SINGULARITYCOMPUTERS

# DOMINUS

**Dominus De Machinis – Lord of the Machines**

# Assembly Manual

Revision 1.3

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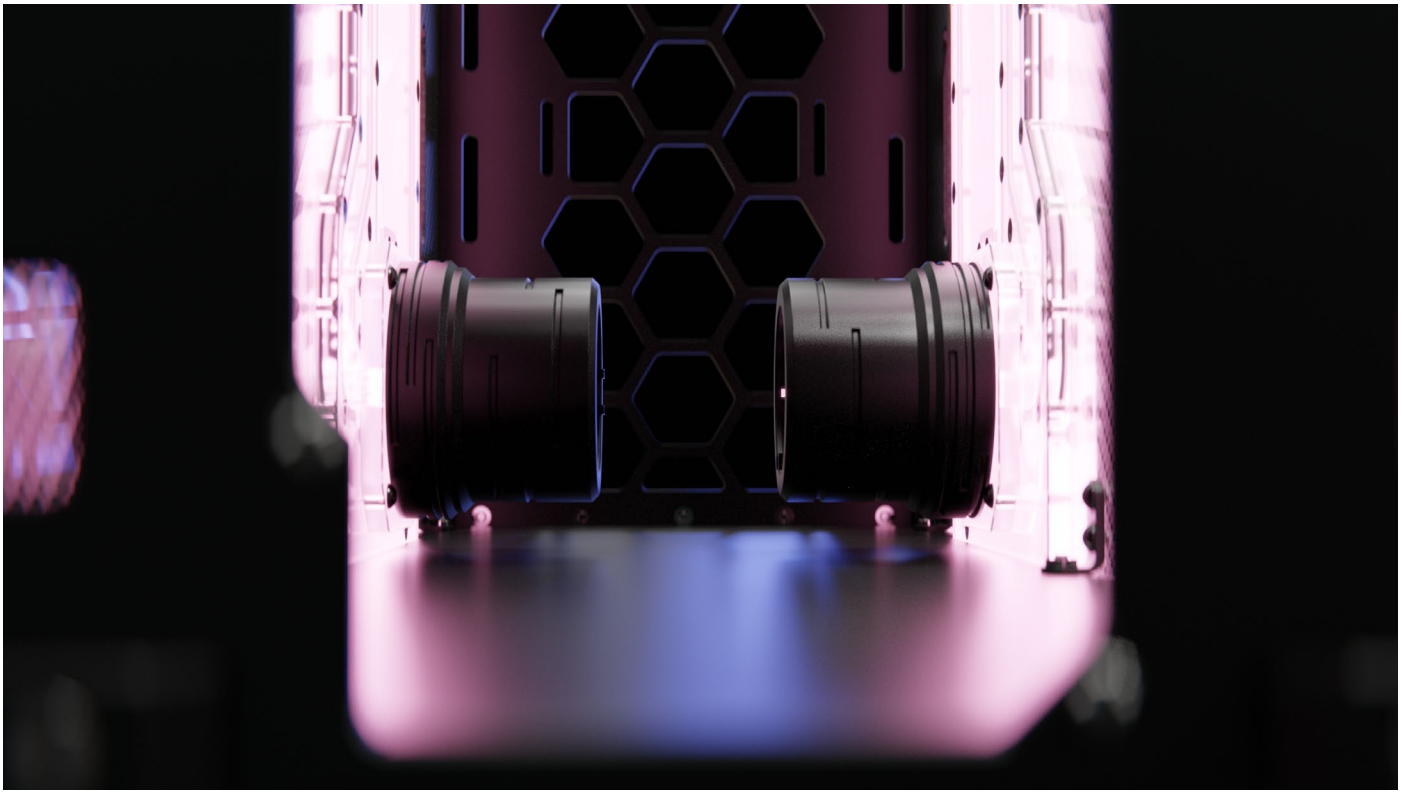
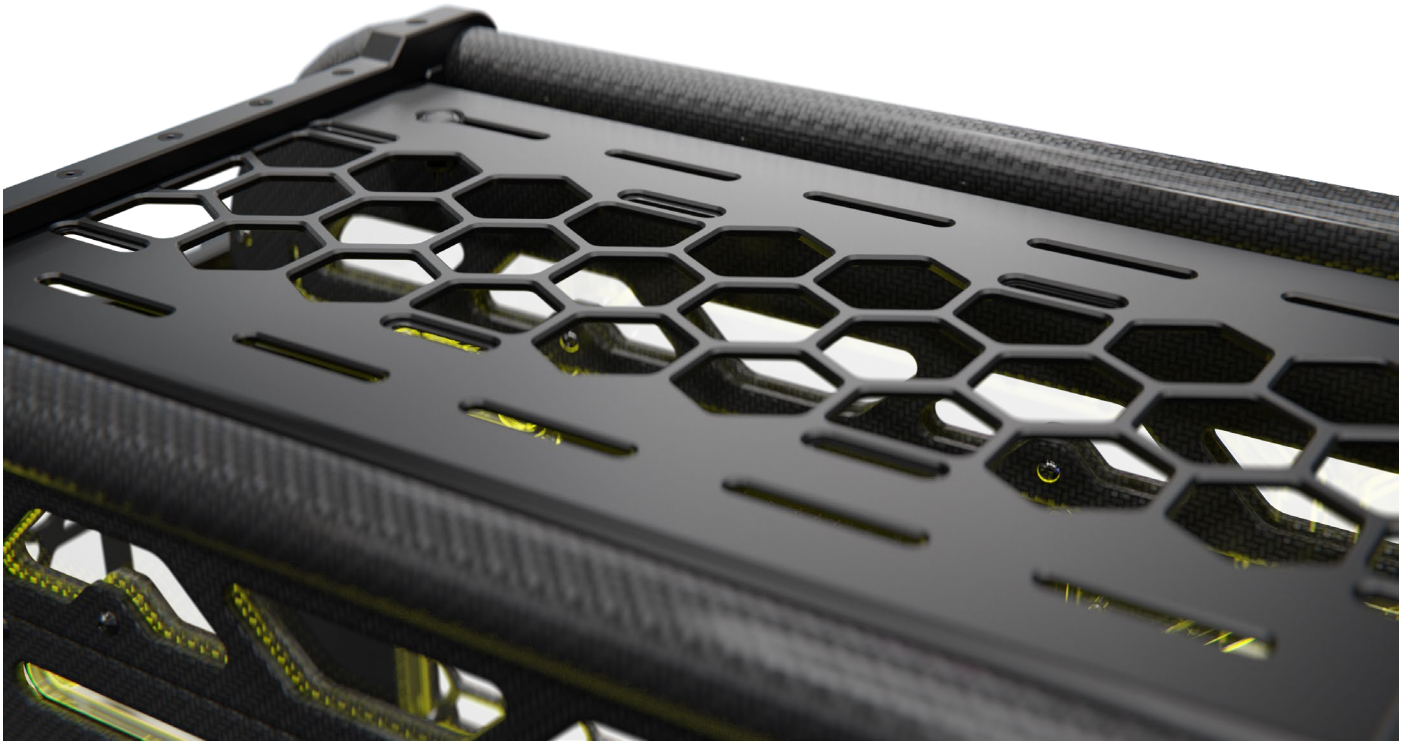


## Introduction

Dominus is the most high-end case we have ever created. It is an extreme water-cooling case with integrated distribution plates on both sides. It has a frame built from 26mm Carbon Fiber tubes, billet aluminum clamps & 3mm aluminum panels. It has Carbon Fiber panels over the distribution plates. The distribution plates are CNC machined from clear cast acrylic, each side contains a D5, Reservoir and Parts of the loop. The integrated water-cooling system is designed for the cleanest possible tube routes. There is an integrated Singularity Computers PowerBoard which removes the need for cable management. The PowerBoard has temperature-based RPM control with multiple PWM zones, dedicated PWM pump headers, PSU jump start for running the pumps, pump power headers, a temperature sensor input & more. Dominus fits a 360mm & 480mm radiator. It has a 120mm fan mount behind the motherboard to cool the rear of the CPU socket.

## Features

- **PowerBoard Integration**
  The Dominus PowerBoard is a PCB integrating MB 24pin, EPS, PCIE and 12V2X6 with PWM & ARGB hubs. Essentially, the PowerBoard is a distribution plate for cables while integrating other features and functions as well. It is a new method for cables allowing standardisation of cable lengths and making traditional cable management no longer necessary.
- **Reduced Build Time due to Integration**
  Cables do not need to be purchased separately and no cable management is needed for the core component cables.
- **High End Components**
  It is designed to fit the highest-end GPUs, PSUs and 45mm thick radiators.
- **Radiator Adjustment**
  The radiator has ± 5mm adjustability.
- **Storage**
  The case has no drive positions.



# Dominus Case Specifications

| | |
|---|---|
| **Case Components** | CNC machined and folded aluminium panels, stainless steel fasteners and stand offs. Machined acrylic distribution plates. Rubber Feet. |
| **PowerBoard Electronics Integration** | 24pin x1, 8pin EPS x4, 8pin PCIE x3, 12V2X6 x2, 6pin PCIe supplementary x1, 8pin PCIe supplementary x1. PWM x4 and ARGB x4 headers. PSU jumpstart switch and Touch Power Button (Horten Module) header x2. |
| **Cables** | PowerBoard Linking Cables and PowerBoard PSU Cables available here. Custom Cables available here. |
| **Motherboard Form Factor** | EATX (up to 290mm width), ATX, mATX, mini-ITX. SSI-CEB/EEB 290mm+ support without the PowerBoard. |
| **Expansion Slots** | x7. |
| **Case Form Factor** | Full Tower Water-Cooling Case. |
| **Package Dimensions** | 640mm(L) x 620mm(W) x 110mm(H)<br>Case is flat packed and requires assembly. |
| **Package Weight** | 12 kg. |
| **Case Dimensions** | 600mm(L) x 308mm(W) x 631mm(H). |
| **Case Weight** | 10 kg. |
| **Radiators** | 1x 480mm radiator up to 45mm thickness with up to 30mm thick fans on the front panel for the GPU. 1x 360mm radiator up to 45mm thickness with up to 30mm thick fans on the top panel for the CPU. |
| **Max. GPU Length** | 470mm. |
| **Max. GPU Height (Horizontal)** | 170mm. |
| **Max. GPU Width (Vertical)** | 96mm and maximum 3-slot PCIe I/O. |
| **Max. CPU Cooler Height** | 160mm. |
| **Max. PSU Length** | 230mm. |
| **Storage** | n/a. |
| **Ports** | 2x 20mm diameter pass thru ports for external water-cooling on the rear panel.<br>4x G1/4" ports on the outside of the distribution plates for filling and draining the loop. |
| **Top Panel I/O** | Power and Reset buttons. |
| **Vertical GPU Mount** | Yes, included. |
| **Distribution Plate** | The front radiator must have the ports on the bottom and the top radiator must have the ports on the rear end to line up the ports with the distribution plate. |
| **Materials** | Aluminium, stainless steel, TPU, acrylic and PCB. |
| **Manufacturing Process** | Metal folding & CNC machining. |
| **Assembly** | Flat packed and needs to be assembled by the customer. |
| **Accessories** | M3 Hex Key x1 & M4 hex key x1. |

# Parts List

| | Item | | Quantity |
|---|---|---|---|
| **Dominus Case** | Left Side Distribution Plate | | 1 |
| | Right Side Distribution Plate | | 1 |
| | Rear Panel | | 1 |
| | Front Panel | | 1 |
| | Top Panel | | 1 |
| | Bottom Panel | | 1 |
| | Angle Brackets | | 6 |
| | Clamp-A | | 5 |
| | Clamp-B | | 12 |
| | Clamp-C | | 2 |
| | 12mm Power Switch | | 1 |
| | 12mm Reset Switch | | 1 |
| | M4 12mm CS | | 29 |
| | M4 25mm CS | | 12 |
| | M4 8mm BH | | 18 |
| | M4 12mm BH | | 30 |
| | M4 30mm BH | | 4 |
| | M4 35mm BH | | 4 |
| | M6 10mm BH | | 2 |
| | #6-32 0.25" BH | | 11 |
| | M4 7mm Plastic Washer | | 10 |
| | M4 Metal Washer | | 10 |
| | M3 8mm BH | | 10 |
| | M3-M4 18mm Standoff | | 10 |
| | M3 & M4 Hex Key | | 1 |
| **Vertical GPU Mount** | PCIe Riser Cable | | 1 |
| | PCIe I/O Cover | | 1 |
| | PCIe Mount | | 1 |
| | M4 6mm BH | | 2 |
| | M3 7mm washer | | 3 |
| | M3 18mm BH | | 3 |
| | VGPU 3mm Acryl Mount | | 1 |
| | VGPU 10mm Acryl Mount | | 1 |
| | VGPU 90 Degree Bracket | | 1 |
| | VGPU Mount | | 1 |
| **PowerBoard** | 24pin MB 20cm Linking Cable | | 1 |
| | 8pin EPS 20cm Linking Cable | | 2 |
| | 12V2X6 Linking Cable or 8pin PCIe Linking Cable | | 3 |
| | PWM Linking Cable | | 2 |
| | ARGB Linking Cable | | 1 |
| | PowerBoard Switch Power Cable | | 1 |
| | PowerBoard Switch Reset Cable | | 1 |

**Dominus Carbon Fiber Covers**

If the case is exposed to substantially colder ambient temperatures than the ambient temperature of 30C which it was assembled in then you may experience slight lifting of the carbon fibre covers. Tolerances have been built into the mounting holes and the related fasteners can be loosened slightly to resolve this.

# Assembly Manual

### Step 1: Installing the Feet

- Step1: If the Front and Rear Panels don't come with the feet pre-installed, then install them using M4 8mm CS x2 per feet, otherwise skip to Step 2.

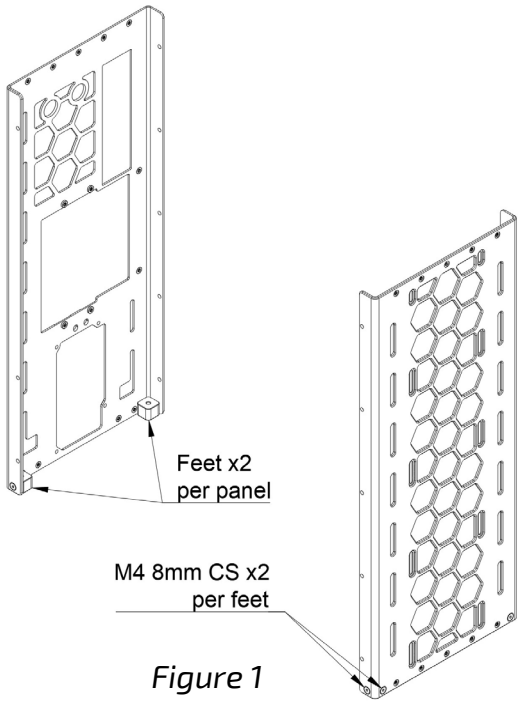



*Figure 1*

### Step 2: Preparing the Right Side Distribution Plate

- Step 2A: Install M3-M4 18mm standoffs. The amount and location of these will depend on the motherboard used. For SSI-EEB motherboards wider than 290mm, the PowerBoard cannot be used as the motherboard blocks the headers on the right side of the PCB and it must be taken out. In this case put a black plastic and a metal M4 washer under each standoffs to compensate for the 1.5mm height loss. Install a motherboard to these standoffs and secure it with M3 8mm BH fasteners.

- Step 2B: Install Angle Brackets x3 to the marked locations and secure them with M4 8mm BH x2 per bracket.

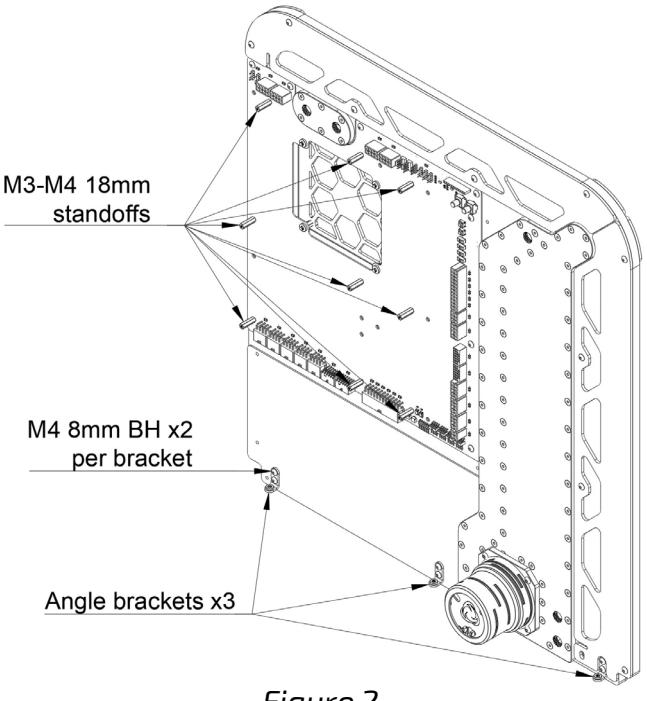



*Figure 2*

- Step 2C (Optional): Install a 120mm fan to the rear by removing the cover and the standoffs, and replace the standoffs and the original fasteners with a fan and mount the fan with M4 30mm BH x4 or M4 35mm BH x4 depending on fan thickness.

## Step 3: Installing the Panels

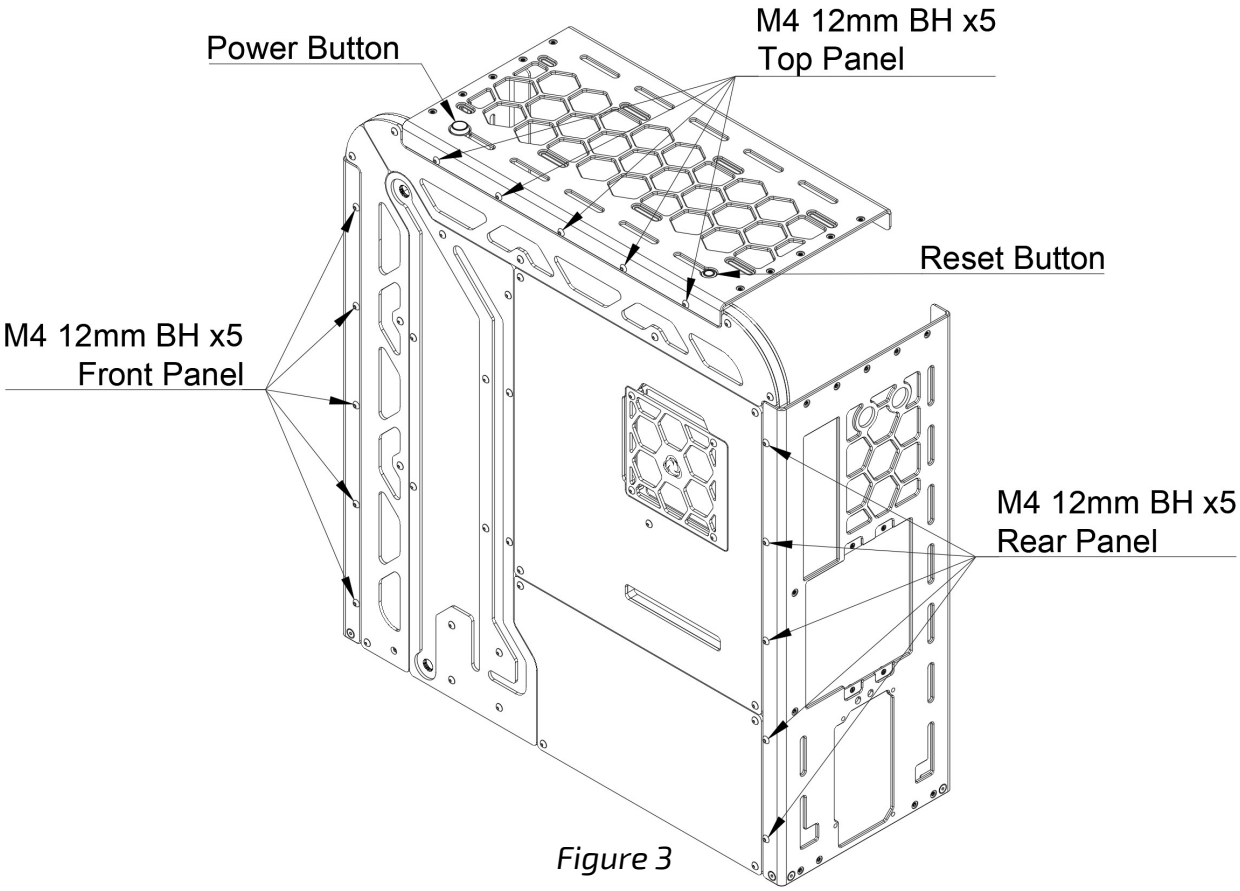



*Figure 3*

- Step 3A: Install the Power and Reset Buttons in the marked positions on the Top Panel.
- Step 3B: Attach the folded aluminium panels to the Right Side Distribution Plate using M4 12mm BH x5 for each panel. Mind the orientation of them, the feet on the Front and Rear Panels face downwards, while the larger Power Button faces towards the front on the Top Panel.

**Step 4: Preparing the Left Side Distribution Panel**

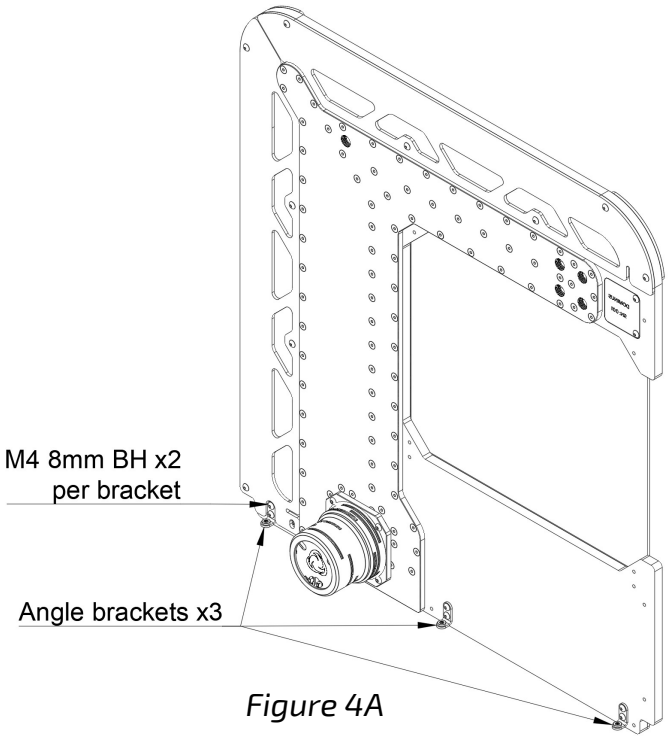



*Figure 4A*

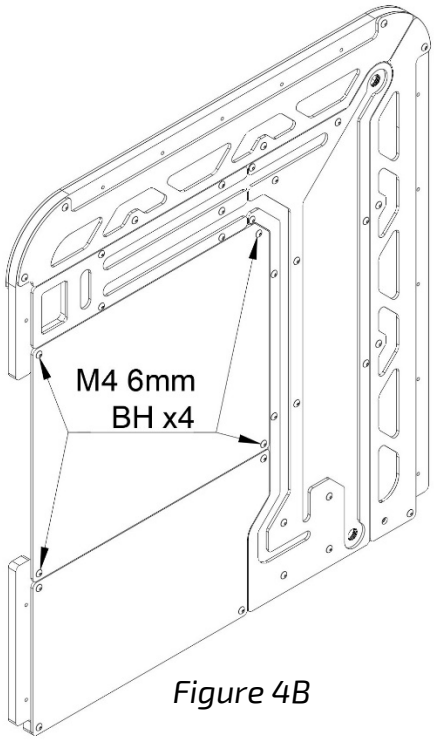



*Figure 4B*

- Step 4A: Install Angle Brackets x3 to the marked locations and secure them with M4 8mm BH x2 per bracket.
- Step 4B: Remove the acrylic window by undoing the M4 6m BH x4 fasteners, then reinstall window after the build is finished.

**Step 5: Attaching the Left Side Distribution Panel**

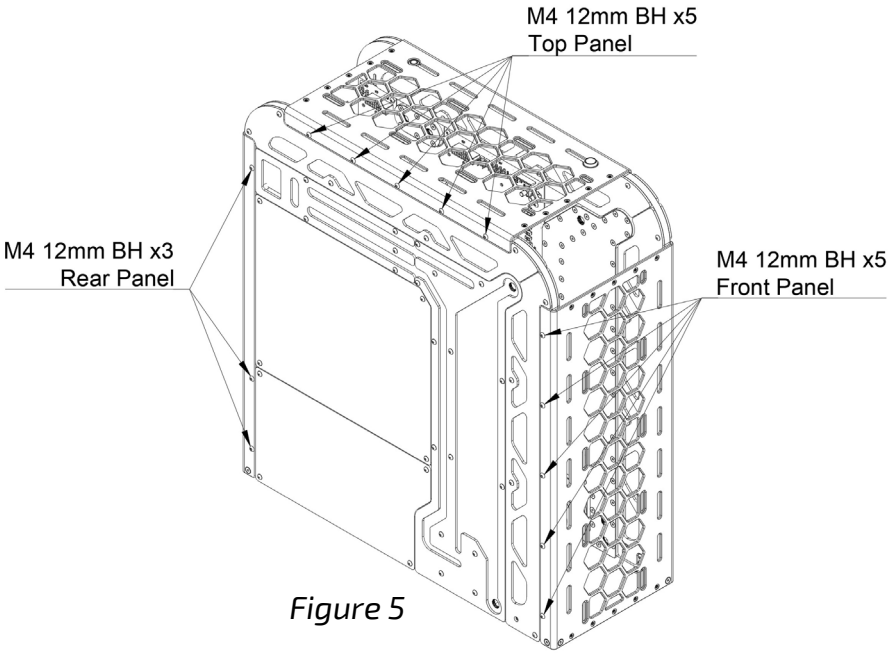



*Figure 5*

- Step 5: Slide the Right Side Distribution Plate in from below and secure it to the folded panels using M4 12mm BH x5 for the Top and Front Panels and M4 12mm BH x3 for the Rear Panel.

**Step 6: Installing Clamps**

- Step 6: Install the clamps to the folded panels in the marked positions. Use M4 12mm CS x5 for each Clamp-A and use M4 12mm CS x2 for each Clamp-C.

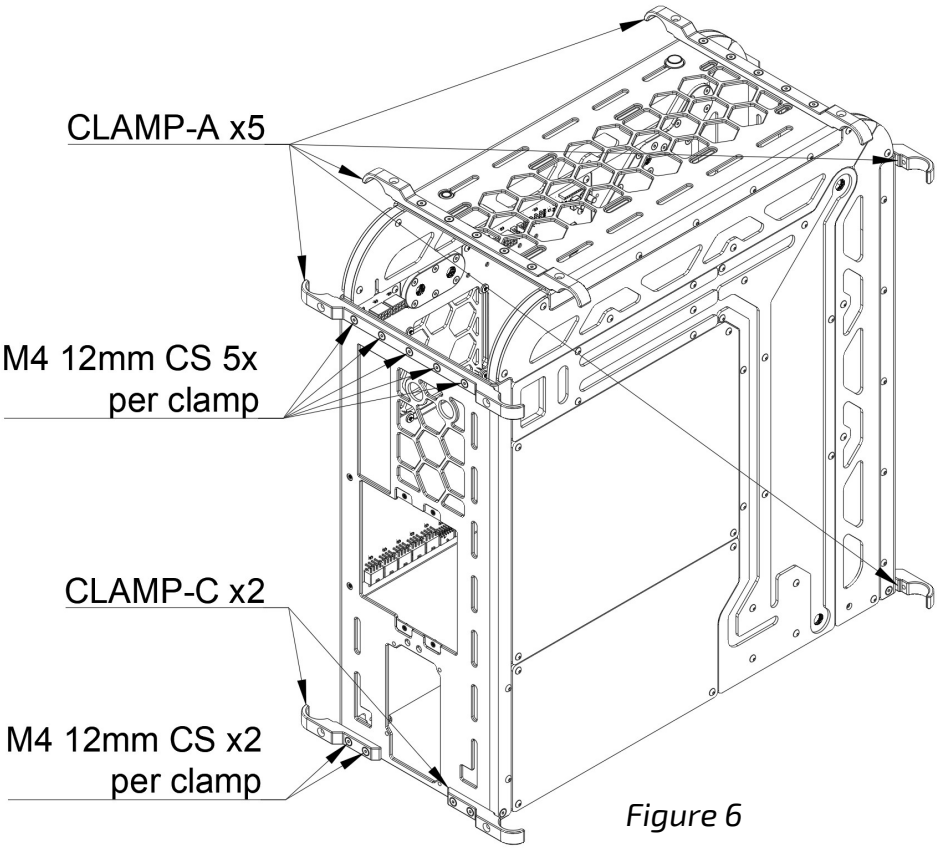



*Figure 6*

**Step 7: Installing the Carbon Fiber Tube Frame**

- Step 7: Slide in the Carbon Fiber Tube Frames from below.

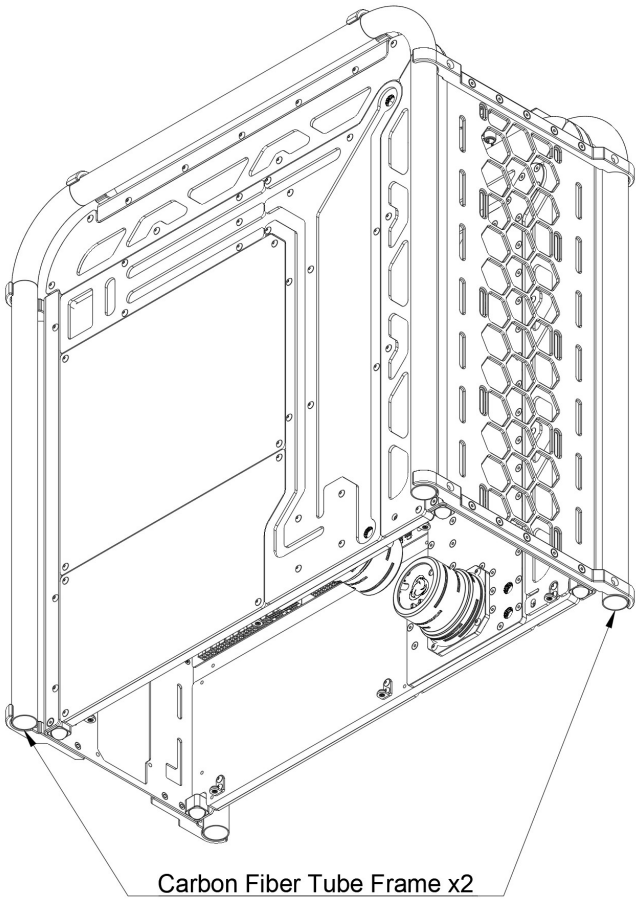



*Figure 7*

**Step 8: Securing the Carbon Fiber Tube Frame**

- Step 8: Secure the Carbon Fiber Tube Frame by attaching Clamp-B x6 to the chassis using M4 25mm CS x1 per clamp.

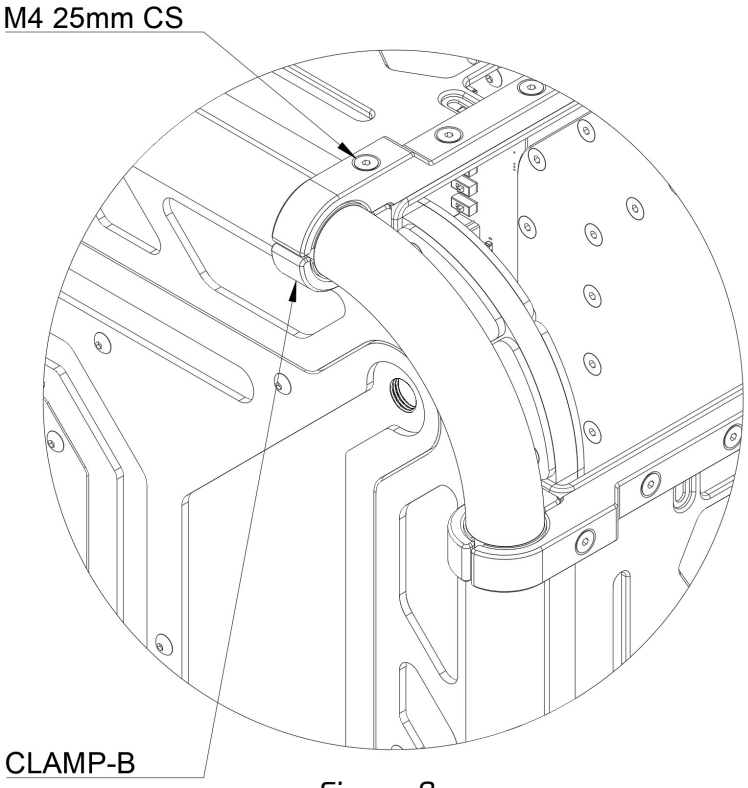



*Figure 8*

**Step 9: Installing the Power Supply**

- Step 9: Install the Power Supply to the Rear Panel using #6-32 0.25" BH x4.

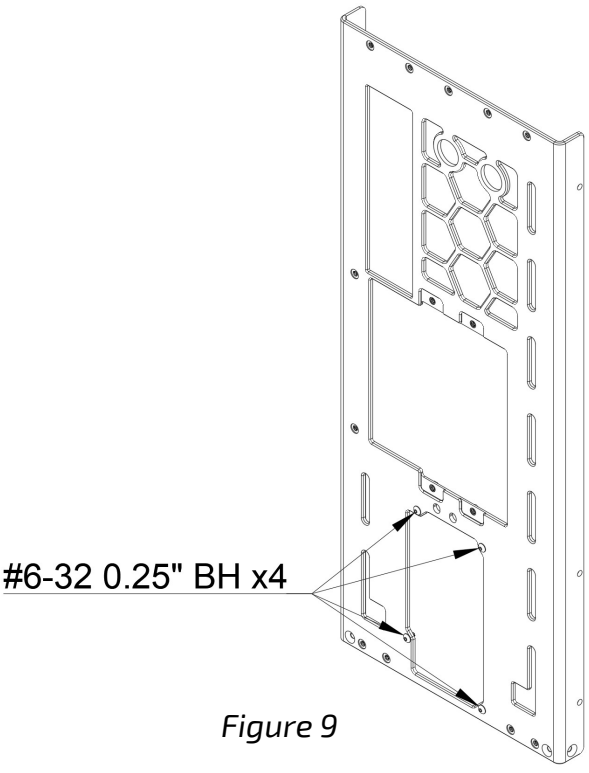



*Figure 9*

**Step 10: Horizontal GPU Mounting**

- Step 10: Install the PCIe Mount in the horizontal position marked and secure it with M4 12mm BH x2. The mount can be adjusted forward and backward slightly.

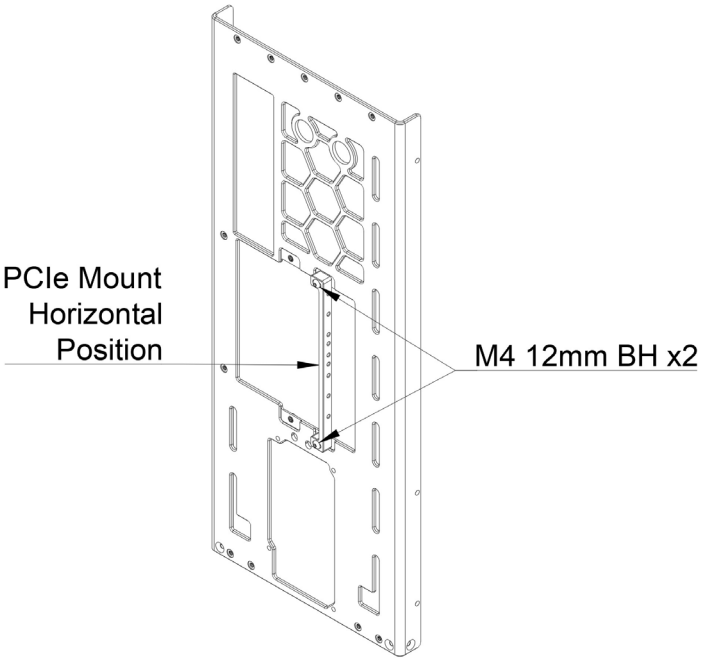



*Figure 10*

**Step 11: Vertical GPU Mounting**

- Step 11A: Assemble the vertical GPU mount using M3 18mm BH x3 with M3 7mm washer x3.

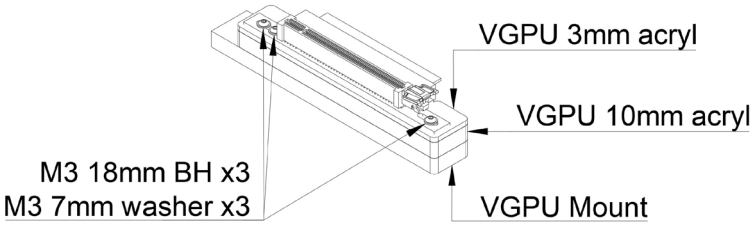



*Figure 11A*

- Step 11B: Attach the vertical GPU mount assembly to the Rear Panel and secure it with M6 10mm BH x2; while letting it rest on top of the power supply for support. Install the PCIe mount in the marked position and secure it with M4 12mm BH x2. The mount can be adjusted forward and backward slightly. Attach the VGPU 90 degree bracket to it with #6-32 0.25" BH x2, its position is vertically adjustable. Install the PCIe IO Cover using M4 6mm BH x2.

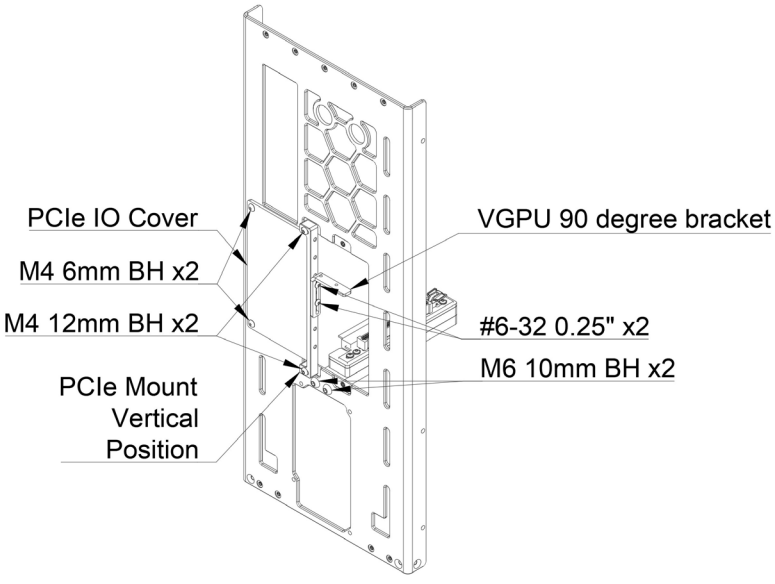



*Figure 11B*

**Step 12: Bottom Panel**

- Step 12: Install the Bottom Panel and secure it with M4 8mm BH x6.

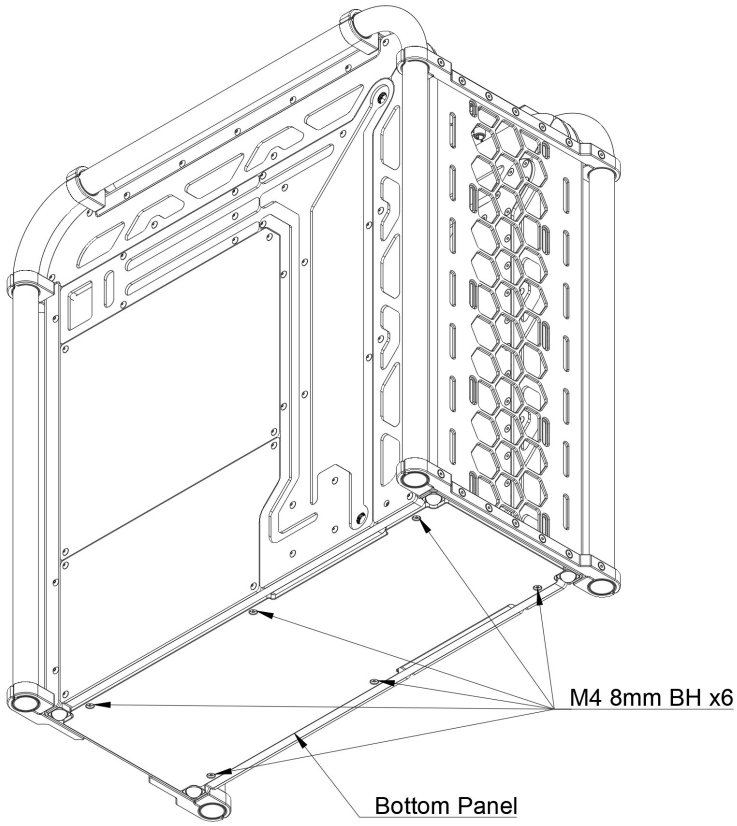
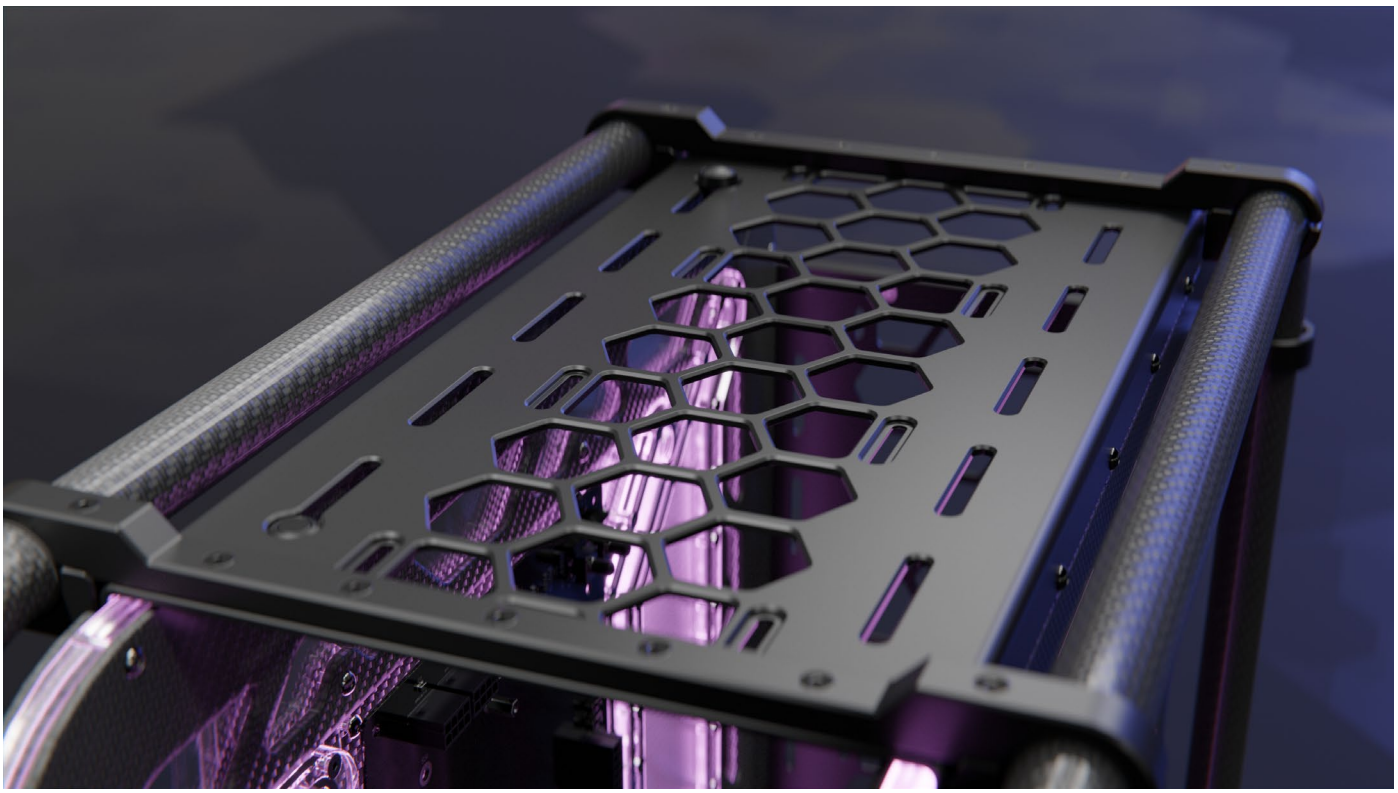
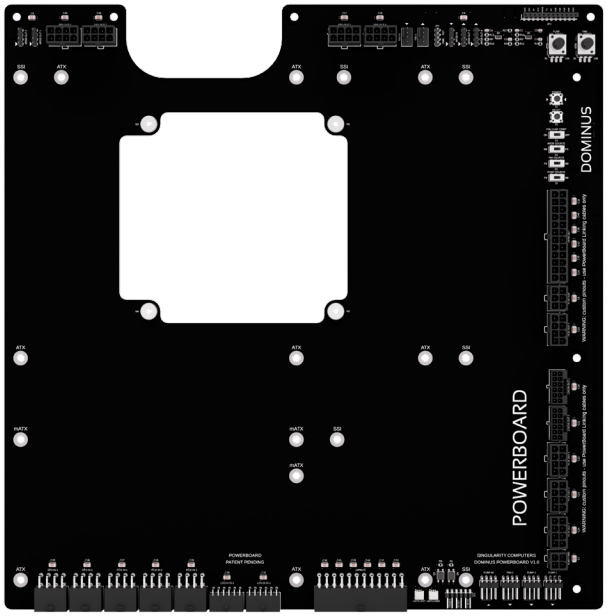
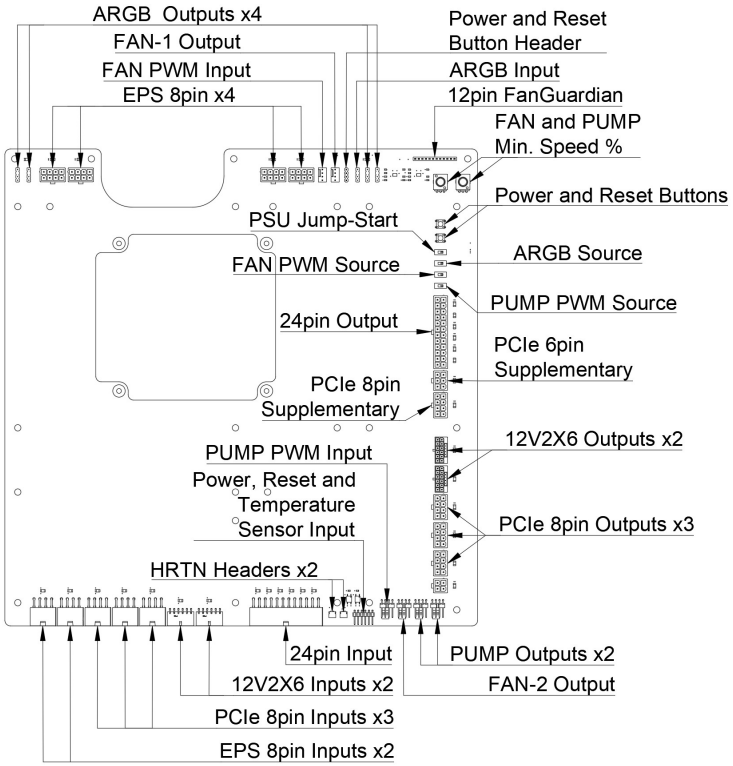



*Figure 12*



# Dominus PowerBoard




***⚠ All PowerBoards need PowerBoard Linking Cables.***

**Input Connections**

- MB 24pin input x1
- EPS 8pin input x2
- 12V2X6 input x2
- PCIe 8pin input x3
- PWM input x2 (FAN, PUMP)
- ARGB input x1
- Power and Reset Button inputs x1
- Horten Module input x2
- Temperature Sensor input x1

**Output Connections**

- MB 24pin output x1
- EPS 8pin output x4
- 12V2X6 output x2
- PCIe 8pin output x3
- PCIe 6pin supplementary output x1
- PCIe 8pin supplementary output x1
- PWM output x4 (FAN x2, PUMP x2)
- ARGB output x4
- Power and Reset Button outputs x1
- 4pin ATX pump power header x1
- 12pin FanGuardian header

The Dominus PowerBoard's extra feature is a PSU jumpstart switch that is able to power on the system without booting the motherboard which simplifies filling and bleeding the loop. It also has 2 hidden touch-sensitive M3 button head fasteners in the Left and Right side Distribution Plates that can be used as Power and Reset buttons.

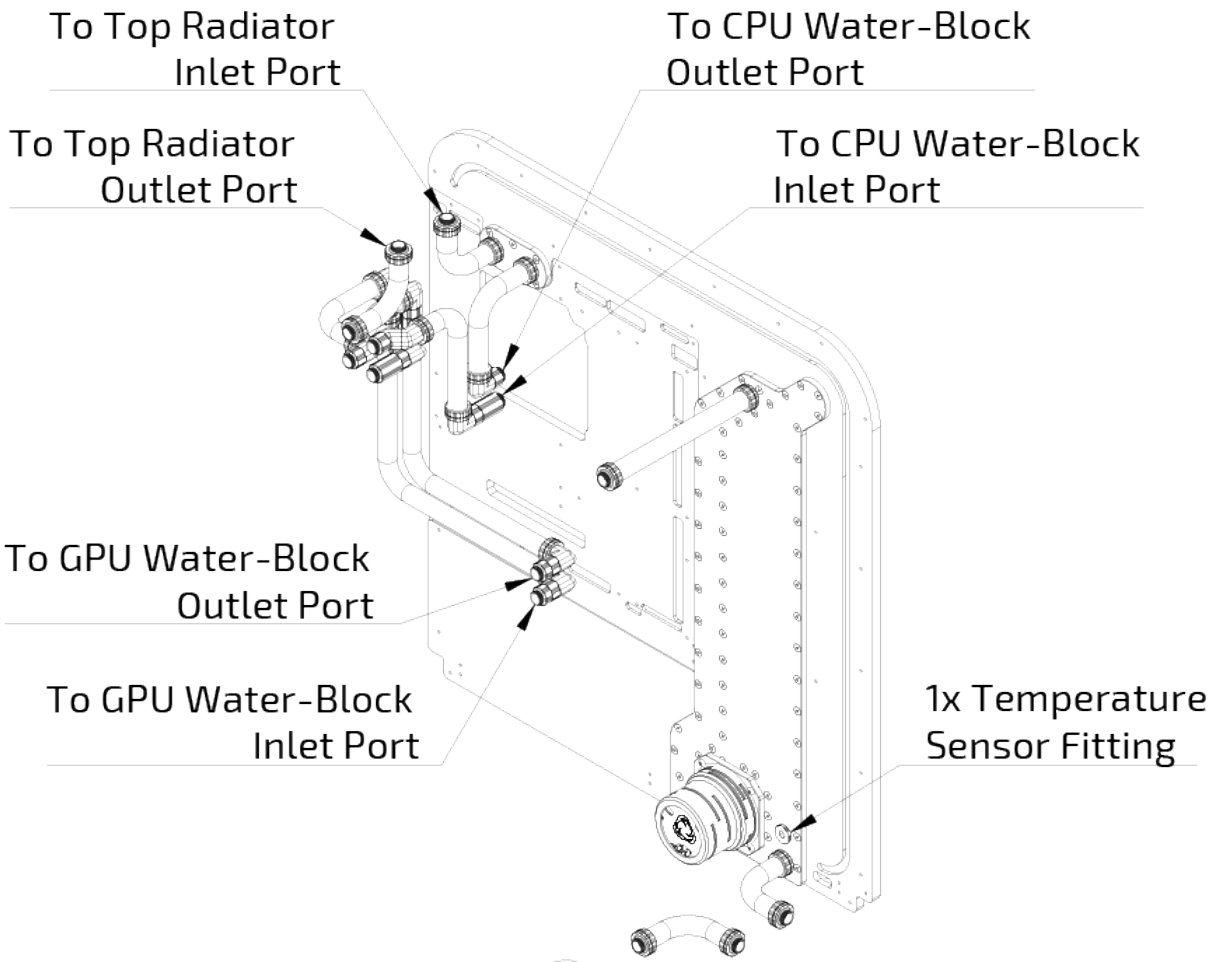
- Connect the power supply's cables to the input connectors on the Dominus PowerBoard. Use as many connections as many are used on the graphics card and motherboard. In general, a 12V2X6 connector equals to 2x PCIe in terms of power delivery and the PowerBoard converts PCIe to 12V2X6 and back. This allows using older power supplies with modern graphics cards that need 12VHPWR or 12V2X6 or vice-versa.
- Connect the 60cm "HRTN" cables to the Horten modules embedded in the Left and Right Side Distribution Plates to the HRTN-PWR and HRTN-RST headers on the PowerBoard.
- Connect the motherboard PWR_BTN and RST_BTN pins from the front panel header to the PowerBoard's POWER and RESET headers on the bottom area of the PCB using the PowerBoard Switch Power and Reset cables.
- Connect the regular Power and Reset buttons from the Top Panel to the PowerBoard's "PWR" and "RST" header in the top area of the PCB.
- Connect ARGB and PWM signals with their appropriate Linking Cables to an Input header.

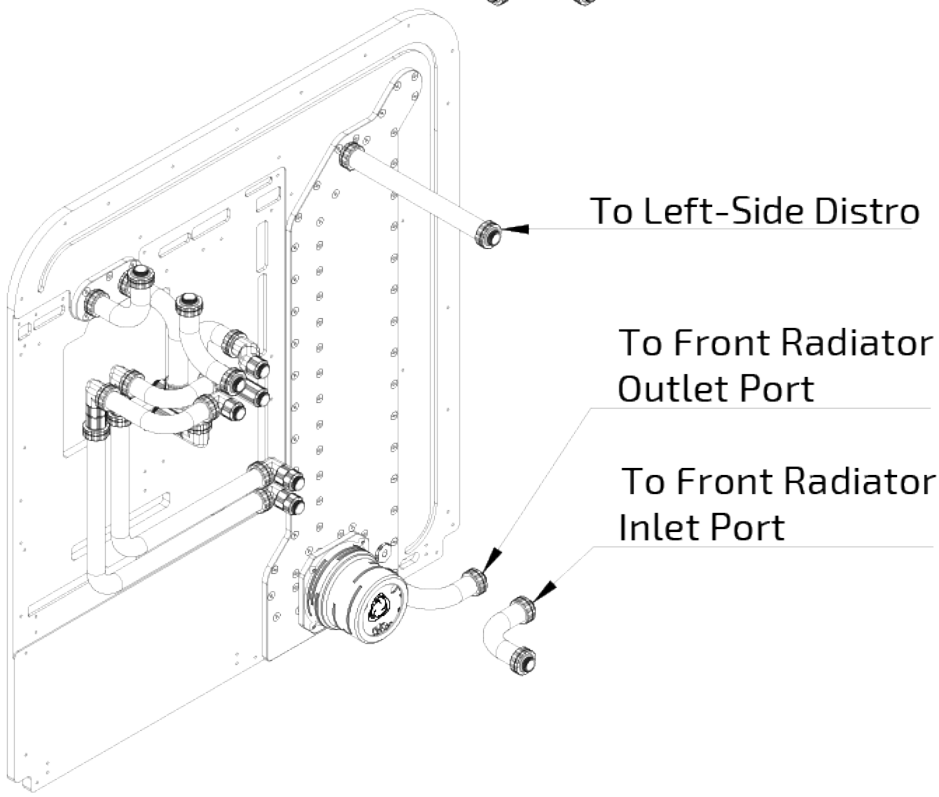
ARGB lighting built into the case is fully daisy-chainable:

- Plug in the +5V Addressable ARGB cable from the Right Side Distribution Plate to a header in the top left corner on the PowerBoard to start the chain.
- Plug in the 3pin white connector hanging out in the bottom right corner of the distro to one of the 3pin white headers on the D5 Pump ARGB Cover PCB in that distro.
- Join the two D5 Pumps' ARGB signal with a 20cm HRTN-to-HRTN cable using any of the 3pin white headers.
- Plug in the 3pin white connector hanging out in the bottom left corner of the Right Side Distribution Plate to one of the 3pin white headers on the D5 Pump ARGB Cover PCB in that distro.
- The chain order should be: PowerBoard→Right Side Distribution Plate ARGB LED strips→Right Side Pump ARGB Cover→ Left Side Pump ARGB Cover → Left Side Distribution Plate ARGB LED strips.

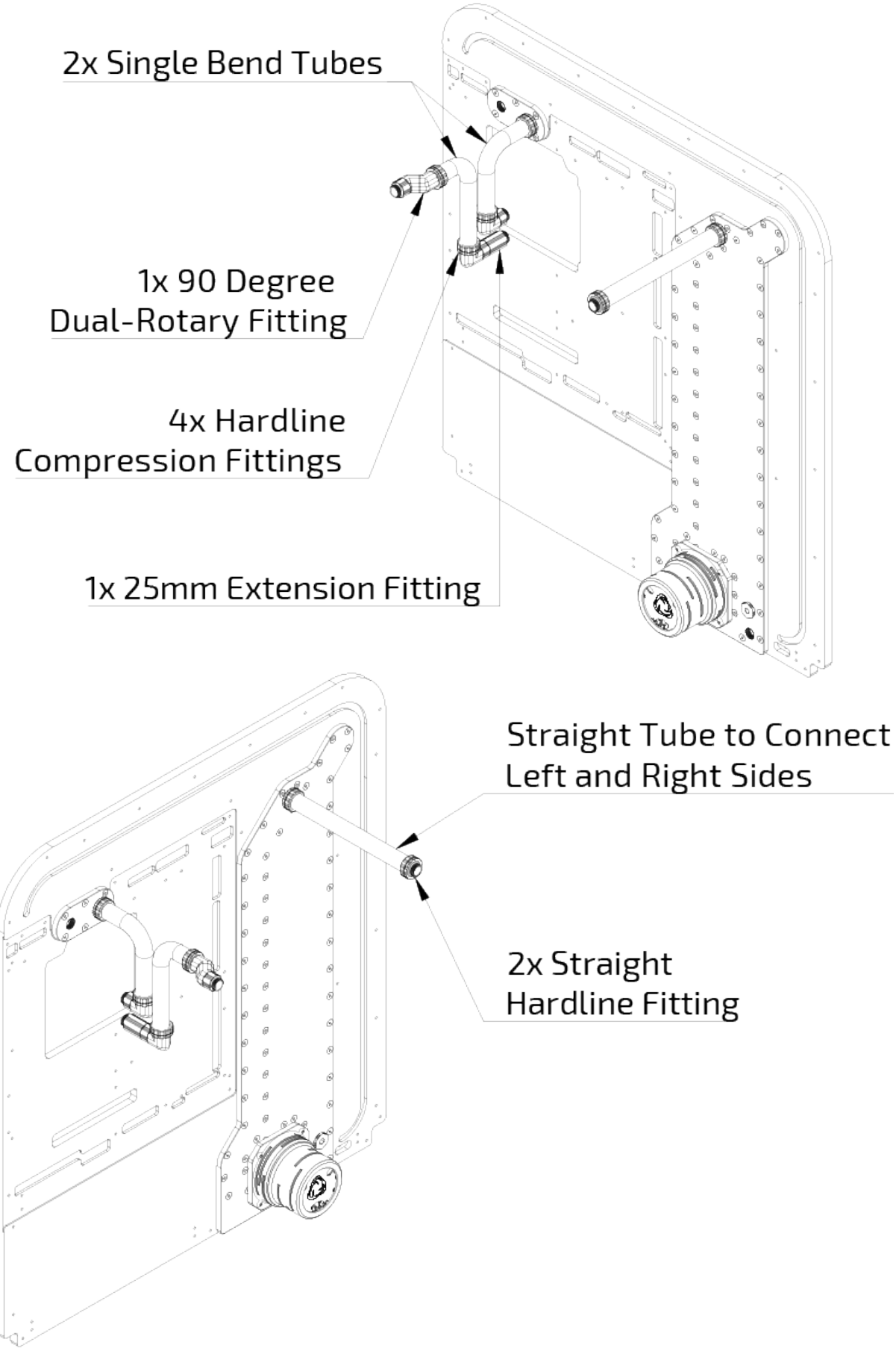
# Dominus Tubing Guide

**Overall Layout**

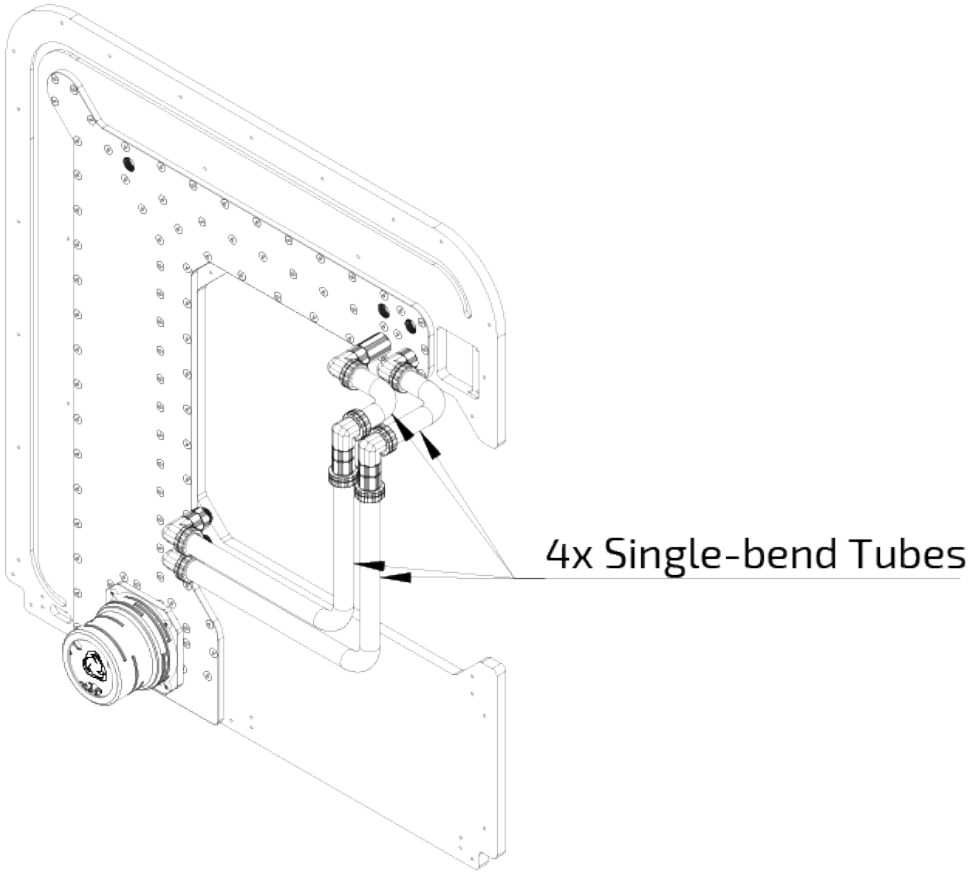


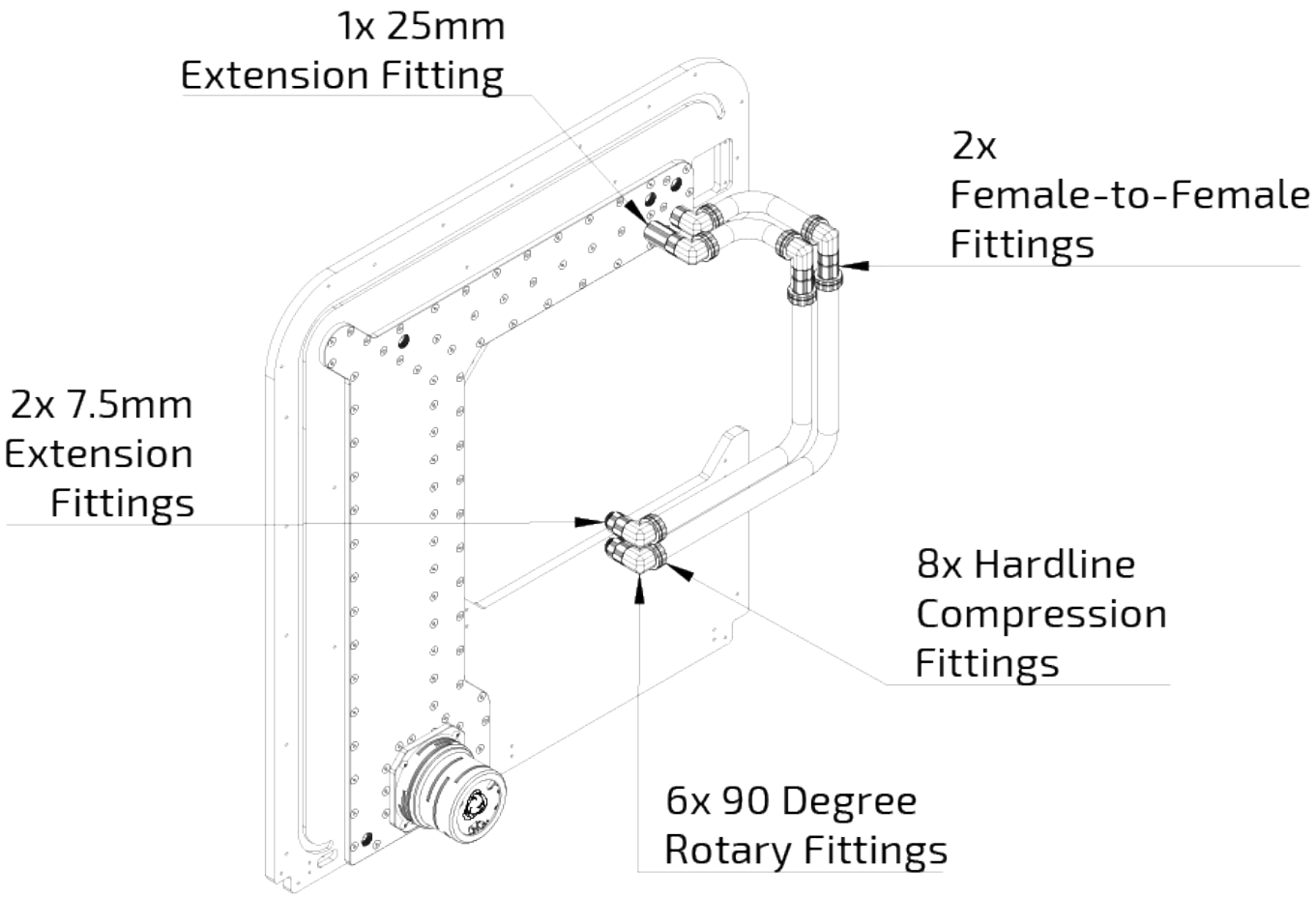



**SC Plasma 3 Water-Block & Distro Connection**

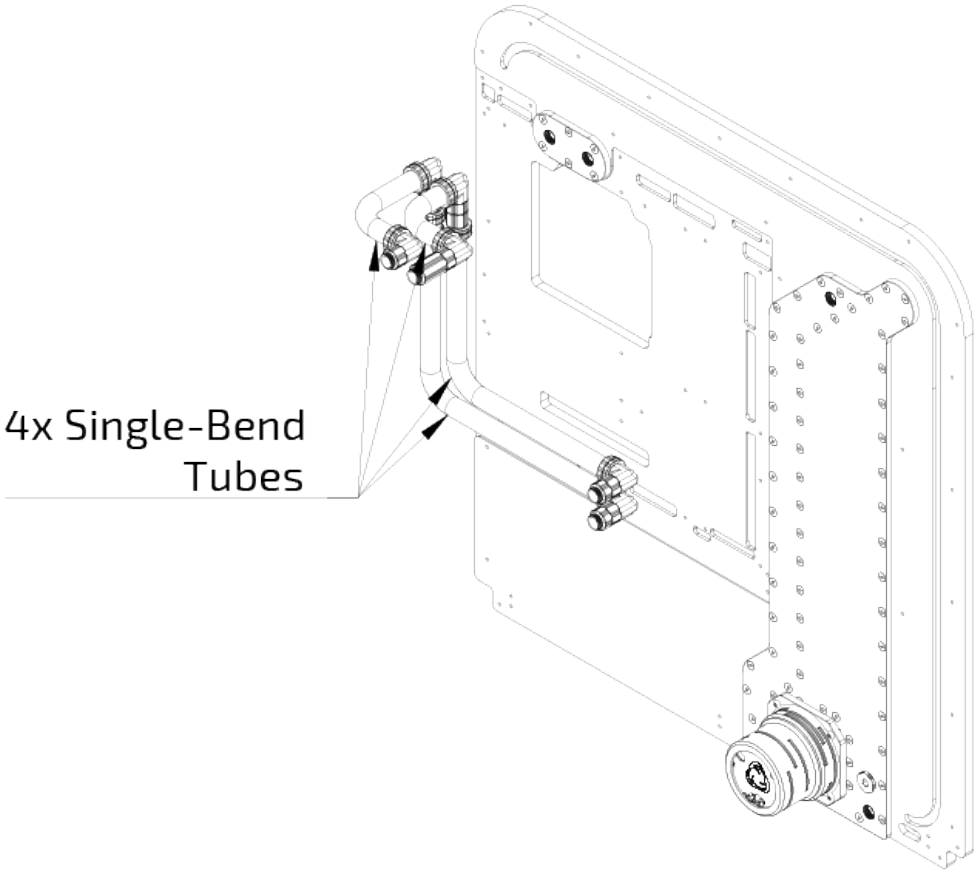


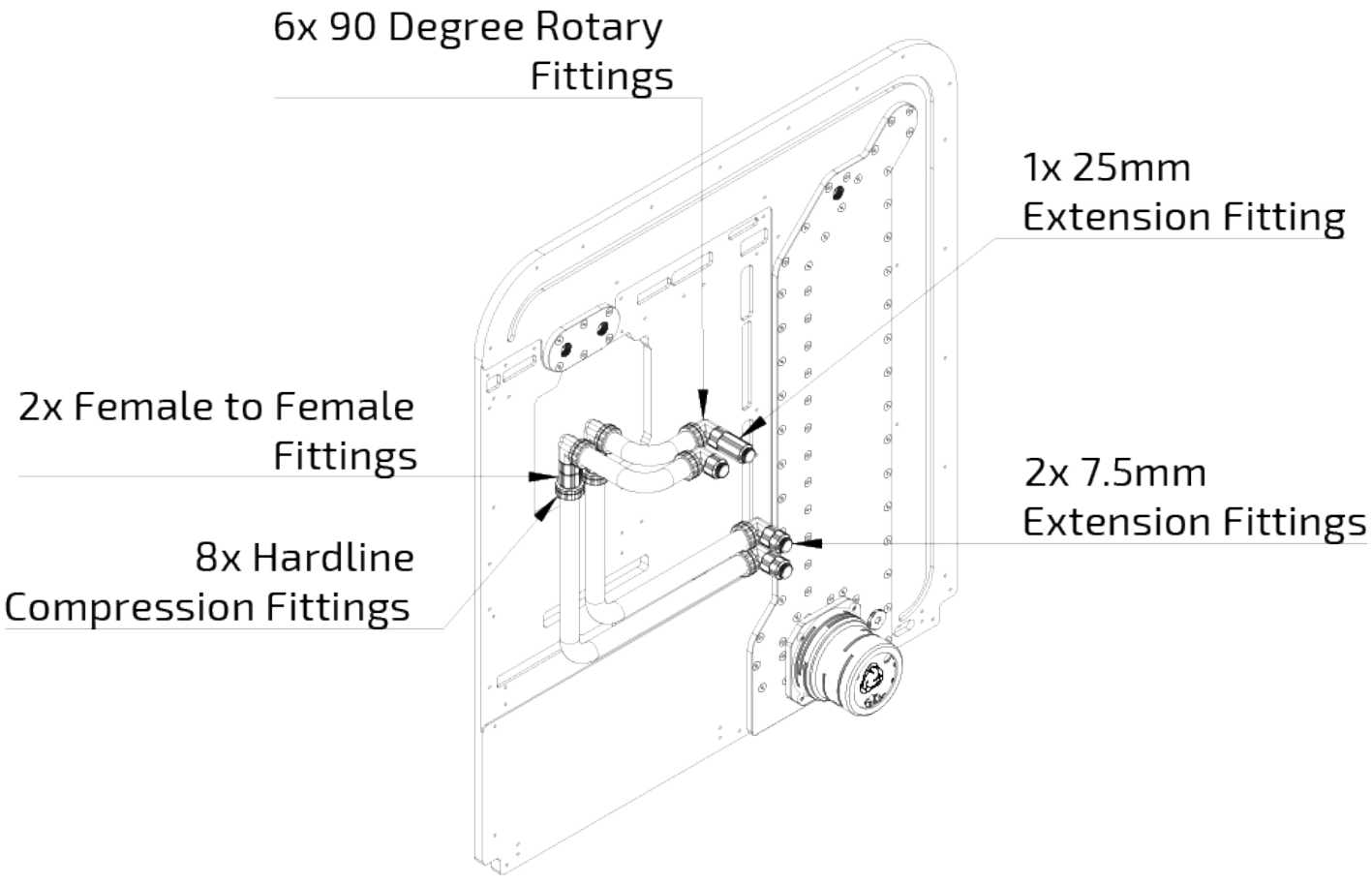
**SC 5090 Astral Water-Block (Left-Side View)**



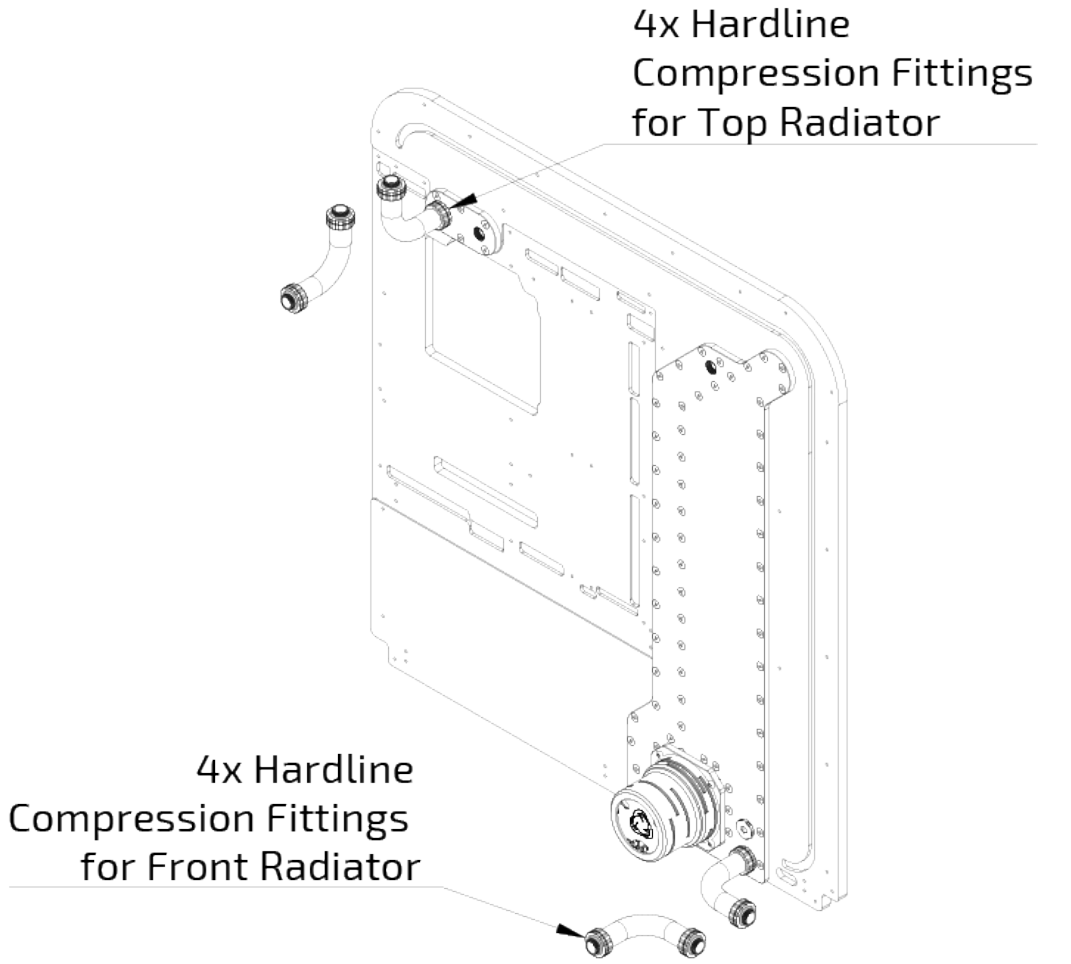



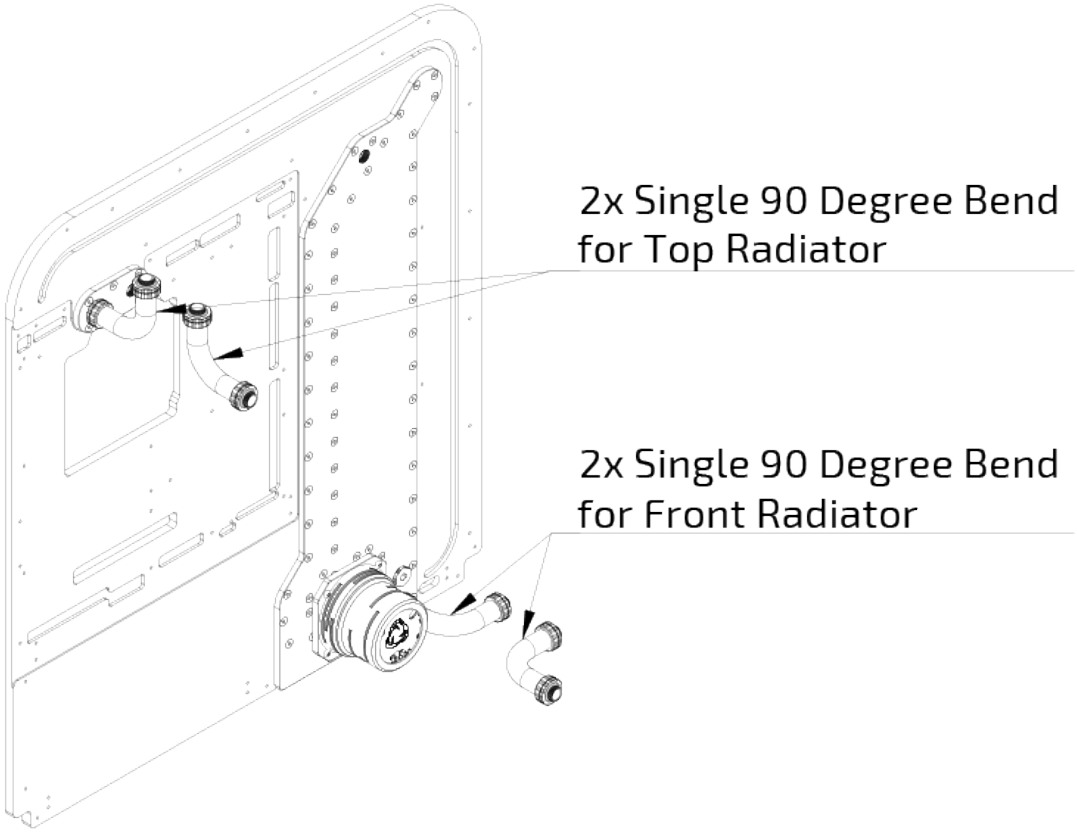
**SC 5090 Astral Water-Block (Right-Side View)**



**Radiators**


4x Hardline
Compression Fittings
for Top Radiator
4x Hardline
Compression Fittings
for Front Radiator


2x Single 90 Degree Bend
for Top Radiator
2x Single 90 Degree Bend
for Front Radiator