

This product is intended for installation only by expert users. Please consult with a qualified technician for installation. Improper installation may result in damage to your equipment. EK Water Blocks assumes no liability whatsoever, expressed or implied, for the use of these products, nor their installation. The following instructions are subject to change without notice. Please visit our web site at [www.ekwaterblocks.com](http://www.ekwaterblocks.com) for updates. Before installation of this product please read important notice, disclosure and warranty conditions printed on the back of the box.

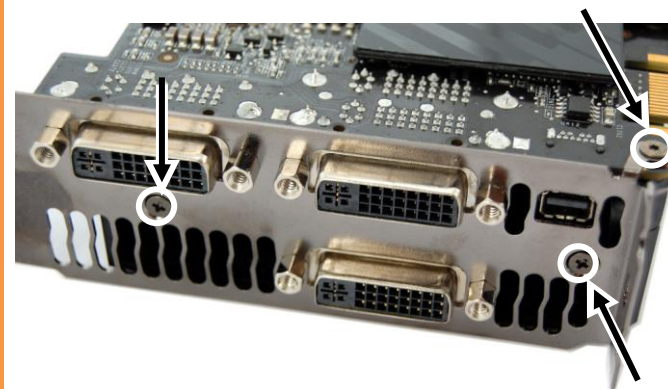
**The barb hose fittings require only a small amount of force to screw them in; otherwise the high flow fittings might break. These fittings do not need to be tightened with much force because the liquid seal is made using o-rings.**

**STEP 1: GENERAL INFORMATION:** Sample picture of NVIDIA GeForce 590 GTX graphics card



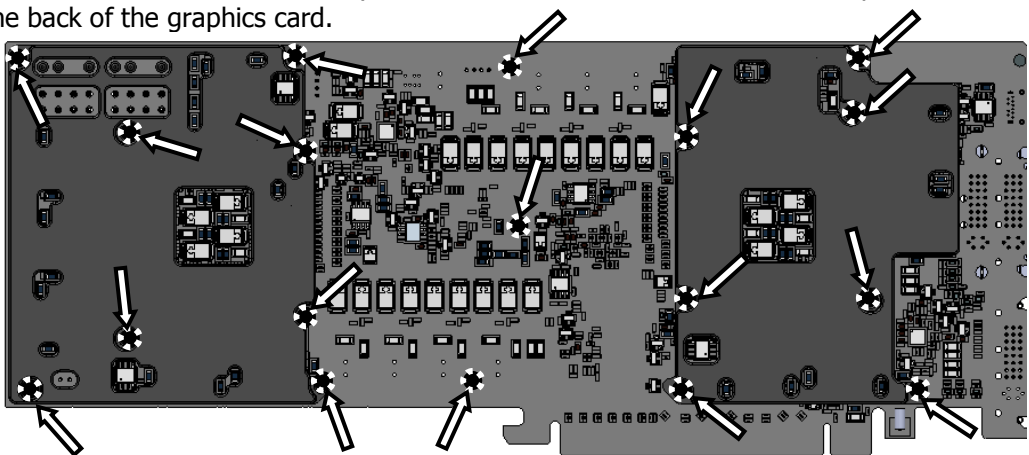
**STEP 2: PREPARING YOUR GRAPHIC CARD:**

1. REMOVING STOCK COOLER: Remove the three (3) encircled screws:



**STEP 2 cont.: PREPARING YOUR GRAPHIC CARD:**

1. cont.. REMOVING STOCK COOLER. Remove all encircled screws also marked with an arrow. All heat sink assembly screws should be removed. There are up to 18 screws on the back of the graphics card.



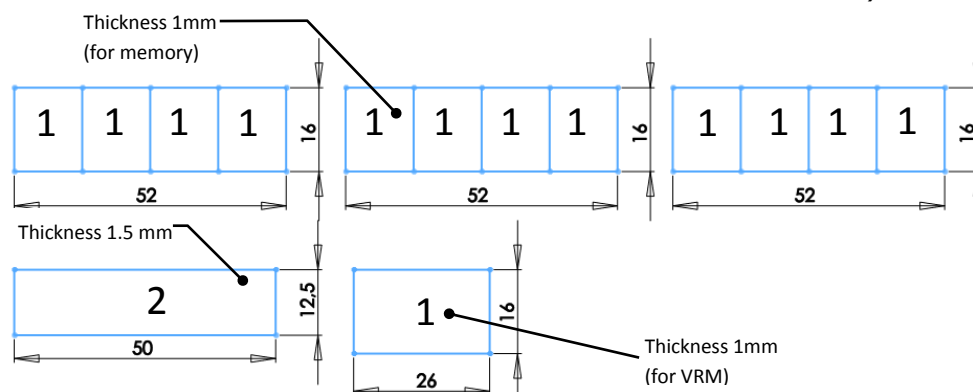
2. CLEANING THE PCB. Carefully detach the original heat sink after removing all fasteners securing it to the board and bracket. Wipe off the remains (by using non-abrasive cloth or Q-tip, as shown on sample photo) of the original thermal compound until the components and circuit board are completely clean. EKWB does not recommend using any liquids for removing paste.



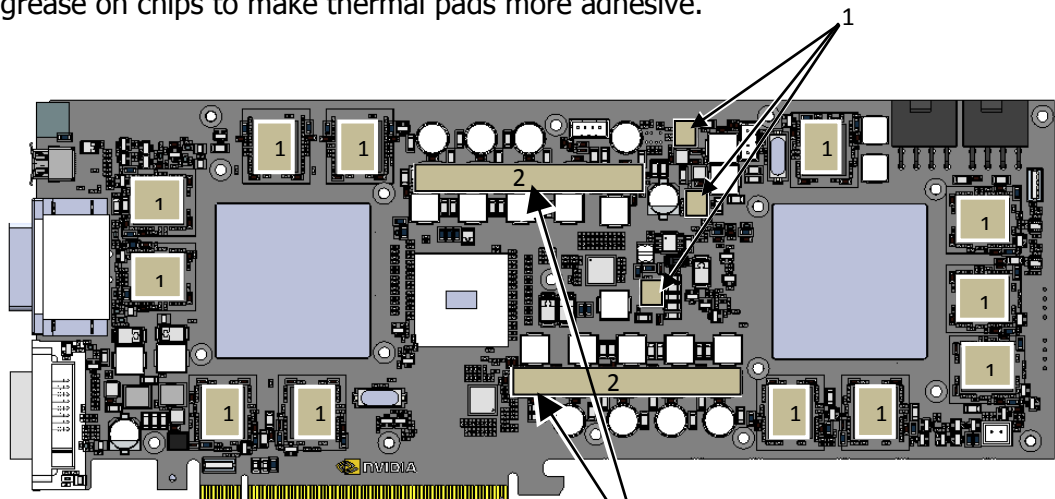
3. APPLYING THERMAL COMPOUND. Apply thermal compound: lightly coat both GPUs and bridge chip with for example Arctic Cooling MX-2™ or MX-4™ thermal. EKWB recommends to apply thermal grease in cross form for best performance (see sample picture). On a smaller chip die such as NF200 apply proportionally smaller amount.



4. CUTTING THERMAL PADS. Your block comes with thermal pads, some of which are already pre-cut. Others have to be cut to smaller chunks in order to cover all the VRM components (PLEASE REMOVE FOIL ON BOTH SIDES OF THERMAL PADS PRIOR TO INSTALLATION. WARNING: DIMENSION BELOW ARE SCALED).

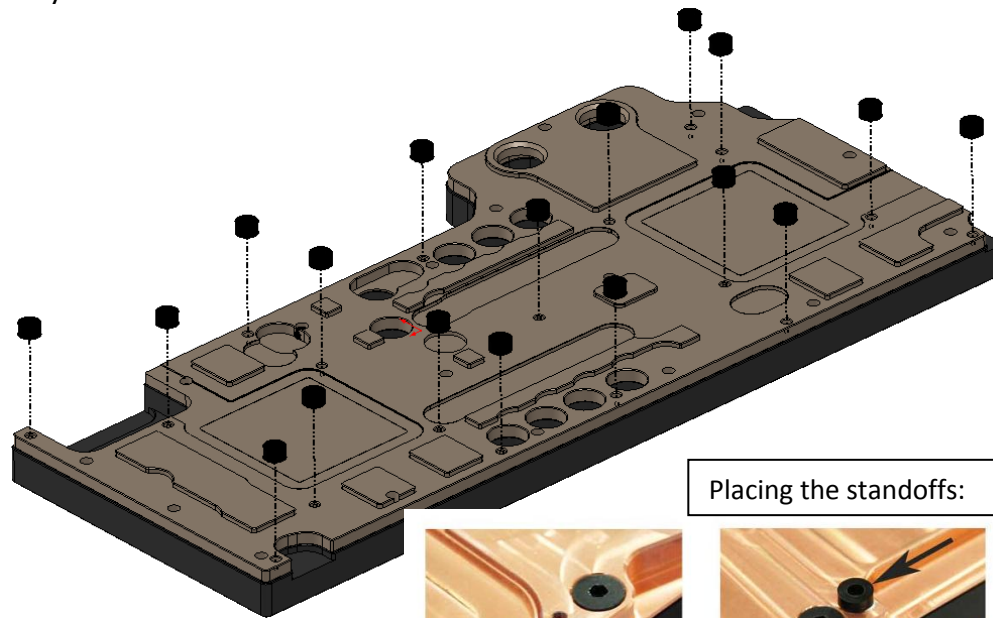


5. PLACING THERMAL PADS ON PCB. Place thermal pads on chips so that numbers on chips match size of thermal pads. Thermal pad number 1, 2 and 3 will have to be cut by user to match all small power regulation chips (EKWB made sure users have more than enough pads to cover all surfaces that need to be covered to make block fully function). You can also use small drop of thermal grease on chips to make thermal pads more adhesive.



We highly recommend using small droplets of electrically non-conductive thermal grease over each phase regulator!

6. PLACING STANDOFFS ON BLOCK. Standoffs are obligatory to make this block fully functional. Please use small amount of thermal grease on standoffs and glue them so they are concentric with mounting holes. Once they are stuck to block be careful not to move them.



Placing the standoffs:

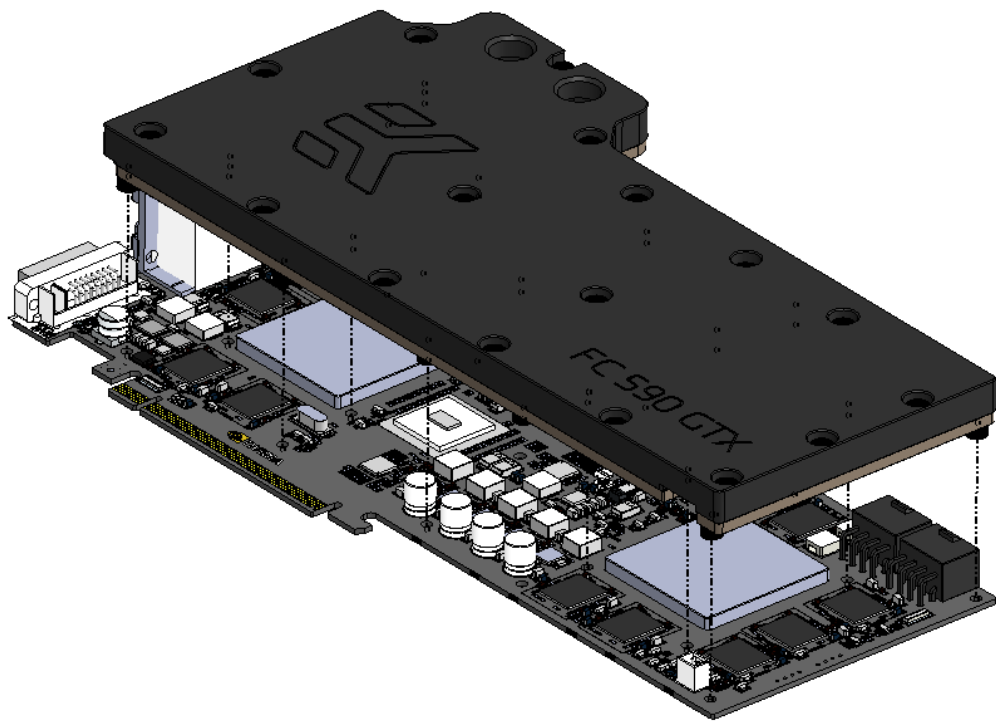


Apply little thermal grease near the threads in copper.

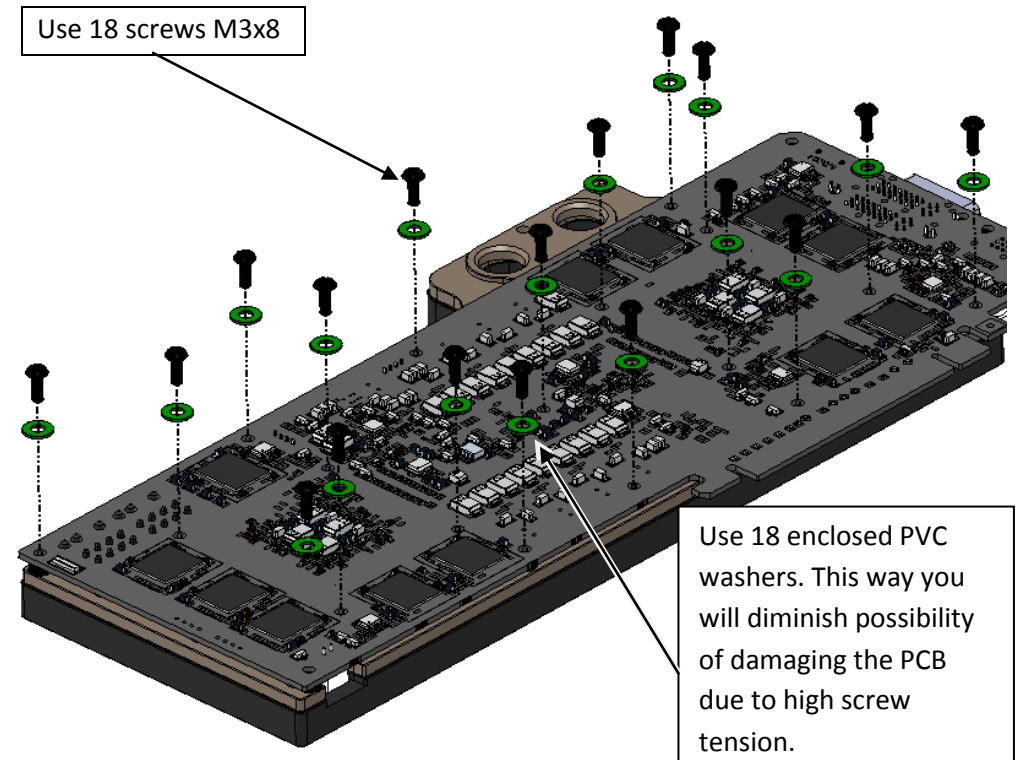


Then put the Stand-offs in center of the threads. Thermal grease helps that the stand-offs dont move while installing.

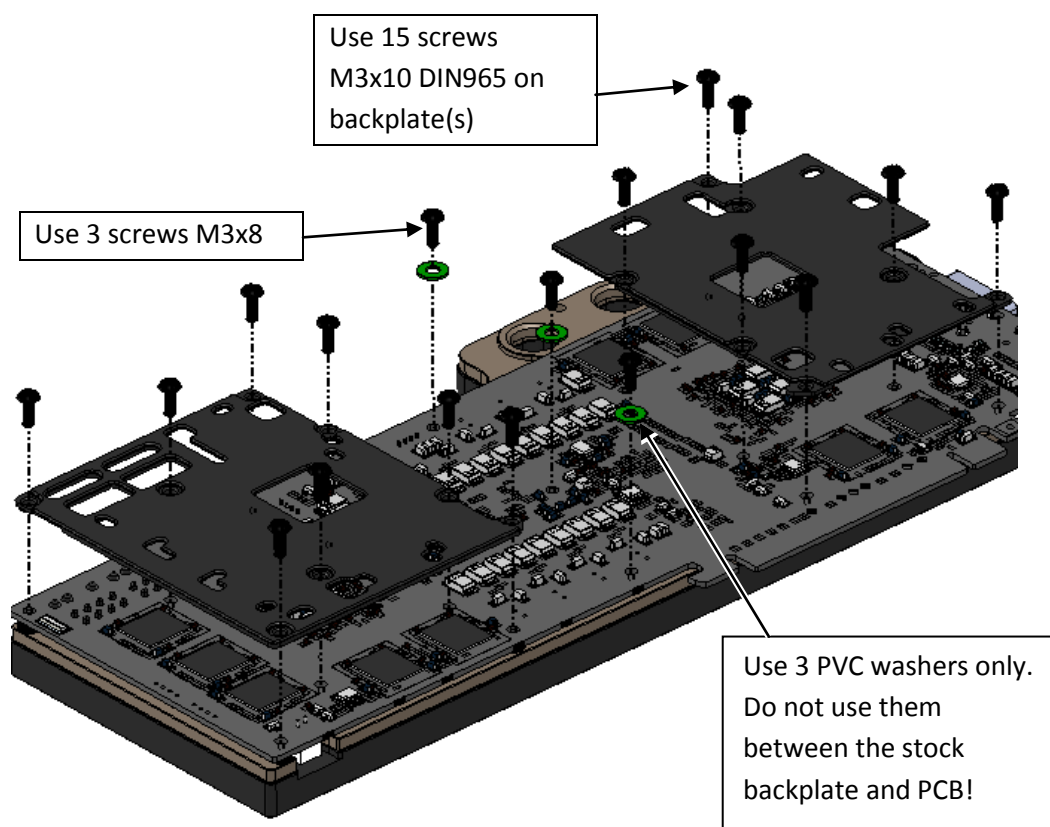
7. PLACING BLOCK TO GRAPHIC CARD. During this process please make sure you align holes on PCB with holes on block. Also pay attention not to use too much force by pressing block down to PCB. Chip dies are prone to cracking.



8. ATTACHING BLOCK TO GRAPHIC CARD. By using Philips screwdriver screw in eighteen (18) enclosed M3x8 screws. EKWB recommends start screwing the screws around the GPU core and continue outwards. This is the recommended mounting method!



8. ALTERNATIVE MOUNTING. By using Philips screwdriver screw in three (3) enclosed M3x8 screws together with three (3) enclosed PVC washers. Then mount the two original backplates using the fifteen (15) enclosed M3x10 DIN965 screws. The screw openings on the original backplates are a tight fit therefore you may need to expand them using the electric drill and Ø3mm metal drill bit. **This is not the recommended method** and is for expert users only. EKWB recommends start screwing the screws around the GPU core and continue outwards. It is highly recommended using EK-590GTX backplate with this block, as backplate serves as retention plate as well.

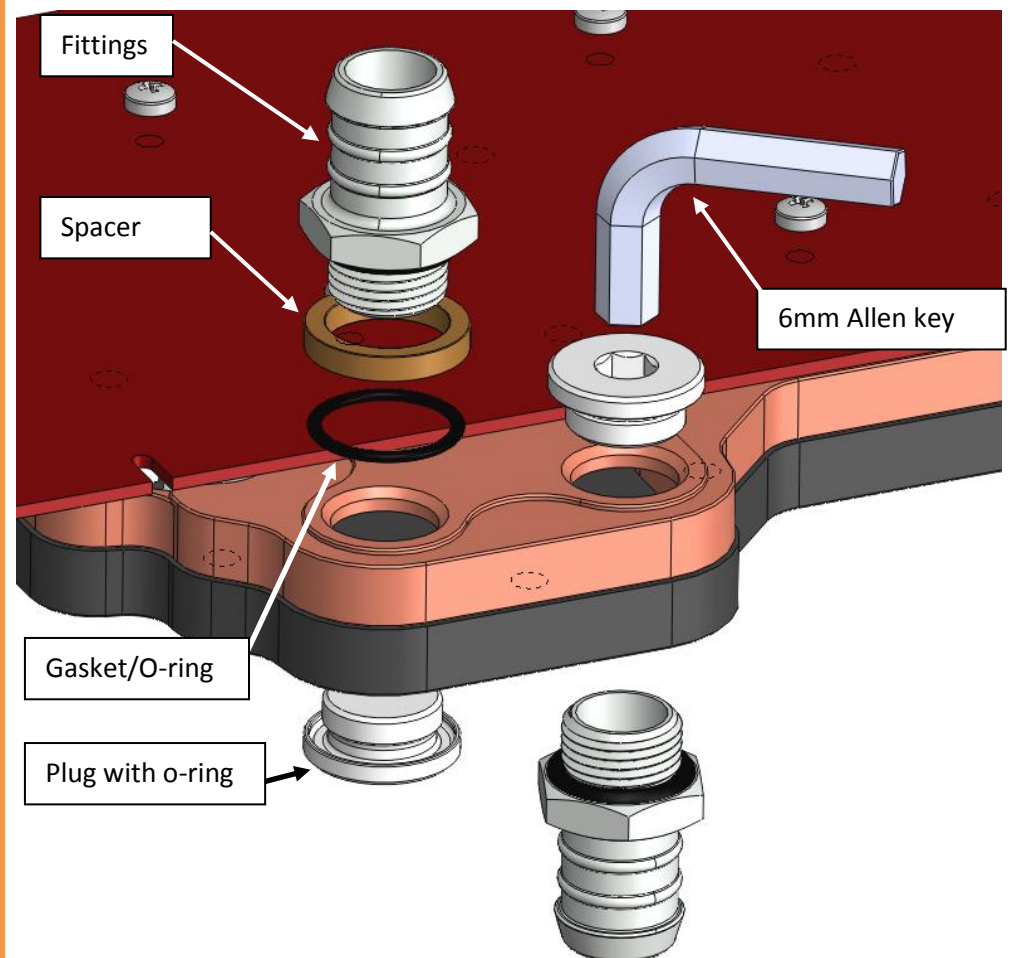


### STEP 3: CHECKING FOR CONTACTS

Temporarily remove the water blocks to check for uniform surface contact between the block and the components. Note the pattern of contact on a piece of paper. Then repeat substeps 5 and 8 to reattach the block applying more or less pressure to the areas where you have found it necessary.

### STEP 4: POSITIONING FITTINGS

Please use spacer on copper base (see sample picture). Screw in the fittings and plugs (please use spacers only on copper base), attach the liquid cooling tubes and connect the water-block(s) into the cooling circuit. EKWB recommends using high flow fittings with the EK-FC590 GTX series water blocks. To ensure that the tubes are securely attached to the barb/fittings, please use hose clamps or an appropriate substitute. The use of an algacide is always recommended for any liquid cooling system. You can use any opening as an inlet/outlet port.



### STEP 5: INSERTING CARD IN YOUR PC CASE

Carefully lift your card with installed block and insert it in your PC case. Bear in mind that your card suddenly withstands extra weight thus again be very careful not to bend it or cause any other unneeded moves that might damage your card or block during installation.

### REQUIRED TOOLS AND MOUNTING SCREWS:

