EK-SF3D Inflection Point EVO –LGA-115x
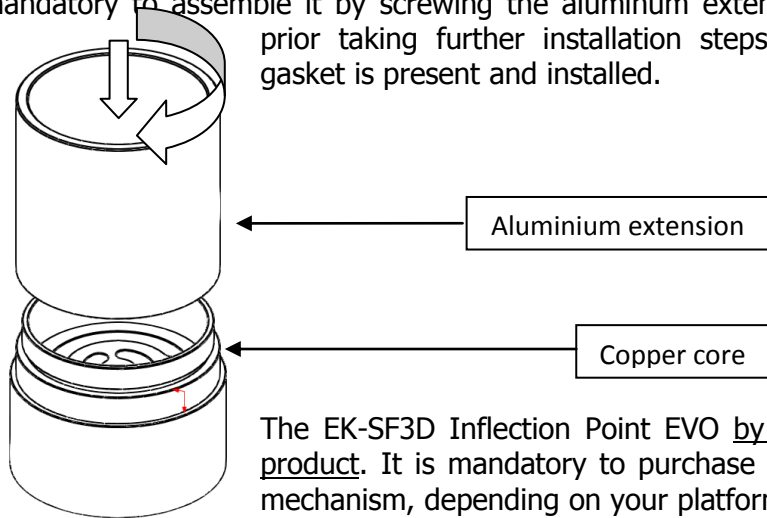## CPU liquid nitrogen evaporation cooler installation manual

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.ekwb.com for updates.

Before you start using this product please follow these basic guidelines:
1. **Please carefully read the manual before through before beginning with the installation process!**
2. **Art eraser insulation method is not recommended. EK recommends either Vaseline coat insulation method or using neoprene sheets.**
3. **If you intend to use adhesive properties of enclosed insulation sheets it is recommended to apply single layer of electrical/scotch/duct tape to the circuit board before adhering the insulation sheet to the motherboard.**
4. **The heaters are not used to completely defrost the motherboard during operation. Their purpose is to heat up the VRM capacitor area under extreme cold as well as to minimize the need for additional insulation!**

STEP 1: GENERAL INFORMATION ON PRODUCT COMPATIBILITY

Congratulations on your purchase of EK-SF3D Inflection Point EVO universal CPU liquid nitrogen evaporation cooler. This item comes disassembled therefore it is mandatory to assemble it by screwing the aluminum extension to the copper core prior taking further installation steps. Make sure the o-ring gasket is present and installed.

Aluminium extension

Copper core

The EK-SF3D Inflection Point EVO by itself is not a complete product. It is mandatory to purchase socket-specific mounting mechanism, depending on your platform:

Intel LGA-1156/1155/1150:
- **EK-SF3D Inflection Point EVO - Mounting LGA-115x**
  (EAN: 3831109857236)

Intel LGA-2011:
- **EK-SF3D Inflection Point EVO - Mounting LGA-2011**
 (EAN: 3831109857243)

AMD 754/939/940/AMx/FMx:
- **EK-SF3D Inflection Point EVO – Mounting AMD**
  (EAN: 3831109857250)

STEP 2: TABLE OF CONTENT

The following items are enclosed with each EK-SF3D Inflection Point EVO – Mounting LGA-115x unit:

- EK-SF3D Inflection Point EVO - Mounting LGA-115x adapter with gaskets
- EK-SF3D Heater 4W type A (LGA-115x)
- LGA-115x Backplate (stainless steel)
- Self-adhesive insulation sheet:
  - 3mm front (socket) sheet
  - 15mm backplate sheet
- Mounting screws:
  - Plastic washers M4
  - POM Backplate standoffs
  - M4x22 ISO 7380 screws
  - M4-M4 Adapter Backplate screws
- Required set of Torx T20 and 2.5mm Allen keys
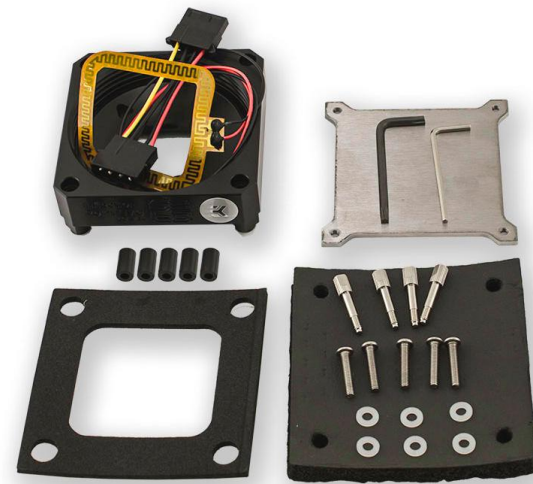
STEP 3: REMOVING THE ORIGINAL ILM - LATCH MECHANISM

With the enclosed Torx T20 key please remove the three screws securing the socket latch mechanism (ILM) and original backplate (BP) to the motherboard.

Remove the socket latch, all three screws as well as socket backplate and store them in a safe place as these items will not be used at any stage of the installation. **Make sure you have install the plastic cover over the socket pins during this procedure!**

LGA 115X ILM

Make sure to protect the socket pins against physical damage!
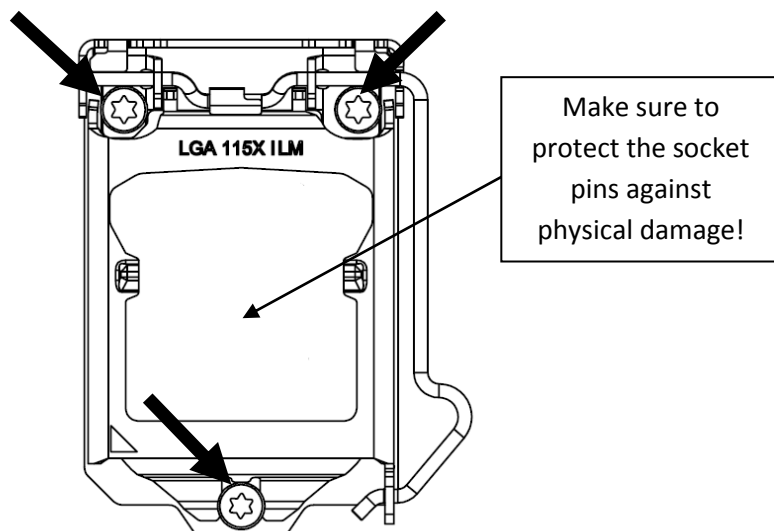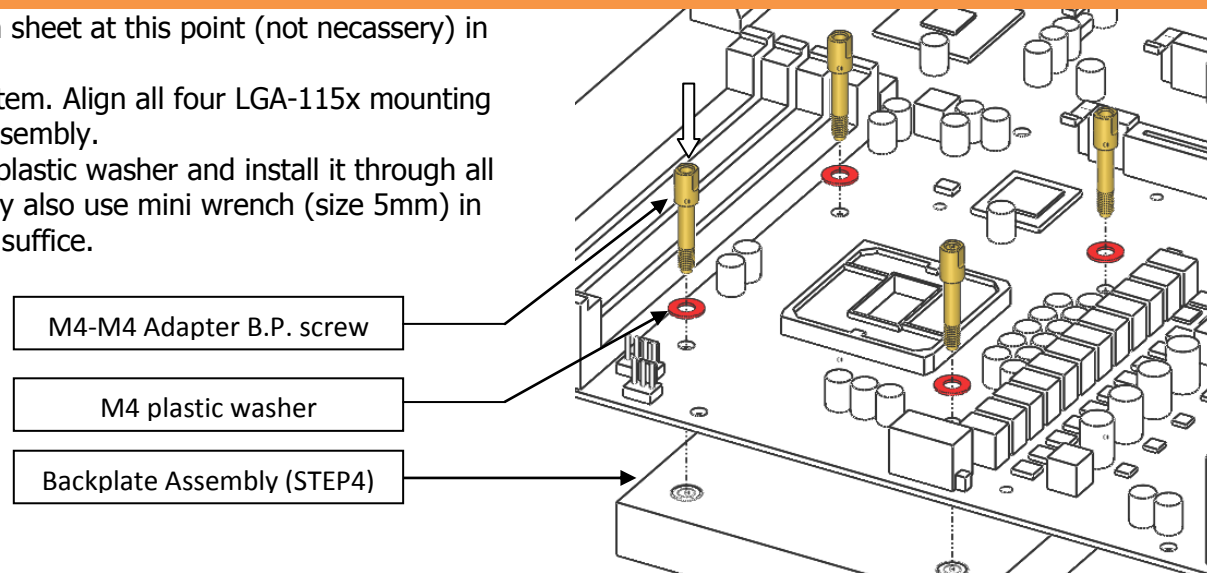
STEP 4: INSTALLING THE BACKPLATE SYSTEM

In order to install the backplate system please follow the steps below:
1. Place 13mm POM Backplate standoffs into each of the four openings on the thicker backplate closed-cell insulation sheet
2. Place the stainless steel Backplate to the back side of the thicker insulation sheet and align all four threaded openings with the POM standoffs. The adhesive side should be on the opposite site of the metal backplate.


POM Backplate standoff

Backplate insulation sheet

Adhesive side up

Stainless steel backplate
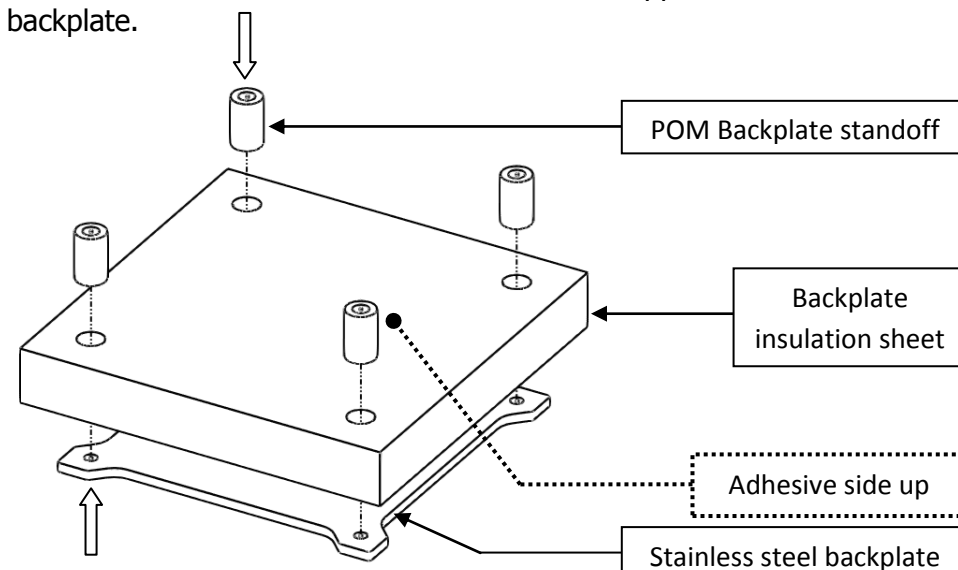
STEP 4 cont.: INSTALLING THE BACKPLATE SYSTEM

1. **OPTIONAL:** You may peel off adhesive side from the insulation sheet at this point (not necassery) in order to allow it to stick to the circuit board.
2. Place the motherboard over the newly assembled Backplate system. Align all four LGA-115x mounting holes on the motherboard with the openings in the backplate assembly.
3. Equip each of the four M4-M4 Adapter Backplate screws with a plastic washer and install it through all four LGA-115x mounting openings on the motherboard. You may also use mini wrench (size 5mm) in order to tighten the screws but force of the thumbs should also suffice.

M4-M4 Adapter B.P. screw

M4 plastic washer

Backplate Assembly (STEP4)

All disclosures, notices and warranty conditions are being written on EK Water Blocks website.

Revision 1.0. Released on 21st of May, 2013.

## STEP 5: INSTALLING THE LGA-115x MOUNTING ADAPTER

1. Install the LGA-115x CPU into the socket. Apply the enclosed Gelid GC-Extreme TIM enclosed with the EK-SF3D Inflection Point EVO.
2. Install the enclosed EK-SF3D Heater 4W type A (LGA-115x) directly onto the PCB. Peel off the protective sticker and adhere it directly onto the circuit board. Alternatively you can install the heater directly onto the LGA-115x Mounting Adapter, directly over the o-ring / gasket channel.
3. Install the 3mm thick self-adhesive closed-cell insulation sheet directly to the motherboard. Align it with the screws on the motherboard. You may need to cut it to fit past nearby capacitors. Apply roll of 3mm self-adhesive around the Mounting Adapter outer edges if required.
4. Install the LGA-115x Adapter on to the motherboard by simply pressing it down against the motherboard. **It is mandatory to install as shown on the photo below! The correct orientation is of highest importance!** The milled-out triangle shape should serve as an orientation point. The triangle (ENCIRCLED; right picture) should always point towards the corner where the original latch hook was secured. On the majority of the motherboard the LGA-115x Mounting Adapter is installed correctly when the EK logo is facing away from the PCI/PCI-express slots.
   Also double check there is a gasket installed in the recess at the bottom side of the adapter
5. Install the four M4x22 ISO7380 stainless steel screws into each of the four openings and fasten them using enclosed Allen Key 2.5mm.

M4x22 ISO730 screw

LGA-115x Mounting Adapter

3mm insulation sheet

Heater 4W Type A
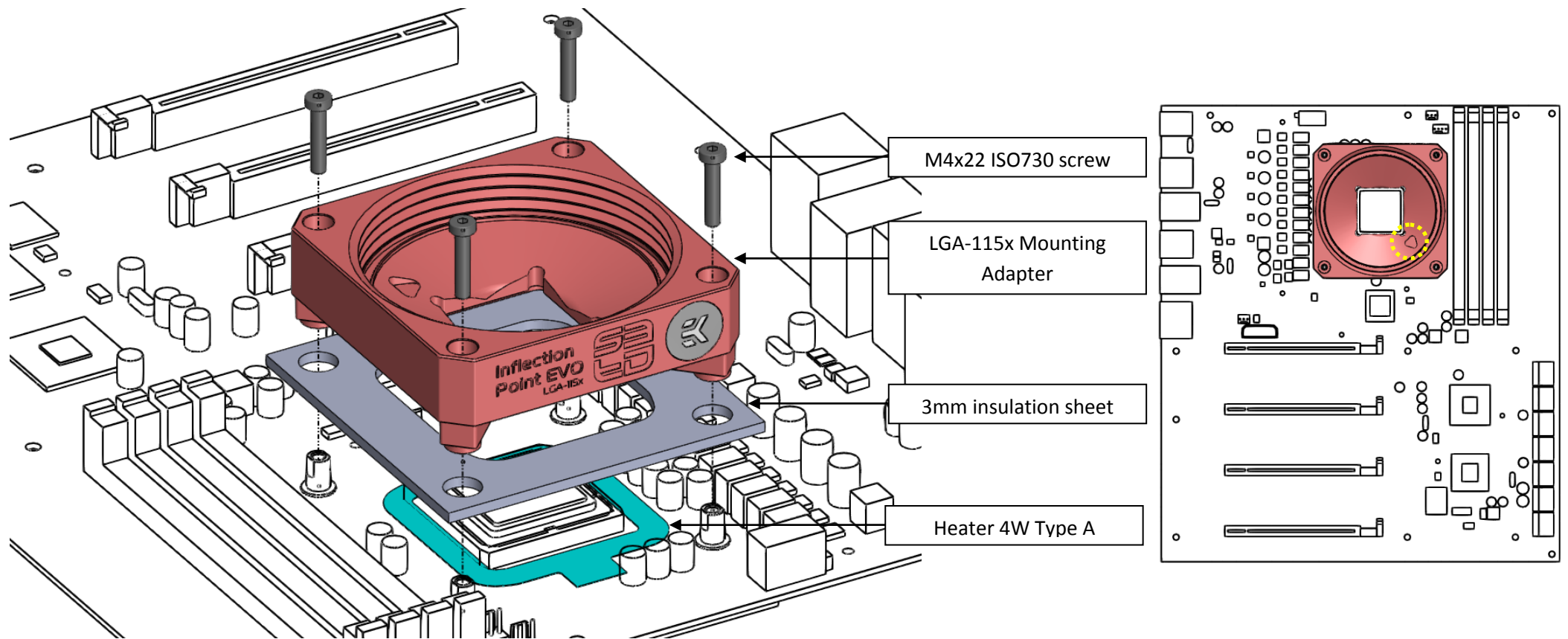
STEP 6: INSTALLING THE TEMPERATURE SENSOR/PROBE

Install the thin-wire K-type thermocouple (TC) sensor/probe (or equivalent; not enclosed) to the pre-drilled slot near the contact surface of the evaporator's copper core (encircled). We recommend dipping the TC buble into enclosed Gelid GC-Extreme TIM/grease in order to further improve the precision of the temperature read-outs.

Route the TC wire into the pre-milled slot on the side of the evaporator wall and use scotch- or electrical tape to secure the probe to the copper core. Do not use scotch tape above the step marked on the photograph below:

Tape limit line

M4x22 ISO730 screw
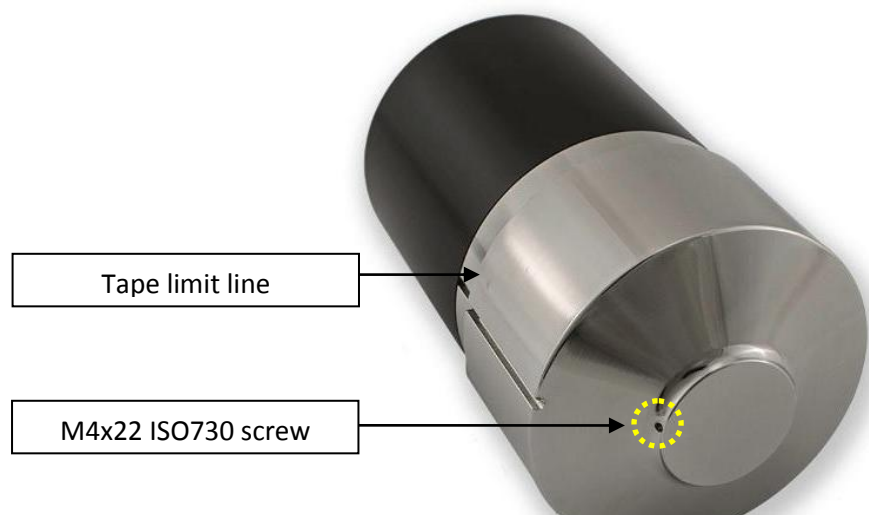
STEP 7: ATTACHING THE EVAPORATION COOLER TO THE ADAPTER

To finish up the installation follow these steps:

1. Install the hand-grip mounting nut with pre-installed 10W thin-foil heater over the evaporation cooler. Make sure to route the thermocouple wire past the the mounting nut!
2. Screw down the mounting nut using right-hand turns until the connection feels secure and/or until you reach the end of the thread. Do not use any tools (i.e. pliers) for tightening of the nut as you may damage your components!
3. Connect both heater's 4-pin Molex connectors to the power supply unit (may be auxiliary as well)
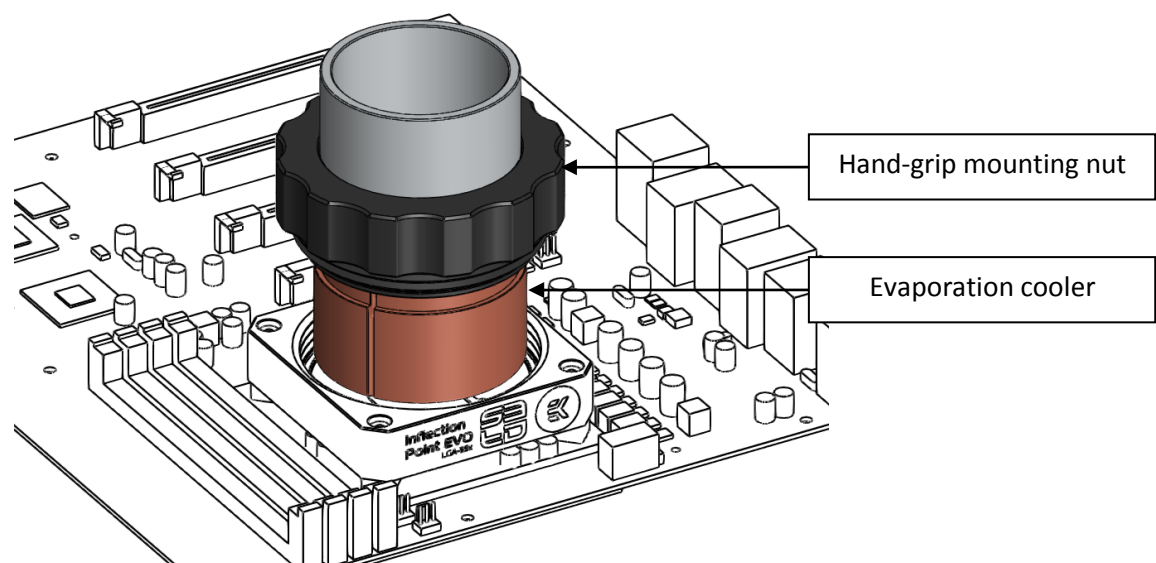
Hand-grip mounting nut

Evaporation cooler

If you intend to use adhesive properties of enclosed insulation sheets it is recommended to apply single layer of electrical/scotch/duct tape to the circuit board before adhering the insulation sheet to the motherboard.

REQUIRED TOOLS:
- Scissors
- Blade knife
- Duct or electrical tape
- Additional insulation material as per users insulation method (optional)