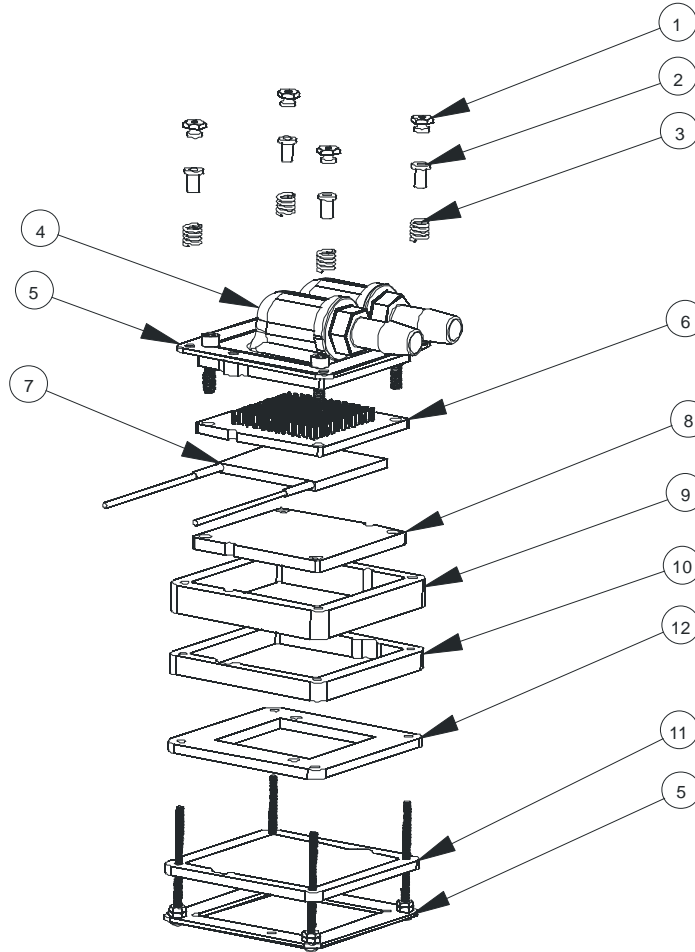


**MCW60-T THERMOELECTRIC WATER-BLOCK
INSTALLATION GUIDE**

One or more Patents pending

This product is intended for expert users. Please consult with a qualified technician for installation. Improper installation may result in damage to your components. Swiftech™ 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.swiftnets.com for updates.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY
1	77706	2-56-thumb-nut	4
2	SCREW INSULATOR10SC004025	tension limiter	4
3	70700S	spring	4
4	mcw60-housing-rev2	housing	1
5	MCW60-HOLD-DOWN-PLATE	hold-down plate	2
6	MCW60-BP-T	base plate	1
7	40mm	Peltier module	1
8	MCW60-CP-T	Cold plate	1
9	MCW50-T-B2	gasket	1
10	MCW60-T-GSKT1	gasket	1
11	MCW60-T-GSKT4	gasket	1
12	MCW50-T-MB125	gasket	1



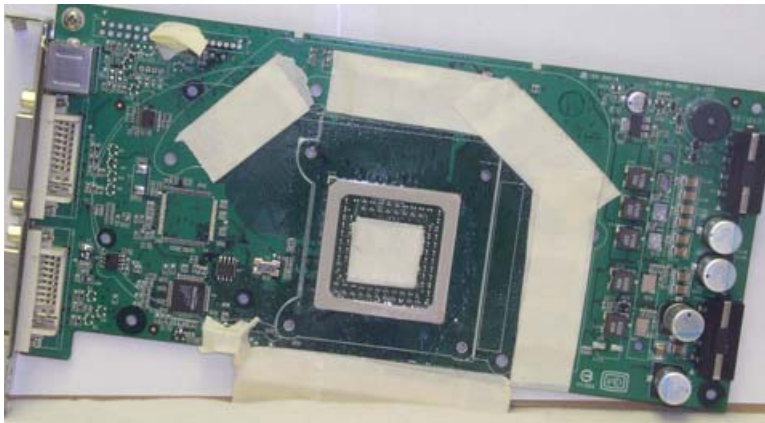
BEFORE YOU BEGIN: Please remove the existing cooling solution from the graphics card, and carefully clean off the GPU with an electronics degreaser (Xylene is recommended).

1. Condensation control measures

The following instructions are crucial to long lasting & reliable operations. Do not skip these steps, and do not take shortcuts. Permanent damage to your components is likely to occur otherwise.

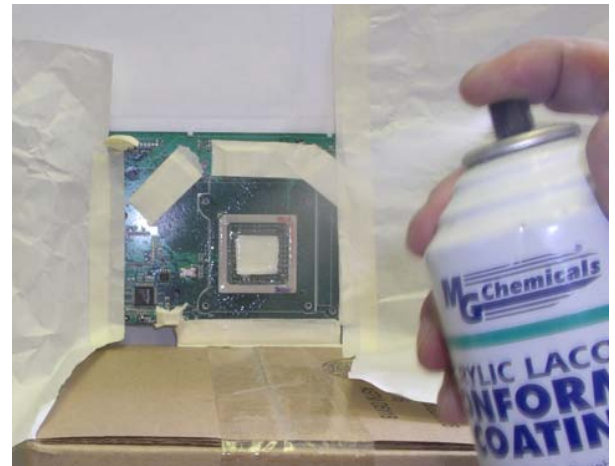
Conformal coating application: This step will positively ensure that any micro condensation occurring on small surface mount components will not corrode or short-circuit the VGA adapter.

Procure a spray can of conformal coating. We use M.G. chemicals Acrylic Conformal Coating, part # 419B-340g – A list of retail distributors carrying this item can be found here (US): <http://www.mgchemicals.com/distributors/us/index.html>, Canada: <http://www.mgchemicals.com/distributors/canada/index.html> . Equivalent products can also be used. Sprays are recommended for their ease of use. The product can also be purchase at our online store here: <http://www.swiftnets.com/store/category.asp?CatID=11>



Step 1

Use two to three layers of masking tape to protect the memory modules, the GPU, and any electrical connector.



Step 2

Spray the area immediately surrounding the GPU. Apply two to three light coats at 5 minute intervals.

Allow the lacquer to dry 15 minutes, and then proceed to the next step.

Spray the back of the board. Apply two to three light coats at 5 minute intervals.

Allow the board to dry for 15 minutes (surface “dry to the touch”), and then remove the masking tape. In effect, it is preferable to remove the masking tape before the lacquer is fully cured.

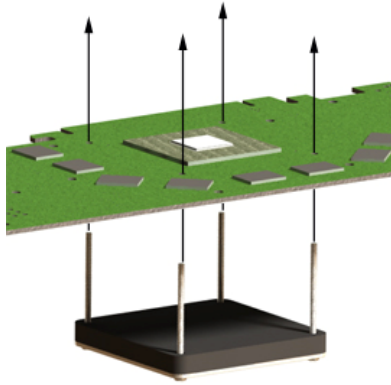
Clean off any glue residues from the masking tape from the surface of the memory modules, GPU and PCI connector using an electronics cleaning solution, or a product such as Xylene, available in most hardware stores.

Wait for the lacquer to be fully cured (at least 12 hours) before you proceed with the installation of the MCW60-T cooler.



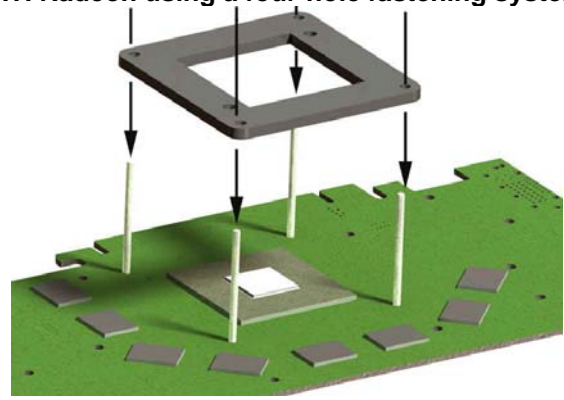
Step 3

2. **Mechanical Installation** (all nVidia High-end GeForce and ATI Radeon using a four-hole fastening system)



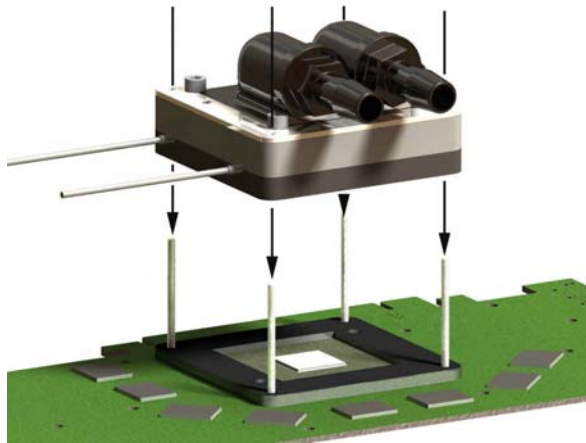
Step 1

Apply the supplied thermal compound to the GPU, peel-off the protective paper from the gasket, and then insert the back-plate with its gasket thru the board.



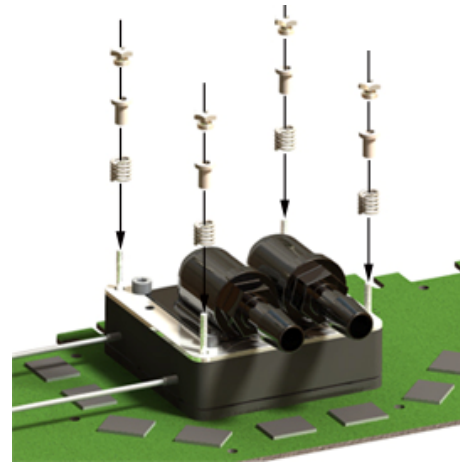
Step 2

Remove the protective paper from the board gasket, and push the gasket down (sticky side face down) the posts until it mates with the board.



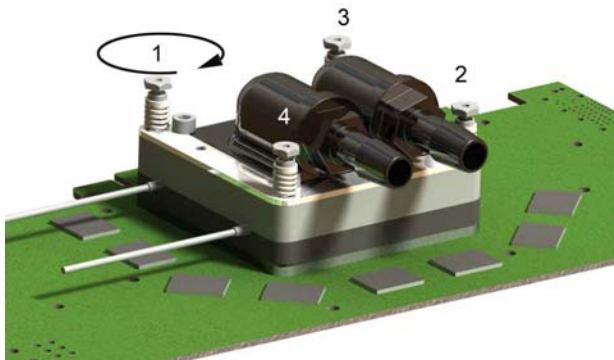
Step 3

Push the MCW60-T assembly down the posts until it mates with the board gasket



Step 4

Place the spring, nylon tension limiter and thumbnuts on each post.



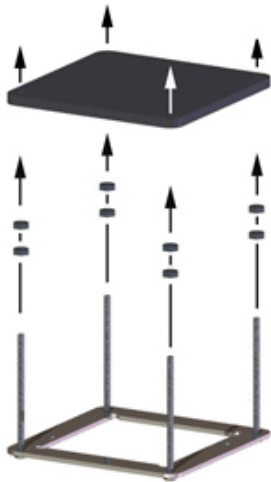
Step 5

Gradually fasten the assembly with the provided thumbnuts in a cross pattern, until you feel that the nylon tension limiter is preventing the spring from compressing further. Do not over tighten!

Mechanical installation is now complete!

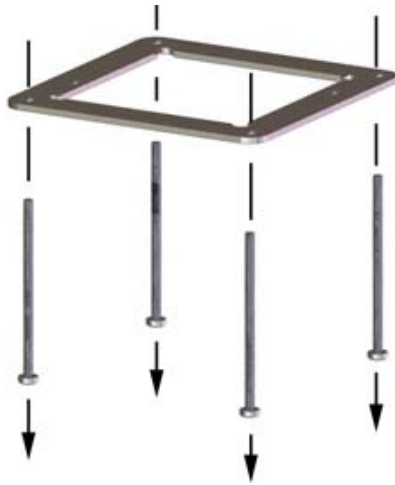
3. Mechanical Installation (all Radeon X1600 and earlier, using a 2-hole mount)

The MCW60-T back-plate is shipped in a 4-hole mount configuration which is the most common usage for this product. As a result, the 2-hole mount necessitates that the posts be disassembled and reconfigured as follows.



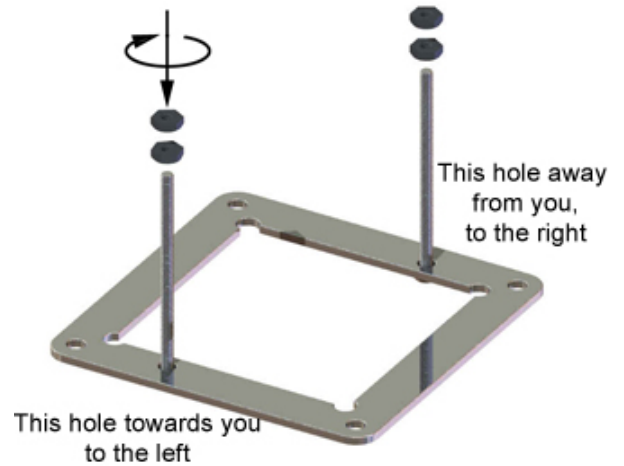
Step 1

Remove gaskets and nuts



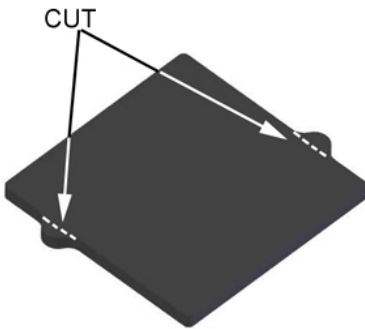
Step 2

Remove screws



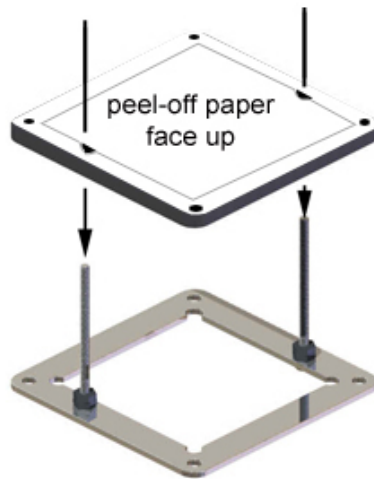
Step 3

Position plate as shown, insert screw in each of the 2 diagonal holes, and fasten with 2 nuts each.



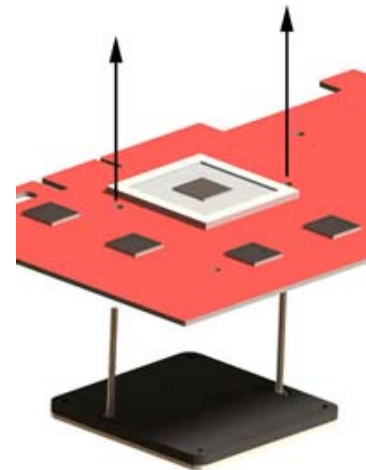
Step 4

Re-cut the two ears of the center gasket



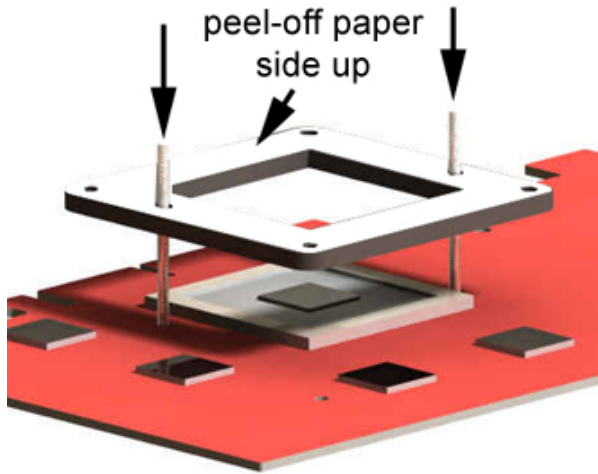
Step 5

Push the gasket down the posts as shown and then peel-off the paper



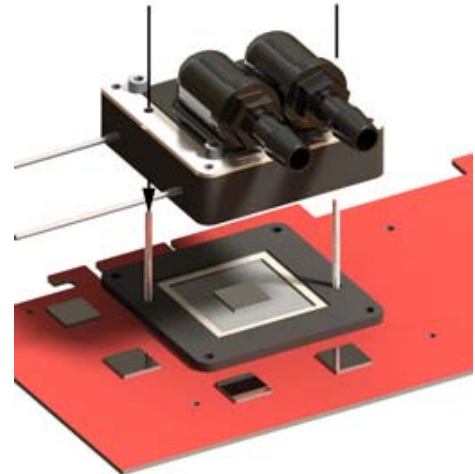
Step 6

Apply the supplied thermal compound to the GPU and then insert the back-plate with its gasket thru the board.



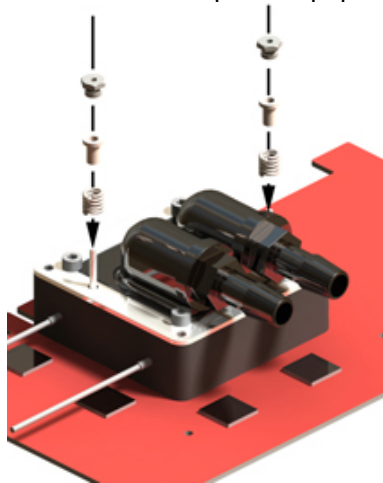
Step 7

Push the gasket down the posts until it mates with the board and then remove the peel-off paper



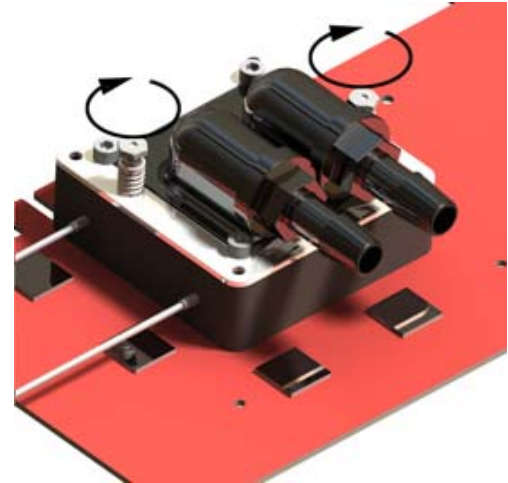
Step 8

Push the MCW60-T assembly down the posts until it mates with the GPU



Step 9

Place the spring, nylon tension limiter and thumbnuts on each post.



Step 10

Gradually fasten the thumbnuts until you feel that the nylon tension limiter is preventing the spring from compressing further. Do not over tighten!

Mechanical installation is now complete!

4. Electrical Installation

IMPORTANT WARNING: Solder joints of the wires to the thermoelectric module are **extremely fragile**. Bending the wires at their root will break the solder joint, with no possible repair. **Swiftech will not honor the warranty for broken wires.**

Thermo-electric modules characteristics:

The Peltier module used with your MCW60-T can be safely operated from 12 to 19.3 Volts.

Specifications			
U max (V)	I max (A)	Q max (W)	L xWxH(mm)
19.3	15	188.4	40x40x3
Values when operated at typical 12 Volt			
12	9.3	120	

When connecting the MCW60-T to your computer power supply, you must carefully consider the existing requirements of other devices connected to the +12V line. Connecting to an underpowered PSU unit will definitely damage the power supply, and/or starve the other components in the system. As quality of the power supplies on the market varies widely, we can only recommend that you choose your PSU among the best quality units available on the market. A unit featuring minimum 600 Watts (peak) and 38 Amps (peak) available on the 12 Volt rail is advisable.

Connecting TEC wires to the power supply:

Use the provided euro-style wire connector as shown in fig 1 below, or a similar device with a current rating of at least 12 amps. Connect red wire from TEC module to +12V of the PSU (Yellow wire), and black wire to black wire:

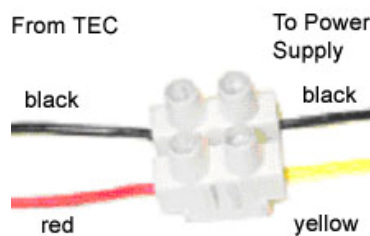


Figure 1

If you need wiring extensions: use 16 gage stranded wire. Connect the extension to the existing wires with **terminal splices**, or solder the butts, and insulate with shrink tubing.

CRITICAL RECOMMENDATIONS MUST READ!!!

Never run a thermoelectric module without coolant flowing in the circuit. This will result in catastrophic failure of the cooling element, and may cause any/all of the following:

- Tubing to burst open due to coolant overheating
- Permanent failure of the Peltier module
- Permanent damage to the CPU and/or motherboard due to excess heat

WARNING! Wires from the thermoelectric module do get hot (this is normal). Make sure that the wires do not touch devices that are heat sensitive, such as vinyl tubes for example. Heat from the wires may cause the vinyl to deform, and/or burst.

5. Hydraulic Installation

- The inlet and outlet are interchangeable with respect to flow direction.
- Coolant: use of distilled water is mandatory. Swifttech's HydrX coolant is recommended as an antifungal, and corrosion inhibitor.
- The MCW60 is shipped with 2 sets of fittings in the US: 1/2" barbs, and 3/8" barbs, and an additional set of 1/4" barbs in Europe.
- **Tighten each fitting until the flange of the fitting mates with the ledge of the water-block o-ring groove, then lock it by adding ¼ to ½ turn. Use of a tool (5/8 or 14mm flat wrench) is recommended.**
- **Your MCWS60-T is now ready to use.**

6. Final inspection

Once the installation is completed, **it is always a good idea to test the circuit for leaks, prior to powering up the computer.** Troubleshooting help is available on our web site at www.swiftnets.com, or by calling customer support at 562-595-8009.

IMPORTANT DISCLOSURES

While all efforts have been made to provide the most comprehensive tutorial possible, Swiftech assumes no liability expressed or implied for any damage(s) occurring to your components as a result of using Swiftech cooling products, either due to mistake or omission on our part in the above instructions, or due to failure or defect in the Swiftech cooling products.

WARRANTY

Our products are guaranteed for 12 months from the date of delivery to the final user against defects in materials or workmanship. During this period, they will be repaired or have parts replaced provided that: (I) the product is returned to the agent from which it was purchased; (II) the product has been purchased by the end user and not used for hire purposes; (III) the product has not been **misused (*)**, handled carelessly, or other than in accordance with any instructions provided with respect to its use. This guarantee does not confer rights other than those expressly set out above and does not cover any claims for consequential loss or damage. This guarantee is offered as an extra benefit and does not affect your statutory rights as a consumer.