

BACKPLANE INSTALLATION LEAFLET

For use with the Archimedes High Performance Computer System

Any Podule is installed by plugging it into an adapter, inside the Archimedes, called the 'backplane'. This leaflet describes how to install the backplane as well as a cooling fan which is included with the kit. It is essential that the fan is fitted at the same time as the backplane to ensure that the machine remains within its specified operating temperature range.

The backplane fitting kit should contain the following parts.

For the backplane:

- 1 backplane PCB
- 1 mounting bar
- 2 hexagonal plastic spacers
- 4 self-tapping screws to fit the spacers
- 2 straight screws to locate the mounting bar
- 1 tie-wrap

For the fan assembly:

- 1 fan unit
- 1 filter clamp
- 1 fan filter
- 4 bolts and 6 nuts to locate the fan and filter

If any of these parts is missing then consult your supplier.

Fitting the backplane necessitates removing the lid of the Archimedes. The only tools required to do this are a medium Posidriv screwdriver (which is also needed to locate the mounting bar, the backplane PCB and the fan unit) and a M4 spanner. If you are not confident of fitting the backplane yourself, then please take your Archimedes and the backplane fitting kit to your dealer who will fit it for you.

WARNING

Ensure that the Archimedes is switched off at the rear and that the mains supply cable is disconnected from the mains before removing any covers.

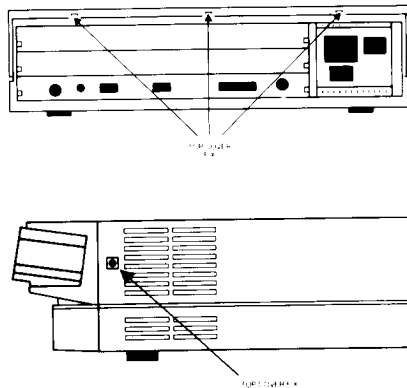
Under normal operation, hazardous voltages exist in the power supply unit. Do not push, dangle or drop objects through the ventilation holes of the PSU case.

If for any reason, the PSU is removed from the casework, then on reassembly, the system should be tested for satisfactory safety earth continuity as detailed in the *Archimedes Service manual*.

DISASSEMBLY

First, make sure that the Archimedes is disconnected from the mains by unplugging the power supply cable, and remove any peripherals (including the keyboard) that are attached. Clear the Archimedes completely, that is, remove any monitor from on top and any other loose items.

The top case is held by three screws at the top rear of the unit and one screw on each side of the unit. These must be removed. The position of these screws are shown in figure 1.



The position of the screws holding the top case

Figure 1

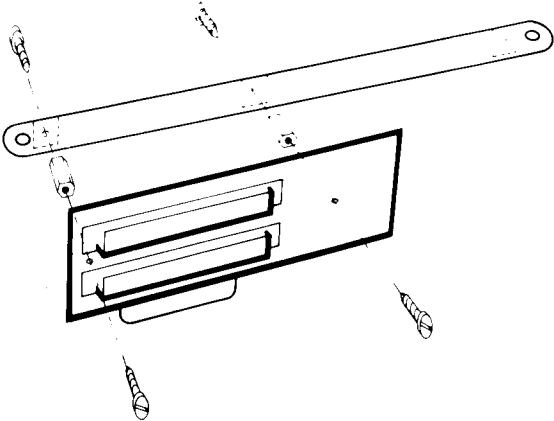
Once you have removed the five screws, the lid of the unit will slide back and off. Remove the lid from the unit completely.

The backplane can now be fitted.

FITTING THE BACKPLANE

The first task is to affix the backplane PCB to the backplane mounting bar using the hexagonal plastic spacers and the four self-tapping screws.

It is vital to get the PCB and the mounting bar in correct relation to one another, and to use the correct two holes in the mounting bar. (See figure 2.)



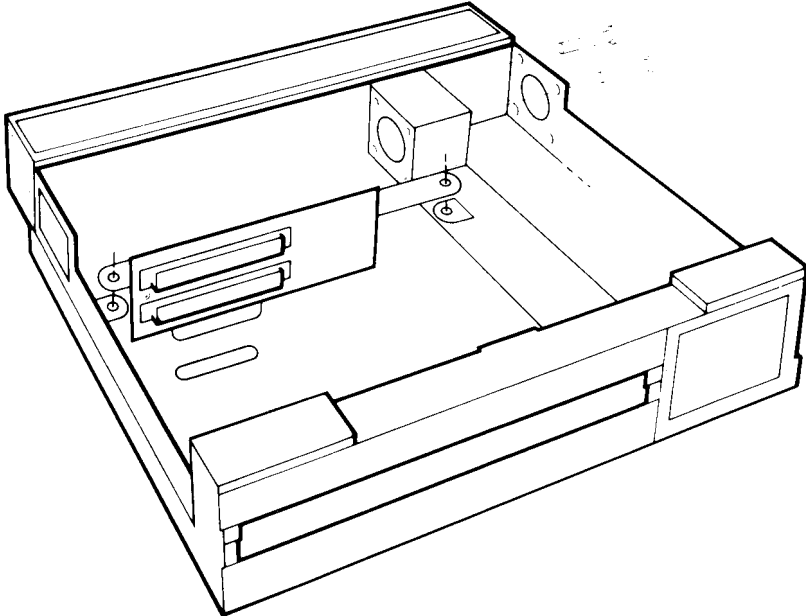
The correct relation of the mounting bar and the backplane PCB
Figure 2

Following figure 2, use four self-tapping screws and the two hexagonal plastic spacers to mount the PCB on the bar. Tighten the screws until the assembly becomes a firm unit with no play.

On the Archimedes, there is a bunch of cables and connectors tie-wrapped to the side of the power supply unit. Some of these cables are needed to power the back-plane, so cut the tie-wrap using a pair of scissors. Take care not to cut or damage any of the cables themselves.

The backplane mounting bar is located on two flanges. One is located on the power supply unit near to where the cables were tie-wrapped. The other flange is located on the opposite side of the unit. (See figure 3.)

Next, take the backplane PCB attached to its mounting bar and, with the mounting bar nearest the front of the Archimedes, plug the connector on the backplane into the connector on the Archimedes PCB. As you do this, ensure that the connector is aligned correctly and do not use any excessive force. If it is difficult to plug in, then it is not aligned correctly, so remove it and start again. Be careful that the mounting bar does not snag on any of the cables that you have just freed. All the cables must be loose and in front of the mounting bar. (See figure 3.)



The backplane and fan assembly mounting points

Figure 3

When the backplane is located on the Archimedes PCB, the backplane mounting bar should line up fairly closely with the flanges on the Archimedes. Use the two straight screws supplied and gently manipulate the Archimedes lower case and the backplane mounting bar until they locate through the bar and into the holes below. Tighten up the screws in such a position as the backplane PCB is as near vertical as possible. The holes in the backplane mounting bar are oval for this purpose.

Take the black single wire from the bunch that was freed and connect it to the tag on the backplane PCB labelled OV.

Take the red single wire and connect it to the tag on the backplane PCB labelled +5V.

Take the yellow single wire and connect it to the tag on the backplane PCB labelled +12V.

If a hard disc drive is already fitted to the Archimedes then the installation of the backplane is now complete.

If a hard disc drive is not fitted then the power supply cable used for it is still hanging free. This cable, which has a large plastic-covered connector on the end, must be tied out of harm's way to the backplane mounting bar using the new de-wrap supplied. Make sure that there is no way that the live pins in the connector can come into contact with any surface in the Archimedes, such as the power supply unit, or the PCB, or the backplane mounting bar itself.

The backplane unit is now installed.

FITTING THE FAN ASSEMBLY

The fan assembly locates on the left side of the Archimedes, just in front of the power supply unit. There are four holes in the case arranged in a square pattern. The fan assembly locates on four bolts through these holes. (See figure 3.)

First, examine the fan unit itself. There are two arrows inscribed on its case, one showing the direction of rotation, and one showing the direction of airflow. The arrow indicating the direction of airflow must point into the Archimedes case when the fan is installed.

Take the four bolts and insert them, from the outside, into the four holes. Place one hand over all four bolt heads to stop them from being pushed out.

Take the fan unit and, ensuring that it is the correct way round as described above, pass its mounting holes over the four bolts which protrude into the case.

Put a nut on each bolt, and, holding each nut in turn with one hand, use the Posidriv screwdriver to tighten the bolt from the outside.

Next, take the fan filter and pass it over the four bolts, being careful not to tear it. Locate the filter so that the nuts fit through the cutouts and the filter is flush against the face of the fan.

Take the filter clamp and pass this over the four bolts. Fit the two remaining nuts on to the top right and bottom left bolts (as viewed from inside the machine). Tighten the nuts, using an M4 spanner. Be careful not to trap the filter material between the filter clamp and the four fan-fixing nuts.

Finally, plug the power supply connector from the fan lead on to the connector labelled PL 12 on the Archimedes PCB. This connector will only engage correctly one way round.

The fan assembly is now installed.

REASSEMBLY

Once the backplane and fan unit are correctly installed, slide the top case of the Archimedes on from the rear, making sure that it is correctly located in the two slots, one on each side of the lower case.

First replace the three screws at the rear of the unit and tighten them up. (See figure 1.)

Finally replace the two screws, one on each side of the case and tighten them up. (See figure 1.)

REPLACING THE FAN FILTER

To replace the fan filter, proceed as follows:

- undo the two M4 nuts retaining the filter clamp
- remove the clamp and filter
- replace the filter with a new one
- refit the clamp and the two M4 nuts

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