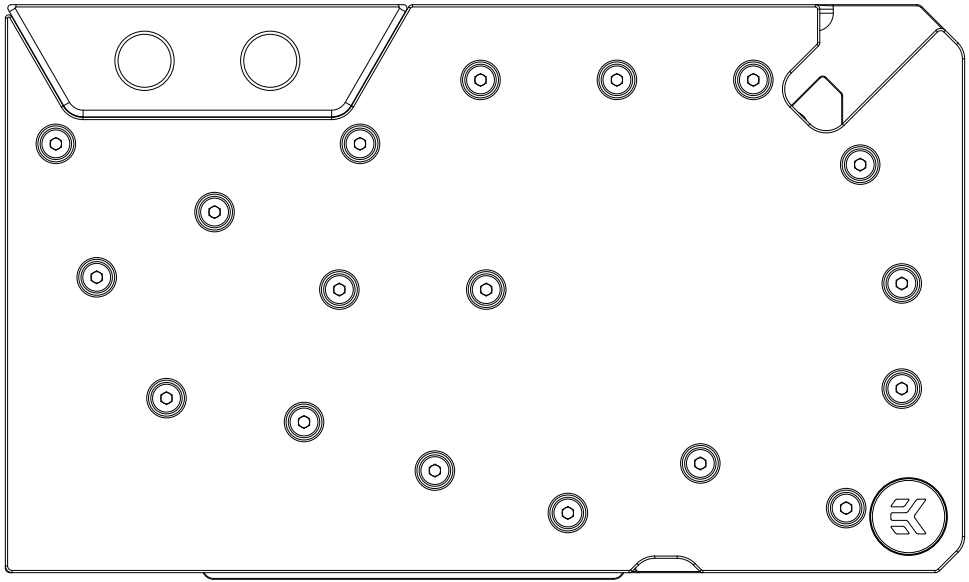
EK-Quantum Vector3
FE RTX 5090

GPU WATER BLOCK



This product is intended for installation only by expert users. Please consult with a qualified technician for installation. Improper installation may result in damage to your equipment. EK Water Blocks 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. Before installation of this product, please read important notice, disclosure, and warranty conditions that are printed on the back of the box.

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

Please carefully read the manual before beginning the installation process.

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

The use of corrosion inhibiting coolants is always recommended for liquid cooling systems, and mandatory for nickel plated water blocks.

Do not use pure distilled water! For best results EK recommends theuse of EK-Cryo Fuel coolants.

Make sure to thoroughly bleed air out of your water block, or you will not reach optimal performance.

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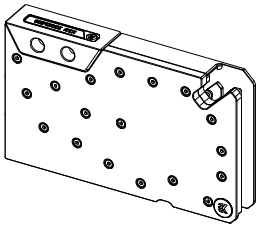
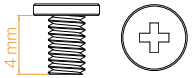
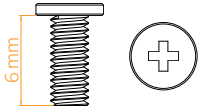
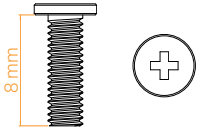
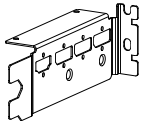
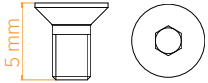
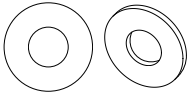
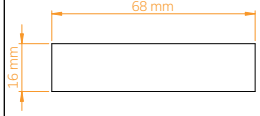
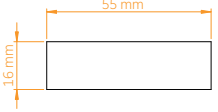
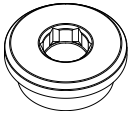
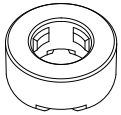
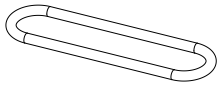
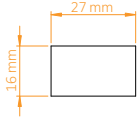
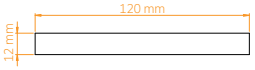
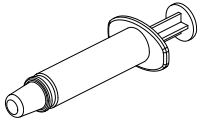
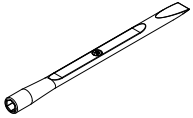
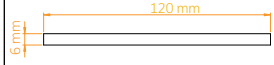
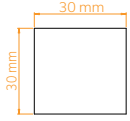
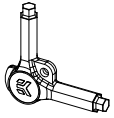
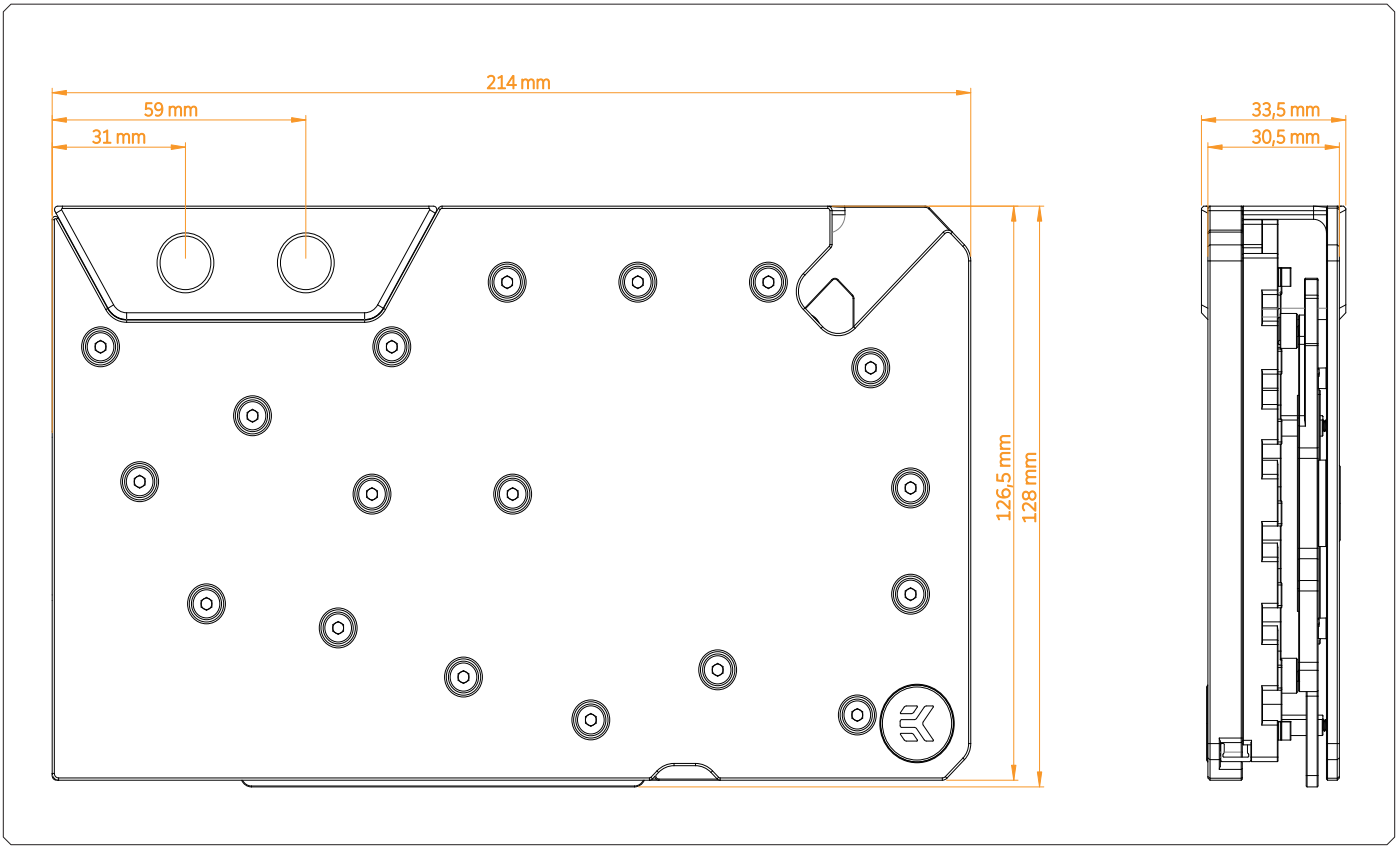
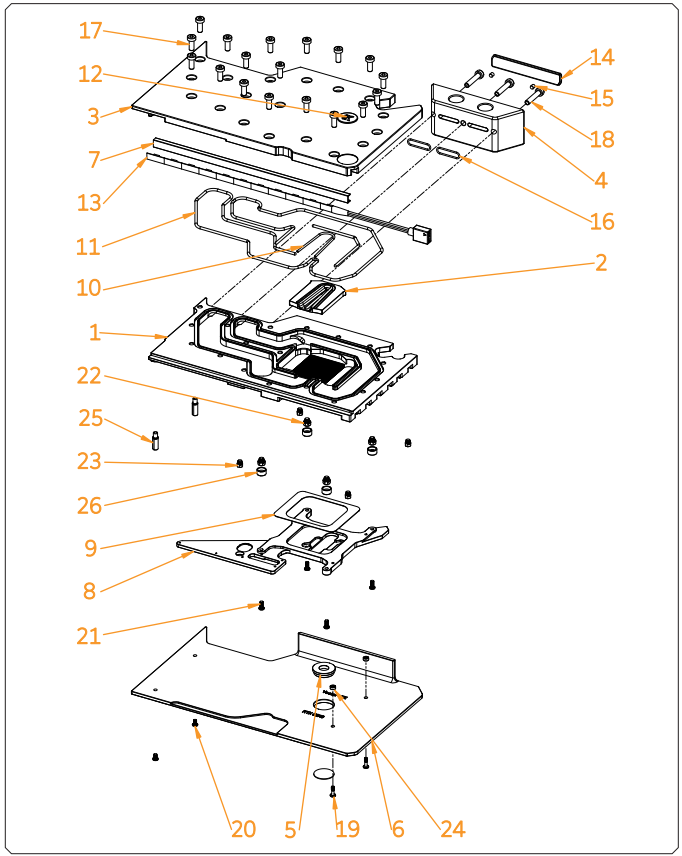
 EK-Quantum Vector3 FE RTX 5090	 Sticker - flat cable protector (1pc)	 M2.5x4 AX1 Screw (5 pcs)	 M2.5x6 AX1 Screw (1 pcs)	 M2.5x8 AX1 Screw (1 pc)
	 I/O Bracket (1 pc)	 M3X5 Screw (2 pcs)	 Polyamid Washer M2.5 0.5mm (5 pcs)	 Sdoff M2.5-M3 x 6.6mm (1 pc)
 Thermal Pad - VRAM 68x16x2 (2 pcs)	 Thermal Pad - VRAM 55x16x2 (2 pc)	 Quantum Plug (2 pcs)	 Standoff Ø4.5/2.5 (2 pc)	 Terminal OR 14x1 mm (2 pcs)
 Thermal Pad - VRAM 27x16x2 (1 pc)	 Thermal Pad -Inductor 120x12x1 (2,5 pcs)	 Thermal Grease (1 pc)	 EK-Plug Out Spludger Tool (1 pc)	 Allen Key 2 mm (1 pc)
 Thermal Pad -VRM 120x6x2 (2,5 pcs)	 Thermal Pad BP Chip 30x30x1 (1,5 pcs)	 Allen Key 2.5 mm (1 pc)	 EK-Loop Multi Allen Key (1 pc)	

EAN: 107997

WATER BLOCK DIMENSIONS



TECHNICAL SPECIFICATIONS AND WATER BLOCK PARTS

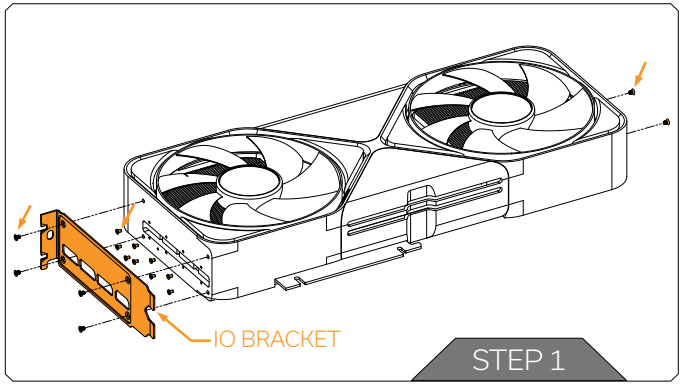


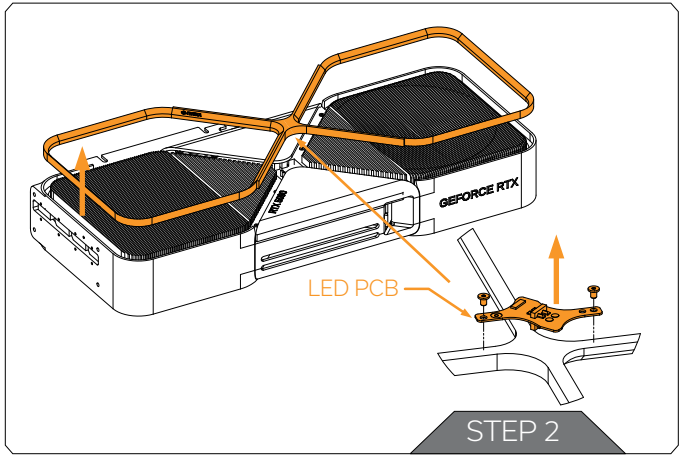
NICKEL PLEXI

Technical Specification:
Dimensions (L x H x W): 214 x 128 x 33,5 mm
D-RGB cable length: 500 mm
D-RGB LED count: 11
D-RGB connector standard 3-pin (+5V, Data, Blocked, Ground

Position	EAN	Description	Quantity
1	107964	Coldplate (Ni)	1
2	107968	Plexi insert	1
3	107946	Top plate (Plexi)	1
4	107932	FC Terminal (Acetal)	1
5	108004	Badge lightguide	1
6	107986	Backplate (Bl. Elox)	1
7	107985	LED Cover (N. Elox)	1
8	107975	Pressure plate	1
9	108003	Pressure plate protector	1
10	107994	OR - Insert	1
11	107952	OR - Vector3 FE RTX 5090	1
12	100663	EK Badge	2
13	101556	LED D-RGB strip	1
14	103942	Terminal Badge	1
15	104216	Disc magnet 3x3	2
16	104106	Terminal OR 14x1 mm	2
17	9024	Screw DIN 7984 - M4 x 10 mm	18
18	8311	Screw M4x20 DIN7984	3
19	104187	Screw M2,5x8 AX1n	2
20	9047	Screw M2,5x4 mm	2
21	9058	Screw M2,5x6 mm	4
22	103988	Standoff M4-M2,5 x 3 mm	4
23	103987	Standoff M3,5-M2,5 x 3 mm	4
24	104188	Standoff fi 4.5/2.5 mm	2
25	103986	Standoff M3,5-M2,5 x 11,3 mm	2
26	108023	PCB Gap Cap	4

PREPARING THE GRAPHIC CARD





REMOVING THE STOCK COOLER

NVIDIA FE GEFORCE RTX 5090

Important! Before starting, make sure to have a clean, flat surface to work on. It is recommended to put foam or soft material to lay the graphics card on.

STEP 1

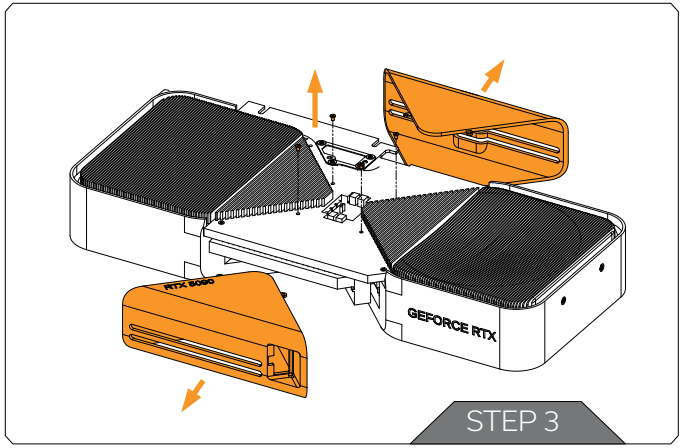
First, remove two (2) screws from the back of the stock cooler (with a Torx head screwdriver).

Unscrew four (4) screws to remove the I/O bracket, then unscrew nine (9) I/O ports screws.

STEP 2

Gently lift the frame by prying it with a thin plastic tool starting from the left. The frame is attached magnetically along the card.

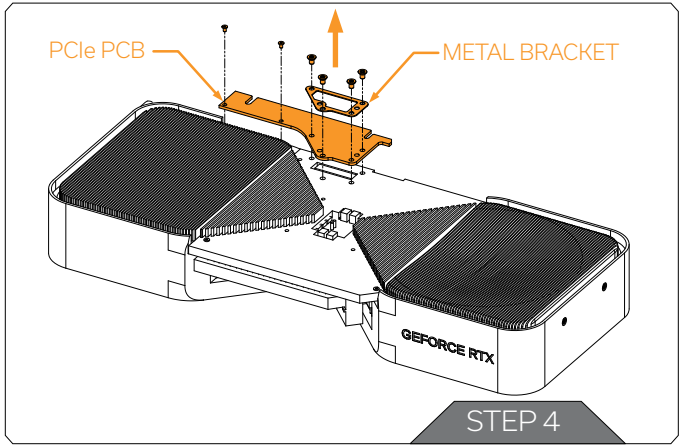
Unscrew two (2) Phillips head screws from the frame and remove the LED PCB. You will need it in a later step.



STEP 3

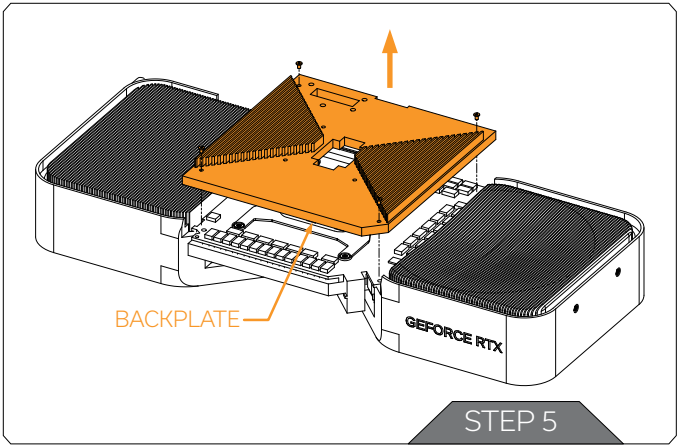
Unscrew four (4) screws holding triangle-shaped covers.

Slide the triangle-shaped covers by moving them around until you find the correct direction. It should slide smoothly, there is no need to apply a lot of force.



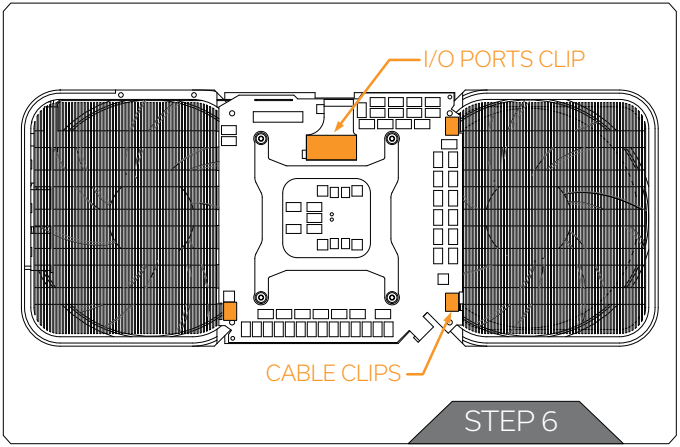
STEP 4

Unscrew six (6) screws and remove the PCIe PCB and metal bracket.



STEP 5

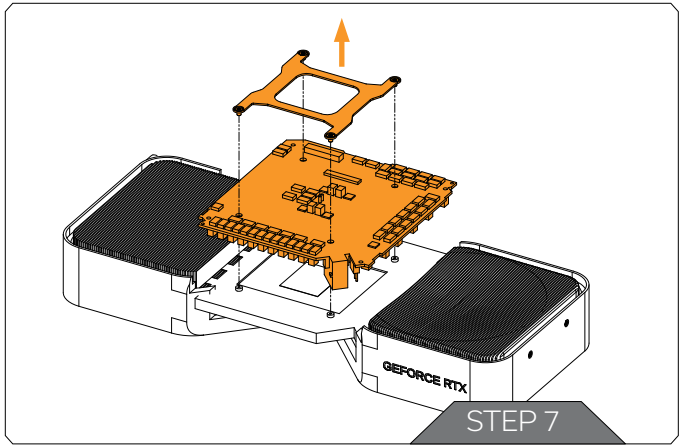
Unscrew four (4) screws and remove the backplate



STEP 6

Carefuly unclip cable clips.

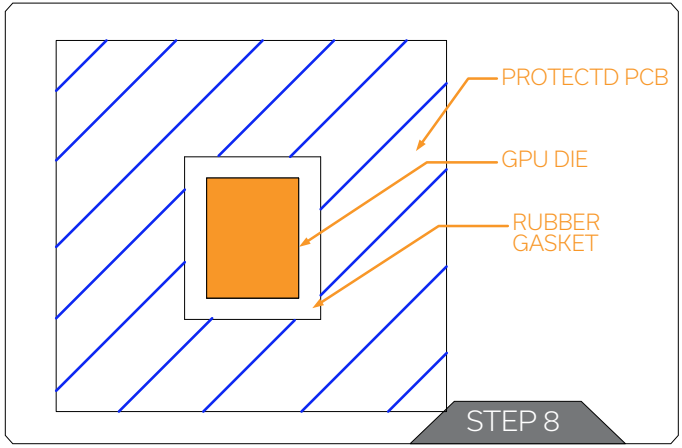
To unclip the I/O cable, pry it using a plastic prying tool.



STEP 7

Remove the retention bracket by unscrewing four (4) screws.

Carefuly lift the GPU PCB



STEP 8

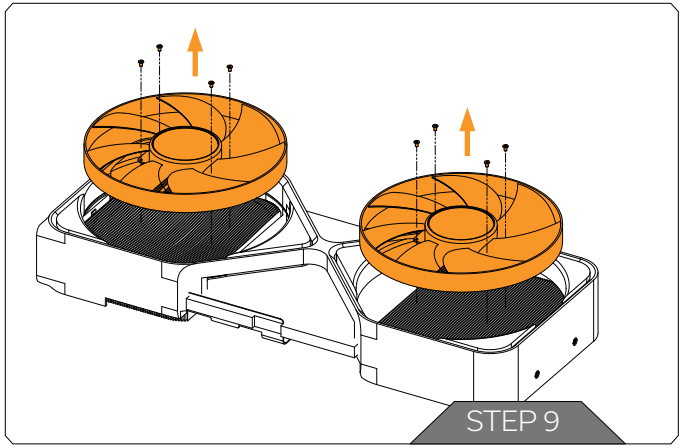
Liquid metal removal

Before removing liquid metal, protect the GPU die surrounding components with painter's tape. This will ensure that the liquid metal does not come into contact with any PCB components, as it is electrically conductive.

Use Q-tips and isopropyl alcohol to remove liquid metal.

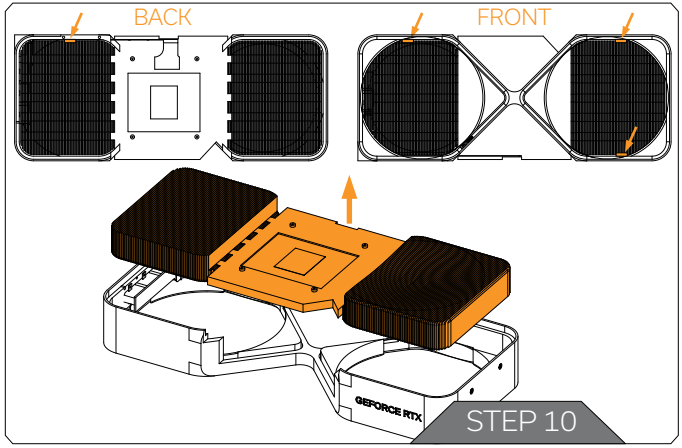
Remove rubber gasket. The bottom side of the rubber is sticky, use a plastic tool from the outside to go under it and lift it.

Important! Be careful with the liquid metal so you don't spill it on the card!



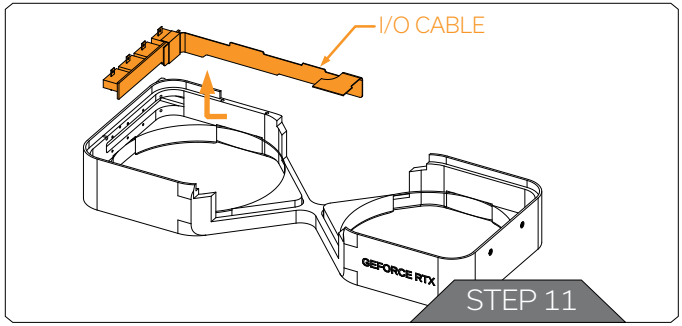
STEP 9

To remove the fans, unscrew the eight (8) screws located between the fan blades.



STEP 10

To detach the cooler from its housing, carefully bend back four metal spring clips: three in the front and one in the back. Lift the cooler while bending back one clip at a time.



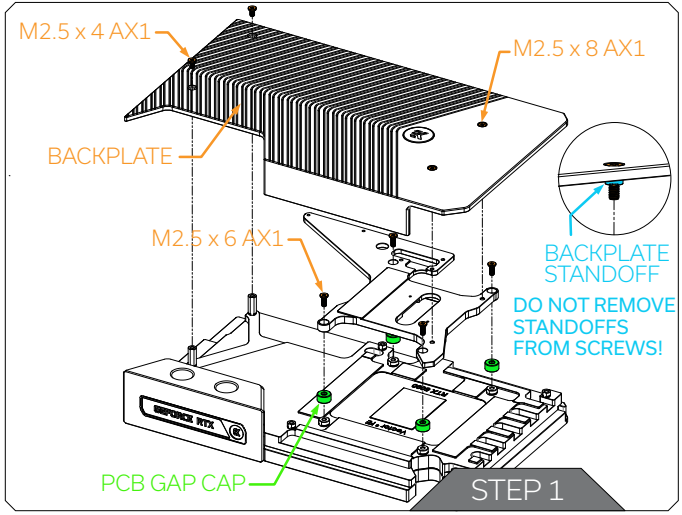
STEP 11

Carefully remove the I/O cable assembly from the housing. The cable is glued to the side of the housing.

Use a thin plastic prying tool to help separate the cable from the housing. It is recommended to heat the housing for easier removal.

Important! Do not use excessive force.

PREPARING THE WATER BLOCK FOR INSTALLATION

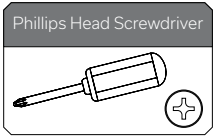


STEP 1

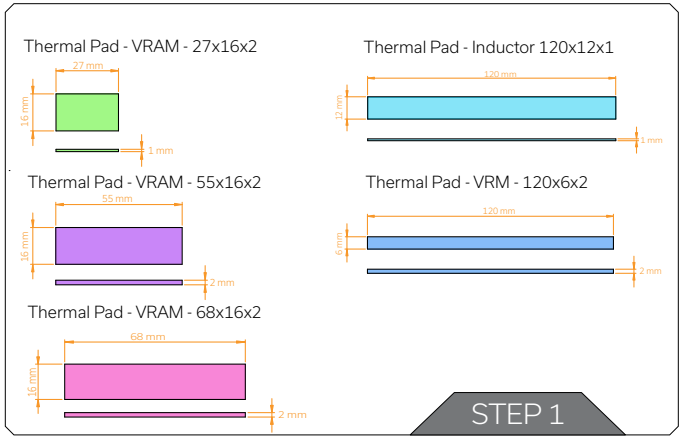
Unscrew two (2) Screws AX1 M2.5 x 4 mm, and two (2) Screws AX1 M2.5 x 8 mm. Remove the backplate together with the Screws and backplate standoffs Standoffs must stay on Screws AX1 M2.5 x 8 mm. **Remove the green PCB gap caps.**

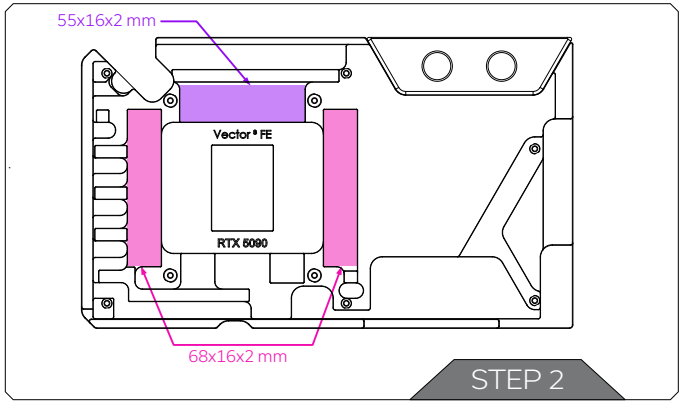
Do not remove standoffs from screws! In case the standoff detaches from the screw, replace it with a spare one. When replacing the standoff make sure that you screw it on the AX1 M2.5 x 8 screws. Do not push the standoff onto the screw AX1 M2.5 x 8 mm.

For this step, you will need:



CUTTING AND PLACING THERMAL PADS - WATER BLOCK





STEP 1

The GPU water block comes with pre-cut thermal pads, but some of them need to be additionally cut into smaller pieces.

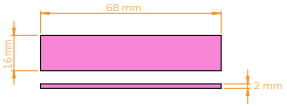
> Remove the protective foil from both sides of the thermal pad before installation.

Replacement thermal pads (EAN 107997):

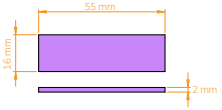
Thermal Pad - VRAM - 68x16x2 mm - 2 pcs
Thermal Pad - VRAM - 55x16x2 mm - 1 pc
Thermal Pad - VRAM - 27x16x2 mm - 1 pc
Thermal Pad - Inductor - 120x12x1 mm - 2,5 pcs
Thermal Pad - VRM - 120x6x2 mm - 2,5 pcs

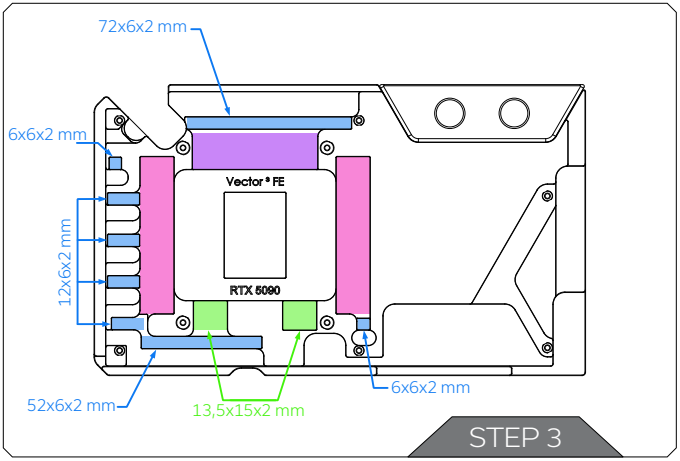
STEP 2

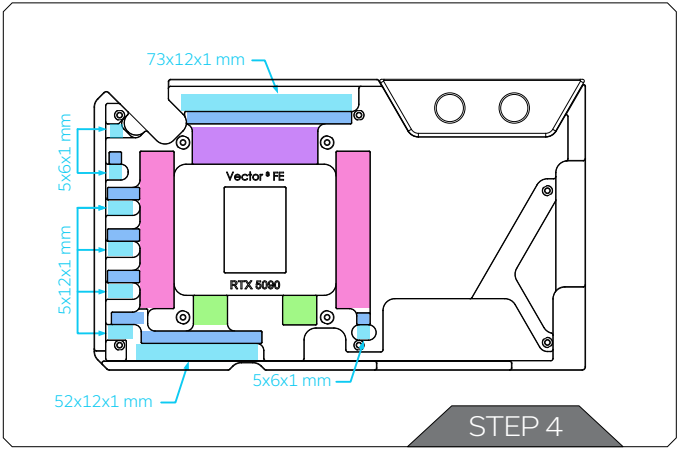
Use two (2) Thermal Pad - VRAM - 68x16x2 mm



Use one (1) Thermal Pad - VRAM - 55x16x2 mm



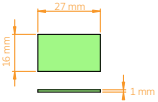




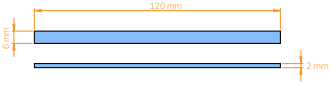
STEP 3

Use one (1) Thermal Pad - VRAM - 27x16x2 mm
Cut it in half (13,5x16 mm)

Thermal Pad - VRAM - 27x16x2



Use Thermal Pads - VRM - 120x6x2 mm
Cut one (1) to a length of 72 mm.
Cut one (1) to a length of 52 mm.
Cut the remaining Thermal Pad - VRM - 120x6x2 mm to a:
- 4 pcs 12 mm length (12x6x2 mm)
- 2 pcs 6 mm length (6x6x2 mm)

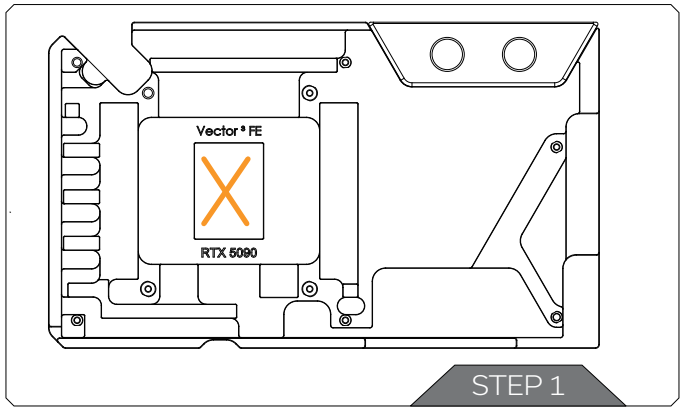


STEP 4

Use hermal Pads - Inductor - 120x12x1 mm
Cut one (1) to a length of 73 mm.
Cut one (1) to a length of 52 mm.
Cut the remaining Thermal Pad - VRM - 120x12x1 mm to a:
- 4 pcs 5x12x1 mm
- 3 pcs 5x6x1 mm

Thermal Pad - Inductor 120x12x1

APPLYING THERMAL COMPOUND

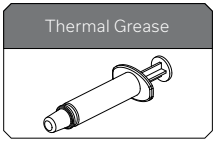


STEP 1

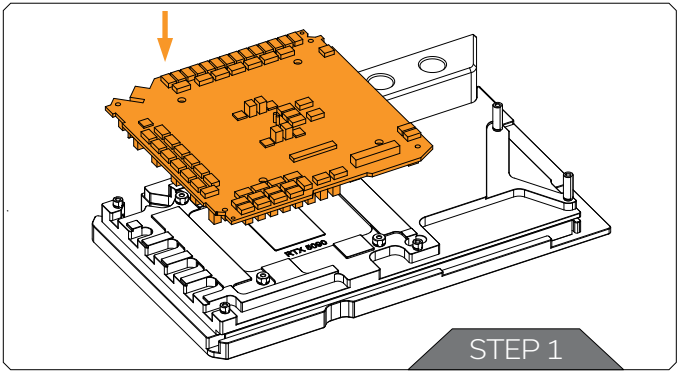
Apply the enclosed thermal grease (thermal compound) on the GPU die – as shown in the image. The layer of the thermal compound must be thin and even over the entire die surface.

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

For this step, you will need:



ATTACHING THE WATER BLOCK

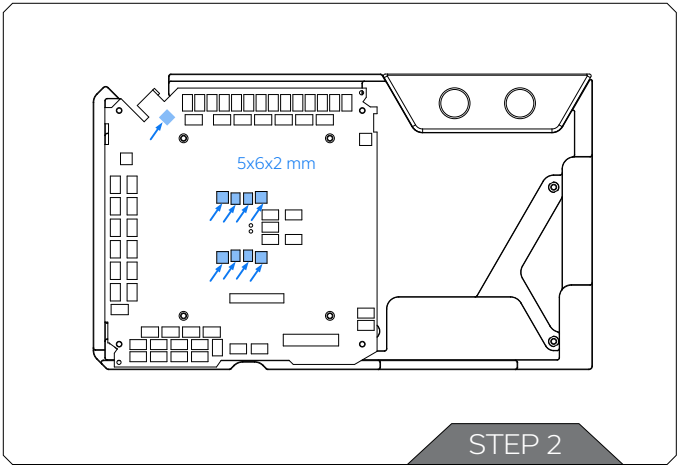


STEP 1

Carefully position the PCB on the water block. During this process, make sure you have aligned the mounting holes of the PCB with the holes of the water block.

Pay attention not to use too much force when pressing the PCB down to the block since chip dies are prone to cracking.

Before attaching the PCB to the Water Block, make sure all the Thermal Pads are placed correctly!

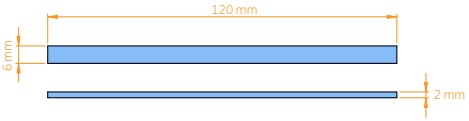


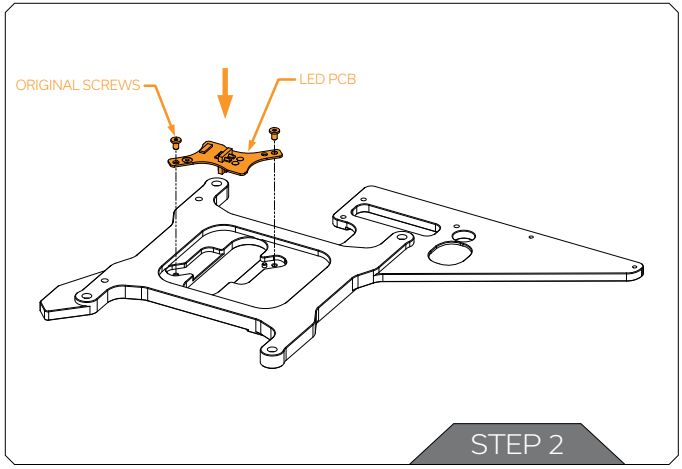
STEP 2

CUTTING AND PLACING THE THERMAL PADS - PCB

Use Thermal Pad - VRAM - 27x16x2 mm
Cut nine (9) to a length of 5 mm.

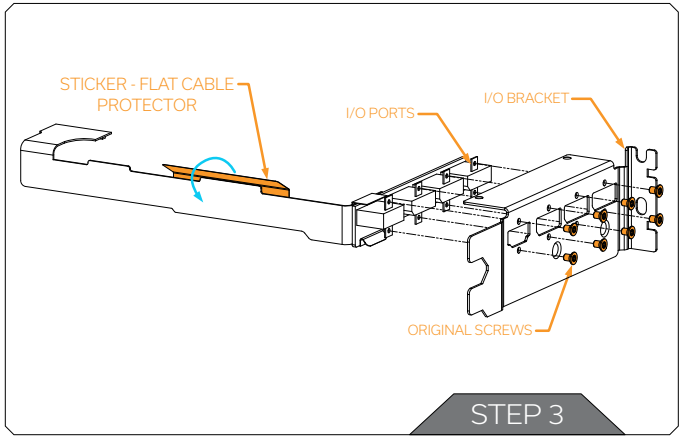
Thermal Pad - VRM - 120x6x2





STEP 2

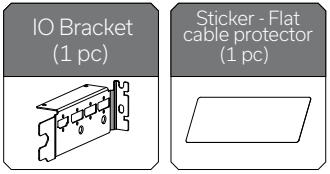
Carefully position the LED PCB on the Pressure Plate. Secure it with two (2) original screws.

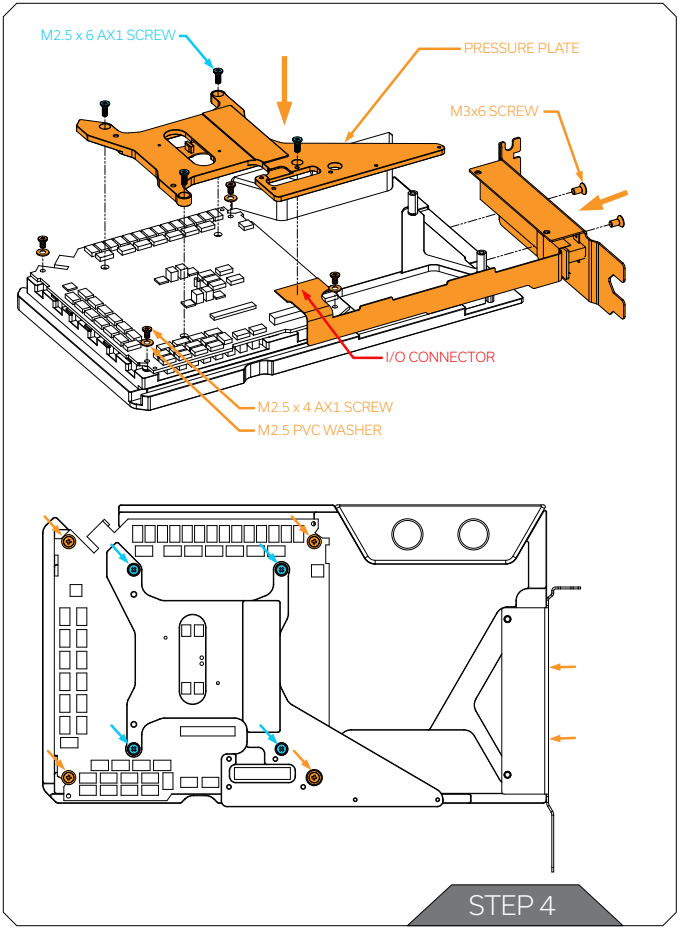


STEP 3

Attach I/O bracket to a I/O ports by screwing the original eight (8) Torx screws.

Place the sticker on the flat cable, then fold it over and stick it in place as shown in the picture.





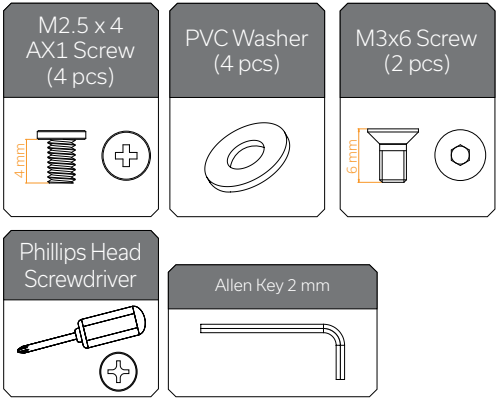
STEP 4

1. To secure the PCB to the water block, use four (4) PVC washers and four (4) M2.5 x 4 AX1 screws.

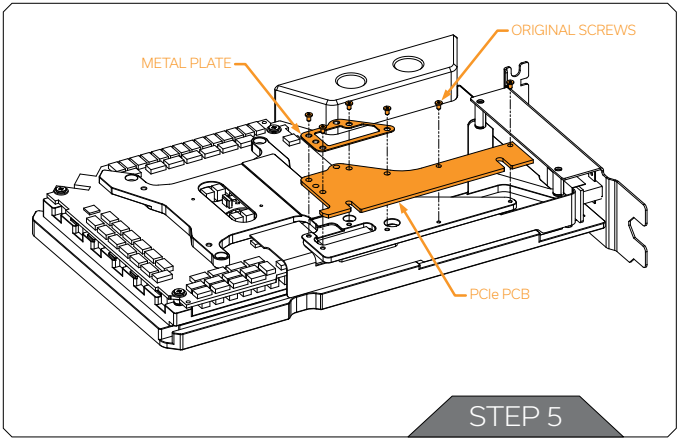
2. Position the pressure plate and secure it by tightening four (4) M2.5 x 6 AX1 screws..

It is recommended to partially screw in all the screws first, then tighten them evenly using a Phillips head screwdriver.

3. Attach the I/O bracket assembly using two (2) M3x6 screws and an Allen Key 2 mm. Be careful not to damage the ribbon cable and connect the I/O connector to a GPU PCB.

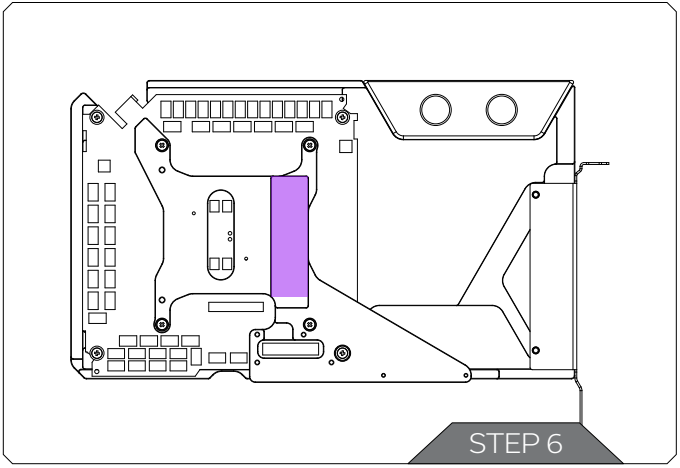


Screws must be present in the places marked on the picture.



STEP 5

Connect PCIe PCB to a GPU PCB and secure it with five (5) original Torx screws, along with a metal plate.

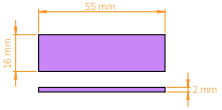


STEP 6

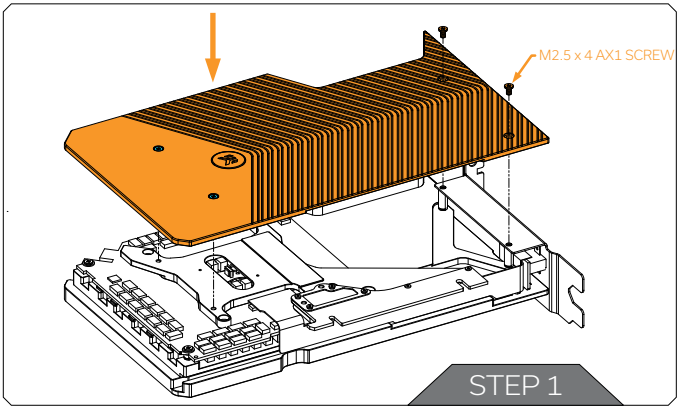
CUTTING AND PLACING THE THERMAL PADS - PRESSURE PLATE

Use one (1) Thermal Pad - VRAM - 55x16x2

Thermal Pad - VRAM - 55x16x2



ATTACHING THE BACKPLATE



STEP 1

Position the Backplate (including screws and standoffs) onto the GPU PCB. Use additional two(2) M2.5x4 AX1 Screws. Make sure all the holes are aligned. Tighten the screws evenly.

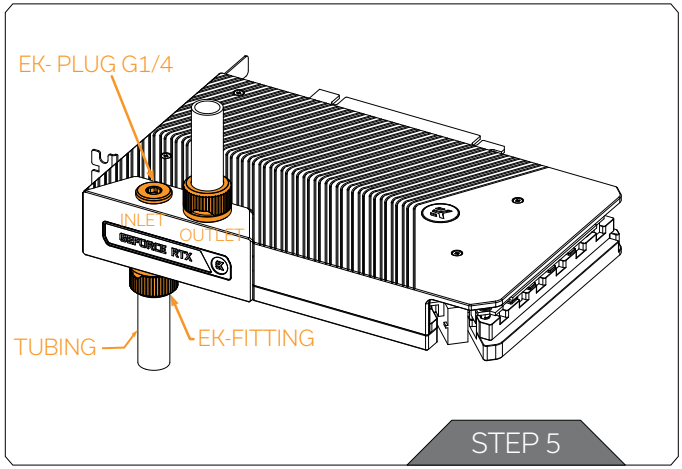
Do not use excessive force!

For this step, you will need:

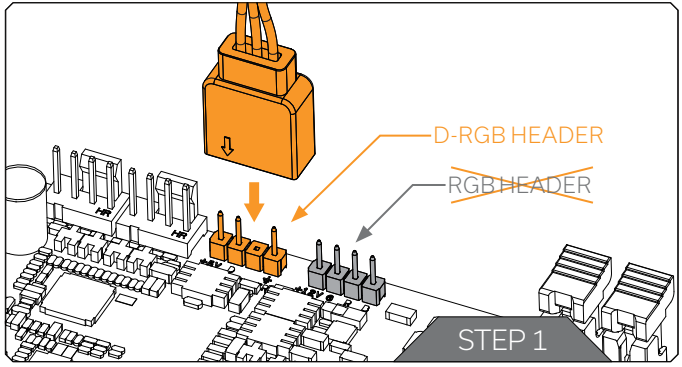
INSERTING THE GRAPHICS CARD INTO THE CHASSIS

Carefully lift your graphics card with the installed water block and insert it into your PC's motherboard PCI Express expansion slot. Please keep in mind that your graphics card is heavier than before it was equipped with the water block.

You need to be very careful when handling the graphics card. Avoid all unnecessary manipulation of the water block assembly that might damage your card or water block.



CONNECTING THE D-RGB LED



STEP 5

Screw in two (2) G1/4 threaded male fittings. Attach the liquid cooling tubes and connect the water block to the cooling loop.

Do not forget to plug the remaining two openings using the enclosed EK-Plug G1/4 or its equivalent.

EK recommends using EK fittings with all EK water blocks.

CAUTION: When using connectors other than EK fittings, pay special attention to the length of the fittings' male G1/4" thread – 5mm is the maximum G1/4" thread length allowed!

For this step, you will need:

EK-Loop Multi Allen Key

STEP 1

Plug the 3 Pin connector from the water block's D-RGB LED light to the DRGB HEADER on the motherboard. The LED will work if the pin layout on the header is as follows: +5V, Digital, empty, Ground.

Please ensure that the arrow indicated on the connector is plugged into the +5V line as indicated on your motherboard. If you put the LED Diode to the 12V RGB HEADER you can damage the LEDs. Failure to do so will damage your motherboard or LED strip.

TESTING THE LOOP

To make sure the installation of EK components was successful, we recommend you perform a leak test for 24 hours. 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. It is normal for the coolant level to drop during this process as air collects in the distribution plate. Inspect all parts of the loop, and in the eventuality, that coolant leaks, fix the issue and repeat the testing process. Ensure that all hardware is dry before the system is powered on in order to prevent any damage.

WARRANTY

Our products are warranted against defects of materials and quality for a period of 24 months, starting with the date of delivery to the end-user. During this period, products will be repaired or have parts replaced at our discretion, provided that 1) the product is returned to the agent from whom it was purchased; 2) the product has been purchased by the end-user and has not been used for commercial purposes; 3) the product has not been misused, handled carelessly, or used in a manner other than the way described in the instructions manual. This warranty does not confer rights other than those expressly set out above and does not cover any claims for consequential loss or damage. This warranty is offered as an extra benefit and does not affect your statutory rights as a consumer. This warranty is voided if the product comes in contact with aggressive UV additives or other improper liquids. EK water blocks are sealed with a warranty-voiding circular label, proving the water block has withstood a pressure leak test. Removing the label will void the leak-free guarantee, but not the guarantee on the product itself. Any other RMA issues can be reported to EK Customer Support at www.ekwb.com/support for further analysis.

SUPPORT AND SERVICE

In case you need assistance or wish to order spare parts or a new mounting mechanism, please contact:
https://www.ekwb.com/customer-support/

For spare parts orders, refer to the page with "TECHNICAL SPECIFICATIONS AND WATER BLOCK PARTS" where you can find the EAN number of each part you might need.

Include the EAN number with quantity in your request. Mounting Mechanism EAN can be found under "BOX CONTENTS"

Thermal pads are readily available in the EK shop

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