



**DB4**  
GPU KIT

## Introduction

The GPU cooling kit was designed to bring silent performance/gaming to the DB4 by allowing a discreet graphics card to be passively cooled using one of the side panels. It comprises of a GPU mount, heat sink mount, heat pipes, universal bracket and VRAM coolers, everything needed to cool a graphics card without the need of a fan. The GPU mount features adjustable arms to accommodate most graphic card variations, and combined with the flexible heat sink mounting design of the DB4, allows for virtually any compact graphics card to be used.

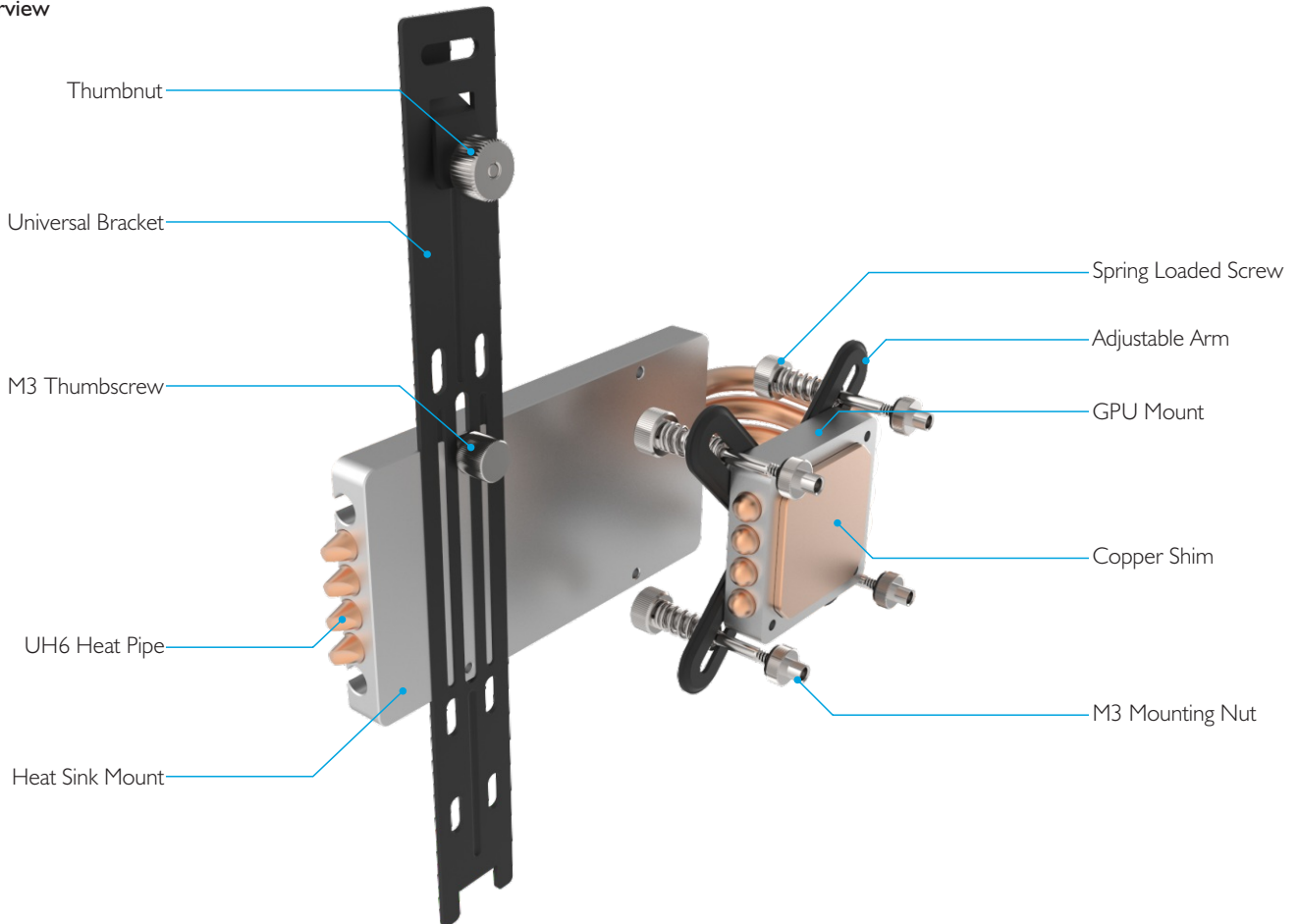
## Kit Contents

GPU Mount	x 1	Heat Sink Mount	x 1
Copper Shim	x 1	VRAM Heat Sink	x 8
Spring Loaded Screw	x 4	Universal Bracket	x 1
M3 Mounting Nut	x 4	M3x6 Thumbscrew	x 1
UH4 Heat Pipe	x 4	Thermal Paste	x 2

## Specification

Recommended GPU TDP	65W, 75W Max
Heat Pipe Diameter	6mm
Heat Pipe Rating	30-35W
Heat Pipe Length	225mm

## Kit Overview

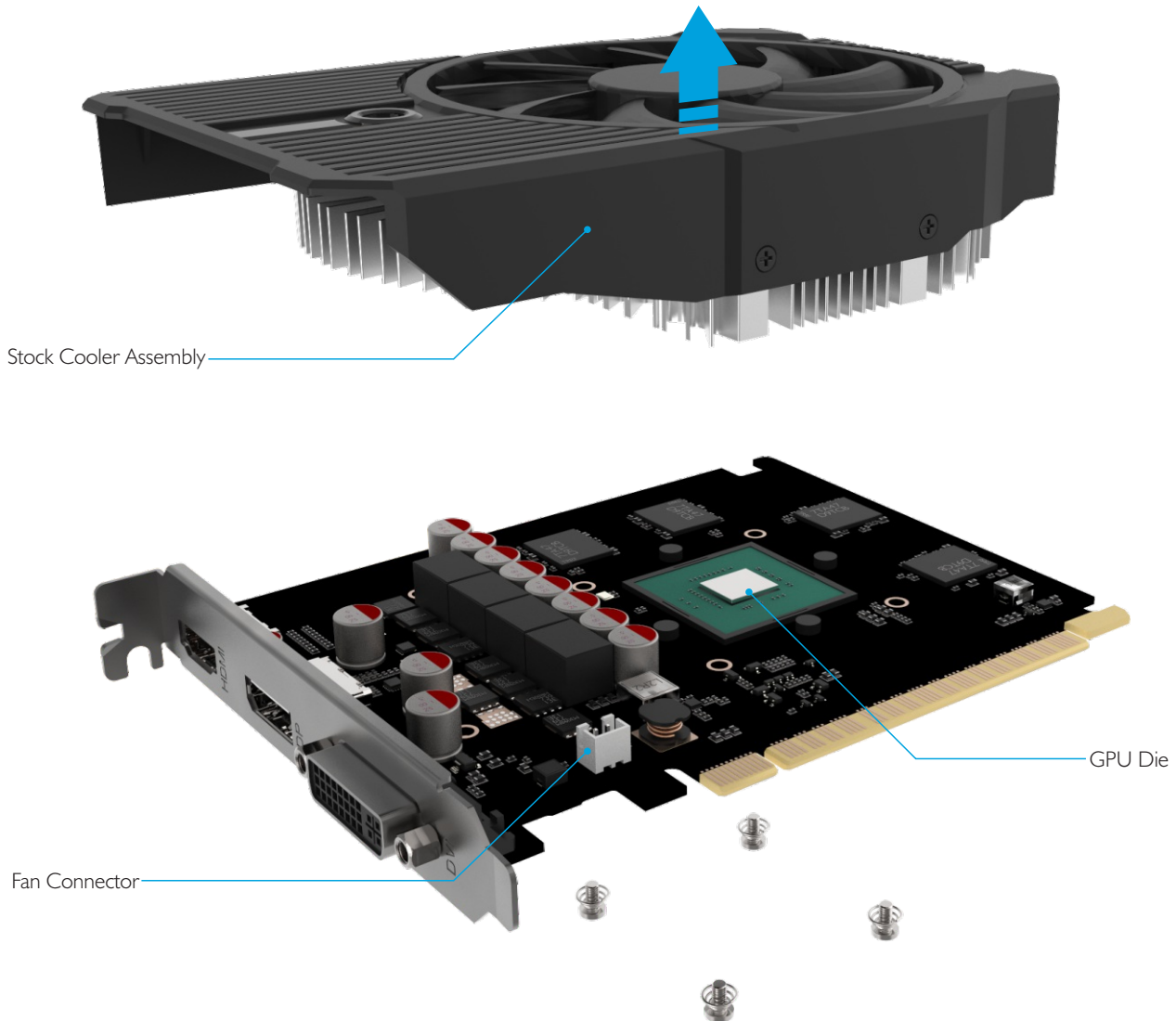


## Prepare Graphics Card for Installation

Before you can attach the DB4 GPU cooler to the graphics card, you will need to remove the existing cooler. The exact mounting mechanism is going to vary from card to card, but in general the stock cooler will be attached to the card with 4 screws that are accessed from the back of the card and screw directly to the cooler.

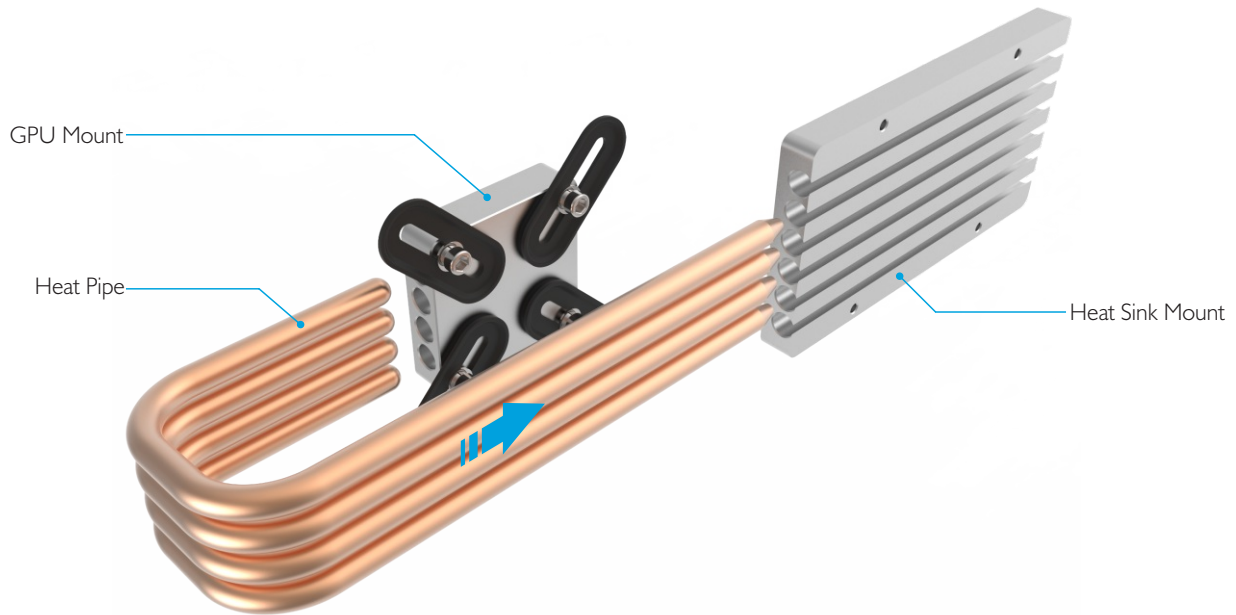
Note that removing the stock cooler might invalidate any warranty, so please consider this before proceeding. Remove all 4 screws in order to release the cooler then carefully pry it away from the card. The fan connector should also be disconnected in order to fully remove the stock cooler assembly.

With the stock cooler removed, you can now clean any residual thermal paste from the GPU in preparation for mounting the DB4 GPU cooler.

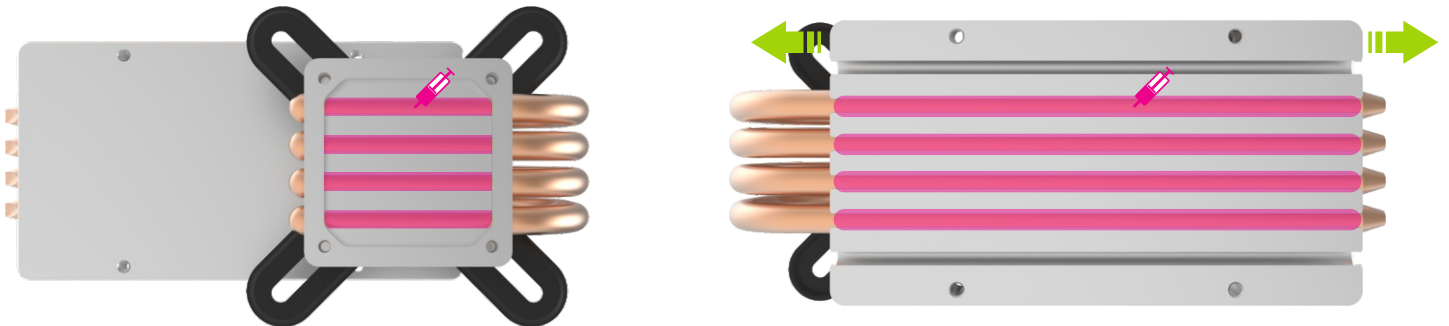


## Assemble the GPU Cooler Assembly

The kit is supplied disassembled for shipping, so the CPU mount, heat sink mount and heat pipes must be assembled prior to attaching them to the graphics card. Slide the heat pipes into the slots in the GPU mount and heat sink mount, the shorter side of the heat pipes into the GPU mount and the longer side into the heat sink mount. We recommend starting with the heat sink mount as there is further for the heat pipes to travel and should they meet any resistance, they can be rotated back and forth to help the insertion. There are 6 slots on the heat sink mount, we recommend using the centre 4 slots. Note that the heat pipes are fragile and excess force will cause them to bend, so please take care when doing this.

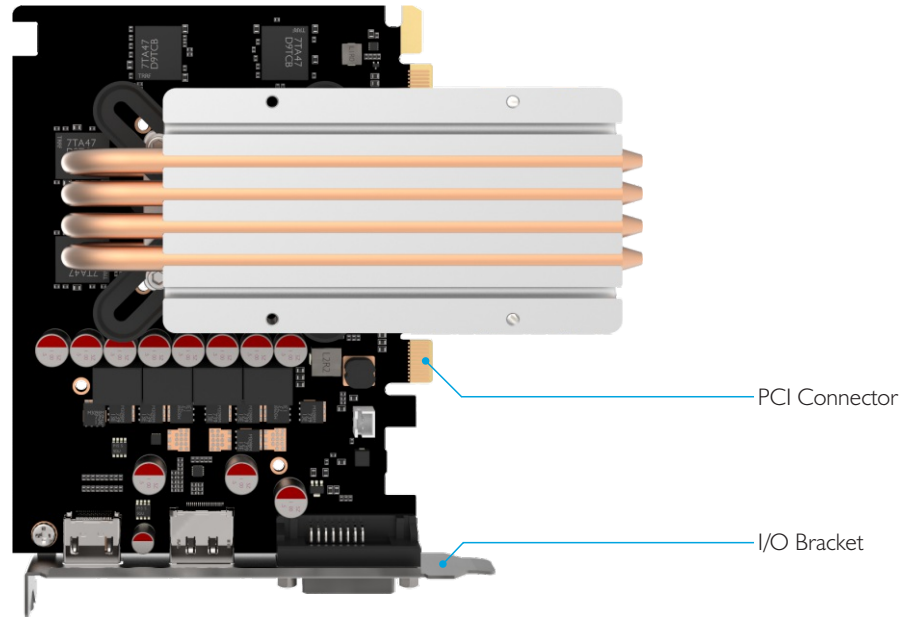


When correctly assembled, the heat pipes should protrude slightly from the GPU mounts as shown below. For the heat sink mount, the depth of insertion will depend on the GPU location in relation to the side panel and will need further adjustment when fitting the assembly to the case. The diagram also highlights where thermal paste will need to be applied in the proceeding steps.

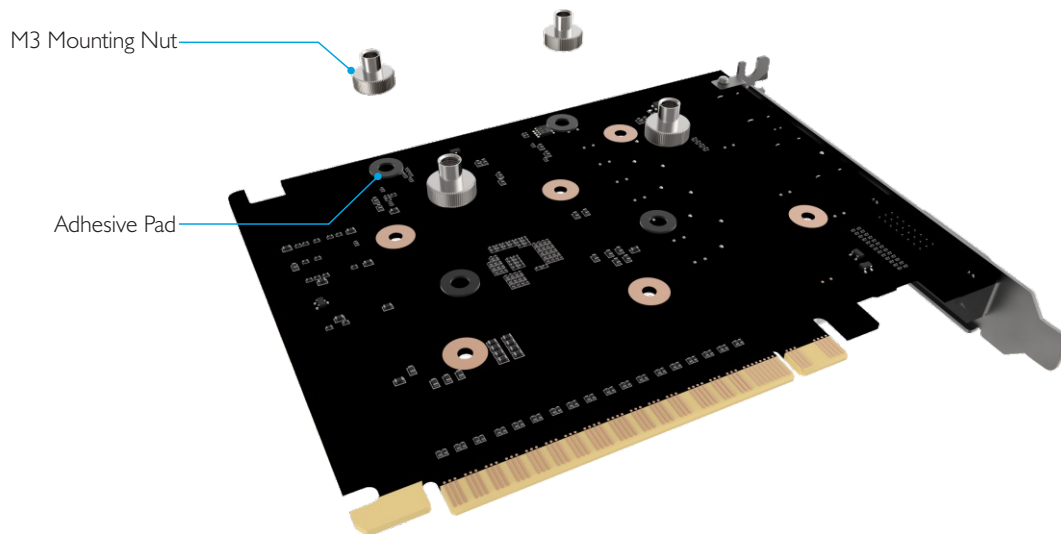


## Prepare to Fit the GPU Cooler Assembly

Before fitting the GPU cooler assembly, it is important to determine the correct orientation so that when the graphics card is fitted into the DB4, the heat pipes run horizontally. The diagram below shows the correct orientation with the heat pipes running parallel to the card I/O bracket and in the direction of the PCI connector.



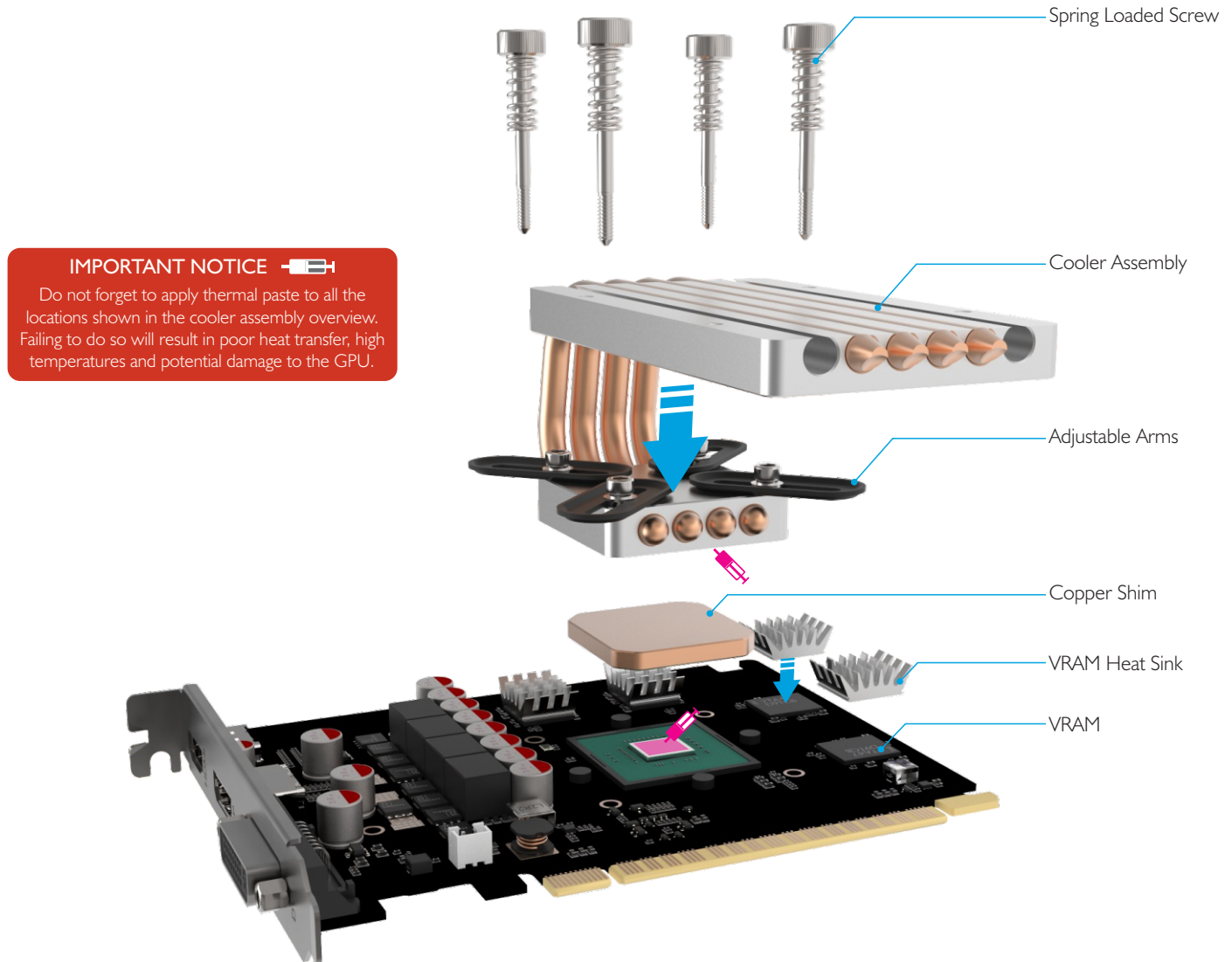
The GPU cooler secures to the graphics card using 4 spring loaded screws which require mounting nuts to be attached to the back side of the card. The nuts are supplied with double sided adhesive pads which attach the nuts to the card. Locate the same holes used to mount the stock cooler and stick the nuts to them insuring they align with the holes and that the protruding side faces away from the PCB (in most cases the hole in the PCB will be too small for them to pass).



## Fit the GPU Cooler

Apply thermal paste to the die surface of the GPU and to the exposed area of the heat pipes in the GPU mount. Carefully place the copper shim onto the centre of the GPU then lower the cooler assembly onto the copper shim. The GPU mount arms can be adjusted for irregular hole spacing but in most cases the supplied position will be suitable. Secure the cooler assembly to the graphics card using the 4 spring loaded screws making sure not to over or under tighten them. Typically the correct pressure can be achieved when the tip of the spring screw is flush with the protruding side of the mounting nut.

The kit is also supplied with adhesive miniature heat sinks which are designed to provide additional cooling to components that would otherwise be cooled by the airflow from the fan, specifically the VRAM, but other components can also be cooled. Apply the miniature heat sinks to the VRAM by peeling the protective backing from the back of the heat sink and sticking them directly to the surface of the component.

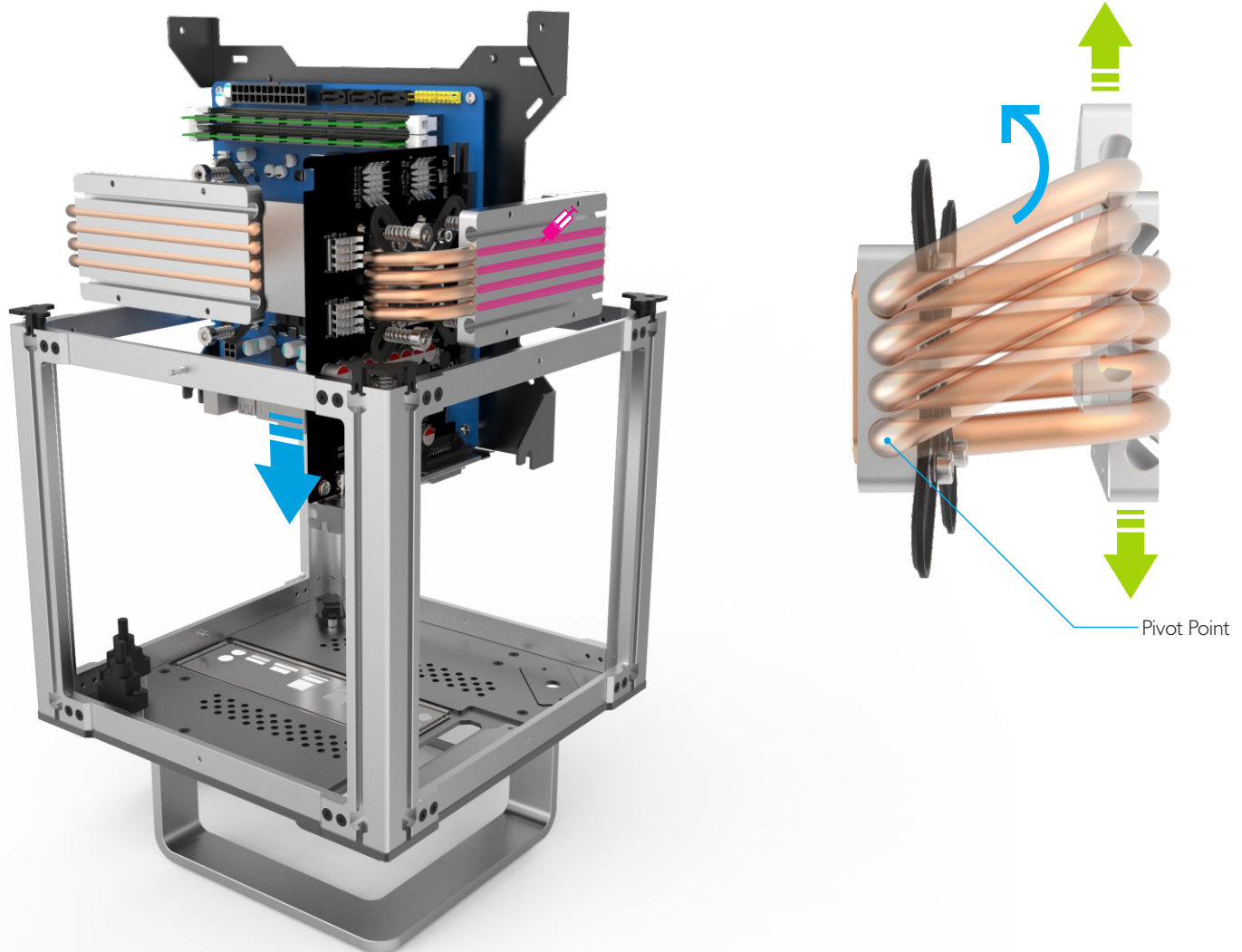


## Install the Graphics Card

For both a new build or to add a graphics card to an existing build, it is recommended to first install the graphics card onto the motherboard then lower the entire assembly into the DB4. The procedure of removing/installing the motherboard tray assembly is covered in the DB4 user guide and should be referred to if you are unsure about any of the steps.

Note that the heat pipes and heat sink mount can pivot/move parallel to the graphics card. This is important when fitting the tray back into the case in order to clear the internal frame and for the final adjustments to ensure there is good contact between the heat sink mount and side panel.

With the graphics card installed on the motherboard, lower the assembly into the DB4 being careful not to damage any of the heat pipes. Lock the motherboard tray in place with the thumbscrews and secure the graphics card bracket to the PCI mount on the bottom of the DB4. Thermal paste can now be applied to the heat sink mount along the exposed area of the heat pipes in preparation for replacing the side panels.





## Attach the Heat Sink Mount to the Side Panel

A key step before replacing the top panel is the attachment and adjustment of the Heat Sink Mount (HSM) to the side panel. As noted earlier it can pivot/move, which changes the space between it and the side panel. For optimal performance it must be correctly positioned to make good contact with the side panel.

With the HSM still in the up position, replace the side panel and lock it in place with the thumbscrew. Push the HSM downwards until it makes firm contact with the side panel. The heat pipes should still have a slight upward angle away from the GPU and be applying pressure on the HSM to force it against the side panel. Fit a universal bracket to the frame making sure it aligns with the holes on the opposite side of where the heat pipes enter the HSM. Note that the HSM can be adjusted to the left or right to ensure the bracket clears the motherboard tray and aligns with the screw hole on the HSM. The bracket will lock the HSM in place and apply additional pressure to ensure positive contact with the side panel. A thumbscrew can also be used to lock the HSM in place and stop it from moving. If done correctly, the gap between the HSM and side panel should be parallel which indicates that even force is being applied along the length of the HSM.

The GPU cooler part of the installation is now complete and the rest of DB4 assembly can be followed as detailed in the main user guide.

