

Operating and assembly manual




aquaduct
mark III ceramic

240 PRO, 360 XT and 720 XT

August 2009

Table of contents

1. Preface.....	3
1.1. Overview about the aquaduct.....	3
1.2. Information on the assembly of a water cooling system.....	4
2. Safety precautions.....	6
3. Scope of delivery.....	8
3.1. aquaduct 240 PRO mark III.....	8
3.2. aquaduct 360 XT mark III.....	8
3.3. aquaduct 720 XT mark III.....	8
3.4. Optional accessory for aquaduct 240 PRO mark III.....	9
3.5. Optional accessory for aquaduct 360 XT mark III and aquaduct 720 XT.....	9
4. Arranging the elements of the cooling system.....	9
5. Use of the plug&cool connectors.....	10
6. Installation of the CPU waterblock (cuplex™ series).....	11
6.1. Preparing the installation of the CPU cooler.....	11
6.2. Installation of "4-hole-mounting kits" - Socket, 775, 1366, AM2.....	12
6.3. Installation of „2-hole-mounting kits“ - Socket 754, 939, F.....	13
6.4. Installation of "3-nose-mounting kits" - Socket 370, A.....	14
6.5. Examination and connection to the cooling system.....	15
6.6. Proper connection of the cuplex PRO, hd and XT di.....	15
7. Installation of the PC interface circuit board.....	16
7.1. Connector „power“	16
7.2. Connector „pump rpm signal“	16
7.3. Connector „flow“ (aquaduct 240 PRO only).....	16
7.4. Connector „fan“ (aquaduct 360 XT and 720 XT only).....	17
7.5. Connector „external standby“ (aquaduct 360 XT and 720 XT only)...	17
7.6. Connector „alarm/relay“ (aquaduct 360 XT and 720 XT only).....	17
7.7. Jumper „J1“ (aquaduct 360 XT and 720 XT only).....	17
7.8. Connectors „temp sensor 1/2“ (aquaduct 360 XT and 720 XT only). 17	
8. Connecting the aquaduct.....	18
9. Operation of the ball valves.....	19
10. Initial operation.....	20
11. Mechanical fill level and flow indicator.....	22
12. Electronic fill level and flow indicator (aquaduct 360 XT and 720 XT).....	22
13. Maintenance and care instructions.....	23

1. Preface

Dear Customer,

We congratulate you on the purchase of a water cooling system made by Aqua Computer GmbH & Co. KG. We are one of the most renowned manufacturers of PC water cooling systems in Germany. Our production meets highest quality standards. During the development we especially took into account that our cooling system is dependable and leak proof.

Should you have any questions, we would like to ask you to first look at the "FAQ" area and "forum" on our homepage www.aqua-computer.de. If you should not find an answer to your question there, please email to support@aquacomputer.de.

We hope you will enjoy your new cooling system.

Your Aqua Computer Team

1.1. Overview about the aquaduct

The aquaduct is an uncompromising solution. It has convincing design and a cooling performance which sets standards at a minimum noise level. Furthermore it is foolproof to handle, secure and compact.

It got the name, since the water runs over a kind of bridge at the top and falls down then on the other side.

The combination of a passive and an active radiator result in a very good overall cooling performance under changing conditions.

Newly introduced with the mark III series, the integrated pump features a ceramic bearing which reduces the operation noise even further.

Starting with the aquaduct 240 PRO mark III, each of the premium range aquaduct mark III models represents state of the art watercooling equipment. Although being the entry model of the premium range, the aquaduct 240 PRO mark III features an extensive electronic control unit and offers an impressive cooling capacity due to the built-in dual radiator equipped with two 120 mm fans.

The aquaduct 360 XT mark III and aquaduct 720 XT unite our experience and development achievements of the last years. Both models offer all known control and monitoring functions of our renowned fan controller "aquaero", such as flow-rate measurement, temperature measurement, parameterizable fan control. All data can be monitored using the integrated LC display or via USB connection by the graphical software aquasuite, which is also network-compatible. Moreover, integrated LEDs in the aquaduct can be used to display the temperature of the coolant by changing colour or to display alarm conditions.

Due to the sized integrated radiators, the aquaduct 360 XT mark III and even more so the aquaduct 720 XT offers outstanding cooling performance and ample reserves for future computer hardware components.

To keep the maintenance frequency of the aquaduct as low as possible, large water tanks were integrated into the cooling profiles. Through this the refill of water is minimized to an annual maintenance. Two ball valves were integrated into the base part of the aquaduct allowing to disconnect the aquaduct without draining the system. In contrast to self-closing couplers, the ball valve do not restrict water flow.

In addition to the electronic monitoring features of the aquaduct 360 XT and 720 XT models, all aquaduct variants feature mechanical function indicators. Fill level and flow rate can easily be checked with a quick glance.

The aquaduct comes with a small circuit board for a free PCI slot. It supplies the aquaduct with current and offers various connections for PC communication and additional components. For example, the PC can be turned off (optional accessories required) over a potential-free output of the aquaduct 360 XT and 720 XT in case of a malfunction.

1.2. Information on the assembly of a water cooling system

To enable cooling by water in sensible electronic devices, one basic requirement has to be fulfilled: the entire system has to be completely watertight and long lasting. This has always been our priority in developing water cooling equipment. Therefore high-quality plug-connectors are used for our plug&cool-system. These rather expensive, but by the in-

dustry almost exclusively used push-in connectors possess a pressure resistance of more than 10 bar, when using suitable hoses, guaranteed by the manufacturer. This pressure in water cooling systems is far lower than this value.

In addition to the aquaduct cooling system you merely need the water coolers matching your PC's components. The water cooler models cuplex, cuplex PRO, cuplex hd and cuplex XT di have acrylic or stainless steel lids, which allow for cleaning after long usage. It also enables an optical control of the cooler. No part is glued or soldered on the entire cooler, which makes it easy to dismantle. Therefore replacement of individual parts is possible as well as the fitting of new mounting plates e.g. when changing the CPU-type.

The high-quality rubber gasket is long lasting. Should it ever wear out, it can easily be replaced. Accessories can be obtained from us. Generally the gaskets should be replaced after 5 years or earlier if the cooler is frequently dismantled. The threaded hose-connections of the plug&cool-system are made watertight with real rubber gaskets. They can be replaced later the same way as the main gaskets of the coolers. The optional available barb connectors and 10/8 connectors are also made watertight with a rubber gasket.

To optimally carry off the heat of the CPU the cooler was made out of copper. The copper used is of very high purity, which results in an outstanding heat conductivity. The surface of the cooler is milled absolutely planar, re-smoothing is entirely unnecessary.

Over time the copper material will develop a protective oxide layer. This protects the copper from further oxidation and has no influence on the function of the cooler.

The pump is one of the most important parts of the system. If it stops working, the processor will soon overheat extremely. As well as a failure of the fan in air-cooled computers, this can result in the destruction of the computer (or even a fire). Therefore a powerful and dependable pump is essential.

The pump of the company Eheim used in the aquaduct stands out due to a almost not audible run noise and a high reliability. The ceramic pump bearing introduced with the mark III series is extremely wear resistant and further reduces operating noise.

In the course of further technical development our products can be subject to change any time. Therefore it is possible that the product you purchased doesn't answer exactly the descriptions or the pictures in this manual.

2. Safety precautions

The following safety precautions have to be observed at all times:

1. Read this manual thoroughly and entirely!
2. Save your data before working on your hardware in any case!
3. Be careful when removing existing conventional cooling devices. Especially when removing cooling devices that are glued on, there is a risk of damaging the hardware!
4. To connect the waterblocks for the PC hardware, it is normally necessary to pass hoses inside the case. The holes in the bracket of the pc interface board feature suitable holes, equipped with rubber protectors to prevent damaging the hoses. If using hoses with bigger outer diameters, suitable protective lead-throughs must be used!
5. Do not start your computer before you are absolutely sure that no water leaks from the system!
6. Pay attention to the care instructions at the end of this manual. Specially avoid any contact of the Plexiglas components with solvents!
7. Make sure that your wall socket is protected by an FI-fuse!

8. Maintain a minimum distance of 0.5 m between the aquaduct and devices that could react in a sensible way to magnetic or electromagnetic fields!
9. During operation of the computer constantly observe the temperature of the processor. Use software or hardware with a warning- or switch-off-feature for this purpose, since a failure of the cooling system is not audible. Should the temperature of the processor exceed 65°C (149°F) turn off the computer immediately!
10. Use only the coolant we specify. Other coolants can damage the system and cause leaking or decreased cooling performance.
11. Regularly check the whole system for leaks and replace all seals with signs of wear, every five years at the latest. Suitable spare parts can be purchased from us.
12. This product is not designed for use in life support appliances, devices, or systems where malfunction of this product can reasonably be expected to result in personal injury. Aqua Computer GmbH & Co. KG customers using or selling this product for use in such application do so at their own risk and agree to fully indemnify Aqua Computer GmbH & Co. KG for any damages resulting from such application.
13. Secure the aquaduct against overturning, particularly if children or domestic animals have access to the device! When overturning there is a risk of injury! In the overturned condition the function of the pump and with that the complete cooling function can fail!
14. Depending on the configuration of the aquaduct it is possible that the surfaces on the outside get very hot! Take measures to protect the device from touching, particularly if children or domestic animals have access to the device!

3. Scope of delivery

3.1. aquaduct 240 PRO mark III

- aquaduct 240 PRO
- 2 pcs. straight connector plug&cool G1/8"
- 2 pcs. ball valves actuation with bolt
- allen key 2,0 mm
- dual PUR tube blue/black approx. 2,5 m
- PC circuit board
- USB cable approx. 2 m
- 15-pin aquaduct connection cable approx. 2 m
- ATX starter
- cable for rpm signal
- 1000 ml Double Protect Ultra coolant
- this manual

3.2. aquaduct 360 XT mark III

- aquaduct 360 XT
- 2 pcs. straight connector plug&cool G1/8"
- 2 pcs. ball valves actuation with bolt
- allen key 2,0 mm
- dual PUR tube blue/black approx. 2,5 m
- PC circuit board
- USB cable approx. 2 m
- 15-pin aquaduct connection cable approx. 2 m
- ATX starter
- cable for rpm signal
- 1000 ml Double Protect Ultra coolant
- aquasuite CD
- manual „aquaduct controlling unit“
- this manual

3.3. aquaduct 720 XT mark III

- aquaduct 720 XT
- 2 pcs. straight connector plug&cool G1/8"
- 2 pcs. ball valves actuation with bolt

- allen key 2,0 mm
- dual PUR tube blue/black approx. 2,5 m
- PC circuit board
- USB cable approx. 2 m
- 15-pin aquaduct connection cable approx. 2 m
- ATX starter
- cable for rpm signal
- 2x 1000 ml Double Protect Ultra coolant
- aquasuite CD
- manual „aquaduct controlling unit“
- this manual

3.4. Optional accessory for aquaduct 240 PRO mark III

- connection cable for flow sensor (order code 53027)
- flow sensor (order code 53061)
- flow sensor "high flow" (order code 53068)

3.5. Optional accessory for aquaduct 360 XT mark III and aquaduct 720 XT

- aquaero power connect - 24 pin ATX standby power / ATX break (order code 53047)
- temperature sensor (order code 53026)
- plug&cool temperature sensor (order code 53025)

4. Arranging the elements of the cooling system

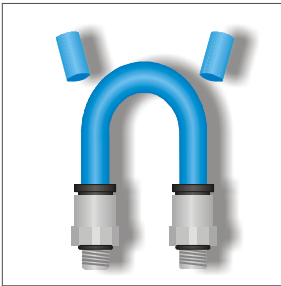
On arranging the elements of the cooling system you should observe the following essential points:

- All elements have to be flown through sequentially one after the other. A parallel assembly must not be carried out, since the allocation of the water in the different hoses can hardly be predicted and single components could possibly not sufficiently be cooled or even not at all.
- The components can be in any order you like. This has (almost) no influence on the cooling performance. Additionally it is worth mentioning, that the difference in temperature of the coolant

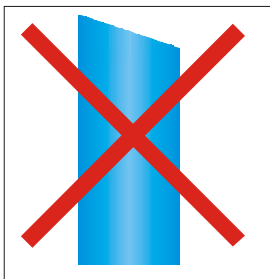
between the in- and outgoing line of the radiator is about 1-2 °C in an average system, meaning that the water just heats up about 1-2 °C while flowing through all the coolers.

- A complete cooling circle consists of the aquaduct and one water cooler at the minimum.

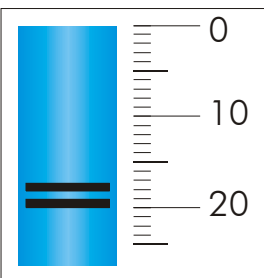
5. Use of the plug&cool connectors



Our plug&cool connection system makes a secure fitting of the hoses possible without any tools. It is pressure and temperature resistant. Please observe the following instructions for the fitting:

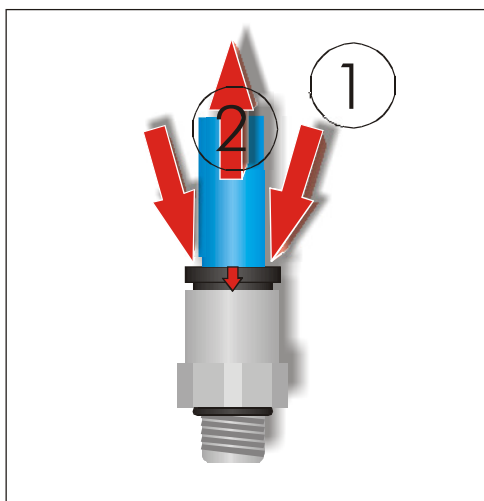


1. Cleanly cut the hose to the desired length. The hose should be cut **evenly** and cleanly **avoiding burs** with a sharp knife or a hose cutter (available in our shop). After each detachment of the hose from a connector the first two centimeters have to be cut off to guarantee a secure operation.



2. Insert the hose into the connector up to the limit stop.

When inserting the hose, a first limit stop will be felt which has to be overcome with some effort. If you want to be on the safer side, you can mark the hose with a felt tip pen up to where you have to insert it. Depending on the connector it will be between 18 and 20 mm.



If the hose has to be detached, please do the following:

1. Push down the black or blue plastic ring on the connector. For this purpose you can also use the separately available AC Multi-Tool. Slip it over the hose with the middle opening.

2. While pushing down pull the hose from the connector.

It is important to remove the length of hose which had been inserted into a connector before connecting the hose again. It must not be scratched to secure a perfect sealing of the connector.

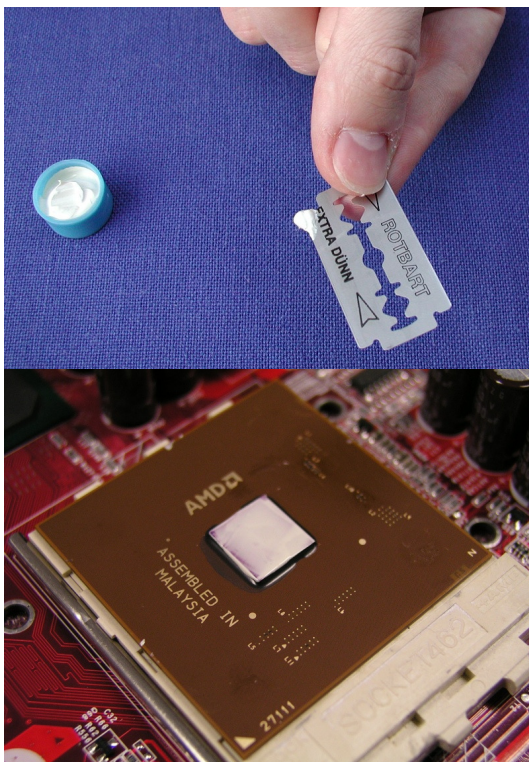
Now a few remarks about our hose. The hose we use is made of polyurethane. It has an outer diameter of 8 mm and an inner diameter of 6 mm. It makes bending radiuses of less than 10 cm possible and is resistant against many chemicals. A great advantage of the system is that it seals the hose on the outside. This allows the use of the complete diameter, unlike the use of hose barbs which are inserted into the hose and therefore have to have a smaller inner diameter than the hose. With a cross-section area of about 30 mm² the system allows a sufficient flow even in larger lengths of hose.

6. Installation of the CPU waterblock (cuplex™ series)

6.1. Preparing the installation of the CPU cooler

Now that you understand how the connection system works, you can begin installing the CPU cooler.

As mentioned earlier, with any work you do on your computer, you should always **save your data** beforehand. Disconnect your computer



from the power supply. To protect the sensible hardware you should ground yourself before installation to avoid electrostatic destruction of the component parts. For that purpose you can use a non-isolated water pipe for example.

If you are upgrading an existing system you have to remove the old cooler from the processor first. For that purpose please read the manual of your cooler or your motherboard. After removing the cooler you have to clean the die of the processor of any residue of old heat-conductive paste. Then take a razor blade or a plastic spatula and apply a

thin layer of our supplied heat-conductive paste. The core of the processor, also called "die", should now be coated by a homogeneous white layer. **Make sure that no heat-conductive paste will get on any other place and remove it if necessary!**

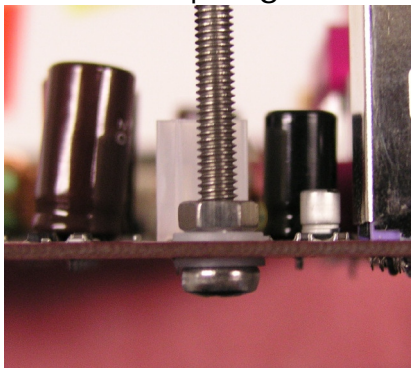
WARNING: If the cooler gets stuck on the surface of the die it can cause an edge of the die to break off. This results in an unrecoverable destruction of the processor. Avoid the cooler to get stuck under any condition. Even so-called spacers do not offer absolute protection. If you are not confident in doing this yourself, please ask a dealer to do it for you.

The principle of installation depends entirely on the kind of fastening of the cooler. That is why we confine the illustration of the installation instructions mainly on description of a classic cuplex on a socket A motherboard. From this description the procedure for any combination of cooler and fastening version can be derived.

6.2. Installation of "4-hole-mounting kits" - Socket, 775, 1366, AM2

Should be more than four feathers included in the screw set, please use the four „softer“ feathers.

With the so-called four-hole-mounting kit the cuplex is fixed directly on the motherboard with four screws and pressure springs which are used as screw springs. Therefore you have to fasten the four screws first. For

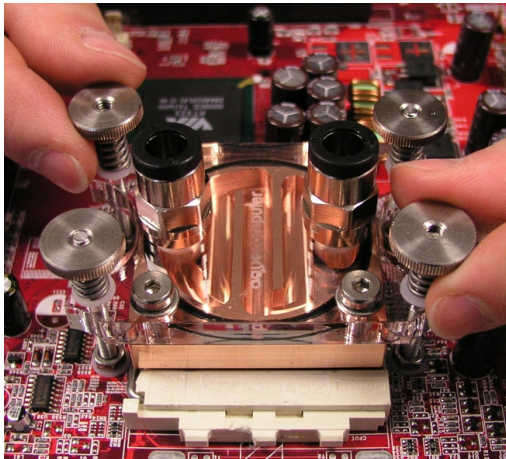


that purpose detach your motherboard from the computer case. In P4- and Xeon-systems the mostly black plastic mounting for air-coolers has to be removed from the motherboard to reveal the necessary drill holes on it. Next slide a plastic washer over one of the supplied stainless steel M4 screws which you then put through the holes adjacent to the socket from below. Slide

another plastic washer over the screw from above the motherboard and then screw on one of the supplied stainless steel M4 nuts up to the limit by hand. The screw should now be fixed to the board like a standing

bolt. Do the same with the three other screws. Now the cuplex can carefully and slowly be put onto the standing bolts. Slowly slide it down until it rests on the prepared core of the processor, without getting it stuck.

To protect the Plexiglas of the cuplex from getting scratched slide another washer over each screw. Now put one of the supplied springs over each of the standing bolts.



Screw one of the supplied knurled nuts on each screw about 2 turns, so it just grips. For fastening the springs, take turns in fastening two knurled nuts at a time placed opposite of each other diagonally. During this process make sure that the **spring coils do not touch each other**, since this can cause inadmissible high forces to build up. The spring has to be fastened to the

extent, that a slight but visible slit is left between the coils. You can check this by sliding a piece of paper between the coils, as illustrated on the photo. If this is not possible, you fastened the knurled bolts too much and you have to loosen them. Also make sure that the cuplex does not rest on the cover of the barring mechanism of the socket, but on the core of the processor.



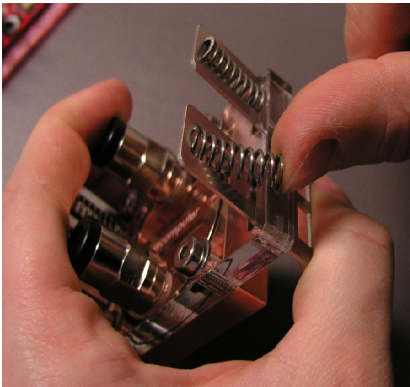
6.3. Installation of „2-hole-mounting kits“ - Socket 754, 939, F

Should be more than two feathers included in the screw set, please use the two „harder“ feathers.

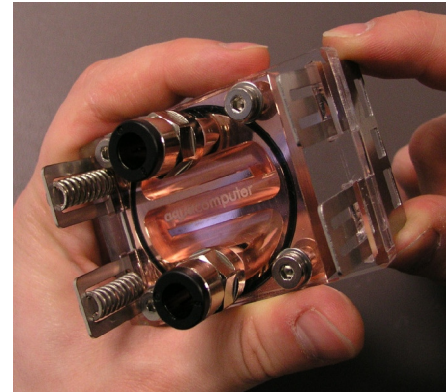
For the installation on Athlon64 boards the cooler is put together in analogy to the four-hole-mounting kit but this time only two screws will be used here since only two fastening holes are available on the board. Before the assembly of the screws an existent plastic framework must be removed if necessary. The two bigger feathers of the mounting kit are used as feathers. Please gather the further procedure from chapter 6.3.

6.4. Installation of "3-nose-mounting kits" - Socket 370, A

For this fastening version two laser-processed high-grade brushed steel sheets and four pressure-springs are supplied with the cuplex. First slide the brushed high-grade stainless steel sheets through the slits in the Plexiglas lid from the bottom. One of the two brushed high-grade stainless steel sheets only fits

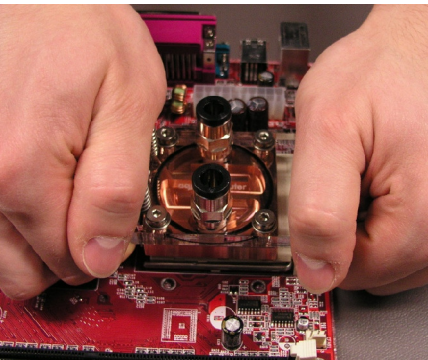
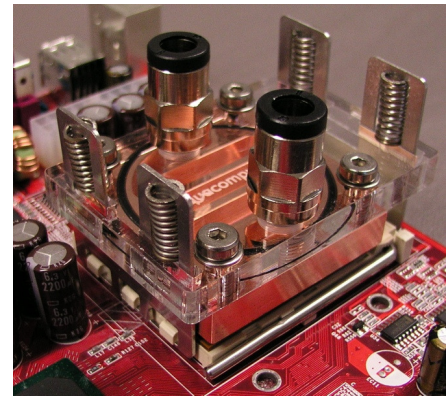


through the slit on one side of the Plexiglas lid, therefore confusion is impossible. The slightly differing spring displacements on both sides cause the pressure to finally concentrate exactly on the processor core ("balanced load"). Now insert the pressure springs into the metal sheets above the lid, as shown on the picture. The cooler can be mounted



onto the core of the processor now, which should already be prepared with heat-conductive paste as described above.

Make sure that the core of the processor is located centrally below the copper bottom of the cooler and that the longer part of the Plexiglas lid which sticks out is situated above the detachment mechanism of the socket. To avoid damage to the core the pressure for mounting has to be applied exactly perpendicular to the surface of the core. Compress



the springs putting the thumb balls on the stainless steel sheets from above and taking hold of the lid from below and hook the stainless steel sheets under the plastic noses of the socket. Avoid the cooler to get stuck, since this will risk a corner of the die to break off. Do not hook in one side after the other!

6.5. Examination and connection to the cooling system

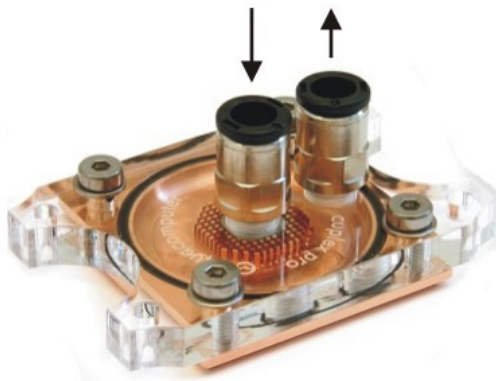
Finally check again if the cooler rests plane on the core of the processor and does not touch the part of the socket in which the detachment mechanism is integrated.

WARNING: A cooler which does not rest plane on the core of the processor can cause destruction of the processor in seconds when the processor is switched on, since the heat-capacity of the core is too small. Even TCS, bios or software-shutdown-tools can not prevent destruction in this case!

Now cut the hoses evenly to the needed length with a hose cutter or a sharp knife and put them onto the connections of the cuplex. The procedure is described in chapter 4. Use of the plug&cool connectors.

The special tubes of the aquaducts must get separated before the use. It can be helpful to separate the first millimeters with a knife. This area must then be divided off.

6.6. Proper connection of the cuplex PRO, hd and XT di



Unlike channel coolers, the nozzle- and microstructure coolers cuplex XT, cuplex hd and cuplex PRO have a predefined flow direction. For the cuplex PRO, the water must be led in through the central connection directly onto the microstructure, in the case of cuplex XT and cuplex hd, the water is to be led in through the fitting connected to the nozzle structure. The nozzles accelerate the flowing water and provide a better heat transfer. For both cooler variants, the water is then led out through the lateral connection. In order to attain the full performance of the waterblock, correct connection of inlet and outlet is crucial. When operated with reversed flow direction, the cooling performance is significantly reduced.

The nozzles accelerate the flowing water and provide a better heat transfer. For both cooler variants, the water is then led out through the lateral connection. In order to attain the full performance of the waterblock, correct connection of inlet and outlet is crucial. When operated with reversed flow direction, the cooling performance is significantly reduced.

7. Installation of the PC interface circuit board

Install the circuit board in a free slot of your case. The slot does not have to have any connection on the motherboard.

Please pay special attention to the jumper J1 on the interface board when using an aquaduct 360 XT or 720 XT, as correct setting of this jumper is crucial for correct operation!

The two holes in the bracket are equipped with rubber protectors for safe lead-through of the coolant hoses.

7.1. Connector „power“

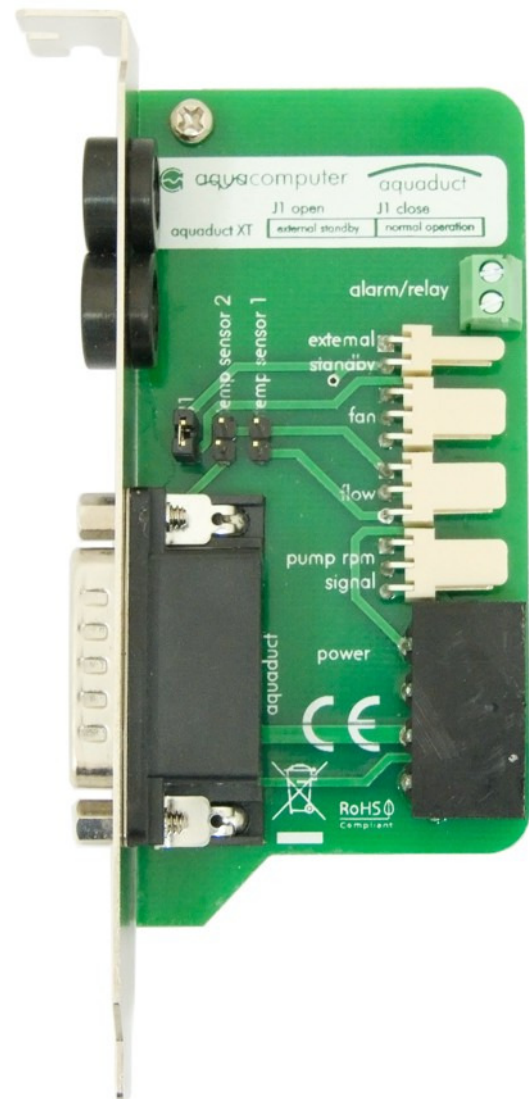
Please connect a HDD power plug of your PSU to this connector. Do not use excessive force but double check the polarity of the plug if having trouble to connect.

7.2. Connector „pump rpm signal“

This connector supplies a artificial rpm signal that is generated by the controlling unit of the aquaduct. This rpm signal can for instance be configured to be switched off in case of an alarm and thereby can be used for status monitoring of the aquaduct. If connected to a fan connector of the motherboard, depending on BIOS functionality and configuration, an alarm power-off can be realised. For details on BIOS configuration, please consult the manual for your motherboard,

7.3. Connector „flow“ (aquaduct 240 PRO only)

Usable for connecting an optional flow sensor. Do only use aqua computer sensors and cables!



Pin assignment Pin 1: GND
Pin 2: 5 V
Pin 3: rpm signal

7.4. Connector „fan“ (aquaduct 360 XT and 720 XT only)

This connector can be used to supply an additional fan inside the PC case. Fan speed can be configured to change depending on temperature or be manually set. The connector features rotation monitoring and supplies a maximum of 5 watts.

Pin assignment Pin 1: GND
Pin 2: 0-12 V
Pin 3: rpm signal

7.5. Connector „external standby“ (aquaduct 360 XT and 720 XT only)

Please refer to the manual „aquaduct controlling unit“ and the note on jumper „J1“.

7.6. Connector „alarm/relay“ (aquaduct 360 XT and 720 XT only)

Please refer to the manual „aquaduct controlling unit“.

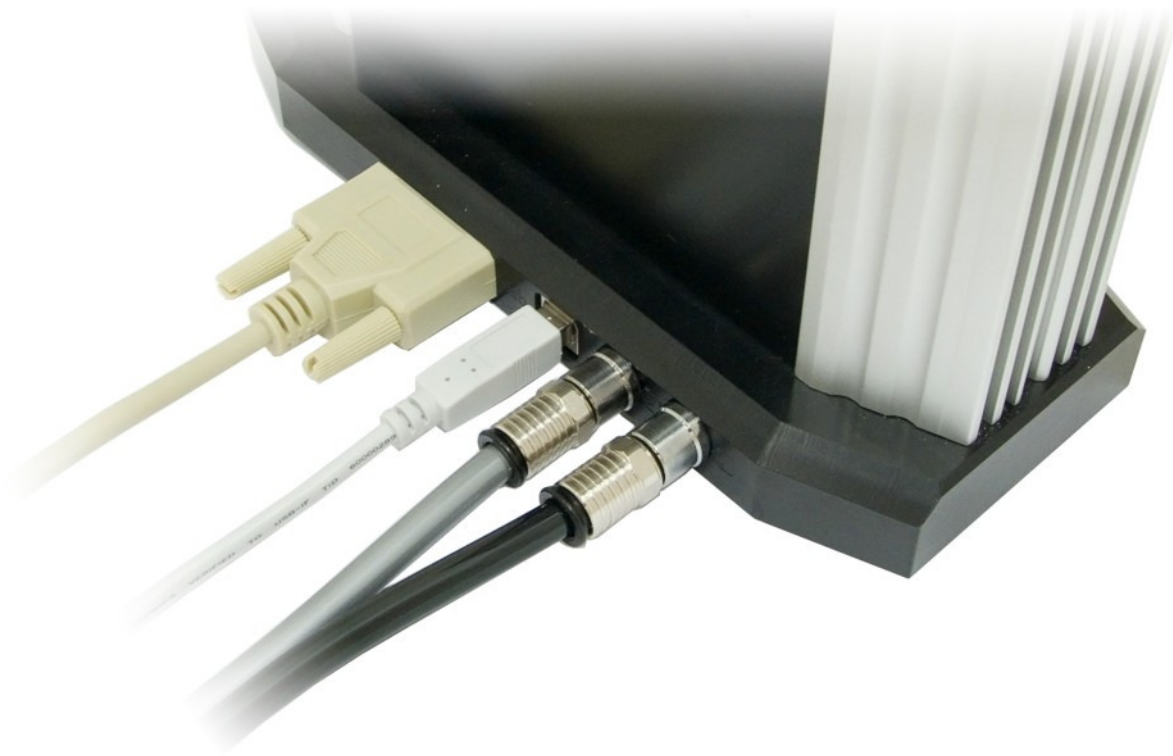
7.7. Jumper „J1“ (aquaduct 360 XT and 720 XT only)

The jumper must be **opened** if the stand-by supply connector is used! The optional accessory “aquapro power connect”, order code 53047, can be used to supply the aquaduct controlling unit with standby power. **IMPORTANT:** If this jumper is set, a stand-by supply **must not** be connected to the interface board!

7.8. Connectors „temp sensor 1/2“ (aquaduct 360 XT and 720 XT only)

Please refer to the manual „aquaduct controlling unit“.

8. Connecting the aquaduct

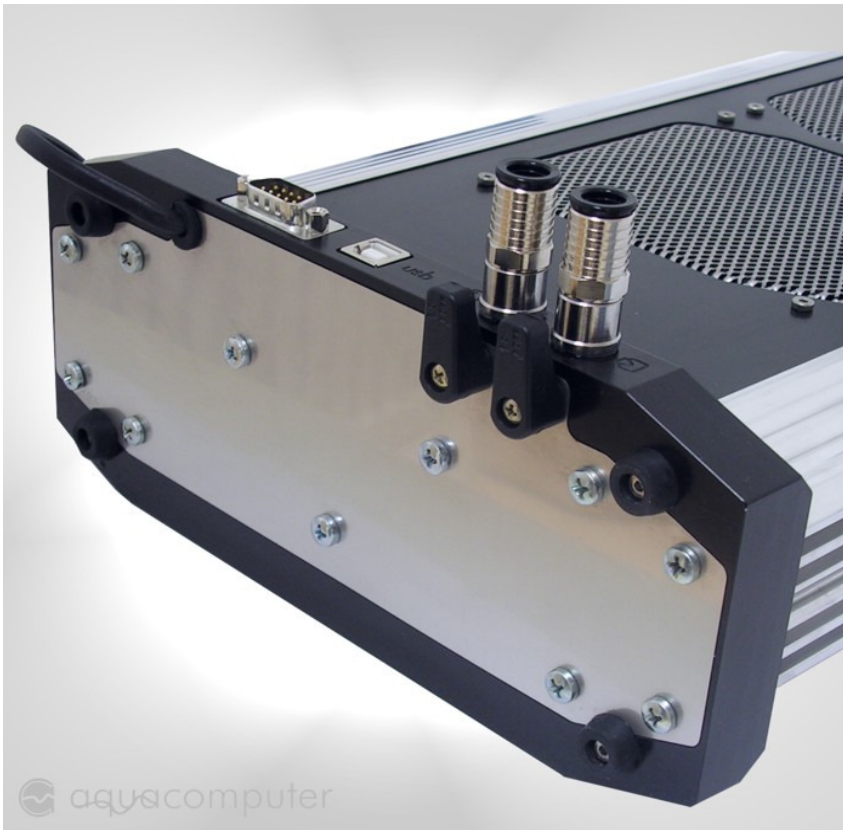


All aquaduct variants have two electrical and two hose connections. The left 15-pin connection serves for the power supply of the aquaduct and always has to be connected with the PC interface circuit board. **Important:** Attach this plug only to the enclosed interface! It is **not** a PC standard connection!

The USB interface of the aquaduct can be connected with the PC to configure the integrated control unit of the aquaduct using the aqua-suite software.

Adjacent to the electrical connectors, the hoses for coolant supply and return have to be connected. Supply and return connector are marked by icons next to the connector. To connect the hoses, at first the fittings included in delivery have to be screwed in. If alternatively special hoses are to be used, fittings with G1/8 thread can be used.

9. Operation of the ball valves



On the bottom side of the base are two ball valves for the in- and outlet connectors. The levers should only be fitted temporarily during setup to avoid unwanted operation by children or domestic animals. It is not necessary to use the enclosed screws.

After equipping the valves with the levers you can close the valves. Turn the valve on the left (see photo) to the left, turn the right one to the right until they stop. When both valves are closed the levers stand in line. Opening is made by turning the levers into the origin position. The open condition is indicated by levers standing in parallel to each other and to the flow direction. It is recommended to use sealing caps (our item number 63020) to prevent leakage from the tubes when they get disconnected from the aquaduct. The tubes should always be disconnected and closed one after another with ball valves in closed position. This will considerably reduce the amount of water leaking from the tubes while disconnecting.

10. Initial operation

As the last step you fill your aquaduct the supplied Double Protect Ultra coolant.

Caution: Disconnect all PC components from the power supply during the whole filling process! Do not start the PC until you have made sure that there are no water leakages! If you do not feel capable of doing this work yourself, charge an expert with the assembly and initial operation!

Caution: Make sure once again that your electrical outlet is protected with a FI circuit breaker!

If this is the case, you may proceed to put the aquaduct into operation.

After you have connected your water cooling blocks (not contained in the scope of delivery) with the aquaduct, make sure that the ball valves of the aquaduct are open. Then you can fill the aquaduct.

For filling the aquaduct open the upper Plexiglas lid with the included allen key. Take care that the seal does not get lost and lies correctly in its seal bed again after filling.

Important: The coolant must be filled into the right aluminum profile, seen from the front. Otherwise it is very difficult to deaerate the system.

If the profile is filled almost up to the upper edge, you can start the aquaduct by establishing the power supply. **Of course the computer must be turned off during the complete filling process since no sufficient cooling function is guaranteed yet!**

To power the aquaduct without switching the computer on, an adapter is included which enables you to start the power supply unit of your PC.

First turn off your PC power supply or remove the main PSU cable if no power switch is present. Remove all cables of the PSU (e.g. from non removable disks, optical storage drives or graphic cards), especially also the 4-pin ATX12V power supply. Connect the aquaduct using the fifteen-pin power supply cable to the PC interface card using the fif-

teen-pin power supply cable and plug a connector of your PSU into the designated jack of the PC interface card.

To start the PC without having it connected to the motherboard you will now have to attach the supplied ATX-connector to the ATX power supply connector of the PSU. After you have attached the connector to the PSU and turned on the mains switch of the PSU, the aquaduct and its pump will start to work.



Please note: Some high-power PSUs will not be able to power the aquaduct without further electrical load due to power regulation problems. In this case, use a second (complete) PC or a separately sold PSU for single component for the filling process. Alternatively, connect further load like hard disk drives and optical drives to the PSU.

The pump of the aquaduct will now pump the coolant from the right profile through all connected water cooling equipment and the level in the right profile will fall. You will have to refill coolant according to the level. After a short while, water will appear in the left profile and the level will rise slowly until water flows back into the right profile via the bridge. Refill coolant until the left profile is completely filled and only 2-3 cm (about 1 inch) of air remains in the right profile, then reattach the lid. Carefully check the position of the gasket below the Plexiglas lid!

Important: If you hear rattling noises from the pump, they are most likely caused by air inside the pump. You can accelerate the deaeration process by carefully tilting the aquaduct. It is absolutely important that there is always enough water in the right profile. Otherwise the pump will draw in air. Since the used radial pump will stop working in this case, the system then must be deaerated completely. To do this, it is necessary to empty the system completely and refill it again.

ATTENTION: Before you put the PC hardware into operation, for safety reasons the complete system must be checked for possible leakages. Do not put the PC hardware into operation before you have made sure that there are no water leakages! If components have come into contact with water, do not put these into operation before they are completely dry again!

The system is operational now. If necessary, remove the ATX start plug from the power supply again and attach all hardware components of the PC to the power supply unit gain.

After a running time of about 10 hours or at visible pollutions, it is advisable to change the coolant once again to remove pollutions and possible production delays (e.g. oils and swarf) from the system.

11. Mechanical fill level and flow indicator

All aquaduct mark III variants have a mechanical fill level- as well as a flow indicator. These are integrated into the two lateral aluminum profiles.

As you have read in the chapter about filling the system, the coolant is filled into the right profile, seen from the front. In this profile you can see a black ball from the side. This shows you the filling level. The filling level must be read while the aquaduct is working and should always be over the middle of the profile.

In the left profile you can see a red ball which swims upwards when switching on the aquaduct. The ball is driven up by a side-flow of the coolant. This ball must not be visible during operation of the system.

Important: The flow indicator only shows a sufficient flow when starting up the aquaduct. Should the flow rate decrease or the circulation be disrupted later, the indicator does not show this. However, it is a very good indicator whether the ball valves of the aquaduct are open and no air is in the system.

12. Electronic fill level and flow indicator (aquaduct 360 XT and 720 XT)

The electronic flow measurement measures precisely the flow of the system. This is shown in the display and in the aquasuite software.

Since the integrated pumps produce a corresponding flow depending on the fill level of the aquaduct and their control curve, it is possible with a special measurement to draw conclusions on the filling level of

the aquaduct. After filling the aquaduct and after changes at the cooling system a calibration of this measuring is necessary. After that the fill level is measured at every start of the aquaduct and is shown on the display as well as in the software.

To ensure a reliable fill level detection, the reference value must be determined first! Due to the principle of measurement, the reference value must be reset after any change to the water cooling circuit, for example after integrating an additional water block to the system.

Calibration of the fill level detection:

1. Check the fill level of the aquaduct using the mechanical indicator in the right side profile and add coolant until the black ball is approximately 1 cm below the upper rim if necessary.
2. Activate the calibration using the PC Software.

During calibration, the pump frequency is temporarily set to a (low) reference value. After completion, the originally set frequency is restored.

13. Maintenance and care instructions

Regularly check the system on possible leaks and observe the water level. If you use the coolant we specified, it is sufficient to exchange it once a year. Since our sets are exclusively closed cooling circuits, an intrusion of air oxygen is not to be expected. This is why the possibility of a biological pollution is very small.

You can check the condition of the coolant through the Plexiglas lids of the coolers and in the profiles of the aquaduct. If there is any pollution you should exchange the cooling medium.

In operation, the pump is maintenance free. All the gaskets in the system have to be exchanged if they are visibly worn out, after 5 years at the latest. You can get spare gaskets from us or let us do the exchange. Also check the hoses for changes in material regularly. Should they get brittle or have scratches you should exchange them.

Care instructions for all Plexiglas components:

Never use solvents (e.g. alcohol, methylated spirit) to clean the Plexiglas parts! Solvents damage the Plexiglas and can cause tears or breaks in the Plexiglas. If a Plexiglas component should get into contact with a solvent, you should exchange it to keep the operation safety of the cooler. Damages caused by solvents may become visible some time after the contact. Suitable spare parts are available from us.

After you read this manual completely, we wish you a successful installation of your water cooling system and hope you will enjoy our products. If you do have any more questions we will be happy to help you per e-mail or in our support-forum.