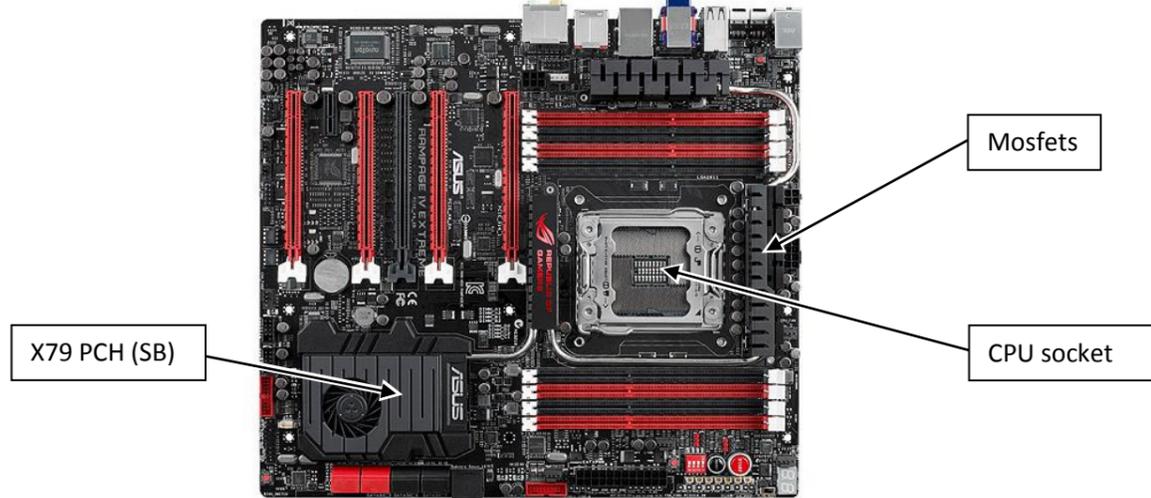




Installation and mounting manual for **EK-FB KIT RE4** water block:

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 for updates. Before installation of this product please read important notice, disclosure and warranty conditions printed on the back of the box or our home page. **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. The use of corrosion inhibitors is always recommended for any liquid cooling system.**

STEP 1: GENERAL INFORMATION Sample photo of ASUS Rampage IV Extreme motherboard

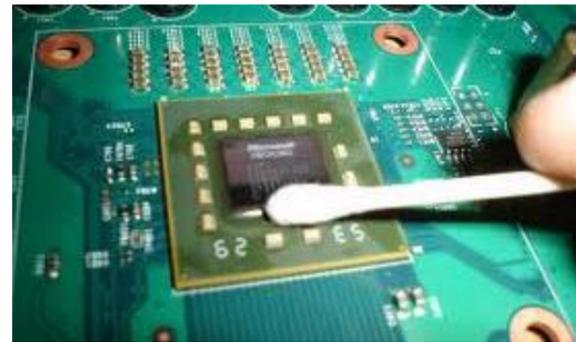


STEP 2: PREPARING YOUR MOTHERBOARD

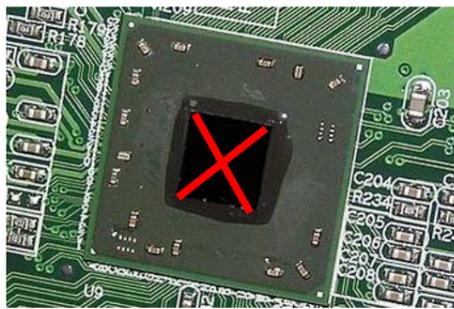
1. REMOVING STOCK COOLER. Remove all encircled screws. There are 11 screws on the back of the motherboard that needs to be removed in order to remove the factory installed SB/MOSFET heatpipe cooling solution.



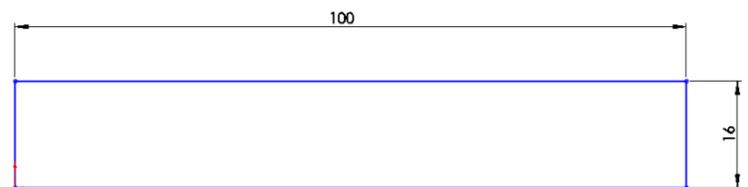
2. CLEANING THE PCB. Carefully detach the original stock cooler after removing **all** screws securing it to the board. Wipe off the remains (by using non-abrasive cloth or *qtip*, as shown on sample photo) of the original thermal compound until the components and circuit board are completely clean. EKWB recommends the use of denatured alcohol for removing TIM leftovers.



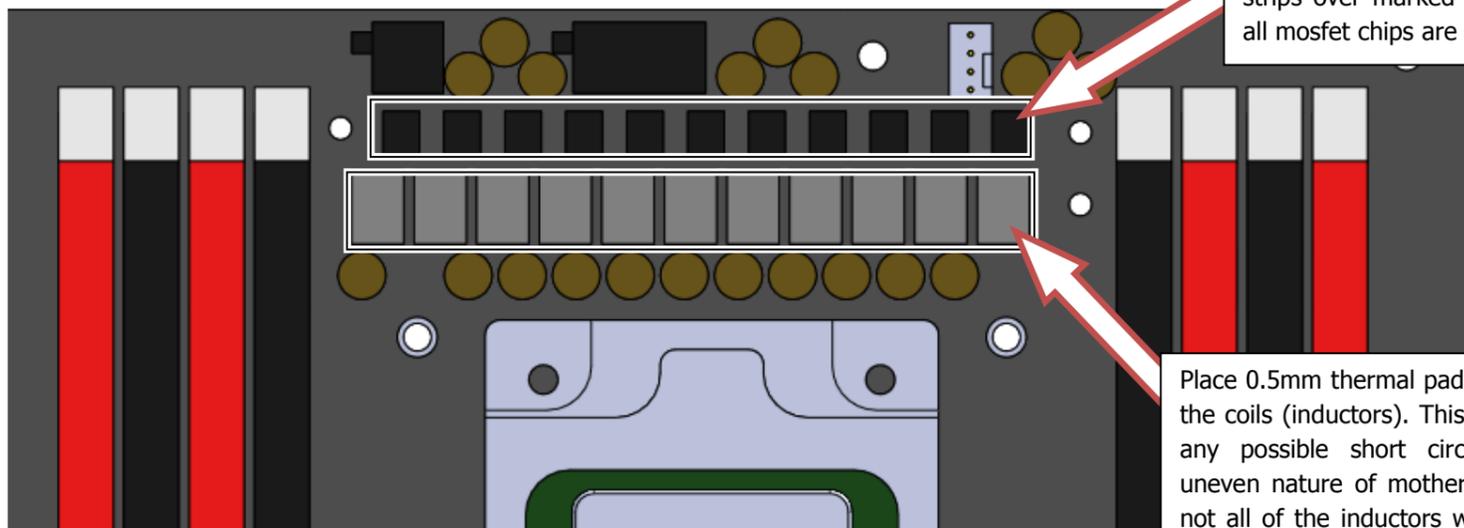
3. APPLYING THERMAL COMPOUND. Apply thermal compound: lightly coat the *Intel X79 PCH (SB)* with electrically non-conductive thermal grease - for example Arctic Cooling MX-2™ or MX-4™. EKWB recommends to apply thermal grease in cross form for best performance (see sample picture).



4. CUTTING THERMAL PADS. Your block comes with one thermal pads (100x16x0.5mm) which needs to be trimmed in order to fit the voltage regulation area (VRM/MOSFET) on the motherboard's circuit board. **WARNING: DIMENSIONS ON PICTURES BELOW ARE SCALED!**



5. PLACING THERMAL PADS ON MOTHERBOARD. Place thermal pads you cut on PCB as shown on picture below (PLEASE REMOVE THE PROTECTIVE FOIL FROM BOTH SIDES OF THE THERMAL PADS PRIOR TO INSTALLATION). EK recommends using small drops of electrically non-conductive (for example: Arctic Cooling MX-2™ or MX-4™) thermal grease on each phase regulator (that is being covered with thermal pad; see picture below) in order to even further improve the thermal performance of the EK-FB KIT RE4 series water block.

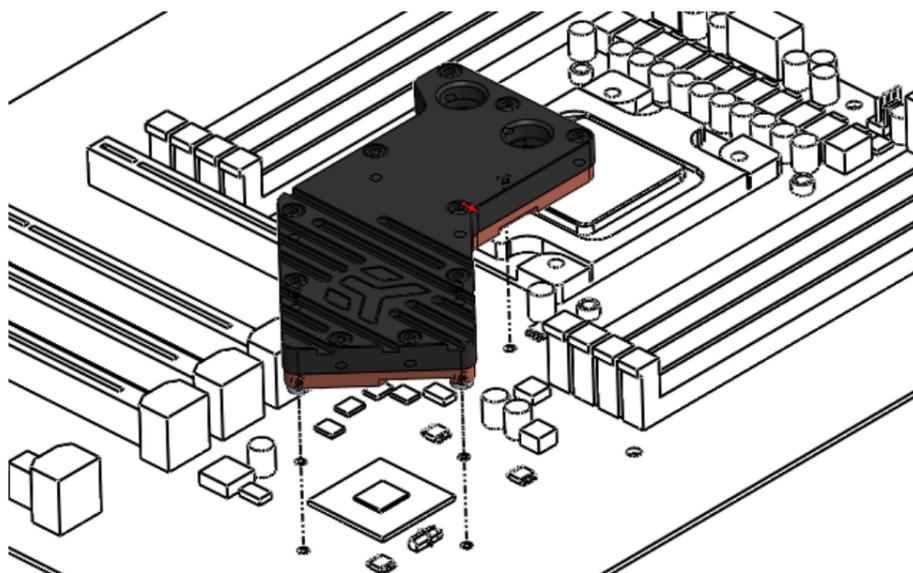


Place 0.5mm thermal pads in larger strips over marked area and make sure all mosfet chips are covered.

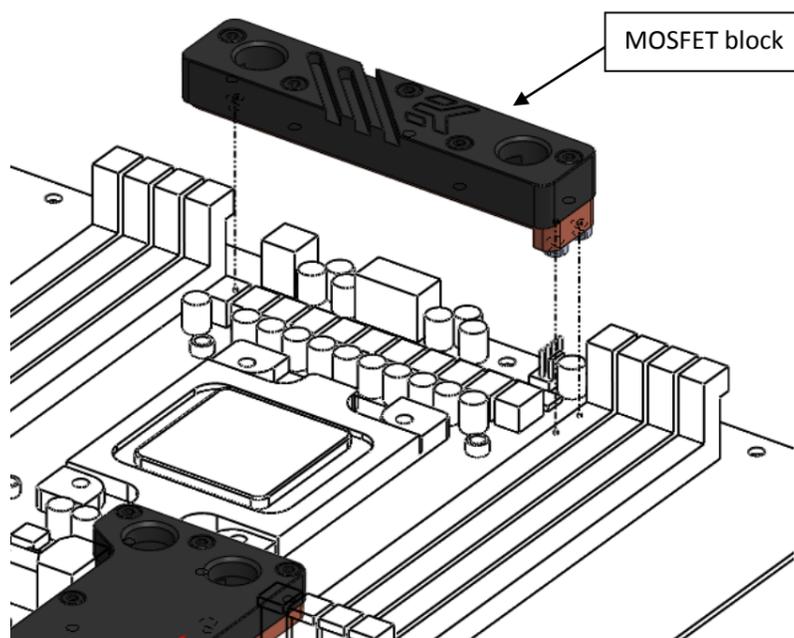
Place 0.5mm thermal pads in larger strips over the coils (inductors). This is merely to prevent any possible short circuiting. Due to the uneven nature of motherboard manufacturing not all of the inductors will have contact with the thermal pad. This is normal.

STEP 3: PREPARING YOUR WATER BLOCK

1. **PLACING SB BLOCK ON MOTHERBOARD.** Place the SB part of the water block with preinstalled 2.1mm standoffs kit gently to the motherboard or vice versa. Make sure that mounting holes are aligned. Skip to STEP 4 on how to fasten the waterblock to the motherboard using the enclosed screws and washers.



2. **PLACING MOSFET BLOCK ON MOTHERBOARD.** Place the waterblock gently to the motherboard or vice versa. Make sure that mounting holes are aligned.



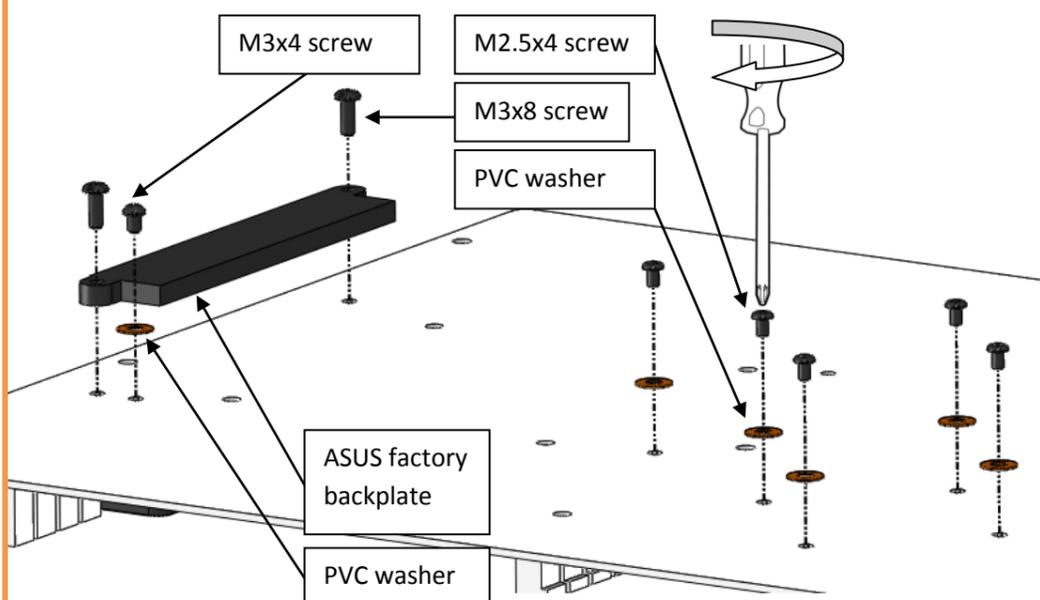
STEP 4: ATTACHING BLOCK TO MOTHERBOARD

Prior to fastening the screws please make sure the mounting holes on the motherboard's circuit board are aligned with water block.

A) **SB block:** Use M2.5x4 DIN7985 and washers. Tighten the screws, beginning near the southbridge, and continue evenly outwards. Do not use excessive force when tightening the screws!

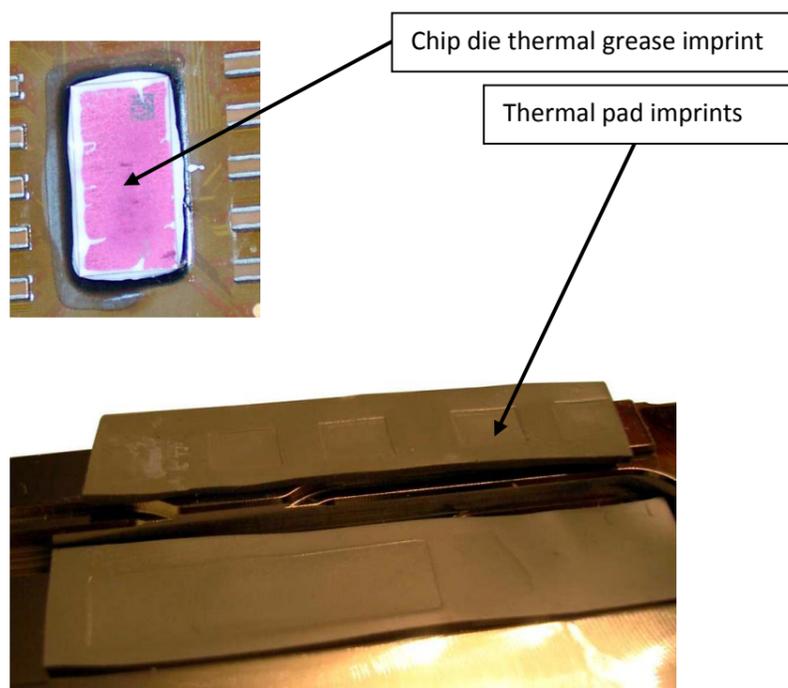
B) **MOSFET block:** Use ASUS factory ("stock") backplate, two M3x8, one M3x4 DIN7985 screws and one washer. Tighten the M3x8 screws going through the backplate first and then the remaining M3x4. Make sure you use enclosed washer underneath this screw.

Use the enclosed screws and washers as shown in picture below:



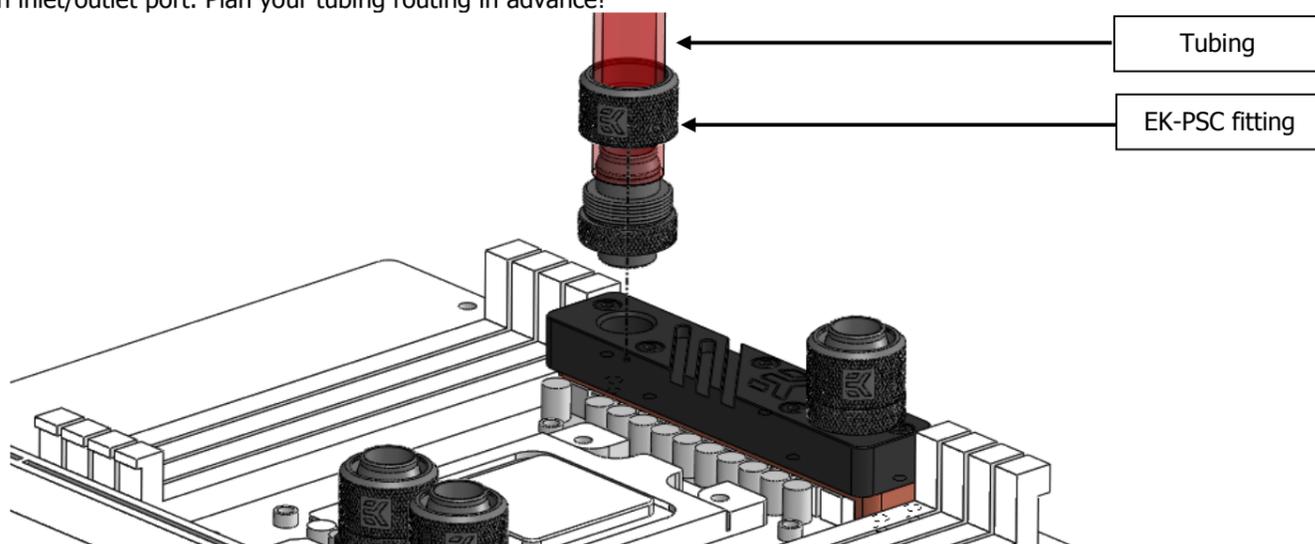
STEP 5: CHECKING FOR CONTACTS

Temporarily remove the water block to check for uniform surface contact between the block and the components. Note the pattern of contact on a piece of paper. Then repeat steps 3 and 4 to reattach the block applying more or less pressure to the areas where you have found it necessary. Note that there is no need for perfect thermal pad imprint on the inductors/coils (mentioned in STEP2)



6. POSITIONING FITTINGS AND CONNECTING TO WATER CIRCUIT

Attach the liquid cooling tubes and connect the water-block(s) into the cooling circuit. EKWB recommends using EK-PSC compression fittings with the EK-FB KIT RE4 series water block. You can use any opening as an inlet/outlet port. Plan your tubing routing in advance!



REQUIRED TOOLS AND MOUNTING SCREWS:



scissors



philips screwdriver



thermal grease



Screws: 5x M2.5x4, 2x M3x8, 1x M3x4 (DIN7985)



6x PVC washers