These installation instructions describe the installation of the Stardos system into your disk drive and computer. If your Stardos was installed by your dealer, then skip this section.

The procedure is very simple and quick, no special tools are required, no permanent changes are made to the computer or the disk drive and there is little or no chance of damage to your system if reasonable care is taken. So follow these simple steps for installation and enjoy your Stardos!

Note: If your equipment is still covered under warranty (90 days from purchase typically) or if you are unwilling, unable or to timid to open your computer, your local computer outlet may be able to install your Stardos for a minimal fee.

1541 Disk Drive Installation

1. Remove all cables, connectors and attachments from your disk drive. Place it up-side-down on a well-lit table. Within reach place a dish so all those little screws that like so much to get lost, won't.

2. Locate, remove and place in your dish the four corner screws from the disk drive.

3. Turn the drive right-side-up and remove the plastic top case.

4. Look on the side of the drive; you should see two small screws holding a metal cover. Remove these and place them in the dish. Place the metal cover out of the way.

5. Locate the microprocessor chip (it is one of the large 40 pin chips on the board and should have the number 6502 or 6502MOS or CBM6502 or the like printed on the top); note the direction the chip is facing in relation to the front of the drive. The chip must be gently removed using a kitchen butter knife, flat-head screwdriver or some other implement. DON'T pry up the chip ALL THE WAY on one side, this will almost certainly bend the pins on the other side! The safest technique is to pry up a little on one end, then pry up a little on the other end. Repeat this until the chip is removed. If there are any capacitors (round ceramic discs) in your way, feel free to bend them a bit as it will not hurt them.

6. Remove the Stardos drive board from your package. Orientate the board so that it looks like Diagram #1.

7. Examine the 6502 you have removed. You will notice that the 6502 has a small notch, dimple, indent, or something at one end. Orientate the 6502 over the large (40-pin), empty socket on the Stardos drive board so that it matches diagram-2. The notch will be facing the opposite direction of the notch on the 28 pin ROM chip. Press the 6502 firmly into the socket, being careful not to bend any pins.

There will be another empty 28 pin socket on the Stardos drive

board. This socket is for future expansion, and enhancements to Stardos.

8. Now take the Stardos drive board and plug it into the disk drive socket where the 6502 was. The 6502 (now on the Stardos board) should be pointing in the same dirrection as when you removed it (diagram-3). Be sure not to bend or misalign any pins as you press the board in place.

9. Put the metal cover back on and install the screws. The cover may press on the top of the Stardos board when installed. If it does, it will not cause a problem and in most cases will help the drive stay cooler.

10. Put the plastic drive cover on. Turn the drive over and put the Screws back in. Do not over-tighten the screws.

ALL DONE! You are now all done with the drive installation. Before continuing with the computer installation, you may want to power-up the drive and see that all systems are go. The drive should still work normally (slow) even without the cartridge plugged in to the computer.

Computer Installation for C-64 and C-128

In many cases, no installation in the computer is required; simply turn the computer off and plug the cartridge into the cartridge slot in the back of the computer and enjoy your Stardos. If an application requires all 64K of the computer's memory (memory under KERNAL) and you would like to use the features of Stardos while running it, you will need to follow the quick and simple installation procedure outlined below.

We highly recommend going to the little extra effort to complete the installation that follows as many commercial programs will not function with out the KERNAL clip. It is not hard at all and will take about 3 or 4 minutes.

1. Remove all cables, connectors, etc. from your computer, and place it up-side-down on your work table.

2. Remove the screws to the plastic case, and place them in a dish.

3. Turn the computer face-up and with the spacebar towards you.

4. Lift keyboard half up and disconnect the power light connector and the keyboard connector. Place the keyboard off to the side.

5. Most C-64 computers will have a silver cardboard cover on the main board; remove the tape on the cover and lift up. Some C-64s and all C-128s will have a metal cover over the top of the board; remove the screws that hold this cover in place and put them in the dish. Remove the cover. If a bit of solder holds down on side of the cover, do not remove the solder but simply lift the cover off to that side

6. Locate the main microprocessor. On a C-64 this chip is the 6510 it may be labeled 6510CBM, 6510MOS or something similar. On a C-128 this chip is the 8502.

7. Connect the clip wire that came with your Stardos package to pin 28 of the main microprocessor (see diagram-4). The most effective way to do this is to depress the clip button and hold the clip vertical to the computer board with the hook extended toward the chip. Turn the hook to grab pin 28 as you release the clip button. You may want to put a piece of tape across the clip to prevent the clip from coming off of the chip pin while you reassemble the computer. Double check your work.

8. To give the wire some additional stress relief, the wire should be tied to some sturdy part of the inside of the computer. On a C64, the fuse holder works great. Remove the fuse and tie the wire around the fuse holder so that about four inches of wire will extend beyond the cartridge port, and the rest of the wire is slack between the holder and the clip. On the C128, Use the large plastic post in the center of the board as there is no fuse holder.

9. Replace the internal cover of the pc board if there was one.

10. Place the keyboard back on top of the base. Reconnect the power light and the keyboard connector, making sure not to misalign or bend any pins.

11. Turn the computer over and put the screws back in. Be sure not to over-tighten the screws.

12. Plug the Stardos cartridge into the computer, and plug the jack on the end of the wire into the small hole on the left side of the cartridge.

That's it! Reconnect power and disk drive cables, and turn it on. When the computer comes on, the power-up message should indicate that Stardos is enabled.
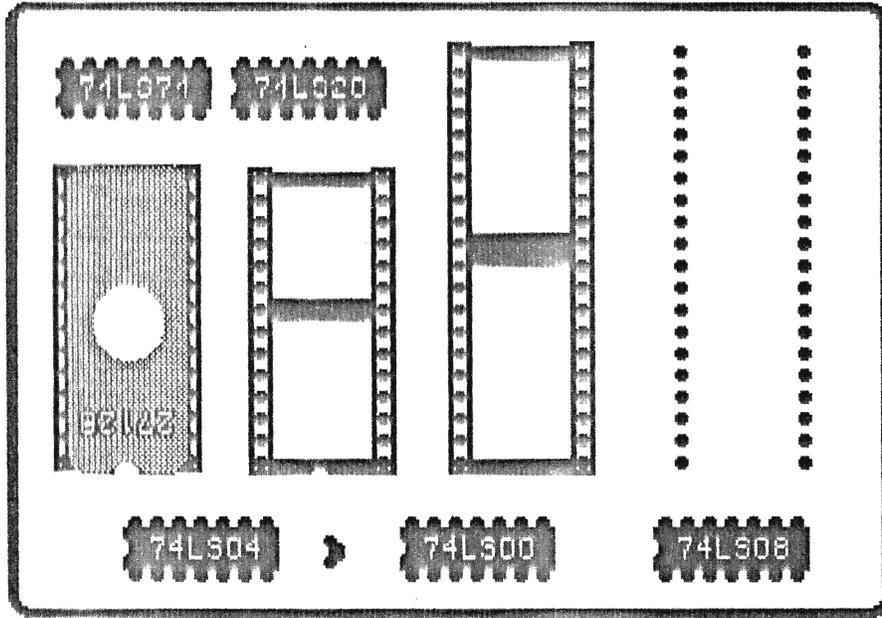
Trouble Shooting: If the machine will not come on or if some commercial programs will not work check that the clip is properly attached to the correct pin on the microprocessor, and the wire's plug is inserted into the cartridge.

Special note for C-128 users: The Stardos system is intended for use in 64 mode only. To enter 64 mode, hold down the C= key during power-on or reset. If you wish to use 128-mode or CP/M mode, simply remove the cartridge from the back of the C-128; your C-128 should now work normally.

If all else fails, give us a ring on the technical support line listed below, we would be glad to give you a hand.
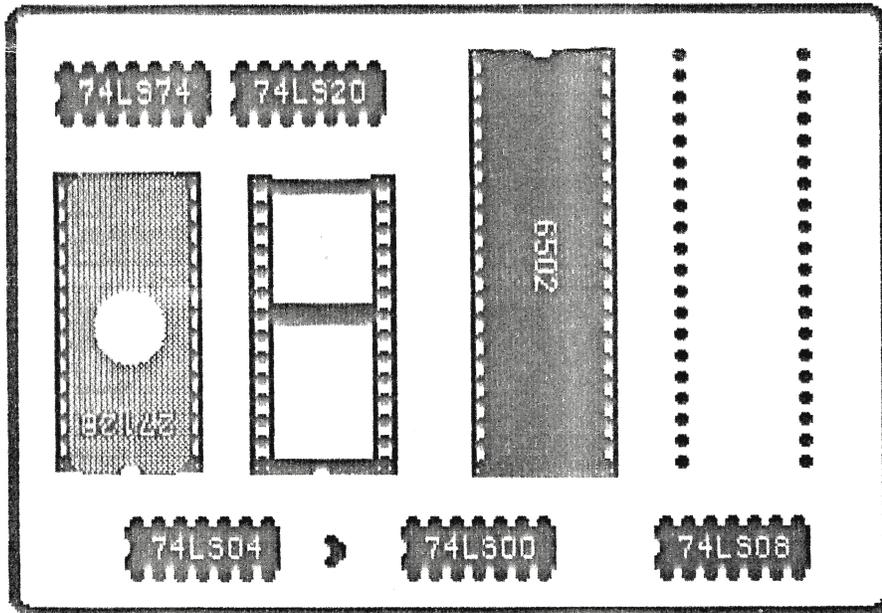
Starpoint Software/Labs
6013 Macks Gulch Rd.
Gazelle, Ca 96034
(916) 435-2373

74LS74 74LS20

27128

74LS04 74LS00 74LS08

Ye Olde Diagram #1

74LS74 74LS20

27128

6502

74LS04 74LS00 74LS08

Like Diagram #2, Dude!
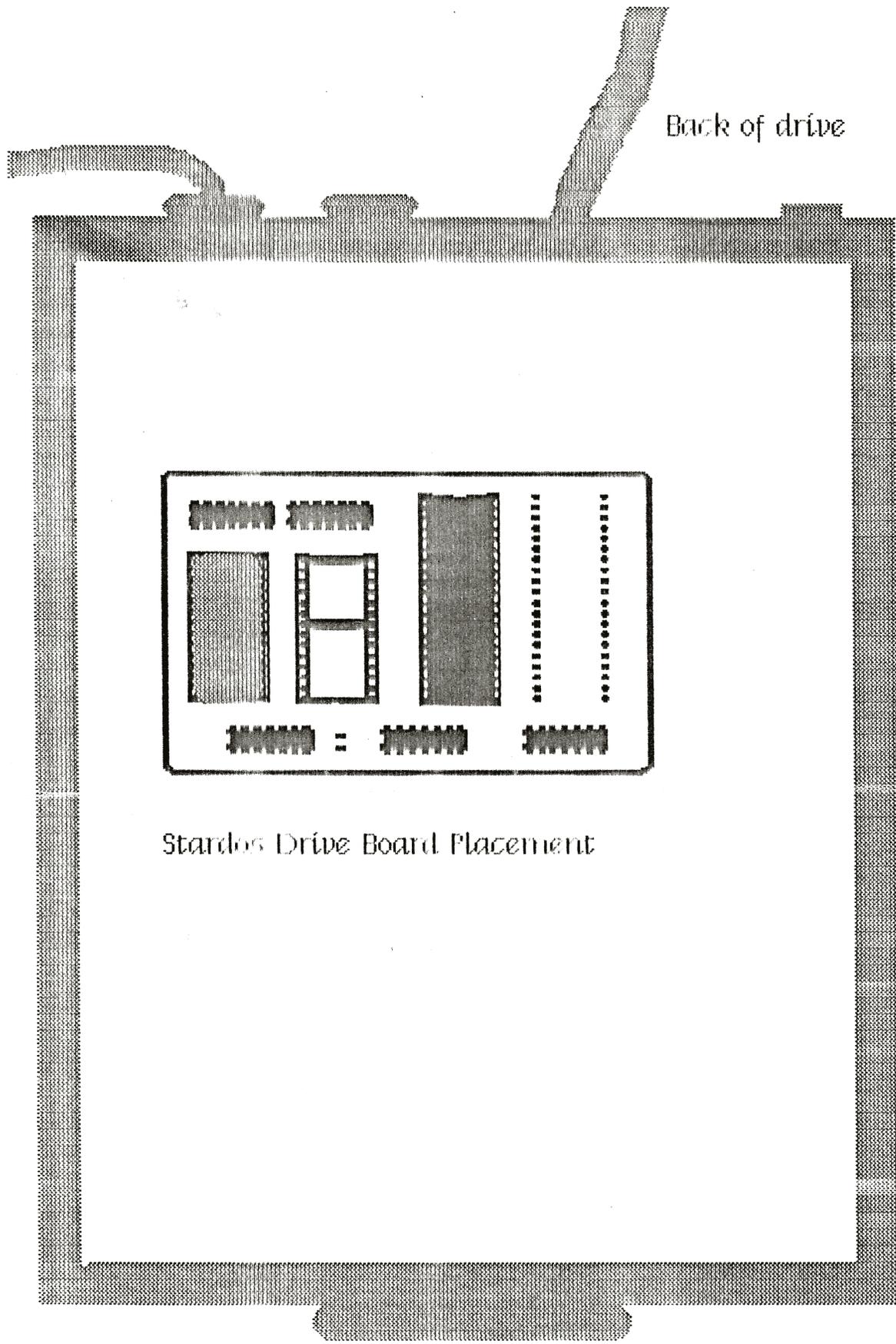
Back of drive

Stardos Drive Board Placement

Front of drive

Extra! Extra! Diagram #3

Notch or indent reference.

Pin 1 ———————— Pin 40

Pin 28

Pin 20 ———————— Pin 21

ACHTUNG! DAS DIAGRAM #4
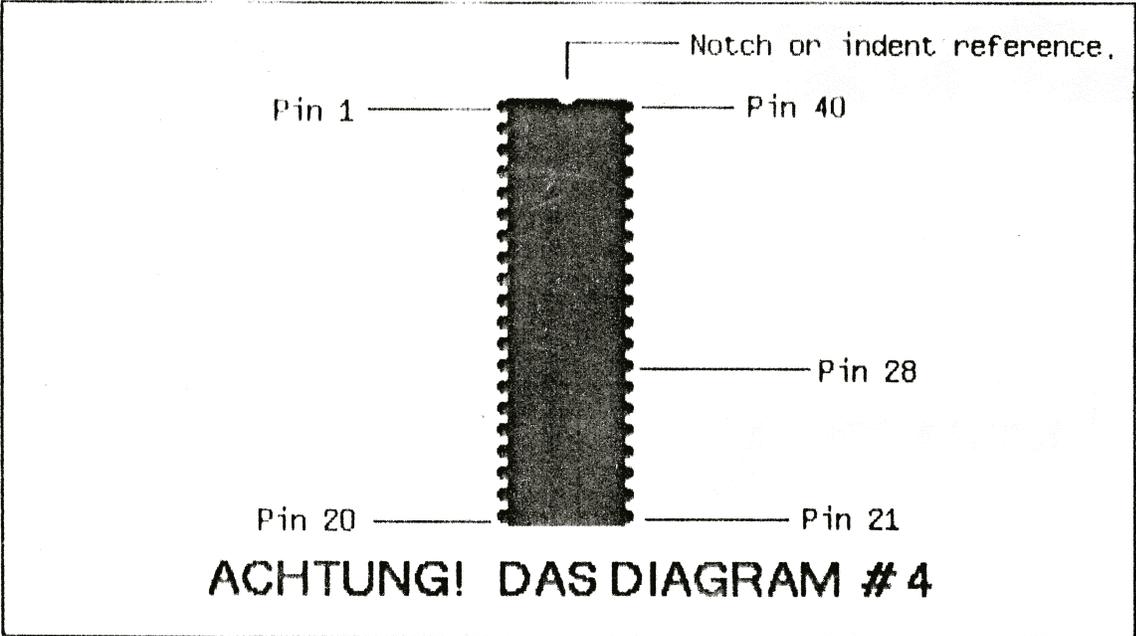
Anatomy of a microprocessor -- 6510 on a C-64 or 8502 on a C-128