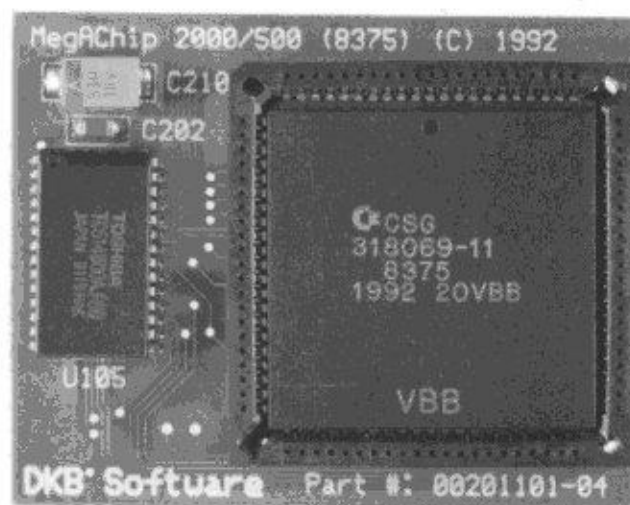


MegAChip 2000/500 Chip Ram Expansion Board for the Amiga® 2000 and Amiga® 500



Installation and User's Guide

by
DKB Software

SERIAL No M 301521

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1. Introduction.

Congratulations on the purchase of your new MegAChip 2000/500™ by DKB Software for the Amiga® 2000 and 500 and also CDTV. DKB Software's MegAChip 2000/500™ is a Chip Ram expansion board that provides many features including:

- o Doubles the amount of Ram accessible to the custom chips.
- o Fully compatible with the Video Toaster - Toaster Paint and Lightwave.
- o Fully autoconfig, uses config space that is reserved for use as Chip Ram.
- o Lets you upgrade your Amiga® to stay current with the latest technology.
- o Fully compatible with Workbench™ 2.0 and the ECS Denise chip.
- o Lets your system multitask much easier with graphic intensive programs.
- o Fully compatible with the MultiStart II™ Rom Board.

The primary feature of the MegAChip 2000/500™ is that it allows you to have a total of 2 Megabytes of Chip Memory. This capability is done by taking advantage of the 1 megabyte of memory that is already on your Amiga®. This allows the MegAChip 2000/500™ to take advantage of the memory space that had been reserved for a second megabyte of Chip Memory by Commodore, making the MegAChip 2000/500™ with the 8375 Agnus fully autoconfigure.

With the MegAChip 2000/500™ installed in your Amiga®, you can now Multitask much easier with programs that open their own custom hi-res screen. Just to name one thing, you can use your desktop publishing program and a structured drawing program at the same time without worrying about seeing a low chip memory warning, (this was done while writing this document).

Now with the MegAChip 2000/500™ in your Amiga® you are ready to take full advantage of all the software that will use any amount of Chip Ram that is in your system. And the new software that is being written to specifically make use of two megabytes of Chip Ram.

2. Configuring the MegAChip 2000/500™.

NOTE:

We highly recommend that you take your Amiga® to your dealer or authorized service center for the installation of your MegAChip 2000/500™. To pull the Agnus chip out of your Amiga® requires a special tool for pulling PLCC chips. If you wish to do this yourself we sell the correct tool required.

Before installing the MegAChip™ in your Amiga®, you may need to install the two Megabyte Agnus in the socket on the MegAChip 2000/500™ board (currently most MegAChip 2000/500™ boards are being shipped with the 8375 2Meg Agnus installed). The Agnus chip that you need should be labeled with a number on the top of the chip. The number needed is 8375 (see figure 1). You also need to check the part number on the chip which designates whether it is for NTSC or PAL use. Part number should end with -11 or -02 for NTSC use and part number should end with -10 or -01 for PAL operation.

Step 1:

You need to line up pin one on the Agnus chip with pin one of the socket. Pin one on the chip is marked with a small dot at the edge of the chip which will be either on the top or the bottom of the chip. Pin one of the socket is marked with an arrow in the bottom of the socket pointing to where pin one is.

Step 2:

Now place the chip on the socket in the correct orientation lining up the pins with the socket. Place your thumb in the center of the chip, press firmly and you should hear and feel the chip snap into place (see figure 1). Your MegAChip 2000/500™ is now ready for installation.

NOTE:

The MegAChip 2000/500™ will not work with either of the older Agnus versions, 8370 or 8372A which are the 512K and 1Meg versions respectively. The chip required will only work in the MegAChip 2000/500™ or the Amiga® 500 Plus or A600.

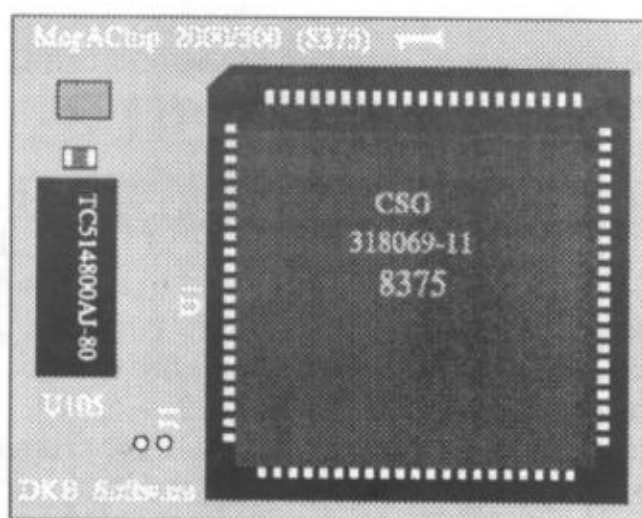


Figure 1

3. Installation in the Amiga® 2000.

Disassembling Your Amiga 2000

Warning:

Unplug your Amiga 2000 before attempting to install the MegAChip 2000/500™. Installing the MegAChip 2000/500™ with the power on could cause possible injury to yourself and damage the equipment. DKB Software will not be responsible for any damages caused by improper installation of the MegAChip 2000/500™. Such improper installation will void the warranties on both the MegAChip 2000/500™ and the Amiga® 2000.

Note :

Before disassembling your Amiga®, you need to know which Agnus chip you currently have. To check this boot your system and open a shell. In the shell type "avail" at the prompt. Now look under the "Maximum" column to the right of "chip"; if the number there has six digits then you have the 512K Agnus, if the number has seven digits then you have the 1Meg Agnus. There is also public domain programs that will tell you which Agnus you have in your system. You will need this information later during the installation.

Step 1:

Remove the mouse and keyboard cables from the front of the Amiga, the power cord, and any peripherals connected to the rear. Carefully note the position and orientation of all connectors to simplify reassembly later.

Step 2:

Remove the five screws holding the top cover on the Amiga® 2000. There is one screw at the top center of the rear panel, and two screws on either side at the bottom.

Step 3:

Turn the Amiga® so that the front is facing you. With one hand on either side of the machine, slide the cover toward you and lift upward. Do not force the cover if it seems to stick. Check that no wires are caught on the metal tab at the rear center of the cover.

Step 4:

If you have an accelerator card installed in the CPU slot, you should remove this prior to the next step.

Step 5:

Next you will need to remove the power supply and disk drive bracket. There are three screws at the front of the bracket and four at the back of the computer that need to be removed. Now you need to disconnect any power cables that may be going from the power supply to peripherals, such as hard drives, and the main power connector that goes to the mother board. You do not need to remove the power cables to the disk drives.

You will also need to remove the data ribbon cable from the disk drive(s) at the mother board connector. This connector is at the back of the computer just to the left of the power supply.

4. Installation in the Amiga® 2000.

Removing the Agnus Chip

If you have a Bridgeboard installed in your computer, you will also need to remove the ribbon cable from the back of that disk drive. Also, if you have a hard drive mounted to the disk drive bracket, you will need to remove the data cable(s) to this drive.

Step 6:

Pick up the Bracket at the center and lift the front up then remove the entire assembly. Set this aside until you are ready to reassemble the computer.

Step 7:

Now you have to remove the Agnus chip that is in your computer. This chip is located to the right of the power supply connector on the mother board. To remove the Agnus chip (See Trouble Shooting Section) you need a special tool for pulling PLCC square chips (this tool is available for purchase from us). Do not try to pry the Agnus out of the socket with a small screwdriver as this could damage the socket on the motherboard of your computer (see figure 3). If you have not yet installed the Agnus chip on the MegAChip 2000/500™, then turn back to section 2, on page 2, and do so now.

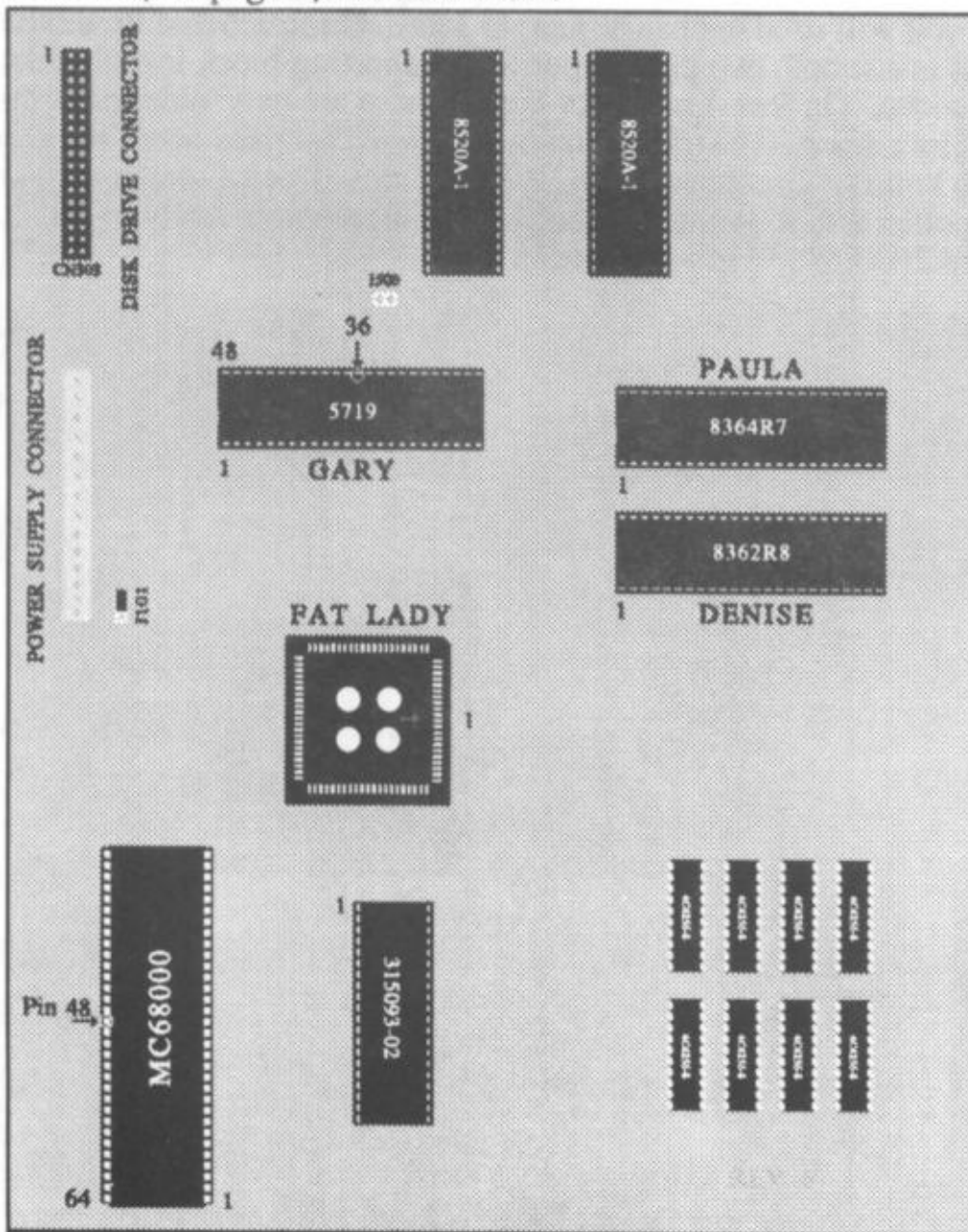


Figure 3

4. Installation in the Amiga® 2000.

Changing the Jumpers

Step 8:

Now you need the information that you got from the avail command before starting this installation. If your Amiga® currently has 512K of Chip Ram there are two very important steps that you need to do to make the MegAChip 2000/500™ work in your system. If your Amiga® currently has 1 Meg of Chip Ram then proceed to step 11 now.

NOTE:

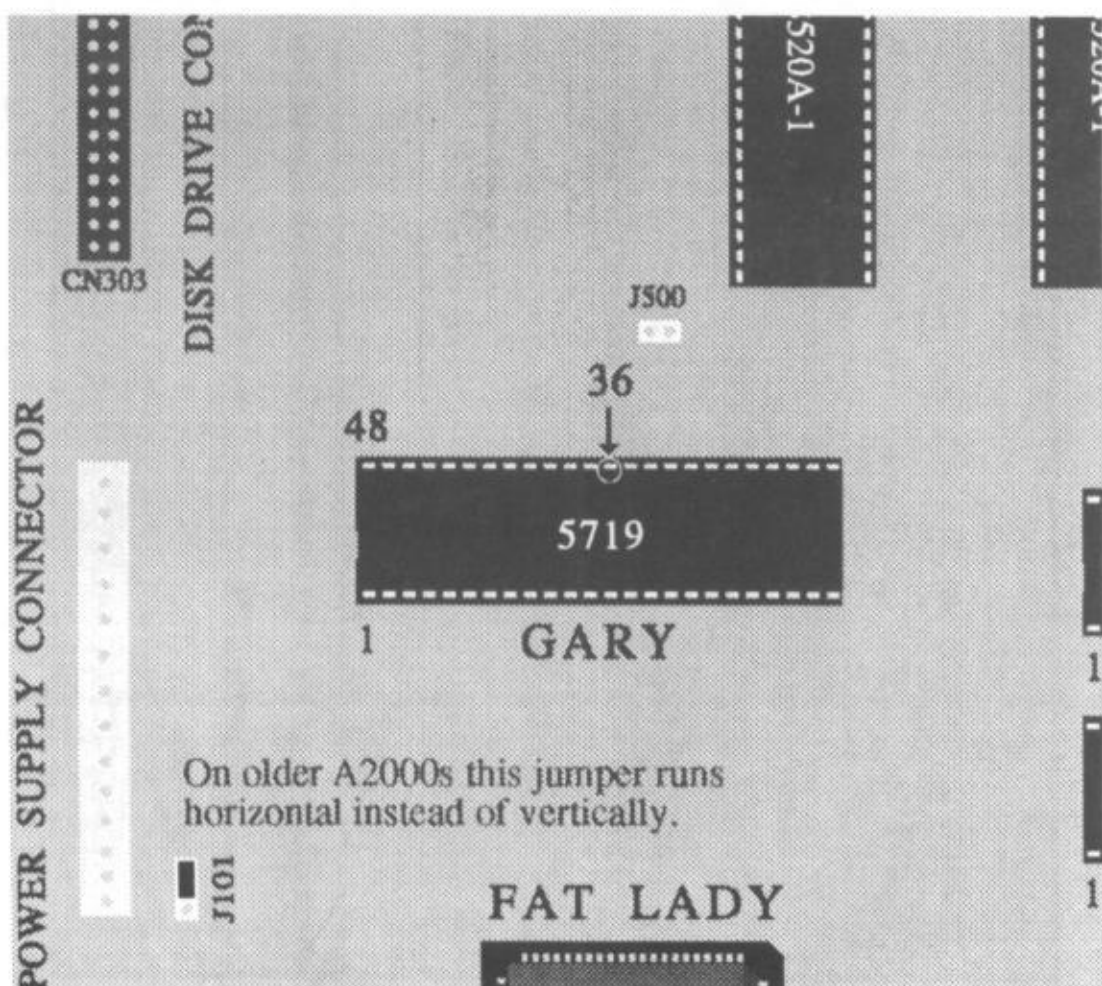
The following two steps (9 and 10) are only for computers with 512K of Chip Ram. Skip this section if your computer has 1 Meg of Chip Ram.

Step 9:

You need to make two jumper changes on the mother board of your computer. The first one is jumper J101, located next to the bottom right of the power supply connector. You need to move the jumper from the current two pins (the middle pin and the top end pin), to the middle pin and the opposite end pin (See Figure 4).

Step 10:

Next you will need to change jumper J500. On Rev 6 and up mother boards this is a simple two pin jumper with a shorting block installed that you need to remove. On Rev 4.x mother boards there are two solder pads that are connected by a trace. The trace connecting these two pads needs to be cut with an X-Acto knife to disconnect them. Be very careful when doing this so as not to cut any other traces on the mother board. You are now ready to install your MegAChip 2000/500™ in your Amiga®.



4. Installation in the Amiga® 2000.

Installing the MegAChip 2000™

Step 11:

To install the MegAChip 2000/500™ in your computer you need to hold the board with the Agnus chip facing you and in the same orientation as it was in the computer. Holding the MegAChip 2000/500™ in your hand by the edge of the board, the adaptor plug on the MegAChip 2000/500™ should be to the front over the Agnus socket with the memory chips on the MegAChip 2000/500™ to the back of the computer. Now seat the adaptor in the Agnus socket and press firmly with your first two fingers. The adaptor should fit snugly into the Agnus socket (See Figure 5).

Step 12:

There is a Black Clip that needs to be attached. This clip is a spring action type. Hold it in your hand like you would a hypodermic needle or syringe, pushing in on the flat end with your thumb will expose a small metal clip at the small end. when you release the pressure with your thumb the clip will recede back into the clip body. This clip needs to be attached to **pin 36 of the Gary chip or to pin 48 of the 68000 chip**. Make sure that the clip lead doesn't touch any other pins on the chip. Pin one on a chip is the pin to the left of the notch at the top of the chip. To count the pins you start at pin one and count in a counter clockwise direction from pin one around the chip.

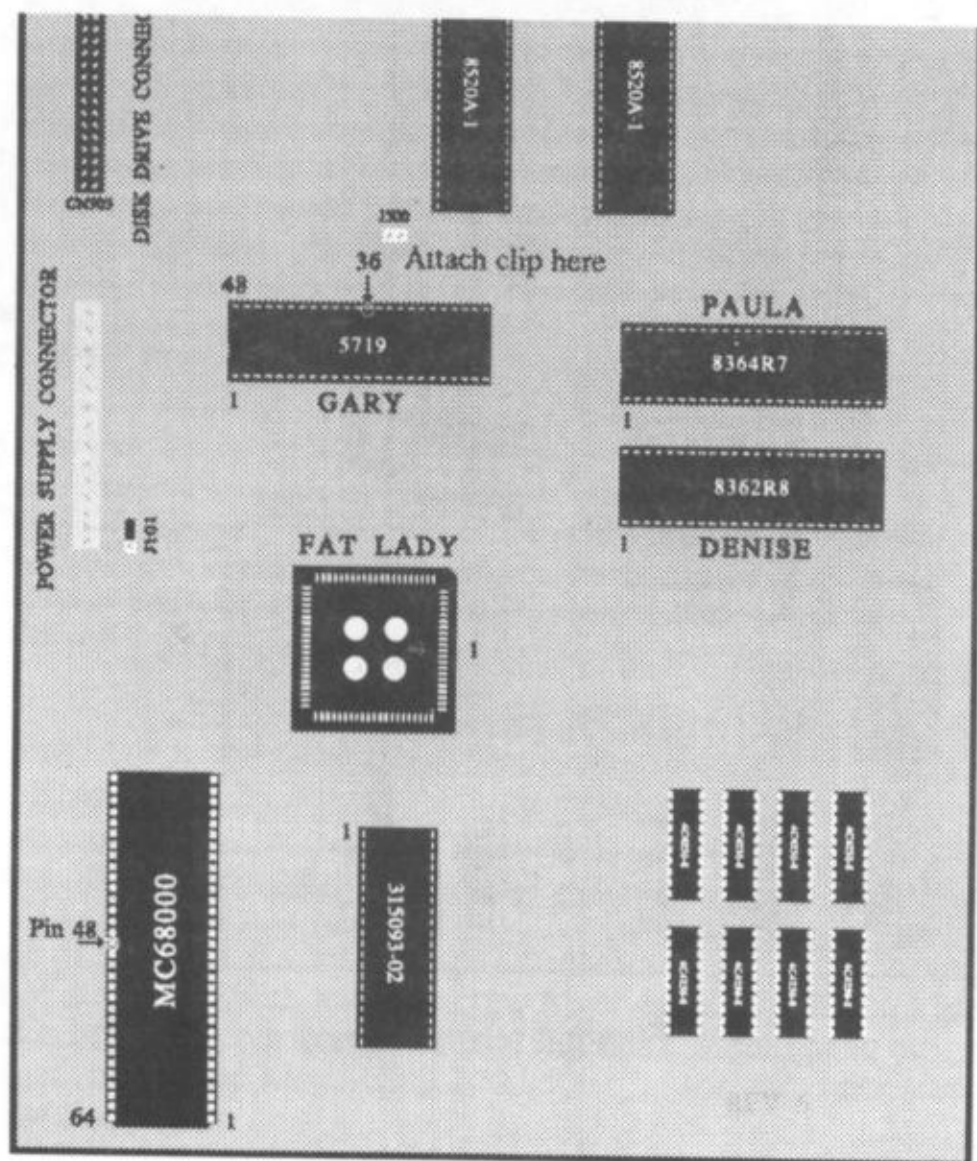


Figure 5

3. Installation in the Amiga® 2000.

Reassembling your Amiga®

Step 13:

Now you can begin to reassemble your Amiga® 2000. First, while holding the bracket assembly in one hand, you should reattach the ribbon cable(s) from the disk drive(s) to the mother board because these usually are under the bracket assembly. Now you can set the bracket assembly down in place. Now you should install the power supply cable to the mother board and the power cables to any peripherals that you have disconnected.

Step 14:

Now you should install the two or three screws in the front of the bracket and the four screws in the back of the power supply. Next replace the cover, install the five screws and connect the keyboard, mouse, power and peripheral cables.

Step 15:

Now turn your Amiga® on. When your system boots up open a shell and type "avail". You should see a number that is close to this - 2096128 for the maximum amount of Chip Ram available.

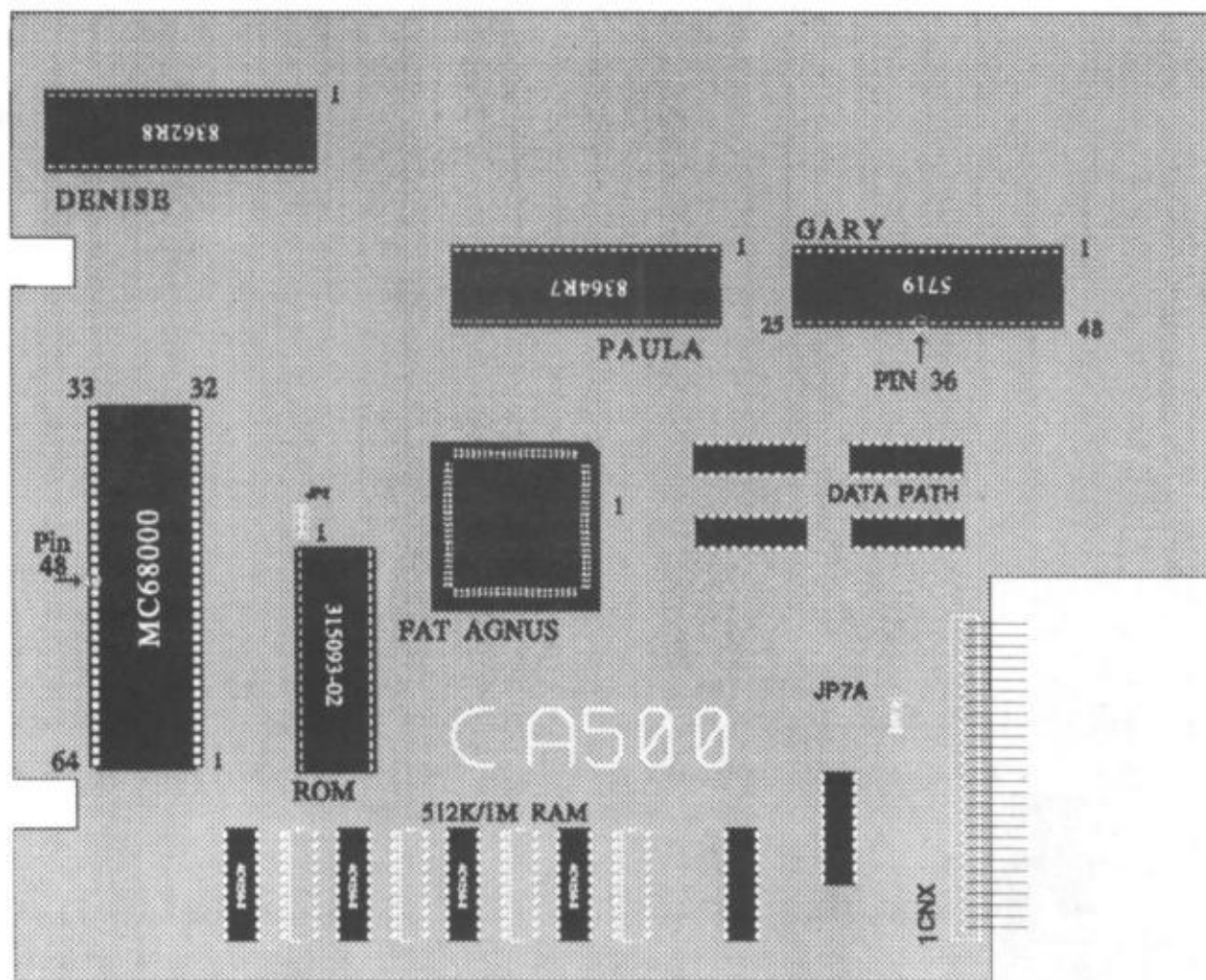


Figure 6

4. Installation in the Amiga® 500.

Disassembling Your Amiga® 500

Warning:

Unplug the Amiga® 500 before removing the cover or attempting to install the MegAChip 2000/500™. Installing the MegAChip 2000/500™ with the power on could cause possible damage the equipment. DKB Software will not be responsible for any damages caused by improper installation of the MegAChip 2000/500™. Such improper installation will void the warranties on both the MegAChip 2000/500™ and the Amiga®.

Step 1:

Remove the mouse, the power cord, and any peripherals connected to the rear or side of your computer. Carefully note the position and orientation of all connectors to simplify reassembly later.

Step 2:

Turn your computer upside down and remove the six Torx(T10) screws from the bottom housing.

Step 3:

Turn your computer right side up while holding the case together. The top cover snaps into the bottom cover at the center of each side of the computer, so remove the top by applying a slight pressure inward on the bottom cover, and an outward pressure on the top cover on each side of the computer. You can set the top cover aside.

Step 4:

Now you can remove the keyboard. First you need to remove keyboard connector from the motherboard that goes through the RF shield and the ground strap that is attached to the disk drive. Now you can lift up the keyboard and set it aside for now. Note the orientation of the keyboard cable for reassembly.

Step 5:

To remove the RF shield there are four Torx screws that need to be removed, two in the front and two on the left side by the expansion connector. There are four small tabs that are folded down on the top of the RF shield that need to be bent straight up. You can use a small flat blade screwdriver to bend up the tabs. Now remove the top RF shield and set it aside.

Removing the Agnus Chip

Step 6:

Now you have to remove the Agnus chip that is in your computer. This chip is located to the right of the 68000 chip on the mother board. The Agnus chip is labeled on the top of the chip as 8370 or 8372A and 318069-0x(1 or 2 etc.).

To remove the Agnus chip you need a special tool for pulling PLCC square chips (this tool is available for purchase from us). Do not try to pry the Agnus out of the socket with a small screwdriver as this could damage the socket on the motherboard of your computer (see figure 3). If you have not yet installed the Agnus chip on the MegAChip 2000/500™, then turn back to section 2, on page 2, and do so now.

4. Installation in the Amiga® 500.

Installing The MegAChip 2000/500™

Step 7:

Now you need the information that you got from the avail command before starting this installation. If your Amiga® currently has 512K of Chip Ram there are two very important steps that you need to do to make the MegAChip 2000/500™ work in your system. If your Amiga® currently has 1 Meg of Chip Ram then proceed to step 10 now.

Note :

The following two steps (8 and 9) are only for computers with 512K of Chip Ram. Skip this section if your computer has 1 Meg of Chip Ram.

Step 8:

You need to make two jumper changes on the mother board of your computer. The first one is jumper JP2, located next to the top left of the Kickstart ROM chip (U6). This is a three pin jumper pad with a trace connecting the two lower pads that you need to remove and connect the middle and upper pads. The trace connecting these two pads needs to be cut with an X-Acto knife to disconnect them. Be very careful when doing this so as not to cut any other traces on the mother board. Once you have cut this trace you will need to solder the middle pad to the top pad. (See Figure 7)

Step 9: For Revision 6A and 7 A500 Mother Boards

Next you will need to make another trace cut. On Rev 6A and up mother boards this is jumper JP7A which is a three pin jumper pad like JP2 with a trace connecting the two lower pads that you need to remove. The trace connecting these two pads needs to be cut with an X-Acto knife to disconnect them. Be very careful when doing this so as not to cut any other traces on the mother board. Once you have cut this trace you do not need to do anything else to this jumper. You are now ready to install your MegAChip 2000/500™ in your Amiga®. (See Figure 8)

Step 9a: For Revision 5 and lower A500 Mother Boards

On Rev 5 and lower mother boards there is no jumper JP7A. The trace that needs to be cut with an X-Acto knife runs vertically up along the CNX expansion connector where the A501 card plugs in from a solder pad. Be very careful when doing this so as not to cut any other traces on the mother board. You are now ready to install your MegAChip 2000/500™ in your Amiga®. (See Figure 7)

Step 10:

To install the MegAChip 2000/500™ in your computer you need to hold the board with the Agnus chip facing you and in the same orientation as it was in the computer. Holding the MegAChip 2000/500™ in your hand by the edge of the board, the adaptor plug on the MegAChip 2000/500™ should be to the front over the Agnus socket with the memory chips on the MegAChip 2000/500™ to the back on a Rev 6A mother board and on a Rev 5 the memory chips should be toward the right side of the mother board.

Now seat the adaptor in the Agnus socket and press firmly with your first two fingers. The adaptor should fit snugly into the Agnus socket (See Figure 9 & 10).

4. Installation in the Amiga® 500.

Step 11:

There is a Black Clip that needs to be attached. This clip is a spring action type. Hold it in your hand like you would a hypodermic needle or syringe, pushing in on the flat end with your thumb will expose a small metal clip at the small end. when you release the pressure with your thumb the clip will recede back into the clip body. This clip needs to be attached to **pin 36 of the Gary chip** or to **pin 48 of the 68000 chip**. Make sure that the clip lead doesn't touch any other pins on the chip. Pin one on a chip is the pin to the left of the notch at the top of the chip. To count the pins you start at pin one and count in a counter clockwise direction from pin one around the chip.

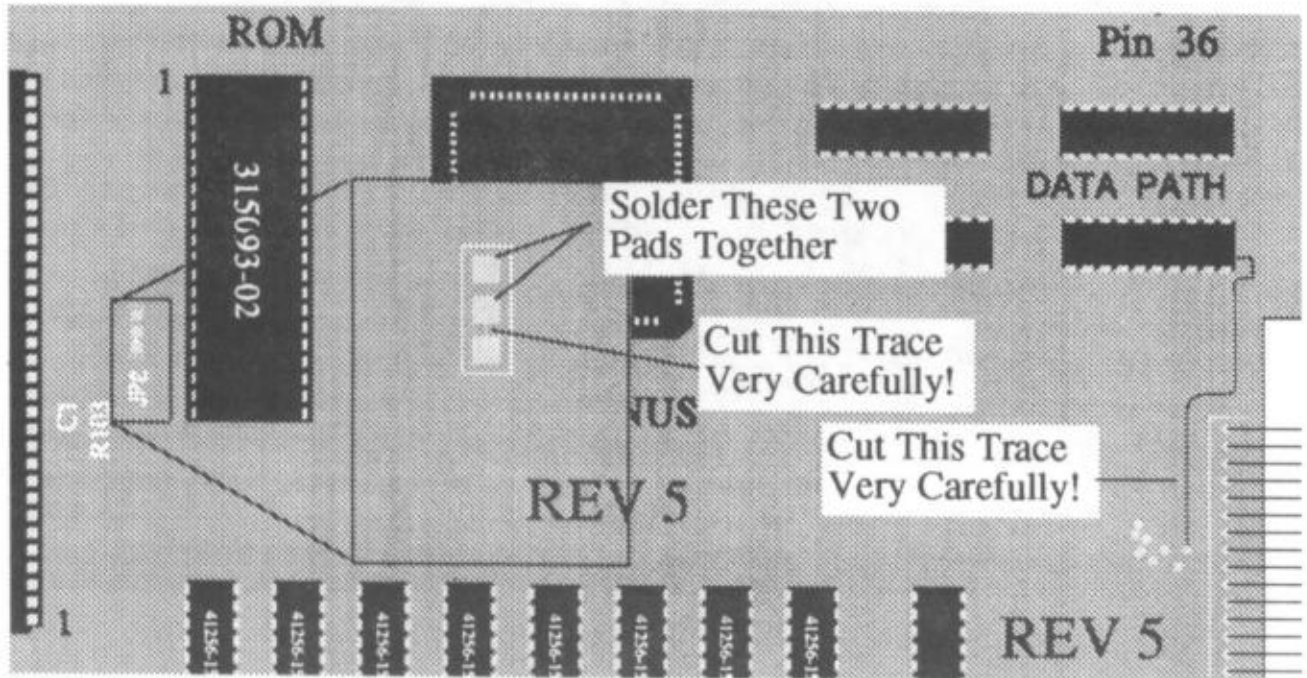


Figure 7

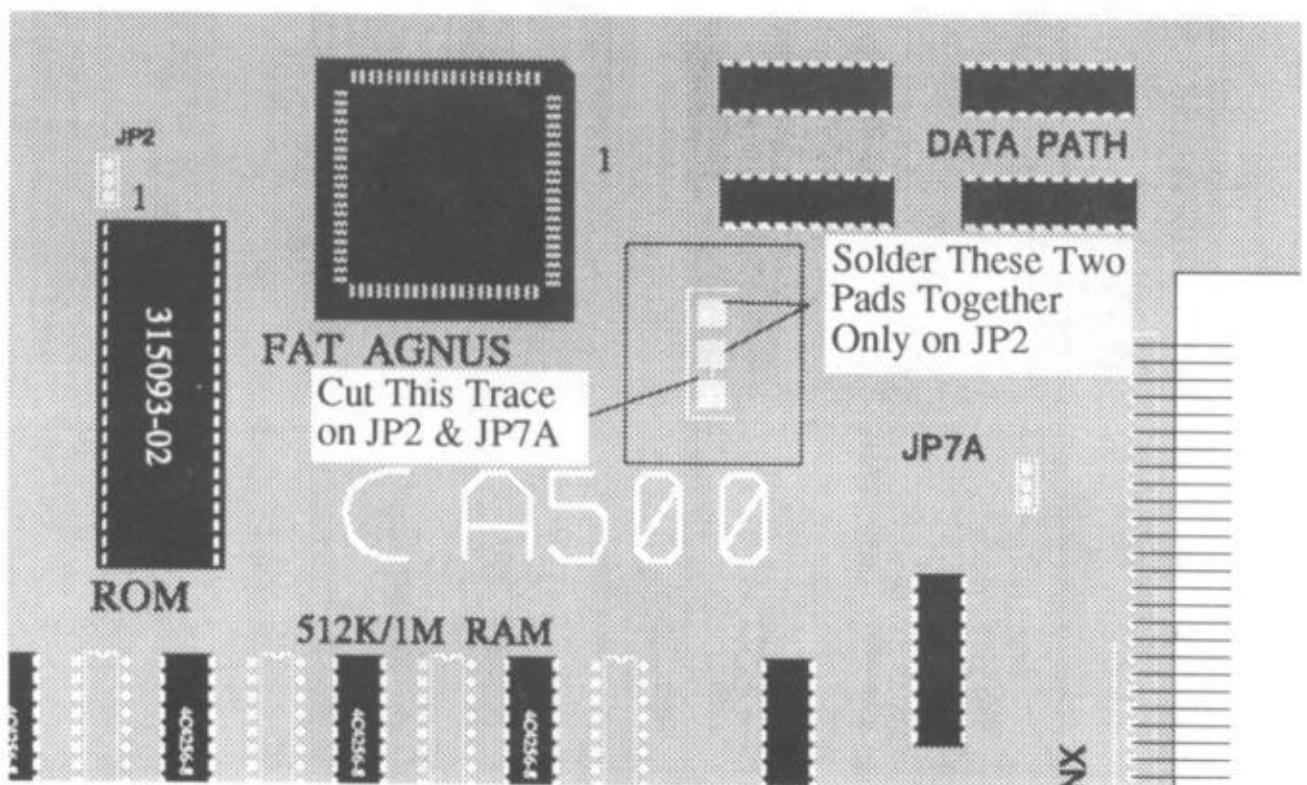


Figure 8

4. Installation in the Amiga® 500.

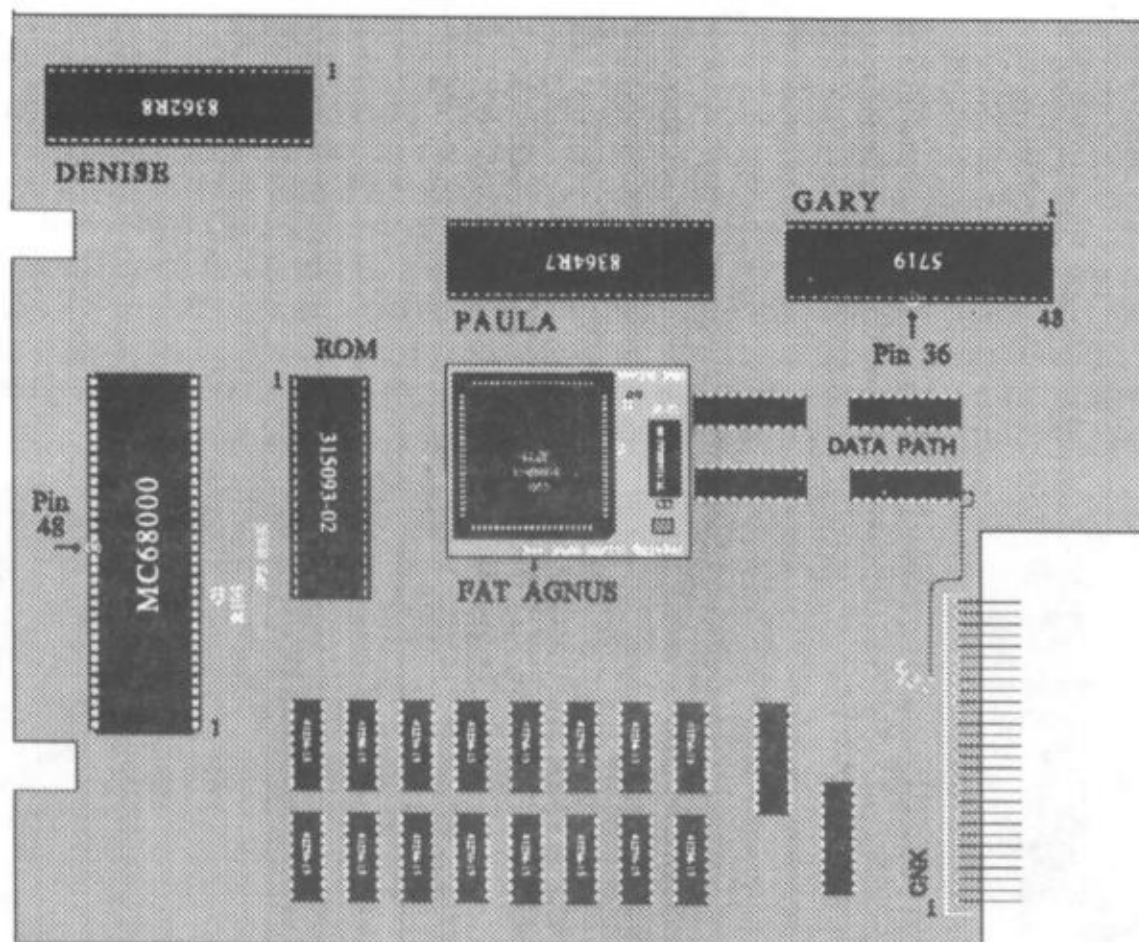


Figure 9

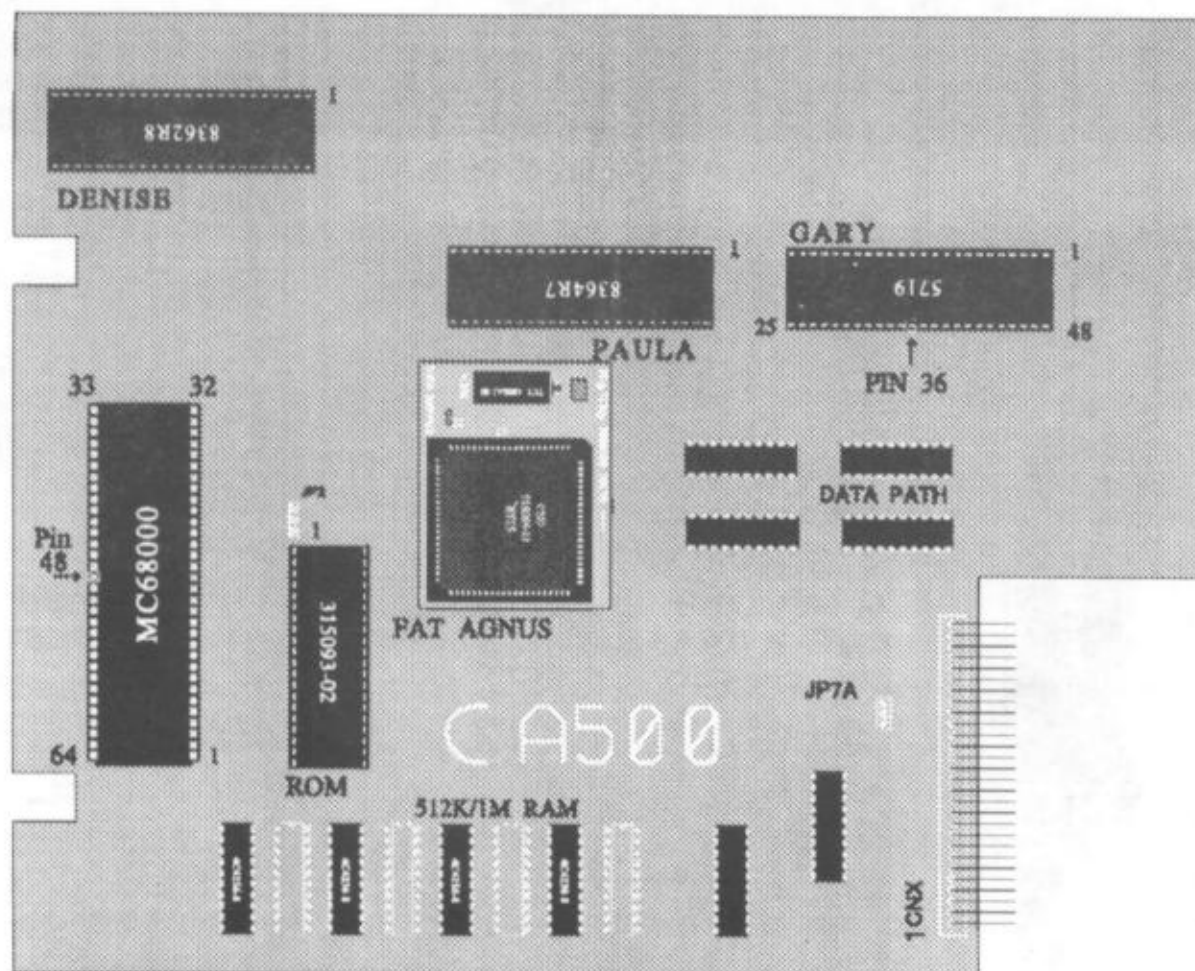


Figure 10

4. Installation in the Amiga® 500.

Reassembling Your Amiga®

Step 12:

Check over your work!

Are the traces cut completely ?

Are all of the chips that you installed in the correct orientation ?

Are all of the pins on the chips in the socket correctly ?

Do you have the clip from the MegAChip 2000/500™ attached to the right pin ?

Is the MegAChip 2000/500™ firmly in its socket ?

If your computer only shows 1 MB of Chip Ram check that the black clip is on the correct pin.

Step 13:

Now you can begin to reassemble your Amiga®. Reinstall the RF shield into your computer with the four Torx screws and fold over the small metal tabs. Don't forget to install the small grounding shield over the expansion port.

Step 14:

Now slide the keyboard back into place and hook up the ground strap at the disk drive and the keyboard cable to the motherboard. The black wire on the cable should be on your right.

Step 15:

Next place the top cover on your computer, be careful to align the power and drive lights in the holes in the cover. Hold the case together and turn the Amiga® over and reinstall the six Torx screws in the bottom case.

Step 16:

Now you can set your system back up. Connect your power and monitor cables and any other peripherals to your computer.

Step 17:

Now turn your Amiga® on. When your system boots up open a shell and type "avail". You should see a number that is close to this - 2096128 for the maximum amount of Chip Ram available.

5. Trouble Shooting Section.

If your computer doesn't boot up, turn off the power and recheck all your work.

Check that the power cables to the mother board and any peripherals are attached properly.

Make sure that the MegAChip 2000/500™ is seated properly in the Agnus socket.

Check that the microclip is on the correct pin and not touching any other pins. If your system comes up showing the wrong amount of Chip Ram the Microclip may be connected to the wrong pin or one of the jumper/trace cuts is not correct. Make sure that you followed the correct steps for changing the jumpers on the mother board.

Make sure that you installed the new Agnus in the MegAChip 2000/500™ with the correct orientation.

If you have a revision 4.x A2000 motherboard and an accelerator installed in your system and you experience problems booting up or random gurus you may need to install a 100 picofarad capacitor at location C905 on your motherboard as this is probably missing.

The MegAChip 2000/500 will not work in an A500 with a ram expansion board in the A501 slot that takes more than 512K of Ram. These type of Ram boards are not true Fast Ram and use Chip Ram addressing to operate.

If you have any problems during this installation, do not hesitate to call us. Even if it is just a simple question to help clear something up.

Our phone number is 313-960-8750

We will try to find a solution to any problem that you might experience.

Removing the Agnus Chip With Tool

To remove the Agnus chip with the **correct tool** you need to insert the ends of the tool into the two slotted corners of the Agnus socket. With the tool in the socket grasp the bottom of the tool to hold the tool in against the Agnus chip with one hand. With the other hand grasp the tool in the center grips and squeeze while **very gently** rocking the tool back and forth to pull the Agnus chip out of the socket.

Products By DKB Software

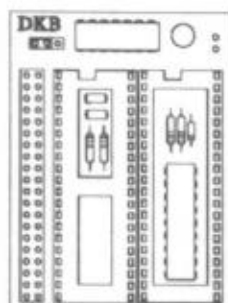
SecureKey™ **System Security for Your Amiga®** **A2000 and A3000**

The First Security Access Device for the Amiga Computer.

Do you need to keep your system safe from unauthorized use? Want to make sure that no one can delete your files from your harddrive or steal your work? Then you need the SecureKey, a hardware security device that you have one security code for. The SecureKey will not allow access to your computer without the right security code, period. You can't boot off of a floppy or bypass it in any manner. This means that if your system has files such as animations, documents, presentations, C-code, or any type of confidential information you can be assured that your harddrive is safe from those that may otherwise unknowingly destroy your information.

MultiStart II™ **for the A500, A600 and A2000** **Install Kickstart™ V2.0 & V1.3 ROMs**

Allows A500, A600 and A2000 owners to install Kickstart V1.3 and V2.0 Roms and switch between them with the keyboard. Lets you stay compatible with your software. No external wires or switches required. Comes with 10" ribbon cable.

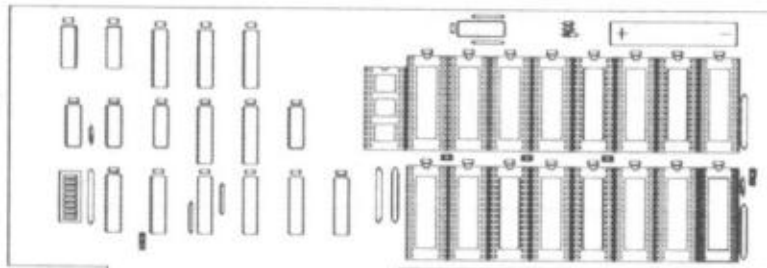


Retail Price \$ 39.95 w/o Roms

The BattDisk™ **Battery Backed Static RamDisk**

Super fast Static Ram Disk for the A2000 & A3000. Operates as a silicon hard disk. The BattDisk™ will survive a warm boot or power down. Anything that you have saved on your BattDisk™ will still be there when you power up. Can be used to autoboot your system. Allows you to have up to a 2Meg RamDisk without using any of your Fast Ram. Easily expandable in 64K or 256K increments to 2 Meg. Excellent for working with Multimedia or Video

Graphics where you need fast access to files. Data transfer rates up to 2.7 Meg per second. Also can be hardware or software write protected. Programmers - Keep your source code in a fast, guru safe, Static Ram.



Retail Price \$ 229.95 w/ØK

Contact your local dealer or call for more information.

All Products come with a Full One Year Warranty.

Products By DKB Software

Insider II™ 1.5 Meg in the A1000

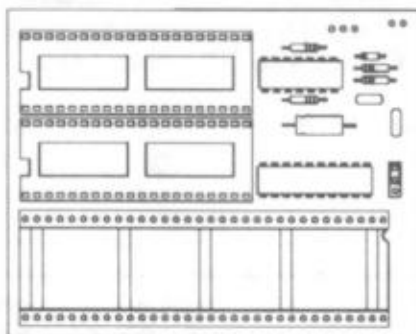
From the maker of the first internal Ram board for the Amiga 1000, the original Insider™ by DKB Software. Allows A1000 owners to add up to 1.5 Meg of Fast Ram internally. User expandable in 512K increments using 256K x 4 Drams. Includes battery backed clock/calendar. Comes with software for the clock and testing ram. Simple installation, no soldering required. The Insider II™ is compatible with the KwikStart™ Rom board. The Insider II™ is also compatible with the AdSpeed board.



Retail Price \$ 199.95 w/ØK

KwikStart II™ for the A1000 Install Kickstart™ V2.0 and V1.3 ROMs In Your Amiga® 1000

Allows A1000 owners to install Kickstart™ V2.0 and V1.3 Rom's. Keyboard switchable between the two ROMs or between one ROM and disk based Kickstart™. Upgrade to the latest operating system and still be able to use your older software. The best way to upgrade to Workbench™ V2.0 for the Amiga® A1000.



Retail Price \$ 69.95 w/o Rom's

A1000 Keyboard Adaptor

Allows Amiga 1000 owners to upgrade to the Amiga 2000 keyboard. Simply plug adaptor into the keyboard connector in the back of the A1000 and you can install the Amiga 2000 keyboard.

Retail Price \$ 19.95

All Products come with a
Full One Year Warranty.

Contact your local dealer or call for more information.

WARRANTY

For a period of One Year from the date of purchase to the original purchaser, DKB Software warrants that the equipment shall remain free of manufacturing defects.

The Equipment, when possible, is tested in all its normal operating modes prior to delivery or shipment.

If a defect should occur during the first year, the unit must be returned to DKB Software along with a sales receipt for repair.

The purchaser's sole and exclusive remedy in the event of a defect is limited to the correction of the defect by adjustment, repair, or replacement at DKB Software's discretion and expense.

DKB Software shall have no responsibility for shipping expenses to or from the repair station.

This warranty is voided if the equipment has been altered or modified, or if the equipment is subjected to improper or abnormal use.

We are not responsible for any damage caused by or derived from the installation of this hardware product.

Except as specifically provided in this warranty there are no other warranties, express or implied, including, but not limited to, any implied warranties or merchantability or fitness for a particular purpose. In no event shall DKB Software be liable for loss of profits or benefits, indirect, special, consequential or other similar damages arising out of any breach of this warranty or otherwise.



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