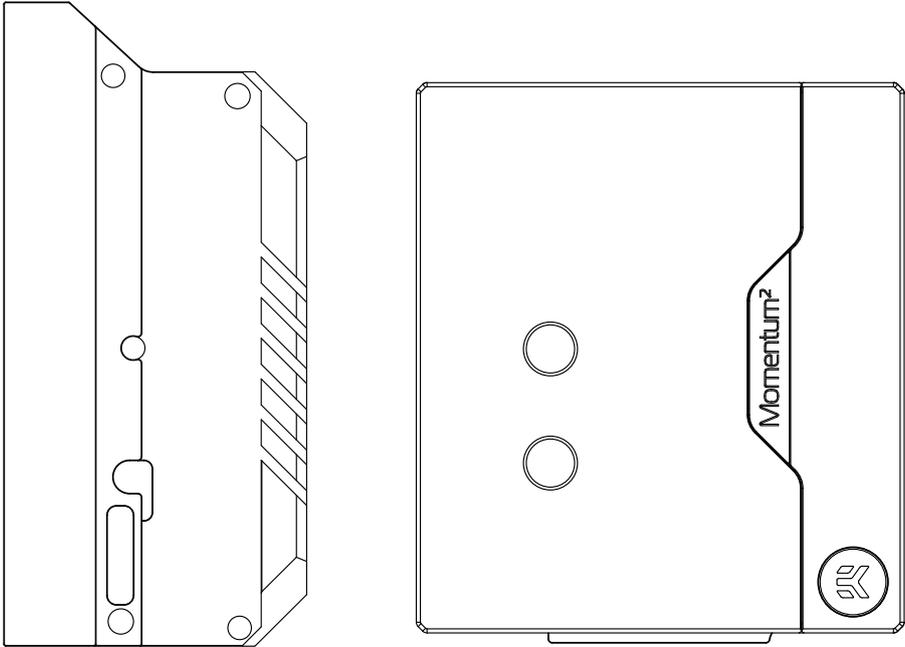# EK-Quantum
Momentum^2 ROG Maximus Z690 Extreme D-RGB

MONOBLOCK

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.

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

Carefully read the manual before beginning the installation process.

Remove your graphics card from the computer for the safest mounting process to prevent any possible damage to your GPU or its circuit board (PCB).

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!
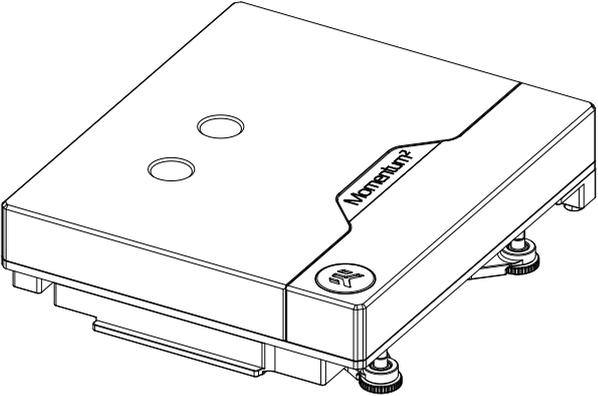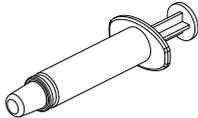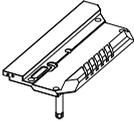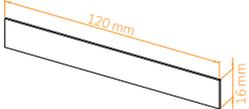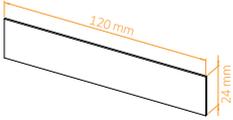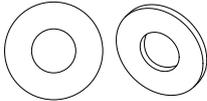
Do not use pure distilled water! For best results, EK recommends the use of EK-CryoFuel coolants!

To reach optimal performance, make sure to thoroughly bleed the air out of your water block!
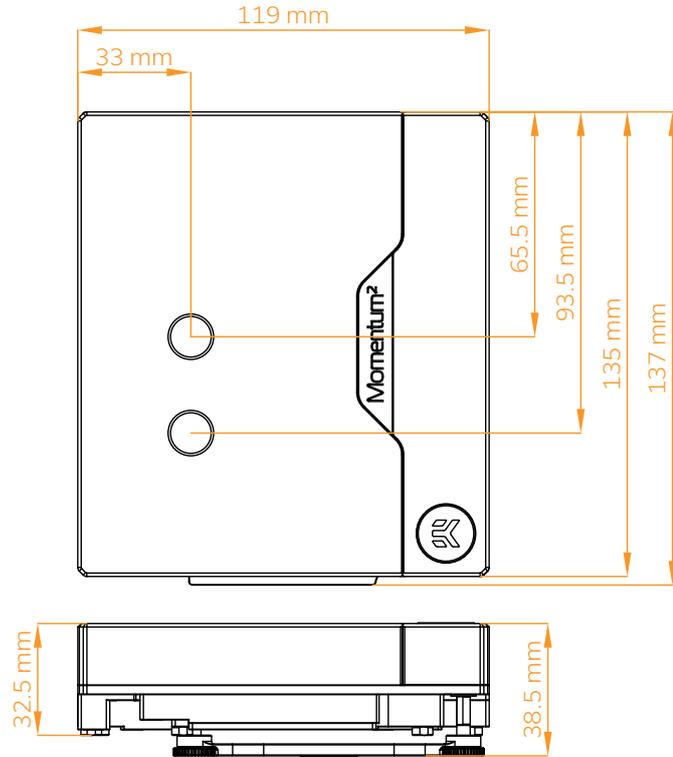
TABLE OF CONTENTS

BOX CONTENTS

EK-Quantum Momentum² ROG Maximus Z690 Extreme D-RGB	Thermal Grease (1 pc)	Allen Key 2.5 mm (1 pc)
	Replacement Cover (1 pc)	Allen Key 2 mm (1 pc)
	Thermal Pad F 1.5 mm (120x16) (2 pcs)	M2.5 x 4 AX1 Screw (6 pcs)
	Thermal Pad G 0.5 mm (120x24) (2 pcs)	PVC Washer M2.5 (6 pcs)

WATER BLOCK DIMENSIONS
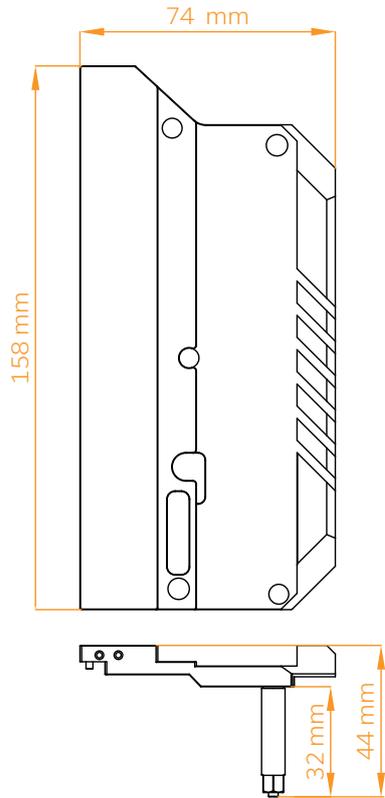
TECHNICAL SPECIFICATIONS AND WATER BLOCK PARTS
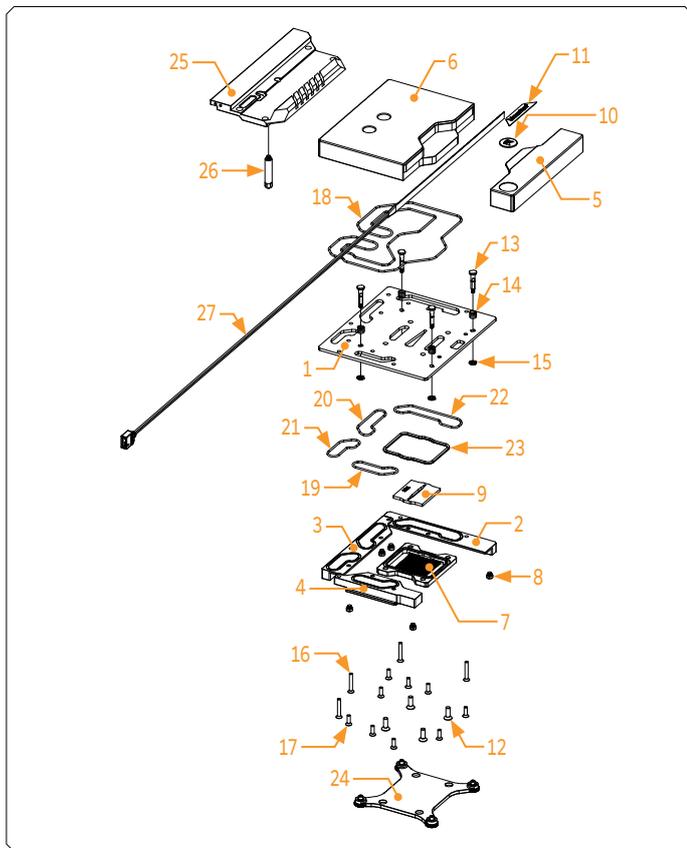

Technical Specification:
- Dimensions: (L x H x W) – 137.5 x 119 x 38.5 mm
- D-RGB cable length: 500 mm
- D-RGB LED count: 20
- D-RGB connector standard 3-pin (+5V, Data, Blocked, Ground)

Position	EAN	Description	Quantity
1	105081	Metal plate	1
2	105074	Mosfet N (Nickel)	1
3	105076	Mosfet W (Nickel)	1
4	105078	Mosfet S (Nickel)	1
5	105080	Standout (Acetal)	1
6	105079	Top plate (plexi)	1
7	104028	Coldplate (Nickel)	1
8	8533	Standoff M4/M2.5 x 2.5 mm	5
9	104029	Jet Plate	1
10	100663	EK - Badge	1
11	104444	Mylar sticker	1
12	100500	Screw M4 x 12 DIN7991 INOX	4
13	104913	Screw - Velocity 2 Mounting Screw (Ni)	4
14	100747	Spring M3 x 10 mm	4
15	104532	Seeger ring	4
16	104771	Screw M3 x 20 7991DIN	4
17	8252	Screw M3 x 10 7991DIN	9
18	105126	OR 245 x 2 mm	1
19	105127	OR 30 x 1.5 mm	1
20	105128	OR 39 x 1.5 mm	1
21	105129	OR 29 x 1.5 mm	1
22	105130	OR 49 x 1.5 mm	1
23	104773	Coldplate OR	1
24	104650	Backplate	1
25	105084	Replacement I/O Cover (Black e.)	1
26	105132	Standoff M4/M2 x 30.75 mm	1
27	101946	LED D-RGB Dense Strip - 500/200 mm	1

PREPARING THE MOTHERBOARD

M2 x 9 AX1 SCREW

STEP 1

M3 x 4 AX1 SCREW

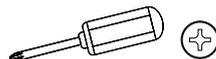STEP 2
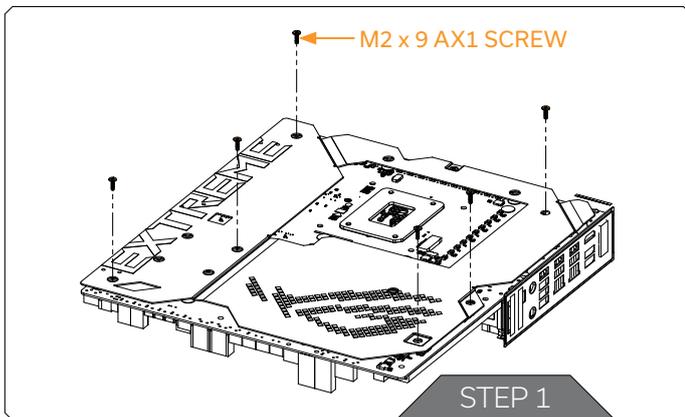
⚠ Important! Before starting, make sure to have a clean, flat surface to work on. It is recommended to put foam or soft material to lay the motherboard on.
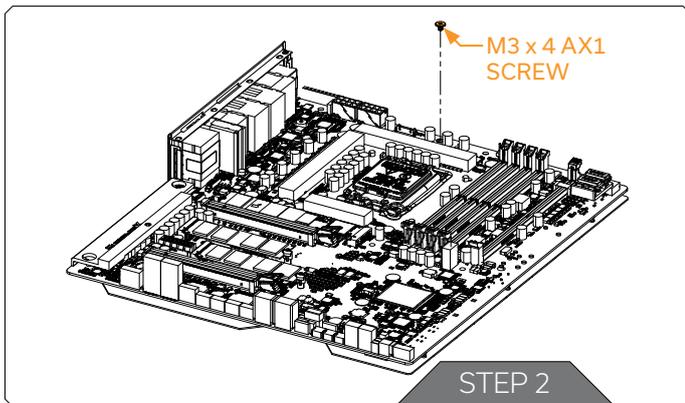
For this step, you will need:

Phillips Head Screwdriver

STEP 1
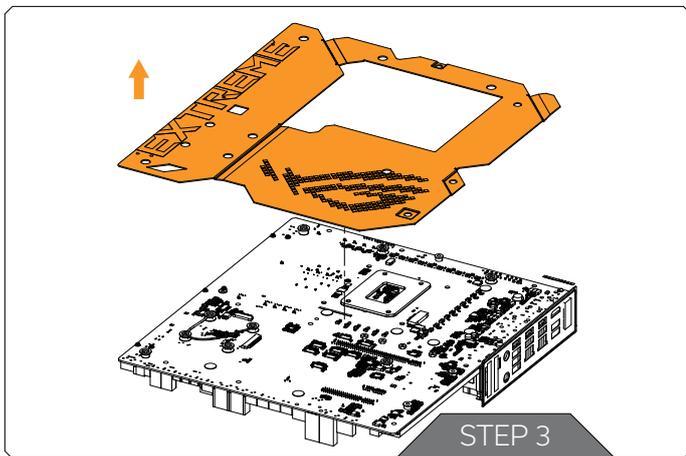**REMOVING THE BACKPLATE**
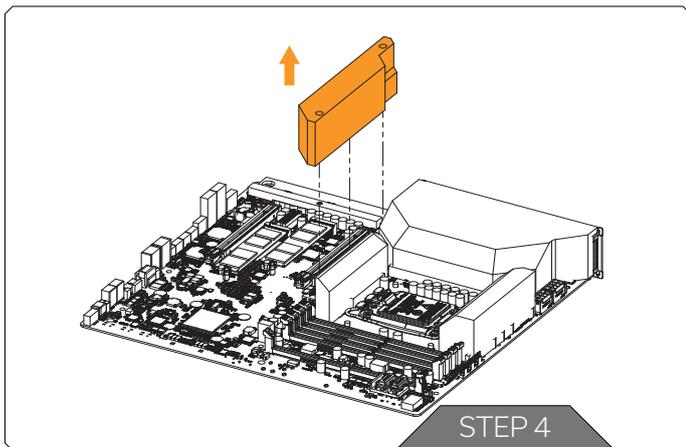Using a Philips head screwdriver, unscrew six (6) M2 x 9 AX1 Screws.

STEP 2
Rotate the motherboard and unscrew one (1) M3 x 4 AX1 Screw.

STEP 3

STEP 3
Now you can detach the backplate from the motherboard.

STEP 4

STEP 4
REMOVING THE SSD
Unscrew two (2) SSD screws located in the SSD heatsink. Then, detach the SSD heatsink from the motherboard.
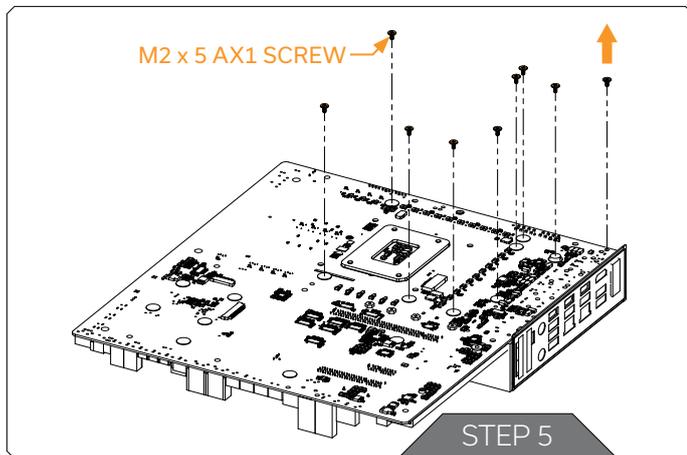
STEP 5
REMOVING THE STOCK COOLER
Unscrew nine (9) M2 x 5 AX1 screws from the back of the motherboard. Save the screws. Two (2) screws will be reused later.

M2 x 5 AX1 SCREW

STEP 5
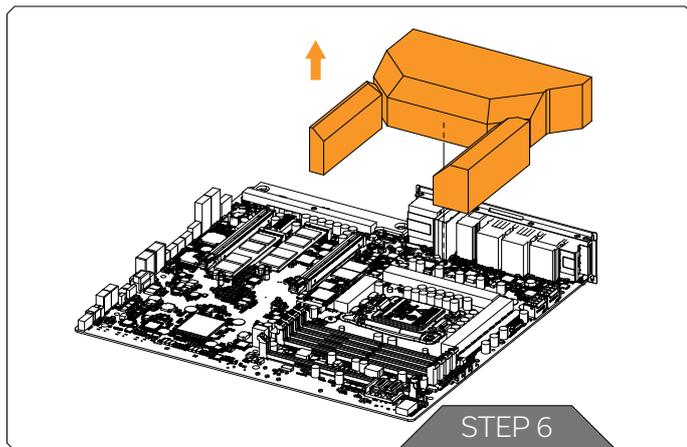
STEP 6
REMOVING THE SSD
Detach the stock cooler from the motherboard. Make sure to remove all the remaining thermal pads from the motherboard.

STEP 6

CUTTING AND PLACING THERMAL PADS

F1.5	Thermal Pad - 120 x 16 x 1.5 mm
G0.5	Thermal Pad - 120 x 24 x 0.5 mm

STEP 1

STEP 1

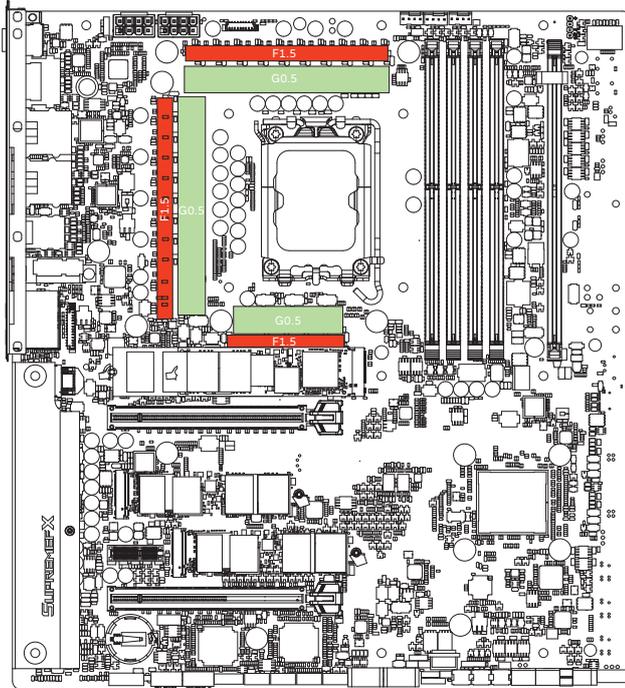EK-Quantum Momentum² ROG Z690 Extreme D-RGB water block comes with Thermal Pads that have to be cut into smaller pieces to cover all the regulation areas (Mosfet) on the motherboard. EK made sure to provide you with more than an adequate quantity of Thermal Pads to complete this Step.

Replacement thermal pads:
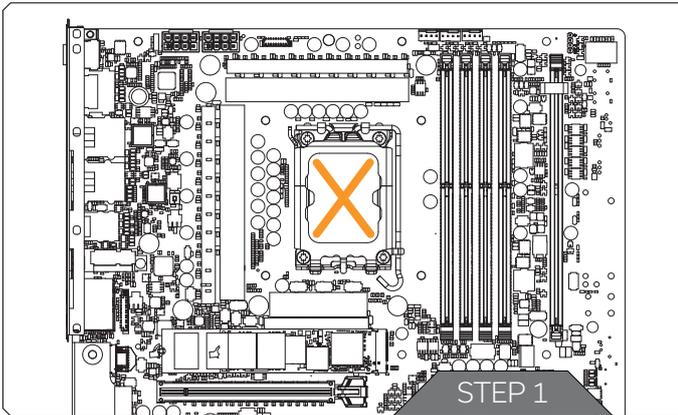Thermal Pad F 1.5 mm – (120 x 16 mm) EAN: 3830046996749
Thermal Pad G 0.5 mm – (120 x 24 mm) EAN: 3830046996763

For this step, you will need:

Scissors

APPLYING THERMAL COMPOUND

STEP 1

STEP 1

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!

For this step, you will need:

Thermal Grease

PREPARING THE WATER BLOCK FOR INSTALLATION

BACKPLATE

PROTECTIVE STICKER
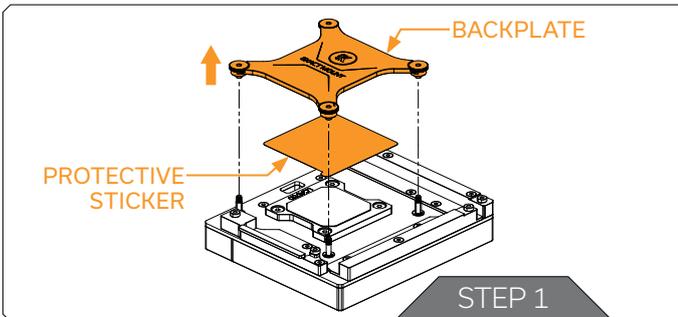
STEP 1

STEP 1

Unscrew four (4) Velocity^2 mounting nuts (turn them in an anticlockwise direction to unscrew). Remove the backplate and save it for later steps. After the backplate is removed, do not forget to peel off the protective sticker.
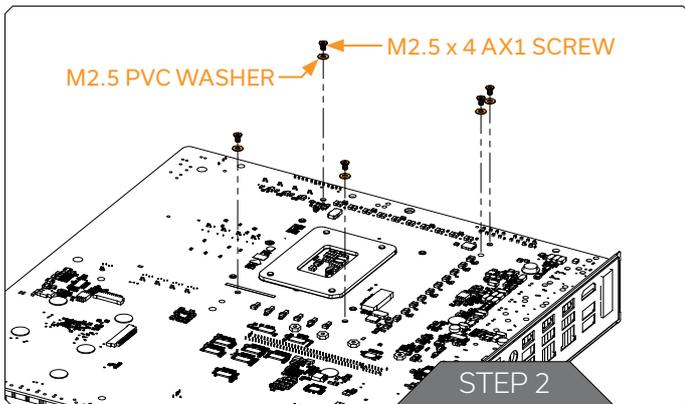
ATTACHING THE WATER BLOCK
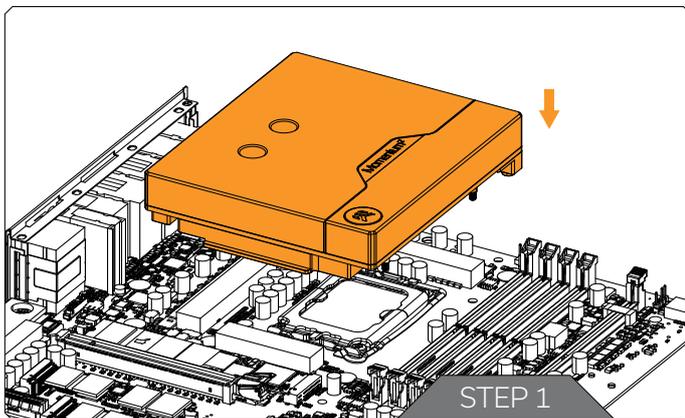
STEP 1

STEP 1

Carefully place the water block onto the motherboard and align four mounting screws on the motherboard. Hold the water block and the motherboard and turn them upside down.

⚠️ Before placing the Water Block on the motherboard, make sure all the Thermal Pads are placed correctly! (Chapter: Cutting and placing thermal pads).

M2.5 x 4 AX1 SCREW

M2.5 PVC WASHER

STEP 2

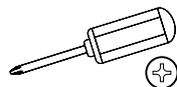**STEP 2**

Secure the water block using five (5) M2.5 x 4 AX1 Screws and five (5) PVC Washers. Do not use excessive force!

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

For this step you will need:

Phillips Head Screwdriver	M2.5 X 4 AX1 Screw (5 pcs)	M2.5 PVC Washer (5 pcs)
	4 mm	

MAX TORQUE:
0.6 Nm

ALLEN KEY 2.5 mm

TOP OF THE
MOTHERBOARD

1
4
3
2

EXACTMOUNT
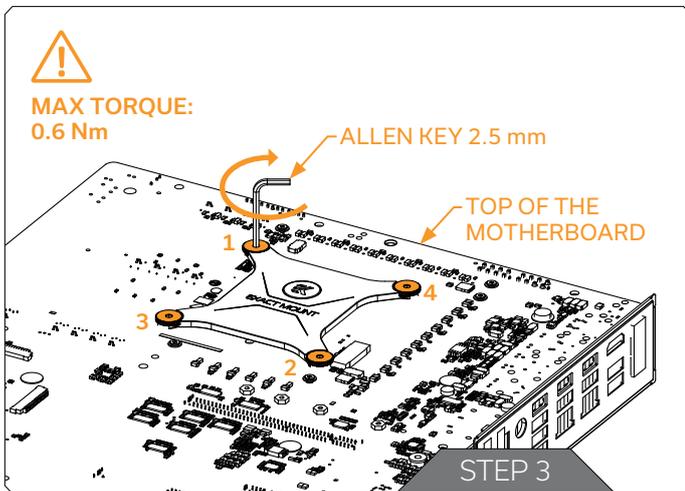
STEP 3

STEP 3

After securing 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) or EK-Loop Torque Screwdriver. 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!

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

For this step you will need:

Allen Key 2.5 mm
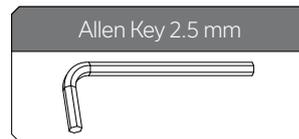
ATTACHING THE REPLACEMENT COVER
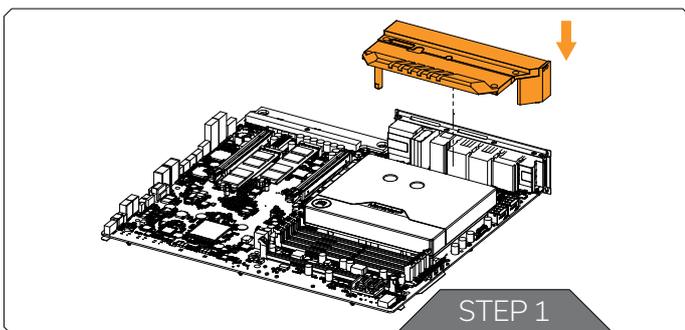
STEP 1

STEP 1

Position the replacement cover over the bracket. Make sure that the holes are aligned.

STEP 2

STEP 2
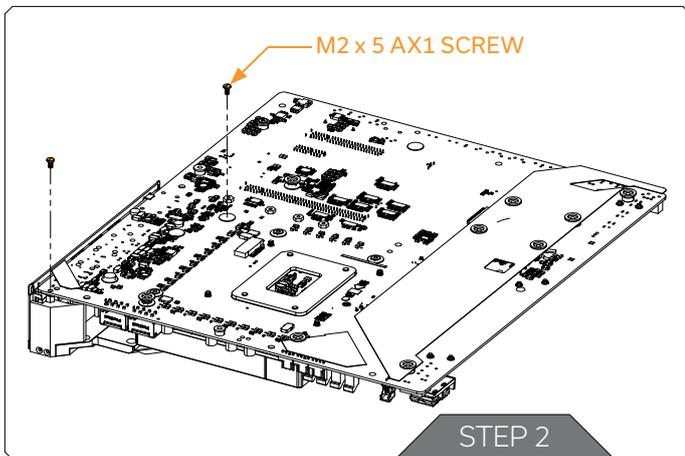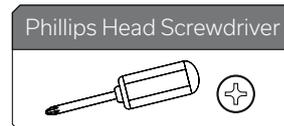Reuse two (2) M2 x 5 AX1 stock screws (From the chapter: REMOVING THE STOCK COOLER – STEP 5) to tighten the replacement cover.

For this step, you will need:

Phillips Head Screwdriver

FITTINGS AND TUBING
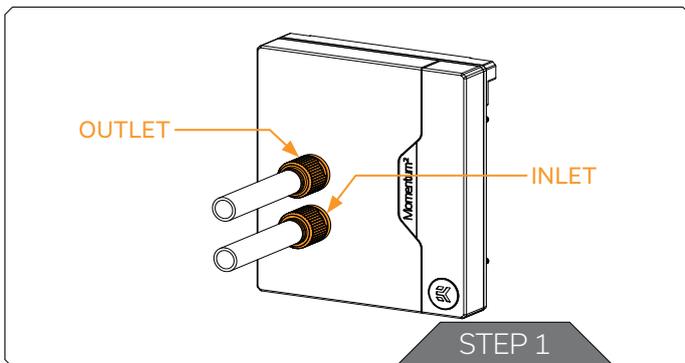
STEP 1

STEP 1
With the EK-Quantum Momentum2 ROG Z690 Extreme D-RGB water block, 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.

The installation of the water block is now complete.

CONNECTING THE D-RGB LED STRIP

D-RGB HEADER

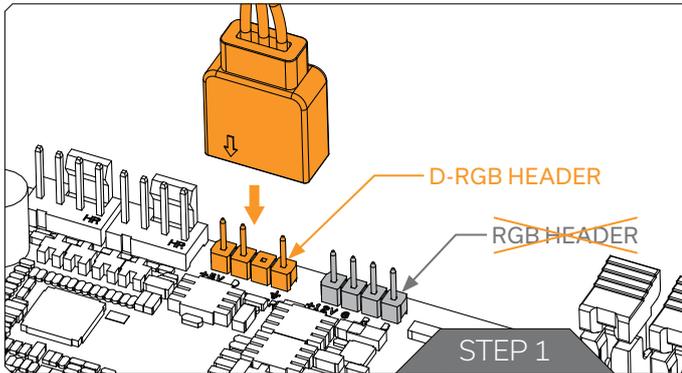RGB HEADER

STEP 1

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.

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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