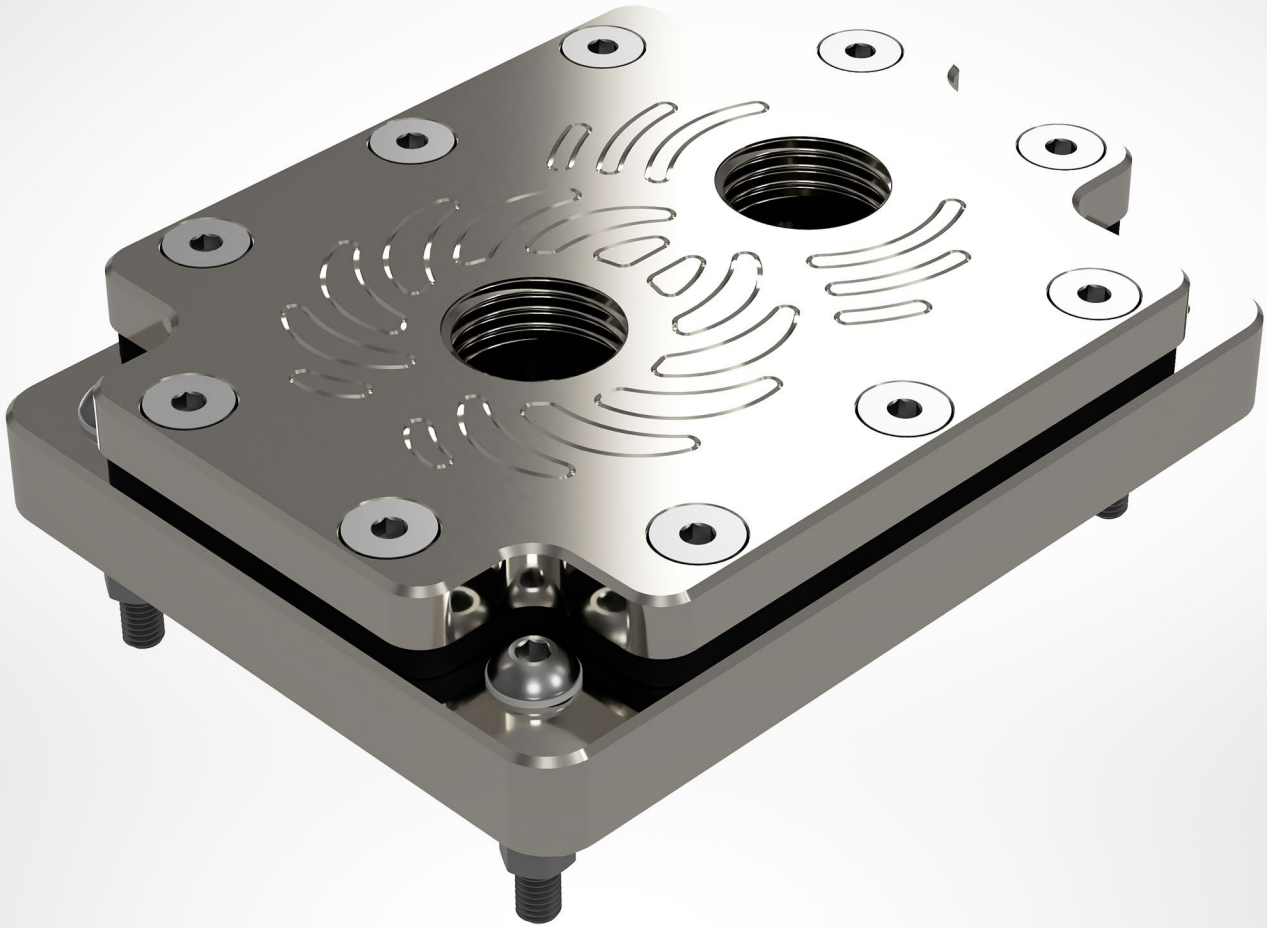
SINGULARITYCOMPUTERS

PLASMA 2



Assembly Manual

Revision 1.1

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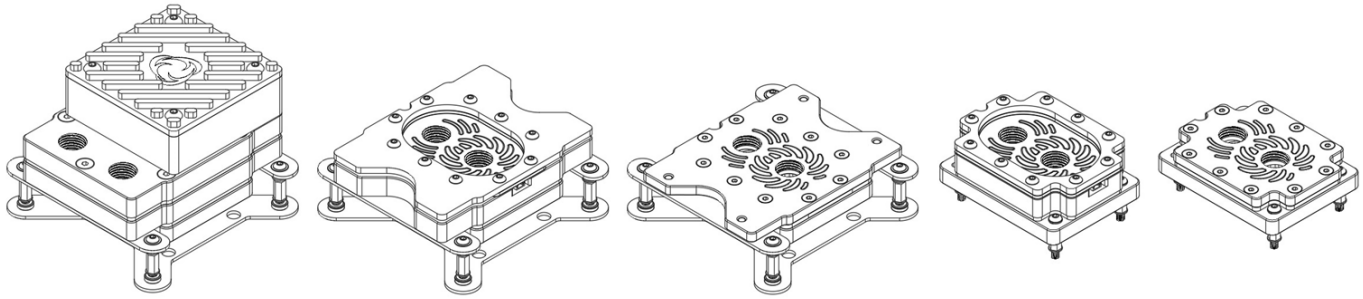
Introduction

The Plasma 2 Water-Block is a design iteration of the previous Plasma with improved compatibility and new features. Plasma 2 comes in multiple configurable versions and is compatible with Intel LGA1700/1851 and AMD AM4/AM5 CPUs. It offers multiple color options and Nickel-plated tops along with a DDC version to mount Your own DDC pump onto it.



DDC | **Standard Acrylic** | **Standard Nickel** | **Compact Acrylic** | **Compact Nickel**

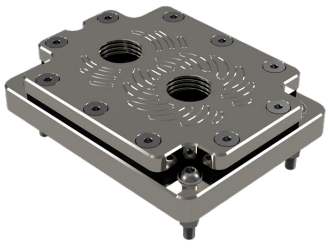
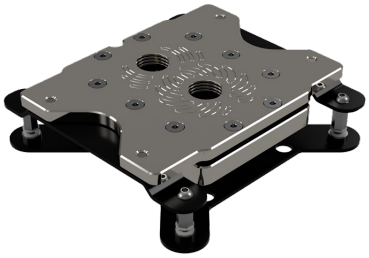
Features

The “Standard” and “DDC” versions have the widest platform compatibility while the “Compact” versions offer more even pressure on the CPU, a smaller footprint and lower prices. The “Compact” editions mount to the stock CPU retention bracket system using stand-offs which are exactly the right length to achieve the correct mounting tension while the “Standard” versions mount using conventional CPU cooler mounting mechanisms for Intel and AMD. We have also created a version which has an integrated DDC pump top. This version is ideal for SFF builds and other compact scenarios. For the “Compact” and “Standard” versions, you can select from a range of different tops including Nickel and various Acrylic and Acetal colors. You can also select from various colors for the Acrylic Top cover including Gold, Silver and Carbon mirror. For the “DDC” version you can select between various Acrylic and Acetal color options. The “Standard” and “Compact” transparent Acrylic versions have an integrated PCB with ARGB LEDs.

Specifications

Materials & Manufacturing Process	Nickel Plated CNC Machined Copper. CNC Machined Cast Acrylic or Acetal.	
Electronics Integration	PCB with integrated ARGB LEDs.	
Gasket	Clear silicone for transparent acrylic, black silicone for non-transparent acrylic.	
Fasteners	Stainless Steel.	
G ¼” Threads	x2 for fittings up to 25mm outer diameter.	
Compatibility	**Compact** - Intel LGA1700/1851, AMD AM5 **Standard & DDC** - Intel LGA1700/1851, AMD AM4/AM5 The “Standard” and “DDC” editions use conventional retention brackets and a custom back-plate for the Intel platform, while the “Compact” editions use the stock Intel or AMD backplate present on the motherboard.	
	Water-block Size	
Compact	**Nickel Top**	72mm(L) x 55mm(W) x 15mm(H)
	Acrylic Top	72mm(L) x 55mm(W) x 26.5mm(H)
Standard	**Nickel Top**	72mm(L) x 94mm(W) x 15mm(H)
	Acrylic Top	72mm(L) x 94mm(W) x 26.5mm(H)
DDC		72mm(L) x 94mm(W) x 58mm(H)

Parts List

	Item	Quantity
Plasma 2 - Compact  	Water-block pre-assembled	1
	RGB cable (for clear acrylic versions with an ARGB PCB)	1
	AMD stand-offs	4
	Intel stand-offs	4
	M3 10mm BH	4
	Nylon washers	8
	M3 hex key	1
Plasma 2 - Standard  	Water-block pre-assembled	1
	RGB cable (for clear acrylic versions with an ARGB PCB)	1
	AMD stand-offs	4
	AMD mounting brackets	2
	Intel stand-offs	4
	Intel mounting brackets	2
	Intel back-plate	1
	Nylon washers	4
	M3 hex key	1
	M4 hex key	1
Plasma 2 - DDC 	Water-block pre-assembled	1
	DDC aluminium cover	1
	DDC aluminium heat-sink	1
	DDC thermal pad	1
	AMD stand-offs	4
	AMD mounting brackets	2
	Intel stand-offs	4
	Intel mounting brackets	2
	Intel back-plate	1
	Nylon washers	4
	M3 hex key	1
	M4 hex key	1

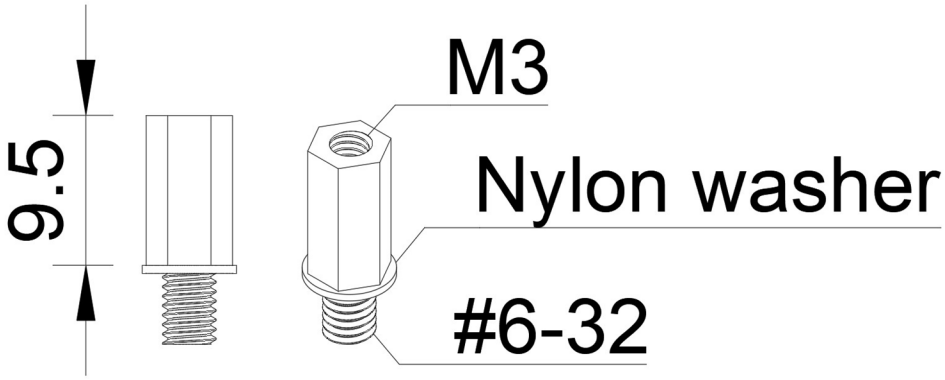
Plasma 2 – Compact | Installation Guide

Preparation on Intel LGA1700/1851 Sockets

Step 1 Open up the lever and the socket cover.

Step 2 Remove the top retention mechanism by unscrewing the top 2 torx fasteners.

Step 3 Install Intel stand-offs x2 with nylon washers into the threaded holes that had the torx fasteners. The nylon washers are used to protect the surface of the motherboard and to achieve the target height of the stand-offs. The nylon washers are necessary for Intel.



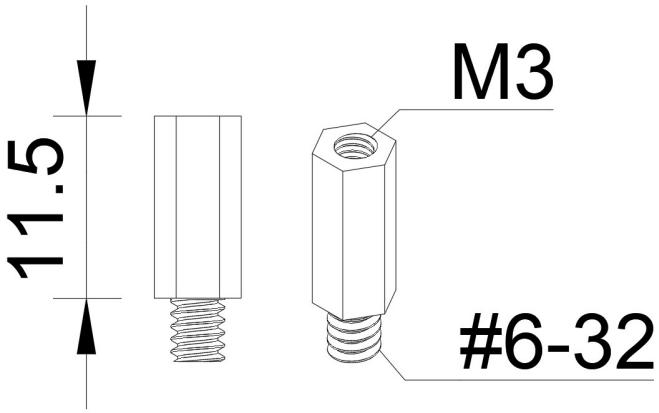
- It is advisable to put super-glue or LOCTITE® thread-locker on the threads of the stand-offs to stop them from getting loose later.

Step 4 Repeat steps 2 & 3 with the bottom part of the retention mechanism. It is important to only remove only one retention mechanism at a time, not both, to prevent the Intel back-plate from falling off.

Preparation on AMD AM5 Socket

Step 1 Remove the 4 torx fasteners and the AM5 retention mechanism but leave the top and bottom plastic parts above and below the socket in place as they prevent the stock AM5 back-plate from falling off during installation.

Step 2 Install the AMD stand-offs x4 into the threaded holes that had the torx fasteners.

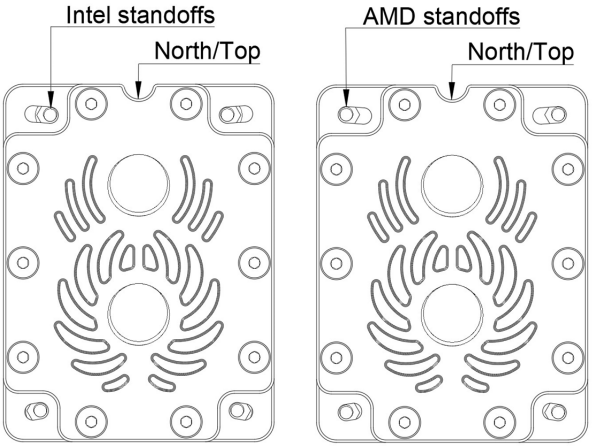


- Do not use nylon washers for AMD AM5 platforms.
- It is advisable to put super-glue or LOCTITE® thread-locker on the threads of the stand-offs to stop them from getting loose later.

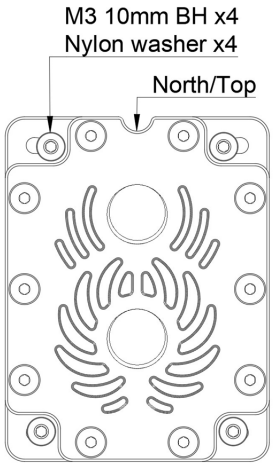
Installation of the Water-block

Step 1 Place the processor into the socket and apply thermal paste on it.

Step 2 Place the Plasma 2 "Compact" Water-Block on top of the processor and align it so the mounting holes are above the stand-offs on the motherboard. There is a rounded notch on the cold-plate which marks the North/Top side of the block. Place and hold a finger on the top of the block to prevent movement during the installation process.

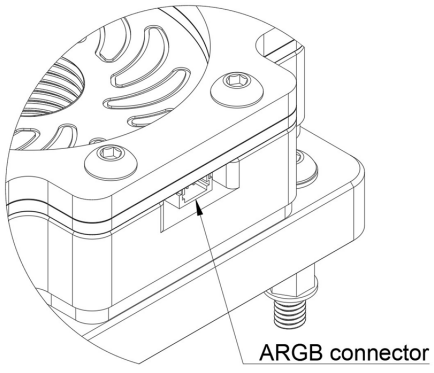


Step 3 Put M3 10mm BH x4 fasteners with nylon washers into the slotted holes of the cold-plate, align them with the stand-offs below and start screwing them in. Turn the screws until You start feeling a little resistance then move onto the next screw. At this stage we only want to keep the water-block in place and engage the 4 screws equally.



Step 4 Start tightening the screws in increments – do not tighten one corner or side fully or too much, but make one full turn on a fastener and then move onto the next one in a cross-pattern to spread the pressure and lower the block down evenly. Keep repeating this method until the screws bottom out.
The Plasma 2 Water-Block does not rely on fastener tension, a torque screwdriver is not needed. Once the cold-plate sits on the stand-offs then the target mounting pressure and height is achieved. The stand-offs are custom engineered to provide ideal mounting pressure for both platforms.

Step 5 Attach the RGB cable to the ARGB PCB or skip this step if no ARGB PCB is present (for non-transparent tops).



⚠ Warning ⚠

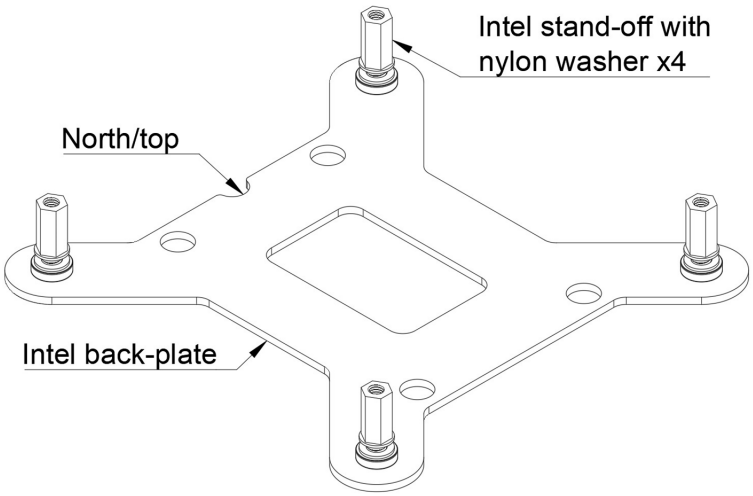
When removing the water-block, first fully remove the M3 10mm BH x4 mounting fasteners from the 4 corner holes while holding the water-block in place, then lift the water-block up vertically.
The CPU will be attached to the cold plate and the block will pull it out of the socket. This is normal behaviour but caution is to be taken. Do not tilt the water-block while the CPU is attached to it, but lift it out of the socket and away from the motherboard while holding it horizontally to avoid the CPU dropping back into the socket or onto the motherboard. Only then gently rotate the CPU back and forth to loosen the grip of the thermal interface material and it should separate from the cold-plate.

Plasma 2 - Standard & DDC | Installation Guide

Preparation on Intel LGA1700/1851 sockets

Step 1 Install the CPU into the socket.

Step 2 While holding the Intel back-plate behind the motherboard CPU socket, install Intel stand-offs x4 with nylon washers into the holes on the motherboard to secure it in place. The nylon washers are used to protect the surface of the motherboard and are necessary for Intel.



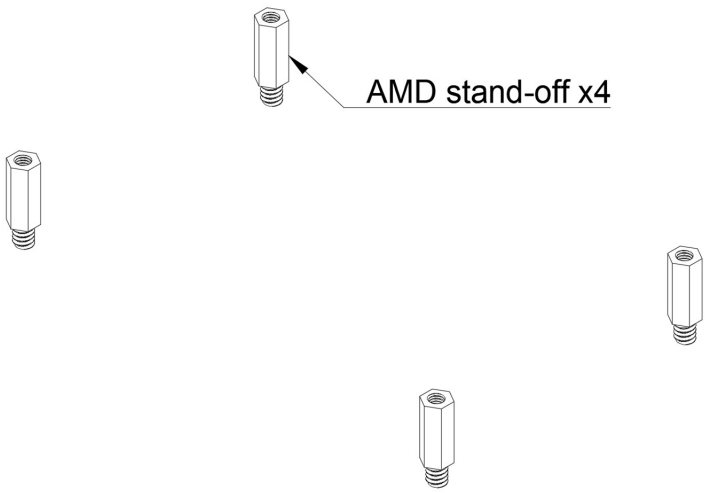
- It is advisable to put super-glue or LOCTITE® thread-locker on the threads of the stand-offs to stop them from getting loose later.

Preparation on AMD AM4/AM5 sockets

Step 1 Install the CPU into the socket.

Step 2 Remove the top and bottom plastic tabs from the motherboard. On AM4 the back-plate will fall off so hold it in place for the next steps.

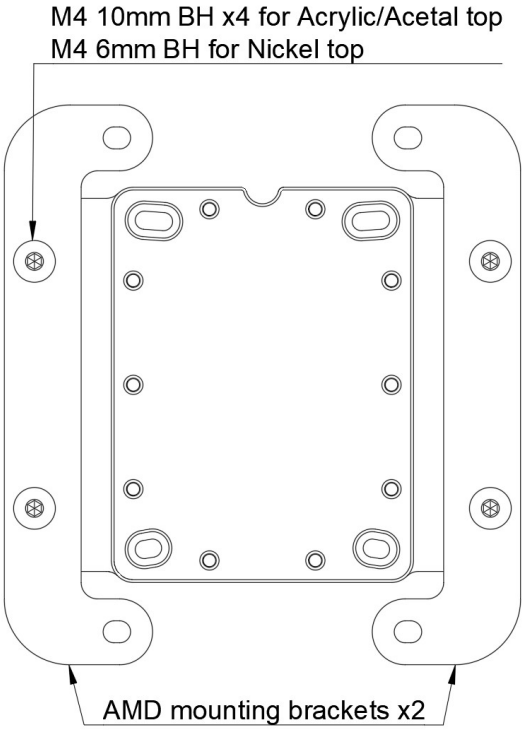
Step 3 Install the AMD stand-offs x4 into the threaded holes of the stock AMD AM4/AM5 back-plate.

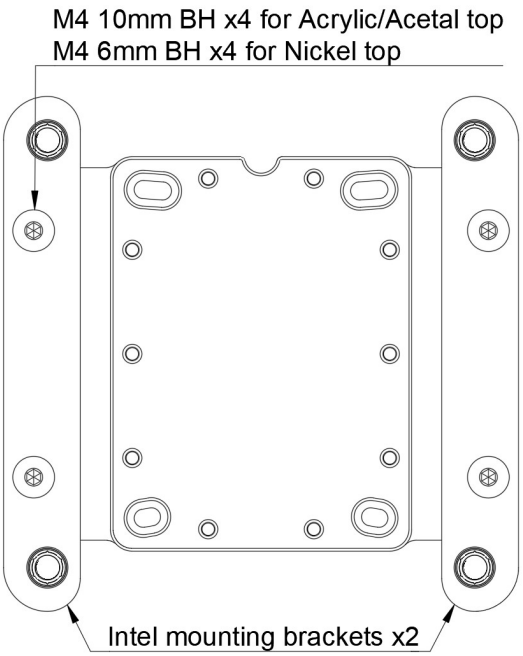


- Do not use nylon washers for AMD AM4/AM5 platforms.
- It is advisable to put super-glue or LOCTITE® thread-locker on the threads of the stand-offs to stop them from getting loose later.

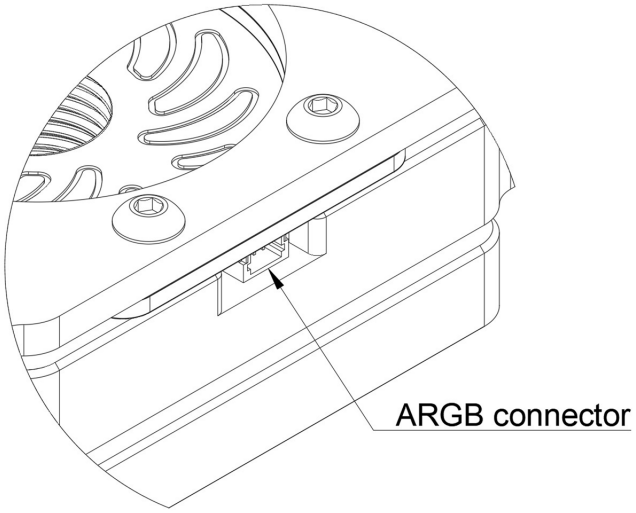
Installation of the Water-Block

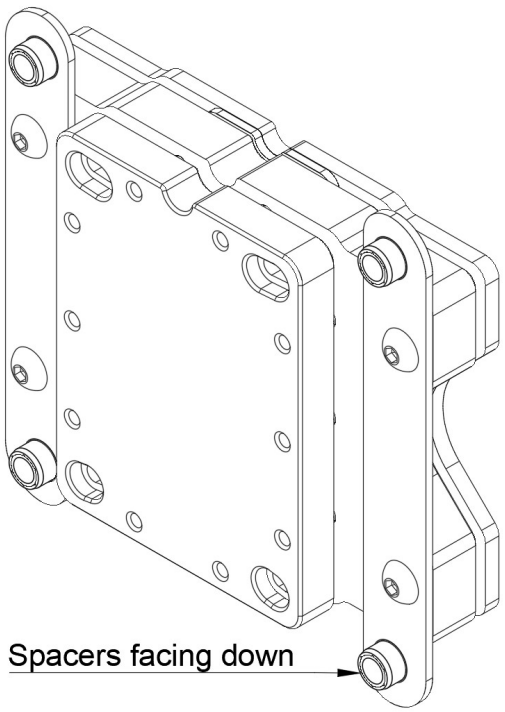
Step 1 Using M4 10mm BH x4 for the Acrylic top or M4 6mm BH x4 for the Nickel top, install the AMD or Intel mounting brackets on the left and right side of the water-block in the below positions. The spacers on the Intel mounting brackets face down.





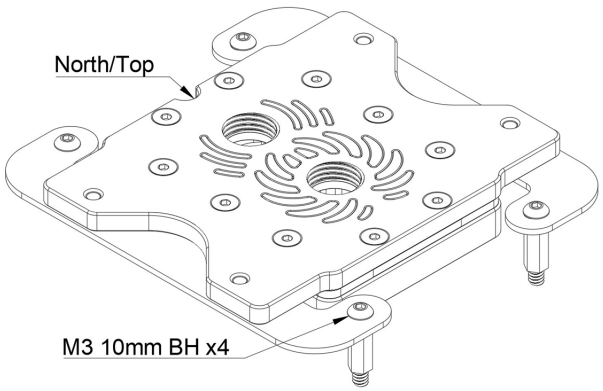
Step 2 Attach the RGB cable to the ARGB PCB or skip this step if no ARGB PCB is present (for non-transparent tops).

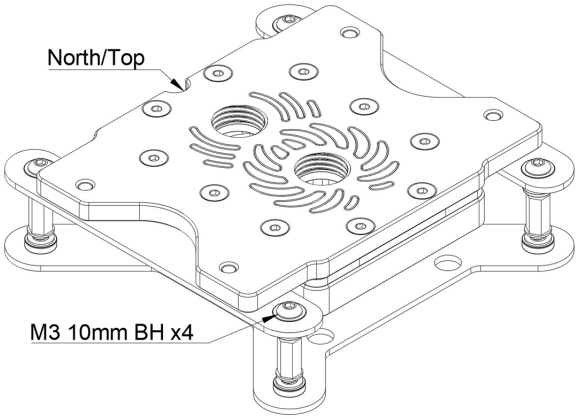




Step 3 Place the Plasma 2 "Standard" or "DDC" Water-Block on top of the processor and align it so the holes on the mounting brackets are above the stand-offs on the motherboard. There is a rounded notch on the cold-plate which marks the North/Top side of the block. Place and hold a finger on the top of the block to prevent movement during the installation process.

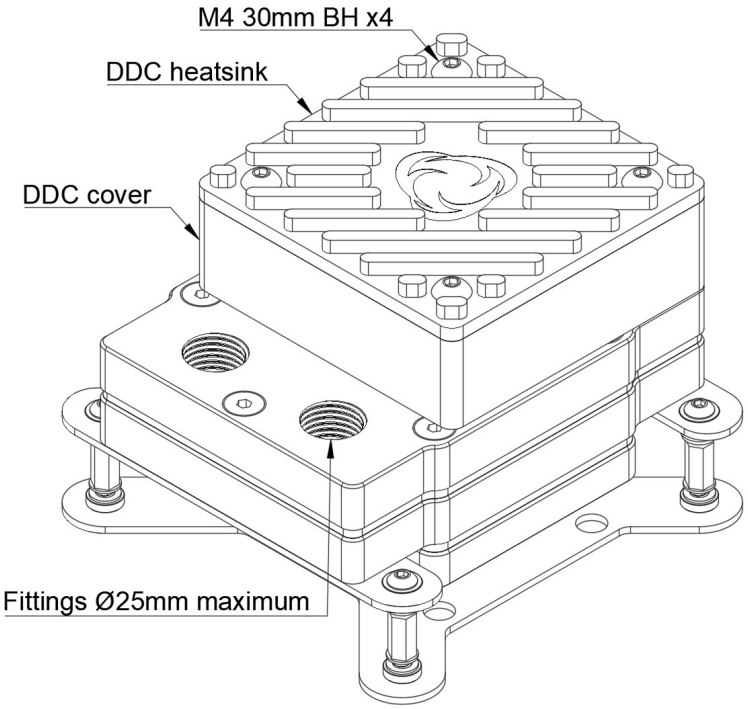
Step 4 Put M3 10mm BH x4 fasteners through the holes of the mounting brackets and align them with the stand-offs below and start screwing them in. Turn the screws until You start feeling a little resistance then move onto the next screw. At this stage we only want to keep the water-block in place and engage the 4 screws equally.





Step 5 Start tightening the screws in increments – do not tighten one corner or side fully or too much, but make one full turn on a fastener and then move onto the next one in a cross-pattern to spread the pressure and lower the block down evenly. Keep repeating this method until the screws bottom out.

Step 6 For the "DDC" version: Install a DDC-class pump onto the Plasma 2 "DDC" Water-Block, put the thermal pad on the pump and secure it with the DDC aluminium cover and heat-sink using M4 30mm BH x4 in the four corners. If a third party DDC cover is used then use the included mounting hardware but the fasteners must be M4 threaded.



Liquid-Cooling Information

The Plasma 2 Water-block does not use a jet-plate design, but flow direction matters as the fin structure is more efficient in the appropriate direction. This unique fin structure was designed to strike a balance between AMD's and Intel's different hot-spot locations while increasing flow. The "DDC" version's inlet and outlet ports cannot be changed due to the pump only providing flow in one direction.