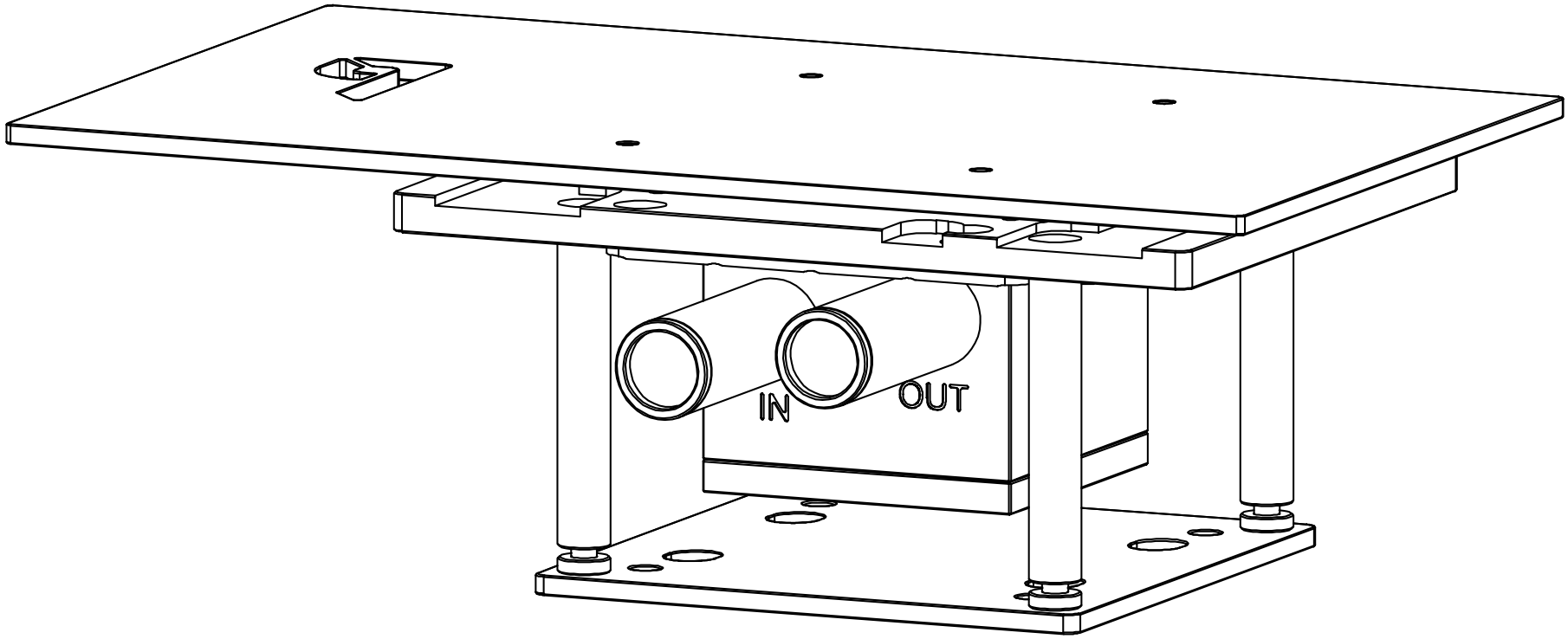
billet labs

MonoBlock | LGA 1700, AM4/5, 4090 FE, 3090 Ti FE

CPU + GPU WATER BLOCK | USER MANUAL



Before You Start

Please take your time to read the instruction manual in full before you begin the installation process. This installation process must begin with your motherboard outside of your case. Billet Labs advises that the installation is done on a flat, nonconductive surface.
The MonoBlock is made from copper which is much softer than steel. Please do not over-tighten any fixtures or fittings as this may lead to damage of the threads.
Do not use any aluminium components in your water cooling loop that may come into direct contact with your coolant.
Be sure to bleed air out of your water loop in order for your components to reach their optimal performance.

Wear gloves

Copper naturally changes colour over time, but to keep it looking shiny for longer, please wear gloves during the installation process. Failure to do so will result in fingerprints marking the surface of the MonoBlock.

Please note that the installation of this product is intended to be undertaken by an adequately trained and experienced person. You are installing the product at your own risk. Please do not attempt the installation procedure if you are not confident or lack the experience or training that is required to do so. Please reach out to our tech support if you require assistance. We will not be liable for any damage that is caused due to improper installation.

Table of Contents

Box Contents

MonoBlock (Assembled)

1. M3 x 12mm Allen Screws, Stainless Steel (x4)
2. GPU Back Plate (x1)
3. 6mm Black spacing washers - for packaging only (x4)
4. M4 x 12mm Allen Screws, Stainless Steel (x4)
5. MonoBlock (x1)
6. Motherboard Standoffs (x4)
7. Washer A (x4) [Thin]
8. AMD / Intel Mounting Bracket (x1)

Loose

9. Pre-Cut Thermal Pads
10. Thermal Compound
11. Alignment Tools (x4)
12. Washer B (x4) [Thick]
13. Washer C (x4) [Medium]
14. Spare Gasket Set
15. AM4 Motherboard Insulator (for AMD orders only)

To Ensure Proper Performance

Using the Correct Washers is Essential
Please ensure that the correct washers are used during assembly. This will ensure that the waterblock is making proper contact with your CPU and GPU.

There are three sets of washers:

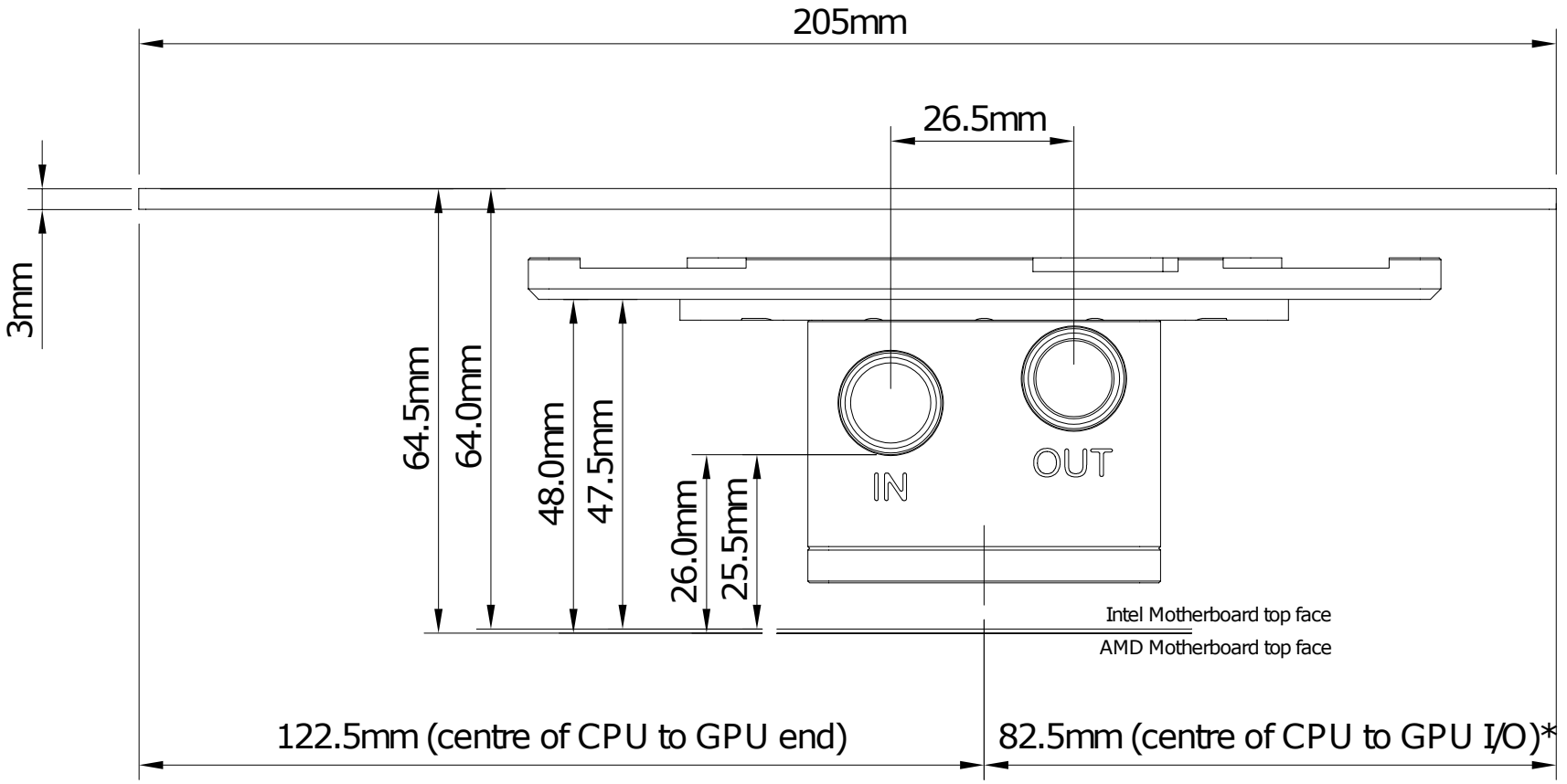
Washer A (x4), 1mm, installed between motherboard standoffs and motherboard.

Washer B (x4), 2.6mm, installed between the MonoBlock and graphics card.

Washer C (x4), 2mm, installed between the graphics card and the GPU backplate.

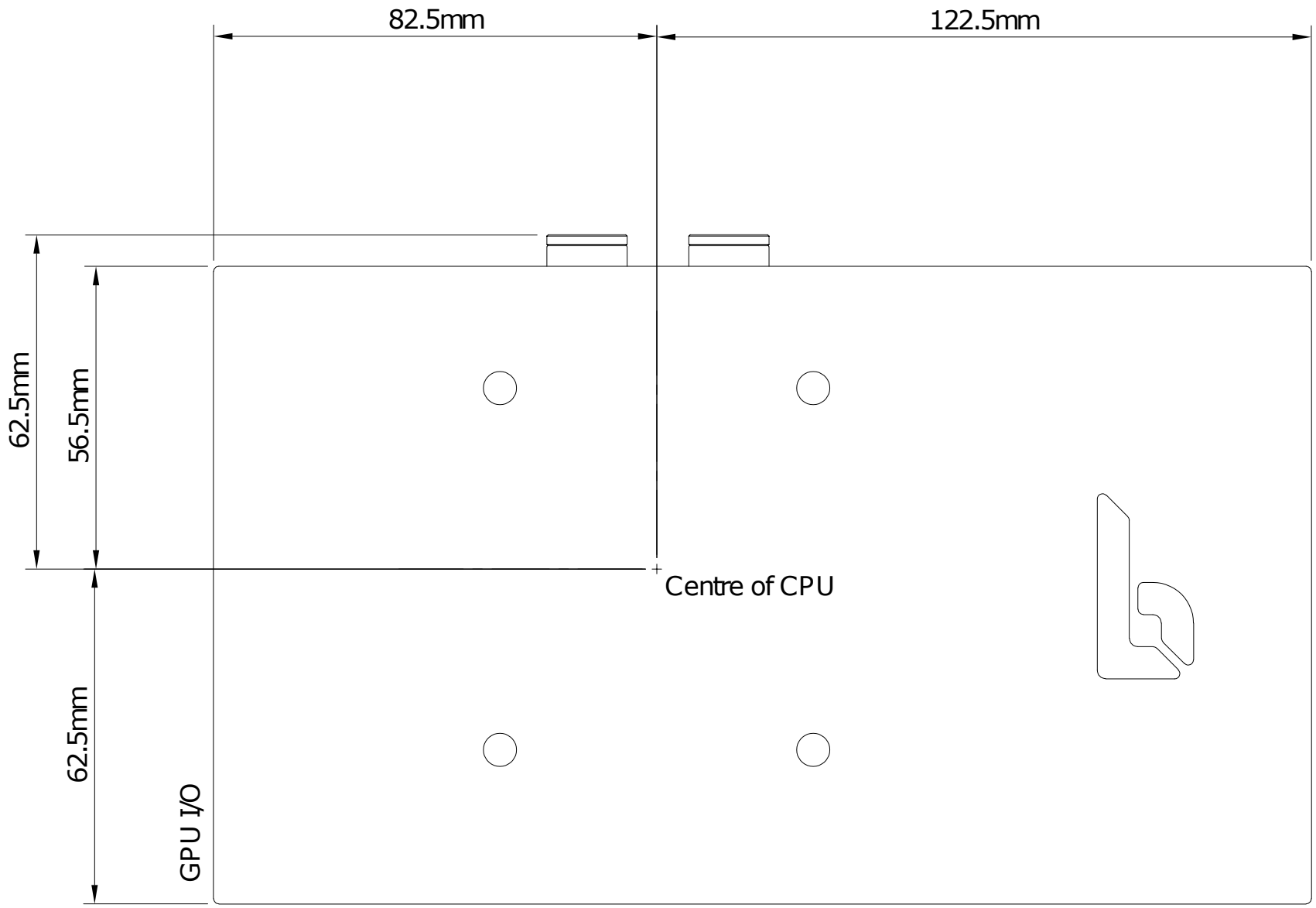
6mm Spacer (x4), used for packaging only and is not intended for installation

MonoBlock Dimensions



*The measurement of CPU to motherboard I/O on your chosen motherboard will define how offset the motherboard and GPU I/Os are. On Intel ITX boards, this usually measures 84-87mm, leaving the GPU inset by 2-5mm. On AMD ITX boards, this usually measures 75-80mm, leaving the GPU protruding by 2-8mm.

MonoBlock Dimensions



Disassemble the MonoBlock

Step 1

Removing the GPU back plate

Using a 2mm allen key loosen the four M3 x 12mm Allen Screws (x4) that hold the GPU Back Plate to the MonoBlock. You can then remove the GPU Back Plate.

Step 2

Dispose of the Spacers

The 6mm spacers are not required for the assembly, please dispose of them to avoid confusing them for other washers.

Step 3

Removing the MonoBlock from the Standoffs

Using a 2.5mm allen key remove the four M4x12mm countersunk screws that hold the MonoBlock to the mounting standoffs. Do not remove the screws that take a 3mm allen key in the centre of the block as this will compromise the water seal.

Step 4

Removing the Standoffs

Unscrew the four standoffs from the mounting bracket.

Step 5

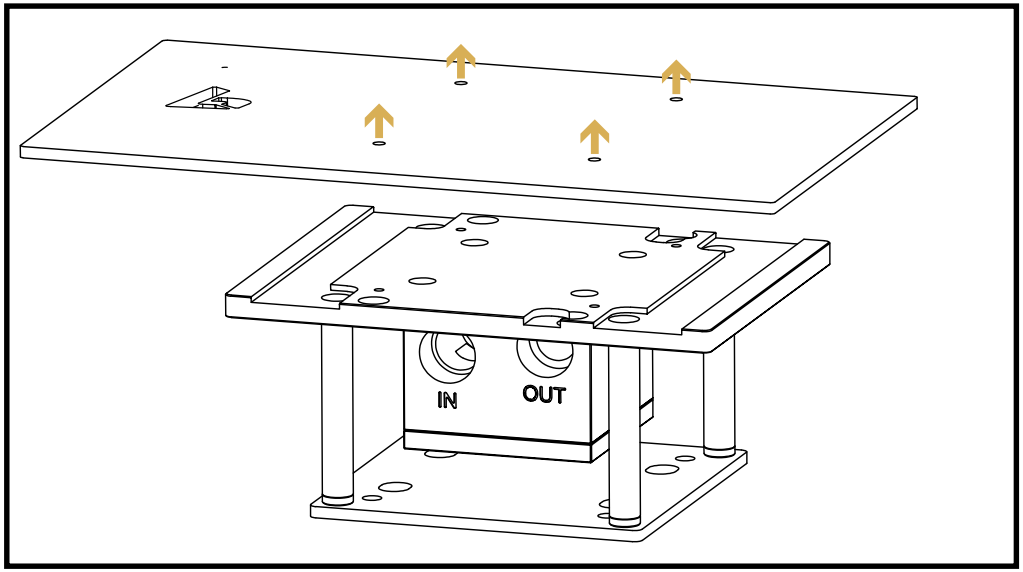
Save Washer A (x4)

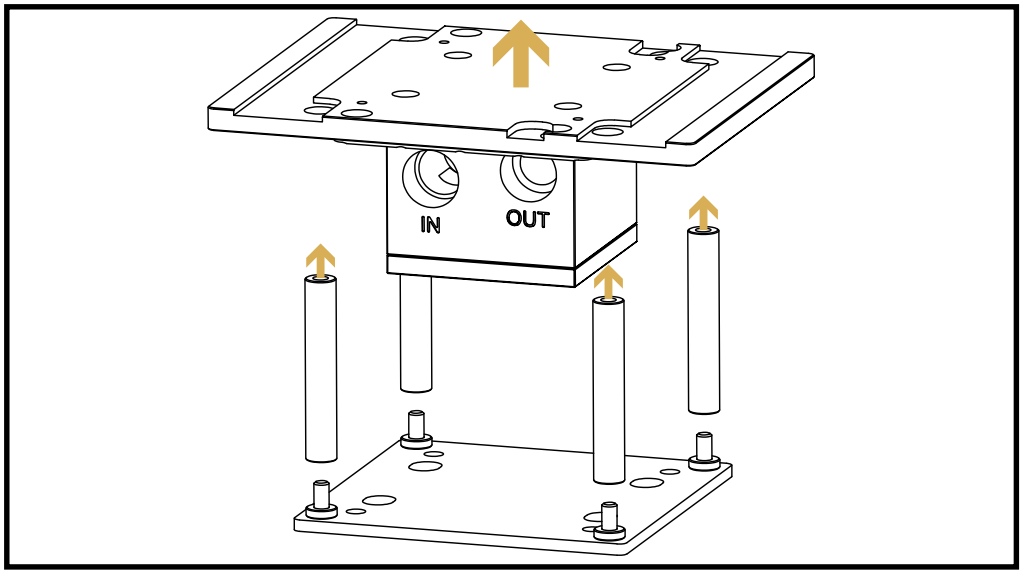
These four washers will be required for assembly later.

Step 6

Removing the Mounting Bracket

Using a PZ2 screwdriver, unscrew the four wood screws that attatch the mounting bracket to the wooden box lid.



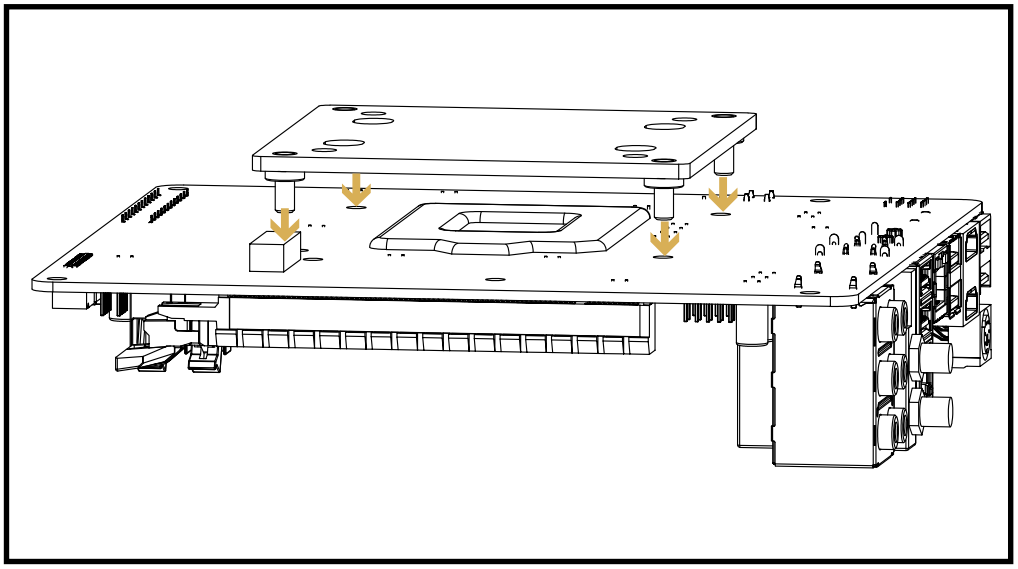


Installing the Mounting Bracket

For Intel LGA1700

Step1

With your motherboard face down, place the **Mounting Bracket** onto the motherboard with the four studs passing through the mounting holes.



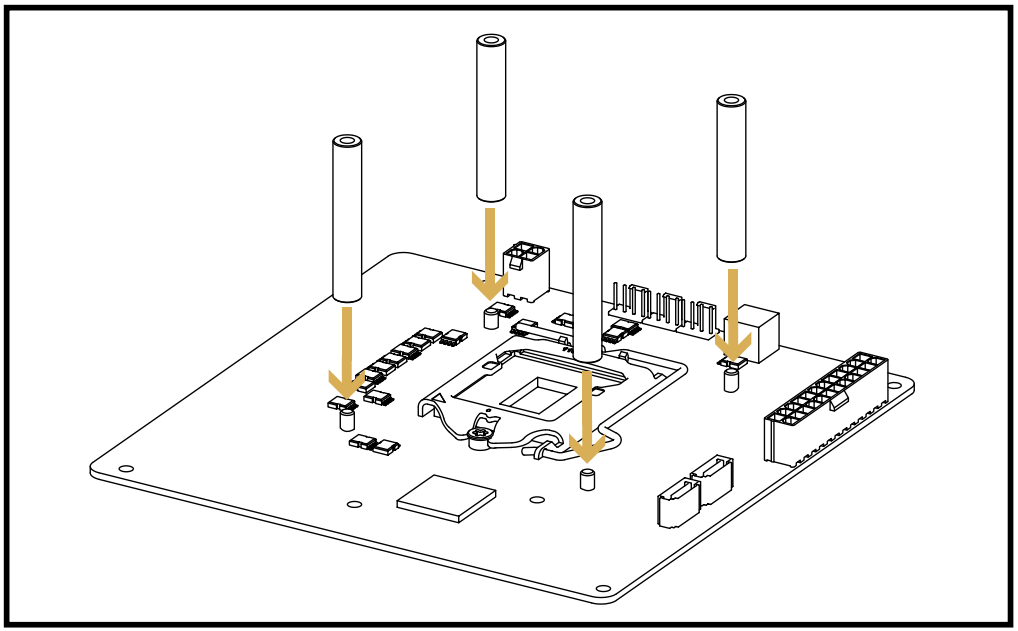
Step 2

Flip the motherboard over and place **Washer A** over each of the four studs, then tighten the standoffs down to the **Mounting Bracket**. Tighten the **Standoffs** down in a cross pattern, ensuring that even pressure is applied to each of the four corners.

For AMD AM4/5

Step 1

Align the **Mounting Bracket** with the holes in your motherboard. AM4 users should install the **Motherboard Insulator** between the motherboard and the bracket.



Step 2

Place **Washer A** over each of the four mounting holes then tighten the **Standoffs** down to the **Mounting Bracket**. Tighten the standoffs in a cross pattern, ensuring that even pressure is applied to each of the four corners.

Applying Thermal Compound to CPU

Step 1

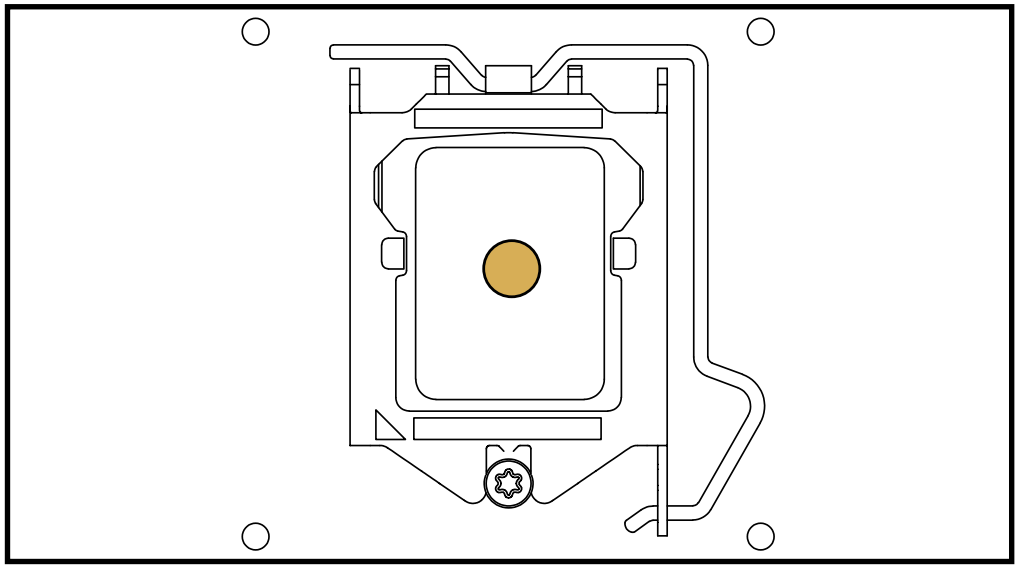
Cleaning the CPU Heat spreader

Clean the remains of the original thermal compound from the CPU heat spreader with a nonabrasive cloth or Q-tip until the component is completely clean.

Step 2

Apply the thermal Compound

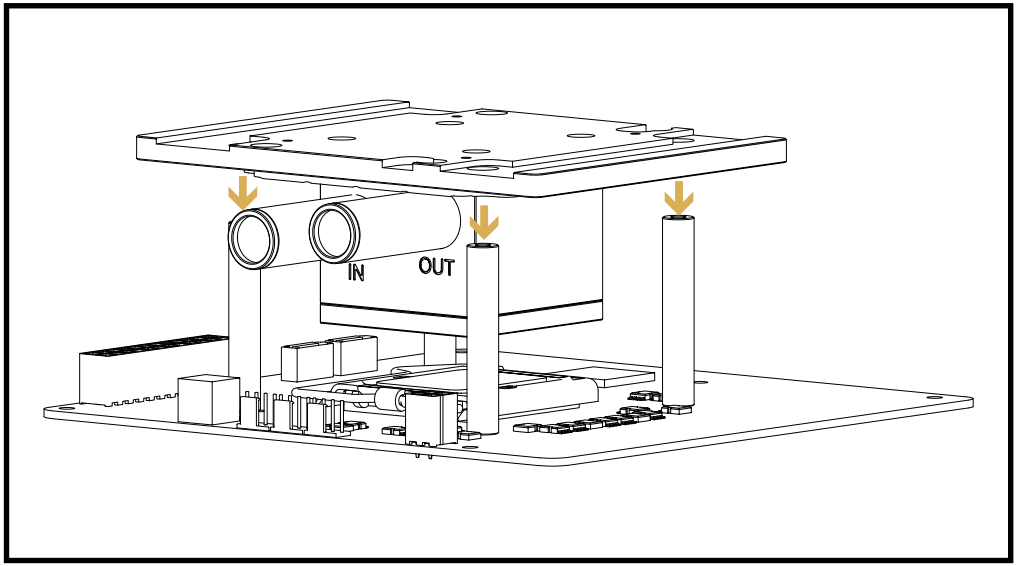
Apply a pea-sized amount of the **Thermal Compound** onto the centre of the CPU, this will ensure that the thermal compound will spread into a thin, even layer.



Attatching the MonoBlock

Step 1
Mounting the MonoBlock

With the motherboard on a flat surface, lower the **MonoBlock** onto the CPU, being careful to align the **Mounting Standoffs** with the holes in the **MonoBlock**. Ensure that the inlet and outlet ports face towards the top of the motherboard.

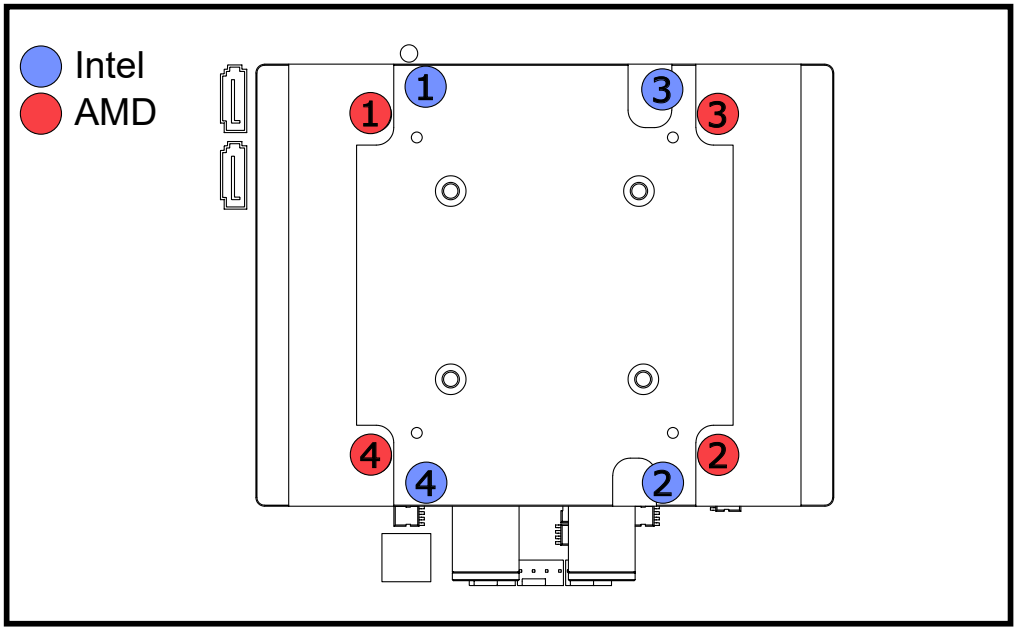


> ⚠ Please refer to MonoBlock Dimensions on Page 5 for motherboard clearances. You may have to remove or modify your VRM heatsink for the MonoBlock to fit some motherboards.

Step 2
Tighten down the MonoBlock

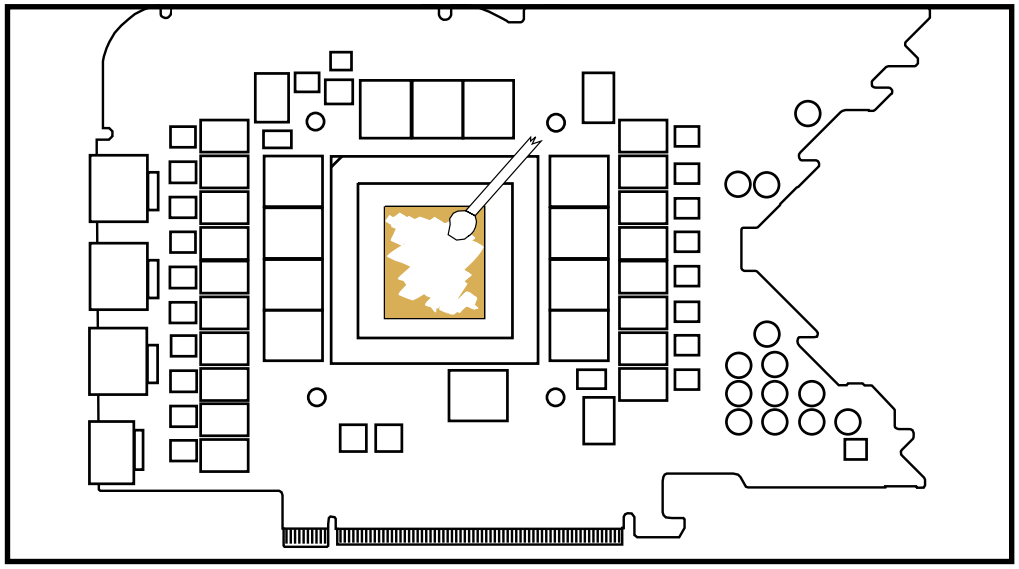
Whilst applying firm pressure to the centre of the **MonoBlock**, tighten it down onto the mounting standoffs with the four **M4x12mm Bolts**. Tighten the bolts in a cross pattern, being careful to evenly distribute the pressure across all four bolts

Take note of the differences in the positioning of the Intel vs AMD standoffs.



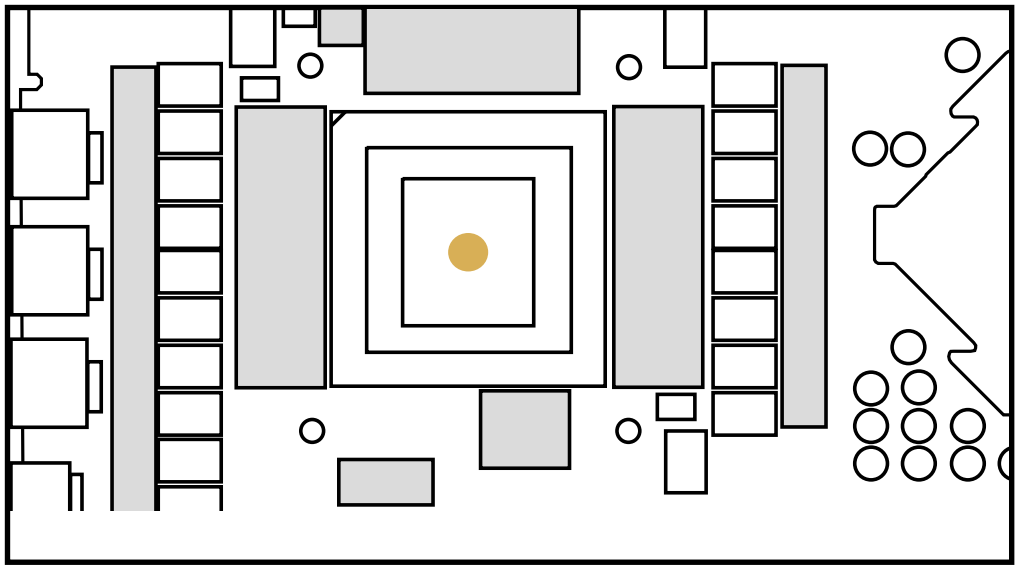
Preparing the Graphics Card

Step 1
Removing the Stock Cooler
Place your graphics card down onto a flat nonconductive surface and carefully remove the stock cooler from the graphics card. Be sure to remove the I/O bracket from the card.



Step 2
Cleaning the PCB
Be sure to remove all of the old thermal pads and then clean the old thermal compound from the GPU die using a nonabrasive cloth or Q-Tip.

Step 3
Applying Thermal Compound
Apply a pea-sized amount of **Thermal Compound** onto the centre of the GPU die, this will ensure that the thermal compound will spread into a thin, even layer.



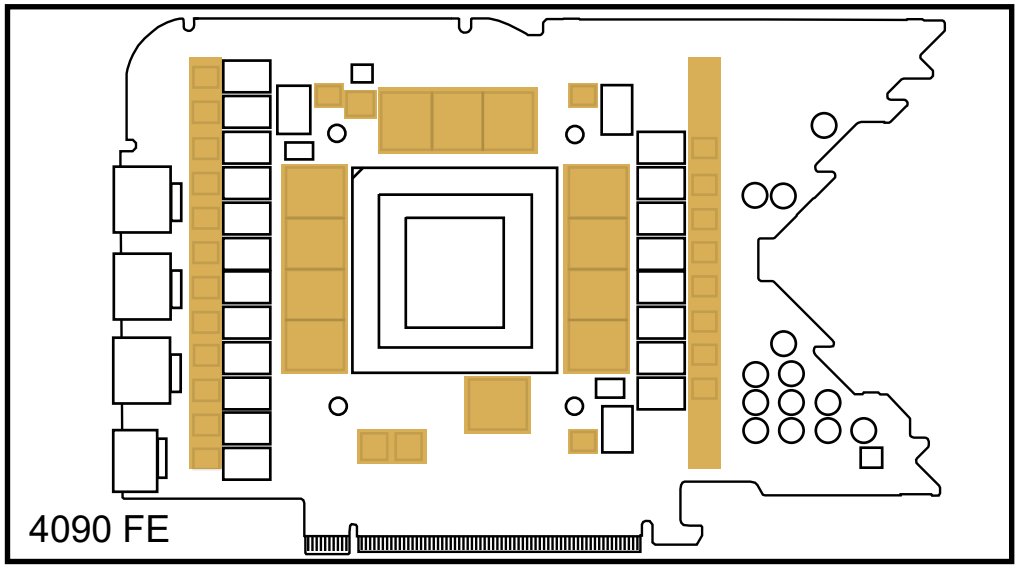
Applying the Front Thermal Pads

Nvidia 4090 FE

Please use this diagram if you are using a **4090 Founders Edition graphics Card**.

Billet Labs provides Pre-Cut **Thermal Pads** that must be applied to the graphics card before installing the card onto the **MonoBlock**. Please use the diagram to ensure that all pads are installed into the correct locations.

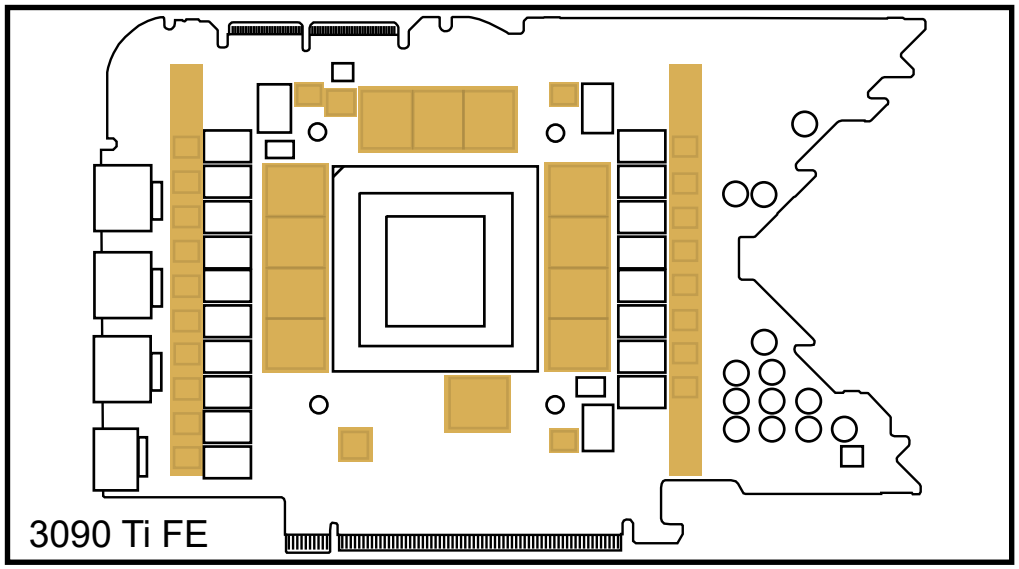
> Some of the pre-cut thermal pads will be left over as Billet Labs supplies a single sheet of thermal pads that includes the required pads for both a 4090 FE or a 3090 Ti FE.



Nvidia 3090 Ti FE

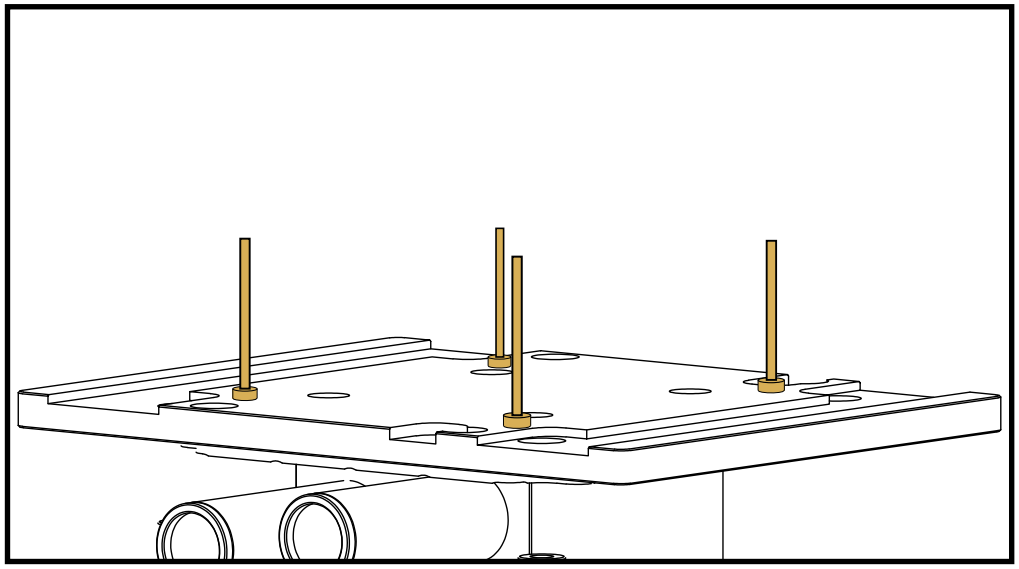
Please use this diagram if you are using a **3090 Ti Founders Edition graphics Card**.

Billet Labs provides **Pre-Cut Thermal Pads** that must be applied to the graphics card before installing the card onto the **MonoBlock**. Please use the diagram to ensure that the pads are installed into the correct locations.

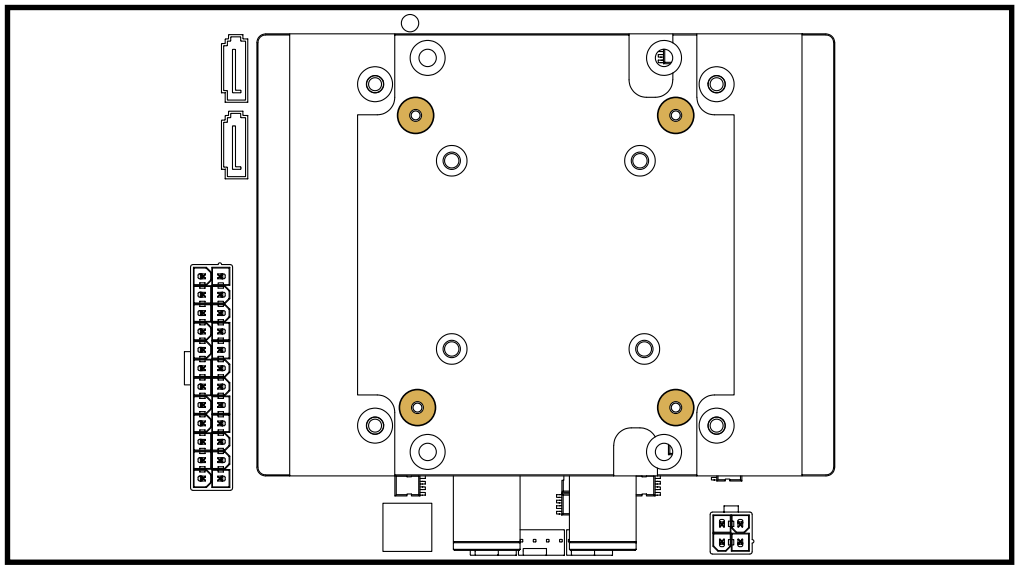


Attaching the Graphics Card

Step 1
Insert Alignment Tools
Place the 4x Alignment Tools into the threaded M3 mounting holes. This will aid the installation of the graphics card and the GPU Backplate in the upcoming steps.



Step 2
Applying the GPU Spacers
Place Washer B (x4) over the alignment tools and rest them on top of the **MonoBlock**, keeping them concentric with the four threaded M3 mounting holes.



Step 3
Attaching the Graphics Card to The MonoBlock
Lower the graphics card face down onto the **MonoBlock**, ensuring that the **Alignment Tools** pass through the holes in the card.

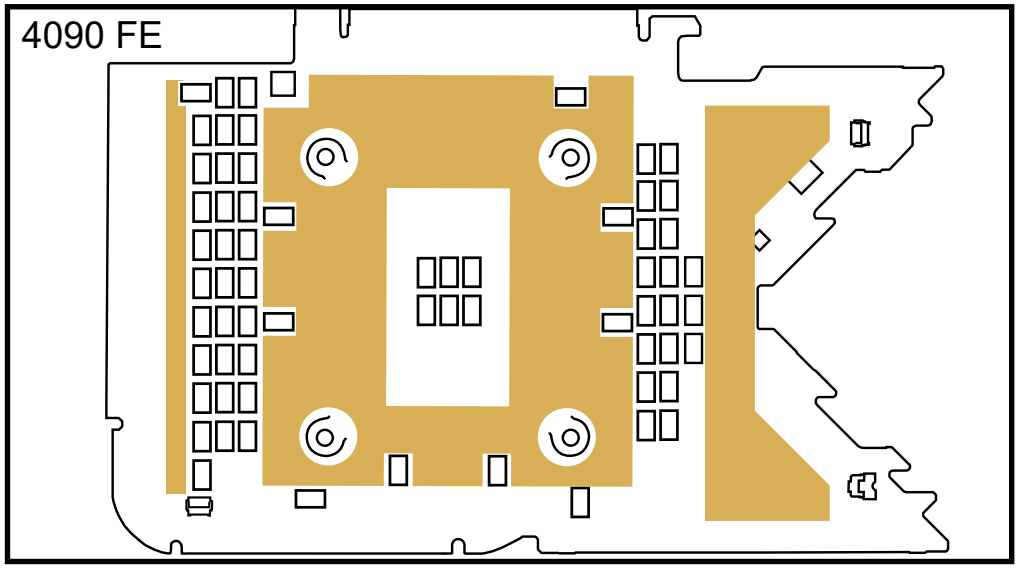
Applying the Back Thermal Pads

Nvidia 4090 FE

Please use this diagram if you are using a **4090 Founders Edition graphics Card**.

Billet Labs also provides **Pre-Cut Thermal Pads** for the full copper **GPU Back Plate**. Using the diagram, please ensure that the thermal pads are installed in the correct locations on the graphics card.

> Some of the pre-cut thermal pads will be left over as Billet Labs supplies a single sheet of thermal pads that includes the required pads for both a 4090 FE or a 3090 Ti FE.



Nvidia 3090 Ti FE

Please use this diagram if you are using a **3090 Ti Founders Edition graphics Card**.

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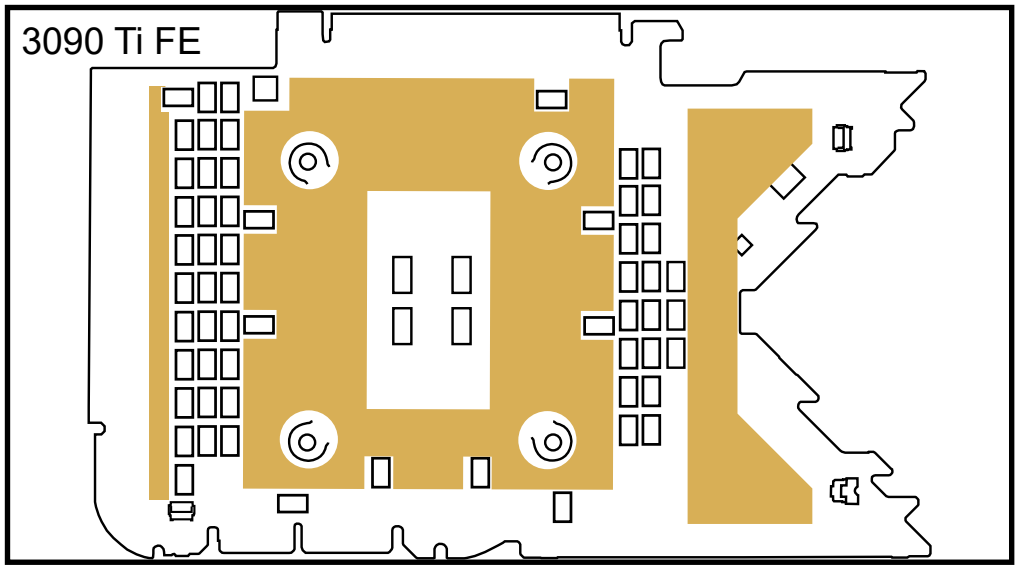
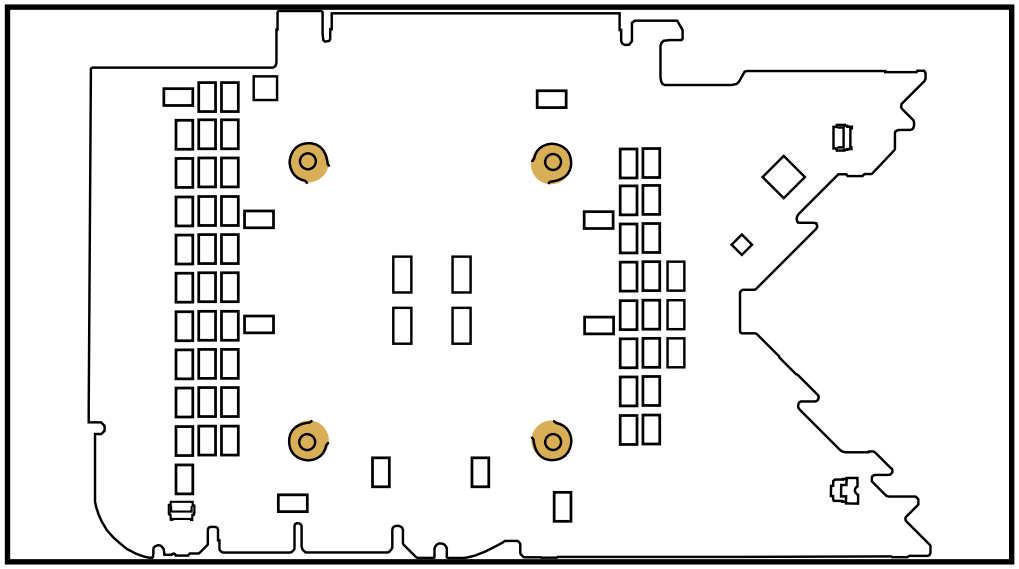


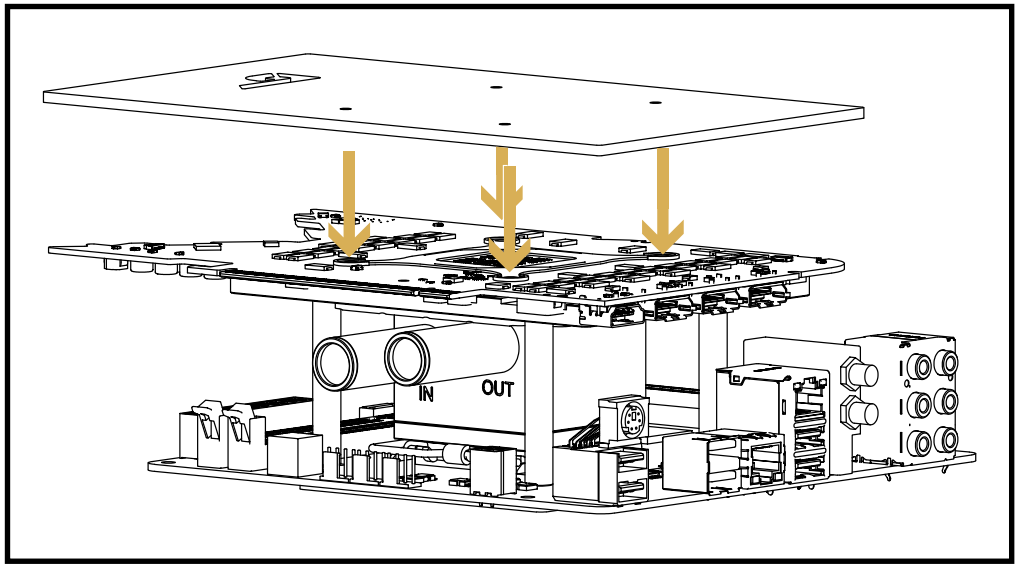
Attaching the GPU Back Plate

Step 1
Inserting the Washers
Place **Washer C** (x4) over the four mounting holes on the back of the graphics card. They should fit neatly inside the black plastic parts shaped like a C.



Step 2
Lowering the Back Plate onto the Graphics Card
Carefully line up the back plate with the **Alignment Tools** and lower it onto the graphics card.

Step 3
Replacing the Alignment Tools with Bolts
Remove one alignment tool and replace it with an **M3 x 12mm Bolt**, threading it in only slightly. Repeat this step for the other 3 bolts.

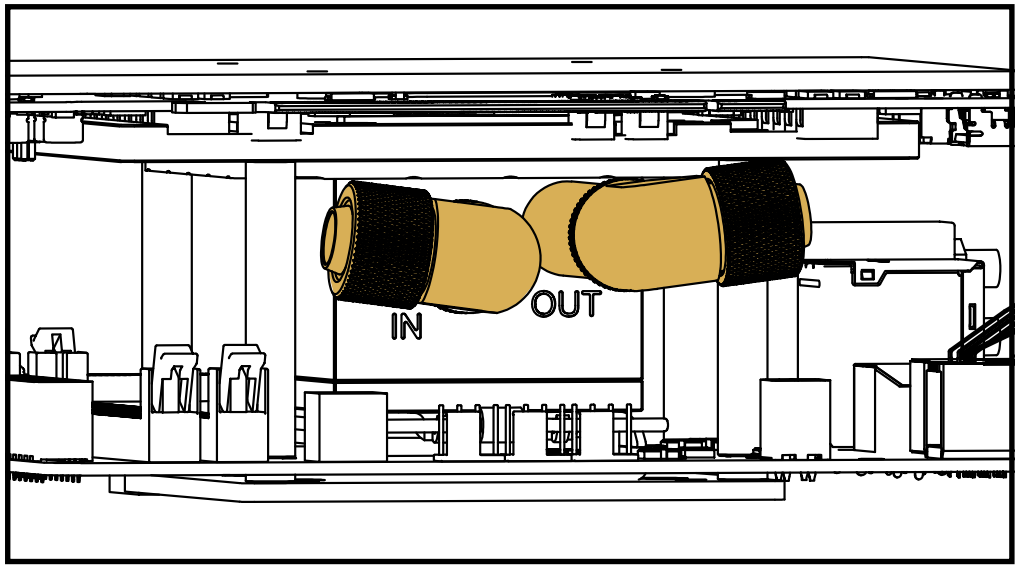


Step 3
Tightening the Bolts
Whilst applying firm pressure to the centre mounting holes on the GPU Back Plate use the four **M3 x 12mm Bolts** to tighten it down to the MonoBlock. Please tighten the bolts in a cross-pattern, being careful to apply even pressure across the back plate.

Testing the Loop

Step 1

Screw two G1/4 threaded male fittings into the two ports on the MonoBlock. Attach the liquid cooling tubes and connect the MonoBlock to your cooling loop.



Step 2

To ensure that your installation of the Billet Labs MonoBlock was successful, we recommend that you perform a leak test on the cooling loop before powering on your system. When your loop is complete and filled with coolant, connect the pump to a power supply that is not connected to the rest of your system. Turn on the power and let the pump run, checking for any water leaks.

If you notice a water leak, turn off the pump and fix the issue, usually by removing the components and then re-tightening it. Please ensure that all electrical components are dry before the system is powered on.

Support and Service

If you require technical support or spare parts, please contact:
info@billetlabs.com

A spare gasket set has been provided with your order. The oil-paper gaskets that we use should not be re-used.
For servicing and cleaning your block please take care when handling the gaskets as they can tear easily.

Social Media

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