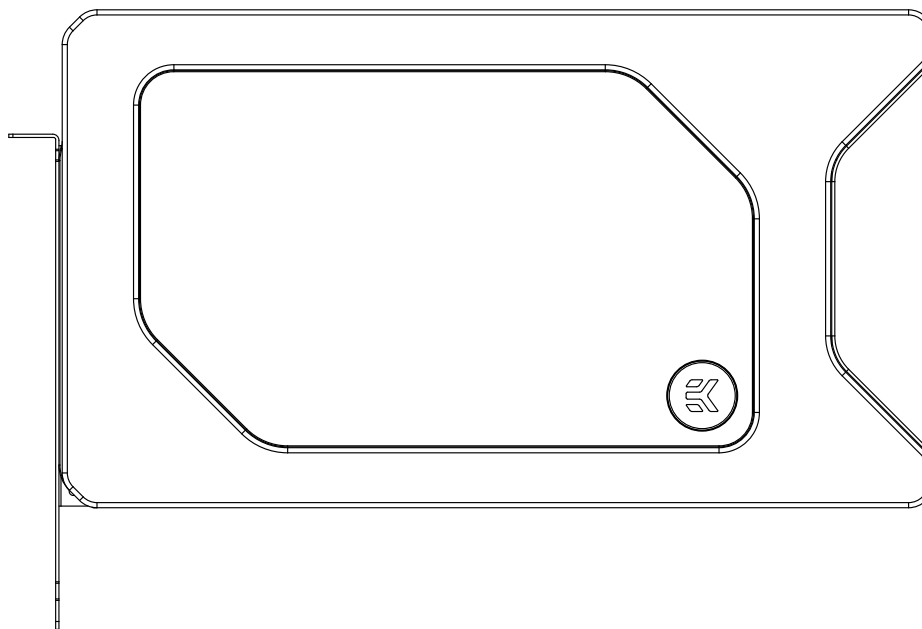


# EK-Quantum Vector FE RTX 3090 Ti D-RGB + Backplate

GPU WATER BLOCK



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 with 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).**

**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.**

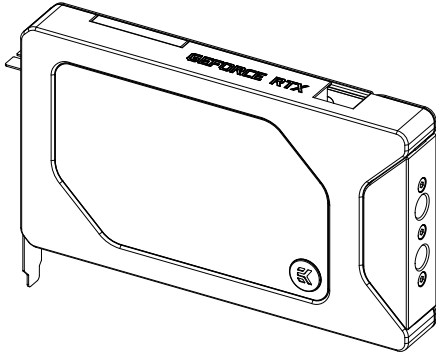
**Do not use pure distilled water as a cooling liquid! For best results, EK recommends the use of EK-CryoFuel Coolants.**

**Make sure to bleed air out of your water block thoroughly in order to reach optimal performance.**

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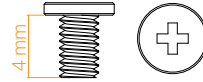
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# BOX CONTENTS

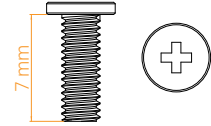


EK-Quantum Vector FE RTX 3090 Ti D-RGB + Backplate

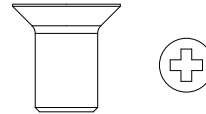
**Universal Mounting Mechanism** – You may not need every screw from this package.



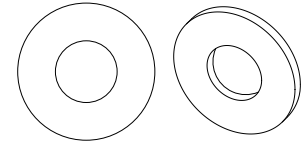
M2.5x4 AX1 Screw (9 pcs)



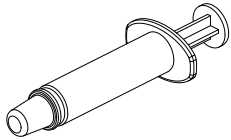
M2.5x7 AX1 Screw (4 pcs)



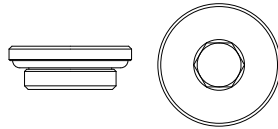
M3x5 Screw (3 pcs)



PVC Washer M2.5 (7 pcs)



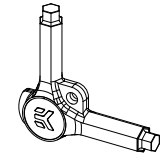
Thermal Grease (1 pc)



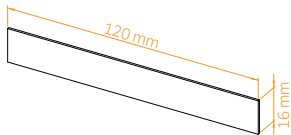
EK-Plug G1/4 (2 pcs)



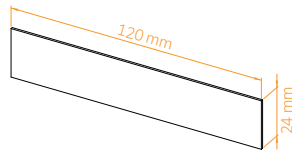
Allen Key 2 mm (1 pc)



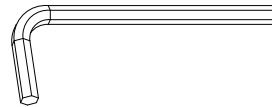
EK-Loop Multi Allen Key (1 pc)



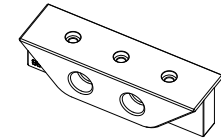
Thermal Pad F 1.0 mm (6 pcs)



Thermal Pad G 2.0 mm (6 pcs)



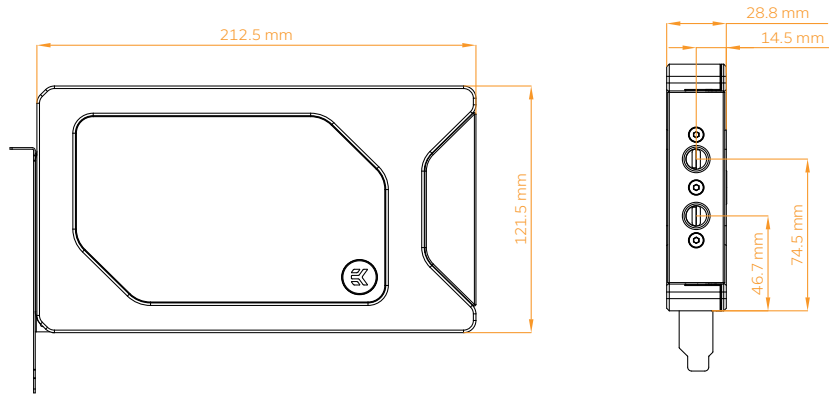
Allen Key 2.5 mm (1 pc)



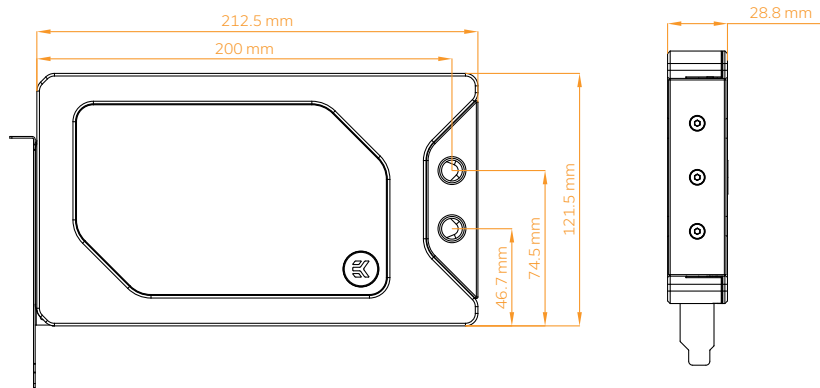
Additional Terminal

# WATER BLOCK DIMENSIONS

## Direct Terminal



## Side Terminal



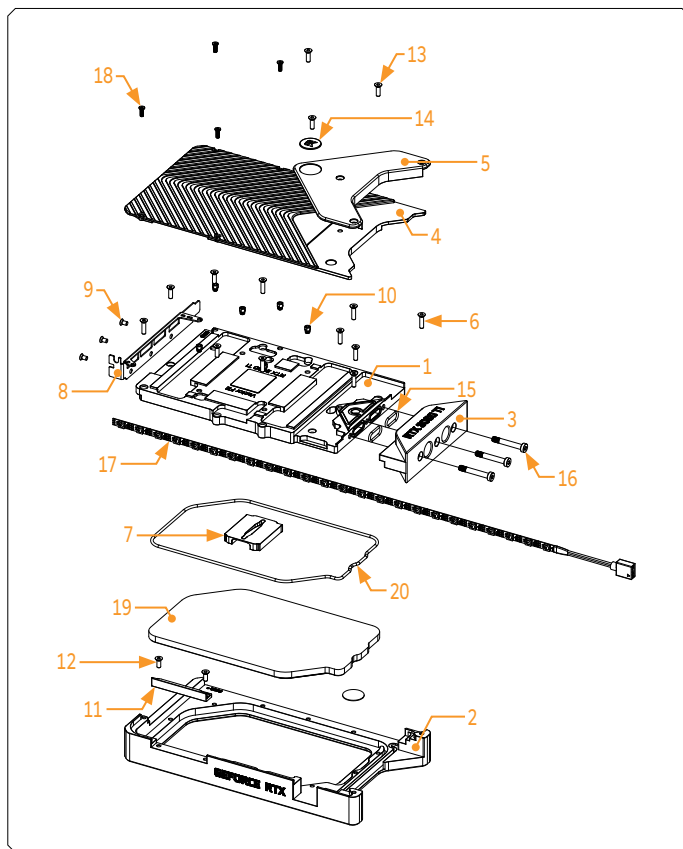
## TEHNIICAL SPECIFICATIONS AND WATER BLOCK MAIN PARTS

### BLACK SPECIAL EDITION

#### Technical Specification:

- Dimensions: (LxHxW) - 212.5 x 121.5 x 29 mm
- D-RGB cable length: 500 mm
- D-RGB connector standard 3-pin (+5V, Data, Blocked, Ground)

| Position | EAN    | Description                  | Quantity |
|----------|--------|------------------------------|----------|
| 1        | 105414 | Cold plate (Nickel)          | 1        |
| 2        | 105412 | Top Cover (Black Elox)       | 1        |
| 3        | 105402 | FC Terminal - Direct         | 1        |
| 4        | 105400 | Backplate (Nat. elox)        | 1        |
| 5        | 102912 | Backplate Cover (Black Elox) | 1        |
| 6        | 8202N  | Screw M3 x 12 DIN7991        | 8        |
| 7        | 105397 | Plexi insert                 | 1        |
| 8        | 103109 | I/O Bracket (Black)          | 1        |
| 9        | 102789 | Screw M3 x 5 mm              | 3        |
| 10       | 102924 | Standoff M3.5-M2.5 x 3       | 6        |
| 11       | 103395 | SLI Cover (Black Elox)       | 1        |
| 12       | 8208   | Screw M3 x 8 7991DIN         | 2        |
| 13       | 8201   | Screw M3 x 10 7991DIN        | 6        |
| 14       | 100663 | EK - Badge                   | 2        |
| 15       | 5092   | OR 12 x 1.5 mm               | 2        |
| 16       | 103397 | Terminal Screw M4 x 27 mm    | 3        |
| 17       | 100815 | LED D-RGB strip 500/400 mm   | 1        |
| 18       | 9049N  | Screw M2.5 x 7 mm            | 4        |
| 19       | 105358 | Top plate - Plexi            | 1        |
| 20       | 5117   | OR 144.5 x 2 mm              | 1        |

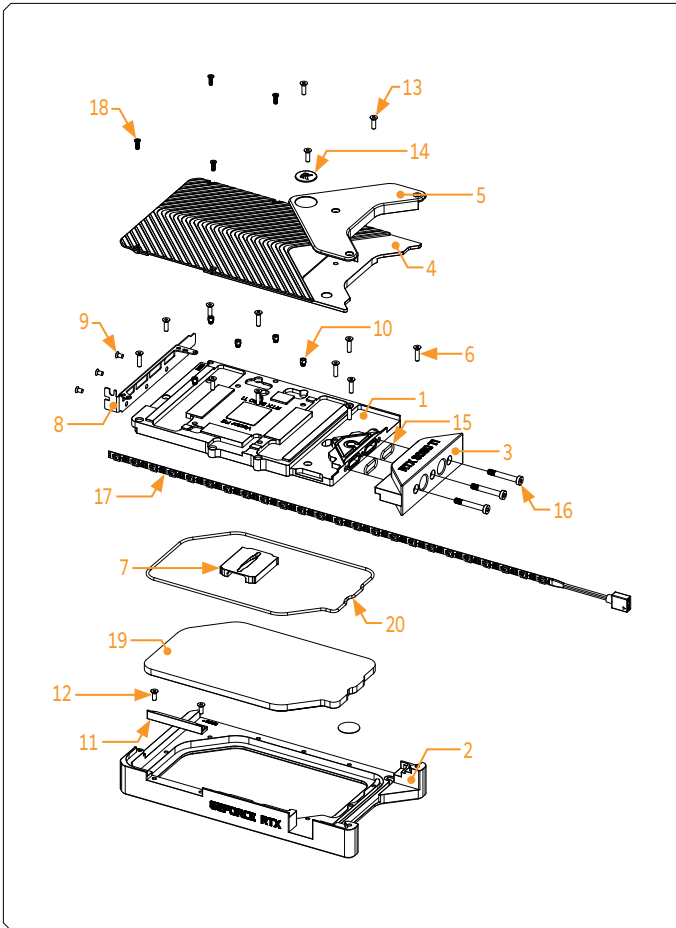


## SILVER SPECIAL EDITION

### Technical Specification:

- Dimensions: (LxHxW) - 212.5 x 121.5 x 29 mm
- D-RGB cable length: 500 mm
- D-RGB connector standard 3-pin (+5V, Data, Blocked, Ground)

| Position | EAN    | Description                 | Quantity |
|----------|--------|-----------------------------|----------|
| 1        | 105414 | Cold plate (Nickel)         | 1        |
| 2        | 105413 | Top Cover (Nat. Elox)       | 1        |
| 3        | 105402 | FC Terminal - Direct        | 1        |
| 4        | 105399 | Backplate (Black. elox)     | 1        |
| 5        | 102911 | Backplate Cover (Nat. Elox) | 1        |
| 6        | 8202N  | Screw M3 x 12 DIN7991       | 8        |
| 7        | 105397 | Plexi insert                | 1        |
| 8        | 103109 | I/O Bracket (Black)         | 1        |
| 9        | 102789 | Screw M3 x 5 mm             | 3        |
| 10       | 102924 | Standoff M3.5-M2.5 x 3      | 6        |
| 11       | 103394 | SLI Cover (Nat. Elox)       | 1        |
| 12       | 8208   | Screw M3 x 8 7991DIN        | 2        |
| 13       | 8201   | Screw M3 x 10 7991DIN       | 6        |
| 14       | 100663 | EK - Badge                  | 2        |
| 15       | 5092   | OR 12 x 1.5 mm              | 2        |
| 16       | 103397 | Terminal Screw M4 x 27 mm   | 3        |
| 17       | 100815 | LED D-RGB strip 500/400 mm  | 1        |
| 18       | 9049N  | Screw M2.5 x 7 mm           | 4        |
| 19       | 105358 | Top plate - Plexi           | 1        |
| 20       | 5117   | OR 144.5 x 2 mm             | 1        |



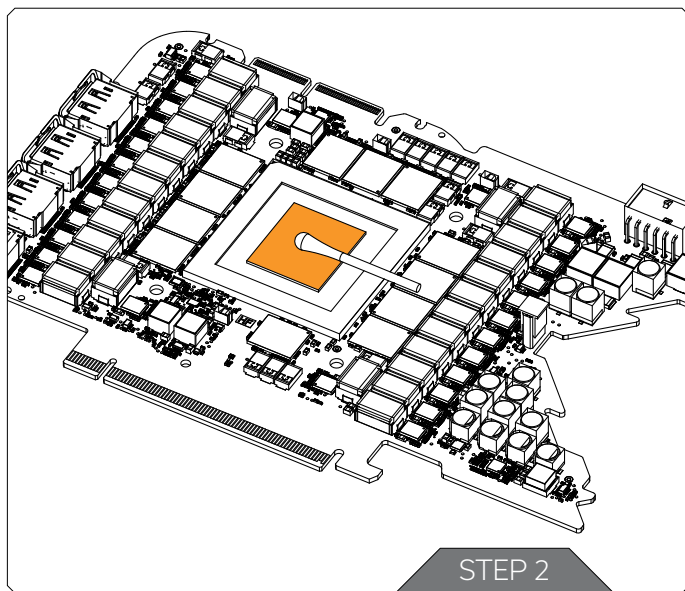
## PREPARING THE GRAPHICS CARD

### STEP 1 REMOVING THE STOCK COOLER

Place your graphics card on the flat surface and carefully remove the stock cooler. Do not forget to unplug all the LED and fan connectors. Pay attention to the following steps in order to install the EK-Quantum Vector FE RTX 3090 Ti water block onto the graphics card.

### STEP 2 CLEANING THE PCB

Carefully detach the original stock cooler after removing all screws that are securing it to the board. Wipe off the remains of the original thermal compound using a nonabrasive cloth or Q-tip, as shown in the sample image, until the components and circuit board are completely clean. EK recommends the use of denatured alcohol for removing TIM leftovers.



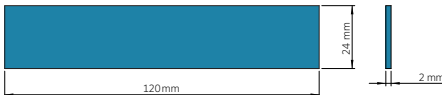


# CUTTING AND PLACING THERMAL PADS

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



**Thermal Pad G - 2.0 mm (120 x 24 mm)**



STEP 1

## STEP 1

Your GPU water block comes with thermal pads that have to be cut into smaller pieces to cover all the VRM components, such as COILS, MOSFETs, and drivers.



You must remove the protective foil from both sides of the thermal pad before installation.

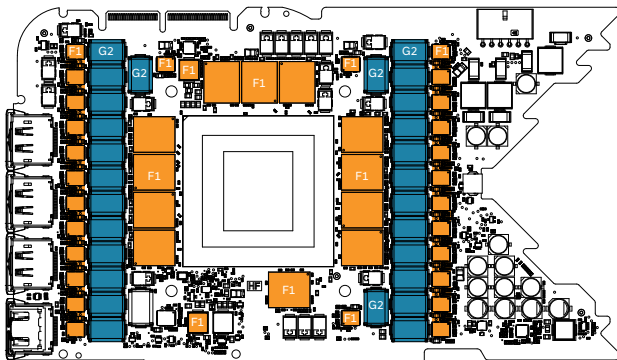
Replacement thermal pads:

Thermal PAD F 1.0 mm - (120 x 16 mm) - 3830046996732

Thermal PAD G 2.0 mm - (120 x 24 mm) - 3830046996794

**F1** Thermal Pad - 120 x 16 x 1.0 mm

**G2** Thermal Pad - 120 x 24 x 2.0 mm

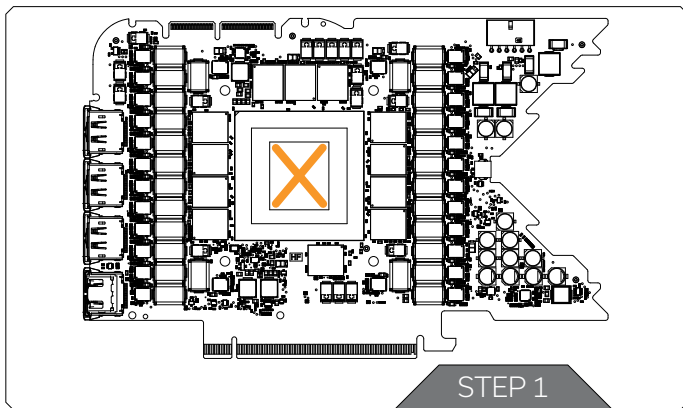


STEP 2

## STEP 2

Once cut to size, thermal pads should be placed on the PCB, as illustrated below. EK made sure to provide you with more than an adequate quantity of thermal pads to complete this Step.

## APPLYING THERMAL COMPOUND



### STEP 1

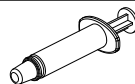
Apply the enclosed EK-TIM Ectotherm thermal grease (thermal compound) on the GPU heat spreader - IHS - as shown in the image. The layer of the thermal compound must be thin and even over the entire surface of the IHS.



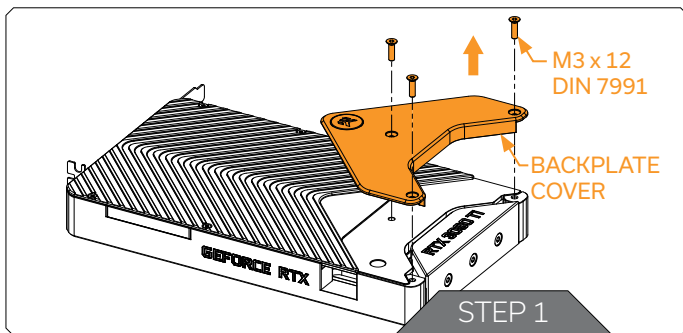
The excessive or uneven application of thermal grease may lead to poor performance!

For this step, you will need:

Thermal Grease



## INSTALLING THE WATER BLOCK



### STEP 1

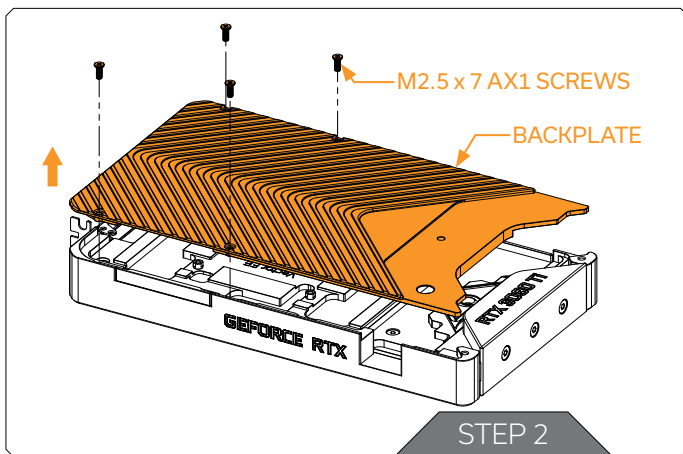
#### REMOVING THE BACKPLATE COVER

Carefully unscrew three (3) preinstalled backplate cover screws (M3 x 12 DIN 7991) as shown in the picture using the enclosed Allen Key (2 mm), and take off the backplate cover. Save the screws and cover for later use.

For this step, you will need:

Allen Key 2.0 mm

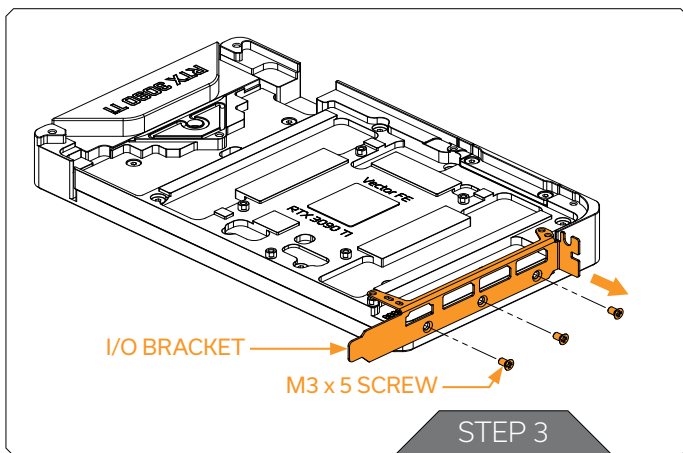
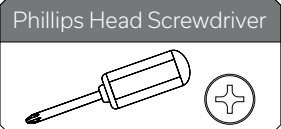




## STEP 2 REMOVING THE BACKPLATE

Carefully unscrew four (4) preinstalled backplate screws (M2.5 x 7 AX1) and remove the backplate, as shown in the picture. Save the screws and backplate for later use.

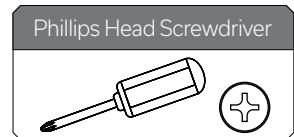
For this step, you will need:

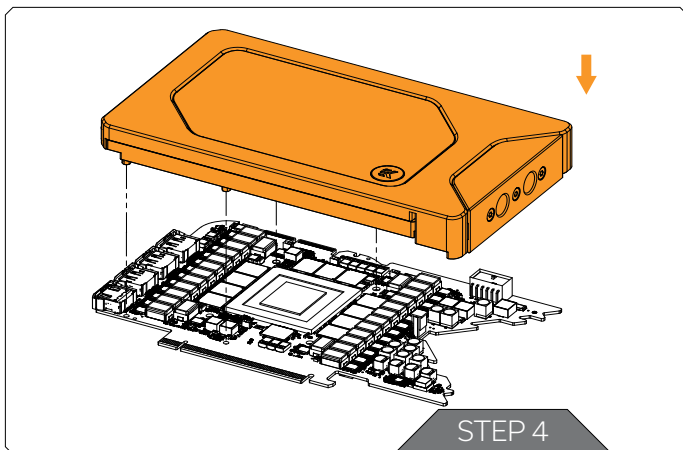


## STEP 3 REMOVING THE PRE-INSTALLED I/O BRACKET

Unscrew three (3) M3 x 5 screws using Phillips head screwdriver and remove the I/O Bracket (as shown in the picture). Save the screws and I/O Bracket for later use!

For this step, you will need:





## STEP 4

### PLACING THE BLOCK ON THE GRAPHICS CARD

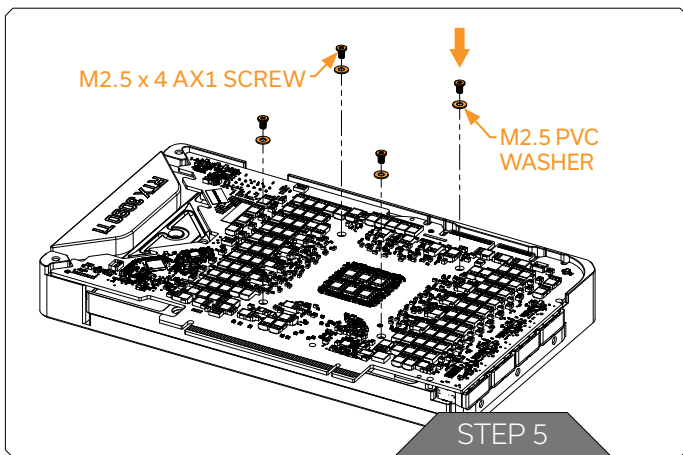
Carefully position the water block with preinstalled standoffs on the graphics card. During this process, make sure you have aligned mounting holes of the PCB with holes of the water block (the same applies to other tops).



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



Before placing the Water Block, make sure all the Thermal Pads are placed correctly!



## STEP 5

### ATTACHING THE BLOCK TO THE GRAPHICS CARD

Use four (4) M2.5 x 4 AX1 screws and M2.5 PVC washers, as shown in the image. Tighten the screws around the GPU core evenly using the Phillips head screwdriver. Always use a plastic washer under each screw!

For this step, you will need:

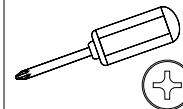
M2.5 x 4 AX1  
Screw (4 pcs)

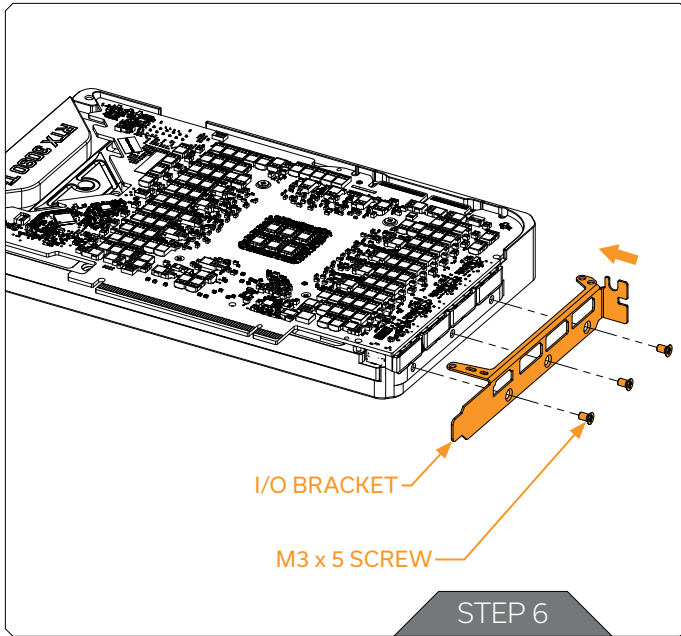


M 2.5 PVC Washer  
(4 pcs)



Phillips Head  
Screwdriver



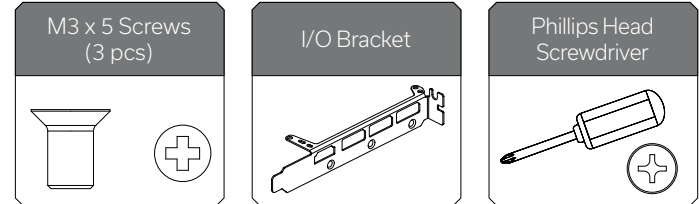


## STEP 6

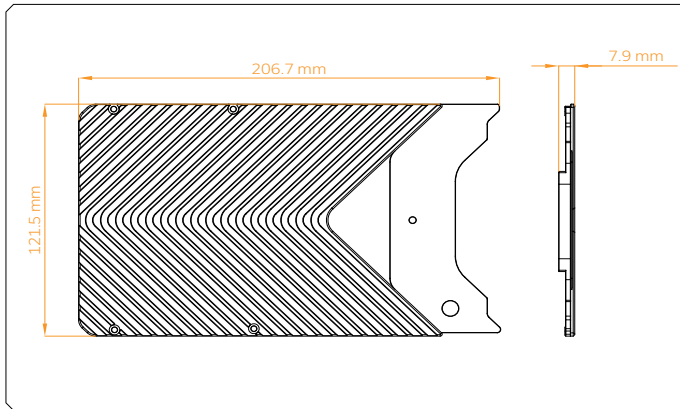
### ATTACHING THE I/O BRACKET

Take the stored screws and I/O Bracket after attaching the water block. Attach them on to the water block as shown in the picture. Do not use excessive force.

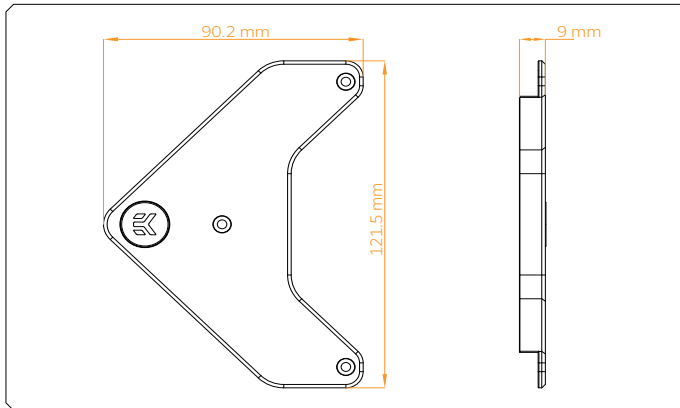
For this step, you will need:



## INSTALLING THE BACKPLATE



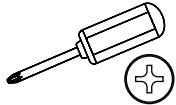
**BACKPLATE DIMENSIONS**



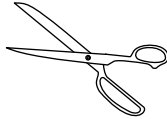
**BACKPLATE COVER DIMENSIONS**

## REQUIRED TOOLS

Phillips Head Screwdriver



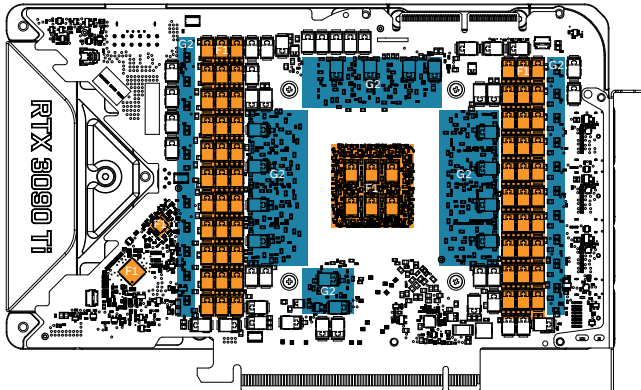
Scissors



## CUTTING AND PLACING THERMAL PADS

**F1** Thermal Pad - 120 x 16 x 1.0 mm

**G2** Thermal Pad - 120 x 24 x 2.0 mm



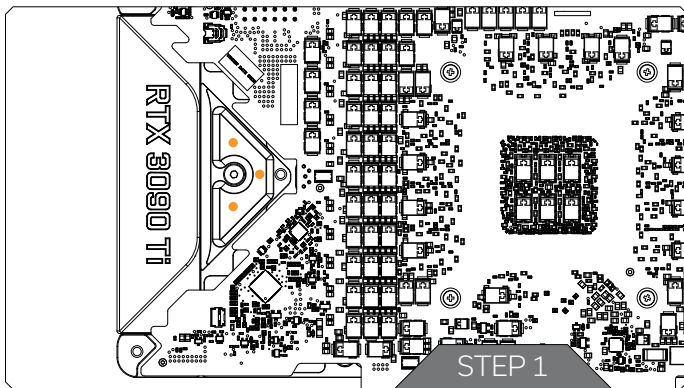
After attaching the water block, few more thermal pads need to be placed on the GPU PCB. EK made sure to provide you with more than an adequate quantity of thermal pads to complete this Step.

Once cut to size, thermal pads should be placed on the GPU PCB, as shown in the image



**CAUTION:** You must remove the protective foil from both sides of the thermal pad before installation.

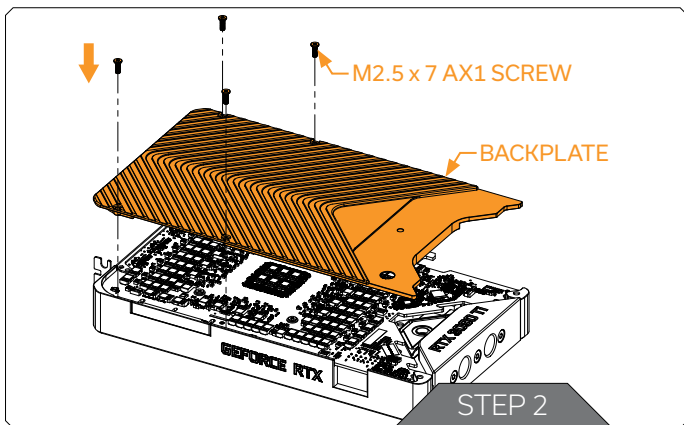
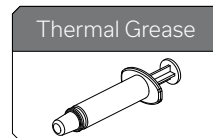
## ATTACHING THE BACKPLATE



### STEP 1

Apply 3 small pea-sized dots of enclosed EK-TIM Ectotherm thermal grease on the water block as shown in the image.

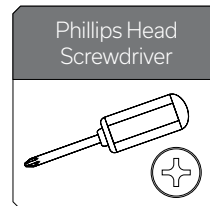
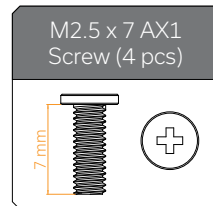
For this step, you will need:



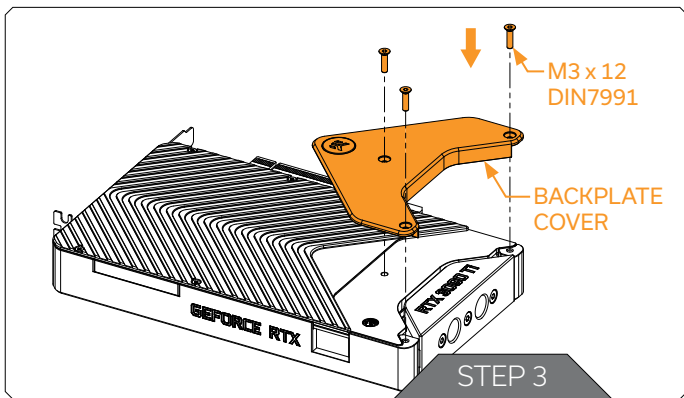
### STEP 2

Place the backplate on the PCB and make sure all holes are aligned. Position an M2.5 x 7 AX1 screw in each of the four (4) mounting holes (as shown in the image) and tighten them evenly with a Phillips Head Screwdriver.

For this step, you will need:



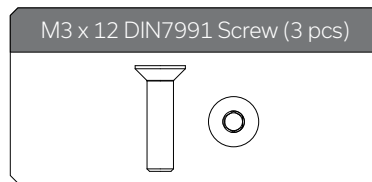
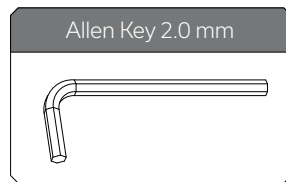




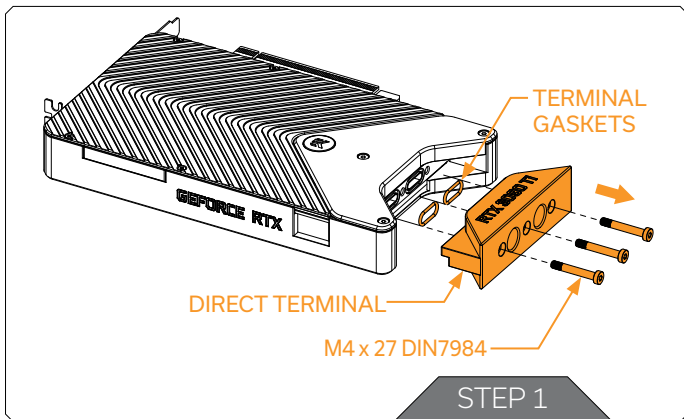
### STEP 3

After securing the backplate, place the backplate cover on the PCB and make sure all holes are aligned. Position M3 x 12 DIN7991 screw in each of the three (3) mounting holes (as shown in the image) and tighten them evenly with an Allen Key 2 mm. **Do not use excessive force!**

For this step, you will need:



## REPLACING THE TERMINAL (Optional Step)

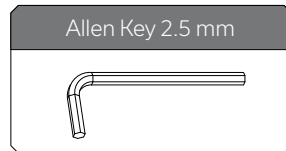


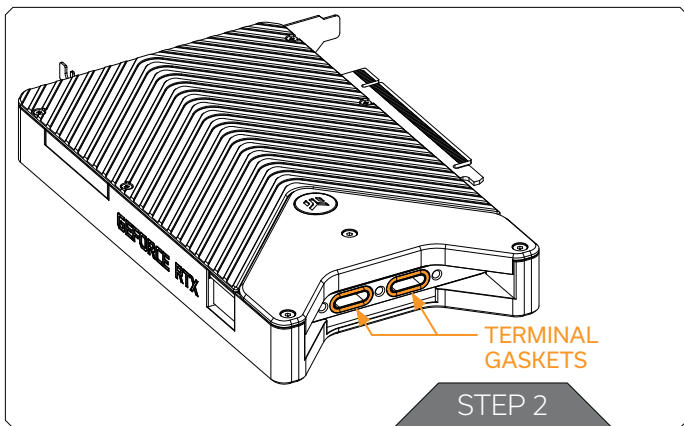
With the EK-Quantum Vector FE RTX 3090 Ti water block, EK provides one additional terminal. Follow these steps to install it.

### STEP 1

Unscrew three (3) M4 x 27 DIN7984 terminal screws with the enclosed 2.5mm Allen Key. Remove the terminal. Save the screws and terminal gaskets.

For this step, you will need:

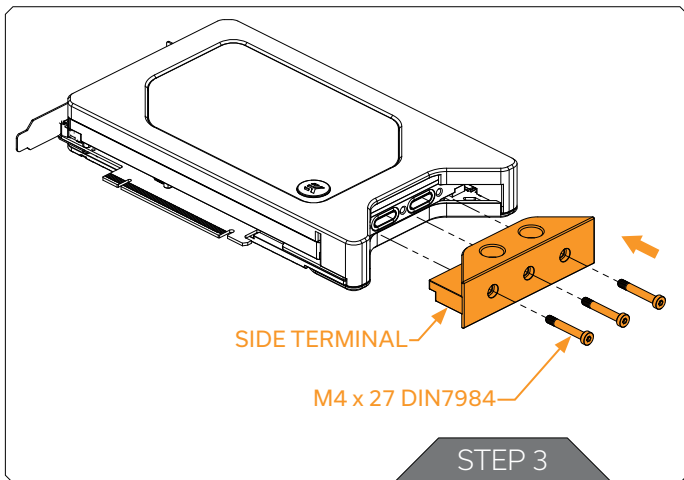
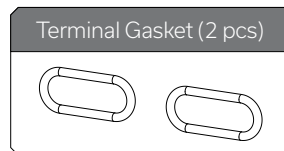




## STEP 2

Before attaching the new terminal, make sure that terminal gaskets are placed inside the slots on the cold plate (as shown in the picture).

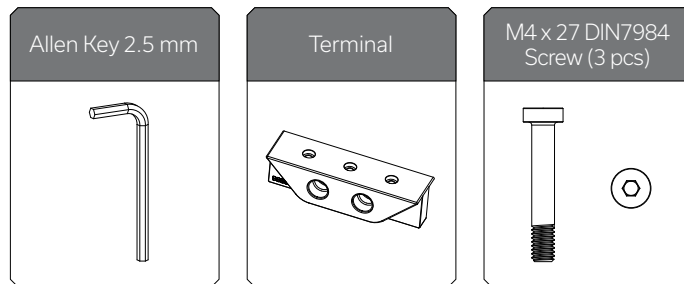
For this step, you will need:



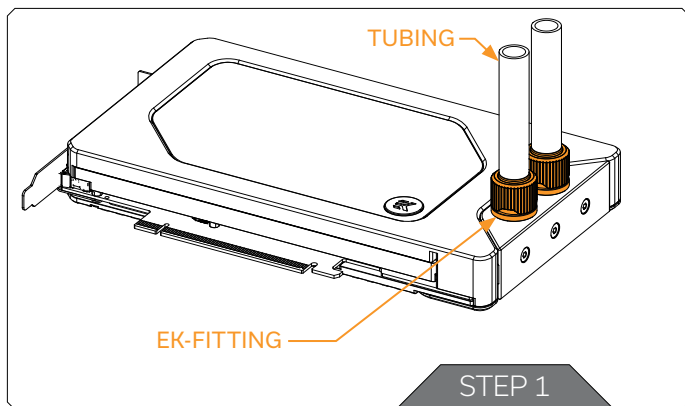
## STEP 3

Carefully place the terminal on the cold plate and secure it with previously saved M4 x 27 DIN984 screws. Do not use excessive force when tightening the screws.

For this step, you will need:



## INSTALLATION OF FITTINGS AND TUBING



### STEP 1

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

You can use any opening as an inlet/outlet port.

**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!

## CHECKING FOR CONTACT

If necessary, temporarily remove the water block to check for uniform surface contact between the block and components. Pay special attention to the VRM section of the graphics card. Check whether the water block makes contact with the intended integrated circuit. Then repeat Steps from the previous section to re-attach the block.



In case you fail to obtain good contact, please check again or contact our support service at <https://www.ekwb.com/customer-support/>.

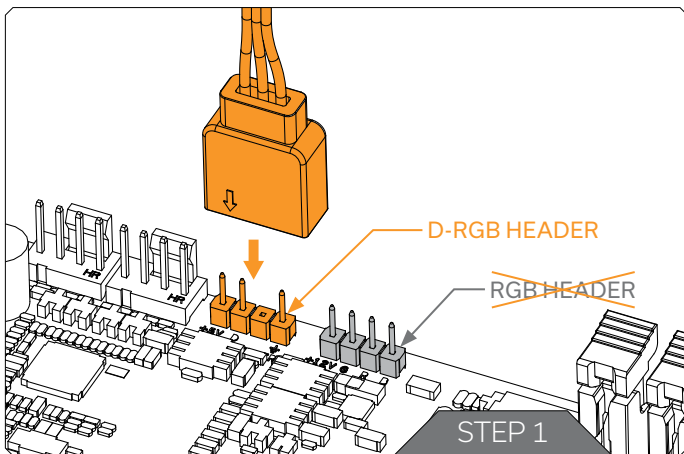
## INSERTING THE GRAPHICS CARD INTO THE CHASSIS

Carefully lift your graphics card with the installed water block and insert it into your PC's motherboard PCIe expansion slot. Please bear in mind that your graphics card is very likely 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 STRIP



### STEP 1

Plug the **3-pin D-RGB connector** from the GPU water block to the **D-RGB Header** on your motherboard or controller. The LED strip will work only if the pin layout on the header is as follows: **+5V, Data, Empty, Ground**.



Incorrect installation or installation to a wrong header can damage to the LED strip or the header itself!

## TESTING THE LOOP

To make sure the installation of EK components was successful, we recommend you perform a 24-hour 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. To prevent possible damage, please ensure that all hardware is dry before the system is powered on.

## 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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