DiiMOCache Slot-Free Cache Card Installation Guide

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This manual was created on an Apple® Macintosh IIci™ computer
using Aldus® Pagemaker™ 5.0 and Aldus® Freehand™ 4.0.

Introduction

About the DiiMOCache™ Slot-Free™ Cache Cards

Thank you for purchasing the DiiMOCache Slot-Free Cache Card. You've purchased a high-performance quality upgrade for your Mac. The DiiMOCache Slot-Free Cache Cards support the Macintosh LC 475, Quadra 610, 650, 660AV, 700, 800, 900, 950, Centris 610, and 650.

The Slot-Free Cache cards are designed with 128K of super-fast Static RAM Cache to give your '040 Mac up to a 45% speed increase depending on Mac model. The Slot-Free cache card increases performance in virtually every function in all applications, including graphics, desktop publishing and spread sheets.

The Slot-Free design plugs directly into the processor socket of your '040 Mac, keeping your PDS and NuBus slots free for other cards. Also, this design performs as good as or better than other cache cards that require valuable system memory.

Included with each Slot-Free cache card is the DiiMO '040 Software. This allows for cache management. The ROM Shadowing function of this software is not needed for the Slot-Free designed cache cards; only PDS (Processor Direct Slot) cache cards require this function to get optimal speed.

As with all DiiMO products you get a 30-day money back guarantee, toll-free technical support and five-year warranty.

Getting Started

Important: DiiMO Technologies recommends you have the DiiMOCache Slot-Free Cache Card installed by your Authorized Apple Dealer or Technician.

Before you begin installation, make sure that your package is complete with the following:

1. The appropriate Slot-Free Cache Card

2. Chip Puller Tool

3. DiiMO Software Diskette

You will also find that in some cases, a Phillip's head screw driver and/or a small flat blade screw driver will be required.

Installation for the Macintosh LC 475

The following instructions assume you are familiar with the basic operations of a Macintosh LC 475 and that you are familiar with opening the computer. If you are not, please consult your Macintosh Owner's Guide for instructions.

CAUTION: STATIC ELECTRICITY CAN BE DAMAGING TO THE MEMORY CHIPS AND OTHER COMPONENTS ON THE DIIMOCACHE SLOT-FREE CACHE CARD. Do not touch the connectors on the motherboard or components on the DiiMOCache Slot-Free Cache Card until you have grounded yourself by touching a grounded object such as the power supply case on your computer to discharge any static electricity.

If a grounding strap is available, you should use one during installation.

STEPS

1. Turn off your Macintosh and disconnect all peripherals. Keep the power cord plugged into your Mac.

NOTE: By keeping your Mac's power cord plugged in, you can use the power supply to ground yourself by simply touching it.

2. To remove the case of your Mac, lift up on the two tabs on the back of the case and remove the case.

3. Locate the Processor Chip on the motherboard. See Figure 1.

4. Use the chip puller tool provided to remove the 68040 processor chip. Pry gently on all four sides of the chip to remove it from
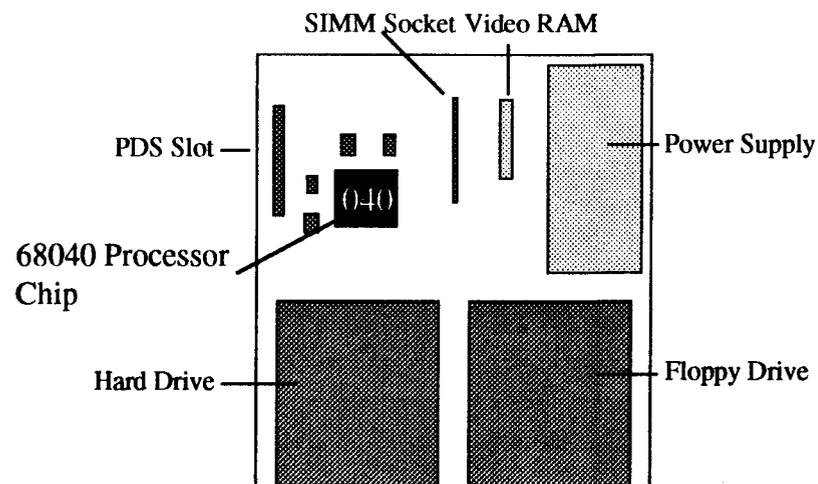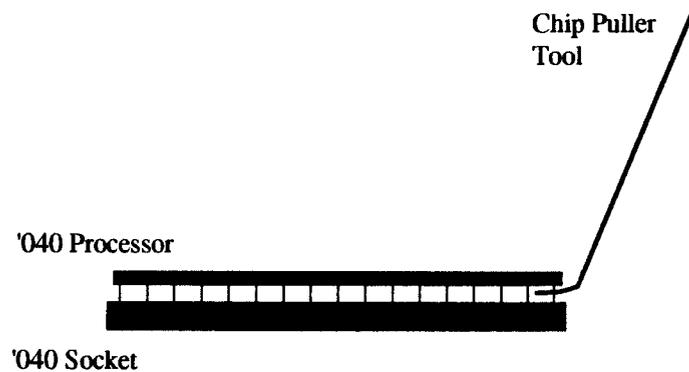
Figure 1. Location of the 68040 Procesor Chip on the Macintosh LC 475.

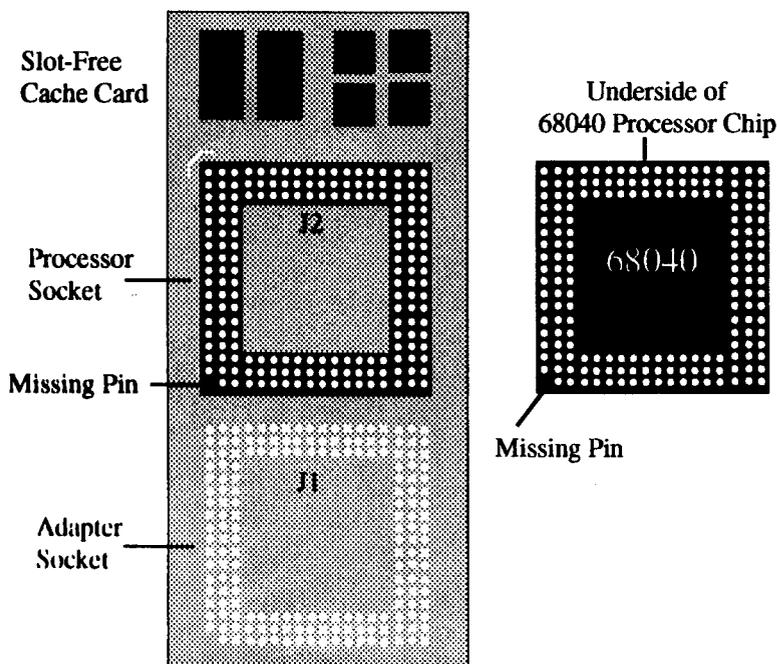its socket. See Figure 2. Take note of the orientation of the chip.

WARNING: Make sure you pry an even amount on all four sides of the Processor chip. You do not want to pry too hard on one side as that may bend the pins on the chip.

5. Remove the Slot-Free cache card from its package.

6. Install the 68040 Processor Chip onto the Slot-Free Cache Card by first aligning the missing pin on the chip with the missing pin on the Processor Socket on the cache card. See Figure 3. Then, while keeping the black foam on the aAdapter Socket of the cache card so that you don't bend any of the pins, gently, but firmly seat the 68040 Processor Chip into the Processor Socket on the cache card. Once installed, remove the black foam from the Adapter Socket and check to make sure none of the pins are bent.

Chip Puller
Tool

'040 Processor

Figure 2. Chip Puller Tool.

'040 Socket

Slot-Free
Cache Card

Underside of
68040 Processor Chip

12

68040

Processor
Socket

Missing Pin

Missing Pin

Adapter
Socket

Figure 3. Orientation of the Processor Chip and the Socket on
the Cache Card.

7. Position the cache card so that the Adapter socket on the Cache card isover the processor socket located on the motherboard. There is a missing pin on the cache card to align with the missing pin on the socket on the motherboard. See Figure 4.

Slot-Free
Cache Card

Adapter
Socket

68040 Processor
Socket

Power Supply

Hard Drive

Floppy Drive
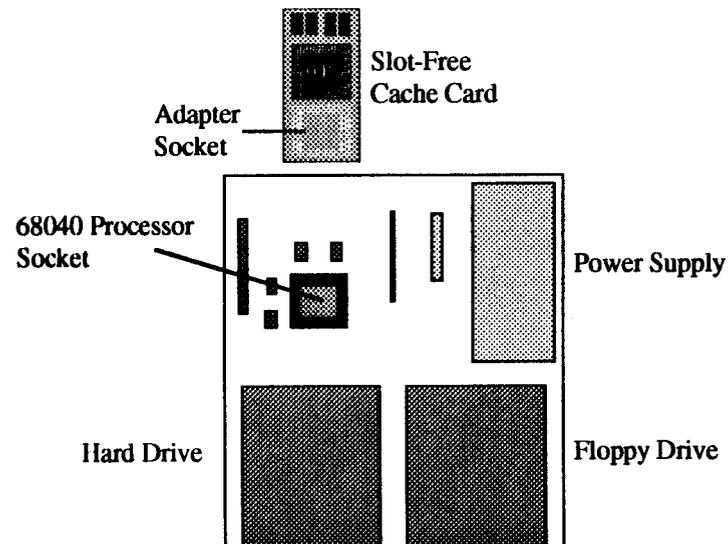
Figure 4. Orientation of the Slot-Free Cache Card over the
Processor Socket on the LC 475 Motherboard.

8. Gently but firmly press the cache card into place. Make sure you have the cache card seated properly.

9. Replace your computer case and peripherals. Start up your Mac. If the DiiMOCache Quadra Card is properly installed, the system will power up correctly.

10. Go to the section titled *Installing the DiiMOCache Software*. You must install the software in order for the cache card to work properly.

Installation for the Quadra 660AV

The following instructions assume you are familiar with the basic operations of a Quadra 660AV and that you are familiar with opening the computer. If you are not, please consult your Macintosh Owner's Guide for instructions.

CAUTION: STATIC ELECTRICITY CAN BE DAMAGING TO THE MEMORY CHIPS AND OTHER COMPONENTS ON THE DIIMOCACHE SLOT-FREE CACHE CARD. Do not touch the connectors on the motherboard or components on the DiiMOCache Slot-Free Cache Card until you have grounded yourself by touching a grounded object such as the power supply case on your computer to discharge any static electricity.

If a grounding strap is available, you should use one during installation.

STEPS

1. Turn off your Macintosh and disconnect all peripherals. **Keep** the power cord plugged into your Mac.
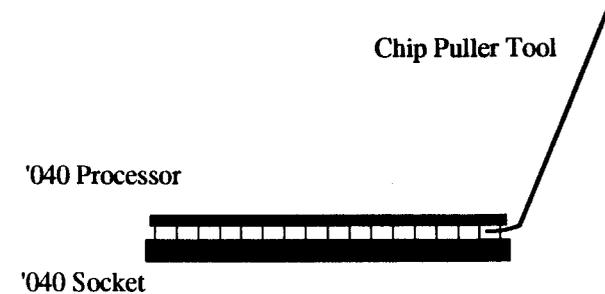
NOTE: By keeping your Mac's power cord plugged in, you can use the power supply to ground yourself by simply touching it.

2. Locate the two release tabs on the back of the case of the computer. Lift the tabs up and remove the case.

3. Locate the 68040 Processor Chip on the motherboard. See Figure 5.
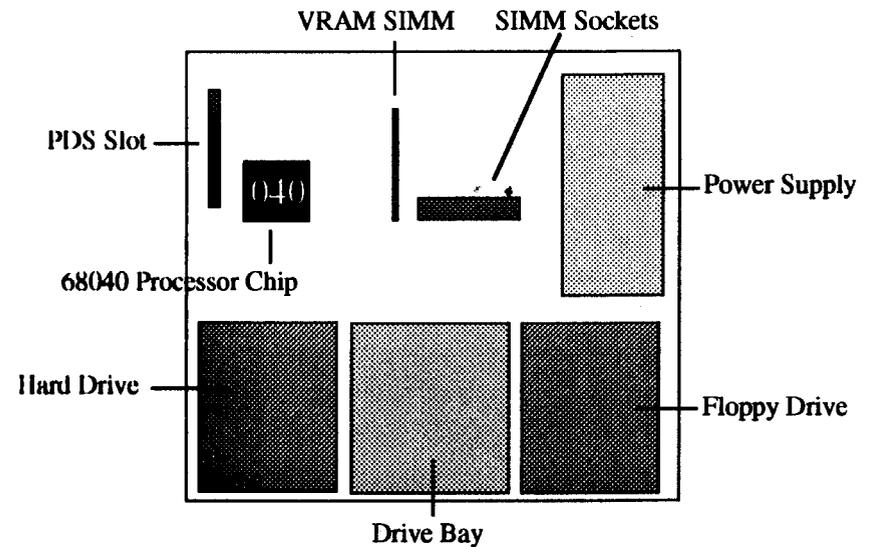
**Figure 5. Location of the 68040 Processor Chip on the Quadra 660AV.**

Figure 6. Chip Puller Tool.

4. You will now use the supplied Chip Puller Tool to remove your 68040 chip. Place the Chip Puller Tool underneath the lip of the Processor chip between the socket and the chip, and gently pry upward on each side until the you've removed the chip from the socket. See Figure 6.

WARNING: Make sure you pry an even amount on all four sides of the Processor chip. You do not want to pry too hard on one side as that may bend the pins on the chip.

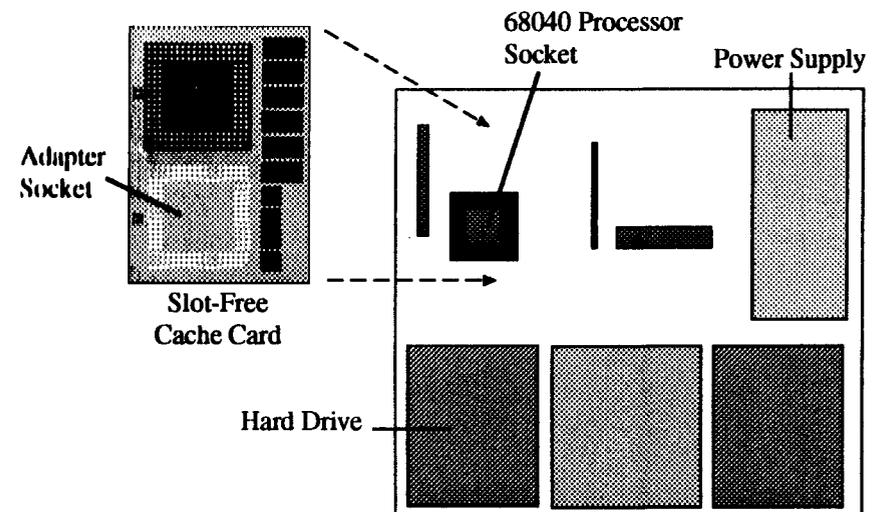5. Remove the DiiMOCache Slot-Free cache card from its package.

6. Install the 68040 Processor Chip by first aligning the missing pin on the processor chip with the missing pin on the Processor Socket on the cache card. See Figure 7.
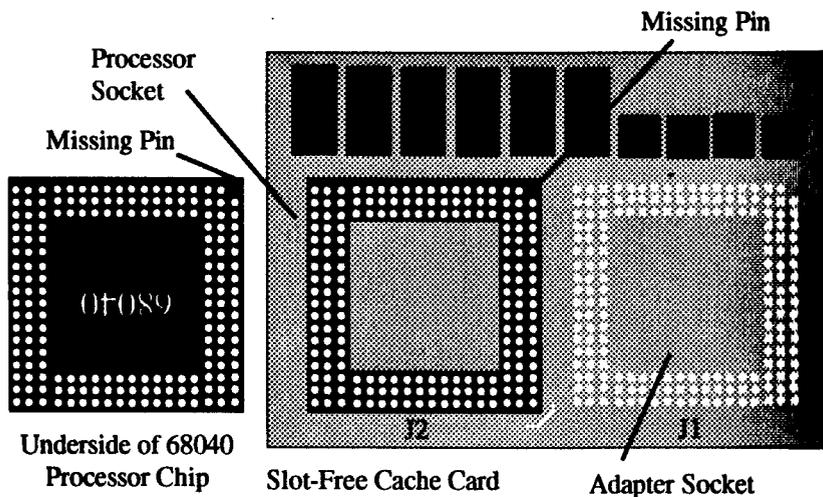
Figure 7. Orientation of the Processor Chip and the Socket on the Cache Card

Then, while keeping the black foam on the Adapter Socket so that you don't bend any pins, gently, but firmly, press the chip into the Processor Socket. Now, remove the black foam from the Adapter Socket and make sure none of the pins are bent.

7. Position the cache card over the Processor socket located on the motherboard. Once again, there is a missing pin on the Adapter Socket on the cache card to align with missing pin on the Processor Socket on the motherboard. See Figure 8.

Figure 8. Orientation of the Slot-Free Cache Card over the Processor Socket on the Quadra 660AV Motherboard.

8. Gently, but firmly, press the cache card into the socket on the motherboard. Make sure the DiiMOCache Slot-Free Cache card is firmly seated in the Processor Socket.

9. Replace your computer case and peripherals. Start up your Mac. If the DiiMOCache Slot-Free Cache Card is properly installed, the system will power up correctly.

10. Go to the section titled *Installing the DiiMOCache Software.* You must install the software in order for the cache card to work properly.

Installation for the Quadra 700

The following instructions assume you are familiar with the basic operations of a Quadra 700 and that you are familiar with opening your computer. If you are not, please consult your Macintosh Owner's Guide for instructions.

CAUTION: STATIC ELECTRICITY CAN BE DAMAGING TO THE MEMORY CHIPS AND OTHER COMPONENTS ON THE DIIMOCACHE SLOT-FREE CACHE CARD. Do not touch the connectors on the motherboard or components on the DiiMOCache Slot-Free Cache Card until you have grounded yourself by touching a grounded object such as the power supply case on your computer to discharge any static electricity.

If a grounding strap is available, you should use one during installation.

STEPS

1. Turn off your Macintosh and disconnect all peripherals. Keep the power cord plugged into your Mac.

NOTE: By keeping your Mac's power cord plugged in, you can use the power supply to ground yourself by simply touching it.

2. Set your Quadra on its side and remove the rubber feet so you can remove the case.

3. Open the Mac by removing the single screw in the middle of the case and pressing the two release tabs.

4. Locate the 68040 Processor chip on the motherboard. See Figure 9.
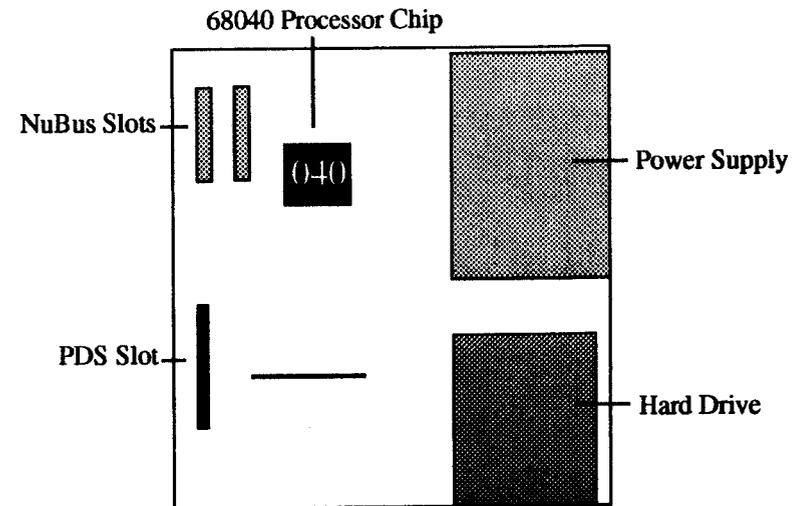
Figure 9. Location of the 68040 Processor on the Quadra 700.

5. You will notice that on top of the Processor chip there is a black heat sink that is held in place by a silver clip.

6. Remove the heat sink clip by prying with a small flat blade screw driver on one side. You will notice that the clip is held in place by plastic feet on the processor socket. Once one side is released, you should be able to remove the clip.

7. Remove the heat sink itself, *only* if it does not appear to be held in place (on some models, the heat sinks are held in place with heat-sink compound).

8. You will now use the supplied Chip Puller Tool to remove your 68040 chip. Place the Chip Puller Tool underneath the lip of the Processor chip between the socket and the chip, and gently pry
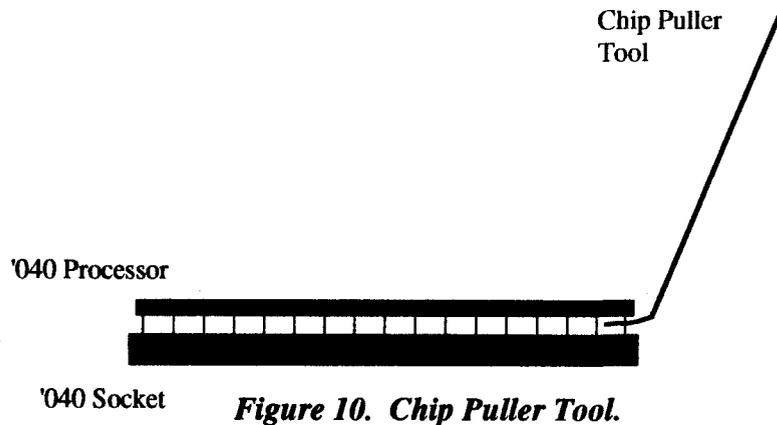
Figure 10. Chip Puller Tool.

upward on each side until the you've removed the chip from the socket. See Figure 10.

WARNING: Make sure you pry an even amount on all four sides of the Processor chip. You do not want to pry too hard on one side as that may bend the pins on the chip.
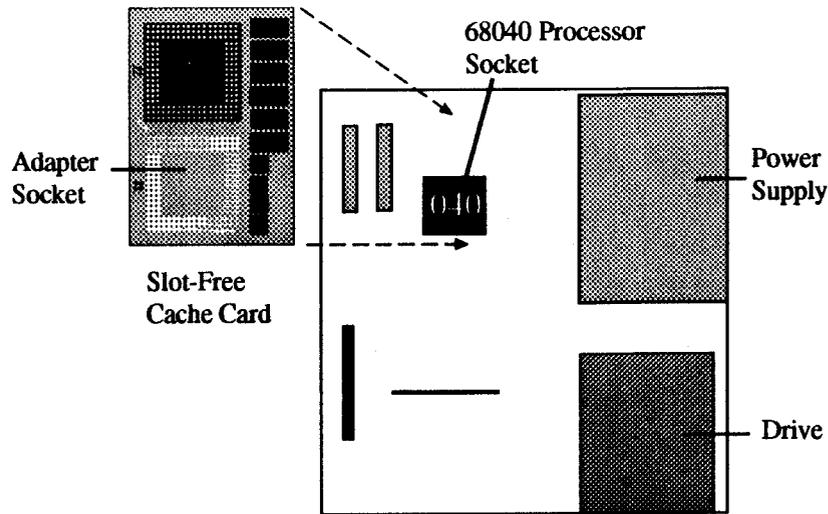
9. Remove the DiiMOCache Slot-Free cache card from its package.

10. Install the 68040 Processor Chip by first aligning the missing pin on the chip with the missing pin on the Processor Socket on the cache card. See Figure 11. Then, while keeping the black foam on the Adapter Socket so that you don't bend any pins, gently, but firmly, press the chip into the Processor Socket. Now, remove the black foam from the Adapter Socket and check to make sure none of the pins are bent.
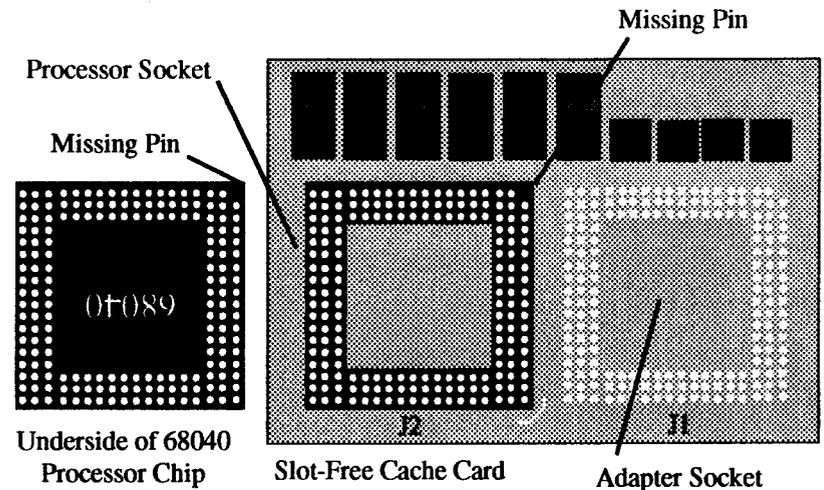
Figure 11. Orientation of the Processor Chip and the Socket on the Cache Card.

11. If you removed the heat sink, position it on the Processor chip.

12. Replace the heat sink clip by positioning it over the tabs on the processor socket. Firmly push down until it is seated. This may be a little difficult. A flat blade screw driver may be helpful in pushing the clip into place.

13. Position the cache card over the Processor socket located on the motherboard. Once again, there is a missing pin on Adapter Socket on the cache card to align with the missing pin on the Processor Socket on the motherboard. See Figure 12.

14. Make sure the DiiMOCache Slot-Free Cache card is firmly seated in the Processor Socket.

Figure 12. Orientation of the Slot-Free Cache Card over the Processor Socket on the Quadra 700 Motherboard.

15. Replace your computer case and peripherals.

16. Start up your Mac. If the DiiMOCache Slot-Free Cache Card is properly installed, the system will power up correctly.

17. Go to the section titled *Installing the DiiMOCache Software.* You must install the software in order for the cache card to work properly.

# Installation for the Quadra 900 and 950

The following instructions assume you are familiar with the basic operations of a Quadra 900 or 950 and that you are familiar with opening your computer. If you are not, please consult your Macintosh Owner's Guide for instructions.

CAUTION: STATIC ELECTRICITY CAN BE DAMAGING TO THE MEMORY CHIPS AND OTHER COMPONENTS ON THE DIIMOCACHE SLOT-FREE CACHE CARD. Do not touch the connectors on the motherboard or components on the DiiMOCache Slot-Free Cache Card until you have grounded yourself by touching a grounded object such as the power supply case on your computer to discharge any static electricity.

If a grounding strap is available, you should use one during installation.

STEPS

1. Turn off your Macintosh and disconnect all peripherals.

2. Open your computer case. First remove the screw in the back with a Phillip's screwdriver. Next, press to two latches and pull the case outward.

3. Set your Quadra on its side.

4. You are now going to have to remove the drive bay and power supply to have access to the 68040 processor chip and socket on the motherboard.
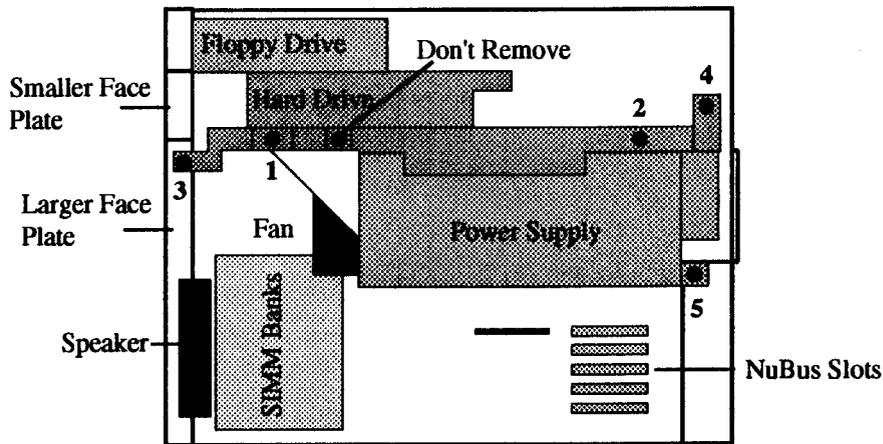
Figure 13. Location of the screws on the Quadra 900 and 950.

5. You will need to remove the Drive Sled and Power Supply to gain access to the 68040 Processor on your motherboard.

6. To remove the Drive Sled, first remove the Screw #1 and #2 identified in Figure 13. Now, remove the floppy drive cable and hard drive cables from the motherboard. Unplug the hard drive power cables from underside of the power supply.

7. Remove the Drive Sled by sliding the entire assembly towards the rear of the computer and then lifting up. Set your Drive Sled aside.

8. To remove the Power Supply you must first get the face plates out of the way. There are two face plates to be moved. See Figure 13. These do not have to be completly removed from your computer.

9. First move the larger face plate. Locate the two plastic tabs on the inside of the face plate. Press these in and pop the face plaate out, just enough to fully expose Screw # 3. See Figure 13. Now move the smaller face plate by pressing on its plastic tab and popping the plate outward.

10. Now you're ready to remove the Power Supply. First, unplug the Power Supply from the motherboard. Then remove Screws #3, #4, and #5. Remove the Power Supply by lifting up on the plastic handles. Set the Power Supply aside.

11. Locate the 68040 Processor chip on the motherboard. See Figure 14.
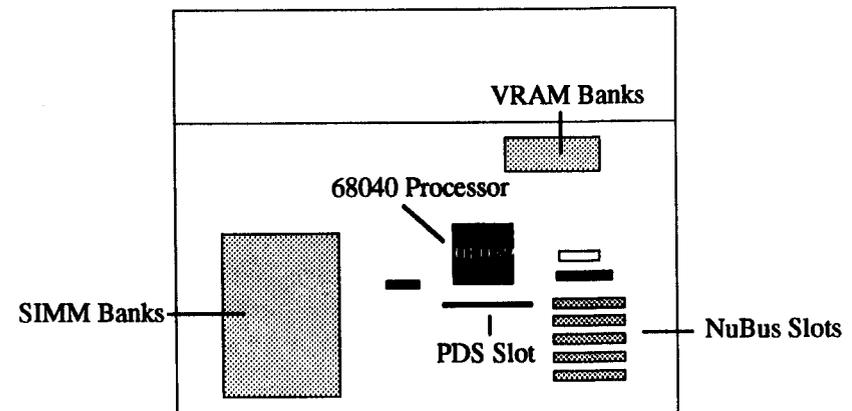
Figure 14. Location of the 68040 Processor chip on the Quadra 900 and 950.

12. Remove the heat sink clip by prying with a small flat blade screw driver on one side. You will notice that the clip is held in place by plastic feet on the processor socket. Once one side is released, you should be able to remove the clip.
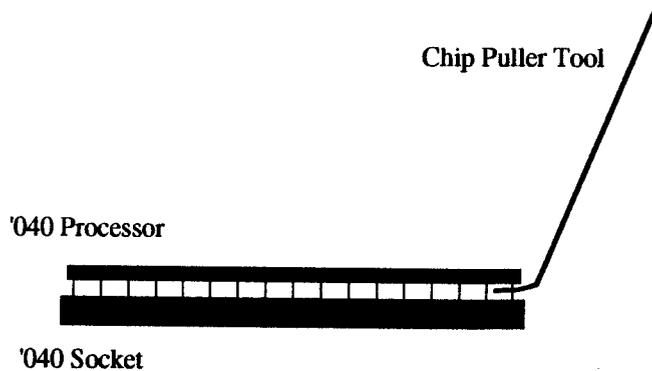
Figure 15. Chip Puller Tool.

13. Remove the heat sink itself, *only* if it does not appear to be held in place (on some models, the heat sinks are held in place with heat-sink compound).

14. You will use the supplied Chip Puller Tool to remove your 68040 chip. Place the Chip Puller Tool underneath the lip of the Proce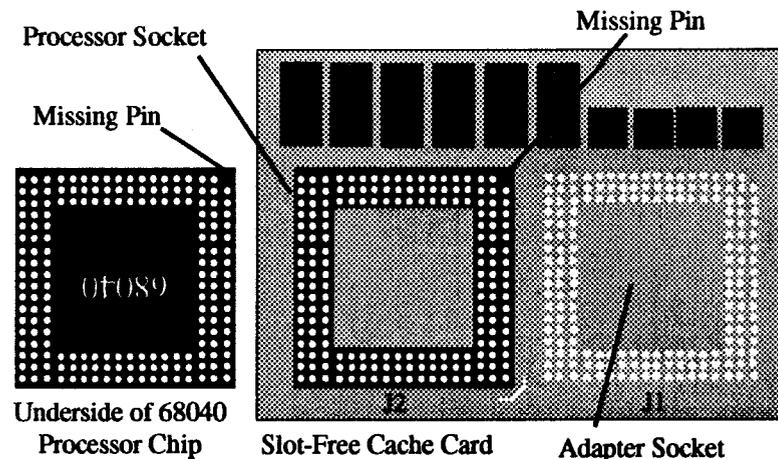ssor chip between the socket and the chip, and gently pry upward on each side until the you've removed the chip from the socket. See Figure 15.

WARNING: Make sure you pry an even amount on all four sides of the Processor chip. You do not want to pry too hard on one side as that may bend the pins on the chip.

15. Remove the DiiMOCache Slot-Free cache card from its package.

Figure 16. Orientation of the Processor Chip and the Socket on the Cache Card.

16. Install the 68040 Processor Chip by first aligning the missing pin on the chip with the missing pin on the Processor Socket on the cache card. See Figure 16. Then, while keeping the black foam on the Adapter Socket so that you don't bend any pins, gently, but firmly, press the chip into the Processor Socket. Now, remove the black foam from the Adapter Socket and check to make sure none of the pins are bent.

17. If you removed the heat sink, position it on the Processor chip.

18. Replace the heat sink clip by positioning it over the tabs on the processor socket. Firmly push down until it's seated. This may take some doing. Sometimes a flat blade screw driver is helpful in pushing the clip into place.

Slot-Free Cache Card

Adapter Socket

68040 Processor Socket

SIMM Banks

NuBus Slots
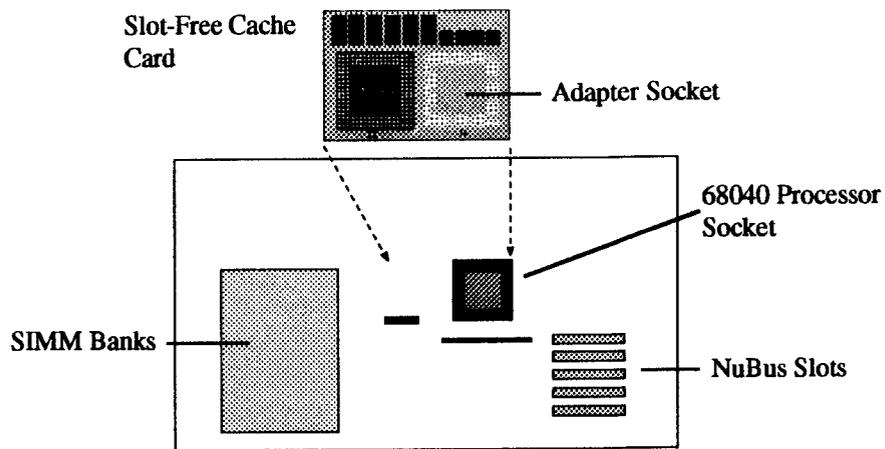
Figure 17. Orientation of the Slot-Free Cache Card over the Processor Socket on the Quadra 900 and 950 motherboards.

19. Position the cache card over the Processor socket located on the motherboard.   Once again, there is a missing pin on Adapter Socket on the cache card to align with missing pin on the Processor Socket on the motherboard. See Figure 17.

20. Make sure the DiiMOCache Slot-Free Cache card is firmly seated in the Processor Socket.

21. Slide the Power Supply back in along its guides. Replace Screw #3. Pop the face plates back in. Plug Power Supply in to the motherboard. Replace Screws #4 and #5. Put Drive Sled back in along its guides. Slide the Drive Sled forward into place. Put Screws #1and #2 back in. Plug hard and floppy drive cables back in their appropriate positions. Plug hard drive power cables back into the Power Supply.

22. Replace your computer case and peripherals.

23. Start up your Mac. If the DiiMOCache Slot-Free Cache Card is properly installed, the system will power up correctly.

24. Go to the section titled *Installing the DiiMOCache Software.* You must install the software in order for the cache card to work properly.

Installing the DiiMOCache Software

A Control Panel Device (CDEV) is provided on the software diskette that comes with your DiiMOCache Quadra Cache Card. You must install the software in order for your cache card to work properly.

STEPS

1. Insert the floppy disk labeled *DiiMOCache Quadra Cache Card* into your floppy drive.

2. If the diskette is not already opened, double click on the icon to open the diskette.

3. Install the DiiMOCache CDEV software by dragging the icon labeled *DiiMO 040 Cache* from the diskette to the Control Panels Folder in the System Folder on your start-up disk if you have System 7.0 or greater.

4. There are two options in the DiiMOCache software for your cache card. You can turn your Cache on or off and you can turn ROM Shadowing on or off. The default setting is with the Cache turned on and the ROM Shadowing turned off.

NOTE: You should leave ROM Shadowing turned off. ROM Shadowing is NOT needed for th e Slot-Free Cache Card. This is used only for PDS (Processor Direct Slot) versions of cache cards. (PDS cache cards need ROM shadowing to get the full benefit of RAM Cacheing. ROM Shadowing uses 1mb of main memory.)

5. To turn the Cache Card on and off you first choose "Control Panel" from the '⌘' menu. Then open the icon "DiiMO 040 Cache" in the control panel window. Simply click on the box labeled 'DiiMOCache™ On' at the top of the control window. An 'X' in the box indicates that the Cache Card is on.

The correct setting is to leave the cache turned on, otherwise you will see no increase in speed.

6. Once you've installed your DiiMOCache software, restart your computer. You will see the DiiMOCache icon load at the bottom of your screen with your other inits.

You have successfully installed your new DiiMOCache Quadra Cache Card!

If you have any problems, first consult your Installation Guide. If further problems occur, you can call DiiMO Tech Support at 800-50-DiiMO (800-503-4466) or 512-335-0421. Support is available on weekdays from 9:00 AM to 5:00 PM Central Time.

WARRANTY INFORMATION

HARDWARE

DiiMOCache™ Slot-Free™ Cache Card: DiiMO Technologies warrants the DiiMOCache™ Slot-Free™ Cache Card to be free from defects in materials and workmanship under normal use for five (5) years. Defective Cards will be repaired or replaced at DiiMO Technologies' option. The DiiMOCache™ Slot-Free™ Cache Card is provided "as is". DiiMO Technologies does not cover any failure of the product which results from accident, abuse, misapplication or the alteration of the product. Incidental and consequential damages caused by malfunction, default, or otherwise with respect to breach of this warranty are not the responsibility of DiiMO Technologies and are hereby excluded both for the property and, to the extent not unconscionable, for personal injury damage.

SOFTWARE

DiiMOCache™ Software: DiiMO Technologies warrants your complete satisfaction that the materials of the diskette containing this software are not defective, this software computer program is properly recorded on the diskette, and, the accompanying text is a complete copy and contains all the material DiiMO Technologies deems appropriate for the installation and use of this software. Any software that does not meet the foregoing standards may be returned by you within thirty (30) days after the effective date to DiiMO Technologies for replacement. DiiMO Technologies makes no representation or warranties of any kind that this software is error free, that all defects, if any, can be corrected, or that this software is fit for any particular purpose. As a condition to this agreement you accept all risks arising out of the use of this software, including loss of data.

LIMITATIONS

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DIIMO TECHNOLOGIES SHALL NOT BE LIABLE OF INCIDENTAL OR CONSE-QUENTIAL DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WAR-RANTY RELATED TO THIS PRODUCT, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. IN NO EVENT SHALL DIIMO TECHNOLOGIES BE LIABLE FOR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES SUCH AS LOSS OF PROFITS OR BUSINESS OPPORTUNITIES. DIIMO TECHNOLOGIES MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PAR-TICULAR PURPOSE IN RELATION TO THIS SOFTWARE OR HARDWARE.

30-DAY MONEY BACK GUARANTEE

The DiiMOCache™ Slot-Free™ Cache Card carries a 30-day money-back guarantee. If, for any reason, within 30 days of your receipt you find that the product fails to fit your needs, you may call the company from which the DiiMOCache™ Slot-Free™ Cache Card was purchased, hereinafter Reseller, for an RMA (Return Merchandise Authorization). On receipt of your merchandise in its original shipping container, in good condition, with an accurate RMA, Reseller will issue a credit to the credit card account on which the product was originally purchased (where applicable), or issue a check for the refund amount (at the Resellers' discretion) to the purchasing party.

HOW TO RETURN MERCHANDISE

If your DiiMOCache™ Slot-Free™ Cache Card fails to meet the standards set out in this warranty, DiiMO Technologies will at its discretion repair or replace it. You must contact DiiMO Technologies immediately with the following information: your sales invoice number and date and place of purchase, your DiiMOCache™ Slot-Free™ Cache Card serial number from the board, and the description of the problem or failure. DiiMO Technologies will provide you with the following information: an RMA number, information regarding any applicable charges, and the address to which the DiiMOCache™ Slot-Free™ Cache Card must be sent. DiiMOCache™ Slot-Free™ Cache Cards must be shipped in their original shipping container and packing material. The RMA number must be clearly displayed on the shipping label of the returned merchan-dise.

The information in this manual is subject to change without notice. DiiMO Technologies assumes no responsibility for errors which may appear in this manual, nor does DiiMO Technologies make any commitment to update the information contained in this manual.

NOTE: *To obtain service during the warranty period or thereafter, contact:*

DiiMO Technologies, Inc.
12201 Technology Blvd., Ste. 130
Austin, TX 78727
Phone: 800-50-DiiMO or 512-335-0421, Fax: 512-335-1429

DiiMOCache™ Slot-Free™ Cache Cards

System Requirements

P/N SA1
- Apple Macintosh LC 475

P/N SA2
- Apple Quadra 660AV, 700, 900 and 950

P/N SA3
- Apple Macintosh Quadra 800
- System 7.0 or greater

Compatibility
- Compatible with all standard software and hardware.

Warranty
- Five-year warranty
- 30-day money back guarantee

Technical Support
- Toll-Free Technical Support at 800-50-DiiMO or 512-335-0421

Technical Specifications

Cache Architecture
- 128K Static RAM Cache

Control Panel Software
- Cache Management

Connectors
- Plugs directly into 68040 processor socket

Physical Dimensions
- 2.0" x 5.0"
- 4.1" x 2.8"