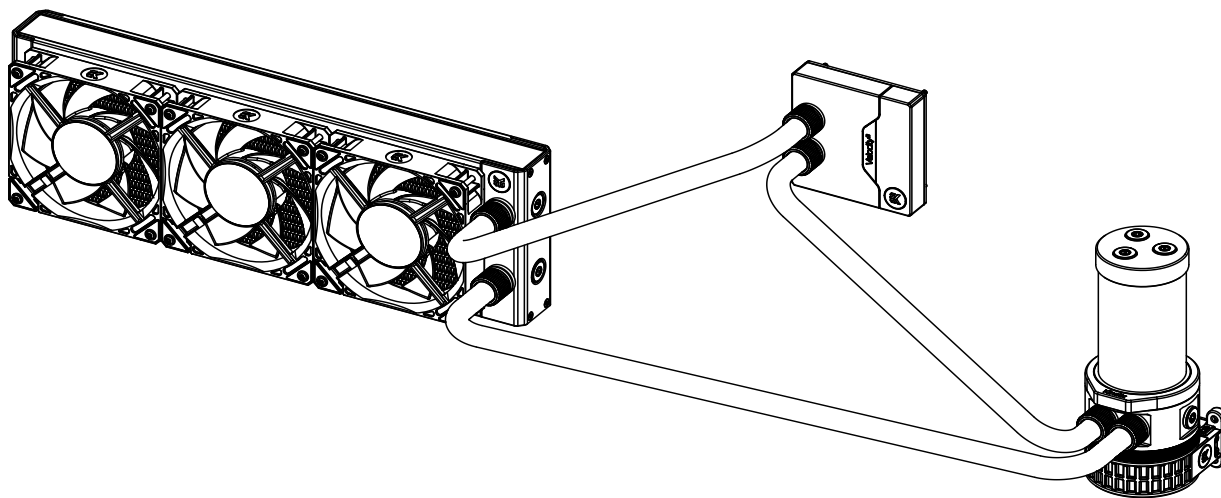


EK-Quantum Power² Kit P360 Series

LIQUID COOLING KIT



Please note the installation of the product is intended to be undertaken by an adequately trained and experienced person. You are installing the product at your own risk. If you are not properly trained or experienced or feel unsure about the installation procedure, please refrain from installing the product yourself and contact our tech support for assistance. We disclaim our liability for any damages to the product as well as incidental, consequential, or indirect damages incurred due to improper or inappropriate installation.



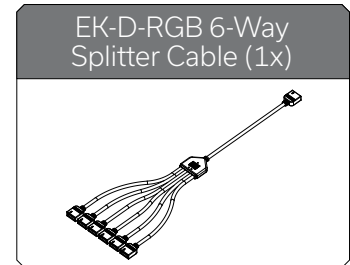
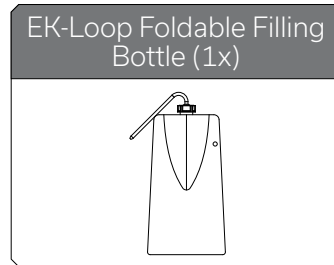
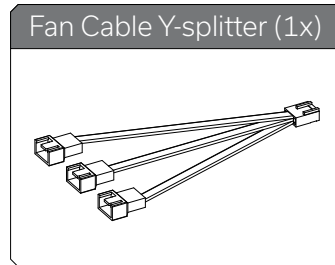
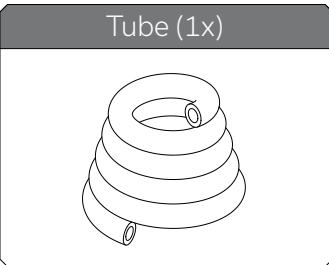
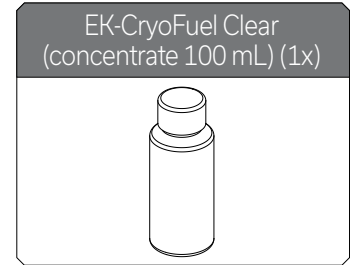
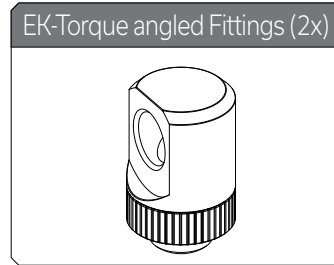
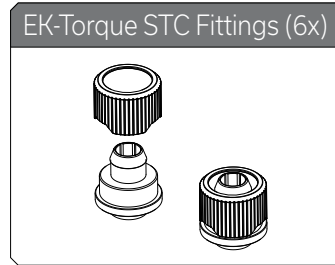
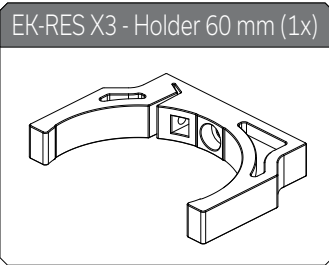
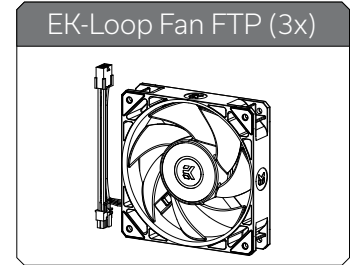
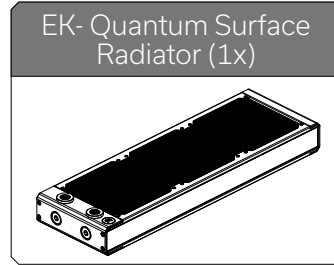
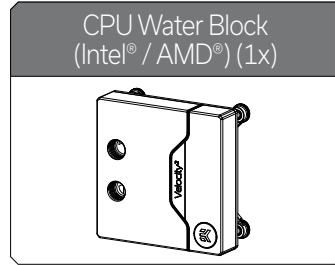
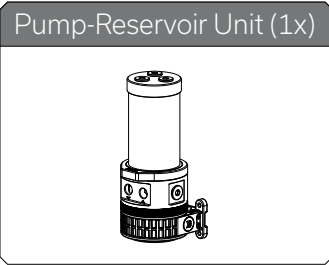
Safety precautions

1. Keep the product away from the reach of children.
2. Check the component list and condition of the product before installation. If there is any problem, contact the shop where you have purchased the product to get a replacement or refund.
3. EKWB is not responsible for any damages due to external causes, including but not limited to, improper use, problems with electrical power, accidents, neglect, alteration, repair, improper installation, and improper testing.
4. CPU and motherboard are subject to damage if the product is incorrectly installed.
5. This product is a CPU liquid cooling kit, comprising of individual, original EKWB parts. Combining this liquid cooling unit with parts other than EK Water Blocks products may lead to warranty loss.
6. The product warranty period is 24 months.

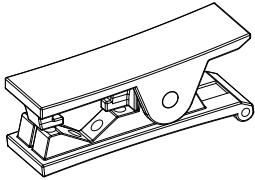
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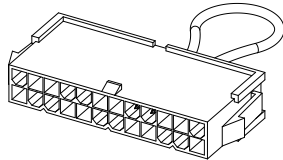
BOX CONTENTS



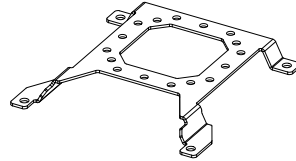
EK-Loop Soft Tube Cutter (1x)



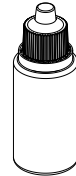
EK-ATX Bridging Plug (24 pin) (1x)



EK-Loop Uni Pump Reservoir Bracket (1x)

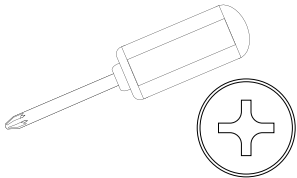


EK-CryoFuel Dye Pack (1x)

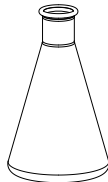


REQUIRED TOOLS

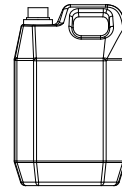
Phillips-head Screwdriver



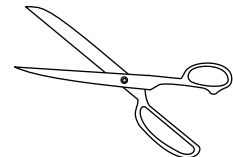
Mixing Bottle



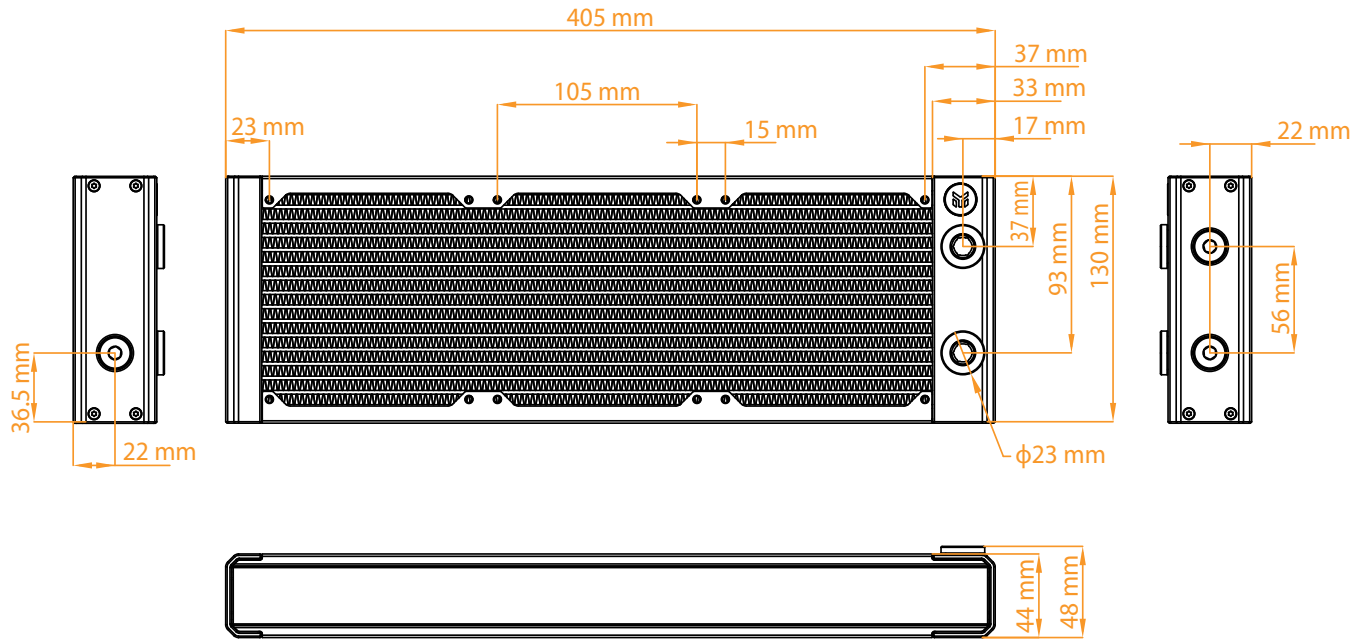
1L Bottle of distilled Water



Scissors



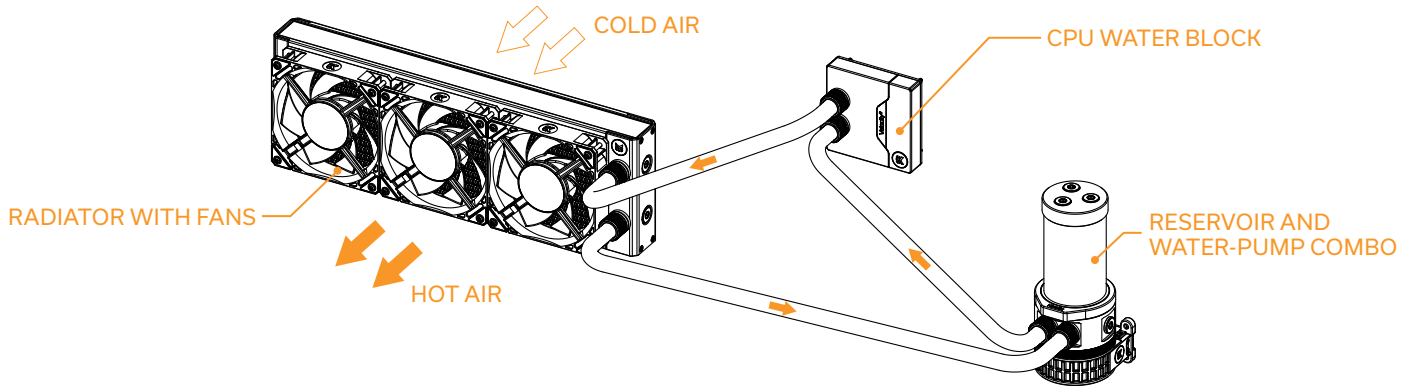
RADIATOR SPACE REQUIREMENTS



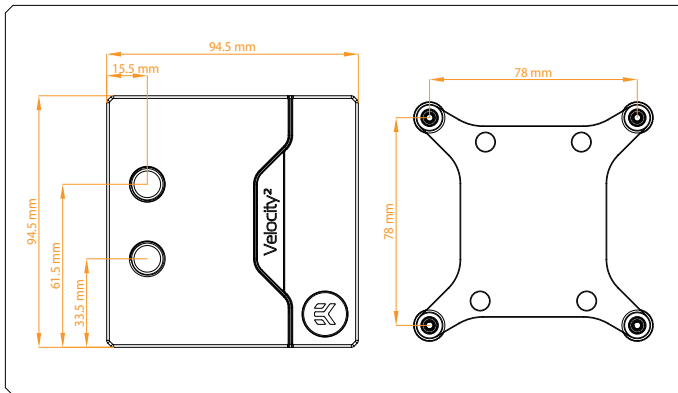
INSTALLATION TIPS FOR NOVICES

1. To lower the shipping cost, we have decided to enclose the coolant concentrate only. Therefore, you need to provide 1 liter (1L) of distilled water. You can find it at every gas station or supermarket.
2. Never run this system on tap water and always use the enclosed cooling concentrate in the right ratio.
3. Never use alcohol, alcohol derivatives, or alcohol-based solvents in the system. Using alcohol might result in permanent damage to water-cooling KIT components, especially acrylic parts of the system
4. It is best practice to do a proper 24-hour leak test before using your computer.
5. If you spot any leaks, turn off the power immediately.
6. Optimize tube length to prevent excessive bending and kinking of the tubing.
7. Never let your pump run dry. If this is happening for a prolonged period, you risk destroying the water pump's bearing, ultimately rendering the pump useless.
8. You are encouraged to periodically clean the radiator assembly as it will collect dust over time. It's best to be done with a soft wide-tip brush and a vacuum cleaner. See chapter Cleaning Guide.

LIQUID COOLING SYSTEM

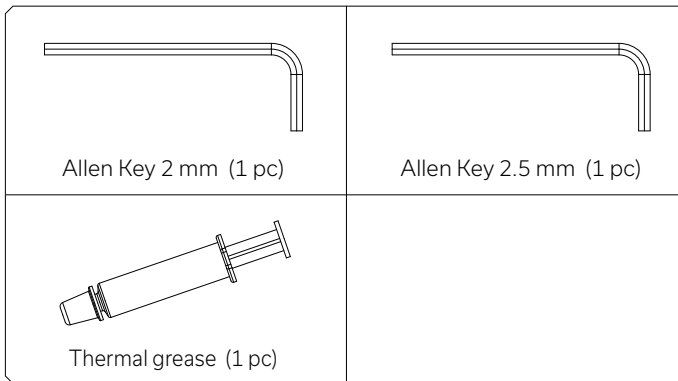


GENERAL INFORMATION ON CPU WATER BLOCK COMPATIBILITY

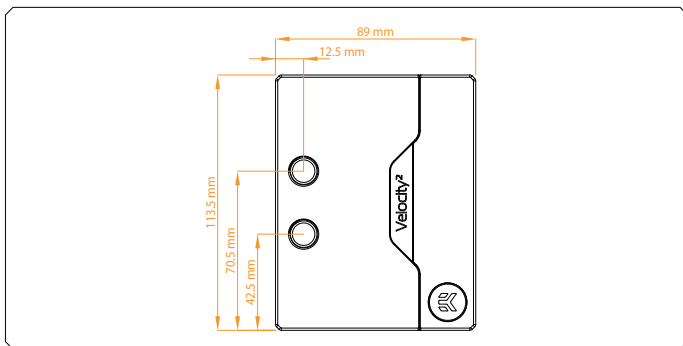


INTEL LGA 1700

This CPU liquid cooling unit is pre-assembled for use with modern Intel desktop socket-type motherboards. By default (out of the box) this water block supports the Intel LGA 1700 socket.



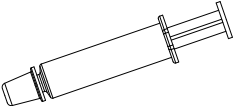

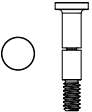


INTEL LGA 1700 CPU MOUNTING MECHANISM



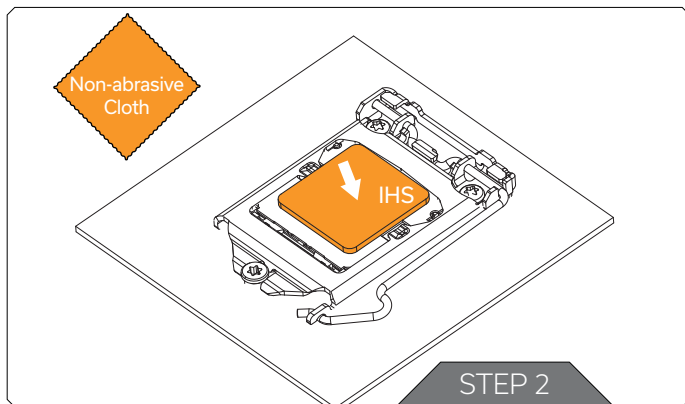
AMD AM5

This CPU liquid cooling unit is pre-assembled for use with modern AMD desktop socket-type motherboards. By default (out of the box) this water block supports the AMD AM5 socket.

 <p>Allen Key 2 mm (1 pc)</p>	 <p>Allen Key 2.5 mm (1 pc)</p>
 <p>Thermal grease (1 pc)</p>	 <p>Tx7 L-Shaped wrench (1 pc)</p>
 <p>Velocity² Mounting Screw AM5 (Ni) (1 pc)</p>	

AMD AM5 CPU MOUNTING MECHANISM

INSTALLING THE CPU WATER BLOCK



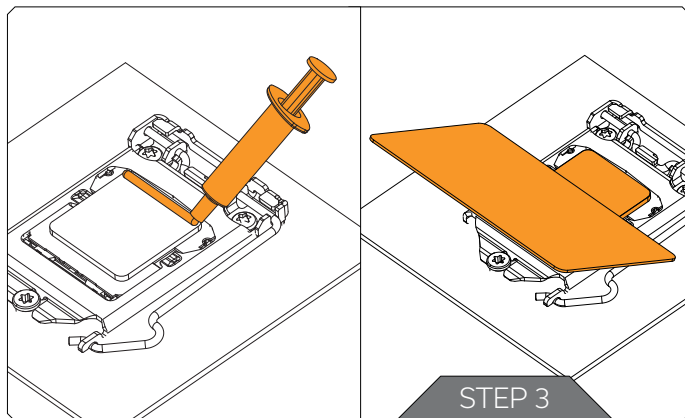
INTEL LGA 1700

STEP 1

If already installed, please remove the motherboard from your computer and place it on an even surface.

STEP 2

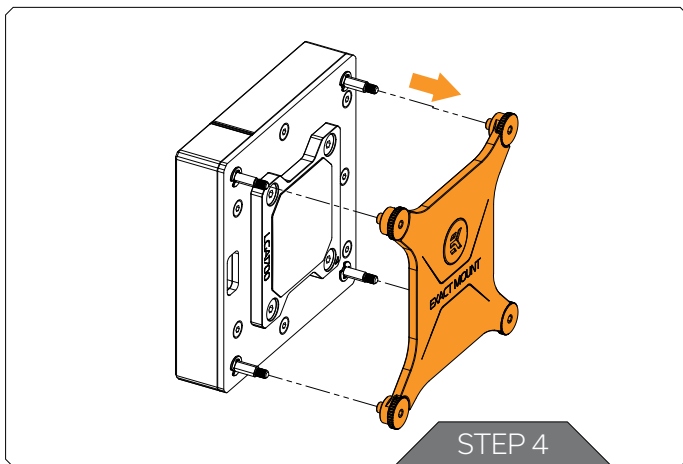
Install the CPU and clean the IHS surface using a non-abrasive cloth or Q-tip as shown in the illustration.



STEP 3

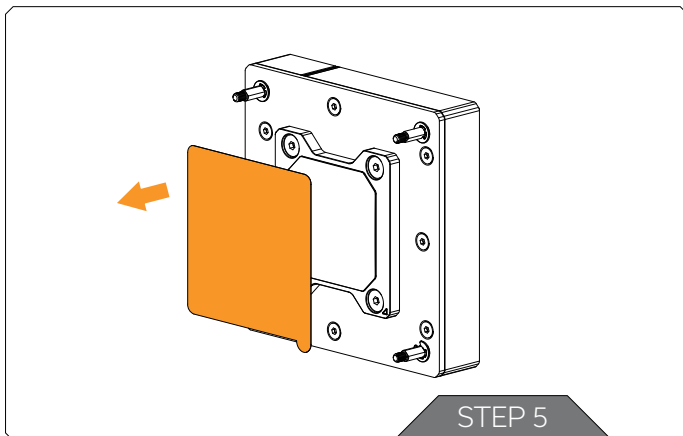
Applying thermal compound: Once clean, apply a line of Thermal Compound on one edge of the IHS and use a credit card or similar to spread it evenly.

The layer of Thermal Compound must be thin and even in thickness over the entire surface of the IHS. Excessive or irregular application may lead to poor performance. This method works for Thermal Grizzly Hydronaut Thermal Compound as supplied with Velocity2 CPU Water Block.



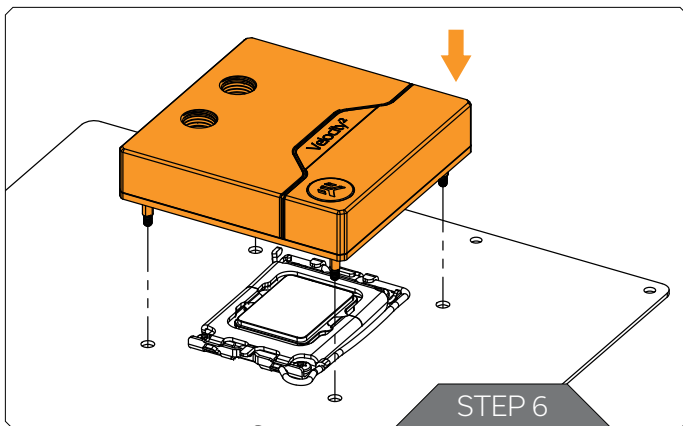
STEP 4

Unscrew the pre-installed backplate from the backside of the CPU using an Allen Key 2.5 mm and save it for the later steps.



STEP 5

Before placing the water block, it is mandatory to remove the protective foil from the backside.

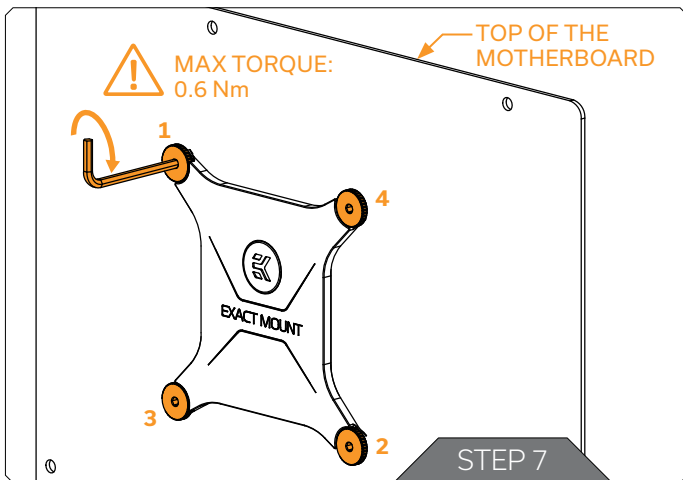


STEP 6

Position the CPU Water Block onto the Motherboard. Make sure to align the holes (as shown in the picture).



Make sure to double-check the layer of the Thermal Grease before placing the water block onto the motherboard.



STEP 7

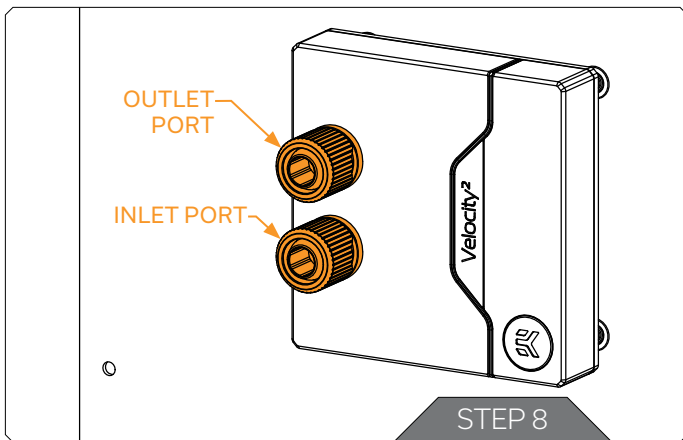
After placing the water block, the stored backplate must be attached to the backside of the motherboard using Allen Key 2.5 mm (shown in the picture).

Start fastening the backplate screws in a cross pattern. Do not tighten fully until all of the nuts are partially screwed in. The Allen Key 2.5mm must be used in a standing position! Otherwise, the mounting screws may crack during tightening!

EK recommends using the EK-Loop Torque Screwdriver - 0.6Nm:
<https://www.ekwb.com/shop/ek-loop-torque-screwdriver-0-6nm>



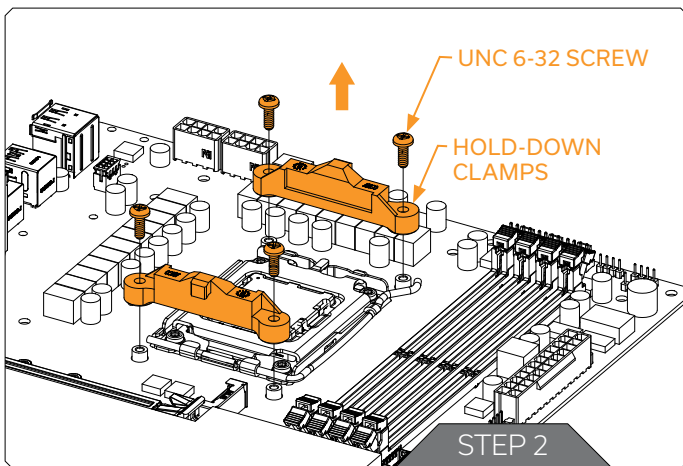
Make sure to orientate the backplate as illustrated. Incorrect installation of the backplate may result in damage to the motherboard.



STEP 8

: With EK-Velocity² series water blocks, it is mandatory to use the bottom port as the INLET. Mixing the ports may result in poor thermal performance of the water block. Tighten the fittings in a clockwise direction until the gasket underneath is compressed.

After installing the CPU water block, the motherboard can be installed into the PC Chassis.



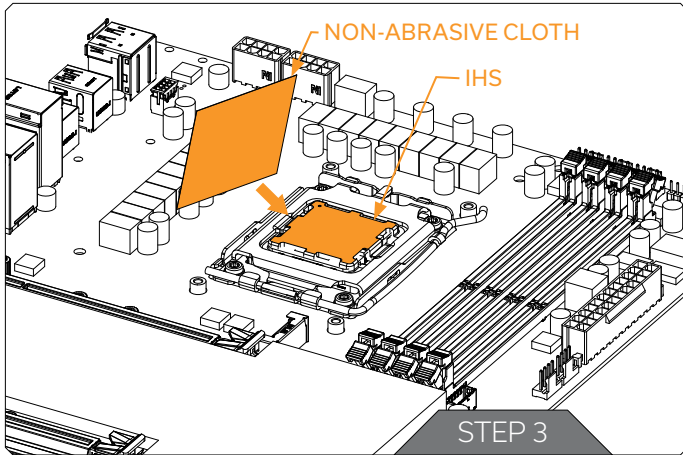
AMD AM5

STEP 1

If already installed, please remove the motherboard from your computer and place it on an even surface.

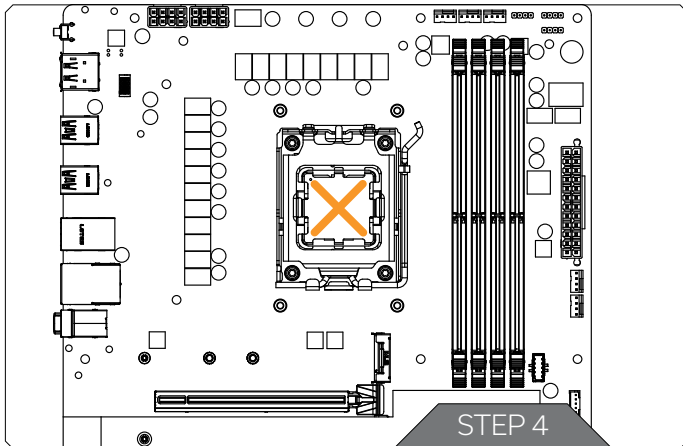
STEP 2

Using a Philips-head screwdriver remove the four UNC 6-32 screws securing the original plastic hold-down clamps around the socket as shown in the illustration. Remove the hold-down clamps and store them away.



STEP 3

Install the CPU and clean the IHS surface using a non-abrasive cloth or Q-tip as shown in the illustration.

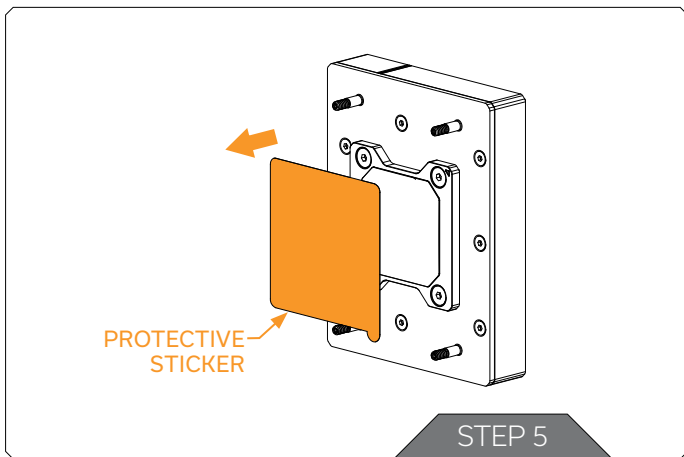


STEP 4

Apply the enclosed thermal grease (thermal compound) on the CPU heat spreader - IHS - as shown in the image. The layer of the thermal compound must be thin and even in thickness over the entire surface of the IHS.

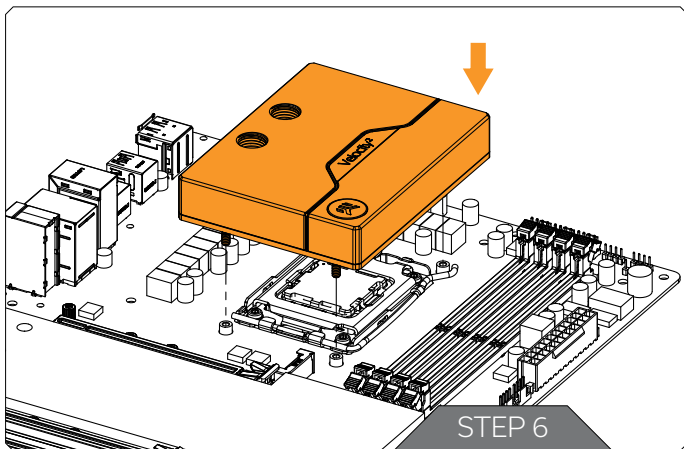


The excessive or uneven application of thermal grease may lead to poor performance!



STEP 5

Before placing the water block, it is mandatory to remove the protective foil from the backside.



STEP 6

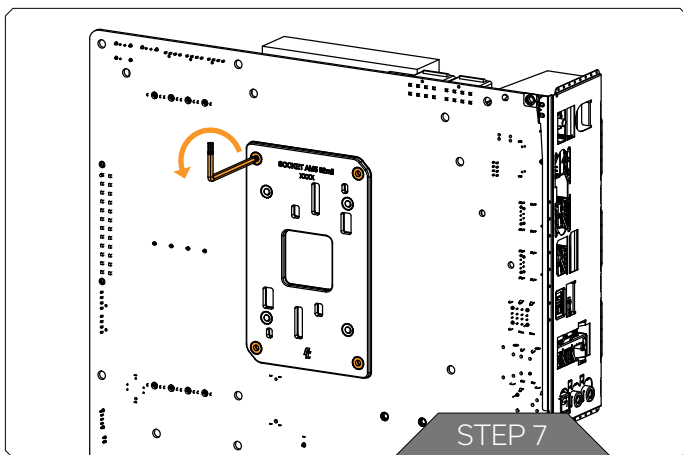
Position the CPU Water Block onto the Motherboard. Make sure to align the holes (as shown in the picture).



Before placing the water block, it is mandatory to remove the protective foil from the backside.



Make sure to double-check the layer of the Thermal Grease before placing the water block onto the motherboard.

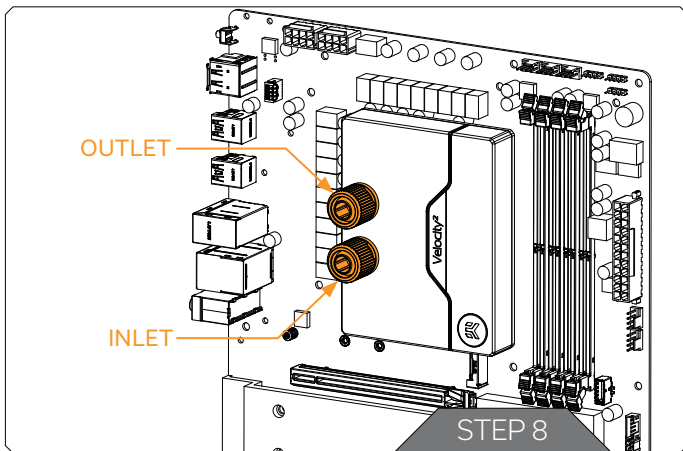


STEP 7

Secure the water block from the backside of the motherboard using the included Tx7 L-Shaped wrench.

Tighten the mounting screws in an anti-clockwise direction. Start fastening the screws in a cross pattern. Do not tighten fully until all of the screws are partially screwed in.

The Tx7 L-Shaped wrench must be used in a standing position! Otherwise, the mounting screws may crack during tightening!



STEP 8

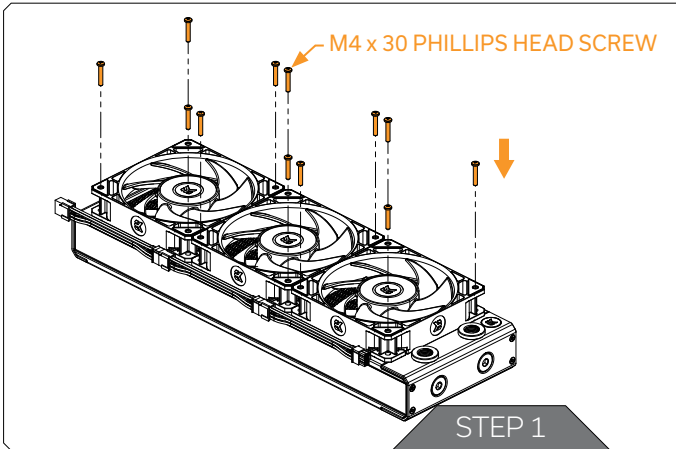
With EK-Velocity² series water blocks, it is mandatory to use the bottom port as the INLET.

Mixing the ports may result in poor thermal performance of the water block.

Tighten the fittings in a clockwise direction until the gasket underneath is compressed.

After installing the CPU water block, the motherboard can be installed into the PC Chassis.

INSTALLING THE RADIATOR AND FANS



Before positioning the fans on the radiator, decide if you want them to serve as the hot air exhaust (Method 1 - when fans are placed on the exhaust) or to receive the coldest air possible (Method 2 - when they're placed on the air inlet).

The first method results in an overall decrease in temperature throughout the entire computer chassis but also leads to slightly higher liquid temperatures. A reversed airflow is a viable option, but you should always strive to achieve unidirectional airflow throughout the chassis.

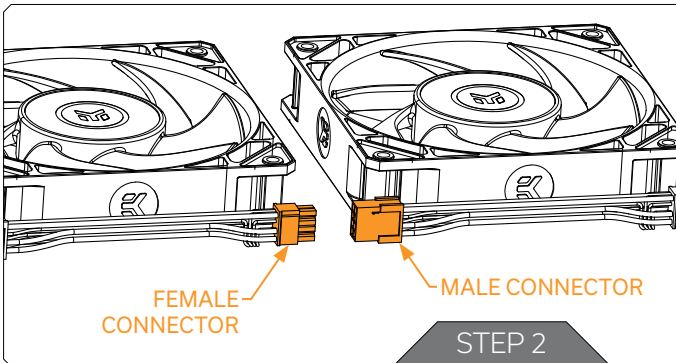
METHOD 1

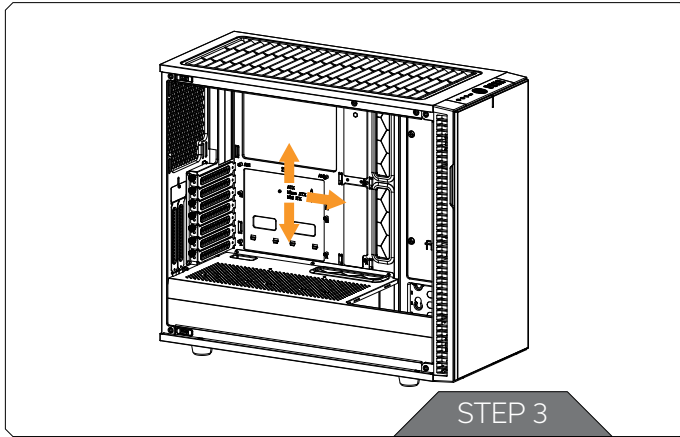
STEP 1

Take four (4) M4x30 Phillips Head screws for each fan (from the radiator mounting box) and tighten them. Use the Phillips Head Screwdriver to tighten the screws in the clockwise direction.

STEP 2

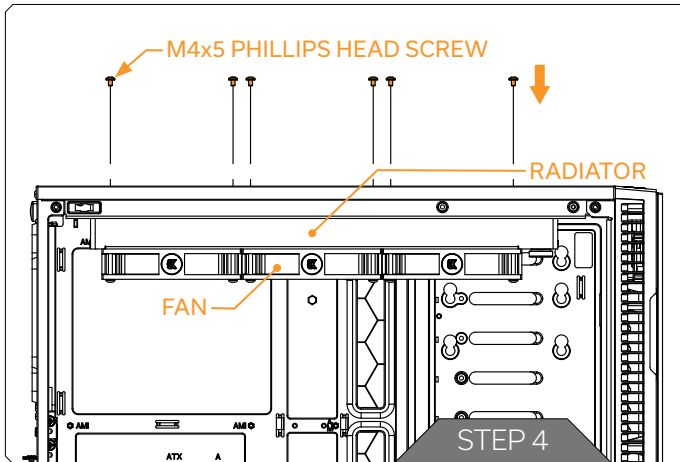
Connect the Fan-s in series with the "daisy-chain". Make sure to turn the connectors correctly.





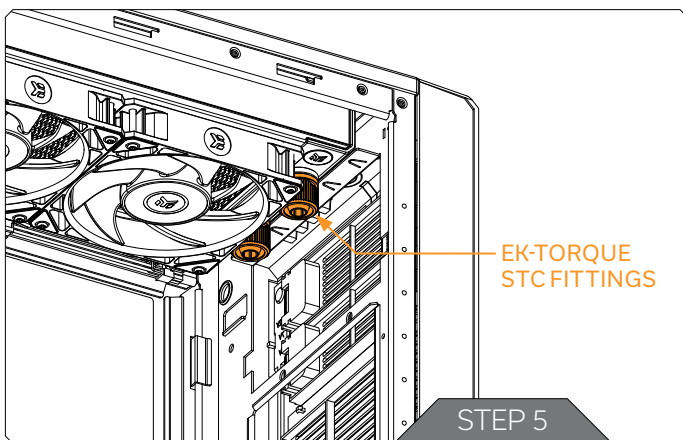
STEP 3

Prepare your suitably-sized PC chassis for the installation of the radiator unit. The position of the unit in the chassis depends on its size, fan mounting holes, and the hardware that is installed. You must make sure the unit fits into the case. Usually, cases already have standard pre-drilled fan-mounting holes, and you should look for those with a spacing of 105mm (for standard 120mm computer cooling fans) or 125mm (for 140mm cooling fans).



STEP 4

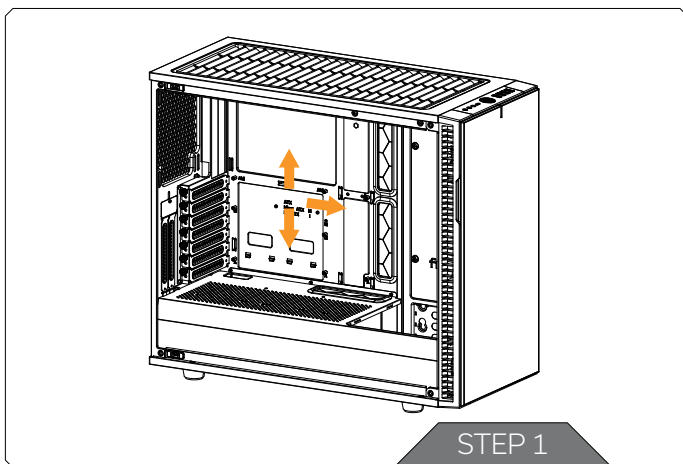
Align the holes of the radiator with the ones in the PC chassis. Take four (4) M4x5 Phillips Head screws for each fan (from the radiator mounting bag) and guide them through the holes in the chassis, then screw them into the threaded holes of the radiator. Tighten them in a clockwise direction using the Phillips Head Screwdriver.



STEP 5

Install the compression fitting on two (2) G1/4 extender openings of the radiator. Make sure to close the remaining ports. Tighten the fitting bars in the clockwise direction. The installation of the radiator and fans is now complete.

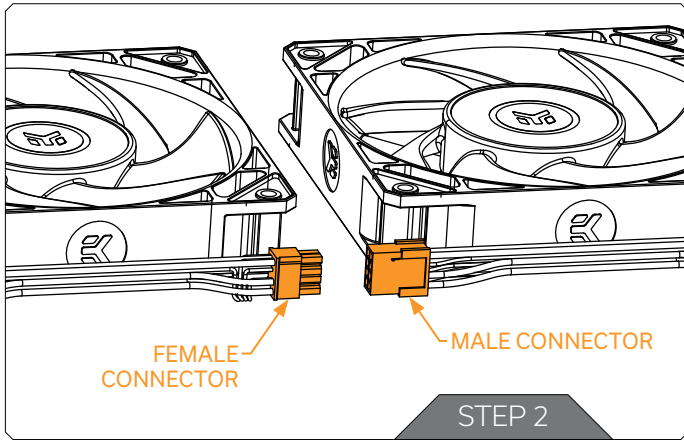
OPTIONAL: EK-Quantum Power² Kit also comes with two pieces of EK-Torque 90° Angled Fittings, which can be installed on the Pump-Reservoir Combo unit, CPU unit, or Radiator.



METHOD 2

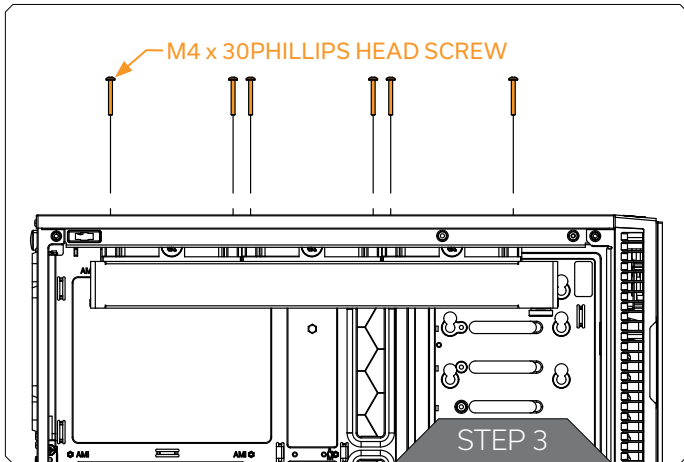
STEP 1

Prepare your suitably-sized PC chassis for the installation of the radiator unit. The position of the unit in the chassis depends on its size, fan mounting holes, and hardware that is installed. You must make sure the unit fits into the case. Usually, cases already have standard pre-drilled fan mounting holes, and you should look for those with a spacing of 105mm (for standard 120mm computer cooling fans) or 125mm (for 140mm cooling fans).



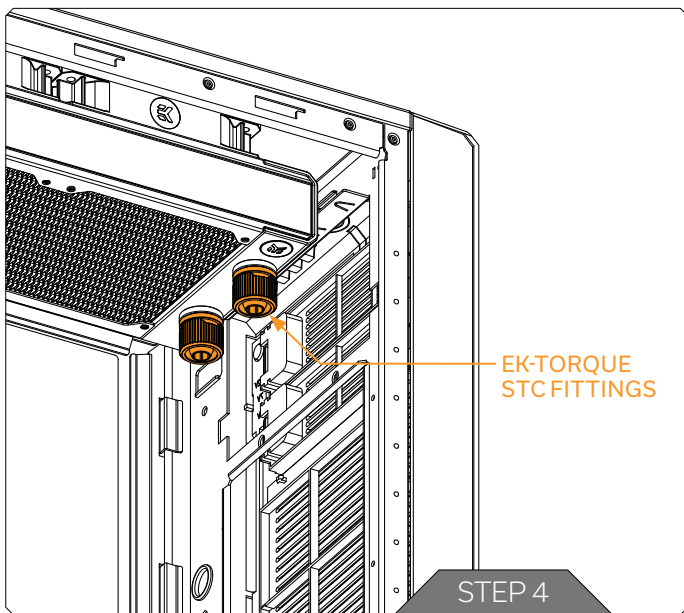
STEP 2

Connect the Fan-s in series with the "daisy chain". Make sure to turn the connectors correctly.



STEP 3

Align the holes of the radiator and fans with the ones in the PC chassis. Take four (4) M4 x 30mm screws (From the radiator mounting bag) for each fan and guide them through the holes of the chassis and fans, then screw them into the threaded holes of the radiator. Tighten them in a clockwise direction using the Phillips Head Screwdriver.



STEP 4

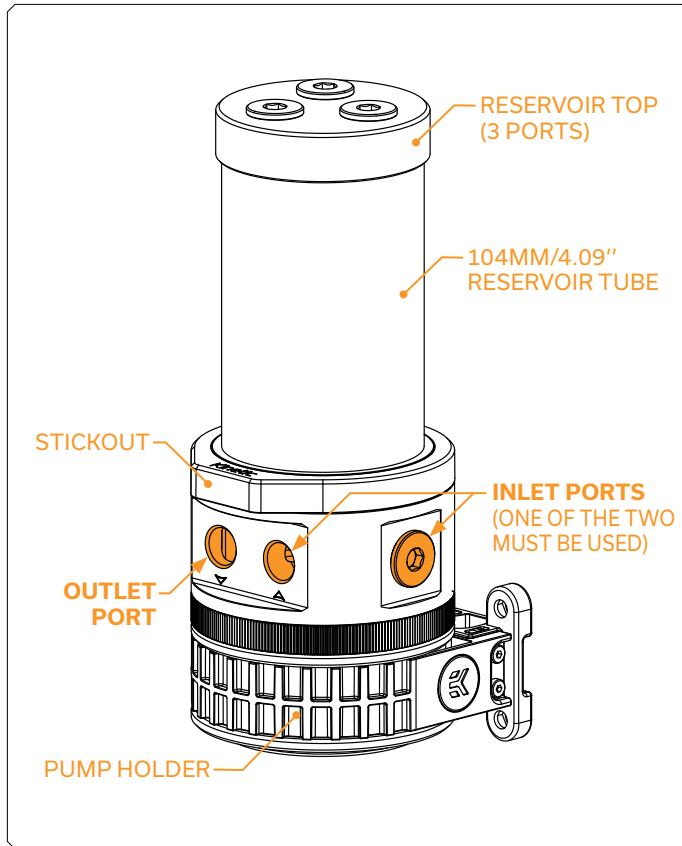
Install compression fittings on the G1/4 openings of the radiator. Make sure to close the remaining ports. Tighten the fitting barbs in the clockwise direction until the gasket underneath is compressed.

The installation of the radiator and its cooling fans is now complete.

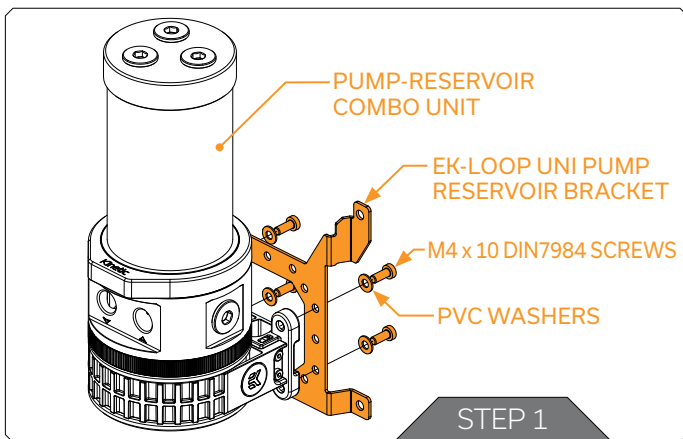
OPTIONAL: EK-Quantum Power² Kit also comes with two pieces of EK-Torque 90° Angled Fittings, which can be installed on the Pump-Reservoir Combo unit, CPU/GPU unit, or Radiator.

INSTALLING THE PUMP-RESERVOIR COMBO UNIT

MOUNTING MECHANISM



<p>Tube HD 12/16 (41,00 mm) (1 pc)</p>	<p>EK-PLUG G1/4 Acetal (1 pc)</p>	<p>OR 16,1 x 1,6 (1 pc)</p>
<p>Allen Key 2 mm (1 pc)</p>	<p>Allen Key 2.5 mm (1 pc)</p>	<p>M4 PVC Washer (5 pcs)</p>
<p>Protective Sticker (1 pc)</p>	<p>M3 x 12 mm DIN7984 (2 pc)</p>	<p>M4 x 10 DIN7984 (5 pcs)</p>
<p>Inlet Tube + O-Ring Gasket (1 pc)</p>	<p>Multi Allen Key (1 pc)</p>	



STEP 1

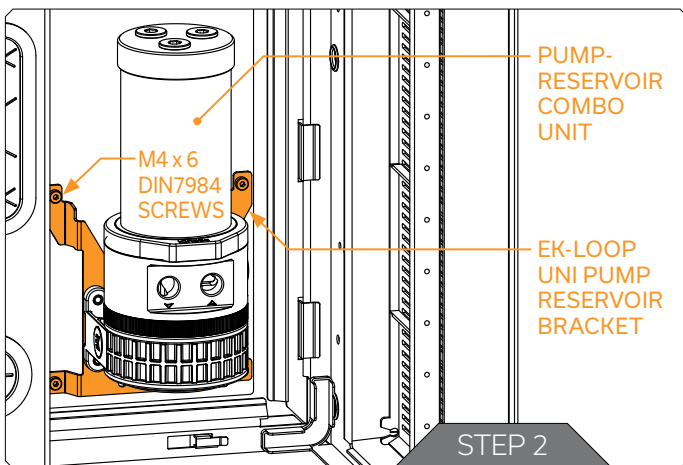
The EK-Quantum Power² Kit comes with a combined pump and reservoir unit with a pre-installed antivibration holder.

Take the unit and place it on the EK-Loop Uni Pump Reservoir Bracket, as shown in the picture.

You can turn the pump in any direction, but do not turn it upside-down.

Secure the pump from the backside using four (4) M4 x 10 screws and PVC washers. Tighten them in a clockwise direction using the enclosed 2.5mm Allen key.

This unit can be installed without the use of a pump bracket if there is a 62 x 34mm rectangular mounting hole pattern in the chassis.

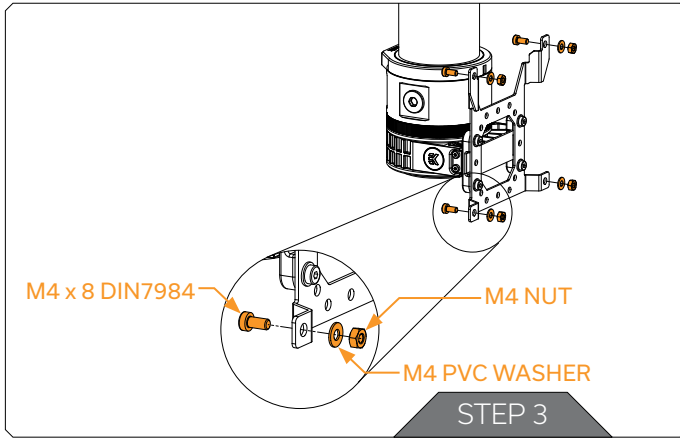


STEP 2

The position of the unit will depend on the fan mounting holes and hardware that is installed in the chassis. Usually, cases already have standard pre-drilled fan-mounting holes, and you should look for those with a spacing of 105mm.

Alternatively, you can drill four Ø4.5mm holes using an electric power drill in the most suitable place of your computer chassis.

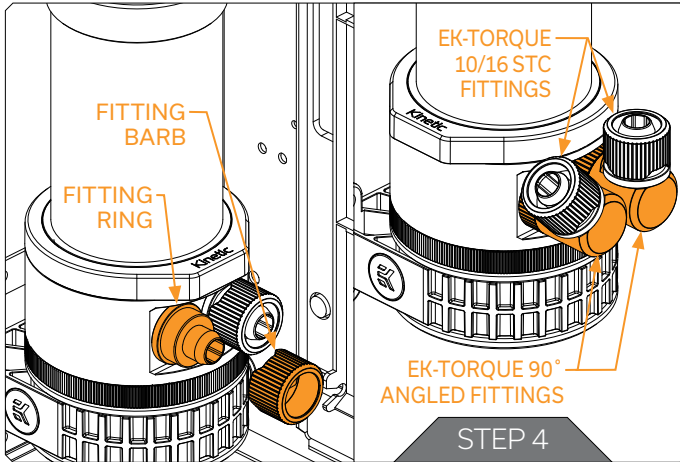
Place four M4 x 6 DIN7984 screws into the holes of the EK-Loop Uni Pump Reservoir Bracket from its front side.



STEP 3

Secure the M4 x 6 screws from the previous Step with four (4) M4 nuts and PVC washers. Tighten them with a 2.5mm Allen key.

The pump-reservoir unit has clearly marked inlet (^) and outlet (v) G1/4 ports. Not taking that into account will lead to reverse flow.



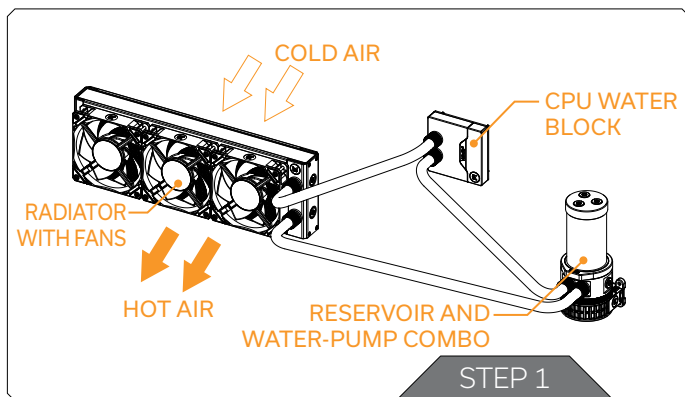
STEP 4

Tighten the fitting barbs in the clockwise direction until the gasket underneath is compressed.

The installation of the pump-reservoir unit is now complete.

OPTIONAL: EK-Quantum Power² Kit also comes with two pieces of EK-Torque 90° Angled Fittings, which can be installed on the Pump-Reservoir Combo unit, CPU unit, or Radiator.

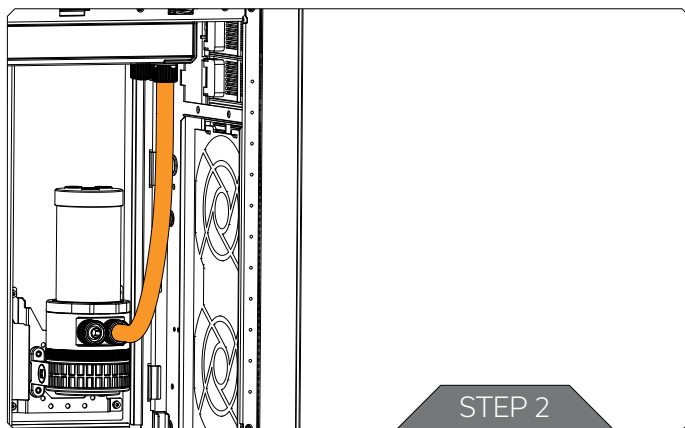
CONNECTING THE TUBING



If you are adding another unit to your water-cooling loop, please check the chapter System Expansion Possibilities.

STEP 1

In order to successfully route your tubing, we recommend you check the liquid cooling scheme.

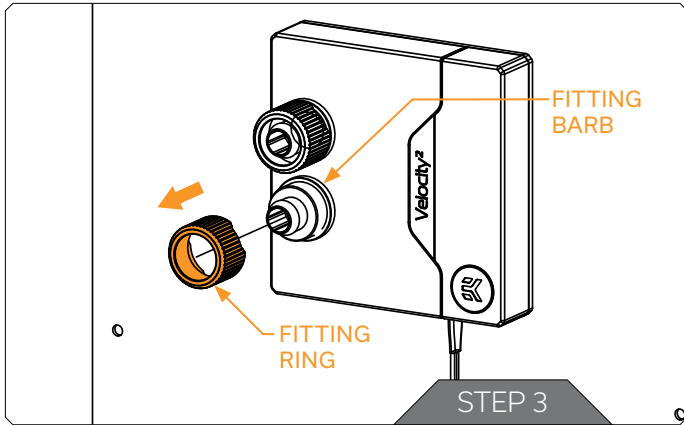


STEP 2

Try to visualize the tube route and then measure its distance by trying to fit it into the chassis. Mark the required length with a felt-tip pen.

Before you make the first cut, keep in mind that it's best to have 2-3cm in tube length to spare. You can always shorten the tube afterward.

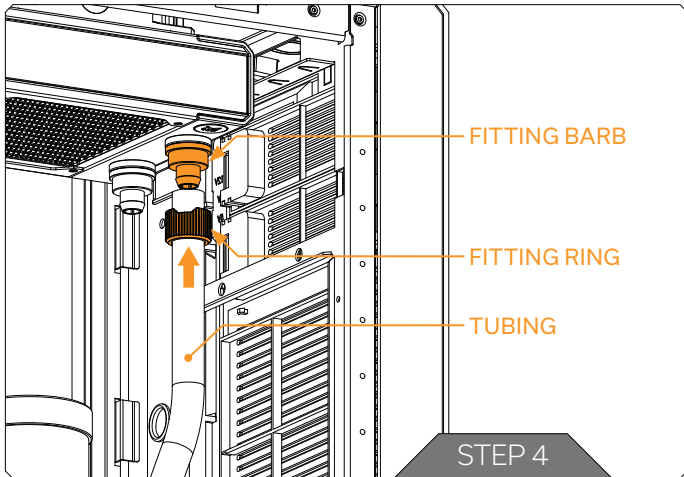
For the coolant to flow without restriction, make sure the tube is not bent or twisted.



STEP 3

If you assembled the components according to this installation manual, all the compression fittings should have already been installed.

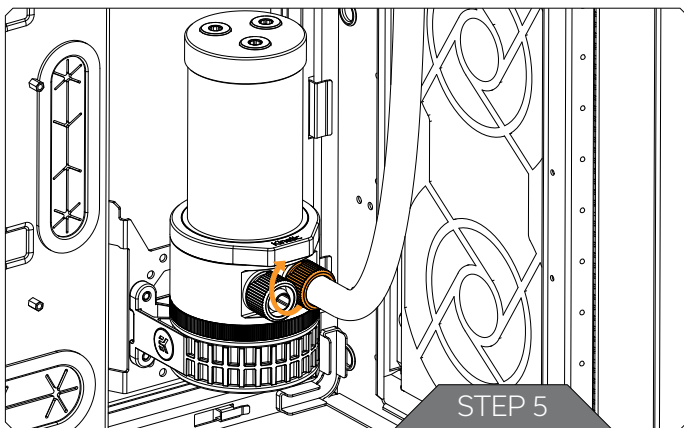
To fit the tubing onto the compression fittings, you will have to remove fitting rings by rotating them in a counter-clockwise direction.



STEP 4

Slide the fitting ring along the tube with the threaded side facing the fitting barb. Install the tube on the fitting barb.

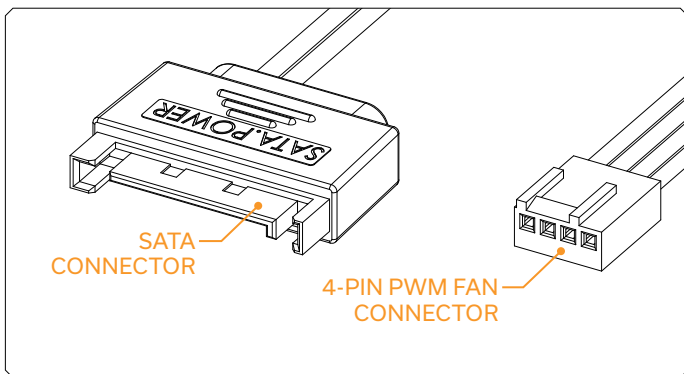
You can do that by forcing it to slide over the edge as far as it goes. If needed, heat the tube in warm water.



STEP 5

Slide the fitting ring toward the fitting barb and tighten it in a clockwise direction as far as it goes. Repeat the procedure on all fittings to connect your liquid cooling loop.

ELECTRICAL INSTALLATIONS



CONNECTING THE PUMP-RESERVOIR UNIT

The EK-D5 PWM pump has two connectors..

- 1. SATA Connector:** It must be connected directly to your PSU at all times as it is used to power the pump.
- 2. 4-pin PWM fan:** It can be connected to your motherboard's CPU_ Fan or designated water pump header. It can also be connected to a controller. This cable is used to control and report the rotational speed of the pump. If it's not connected, the pump will run at maximum speed (100% PWM).

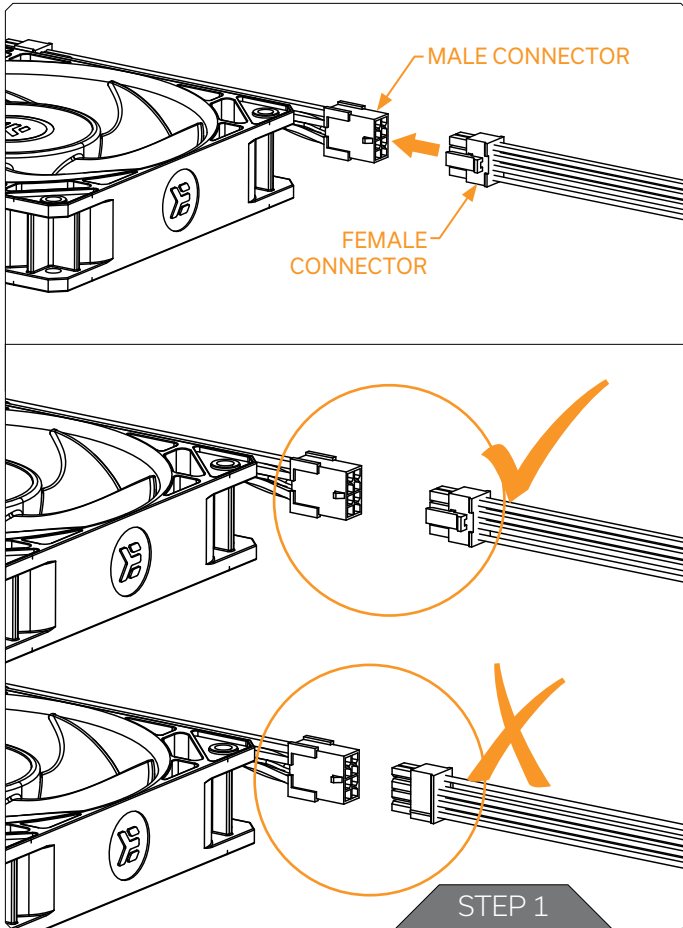
CONNECTING THE FANS

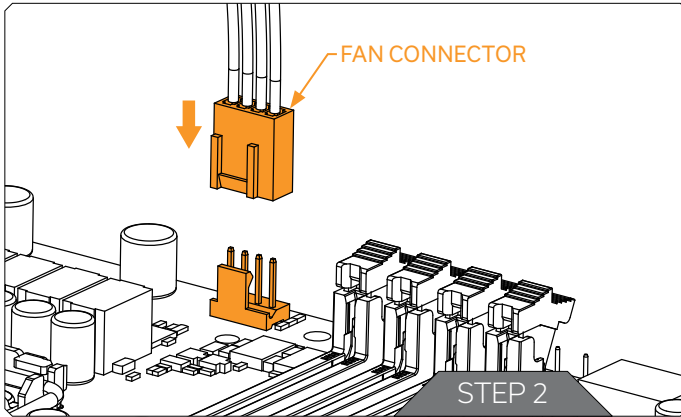
STEP 1

From the fan box, take the extension cable. Connect the female connector from the extension cable to the male connector from the fan.

*Make sure all fans are properly connected!

Make sure to turn the Female connector correctly.



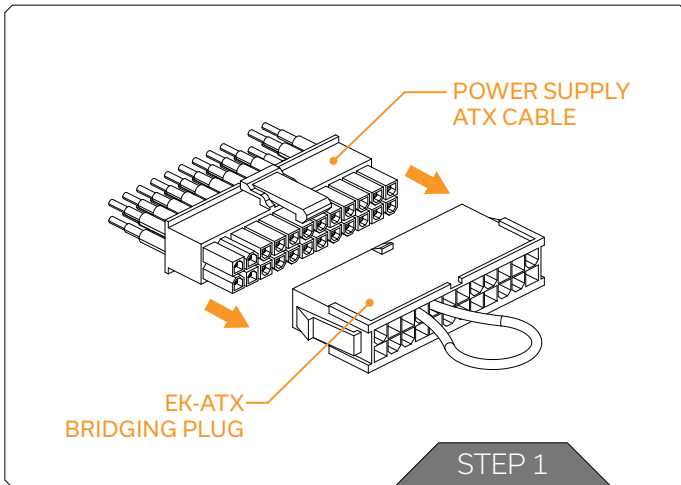


STEP 2

Connect the 4-pin fan connector from the extension cable directly to the CPU fan header on the motherboard.



We recommend using the CPU fan header. On the majority of motherboards, these headers usually offer the best PWM regulation.



RECOMMENDED FILLING AND LEAK TESTING PROCEDURE

STEP 1

It is mandatory to do the following:

1. Disconnect all PSU power connectors on your PC (4/8-pin EPS, 24-pin ATX, PCIeexpress power, SATA power),
2. Plug the EK-ATX Bridging Plug (enclosed) into the 24-pin ATX PSU cable, which allows jump-starting your computer.

This procedure requires only the pump to be connected to the power supply (PSU). Everything else needs to be disconnected!



This Step must be done to prepare the power supply for the pump, so you can fill the water cooling loop with coolant and run the leak test.

Your system is now ready to be charged for the first time.

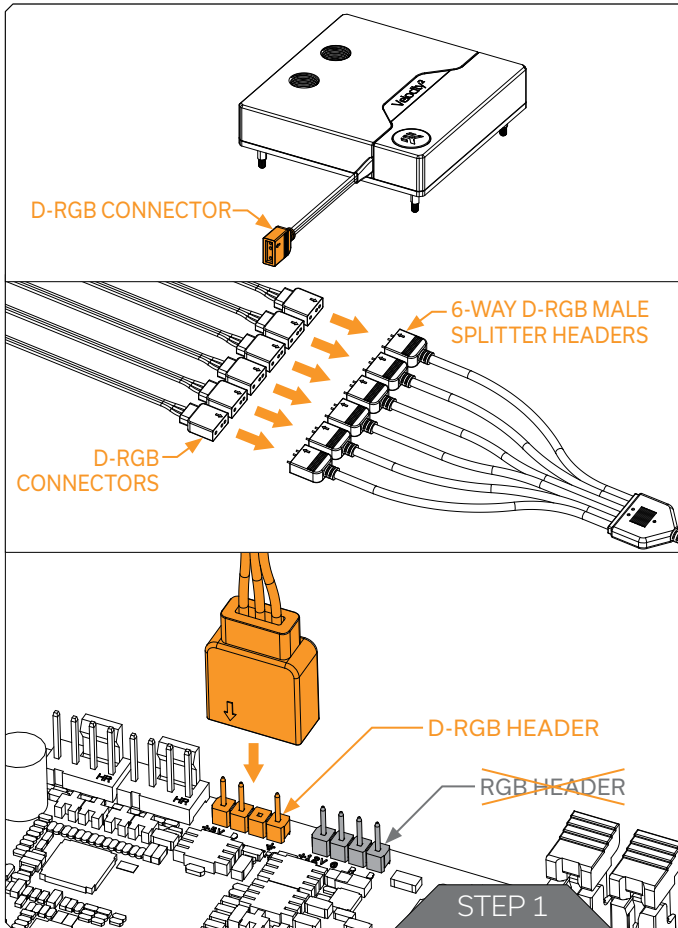
CONNECTING THE FANS, PUMP AND CPU D-RGB LIGHTS

STEP 1

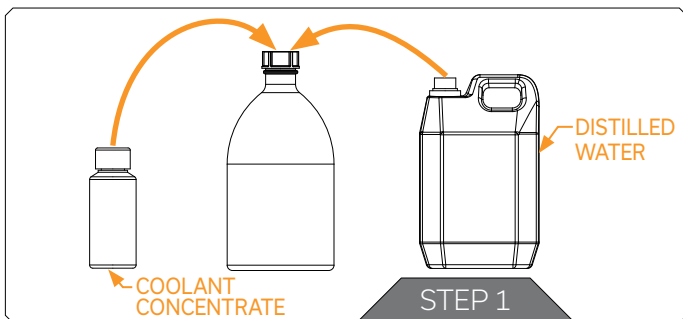
Connect the 3-pin D-RGB LED connector from the pump-reservoir unit, water block, and fans to the D-RGB header on the motherboard. The lights will work if the pin layout on the header is as follows: **+5V, Data, Empty, Ground.**

Please ensure that the arrow indicated on the connector is plugged into the +5V line, as indicated on your motherboard. If you connect LEDs to the 12V RGB header, it will damage them.

You may use the enclosed 6-way D-RGB splitter cable to connect all the D-RGB cables into one header on your motherboard.



FILLING THE SYSTEM FOR THE FIRST TIME



STEP 1

Preparing the Cooling Liquid.

The coolant comes in the concentrated form. To prepare the cooling liquid, you must take 100mL of clear coolant concentrate (comes enclosed with the Kit) and mix it with 900mL of distilled water.

Make sure you mix it properly before pouring it into your water cooling loop.



Store the remaining liquid in the original bottle. Do not use any food or beverage containers!

STEP 2

Remove the top cover of your reservoir by unscrewing it in a counter-clockwise direction.



It is recommended to protect the exposed hardware with a few paper towels in case there is a leak, or you accidentally spill the coolant while pouring it.

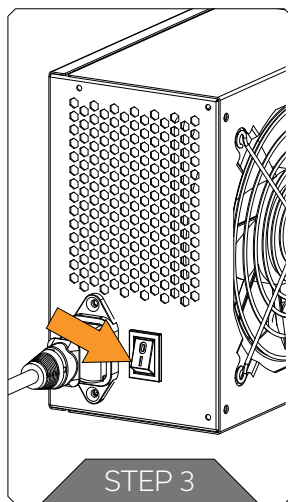
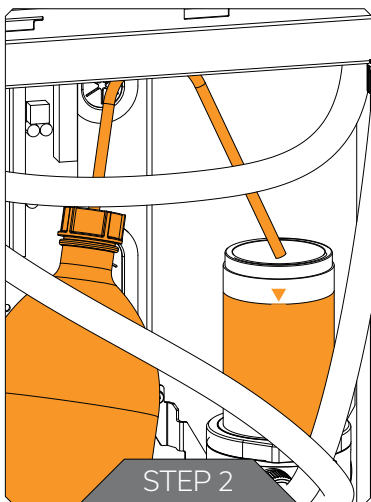
Take the pre-mixed coolant and pour it into the reservoir until the coolant level is about 2cm below the top.

STEP 3



Please check if you have plugged in the EK-ATX Bridging Plug and EK-Cable Pump Testing Adapter correctly. Refer to the chapter: **Recommended Filling and Leak-Testing Procedure.**

Turn the power supply on for a brief moment to check if only the pump is running.





STEP 4

When you turn on the power supply, the coolant should be pushed from the reservoir toward other water cooling components. Therefore, you have to fill the coolant continuously while the pump is running.



Alternatively, you can cycle the power supply by turning it ON and OFF every few seconds to speed up the air bleeding process.

When the coolant level becomes steady, fill the reservoir until the coolant level is about 2cm below the edge. Screw the reservoir top cover back in a clockwise direction.

STEP 5

Tilt your PC chassis in different directions to remove any air that might have remained trapped inside the radiator. You may need to add more coolant afterward.

STEP 6

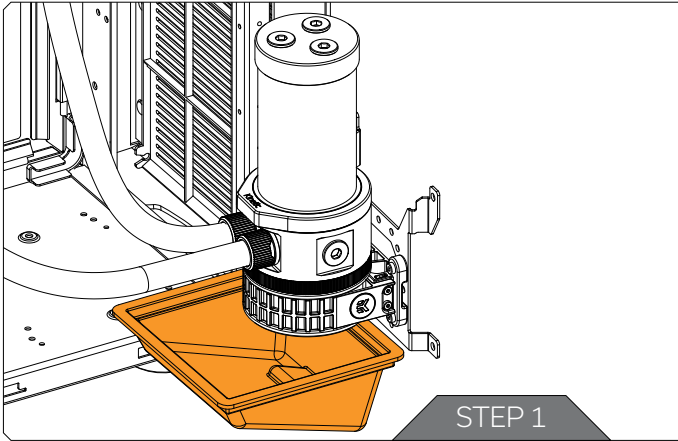
24 HOUR LEAK TEST



It is best practice to run your pump for at least 24 hours to ensure your system is leak-free. Once the 24-hour leak test is completed without signs of leaking fluid, you are free to finish your build.

You will not need the ATX Bridging Plug cable anymore. Connect all the necessary cables to the motherboard, graphics card, and expansion drives.

DRAINING THE LOOP



STEP 1



Before disassembling the water cooling loop, it is mandatory to turn off your computer and pull the power cord from the socket. Prepare some paper towels and stack them over the hardware.

Unscrew the four (4) M4 nuts securing the EK-Loop Uni Pump Reservoir Bracket to the PC chassis. Slowly pull the pump-reservoir unit along with the bracket outside of the case. Do not pull the tubing off the fittings at this stage.

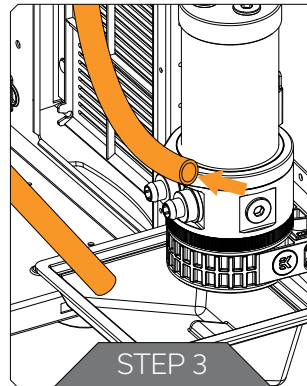
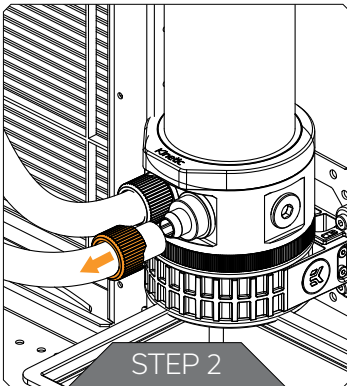
Take a container and put it under the pump-reservoir unit.

STEP 2

Unscrew the fitting ring from the outlet port of the pump-reservoir unit. Rotate the ring in the counter-clockwise direction.

Gently pull the tube off the fitting and direct it into the container.

Let the coolant flow out into the container.



STEP 3

Disconnect the other tube – the one connected to the pump-reservoir unit's inlet port.

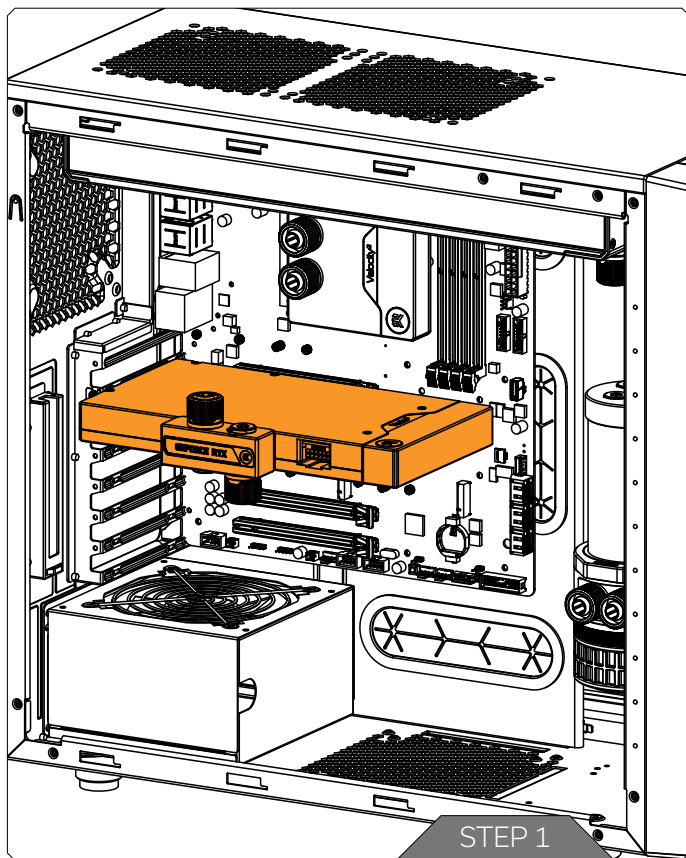
Keep one tube directed to the container and blow into the other one to drain the system additionally.

Thoroughly drain the pump-reservoir unit. You can tilt it in multiple directions or even remove the top cap and pour the coolant out of the reservoir.



Keep the disconnected tube ends over the paper towel to prevent the coolant spillage. You should dry the tubes and the pump-reservoir to keep the hardware safe.

SYSTEM EXPANSION POSSIBILITIES



The best part of having a custom water-cooling loop is that the system can be expanded, and its cooling capacity extended almost without limitations.



For maximum performance, the rule of thumb is to use at least one 120mm radiator (section) per each water-cooled component plus one additional radiator.

For example, if you are liquid cooling a CPU and a single high-performance graphics card, it is recommended you use at least one 240mm (or 2 x 120mm) radiator for adequate performance. But ideally, you should get at least a 360mm (or 3 x 120mm) radiator for the best possible performance. Motherboard and memory water blocks usually have lower power output; therefore, those are not included in this equation.

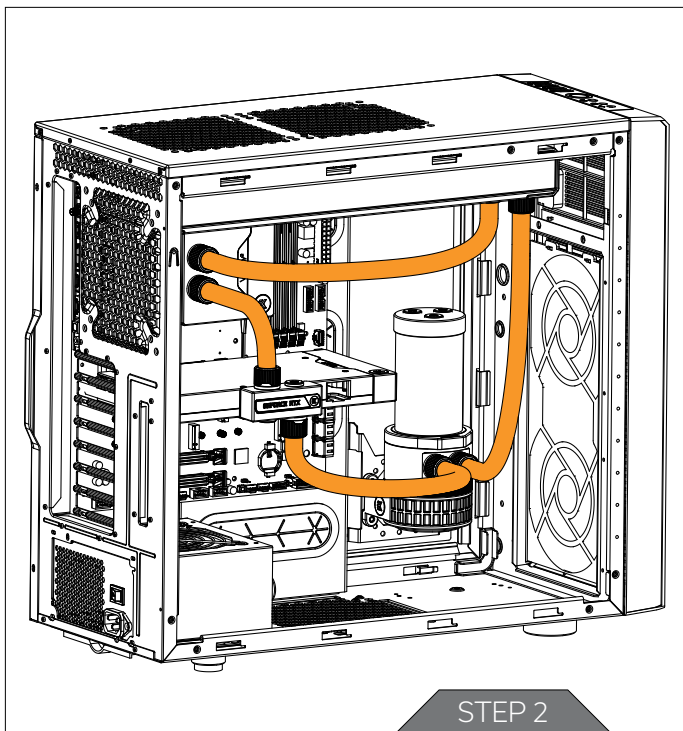
In this manual, we will explain how to expand the loop with an additional GPU full-cover water block. You can also expand the loop with an extra radiator, reservoir, motherboard Monoblock, etc.

STEP 1



If already filled, drain your water-cooling loop according to the instructions in the chapter Draining the Loop.

Carefully determine the optimal tube routing and install compatible fittings (10/16mm), and optionally the plugs.



STEP 2

Measure the length of the tube that will connect the CPU to the GPU water block, and the GPU water block to the pump-reservoir unit. You can use the EK-Loop Soft Tube Cutter or a pair of scissors to cut the tube.



You may also need additional tubing to connect the water block.

Attach the tube to both fitting barbs until it sits firmly. Secure the fitting compression ring to make the assembly complete. Check again that all tubing is secured with compression fittings as intended. If it is not, please see the chapter: **Connecting the Tubing**.



Fill the system by following the Steps from the chapter: **Filling the System for the First Time**.

MAINTENANCE TIPS

In order to obtain the best performance across the entire lifespan of the product, it is crucial to follow these maintenance tips.

1. DUST REMOVAL

It is mandatory to clean the dust **every 2-3 months**. EK recommends using a vacuum cleaner or compressed air to blow the dust away. The radiator is usually the dustiest, so pay special attention to it. Do not forget to turn off the computer and unplug the power supply. It is recommended to clean the dust outside.

2. CHECKING THE ELECTRICAL COMPONENTS

Once a year, you should check if the pump and fans are running as they should. The pump and fans must run silently without any rattling noises and must react to PWM duty cycle changes. All imperfections may lead to overheating and, ultimately, breakdown.

3. CLEANING THE UNIT

Every year the unit should be thoroughly cleaned. You must let all the coolant out (see chapter: **Draining the Loop**). The radiator must be flushed, the pump checked and cleaned. It is also recommended to change the tubing.

4. USING PARTS DESIGNED AND MANUFACTURED BY EK

It is recommended to use only genuine EK Water Blocks liquid cooling gear and add-ons to prevent any performance, compatibility, or warranty issues.

TROUBLESHOOTING

Exceedingly high CPU temperatures are usually the symptom of a malfunctioning liquid cooling loop, assuming the contact between the CPU heat spreader and water block itself is adequate, and that the water is appropriately cooled within the radiator.

High CPU temperatures can occur in the following scenarios.

Malfunctioning or broken-down water pump: The symptoms usually include a rapid spike in temperature when stressing your CPU to the maximum. Make sure the pump is plugged into the power connector, and that liquid is indeed flowing through the system. You should feel the pump vibrating beneath your hand. Observe the flow indicator or flow meter readings if present.

Malfunctioning or broken-down cooling fans: The symptoms usually include a rapid spike in temperature when stressing your CPU to the maximum. Make sure the cooling fans are plugged into the power connector hub and that the blades are indeed rotating.

Kink in the liquid cooling tube: The symptoms are very similar to those described above. Thin-walled tubing may collapse easily under low radius turns or when obstructed by other computer chassis elements, such as side panel doors. Check the tubing for any signs of kinks that could restrict the flow. Usually, this will not be the case when using original tubing.

Clogged microchannels in the water block: Microchannels get clogged easily with various dirt particles and impurities, especially with plasticizer powder, leached from the tubing (when using inauthentic tubing). The symptoms usually include a rapid spike in temperature when stressing your CPU to the maximum, and flow rates that are very low. Visually inspect the water block internals for any buildup or contamination and clean the system if necessary. In

case you have the water block with a translucent acrylic top, this inspection can be done without disassembling the system.

Thermal Interface Material not/improperly applied: The lack of - or even too much TIM (Thermal Interface Material/thermal paste/thermal grease) - may result in the overheating of your CPU. If that is the case, please refer to STEP 2 in the chapter Installing the Water Block.

Cooling liquid (coolant) is freezing: Running the system in a subzero environment may lead to liquid freezing. The symptoms include an initial rapid spike in the temperatures when stressing your CPU, followed by a substantial temperature drop after the liquid partially thaws. Always make sure the system is operating in an environment where ambient (room) temperature doesn't drop below 5°C.

Another culprit for exceedingly high CPU temperatures could be a partially or completely defective CPU. Some CPUs run at higher temperatures than others, and overheating can occur in the following scenario.

Poor thermal contact within the CPU itself: Some CPUs (such as Intel LGA 1151 socket based Skylake, Intel LGA 1150 based Haswell and older, and socket LGA 1155 based Ivy Bridge) are notorious for their poor thermal contact between the CPU die and the heat spreader (IHS) due to the use of poor TIM. This is the problem of the processor itself, not the CPU liquid cooling unit. These CPUs are known to get very hot (80°C +), even on factory-set frequencies. For the best performance, it is usually recommended to replace the TIM between the die and the IHS or even run the processor de-lidded. Both options require hazardous IHS removal that will void the processor's warranty but can lead to a temperature decrease of 30°C or more.

CLEANING GUIDE



Liquid cooling parts can be disassembled for cleaning purposes on an occasional basis. Your warranty will not be void upon disassembly of the water block, but you will lose the EK Leak-Free Guarantee that comes with a factory-tested component. A soft toothbrush is an excellent cleaning tool!

CLEANING NICKEL-PLATED COPPER

When cleaning nickel-plated copper, it is forbidden to use any aggressive chemicals (vinegar included) and rough materials since those could damage the plating and thus void the warranty. Also, note that due to the presence of dye additives and other chemicals, the nickel layer might become discolored/stained over time. However, the staining is usually reversible with a simple flush and rinse.

Cleaning the nickel-plated copper should consist of the following:

- rinse the nickel-plated copper under warm water;
- clean the surface using the wet nonabrasive cloth and once again rinse with clean water;
- if necessary, polish the hardened deposits (such as algae or dirt).

EK recommends the use of automotive soft nonabrasive metal polish cremes. After you finish using other cleaning methods, give the nickel plating a good polish with a nonabrasive metal or chrome polish. Apply a small amount of polish to a cloth or surface of the nickel. Wipe the entire surface of the nickel with the polish, using small circular motions, until it looks shiny and clean. Use another clean cloth to remove the remains of the polishing paste from the surface. Always rinse the surface with distilled water when you are done polishing it.

PREVENTIVE STEPS

Using corrosion-inhibiting coolants such as EK-CryoFuel or other market-proven coolants is highly recommended for any water cooling loop, especially those with nickel-plated parts. Since EK-CryoFuel is also a biocide, it will prevent algae growth and dirt deposition on all wet surfaces.

The use of specifically engineered coolants that contain corrosion, scale, and biological inhibitors is mandatory to prevent damage to your nickel-plated water cooling gear! EK is offering a selection of such products in the webshop's Coolants section.


SUPPORT AND SERVICE

For assistance please contact:

<http://support.ekwb.com/>

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