AGP/PCI Card
Replacement Instructions

Follow the instructions in this sheet carefully. Failure to follow these instructions could damage your equipment and void its warranty.

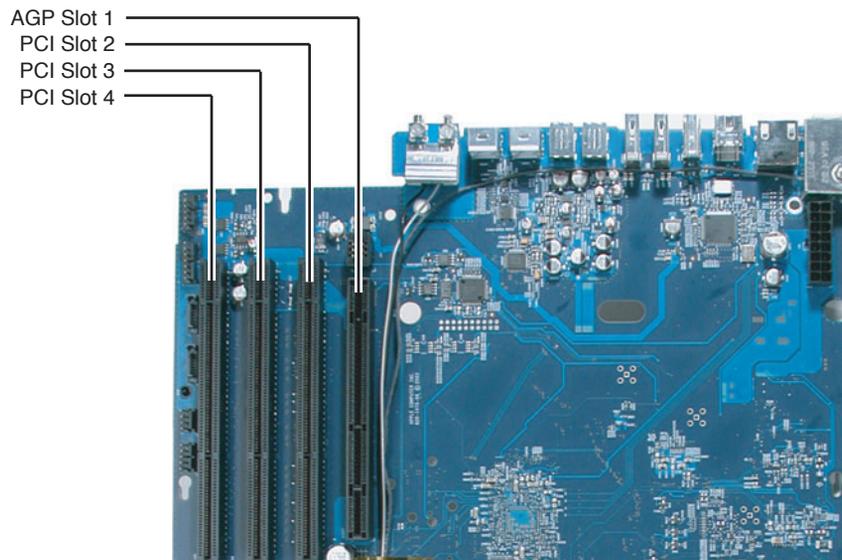Online instructions are available at http://www.info.apple.com/installparts/.

Note: These instructions apply to different versions of the Power Mac G5. While some models may look slightly different from the one shown in the illustrations, the steps for all models are the same.

AGP and PCI Cards

The Power Mac G5 computer has four expansion card slots, three of which accommodate Peripheral Component Interconnect (PCI) cards and one that accepts an advanced graphics port (AGP) video card **(Figure 1)**. AGP cards and PCI cards have different connectors, so you cannot insert a PCI card into the AGP slot.

Note: Maximum power consumption for all four expansion slots (the three PCI expansion cards and the AGP card) should not exceed 90 watts (W).

Figure 1

AGP Cards

The AGP video card, installed in slot 1, contains the graphics processor unit (GPU) and provides the computer's display ports. Slot 1 is designed specifically to accept AGP cards. This 533-megahertz (MHz) slot accommodates 1.5-volt (V) AGP cards.

PCI Cards

The remaining three expansion slots, labeled 2, 3, and 4, accommodate PCI cards up to 12 inches long. Depending on the Power Mac G5 model, you can install either PCI or PCI-X cards.

Note: To determine if your Power Mac G5 computer can accommodate PCI-X cards, check the number of DIMM slots on the logic board. Computers with four DIMM slots have 33 MHz PCI slots and cannot use PCI-X cards; computers with eight DIMM slots can accommodate 100 and 133 MHz PCI-X cards. See the chart below.

Card type	PCI slot	Card speed
PCI*	slots 2, 3, and 4	64-bit, 33 MHz
PCI-X	slots 2 and 3	64-bit, 100 MHz
	slot 4	64-bit, 133 MHz

*The PCI slots can accommodate mixed-voltage (5.0 V, 12 V, or 3.3 V) cards but only at 3.3 V signaling, with 32-bit or 64-bit data widths and a 33 MHz frequency. You can add a 66 MHz card to a 33 MHz PCI slot if the card can operate at the lower 33 MHz rate.

Warning: Do not use PCI cards that function only at 66 MHz in the PCI slots. Damage to the equipment could result. If you are installing an additional 66 MHz PCI card, rather than replacing an existing PCI card like-for-like, check with the card's manufacturer to see if the new 66 MHz card also works at 33 MHz.

Note: The illustrations in the following procedure show how to replace an AGP video card. The replacement procedure for a PCI card is similar. However, remember that only AGP cards can be installed in slot 1; PCI or PCI-X cards must be installed in slots 2, 3, or 4, as described in the chart above.

Tools Required

The only tool required for this procedure is a Phillips screwdriver.

Opening the Computer

1. Shut down the computer.

   Warning: Always shut down the computer before opening it to avoid damaging its internal components or the components you are installing. Do not open the computer or attempt to install items inside it while it is on.

2. Wait 5 to 10 minutes to allow the computer's internal components to cool.

   Warning: After you shut down the system, the internal components can be very hot. You must let the computer cool down before continuing.

3. Unplug all external cables from the computer except the power cord.

4. Touch the metal PCI access covers on the back of the computer to discharge any static electricity from your body. **(Figure 2)**

   Important: Always discharge static before you touch any parts or install any components inside the computer. To avoid generating static electricity, do not walk around the room until you have finished working and closed the computer.
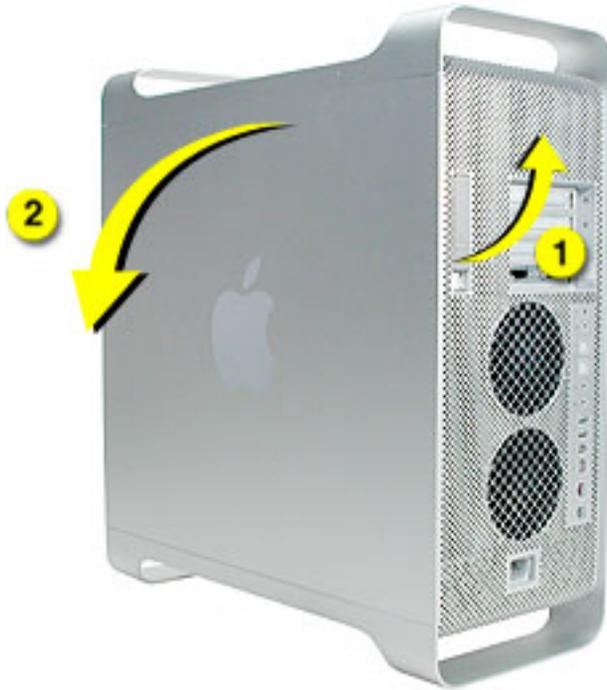
Figure 2

5. Unplug the power cord.

6. Hold the side access panel and lift the latch on the back of the computer. **(Figure 3)**

    Warning: The edges of the access panel and the enclosure can be sharp. Be very careful when handling them.

7. Remove the access panel and place it on a flat surface covered by a soft, clean cloth.

Figure 3

8. Remove the air deflector and place it on a soft, clean cloth. **(Figure 4)**
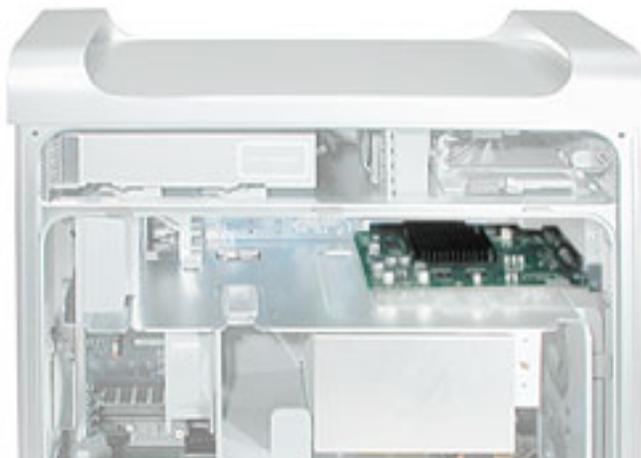
Figure 4

Important: Always remember to replace the air deflector after you have finished working inside your computer. The Power Mac G5 computer will not function properly if the air deflector is not replaced.

Removing the Installed AGP/PCI Card

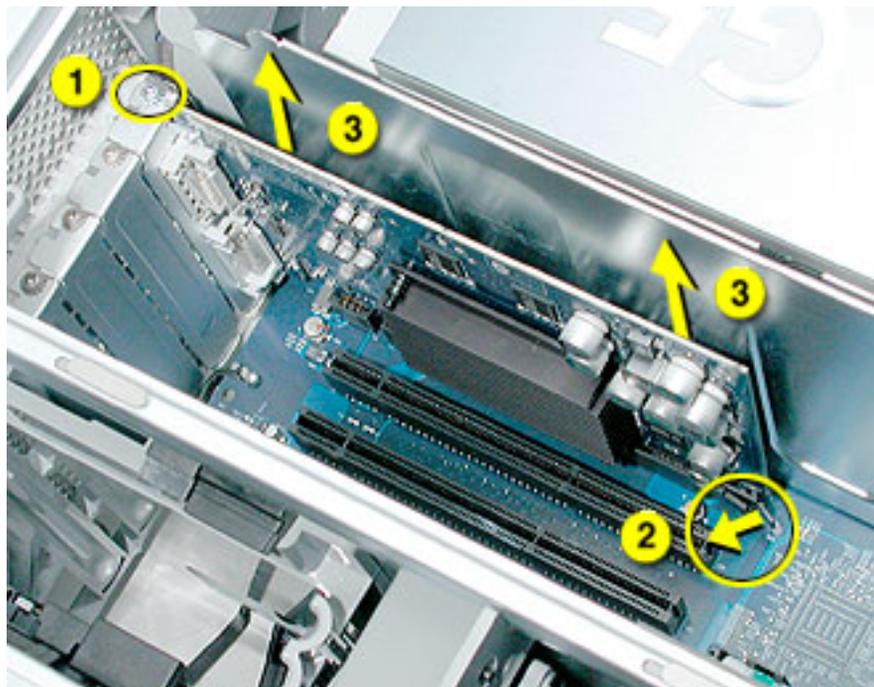1. Locate the AGP/PCI card inside the computer. **(Figure 5)**

Figure 5

2. Carefully lay the computer on its side so that the open side faces up.

3. Remove the screw that mounts the card to the enclosure. **(Figure 6)**

   Warning: When removing or installing a PCI or AGP card, handle it only by the edges. Do not touch its connectors or any of the components on the card. Lift the card straight out from the connector to remove it, and insert it straight into the connector to install it. Do not rock the card from side to side and don't force the card into the slot. Once the replacement card is installed, pull on it gently to check that it is properly connected.

4. If you are removing an AGP card, pull back the small locking clip at the front of the AGP connector.

5. Holding the card by the top corners, gently pull up the card and remove it from its expansion slot.

Figure 6

Installing the Replacement AGP/PCI Card

1. Align the card's connector with the expansion slot and press straight down on the top corners of the card until the connector is inserted all the way into the slot.
   - Don't rock the card from side to side; instead, press the card straight into the slot.
   - Don't force the card. If you meet a lot of resistance, pull the card out. Check the connector and the slot for damage or obstructions, then try inserting the card again.
   - Pull the card gently to see if it is properly connected. If it resists and stays in place, and if its gold connectors are barely visible, the card is connected.

2. If you're installing a 12-inch card, make sure the card engages the appropriate slot in the PCI card guide.

3. Replace the card's mounting screw.

Closing the Computer

1. Replace the air deflector by inserting the three tabs on the bottom edge of the deflector into the three slots in the bottom frame of the enclosure. Then swing the deflector up flush against the top frame.

    Important: Make sure you re-install the air deflector before replacing the access panel. If the air deflector is not installed, the computer will not function properly.

2. Replace the access panel.

    Note: Make sure the latch is in the up position before replacing the access panel. If the latch is down, the access panel will not seat correctly in the enclosure.

3. Push the latch down to close and secure the access panel.

    Warning: Never turn on the computer unless all of its internal and external parts are in place and it is closed. Operating the computer when it is open or missing parts can damage it or cause injury.