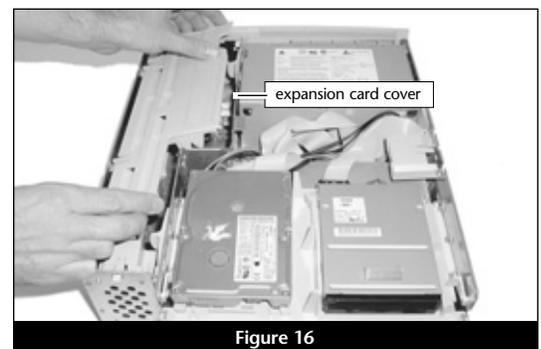
14. Rotate the internal assembly into the computer's case (Figure 14).



15. Raise the assembly support stand (Figure 15) and rotate it into place within the internal assembly.



16. Lock the internal assembly latches into their original position and rotate the expansion card cover over the PCI slots and Crescendo card (Figure 16).

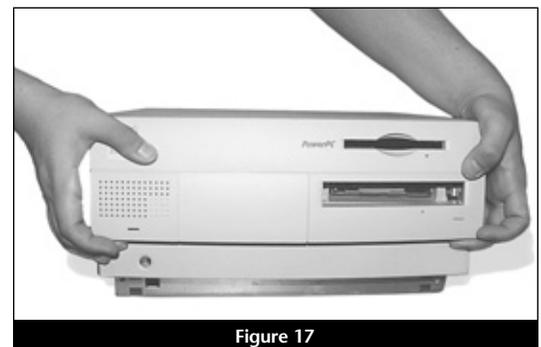


17. Replace the case cover onto your computer (Figure 17).

18. Return the computer to your computing area and reconnect the power and peripheral cables to the computer.

19. Affix the *Powered by Sonnet* label to the front of your computer.

20. Turn on your Power Macintosh; your accelerated machine should boot normally. Your installation is now complete.



## Hardware Installation—Power Macintosh 8200

This section covers the configuration and installation of the Crescendo/7200 into the Power Macintosh 8200. If you are installing the Crescendo/7200 into a Power Macintosh 7200, 7215 or Workgroup Server 7250, go back to page 3.



**WARNING:** Only if you plan to remove DIMMs from, or install DIMMs to your computer, you will be required to remove your system's logic board to gain access to the DIMM slots. This process requires technical knowledge. If you only plan to add new DIMMs to the Crescendo card, this will not be an issue. If you feel you are unable to install the computer hardware, contact a qualified technician.

**For the installation of the Crescendo/7200 into a Power Macintosh 8200 from which DIMMs will be installed into or moved from the computer's logic board, Sonnet strongly recommends that a qualified technician perform the installation.**

1. Shut down your computer. If the computer has been on for any length of time, wait a few minutes for it to cool before beginning the installation.
2. Touch a port access cover on the back of the computer to discharge any potential damaging static electricity (Figure 18). Disconnect the power and peripheral cables from the back of the computer.



**Support Note:** To avoid generating a static charge in your body, do not walk around the room until after you finish installing the Crescendo/7200 and close the computer.

3. With the rear of the computer facing you, open your computer by loosening (*not removing*) the four security screws on the rear panel (Figure 18).
4. Slide the case cover forward about an inch and gently lift the top cover straight up to remove it from the computer (Figure 19).
5. With the computer orientated in front of you as shown (Figure 20), identify its internal components.
6. Lower the PCI card retainer (Figure 21). Slowly squeeze together the two holding clamps to release the retainer to lower it away from the cards.
7. Depress the small tab near the left leg of the retainer, then slide the retainer to the right to remove it (Figure 22); *you will not reinstall the retainer*.

**Attention!** If you are only adding new DIMMs to the Crescendo, proceed directly to step 21. Steps 8 to 20 must be completed *only* if you intend to remove DIMMs from the logic board to install onto the Crescendo card, or replace, or install new DIMMs on the logic board.

8. Remove any PCI cards from the PCI slots (Figure 20).



**Support Note:** Remember, you must leave at least 8MB of memory installed on the system's logic board, and install a minimum of 8MB of memory on the Crescendo/7200 if you are using System 7.5.3 to Mac OS 8.6. For Mac OS 9 and OS 9.1, you must leave at least 8MB of memory installed on the system's logic board, and install a minimum of 24MB of memory on the Crescendo/7200.

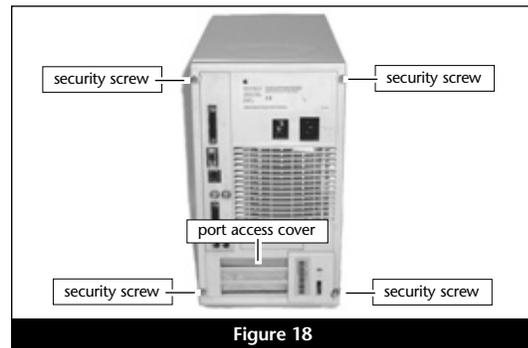


Figure 18

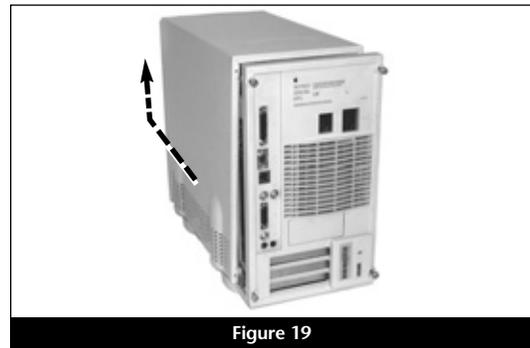


Figure 19

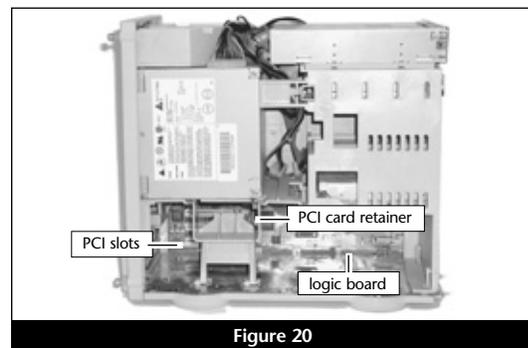


Figure 20

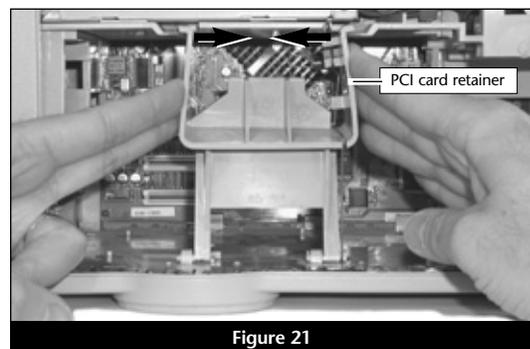


Figure 21

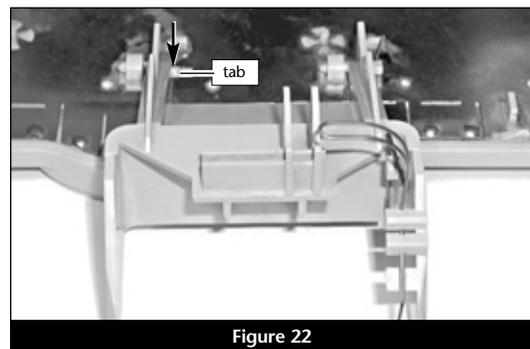
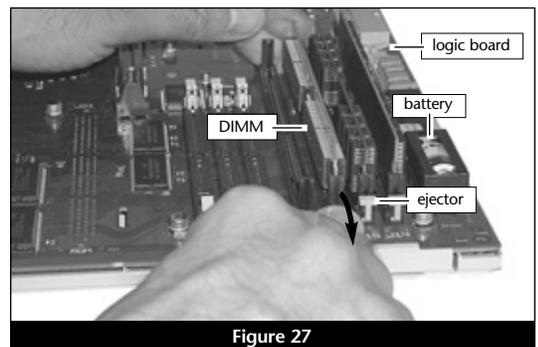
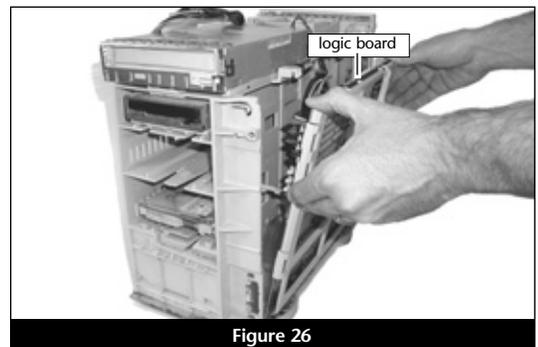
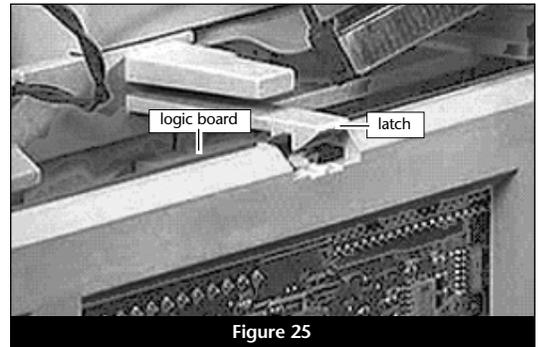
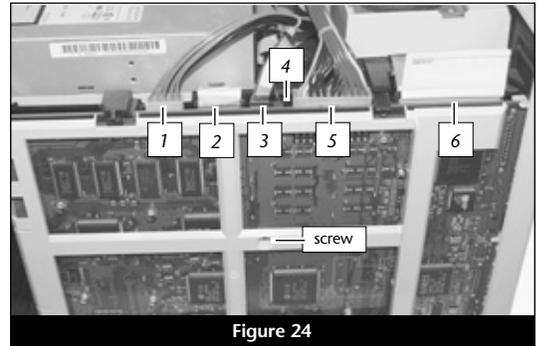
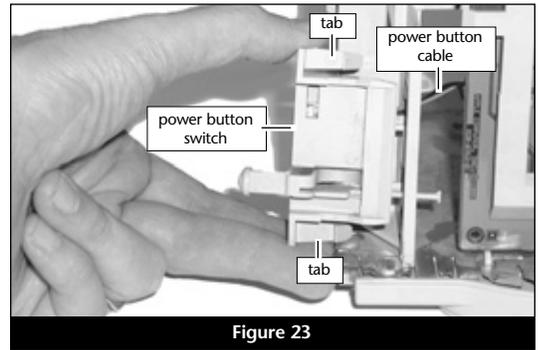


Figure 22

## Hardware Installation—Power Macintosh 8200 (continued)

9. Locate the power button switch in the lower left corner of the computer's case and remove it (Figure 23). First, disconnect the power button cable located behind the switch by gently unplugging it from the logic board. Then, carefully press in the two plastic tabs and push out the switch. If you encounter any resistance you may need to slightly wiggle it back and forth until it pops out of the case. Also note the correct orientation of the switch for proper replacement when you re-install the logic board. The large protruding button on the switch will be reinstalled on the bottom as you replace the switch into the computer's case.
10. Turn the computer's case around so that the back side of the logic board is facing you. Identify and disconnect the following logic board cables (from left to right) on the top of the logic board (Figure 24): 1. hard drive power cable, 2. floppy drive power supply cable, 3. CD-ROM audio cable, 4. speaker cable, 5. power supply cable, and 6. SCSI cable.
11. Remove the screw securing the logic board (Figure 24).
12. Remove the logic board from the interior of the computer's case. Slide the logic board to the left until the slots on the top of the board line up with the latches in the case, then lift the latch at the top of the logic board to release it from the case (Figure 25).
13. Gently tilt the logic board forward and out of the case (Figure 26). Take care not to tug or force the logic board loose. If you experience any unnecessary resistance, carefully rest the logic board against the interior of the case and check to see that you have properly removed the necessary components and cables from the logic board.
14. Place the logic board on a flat, static-free surface with the components side of the logic board facing upward and the battery situated in the bottom right corner (Figure 27).
15. Identify the components on the Power Mac 8200 logic board (Figure 27). The DIMM slots are located near the bottom right corner of the logic board.



**Support Note:** Do not touch the DIMMs' connectors; always handle DIMMs only by the edges. Please note that DIMMs are designed to fit into the slot only one way; be sure to align the DIMMs' notches with the small guides inside the slot.

16. Using the information obtained from Apple System Profiler, determine which DIMMs you will remove or swap from, or install into the logic board's DIMM slots (Figure 27), which are labeled J14 - J17. To remove the DIMMS, push outward and down on the DIMM ejectors. To install DIMMs, align the notches of a DIMM over the guides of a DIMM slot, then gently, but firmly press the DIMM straight into the slot until the ejectors snap completely closed.

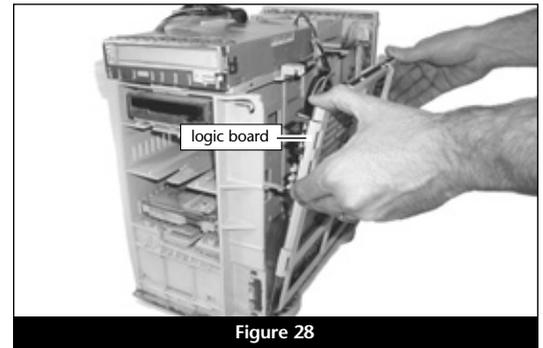


**Support Note:** Remember, you must leave at least 8MB of memory installed on the system's logic board, and install a minimum of 8MB of memory on the Crescendo/7200 if you are using System 7.5.3 to Mac OS 8.6. For Mac OS 9 and OS 9.1, you must leave at least 8MB of memory installed on the system's logic board, and install a minimum of 24MB of memory on the Crescendo/7200.

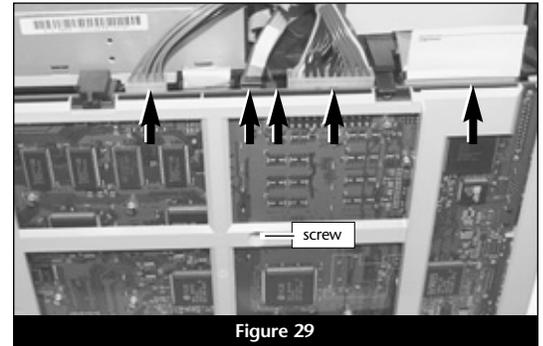
17. Set any DIMMs you removed on a flat, static-free surface.

## Hardware Installation—Power Macintosh 8200 (continued)

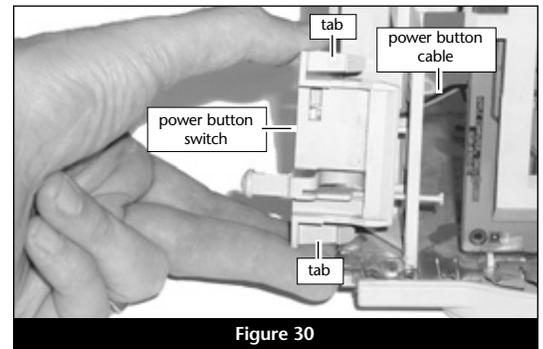
18. Replace the logic board into the case (Figure 28).



19. Secure the logic board with the screw you removed previously, then reconnect the logic board cables to their appropriate connectors on the logic board (Figure 29); verify the connectors are plugged in securely.

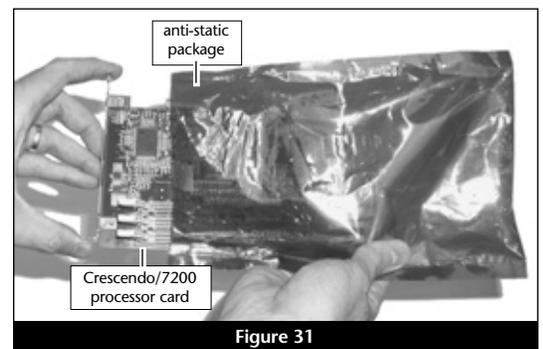


20. Replace the power button switch and reconnect the power button cable to its connector on the logic board (Figure 30); verify the connector is plugged in securely.



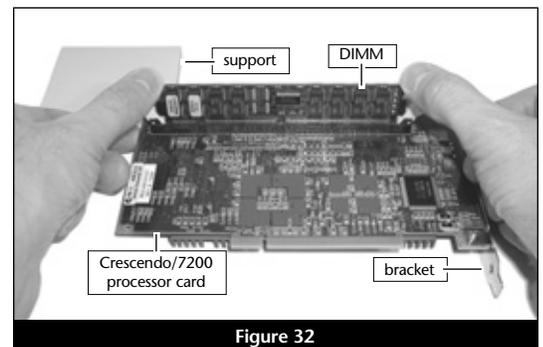
**Support Note:** When you remove the Crescendo/7200 card from its anti-static package, you may notice that a DIMM ejector appears to be missing; do not be concerned. The top right DIMM ejector has been removed to enable easier installation of the card into all Power Macintosh 7200/8200 systems.

21. Remove the Crescendo/7200 from the anti-static package, making sure to handle the card by its edges, and lay the card on a flat, static-free surface (Figure 31).



**Support Note:** Do not touch the DIMMs' connectors; always handle DIMMs only by the edges. Please note that DIMMs are designed to fit into the slot only one way; be sure to align the DIMMs' notches with the small guides inside the slot.

22. Orient the Crescendo card so the DIMM slots are face up and the bracket is on the right (Figure 32). Add some support, such as a piece of cardboard, under the upper left corner of the Crescendo card to keep it level. Align the notches of a DIMM over the guides of the bottom DIMM slot on the Crescendo card. Gently, but firmly press the DIMM straight into the slot until the ejectors snap completely closed. Repeat as necessary with any remaining DIMMs.



## Hardware Installation—Power Macintosh 8200 (continued)



**Support Note:** You may install the Crescendo in any of the three PCI slots, but because of the amount of space occupied by the card with DIMMs installed, we recommend installing it into the slot labeled A1. If you install it into either slot A2 or A3, you will not be able to utilize all three PCI slots in your system.

23. Lay the computer on its side again, with the back of the computer facing away from you. Locate the PCI slot labeled A1 and remove its port access cover (Figure 33).
24. Align the Crescendo/7200 over the PCI slot (Figure 34). Gently press down on the card until it is firmly seated. Verify that the bracket retainer rests on top of the Crescendo/7200 card's bracket.
25. Reinstall any PCI cards you removed previously; verify the cards are firmly seated in their slots.
26. Lift the computer to its upright position, then replace the case cover onto your computer and tighten the four security screws (Figure 35).
27. Return the computer to your computing area and reconnect the power and peripheral cables to the computer.
28. Affix the *Powered by Sonnet* label to the front of your computer.
29. Turn on your Power Macintosh; your accelerated machine should boot normally. Your installation is now complete.

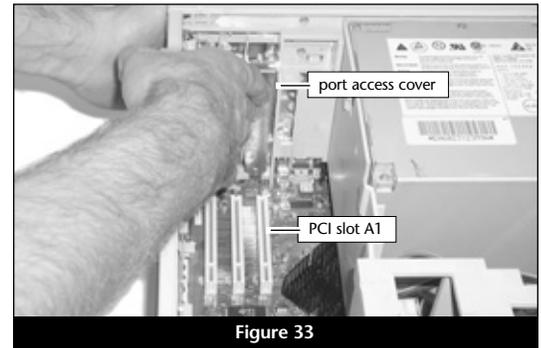


Figure 33

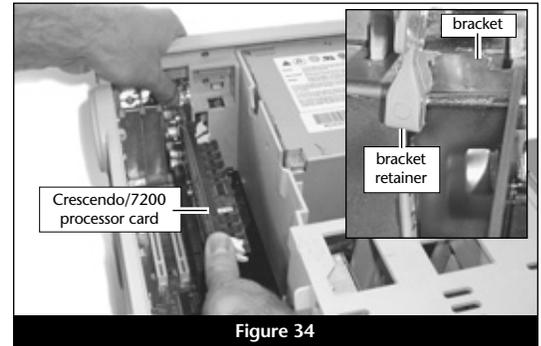


Figure 34

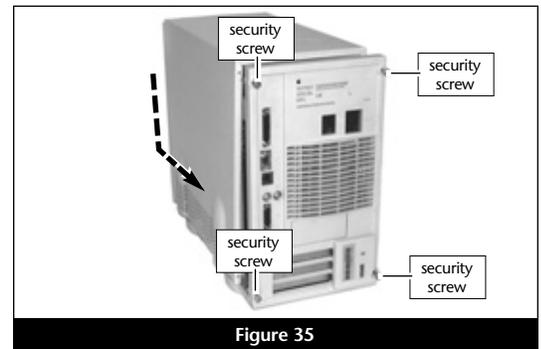


Figure 35