Quiet Power™

FS20-H20 series
Liquid cooled case

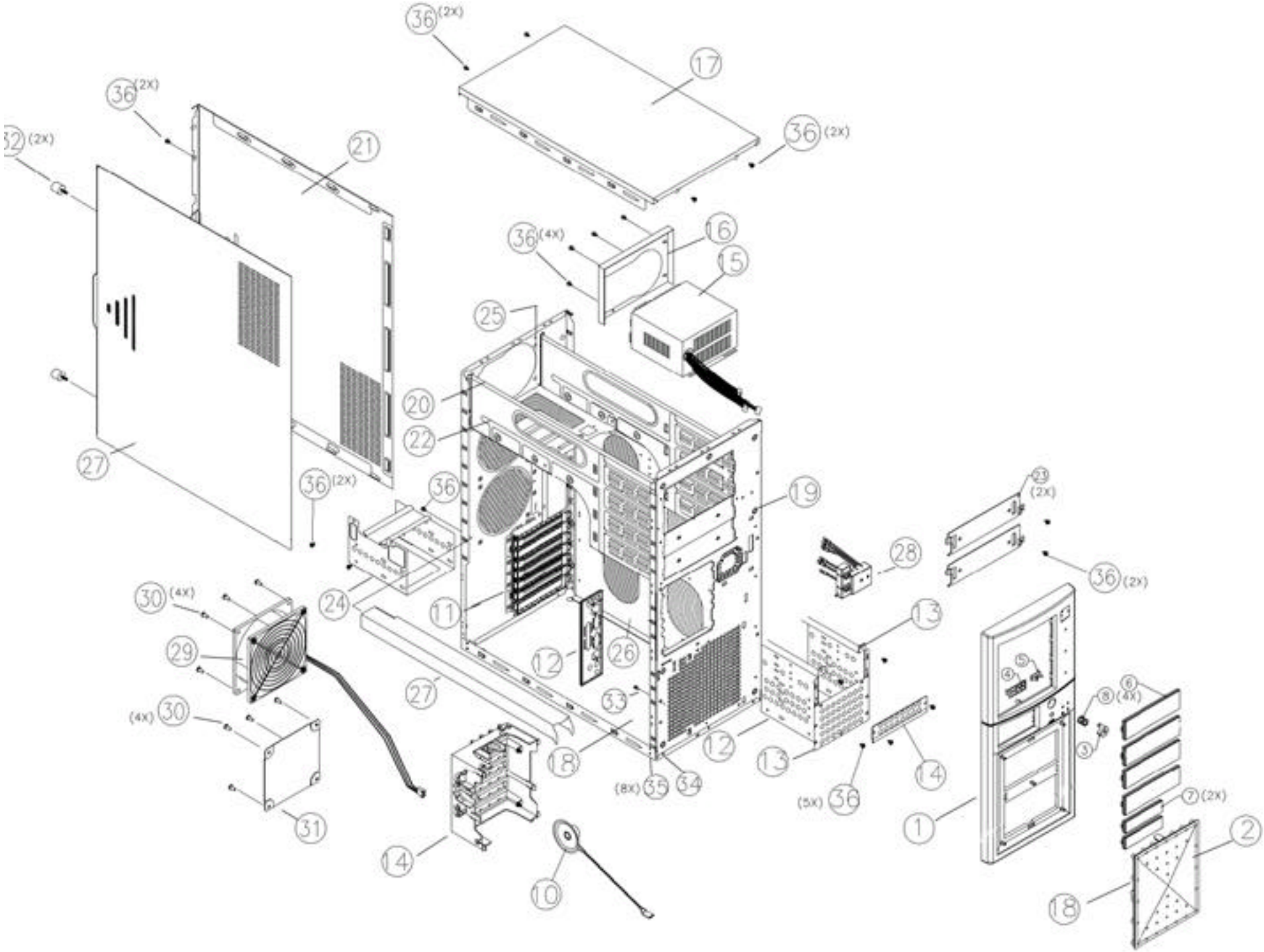
Installation guide

Table of contents

Case parts nomenclature

NO	PARTS	PS
1	BEZEL, FRONT	1
2	BEZEL, FRONT, SUB	1
3	BUTTON, POWER	1
4	BUTTON, RESET	1
5	LENS	1
6	COVER, 5.25 FDD	4
7	COVER, 3.5 FDD	2
8	SPRING	1
9	PLATE, CAGE, 5.25	2
10	SPEAKER	1
11	BULKHEAD ASSY	1
12	SHIELD, I/O	1
13	CAGE, 3.5 ASSY	1
14	CARDGUIDE	1
15	POWER SUPPLY	1
16	BRACKET, P/S	1
17	COVER, TOP	1
18	CHASSIS, BOTTOM	1

NO	PARTS	PS
19	PANEL, FRONT	1
20	PANEL, REAR	1
21	SIDE, PANEL	2
22	CAGE, 5.25	1
23	FILLER TOP 3.5	1
24	BRACKET, HDD	1
25	SLIDE BRACKET P/S	1
26	BASE, M/B	1
27	CROSS BAR	1
28	BRACKET, LED ASSY	1
29	FAN 120MM	1
30	SNAP RIVET	8
31	SHIELD	1
32	THUMB SCREW	2
33	SCREW	1
34	RIVET, ALUMINUM	49
35	RIVET-SUS	8
36	SCREW	20
37	MEMORY BOARD CROSS BAR	1


36 (2X)
17
36 (2X)
36 (2X)
21
32 (2X)
36 (4X)
6
5
25
20
22
27
36 (2X)
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29 (2X)
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36 (2X)
24
11
12
26
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30 (4X)
29
27
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18
(8X) 35
34
12
13
14
(5X) 36
1
8
9 (4X)
3
7 (2X)
2
18
(4X) 30
31
14
10

BEFORE YOU BEGIN!

Components installation

1. Open the side-panel #21 by loosening thumb screws #32
2. Remove the main cross bar #27.
3. A special memory board cross bar (#37) specific to server applications is provided with the lose parts. It is not shown in the schematic above, and can be safely discarded in most consumer applications.
4. Loosen screw #33, and remove the front bezel #1
5. Remove the top cover #17

You now have full access inside the case to proceed with the installation of your power-supply, motherboard, hard drive (s) and various components.

Pre-installation notes

- *Your cooling circuit is already filled with coolant* (95% pure water, 5% Swiftech's HydrX™ high-performance coolant). All you need to do is to install the water-block to your CPU. Please follow the separate installation guides for AMD® or INTEL® processors.

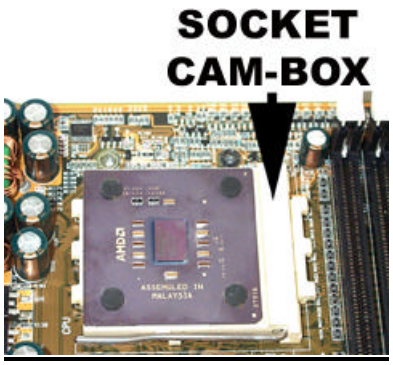
- Power to the pump: a spare power cord is provided to supply A/C power to the pump. *It needs to be connected to an A/C outlet.*

- Your QuietPower™ case ships from the factory **pre-configured to order**. All you need to do is install your components.

I. Installation Guide for AMD® processors

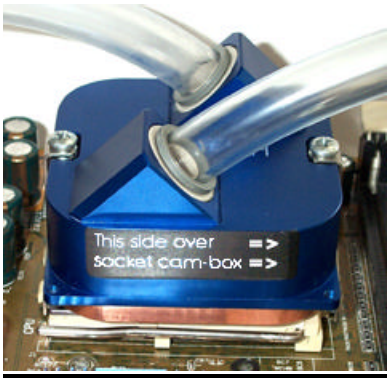
1. **Preparing your Motherboard**
   - **a.** Remove the existing heat sink
   - **b.** Carefully clean the CPU.
   - **c.** Lightly coat the CPU with the provided thermal compound. **Only a paper-thin coat is necessary**. It should be applied using preferably a razor blade, or a credit card, held between thumb and index at a 45-degree angle.
   - **d.** Install the Motherboard inside the case.

2. **Installing the MCW5000-A™ water-block with AMDâ socket 462 processors:**



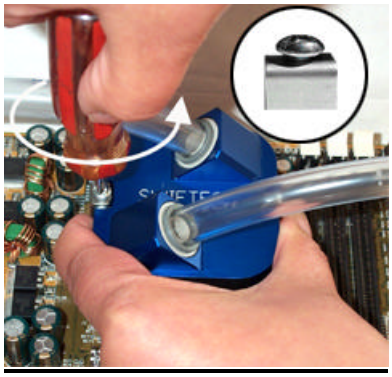
Step 1

Identify the orientation of the socket cam-box. This is critical for the next step.



Step 2

CRITICAL: A label is affixed to the side of the block entitled: “This side over cam-box”. **YOU MUST orient the MCW5000-A in the direction pointing towards the cam-box, as indicated by the arrows on the label**. Then, place the block over the CPU making sure that the clips grab all 6 retention latches of the socket. (See note below regarding some motherboards)



Step 3

Loosen both screws (counter-clockwise) until the head of each screw clears the top of the clip by approximately 1/16” (1.5mm) as shown above. Once the head of the screw is no longer touching the top of the clip, the spring is under full tension. No adjustment is required, nor necessary.

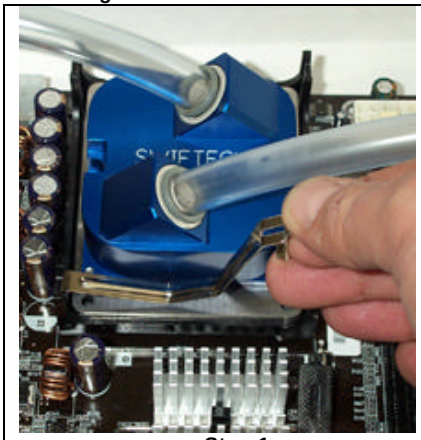
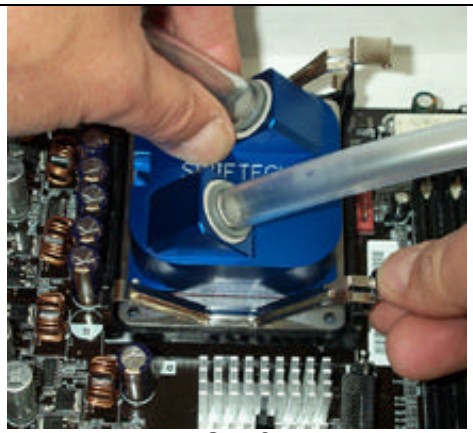
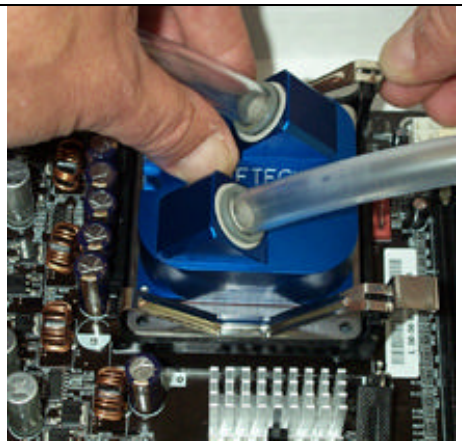
Installation is complete!

IMPORTANT NOTE: Some motherboards (Asus in particular) feature a strip of plastic tape located directly underneath the socket latches. This plastic strip can be safely removed if necessary.

II. Installation Guide for Intel® Pentium® 4

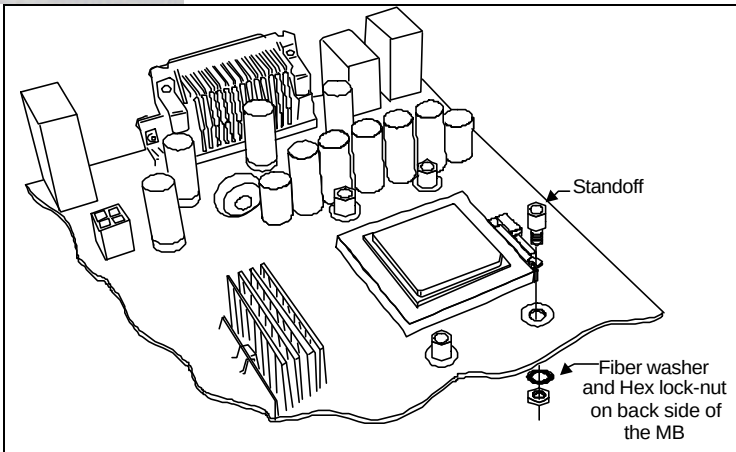
1. **Preparing your Motherboard**
   - **a.** Remove the existing heat sink
   - b. Carefully clean the CPU.
   - c. Lightly coat the CPU with the provided thermal compound. **Only a paper-thin coat is necessary**. It should be applied using preferably a razor blade, or a credit card, held between thumb and index at a 45-degree angle.
   - d. Install the motherboard inside the case

2. **Installing the MCW5000-Pä Water-block in Pentiumâ 4 socket 478 stock retention frame**

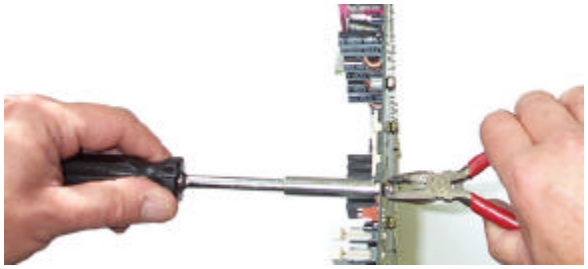
 **Step 1**	 **Step 2**	 **Step 3**
Position your block inside of the retention frame, and put both clips in place for the next steps, by simply slipping the non thumb-tabbed end of each clip in the retention frame's locking holes.	**While maintaining the opposite side of the block to prevent it from tipping over, push down on the thumb-tab to hook the first clip to the retention frame's locking hole.**	**While still maintaining pressure on the same side of the block, hook-down the second clip.** **Installation is complete!**

III. Installation guide for Intel® Xeon® processors

1. **Preparing your Motherboard**
   - **a.** Remove the existing heat sink
   - b. Carefully clean the CPU.
   - c. Remove Intel's stock plastic retention frame by pulling off the push-pin inserts.
   - d. Install Swiftech's provided standoff hardware to your motherboard as described in the following chapter, page 6.
   - e. Lightly coat the CPU with the provided thermal compound. **Only a paper-thin coat is necessary**. It should be applied using preferably a razor blade, or a credit card, held between thumb and index at a 45-degree angle.
   - f. Install the motherboard inside the case

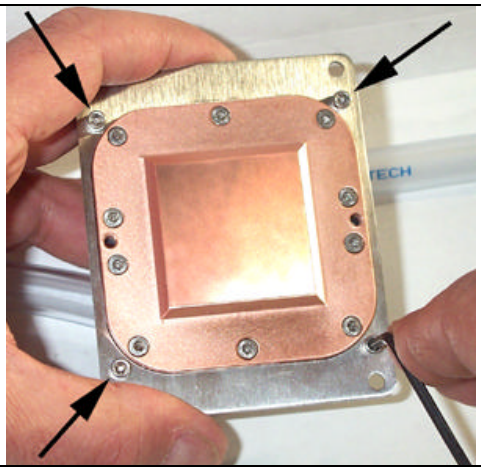


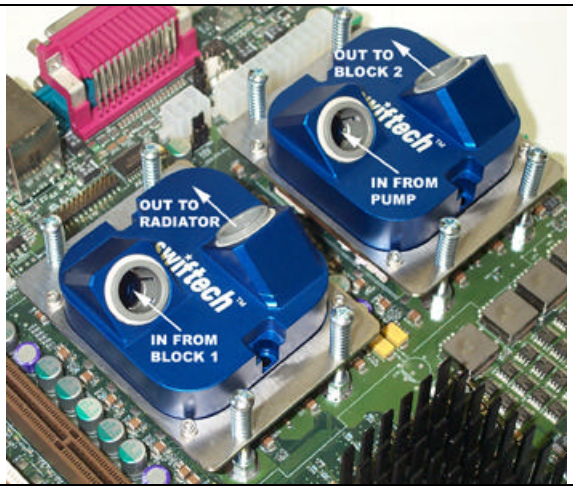
Install standoff in each one of the four holes surrounding the socket. Keep the standoff centered over the MB holes, and secure with fiber washer and locknuts on backside of the MB.



Maximum torque not to exceed 16 in lb
Using a SMALL pair of pliers to hold the locknuts will prevent excessive torque to the standoff, which could result in the standoff stem breaking off.

Block orientation
The MCW5000-PX can be oriented in any direction that suits your needs. Removing the 4 socket screws that attach the frame to the housing will allow you to rotate the frame 90°, so that inlet and outlet face up and down instead of left an right.





Install the block onto the CPU, and **gradually tighten the screws** in a crisscross pattern until you feel that they reach the bottom of the standoff. A "finger-tight" lock is sufficient, do not jam the screw into the standoff ! Conversely, adjustments such as tightening the screws only partially are **strictly prohibited**. Such attempts will result in improper contact between the CPU core and the heat sink, and result in CPU overheating.

IV. Optional MCW50 VGA cooler installation

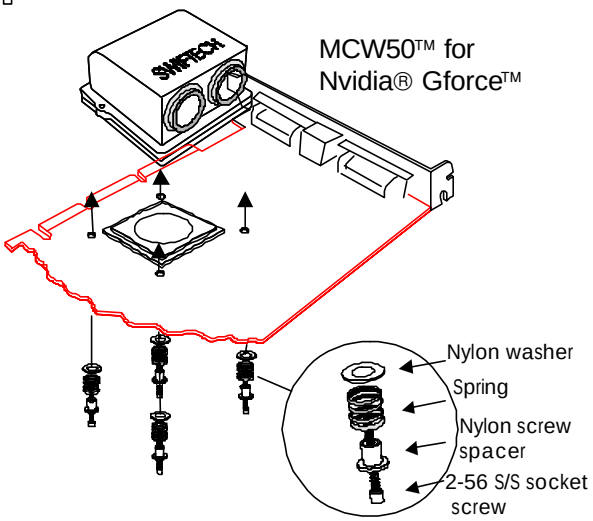


Figure 1

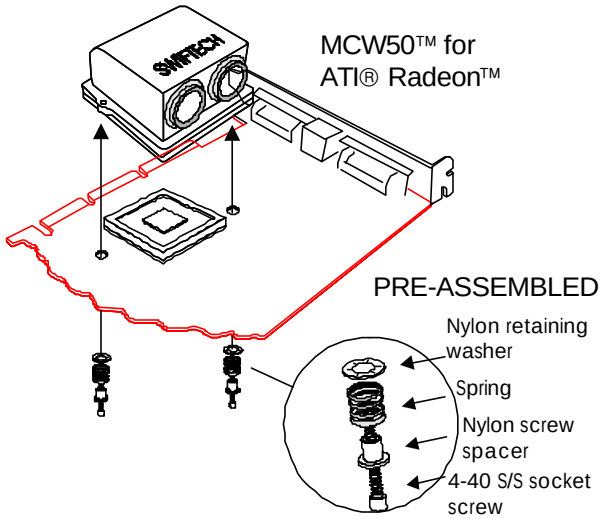


Figure 2

1. **Preparing your graphics card**
   a. Remove the existing heat sink
   b. Carefully clean the GPU (graphics processing unit)
   c. Lightly coat the GPU with the provided thermal compound. **Only a paper-thin coat is necessary**. It should be applied using preferably a razor blade, or a credit card, held between thumb and index at a 45-degree angle.

2. **Installing the MCW50™ GPU Cooler**

   The MCW50™ retention mechanism can either use the two diagonal holes featured in many graphics cards such as ATI® Radeon™ 9000 to 9700 families, or the four mounting holes found in NVidia® GeForce™ families of products. It can also be installed with other graphics processors by using permanent bonding agents, such as thermally conductive epoxies. We recommend Arctic Silver™ or Arctic Alumina™ epoxy.

Install your block onto the graphics card, as shown in Figure 1 or Figure 2 (p.5) according to your application. A “finger – tight” lock is sufficient when tightening the spring retention assemblies. Over-tightening will squash the nylon screw spacer body, and result in uneven pressure over the GPU.

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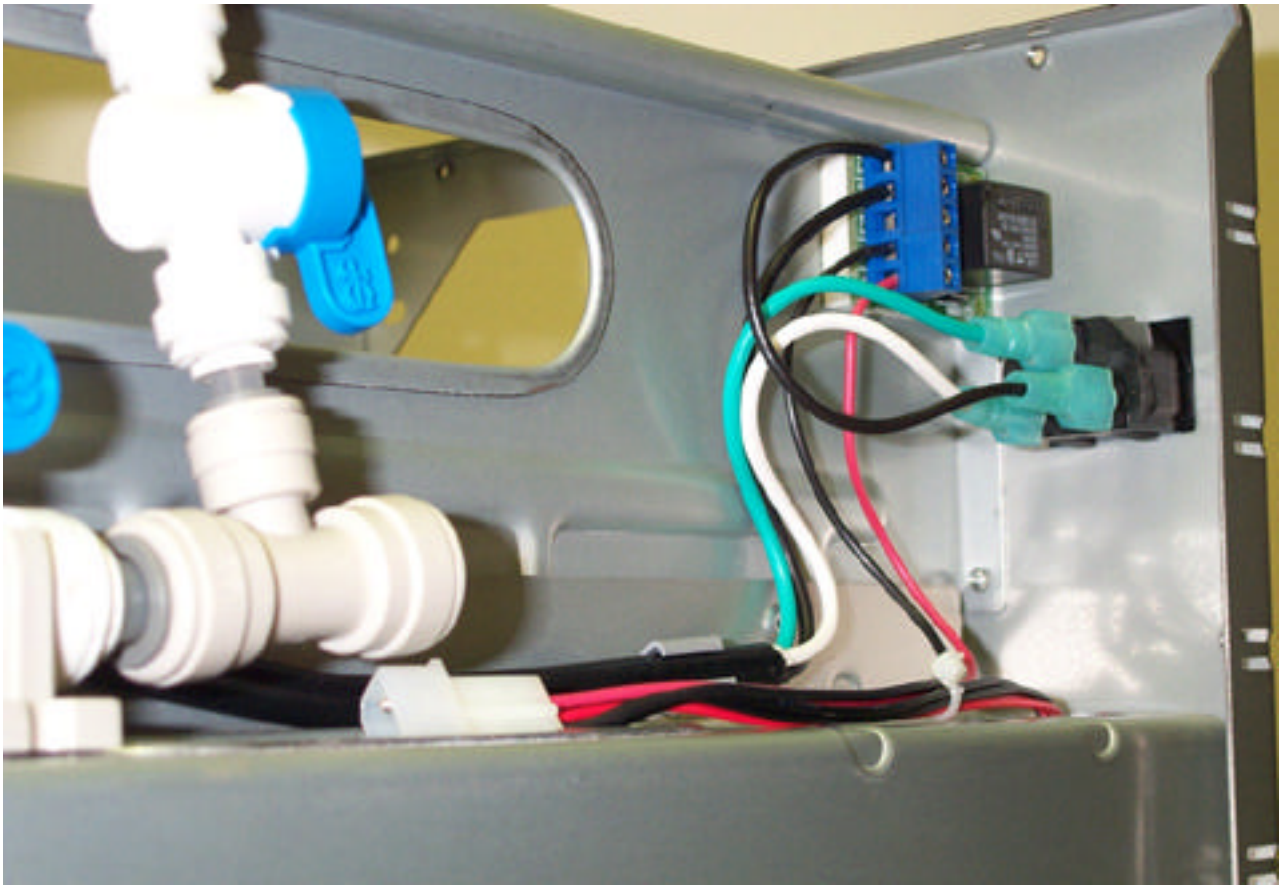
V. Electrical Installation

The Quiet Power Case is equipped with an inline centrifugal pump operating on AC. In order to allow the pump to operate concurrently with the rest of the computer, the pump is connected to a relay switch as shown here:



<u>The relay switch MUST be connected to one of the power supply 4-pin connectors, AND the socket needs to be connected to an A/C source with the provided cord. OTHERWISE YOUR PUMP WILL NOT WORK !</u>

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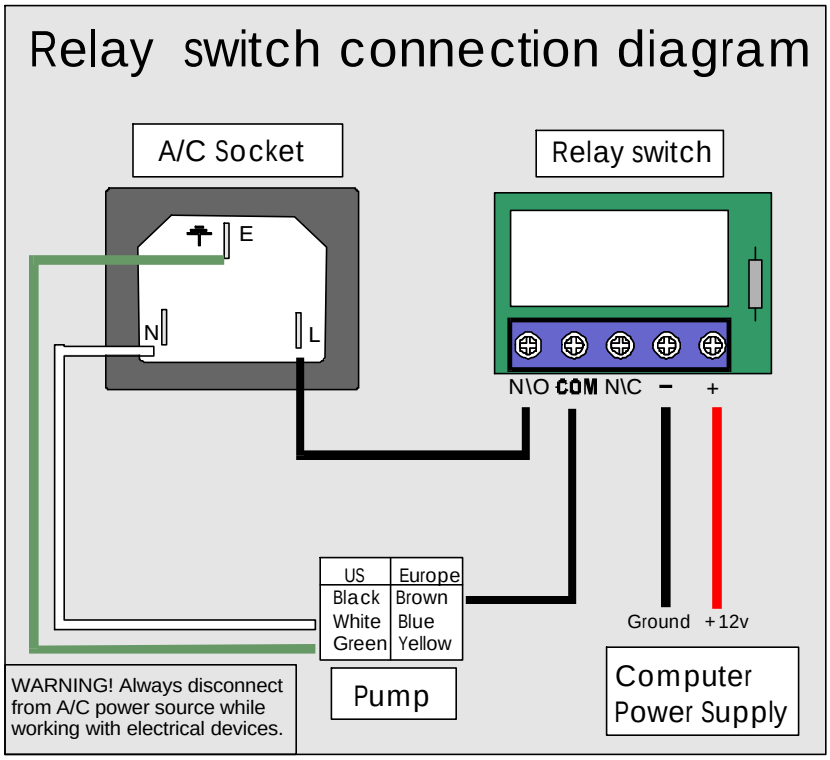
Pump Relay switch operations

For normal operations, the L wire from the A/C socket is connected to the N/O (normally open) position of the switch. This means that when the computer is off, there is no current from the power supply to the switch, and the relay is opened, disallowing A/C to the pump. Conversely, as soon as you turn the computer on, the switch becomes energized by the power supply, and the relay closes, allowing A/C current to pass to the pump.

For maintenance operations, if you want to turn the pump on without operating the rest of the computer, you may temporarily connect the L wire to the N\C (normally closed) position. This is particularly useful for filling and bleeding the circuit, as you wouldn't want the computer running while the cooling circuit is not completely operational. **WARNING: do not forget to reconnect to N\O once you are ready to run the computer: if you leave the L wire connected to N\C, the pump will shut off as soon as the relay is energized by the power supply.**



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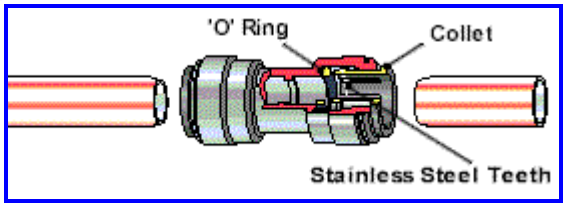
VI. Maintenance Operations

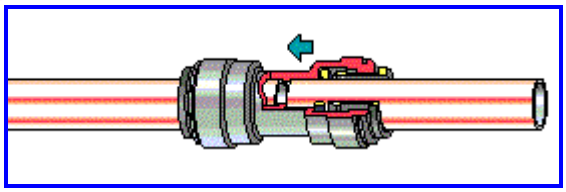
How to use quick connect fittings

1 Cut tube square



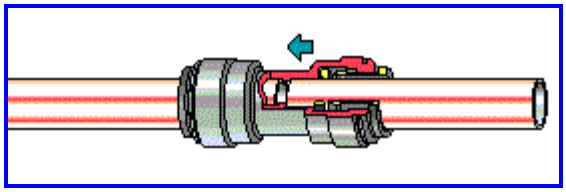
Cut the tube square. It is essential that the outside diameter be free of score marks and that burrs and sharp edges be removed before inserting into fitting. **For soft or thin walled plastic tubing we recommend the use of a tube insert.**

2 Insert tube



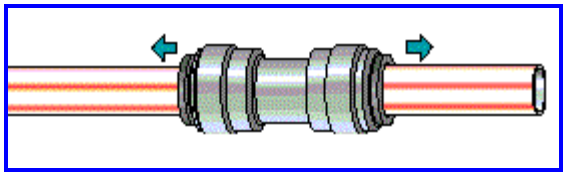
Fitting grips before it seals. Ensure tube is pushed in to the tube stop.

3 Push up to tube stop



Push the tube into the fitting, to the tube stop. The collet (gripper) has stainless steel teeth which hold the tube firmly in position while the 'O' ring provides a permanent leak proof seal.

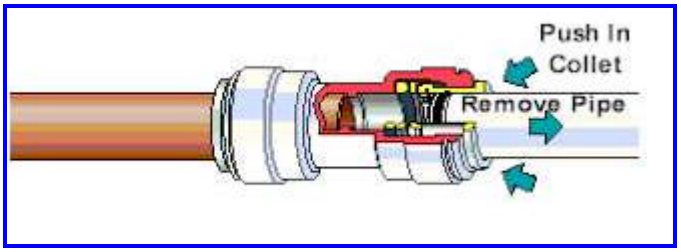
4 Pull to check secure



Pull on the tube to check it is secure. It is good practice to test the system prior to leaving site and/or before use.

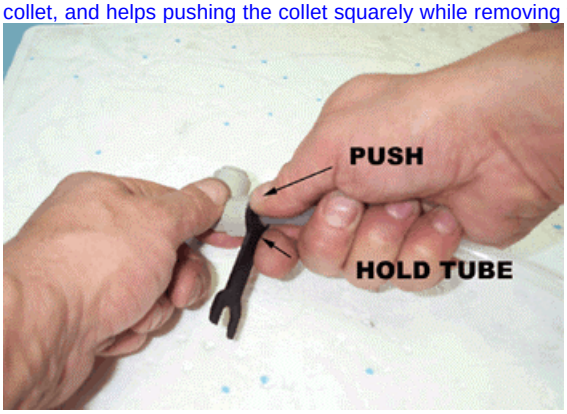
Disconnecting a fitting

Ensure system is depressurised before removing fitting.



Push in collet squarely against face of fitting.
With the collet held in this position, the pipe can be removed. The fitting can then be re-us

Your kit also contains a release aid tool which you can place over the collet, and helps pushing the collet squarely while removing the tube:



General guidelines with regards to tube bending:

In general, you should avoid sharp bends. A sharp bend may result in kinking the tube, and restrict or completely prevent the flow.

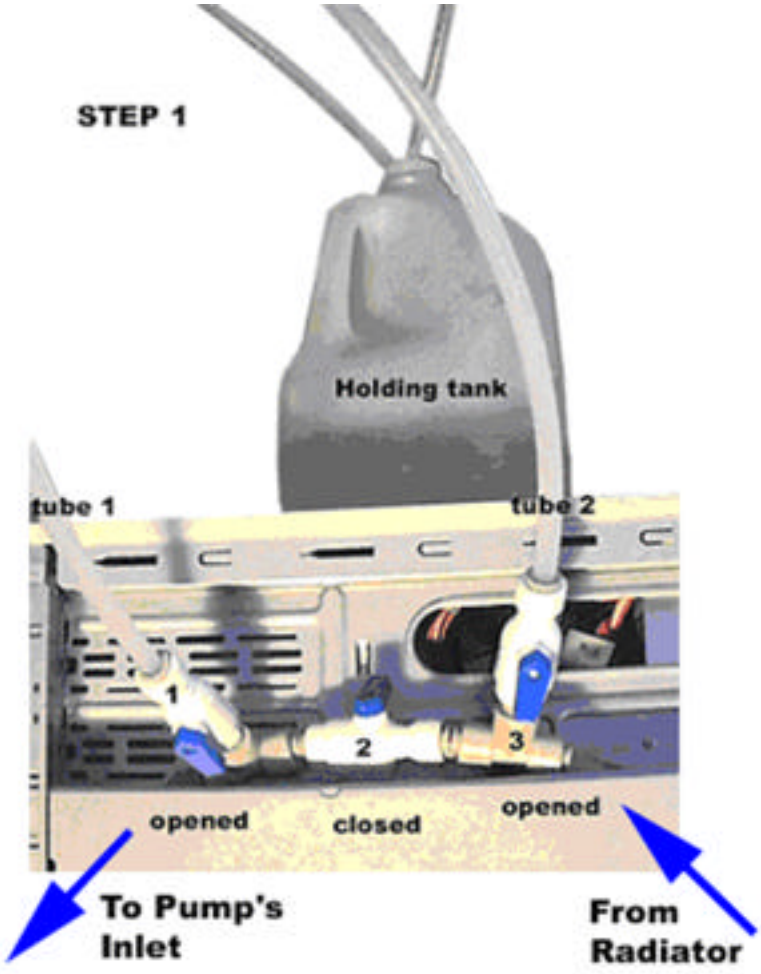
Filling & bleeding the circuit

We recommend using the following mix: 95% purified water, and 5% of one of the following products: Swiftech's specially formulated HydrX coolant, RedLine water wetter, or Zerex Racing Coolant.

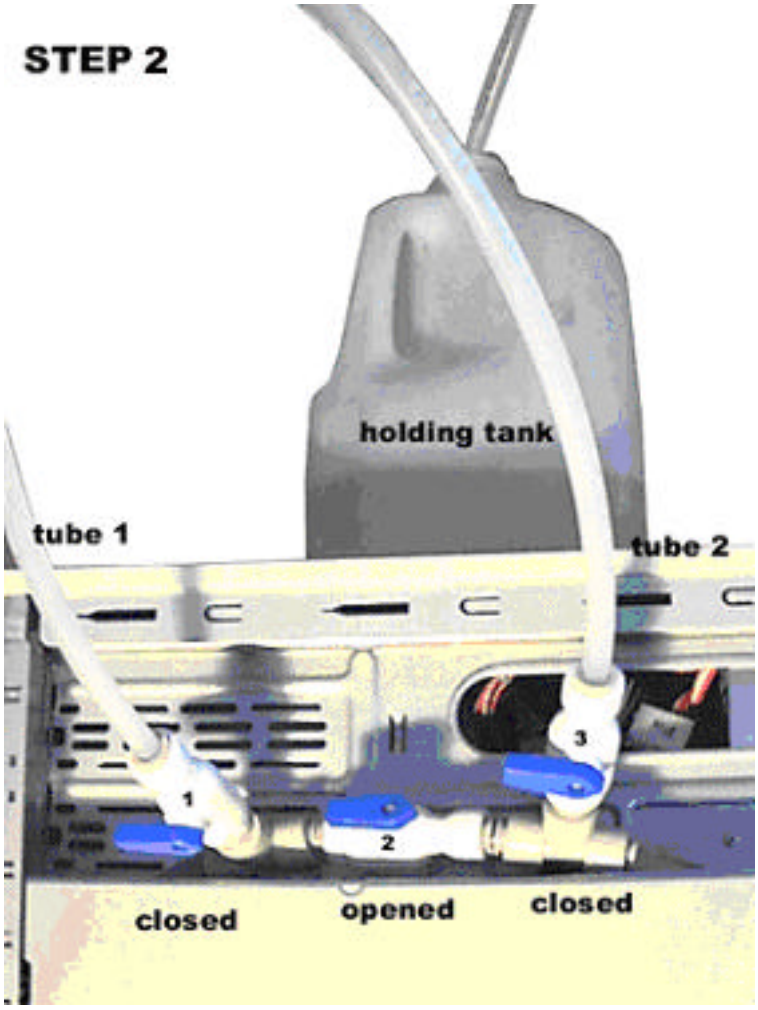
In order to fill and bleed the circuit, you will need to activate the pump. Since you do not want to run the computer until the cooling circuit is completely operational, you should temporarily connect the L wire to the N\C position of the switch. **WARNING: do not forget to reconnect to N\O once you are ready to run the computer: if you leave the L wire connected to N\C, the pump will shut off as soon as the relay is energized by the power supply, and there would be no flow in the cooling circuit, causing your CPU to overheat.**

1. Place a holding tank containing your cooling fluid above the computer.
2. Connect the ¼" tube provided with your kit. Tube 1 goes to valve 1 and tube 2 goes to valve 3
3. Plunge tube 1 only into the holding tank, making sure it is entirely submerged
4. **Open valve1, close valve 2, open valve 3**
5. Prime the circuit by gently sucking in air from **tube 2**, just enough that you see the liquid starting to flow down in tube 1
6. Now, you can plunge tube 2 back into the holding tank
7. Start the pump
8. Let the pump run for 1 minute as shown in the picture to the right. The liquid should be flowing freely from tube 2 into the holding tank.
9. **Important step: after a minute, and while the pump is still running:**

- **Take the holding tank and tubes into one hand – making sure that the tubes remain plunged into the liquid,**
- Then lay the computer down for just a few seconds once flat on it's back, and once flat on its belly. This will bleed any air still trapped into the circuit.



1. Open valve 2 for a couple of seconds, to allow a air trapped into the valve to escape. Close valve again.
2. Now, close valves 3 and 1, and open valve 2. The system is now full, bled, and ready to use, as shown in the picture to the right.
3. Turn off the pump by disconnecting it from A/C.
4. With both tubes still inside valves 1 and 3, carefully place the holding tank below the computer (on the floor for example)
5. Disconnect the tubes from valves 1 and 3. Whatever little liquid was still trapped in the tubes will flow back into the holding tank without making a mess :-)
6. FINALLY, REMEMBER to reconnect the L wire from the socket to the N\O position on the switch !



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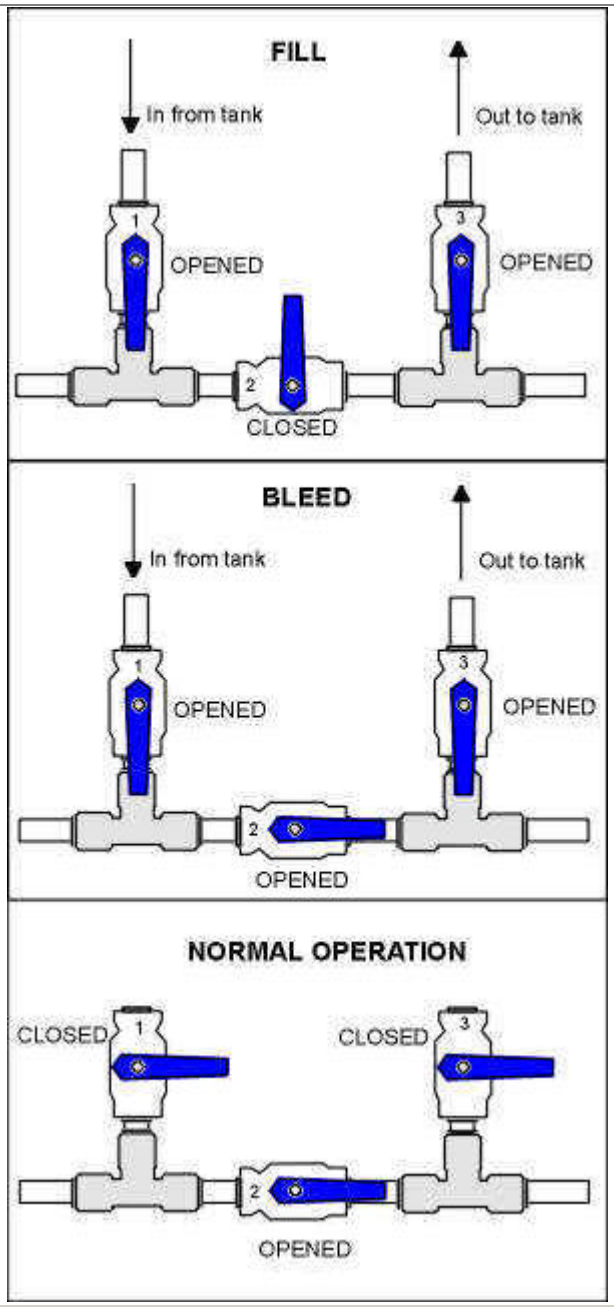
In summary	

Draining the system:

Insert fill and bleed tubes into valves 1 and 3.

Close valve 2

Plunge tube from valve 3 into an empty container.

Open valves 1 and 3.

Clean off the extremity of tube from valve one and blow into it to flush the liquid out. Do not use compressed air to perform this operation, as it could damage your pump.

IMPORTANT DISCLOSURE
While all efforts have been made to provide the most comprehensive tutorial possible, Swiftech assumes no liability expressed or implied for any damage(s) occurring to your components as a result of using Swiftech cooling products, either due to mistake or omission on our part in the above instructions, or due to failure or defect in the Swiftech cooling products.

WARRANTY

Our products are guaranteed for 12 months from the date of delivery to the final user against defects in materials or workmanship. Pump is guaranteed for 24 months. During this period, they will be repaired or have parts replaced provided that: (I) the product is returned to the agent from which it was purchased; (II) the product has been purchased by the end user and not used for hire purposes; (III) the product has not been **misused** (*), handled carelessly, or other than in accordance with any instructions provided with respect to its use. This guarantee does not confer rights other than those expressly set out above and does not cover any claims for consequential loss or damage. This guarantee is offered as an extra benefit and does not affect your statutory rights as a consumer.

For service, support, or questions, please contact us at the address below.