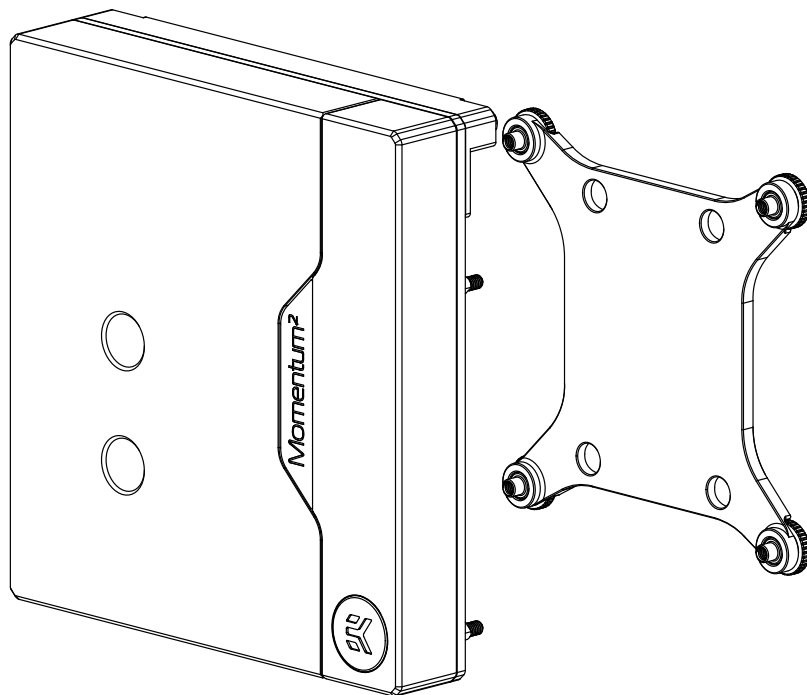# EK-Quantum
# Momentum² ROG Maximus Z790 Hero D-RGB

MONOBLOCK

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, or 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 the important notice, disclosure, and warranty conditions printed on the back of the box.

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

**Please carefully read the manual thoroughly 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.**
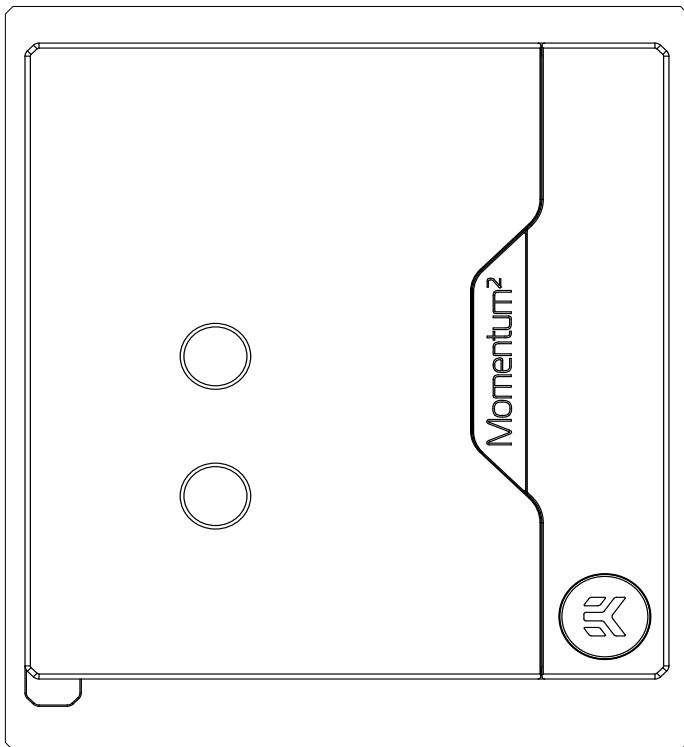
**Do not use pure distilled water! For best results, EK recommends the use of EK-Cryo Fuel coolants.**

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

# TABLE OF CONTENTS

# GENERAL INFORMATION ON WATER BLOCK COMPATIBILITY

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 following CPU sockets:

**- Intel LGA-1700**

# BOX CONTENTS

| | | | |
|---|---|---|---|
| EK-Quantum Momentum² Maximus XIV Hero D-RGB (3831109892381) | Allen key 2 (1 pc) (8901) | Thermal Grease (1g) | Thermal PAD F 0.5 mm (120 x 16 mm) (2 pcs) |
| Standoff M4-M2 x 10.5 (1 pc) | Allen key 2.5 (1 pc) (8902) | Thermal PAD F 1.0 mm (120 x 16 mm) (4 pcs) | Standoff M4-M2.5 x 12 (1 pc) |
| I/O Cover (1 pc) (104781) | I/O Cover Stand (1 pc) (104682) | M2 x 12 Screw (2 pcs) | Polyamide Washer M2.5 0.5 mm (8 pcs) |
| Screw M3 x 8 DIN7991 (3 pcs) | Standoff M4-M2.5 x 12 (1 pc) | M2.5 x 5 AX1 Screw (8 pcs) | M2.5 x 8 AX1 Screw (2 pcs) |

EAN: 106324

EAN: 100844

# WATER BLOCK DIMENSIONS

**CPU WB:**

119.6 mm
35.7 mm
20.5 mm
127.4 mm
64.7 mm
36.7 mm
30.9 mm

Momentum²

**Backplate:**

9.1 mm
6 mm
3.5 mm
78 mm
78 mm

EXACT MOUNT
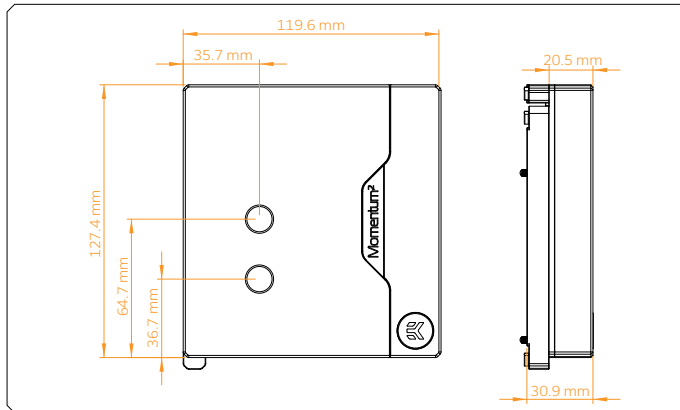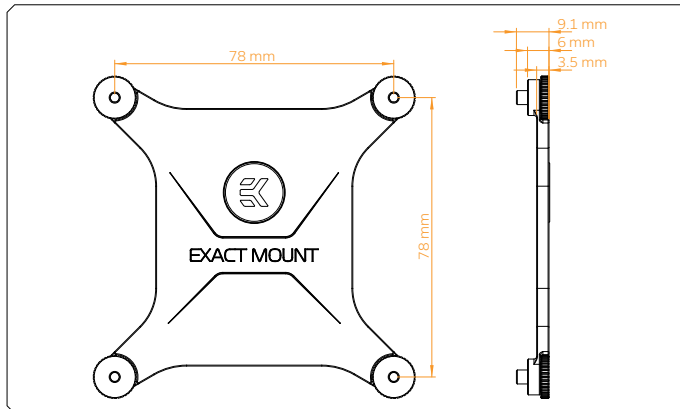
# TECHNICAL SPECIFICATIONS AND WATER BLOCK PARTS
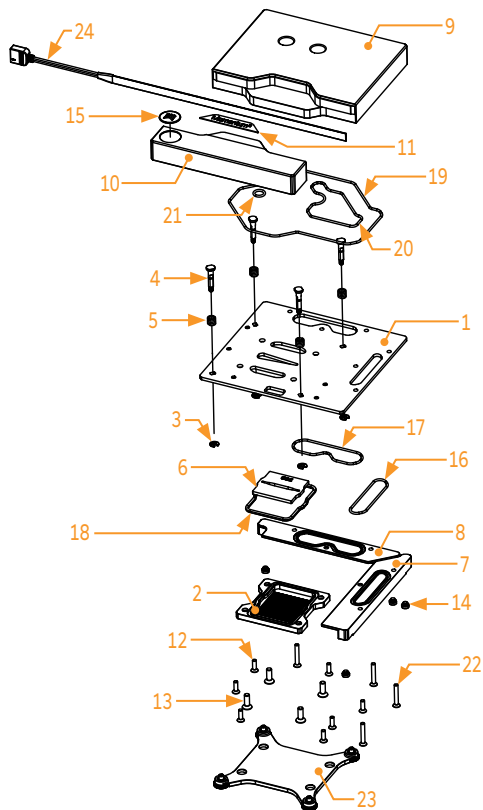


| Position | EAN | Description | Quantity |
|----------|-----|-------------|----------|
| 1 | 104679 | Monoblock | 1 |
| 2 | 104028 | Coldplate (Nickel) | 1 |
| 3 | 104532 | Lock Washer DIN6799 | 4 |
| 4 | 104913 | Mounting Screw | 4 |
| 5 | 100747 | Spring M3 x 10 mm, 8 kg | 4 |
| 6 | 104029 | Jet Plate | 1 |
| 7 | 104674 | Coldplate Mosfet N (Nickel) | 1 |
| 8 | 104676 | Coldplate Mosfet W (Nickel) | 1 |
| 9 | 104677 | TOP Plexi | 1 |
| 10 | 104678 | TOP Acetal Stickout | 1 |
| 11 | 104444 | Mylar sticker | 1 |
| 12 | 8252 | Screw M3 x 10 DIN7991 Inox | 7 |
| 13 | 100500 | Screw M4 x 12 | 4 |
| 14 | 8521 | Standoff M4/M2.5 x 2.1 | 4 |
| 15 | 100663 | EK Badge | 2 |
| 16 | 104777 | OR - 36 x 1.5 mm | 1 |
| 17 | 104778 | OR - 43 x 1.5 mm | 1 |
| 18 | 104773 | OR - 53 x 2 mm | 1 |
| 19 | 104683 | OR - 133 x 2 mm | 1 |
| 20 | 104776 | OR - 55 x 2 mm | 1 |
| 21 | 104774 | OR - 6 x 2 mm | 1 |
| 22 | 104771 | Screw M3 x 20 DIN7991 Inox | 4 |
| 23 | 104650 | Exact Mount | 1 |
| 24 | 101946 | LED Strip | 1 |

# PREPARING THE MOTHERBOARD
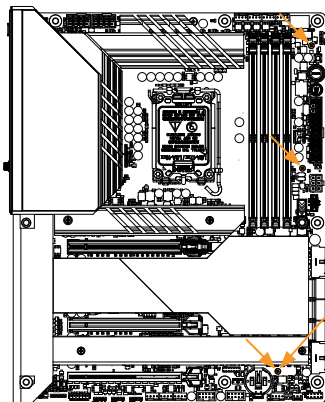


M2 x 2.5 SCREW (3x)
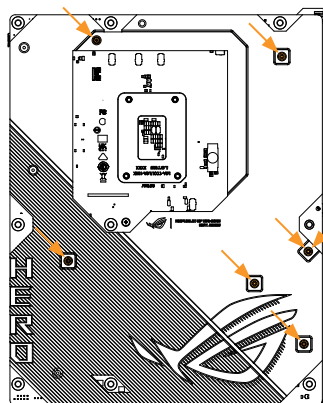
M2 x 10 SCREW (6x)

STEP 1

⚠️ Important! Before starting, make sure to have a clean, flat surface to work on. It is recommended that you put a foam or a soft material to lay the motherboard and the water block on.

## STEP 1

Remove three (3) screws M2 x 5 from the front of the motherboard. Turn over the motherboard and unscrew six (6) screws M2 x 10. Remove the backplate and front audio cover.

For this step, you will need:

Phillips Head Screwdriver

STEP 1
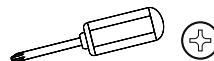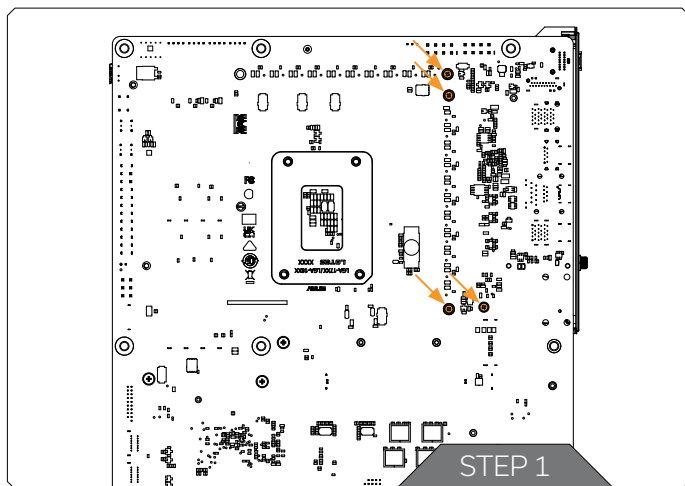
## STEP 2
After removing the backplate, unscrew the additional four(4) marked screws.

For this step, you will need:

Phillips Head Screwdriver



I/O LIGHT SCREEN
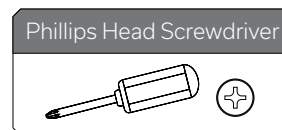
HEATSINK

STEP 3

## STEP 3
Disconnect the I/O Light cable from the motherboard. Pull the Heatsink straight up. Put the Heatsink on a clean flat surface. Be careful not to damage the I/O Light!

SCREW M2 x 4
SCREW M2 x 2.5
SCREW M2 x 4
HEATSINK
I/O BRACKET 1
I/O BRACKET 2
STEP 5
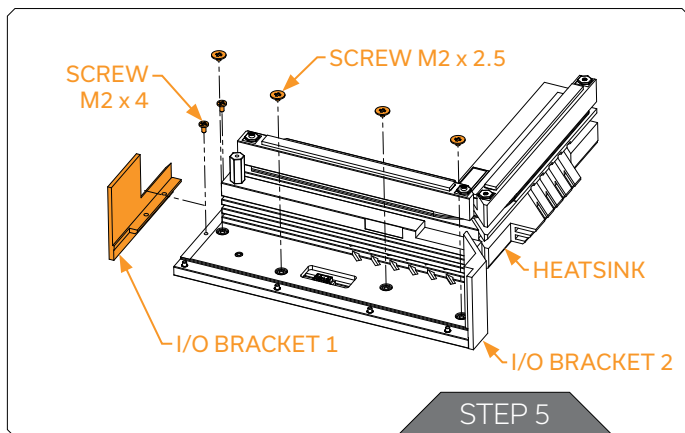
**STEP 4**
Remove all the remaining stock thermal pads from the motherboard.

**STEP 5**
Turn the Heatsink upside down. Unscrew four (4) M2 x 2.5 screws from I/O Light screen. To detach the I/O Bracket 1 unscrew two (2) M2 x 4 screws. Store all the screws and I/O Bracket 1 for later use.

For this step, you will need:

Phillips Head Screwdriver



I/O LIGHT SCREEN
I/O BRACKET 2
SCREW M2 x 4
I/O HEATSPREADER
STEP 6
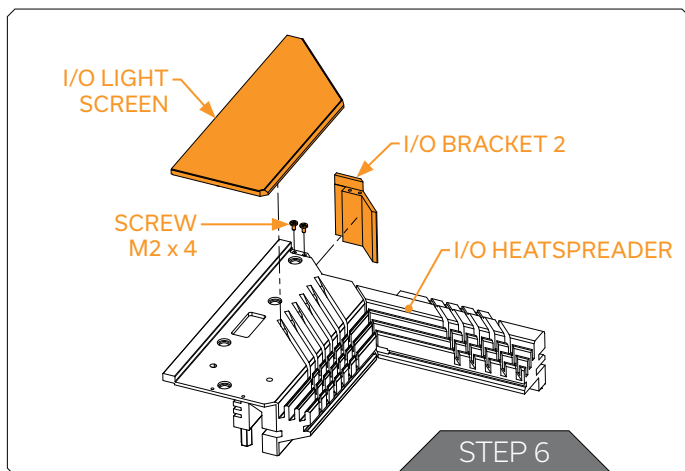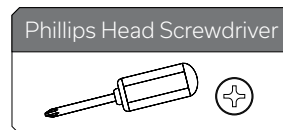
**STEP 6**
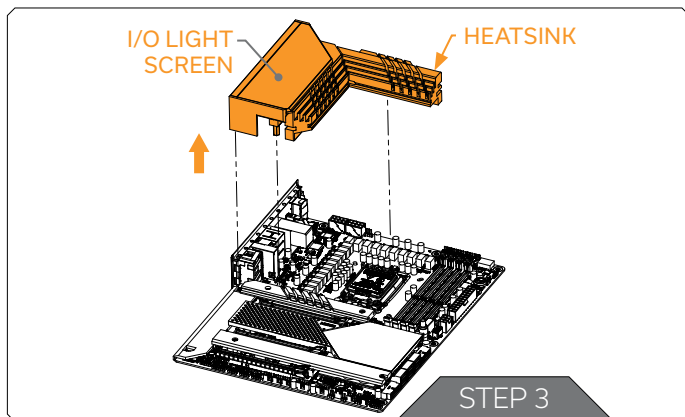Turn the Heatsink upside down again and pull the I/O Light screen straight up. Unscrew two (2) M2 x 4 Screws and detach the I/O Bracket 2. Store all the screws, I/O Light screen and I/O Bracket 2 for later use.

For this step, you will need:

Phillips Head Screwdriver
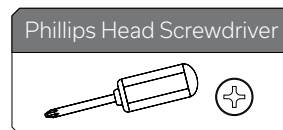
# I/O LIGHT COVER ASSEMBLY Z790 HERO MOTHERBOARD
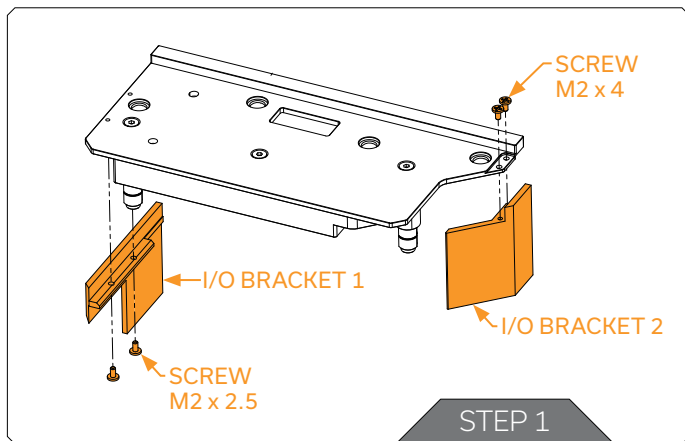


SCREW M2 x 4

I/O BRACKET 1

I/O BRACKET 2

SCREW M2 x 2.5

STEP 1

## STEP 1

Tighten the I/O Bracket 1 and the I/O Bracket 2 on the I/O Cover using four (4) M2x4 screws.

For this step, you will need:

| I/O Cover (1pc) | I/O Bracket 1 (1pc) | I/O Bracket 2 (1pc) |
|---|---|---|

| Screw M2 x 4 (4 pcs) | Phillips Head Screwdriver |
|---|---|



I/O LIGHT SCREEN

I/O COVER

SCREW M2 x 2.5
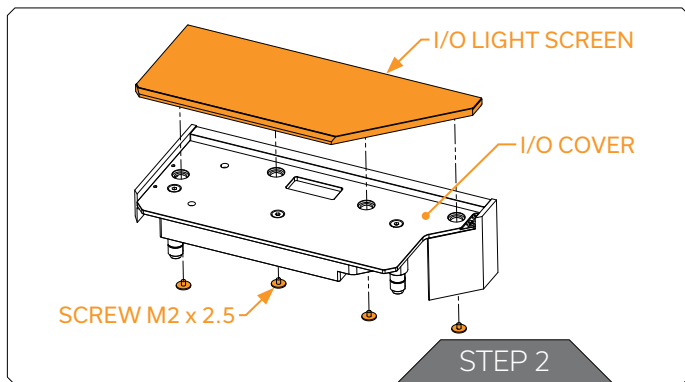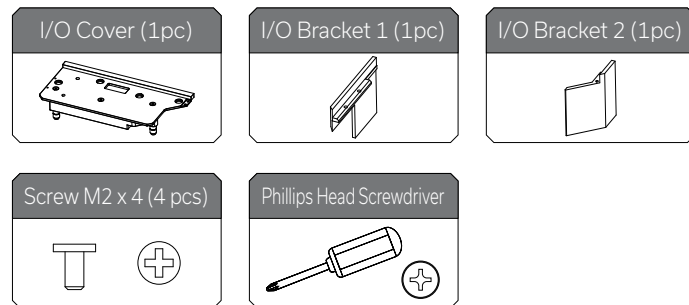
STEP 2

## STEP 2

Put the I/O Light screen onto the I/O Cover and tighten it with four (4) M2 x 2.5 screws.

For this step, you will need:

| I/O Light screen | Screw M2 x 2.5 (4pcs) | Phillips Head Screwdriver |
|---|---|---|
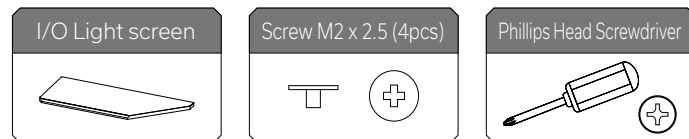
# I/O LIGHT COVER ASSEMBLY Z690 HERO MOTHERBOARD



M2.5-M4 x 12 STANDOFF

STEP 1

## STEP 1

Replace top standoff M2-M4 x 10 with M2.5-M4 x 12 from the Mounting mechanism bag.



SCREW M2 x 4

I/O BRACKET 1

I/O BRACKET 2

SCREW M2 x 2.5

STEP 2

## STEP 2

Tighten the I/O Bracket 1 and the I/O Bracket 2 on the I/O Cover using four (4) M2 x 4 screws.

For this step, you will need:

| I/O Cover (1pc) | I/O Bracket 1 (1pc) | I/O Bracket 2 (1pc) |
|---|---|---|

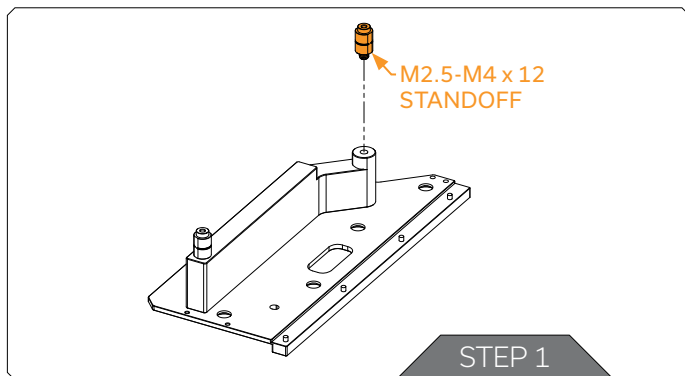| Screw M2 x 4 (4 pcs) | Phillips Head Screwdriver |
|---|---|

I/O LIGHT SCREEN

I/O COVER

SCREW M2 x 2.5
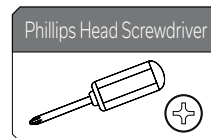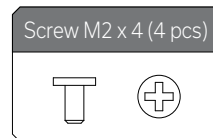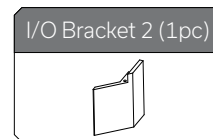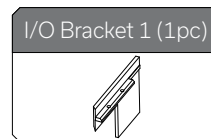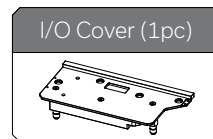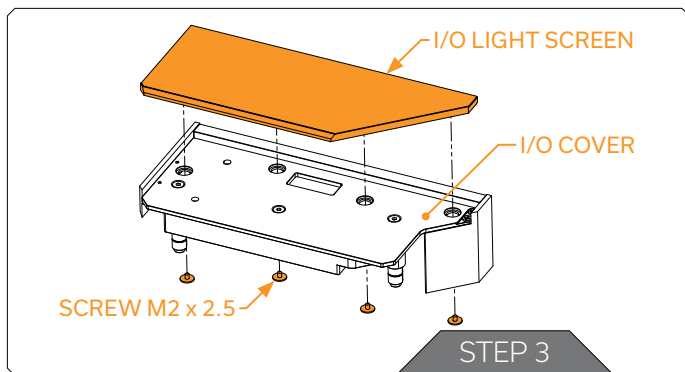
STEP 3

## STEP 3

Put the I/O Light onto the I/O Cover and tighten it with four (4) M2 x 2.5 screws.

For this step, you will need:

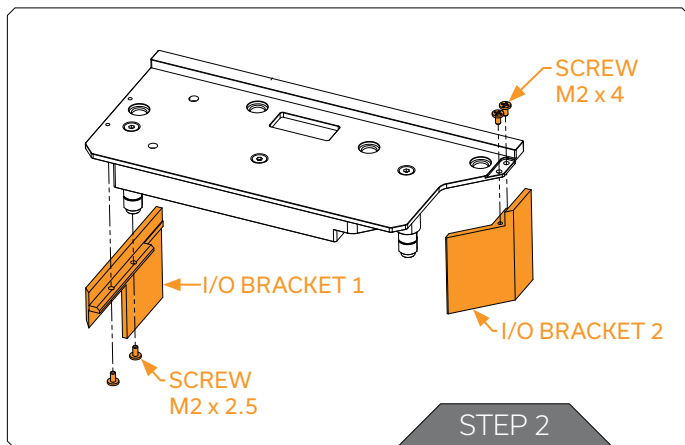| I/O Light screen | Screw M2 x 2.5 (4pcs) | Phillips Head Screwdriver |
|---|---|---|
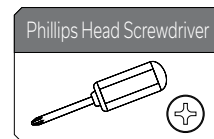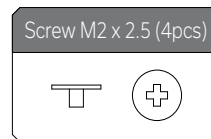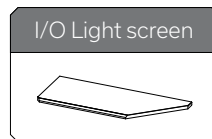
For the next steps of monoblock installation on the Z690 Hero monoblock. Please check the installation manual for EK-Quantum Momentum² ROG Maximus Z690 Hero D-RGB.

# PREPARING THE WATER BLOCK FOR INSTALLATION



MOUNTING NUT (4x)

BACKPLATE

TURN ANTI-CLOCKWISE TO UNSCREW

MOUNTING SCREW (4x)
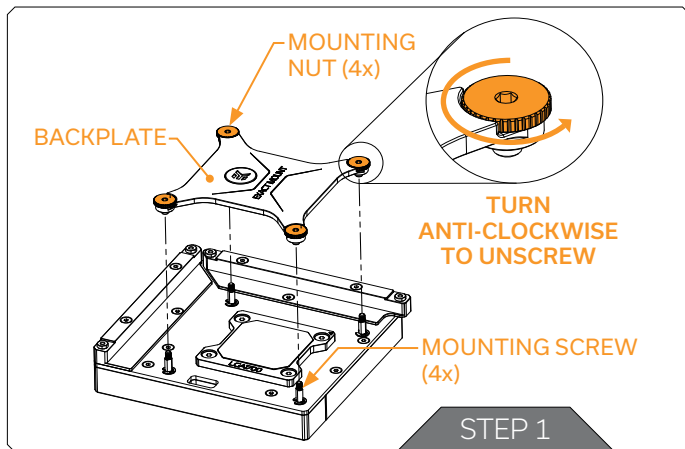
STEP 1

## STEP 1

Unscrew four (4) mounting nuts (turn them in an anti-clockwise direction to unscrew). Remove the Backplate.

For this step you will need:

| Allen Key 2.5mm |
|---|
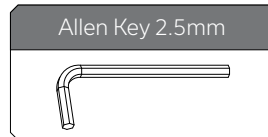
# CUTTING AND PLACING THERMAL PADS

**Thermal Pad F – 0.5 mm (120 x 16 mm)**

16 mm

120 mm

0.5 mm

**Thermal Pad F – 1.0 mm (120 x 16 mm)**

16 mm

120 mm

1 mm

F1

F1

F0.5

F0.5
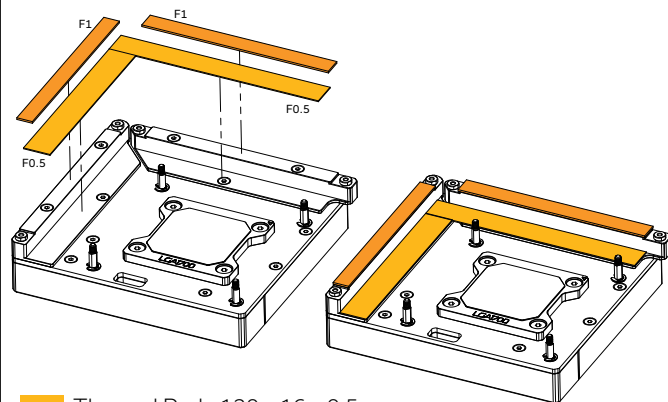
| F0.5 | Thermal Pad - 120 x 16 x 0.5 mm |
| F1 | Thermal Pad - 120 x 16 x 1.0 mm |

STEP 1

## STEP 1

EK-Momentum[2] ROG Maximus XIV Hero 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 water block. EK made sure to provide you with more than an adequate quantity of thermal pads to complete this Step.

⚠ Please remove the protective foil from both sides of the thermal pads prior to installation!

Replacement thermal pads:
Thermal PAD F 0.5 mm - (120 x 16 mm) – 3830046996725
Thermal PAD F 1.0 mm - (120 x 16 mm) – 3830046996732

For this step, you will need:

Scissors
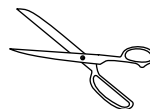
# APPLYING THERMAL COMPOUND
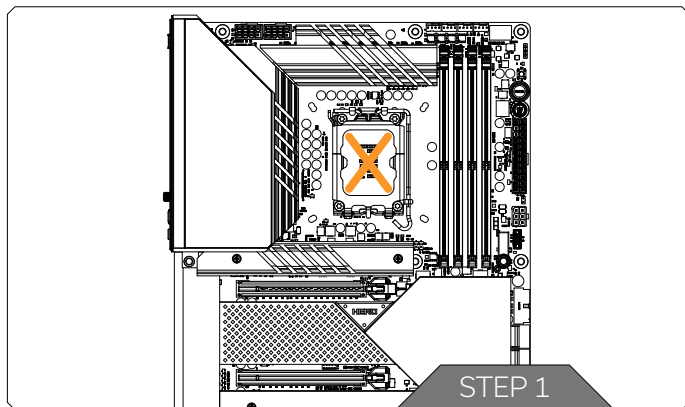


## STEP 1

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
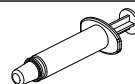
# ATTACHING THE WATER BLOCK



WATER BLOCK
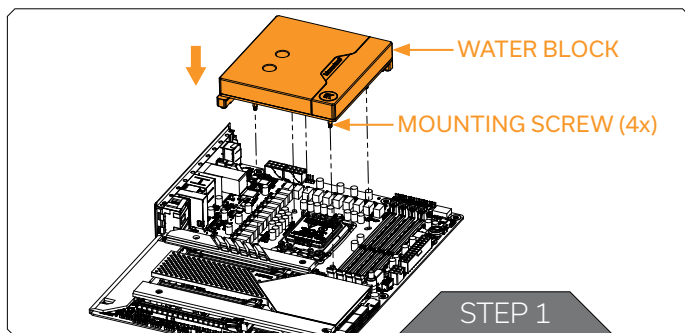
MOUNTING SCREW (4x)

## STEP 1

Carefully place the CPU water block onto the motherboard and align four(4) mounting screws with four (4) holes on the motherboard. Hold the water block and motherboard and turn them upside down.

M2.5 x 4 AX1 SCREW (3x)
MOUNTING NUT (4x)
TURN CLOCKWISE TO SCREW
BACKPLATE
EXACT MOUNT

MAX TORQUE: 0.6 Nm
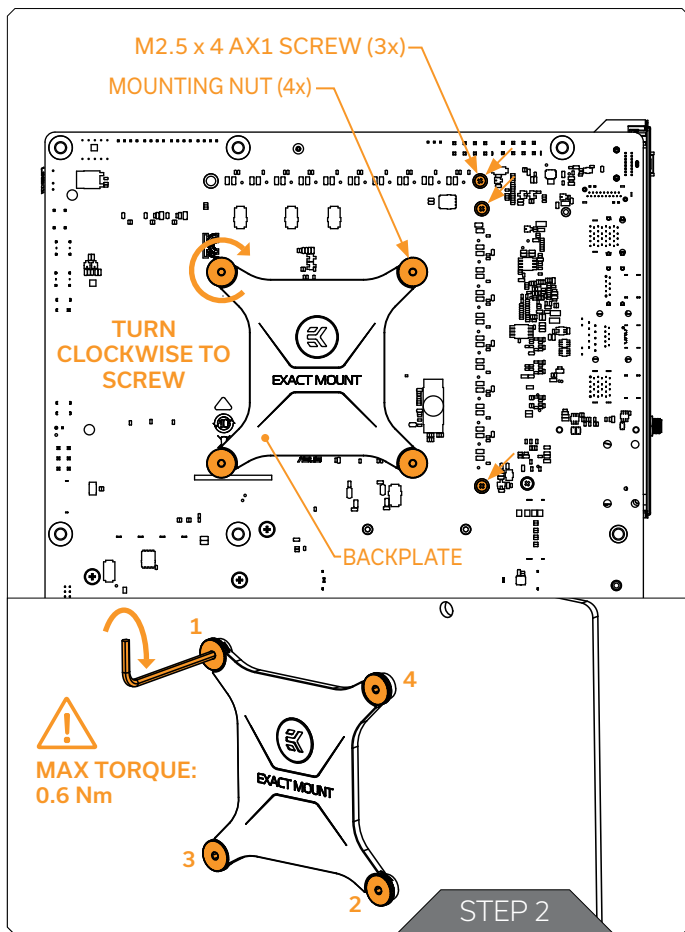
STEP 2

## STEP 2

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

While holding the water block and the motherboard with one hand, align the Backplate with the Mounting Screws of the water block. Turn the mounting nuts using Allen Key 2.5 mm in the clockwise direction according to the numerical order shown in the image. Do not tighten fully until all of the nuts are partially screwed in. After the Backplate is tightened, put three (3) M2.5 x 4 AX1 screws in the holes of the water block and tighten them.

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:
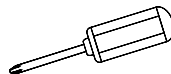
| Phillips Head Screwdriver | Allen Key 2.5mm |
| --- | --- |

⚠ The Allen Key 2.5 mm must be used in standing position! Otherwise, the mounting screws may crack during tightening.

I/O LIGHT COVER
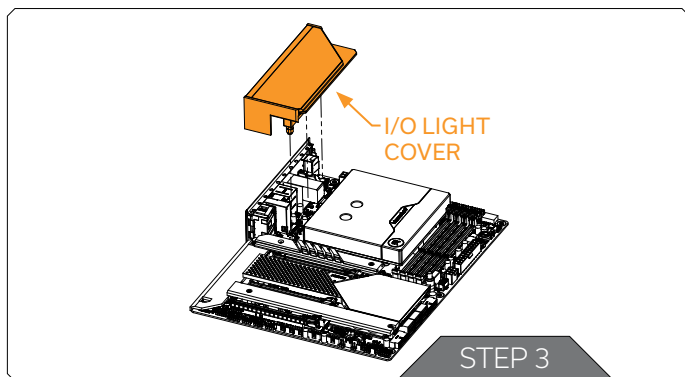
STEP 3

## STEP 3
Carefully place the I/O Light Cover onto the motherboard. Align the I/O Light Cover standoff holes with the holes on the motherboard.



M2.5 x 5 SCREW (1x)

EXACT MOUNT
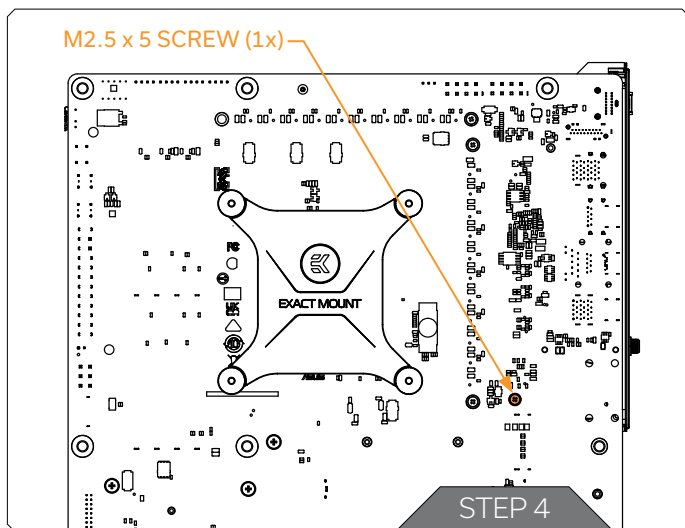
STEP 4

## STEP 4
Tighten one (1) M2.5 x 5 AX1 screw and washer to secure the I/O Light cover onto the motherboard.

For this step, you will need:

Phillips Head Screwdriver

M2.5 x 8 AX1 SCREW (1x)

M2 x 12 SCREW (1x)

M2 x 10 SCREW (4x)

M2.5 x 5 AX1 SCREW (3x)
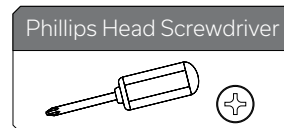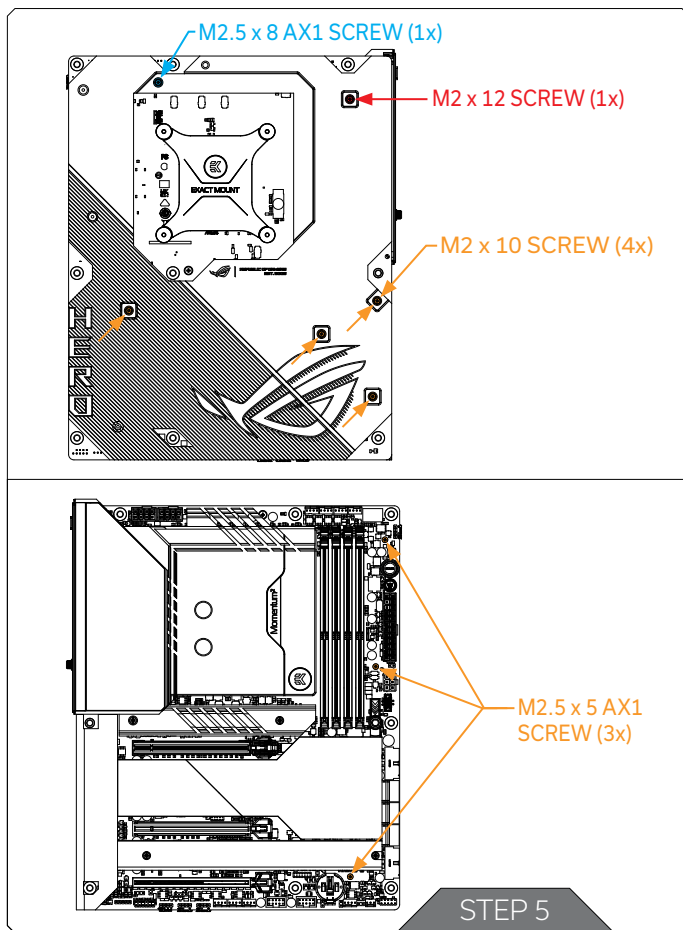
STEP 5

## STEP 5

Place the backplate to the motherboard and screw one (1) M2.5 x 8 AX1 screw and one (1) M2 x 12 mm screw from the mounting bag. Tighten four (4) M2 x 10 mm screws that came with the motherboard to secure the backplate and front audio cover onto the motherboard.

For this step, you will need:

Phillips Head Screwdriver
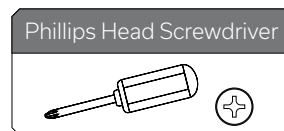
Turn over the motherboard and tighten three (3) screws M2 x 5 on the front of the motherboard.

# FITTINGS AND TUBING



TUBING

IN

OUT
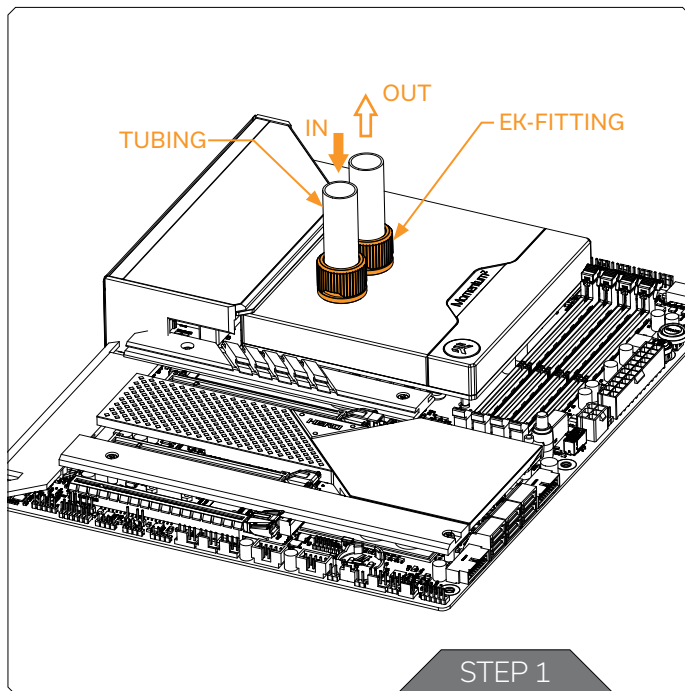
EK-FITTING

STEP 1

## STEP 1

Screw-in two (2) G1/4 threaded male fittings. Attach the liquid-cooling tubes and connect the water block to the cooling loop. Tighten the fittings in a clockwise direction until the gasket underneath is compressed.

**EK recommends using EK fittings with all EK water blocks.**

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

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

The installation of the water block is now complete.

For this step, you will need:

EK-Loop Multi Allen Key

# CONNECTING THE D-RGB LED STRIP



D-RGB HEADER

RGB HEADER

STEP 1

## STEP 1

Plug the **3-pin connector** of the distribution plate D-RGB LED light to the **D-RGB HEADER** on the motherboard. The LED will work if the pin layout on the header is as follows: **+5V, Digital, Empty, Ground**.
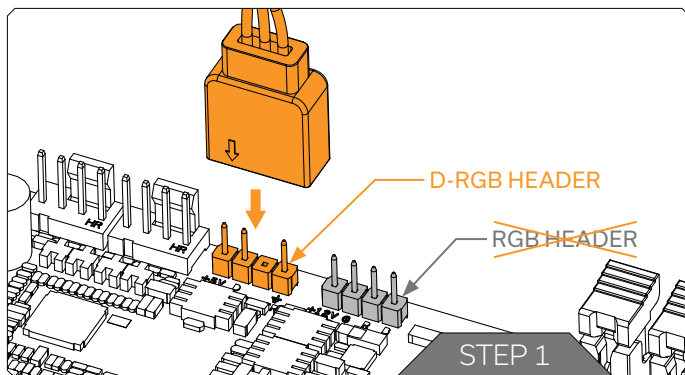
⚠ Please ensure that the arrow indicated on the connector is plugged into the +5V line as indicated on your motherboard. If you put the LED Diode to the 12V RGB HEADER you can damge the LEDs. Failure to do so will damage your motherboard or LED strip.

# 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

## SOCIAL MEDIA

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