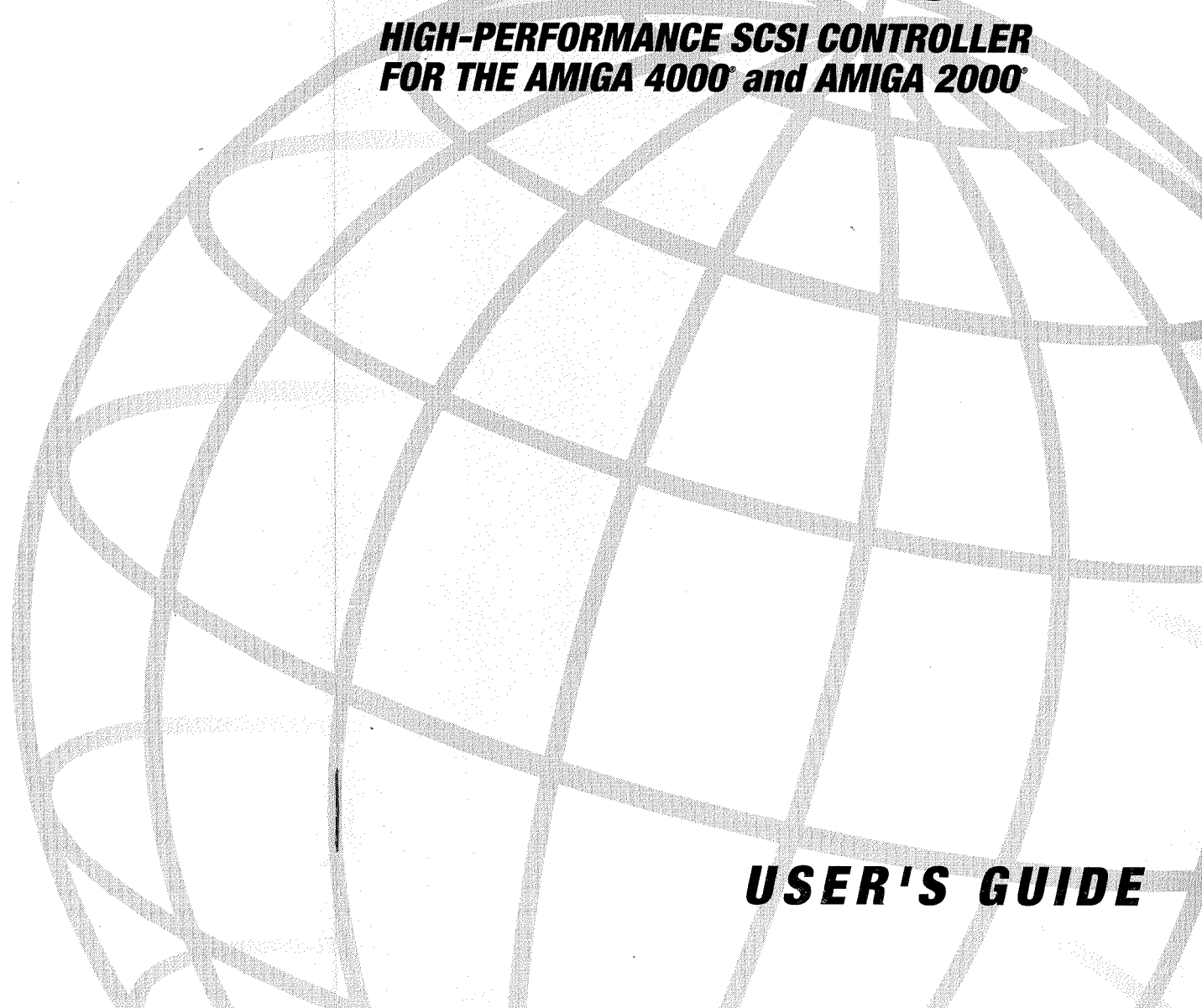


\$150 -



SCSI HARD DISK CARD

**HIGH-PERFORMANCE SCSI CONTROLLER
FOR THE AMIGA 4000[®] and AMIGA 2000[®]**



GREAT VALLEY PRODUCTS, INC.
657 CLARK AVENUE
KING OF PRUSSIA, PA 19406
U.S.A.

USER'S GUIDE



A4008

SCSI/RAM



This product, hardware, manual, and software, are Copyright 1993, Great Valley Products, Inc. (GVP). All rights reserved.

Purchasers are entitled to make one backup copy of the supplied software for archival purposes. All other forms of duplication, whether electronic or physical, are expressly forbidden by GVP.

Commodore, Amiga, Workbench, and AmigaDOS are trademarks of Commodore International, Limited. All other products mentioned in this manual and ReadMe files on the disks are trademarks of their respective owners.

GVP guarantees that, on leaving the premises, the product is in working condition and meets all manufacturing and performance specifications. No further guarantee is expressed or implied.

GVP assumes no responsibility as to the fitness or suitability of this product for any commercial or non-commercial application. GVP assumes no liability for the loss or destruction of data and programs resulting from the use or misuse of this product.

Use of this product indicates acceptance of the terms stated above.



Contents

1. Introduction	
Overview	1.1
A4008 Features	1.1
Available Configurations	1.2
Software	1.2
Using This Guide	1.2
2. Installing The A4008	
Preparation	2.1
A3000/4000 Install	2.1
A2000 Install	2.2
3. Adding Memory	
Introduction To SIMMs	3.1
The Package	3.1
Preparation	3.2
Configuration	3.2
Removing SIMMs	3.3
Adding SIMMs	3.4
Making Memory Work	3.5
4. Adding SCSI Devices	
Preparation	4.1
Termination	4.1
SCSI ID	4.2
Device Installation	4.3
Internal Drives	4.3
External Devices	4.3
Appendix A. Jumper Settings	
Appendix B. Connector Data	
Appendix C. Service & Support	
General Information	C.1
Reporting Problems	C.1
Your Configuration	C.3



FCC Radio Frequency Emissions Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

CAUTION: Only equipment with shield-grounded cables (computer input-output devices, terminals, printers, etc.), certified to comply with Class B limits, can be attached to this device. Operations with non-certified equipment may result in communications interference.

Your house AC wall receptacle must be a three-pronged type (AC ground). If not, contact an electrician to install the proper receptacle. If a multi-connector box is used to connect the computer and peripherals to AC, the ground must be common to all units.

If necessary, contact your dealer or an experienced radio-TV technician for additional suggestions. You may find the following FCC booklet helpful: "How to Identify and Resolve Radio-TV Interference Problems." The booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, stock no. 004-000-00345-4.



1. Introduction

Overview

The GVP A4008 combines a SCSI (Small Computer System Interface) device controller with up to 8 megabytes of Fast RAM expansion capacity. Its stable, time-tested design has been on the market since the advent of the A2000.

A4008 Features

- Adaptable—works in any Amiga with Zorro slots (A2000/A3000/A4000 series).
- Inexpensively adds SCSI capability to IDE-based A4000s; provides much needed memory expansion and hard drive storage in A2000s.
- Accepts up to 8 megabytes of Fast RAM in easily installed 2-megabyte increments, using convenient industry-standard SIMMs.
- Controls up to seven SCSI devices, both internal and external to your Amiga.
- Incorporates one of the fastest SCSI controllers on the Amiga market, using GVP's proprietary DPRC (Dual Port Ram Controller) chip.
- One 3.5" hard drive can be mounted directly on the A4008, making it a self-contained "hard disk card".

Available Configurations

The A4008 comes in a variety of configurations. Your board could have between zero and eight megabytes of memory installed; you may have purchased it without a hard drive, or with an 80MB, 120MB, 213MB or some other size hard drive already mounted.

Software

GVP's FaaastPrep software for partitioning and formatting hard drives accompanies the A4008. Along with FaaastPrep are a number of useful utilities for monitoring and enhancing the performance of your A4008 and other components of your Amiga. See the `readme` file on the FaaastPrep disk for details.

Using This Guide

NOTE >>> If you're adding (or removing) memory or an internal drive on an installed A4008, consult Chapter 2, *Installing The A4008*, and reverse the procedure to remove the board from your Amiga first.

1. If you've purchased expansion memory, refer to Chapter 3, *Adding Memory*, to correctly install and configure the new memory.
2. If you've purchased additional SCSI devices, refer to Chapter 4, *Adding SCSI Devices*, to configure and mount internal drives or to configure external devices, and to set the A4008 appropriately.
3. Follow the instructions in Chapter 2, *Installing The A4008*, to properly install it in your Amiga 2000, 3000 or 4000.

2. Installing The A4008

Preparation

First, remove the cover from your Amiga; refer to your A2000, A3000 or A4000 series computer's manual for instructions.

Make sure your A4008 card is configured as desired (RAM jumpers set, drive data and power cables connected) before proceeding. See chapter 3, *Adding Memory*, and chapter 4, *Adding SCSI Devices*, for the appropriate instructions.

IMPORTANT!!

Beware of static charges - if possible, wear a grounding wrist strap or periodically drain electrostatic potential from your body by touching a grounded metal surface. Disconnect your Amiga's AC power cord before installing or attaching any devices.

A3000/4000 Install

The card slots in the A3000 and A4000 are mounted on a vertical **daughterboard** in the computer. You can use any slot you choose.

1. Detach the metal cover in line with your selected slot by removing its screw, and save the screw.
2. Orient the A4008 with the circuitry on top and its attached slot cover to the rear, and slide it in carefully (see Figure 2.1).

NOTE >>> A drive mounted on the A4008 may obstruct an adjacent slot above.

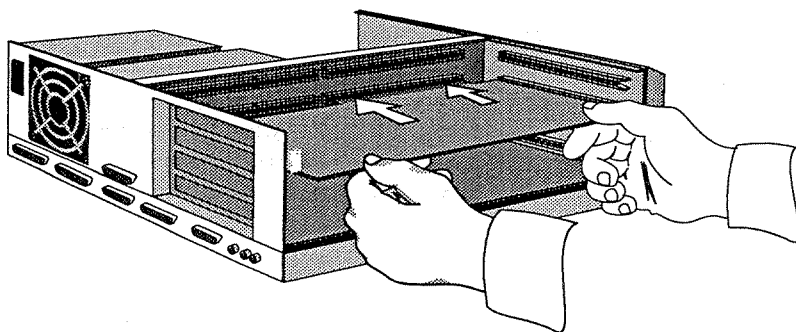


Figure 2.1 — Insertion in the A3000/A4000

3. Press firmly on the A4008 while supporting the daughterboard, until the card edge with the contacts is seated in the slot.
4. Reinsert the screw you saved, to hold the A4008 card in place by its slot cover.

A2000 Install

The card slots in the A2000 are mounted on the computer's horizontal **motherboard**. You can use any slot you choose.

1. Detach the metal cover in line with your selected slot by removing its screw, and save the screw.
2. Orient the A4008 with its attached slot cover to the rear, and slide it in carefully (see Figure 2.2).

NOTE >>> A drive mounted on the A4008 may obstruct an adjacent slot.

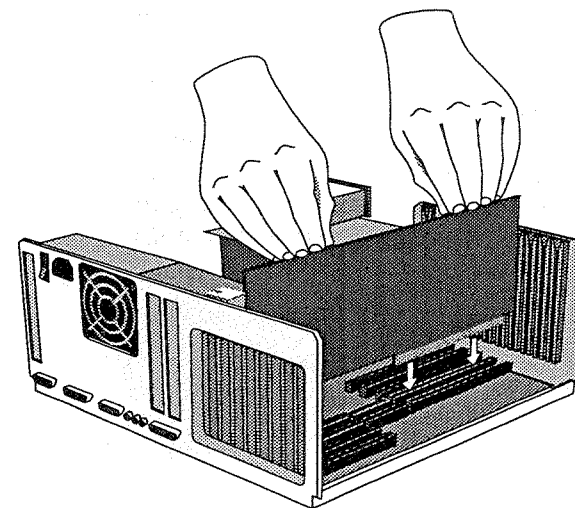


Figure 2.2 — Insertion in the A2000

3. Press down firmly on the A4008, until the card edge with the contacts is seated in its slot.
4. Reinsert the screw you saved, to hold the A4008 card in place by its slot cover.

3. Adding Memory

Introduction To SIMMs

The Package

Expansion memory for the A4008 is packaged as a 16-bit SIMM (Single Inline Memory Module), consisting of a group of chips mounted on a small circuit board (see Figure 3.1). All the connections for the chips are arranged along one edge of the board to mate automatically with the socket's contacts.

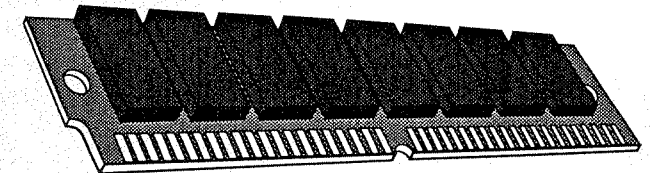


Figure 3.1 — A typical SIMM module

Depending on the date of manufacture, your A4008 may be equipped with either vertical or angled sockets (see Figure 3.2). Aside from the obvious difference in angle, both socket types are identical. They both accept the same SIMMs. The A4008 will accept SIMM units in 1MB or 4MB (MegaByte) capacities, with a rated access time of 100ns (nanoseconds) or less.

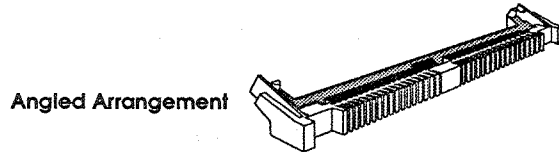
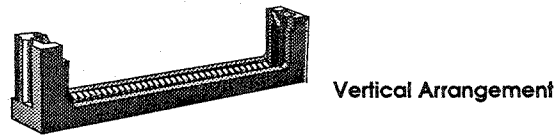


Figure 3.2 — Typical SIMM sockets.

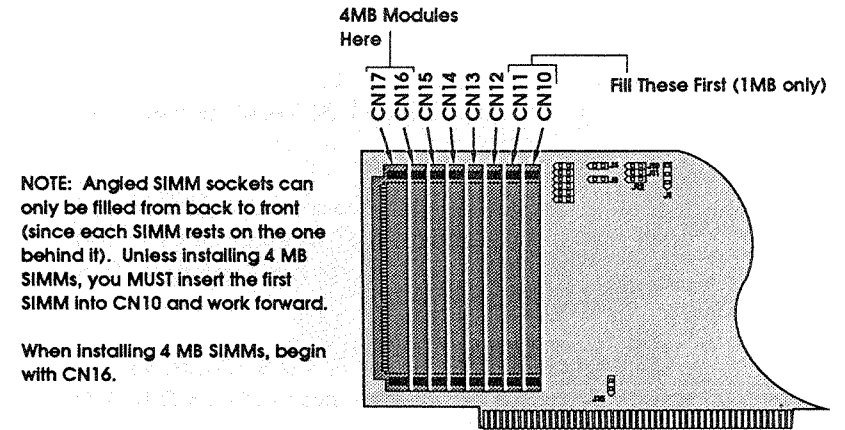
Preparation

To install or remove a RAM SIMM, place your A4008 on a static-free surface, such as the bag in which it was shipped (see Chapter 2, *Installing The A4008*, for instructions on removing it from your Amiga).

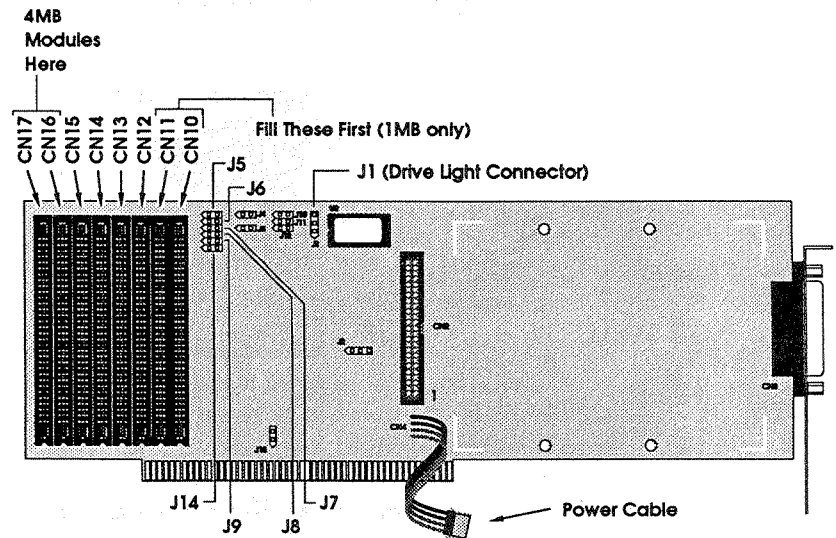
IMPORTANT!!

Beware of static charges—if possible, wear a grounding wrist strap or periodically drain electrostatic potential from your fingers by touching a grounded metal surface.

GVP is not responsible for component malfunction or damage resulting from incorrect configuration of memory expansion. Be sure to follow the instructions in this chapter so that your A4008 is properly configured with respect to total RAM allowed, sockets to be used and jumper settings.



Angled Socket Arrangement



Vertical Socket Arrangement

Figure 3.3 — SIMM sockets and RAM configuration jumpers

Configuration

You can install SIMMs in 1MB or 4MB sizes, with three restrictions:

- »» You must add two or four Megabytes at a time, starting with those labeled **CN10** and **CN11** and working your way forward (see Figure 3.3).

If you are installing 4 MB SIMMs, you can use the two front sockets (**CN16** & **CN17**) **ONLY!**

- »» Don't mix sizes—use only 1MB or only 4MB modules.
- »» A maximum of 8 megabytes can be installed.

Adding SIMMs

Be sure you're installing a recommended configuration. Vertical SIMMs slide directly in from the top. Angled SIMMs fit into the groove at the bottom of the socket and are rotated slightly to snap into place.

Consult the diagrams on the facing page for proper installation procedures.

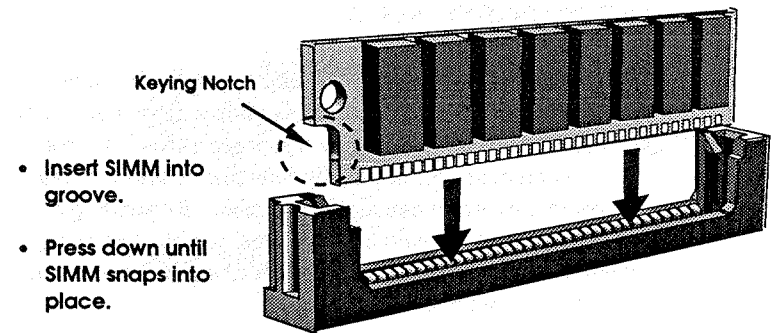


Figure 3.4 – Installing Vertical SIMM

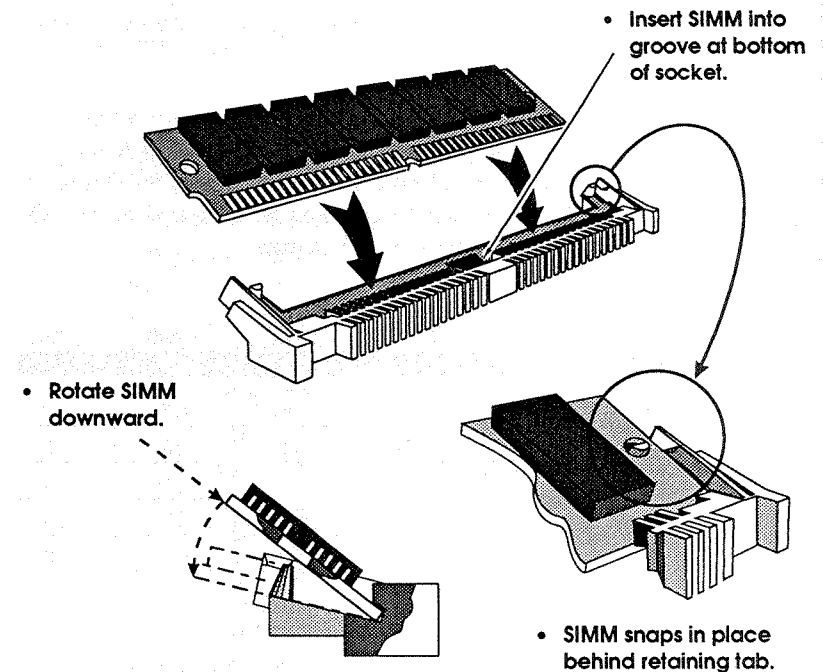


Figure 3.5 – Installing Angled SIMM

Making Memory Work

Now your A4008 must be made "aware" of the new RAM you've installed. This is done with sets of two or three small metal pins called **jumper pins**, which are connection points for special circuits that inform the hardware how much memory is available. By pressing a **shorting block** onto a pair of pins, you're connecting the pins and turning a circuit **ON** (the pins are **shorted** and the circuit is closed).

Figure 3.3 locates the six RAM configuration jumpers—they're labeled **J5**, **J6**, **J7**, **J8**, **J9** and **J14**.

Figure 3.6 shows a typical three-pin jumper, but the RAM configuration jumpers on the A4008 have just two pins.

To make memory work properly, you must set the jumpers in specific combinations, according to the amount of RAM installed and the type of SIMMs used. Refer to the table below to set the indicated jumpers **ON** for the appropriate RAM quantity.

JUMPER	0 MB	2 MB	4 MB	6 MB	8 MB
J5	off	off	ON	off	off
J6	off	ON	off	off	ON
J7	ON	off	off	ON	off
J8	off	off	off	ON	ON
J9	ON	ON	ON	off	off

NOTE >>> If you're using 4MB SIMMs, set jumper **J14** and **J5** to **ON**, and **J5**, **J6**, **J7**, **J8**, and **J9** to **OFF**.

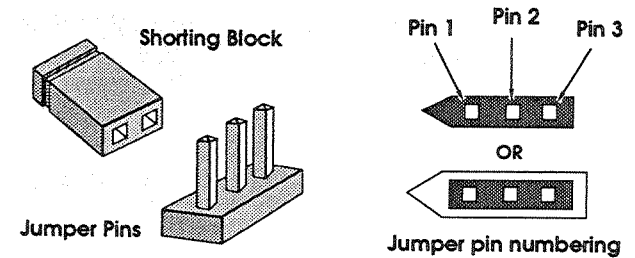


Figure 3.6 - Jumper details

Removing SIMMs

CAUTION

Remove SIMMs only if absolutely necessary. You'll need a prying tool with a narrow tip, such as a scribe, an awl or a small screwdriver. The socket's retaining tabs are stiffly spring-loaded, so you may want your GVP dealer to do the work to avoid accidental damage to components.

SIMMs are held into place by retaining tabs located at either end of the socket. These retaining tabs fit around the edges of the SIMM circuit board, or latch into the locator holes in the SIMM, itself.

To remove a vertical SIMM, pry gently against the retaining tabs while pulling upward on the SIMM. A fine-bladed screwdriver may be helpful, but **avoid damaging the SIMM memory chips!**

To remove an angled SIMM, spread the retaining tabs at either end of the socket. The SIMM will pop up and can be lifted out.

3

4. Adding SCSI Devices

Preparation

The SCSI (Small Computer System Interface) controller in the A4008 can control up to seven SCSI-compatible hard drives or other devices, both internally and externally connected. Before installing new devices, you must make two important settings:

1. Make sure **all** SCSI devices are **terminated** correctly for the new configuration.
2. Set the new device's **SCSI ID number** (also known as its SCSI address).

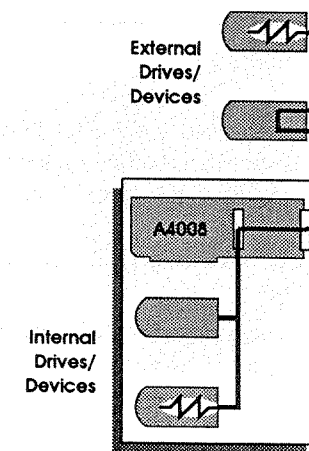


Figure 4.1—The SCSI chain

Termination

A SCSI device can be attached to either the A4008's internal connector or its external jack. Any additional devices are connected to the previous one in series, forming a "daisy chain" of internal or external devices, up to a total of seven.

The chain extends from the last internal device at one end to the last external device at the other end, with the A4008 somewhere in the middle (see Figure 4.1).

4

A set of electrical resistors (or sockets for them) is mounted somewhere on your SCSI device; its manual should show you where. These resistor packs will electrically **terminate** the device. Use the following rule: only the two devices at each end of the chain should be terminated (have resistors installed); if possible, remove the resistor packs from all other devices in the chain.

NOTE >>> One exception to the rule—if there's only one device installed, connected to the A4008 by an internal cable less than 4" long, **remove** its terminating resistor packs.

SCSI ID

The SCSI controller makes seven ID numbers available (from 0 through 6), and each device connected must be assigned one of these. The instruction manual provided with the drive or device should explain how to set the ID (it's usually a binary version of the number, represented with a combination of three jumpers).

CAUTION

You can use any number from 0 to 6, but make sure that all devices connected to the A4008 have different ID numbers. A program like GVP's *FaaastPrep* can help you examine current devices to discover what IDs are in use.

NOTE >>> The physical location of the device in the SCSI "daisy chain" has **no** relevance to your choice of ID.

Device Installation

Internal Drives

To mount or remove an internal SCSI hard drive, first place your A4008 on a static-free surface, such as the bag in which it was shipped (see Chapter 2, *Installing The A4008*, for instructions on removing it from your Amiga).

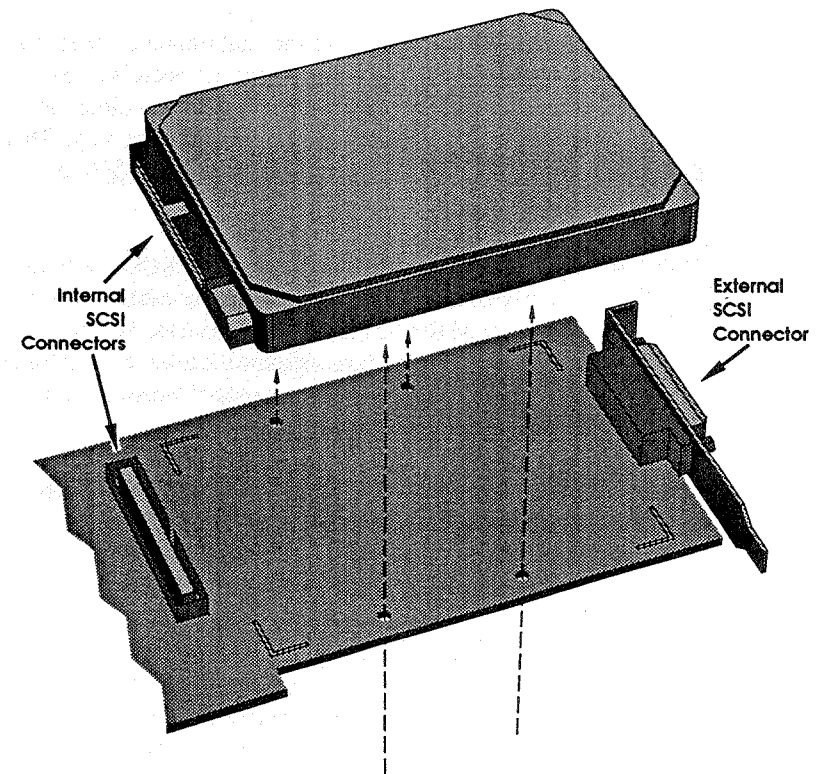


Figure 4.2—Mounting an internal drive

IMPORTANT!!

Beware of static charges - if possible, wear a grounding wrist strap or periodically drain electrostatic potential from your body by touching a grounded metal surface.

If your drive is a standard half-height 3.5" model, you can mount it directly to the A4008 using the provided screws. Orient it as shown in Figure 4.2, and insert the screws from the back of the board.

The A4008 comes with a short, flat ribbon cable for the mounted drive. Attach one end to the board's SCSI connector and the other end to the drive's—since the connectors are notched, they can fit only one way. Then connect the four-wire power cable to the drive (see Figure 3.3).

NOTE

>>> If you aren't mounting the drive to the A4008, you may need extensions for the data and power cables. If one or more internal devices are already connected to your A4008, you'll need data and power cables with multiple connectors to add the new one. All of these are available at your local computer supply store.

Your Amiga may have a small cable connected to its drive activity light; attach this to jumper **J1** on the A4008 after it's installed (see Figure 3.3).

External Devices

If you're installing an external device, it should have its own AC power cord or adapter, and an external SCSI data cable. Attach the SCSI cable to the A4008's external jack after you've installed the A4008 in your Amiga.

A. Jumper Settings

The following chart summarizes the jumpers on the A4008. Many of these jumpers are reserved by GVP for future enhancements of this product, and should **NOT** be changed from the settings given. GVP will not be responsible for any damage to this product caused by changing reserved jumper settings.

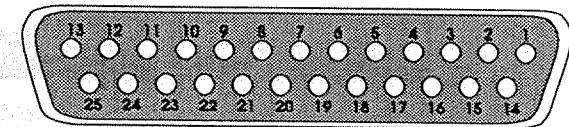
Jumper	Function	Default
J1	LED Connector	Connect to LED
J2	RESERVED	2 & 3
J3	AutoConfig Test Jumper	OFF
J4	AutoBoot Enable/Disable	ON
J5	RAM Setting	See 3.6
J6	RAM Setting	See 3.6
J7	RAM Setting	See 3.6
J8	RAM Setting	See 3.6
J9	RAM Setting	See 3.6
J10	RESERVED	OFF
J11	RESERVED	OFF
J12	RESERVED	OFF
J14	RAM Setting	See 3.6
J15	DTACK Support On/Off	OFF

B. Connector Data

External SCSI Connector

DB-25 Female

Accepts standard shielded 25-pin Centronics-type SCSI cables.



PIN	SIGNAL	PIN	SIGNAL
1	REQ	14	GND
2	MSG	15	C/D
3	I/O	16	GND
4	RST	17	ATN
5	ACK	18	GND
6	BSY	19	SEL
7	GND	20	DB(P)
8	DB(0)	21	DB(1)
9	GND	22	DB(2)
10	DB(3)	23	DB(4)
11	DB(5)	24	GND
12	DB(6)	25	not used
13	DB(7)		

A

B

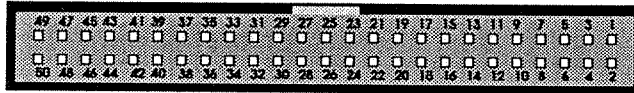


Internal SCSI Connector

50-pin male header

Accepts standard SCSI ribbon cables.

All odd numbered pins, except pin 25, are Ground (GND). Pin 25 is not used.



PIN	SIGNAL	PIN	SIGNAL
2	DB(0)	28	GND
4	DB(1)	30	GND
6	DB(2)	32	ATN
8	DB(3)	34	NC
10	DB(4)	36	BSY
12	DB(5)	38	ACK
14	DB(6)	40	RST
16	DB(7)	42	MSG
18	DB(P)	44	SEL
20	GND	46	C/D
22	GND	48	REQ
24	GND	50	I/O
26	not used		

B



C. Service & Support

General Information

GVP supports hardware and software products through our network of Authorized Dealers. We strongly recommend you work with your supplying dealer first to resolve problems you may encounter. GVP Authorized Dealers have access to significant technical information and support from GVP and in most cases will offer the fastest solution.

If necessary, you can get assistance from GVP's Technical Support department via fax, telephone or mail:

Fax (215) 337-9922 24 hours

Phone (215) 354-9495
9:15 a.m. — 12:00 p.m. EST,
1:45 p.m. — 6:00 p.m. EST
Monday through Friday

Mail Great Valley Products, Inc.
657 Clark Ave.
King of Prussia, PA 19406

Electronic Assistance

GVP provides a 24 hour Bulletin Board Service (BBS) where the latest patches and public release updates are maintained. Access is immediate for first-time users. Call (215) 337-5815 (8,N,1).

C



CompuServe Information Service

Technical assistance, as well as product information, is available on CompuServe (CIS). Go GVP at any prompt or send direct EMail to GVP Tech at 72662,51.

Reporting Problems

If possible, try to determine if the problem is repeatable (i.e., it occurs under predictable conditions), and be prepared to describe in detail the particular symptoms and the system configuration in use when it happens.

Whether you're faxing, calling or writing about your problem, please take the time to complete and submit a copy of this form to GVP; complete the form before calling as well, so you have all the pertinent information at hand. The more detailed information you can provide, the better our support personnel will be able to assist you.



Your GVP Customer Number _____

Name _____ Date _____

Address _____

City _____ State _____

Country _____ Postal Code _____

Telephone Number () _____

GVP Product _____

Serial Number _____ Revision (version) # _____

Describe the symptoms, and the conditions under which they occur:



Installation Guide

A4008 SCSI/RAM Board

Your Configuration

AMIGA MODEL _____

Motherboard Revision _____ Chipset Version _____

Kickstart (ROM) Version _____ Workbench Version _____

CPU Model _____ Clock Speed _____

Expansion products installed (including competitors' products):

CPU Slot _____

Video Slot _____

Expansion Slot #1 _____

Expansion Slot #2 _____

Expansion Slot #3 _____

Expansion Slot #4 _____

Expansion Slot #5 _____

Expansion Slot #6 _____

Expansion Slot #7 _____

List all hard and floppy drives attached to your system, with Unit ID numbers, manufacturers and capacities, plus any other peripherals:

