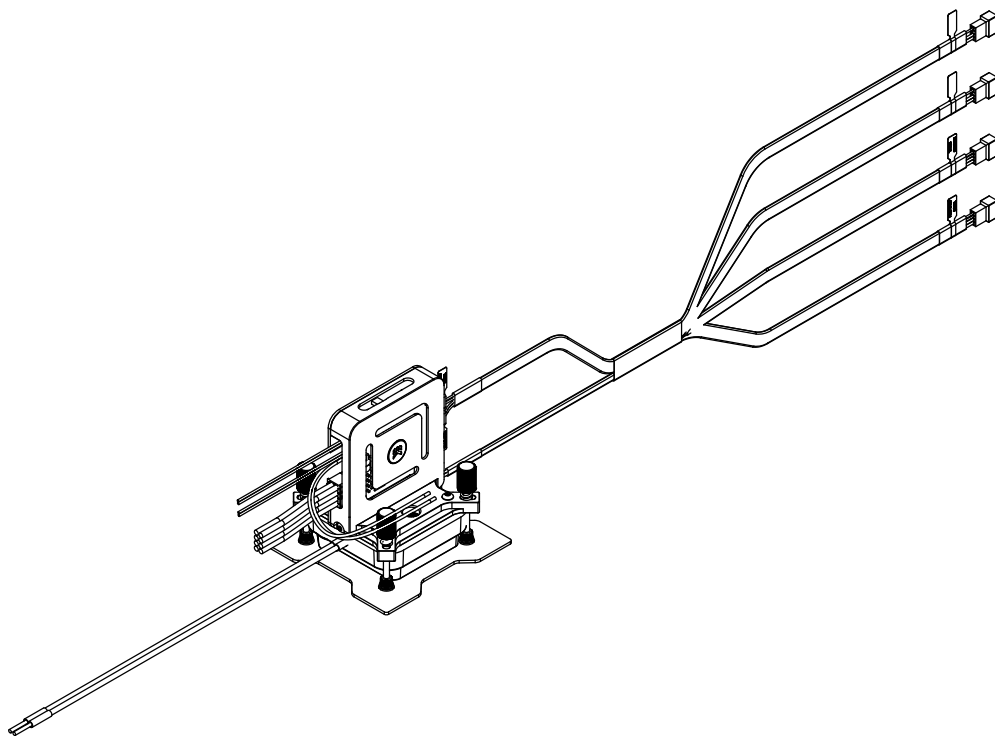


EK-QuantumX Delta TEC EVO E2

CPU WATER BLOCK



This product is intended for installation by expert users only. Please consult with a qualified technician for installation. Improper installation may result in damage to the equipment. EK assumes no liability whatsoever, expressed or implied, for the use of these products, nor their installation. The following instructions are subject to change without notice. Please visit our website at www.ekwb.com for updates. Prior to the installation of this product, please read important notice, disclosure, and warranty conditions printed on the back of the box.

Before you start using this product, please follow these basic guidelines:

Carefully read the manual before beginning with the installation process!

Remove your motherboard from the chassis for the safest mounting process and to prevent damaging your CPU and/or motherboard's circuit board (PCB).

EK Fittings require only a small amount of force to screw them firmly in place since the liquid seal is ensured with the rubber O-ring gaskets.

The use of quality market-proven corrosion-inhibiting coolants is always strongly recommended for any liquid cooling system.

Do not use pure distilled water as a cooling liquid! For best results, EK recommends the use of EK-CryoFuel Coolants.

GENERAL INFORMATION

This CPU liquid cooling unit is pre-assembled for use with modern 10th and 11th generation Intel desktop socket type mother-boards. This water blocks supports the following CPUs:

- Intel® Core™ i9-11900KF
- Intel® Core™ i9-11900K
- Intel® Core™ i9-10900K
- Intel® Core™ i9-10850K
- Intel® Core™ i7-11700KF
- Intel® Core™ i7-11700K
- Intel® Core™ i7-10700K
- Intel® Core™ i5-11600KF
- Intel® Core™ i5-11600K
- Intel® Core™ i5-10600K

Motherboard Requirements

The following list of motherboards has been tested with this liquid cooling solution. Other boards may or may not have the clearance to install the Cryo Cooler. Certain motherboards might work, but have not been tested yet. Please contact cooling vendor for additional information.

Vendor	Model
Asus	ASUS ROG Strix Z490-e gaming
Asus	ASUS ROG Maximus XII Formula
Asus	ASUS ROG Maximus XII Hero (Wi-Fi)
Asus	ASUS ROG Maximus XII Apex
Asus	ASUS ROG Maximus XII Extreme
Gigabyte	Gigabyte Z490 Aorus Master
Gigabyte	Gigabyte Z490 Aorus Ultra
Gigabyte	Gigabyte Z490 Aorus Pro AX
Gigabyte	Gigabyte Z490-i Aorus Ultra
Gigabyte	Gigabyte Z490 Aorus Xtreme
MSI	MSI MEG Z490 ACE
MSI	MSI MEG Z490 Gaming Carbon

Vendor	Model
ASRock	ASRock Z490 Taichi
ASRock	ASRock Z490 Phantom Velocity
ASRock	ASRock Z490 Steel Leged

Power Requirements

The system power supply should be able to have the following:

- Available 1xPCIe (8-pin) power connector directly connected to the power supply, not a Y cable adapter coming from the GPU or the motherboard or another component
- The power supply MUST have an additional 250/300 W available power to provide to the liquid cooling subsystem after factoring in all other components in the system – it is recommended that the power supply capacity should be 750W or higher, but this depends on the GPU and other components already connected to the power supply.

USB Ports

USB ports available in the motherboard are usually referred to as FPUSB or front panel USB connectors. The liquid cooling solution requires connection to a USB port in the motherboard. Use the supplied cable to connect the micro USB port in the cooler to the front panel (FP-USB) connector in the mother board.

Note that different motherboards will have a single or multiple front panel USB connectors. Any available front panel USB connector will work. If you only have one port or all ports are being used, you will need to find an available port. It can also be connected to any regular USB port available using a USB-A to micro USB cable.

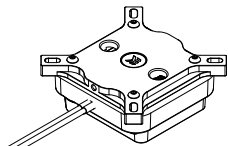
Chassis Capabilities

The solution is designed to fit into an ATX chassis. Make sure the chassis that you use has space for the entire liquid cooling solution (pump + radiator), not just the heatsink block.

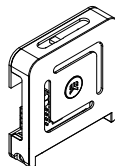
TABLE OF CONTENTS

BOX CONTENTS	5
WATER BLOCK DIMENSIONS	6
PREPARING THE MOTHERBOARD	7
APPLYING THERMAL COMPOUND	8
ASSEMBLING WATER BLOCK AND ELECTRONICS	9
PLACING / ATTACHING THE BLOCK ON THE MOTHERBOARD	11
TESTING THE LOOP	13
CONNECTING THE TEC PLATE ELECTRONICS	13
ESTABLISHING CONNECTION BETWEEN WATER BLOCK AND MOTHERBOARD	14
SOFTWARE INSTALLATION	14
SUPPORT AND SERVICE	15
SOCIAL MEDIA	15

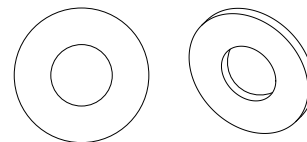
BOX CONTENTS



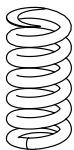
EK-QuantumX Delta TEC EVO E2 water block



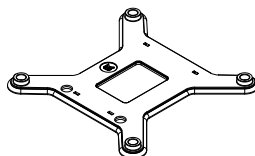
EK-QuantumX Delta TEC EVO E2 electronics



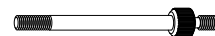
M4 PVC Washers (4 pcs)



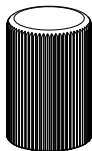
Coiled Spring (4 pcs)



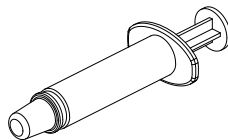
Backplate (1 pcs)



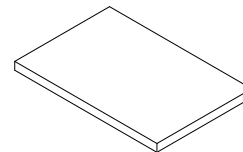
Screw (4 pcs)



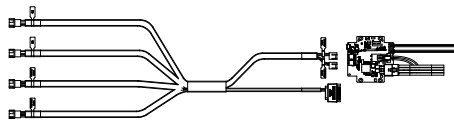
Thumb Nut (4 pcs)



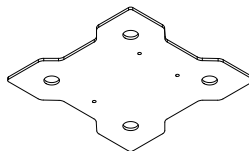
Thermal Grease (1 pcs)



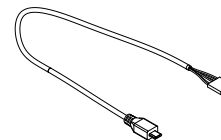
Sticker (1 pcs)



EK-QuantumX Delta TEC EVO E2 power cable

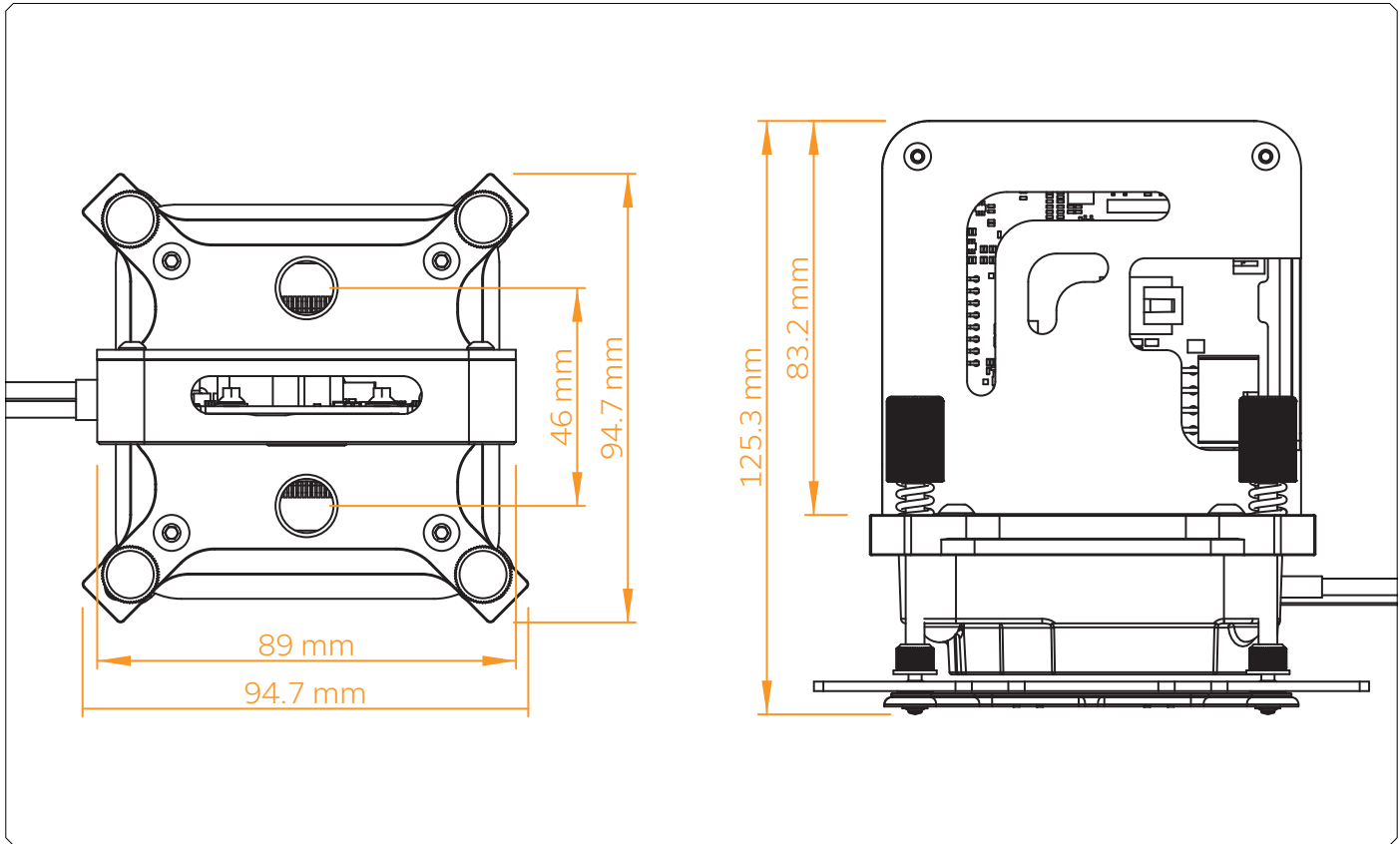


Big Backplate Sticker (1pcs)

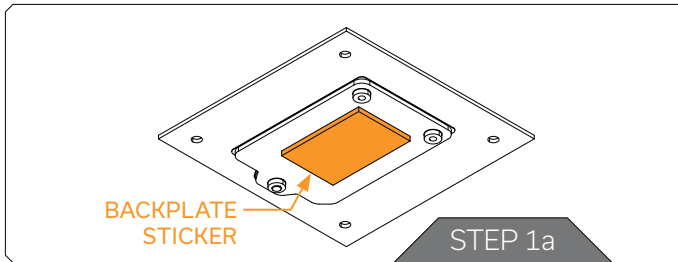


EK-Cable 5-Pin Motherboard (F) to Micro-USB (M) (1pcs)

WATER BLOCK DIMENSIONS

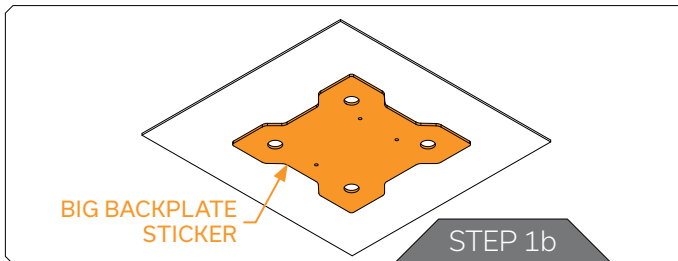


PREPARING THE MOTHERBOARD



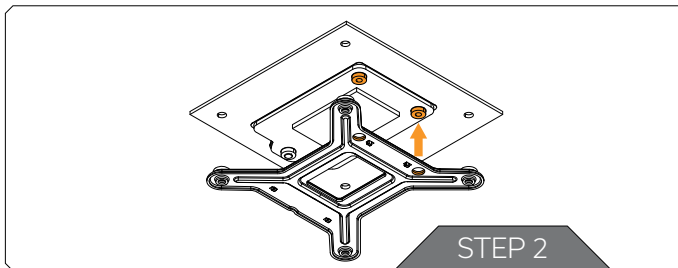
STEP 1a

Prepare the zip bag containing the CPU mounting mechanism and screws. Find a self-adhesive EPDM sticker and stick it to the back of the CPU latch mechanism so it covers the central opening. The sticker must be present to seal the liquid cooling solution.



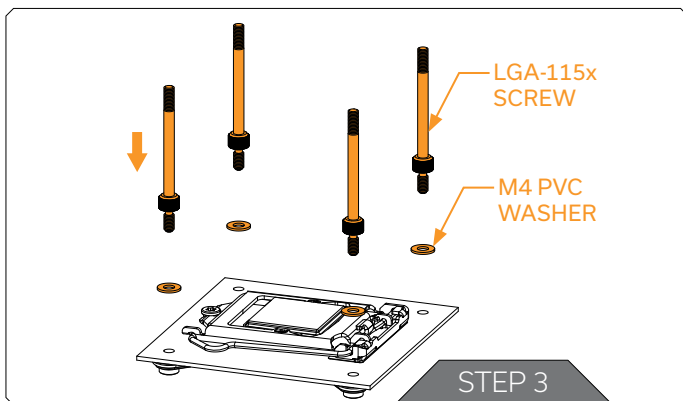
STEP 1b - optional

In unregulated mode of the EK-QuantumX Delta TEC EVO E2, the backplate of the CPU can reach temperatures below ambient, which can lead to condensation on the backplate. Therefore, this insulation is highly recommended when the system works in unregulated mode.



STEP 2

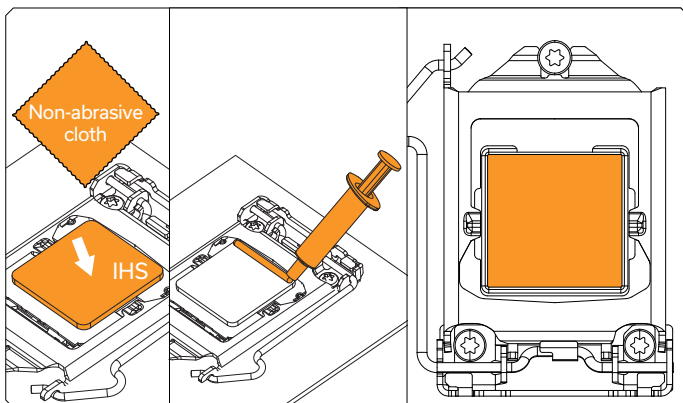
On the backside of the motherboard place a backplate over the glued sticker. Align two (2) openings in applied backplate with two (2) screws on stock backplate.



STEP 3

Install four (4) supplied specific LGA-115x/1200 screws into four (4) M4 threaded stubs on the already installed backplate. It's mandatory to put M4 PVC washer underneath each of the M4 thumb screws. Tighten the screws to the backplate until you reach the end of the thread. Using tools (such as pliers) is not recommended.

Do not overtighten the screws.



APPLYING THERMAL COMPOUND

Wipe the CPU's contact surface (by using non-abrasive cloth or Q-tip, as shown on sample photo).

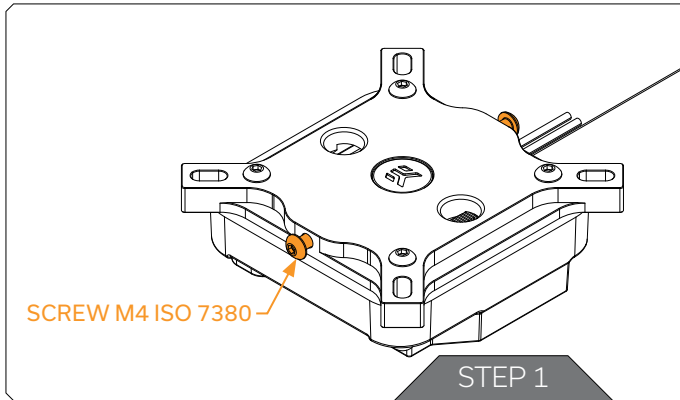
Apply the enclosed EK-TIM Ectotherm thermal grease (thermal compound) on the CPU heat spreader - IHS - as shown in the image. The layer of the thermal compound must be thin and even in thickness over the entire surface of the IHS.

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

EK-TIM Ectotherm (information)

Type.....	Low viscosity
Electrical conductivity.....	No
Optimal working temperature.....	+100 to -50 °C
Thermal conductivity.....	8,5 W/mK
Density.....	3 g/cm ³

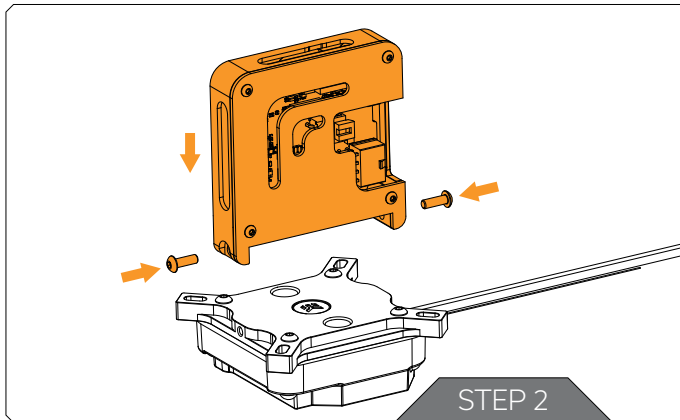
ASSEMBLING WATER BLOCK AND ELECTRONICS



You can install the controller box somewhere else in the chassis. Please make sure that the cables for TEC plate and temperature sensor are long enough to allow to do so. EK recommends you secure the Controller box to the water block, as shown in the following Steps.

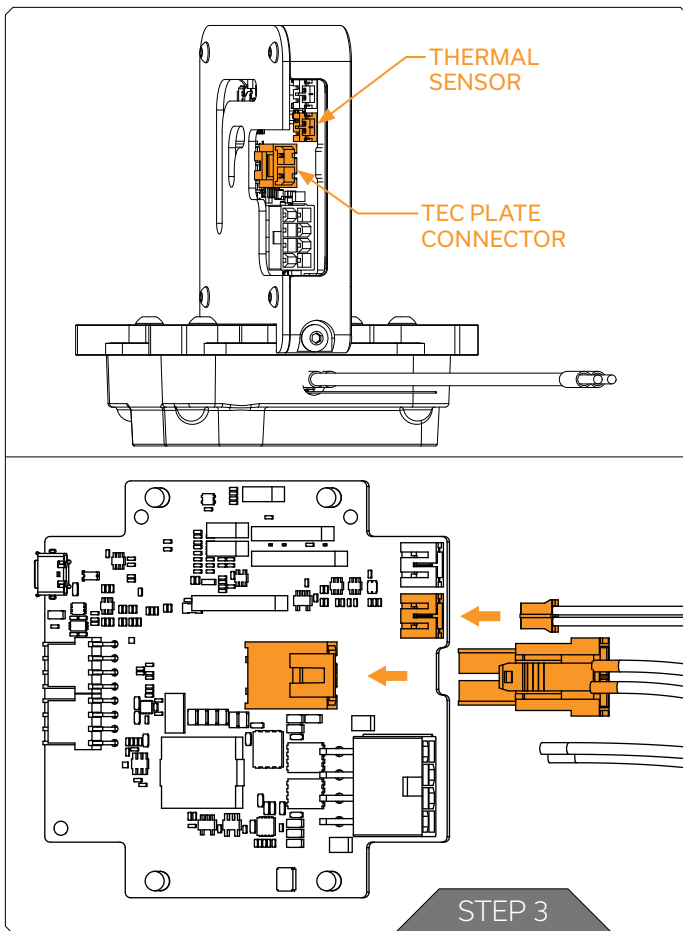
STEP 1

Prepare the water block and remove the two (2) round-headed black screws – M4 ISO 7380.



STEP 2

Prepare the Controller box and align the side holes with M4 threaded holes in water block top. Secure them using the screws which were removed in step 1.



STEP 3

To enable the functioning of the cooling solution, please take the two cables from the water block and connect them to connectors on the Controller box:

- Thermal sensor (white connector - 2pin) - make sure to connect it to the connector marked as COLD - closest to the edge of the case
- TEC plate connector (black connector - 2pin)

The connectors can be inserted in one orientation only!

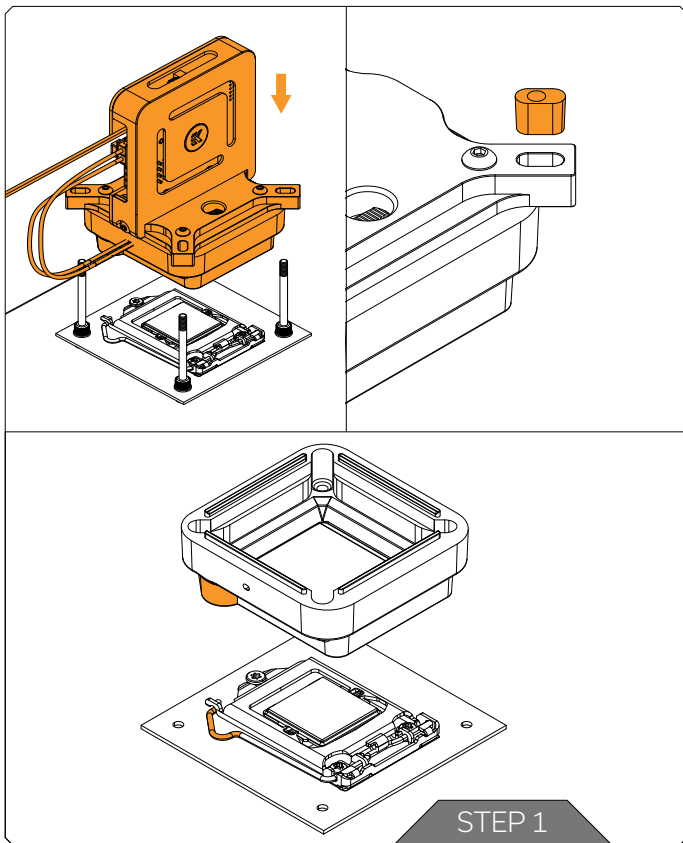
Make sure not to use excessive force. It may cause permanent damage!

CABLING AND ELECTRICAL CONNECTIONS

The liquid cooling solution includes a condensation controller that requires the following connections:

- 12V ATX power (using a 1x PCIe 8-pin GPU power cable directly from the power supply)
- 2-pin connector between the water block and the controller (factory connected)
- 2-pin sensor connector (factory connected)
- USB connection (the cooler has a micro USB port that needs to be connected to the motherboard's internal USB header or to an available USB port. The USB cable is included)

PLACING / ATTACHING THE BLOCK ON THE MOTHERBOARD



STEP 1

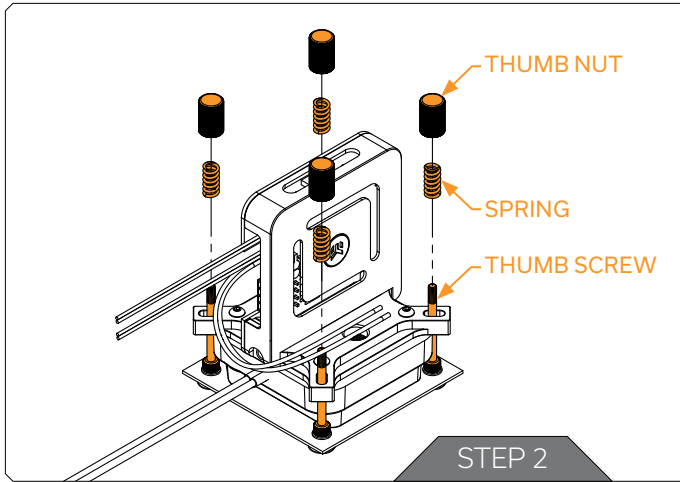
Carefully align your EK-QuantumX Delta TEC EVO E2 water block over pre-installed mounting mechanism with the already installed CPU. Be careful not to remove the pre-installed rubber inserts from the water block mounting holes.

CAUTION: The protective sticker must be removed from the cold plate.

IMPORTANT:

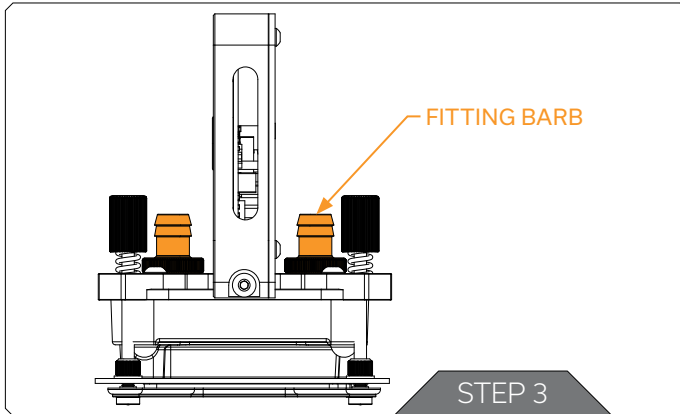
Make sure the protrusion on the insulation guard is aligned with the socket load lever. Not doing so may result in operation malfunctions or even hardware damage.

Pay attention to the shape of insulation – it shouldn't be twisted or crooked when installed.



STEP 2

Place an enclosed compression spring and thumb nut over each M4 thumb screw. Start fastening two thumb nuts at a time, in cross pattern and do not tighten them fully until all of them are partially screwed in. Then - using your fingers only - screw in all four thumb nuts until you reach the end of the thread.



STEP 3

Tighten the fitting bars in clockwise direction until the O-ring gasket underneath is compressed. EK-QuantumX Delta TEC EVO E2 water block is using the G1/4 fittings.

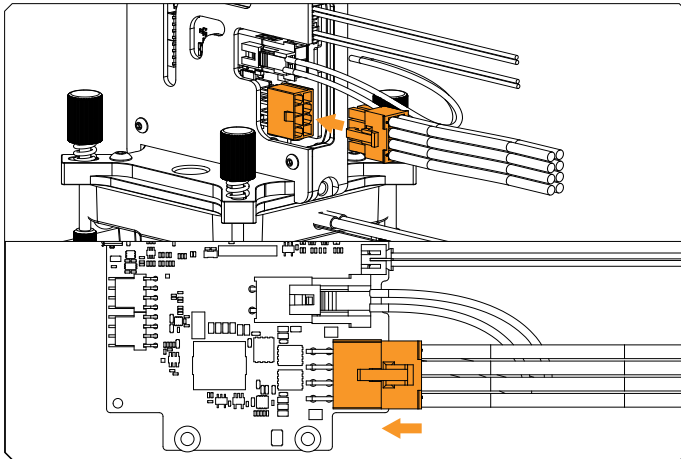
TESTING THE LOOP

To make sure the installation of EK components was successful, we recommend you perform an air pressure leak test using EK-Loop Leak Tester (<https://www.ekwb.com/shop/ek-loop-leak-tester-flex>) or alternatively a 24-hour coolant leak test.

When your loop is complete and filled with coolant, connect the pump to a PSU outside of your system. Do not connect power to any of the other components. Turn on the PSU and let the pump run continuously.

Inspect all parts of the loop, and in case the coolant leaks, fix the issue and repeat the testing process. Ensure that all hardware is dry before the system is powered on, to prevent any damage.

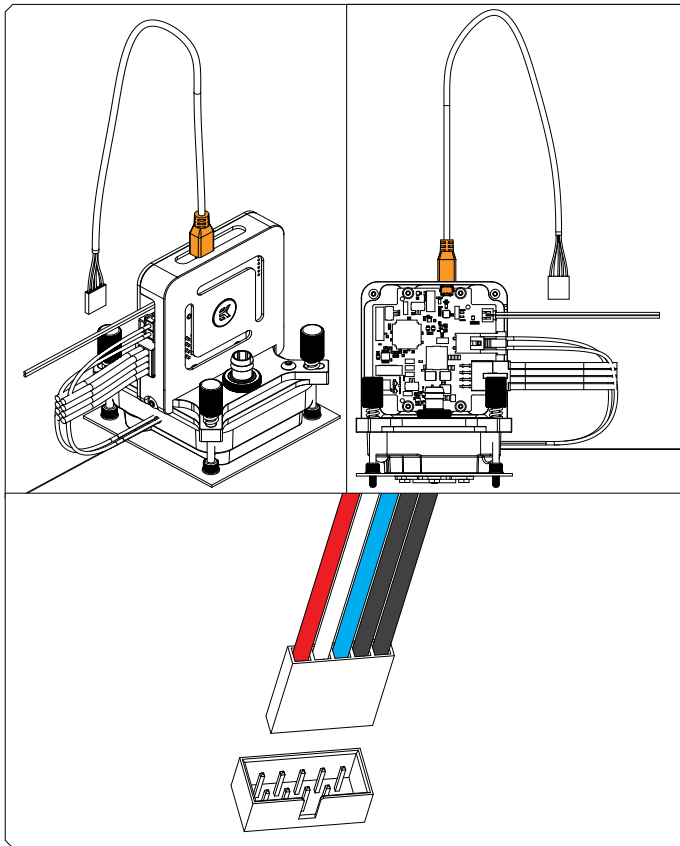
CONNECTING THE TEC PLATE ELECTRONICS



Plug the 8-pin connector from the power supply to the connector on EK-QuantumX Delta TEC EVO E2 WB PCB.

The installation of the CPU water block is now complete.

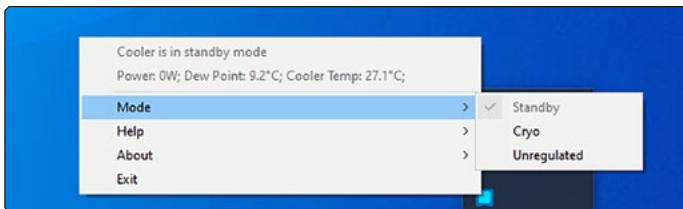
ESTABLISHING CONNECTION BETWEEN WATER BLOCK AND MOTHERBOARD



When the water block with the controller is installed on your motherboard, the communication connection also must be established. Use the USB-A to micro USB cable, which is included in the package. Connect the micro USB to the top of the water block, as shown in the picture.

Make sure that you connect 5-pin connector to motherboard in a way that on the left is red wire.

SOFTWARE INSTALLATION



After successfully booting the system, please install the Intel Cryo Cooling Technology software which is available on Intel home page.

<https://downloadcenter.intel.com/download/30055/Intel-Cryo-Cooling-Technology>

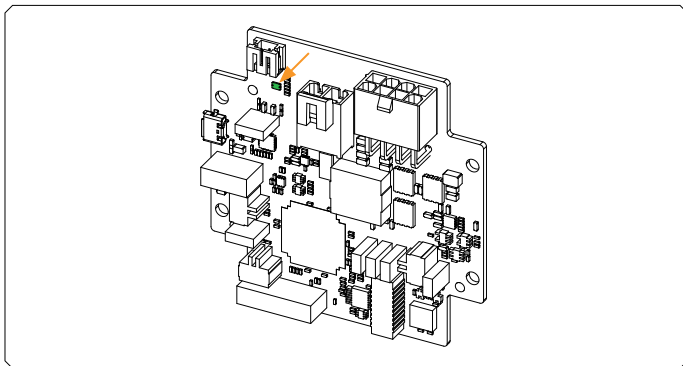
If the software was installed properly you should see a yellow icon in the windows notification tray (see the image below). The mode should be "standby".



Please check the troubleshooting section if it is not present.

Click on the notification tray and select the "Cryo" mode - the icon should turn to green and there should be a green LED slow blinking on the cooler.

Cryo mode keeps the waterblock above dew point - thus eliminating the chance of condensation around the waterblock.



Unregulated mode lets the cooler work at full power all the time - thus letting the waterblock cool under dew point, risking condensation and damage to your components - USE WITH CAUTION and monitor for condensation!



WARNING!

Given that the CPU is cooled by the EK-QuantumX Delta TEC directly to achieve low temperatures, the rest of your liquid cooling loop will be under stress from the TEC plate. Do not use your CPU temperatures as a baseline for your Fan or Pump speeds! It is best to monitor the coolant temperature or set the fans and pump at a fixed speed level!


SUPPORT AND SERVICE


In case you need assistance, please contact:

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

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SOCIAL MEDIA

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