



AMD AM3+ Desktop Processor Replacement and AMD 125W Cooler cleaning.

How to replace your PC CPU and clean its cooler. This example is for AM3+ processors, the AMD Phenom II / FX Bulldozer or FX Piledriver Series

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INTRODUCTION

This Guide will show you how to safely replace / upgrade your CPU and clean the cooler if you are keeping it, (which will depend on its condition and if it meets the heat dissipation requirements of the new processor!) In this case the AMD cooler was rated up to 125W [TDP \(thermal design power\)](#) and the replacement processor was rated at 125W TDP.



TOOLS:

- [Anti-Static Wrist Strap](#) (1)
- [GC-Extreme thermal paste](#) (1)
- [Anti-Static Brush](#) (1)



PARTS:

- [AMD FX-8320 Desktop CPU](#) (1)

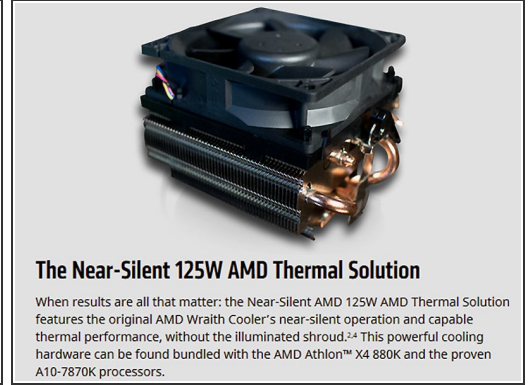
Step 1 — Initial precautions



⚠ Shutdown your PC. **Do not** remove or unplug the power cable! It will provide the [Ground](#) that and electrostatic charge you have will be dissipated to! [Electrostatic Discharge \(ESD\)](#)

- Remove the case cover, clip the crocodile clip of the anti-static wrist band to an **unpainted part of the metal case** attach the the wristband on the other end of the cable to your wrist, left is best if you are right handed.

Step 2 — Remove the CPU cooler.

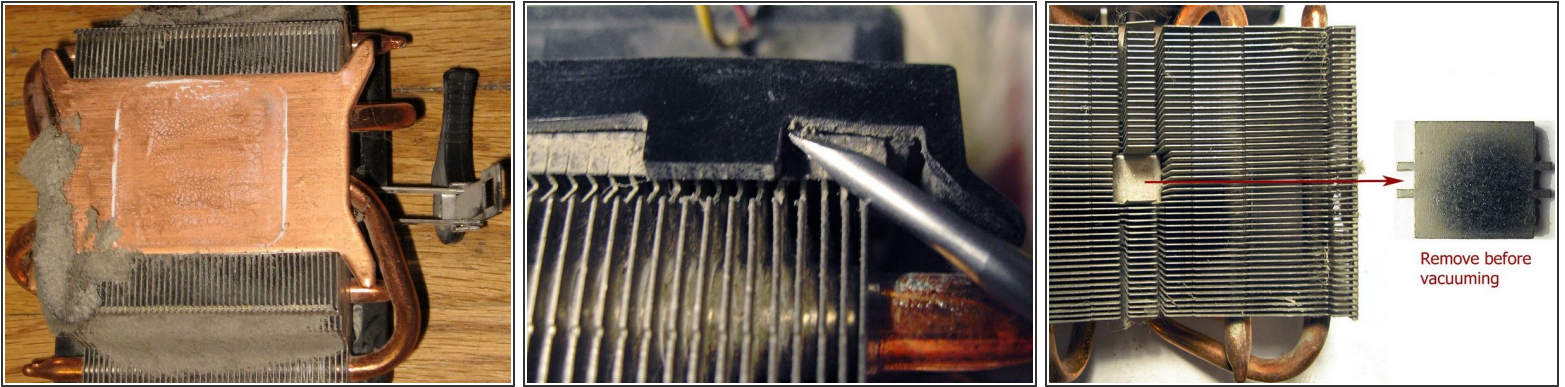


⚠ Does your new processor run hotter than the processor you are replacing it with? This is termed [TDP \(thermal design power\)](#) and can be easily found with a google search. Check that your existing cooler is designed to dissipate the new processors maximum heat output . If it is not **you must replace it!**

⚠ Before removing the cooler, unplug the fan from the motherboard.

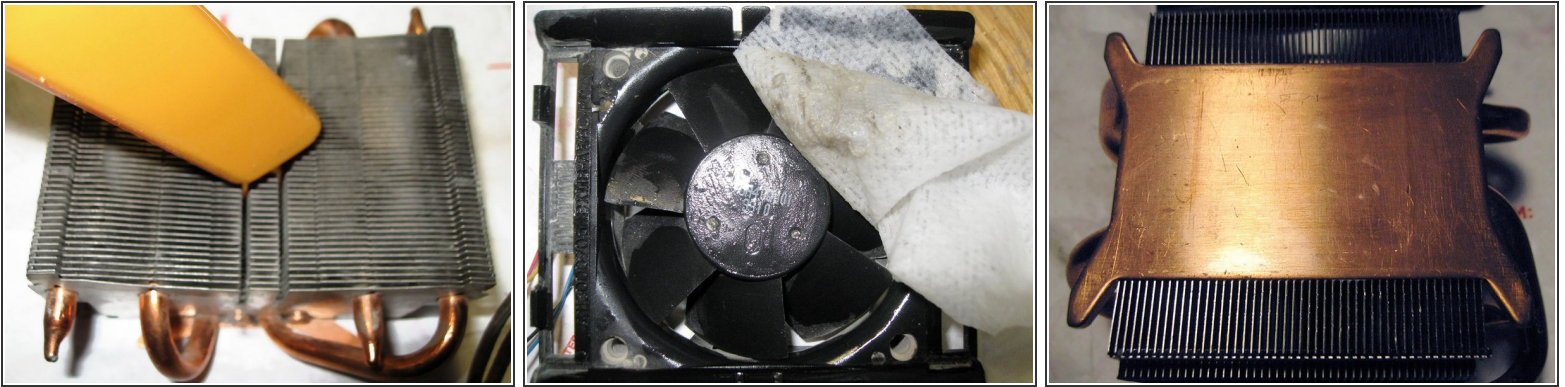
- You will see the processor as shown. It is held in place to the AM3+ socket by two notches. On the left of the first picture you will see a leaver, pull this leave up till it faces the other way. This will un-tension the retaining mechanism allowing you to remove first one side from its notche the the other.

Step 3 — (Optional) If you are keeping the cooler you should clean it thoroughly!



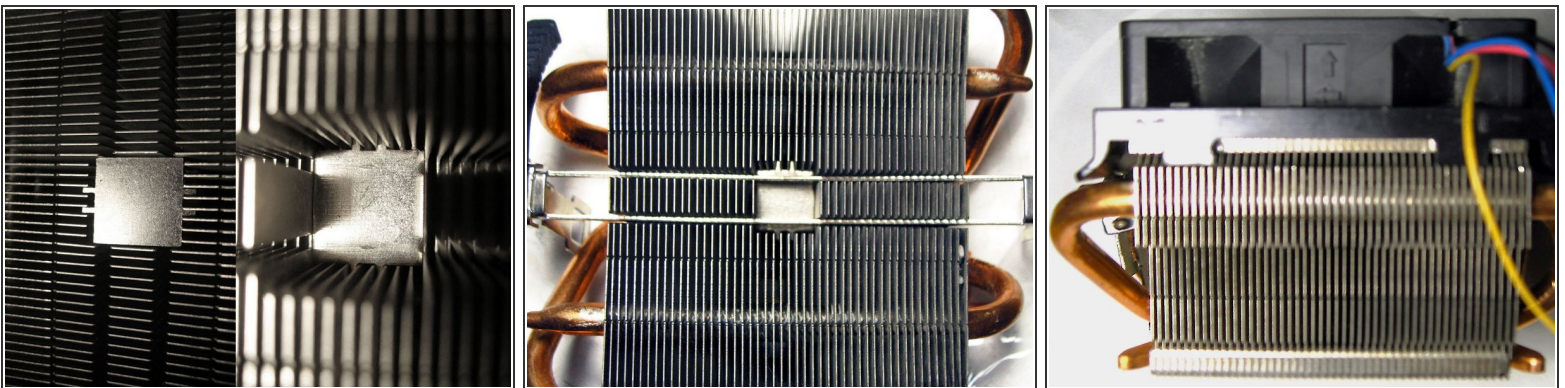
- When your CPU is working under high load it will generate heat approaching its TDP. If the heatsink of the cooler is clogged with dust and debris or the fan is not working well, the CPU will overheat. You do not want this to happen!
- ⓘ Spin the fan with your finger; it should spin freely and without noise or resistance.
- As you can see, a lot of dust had built up under the heatsink, even though the top had recently been cleaned!
- How far you go in cleaning the heatsink is your decision. I removed the fan assembly to clean it thoroughly.
- The fan assembly was held on with four plastic clips. **very carefully** use a flat blade screwdriver to pry the clip up a little and push the assembly up; repeat until the fan assembly comes off.
- ⚠ Remove the metal plate in the center of the heatsink. Clean it and put it somewhere safe. You do not want to lose this inside a vacuum cleaner!

Step 4 — (Optional) Cleaning the cooler



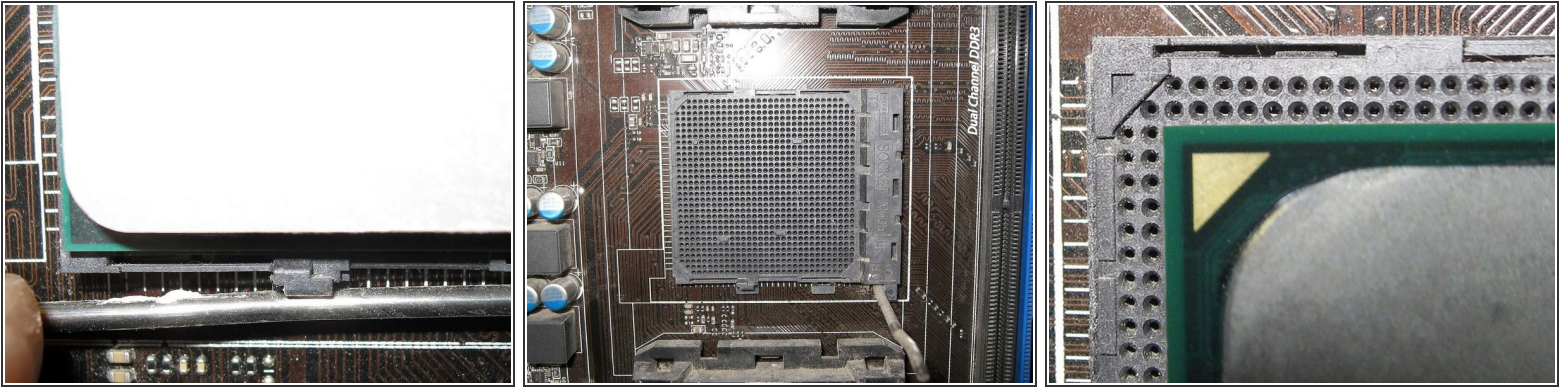
- Use a paint brush, and Vacuum cleaner to remove all dust and debris from the Heatsink.
- Clean the fan assembly with a disinfectant wipe(s) and then dry it with a lint free cloth.
- Ensure you clean the base of the heatsink that will be in contact with the processor very well. There should be no remnants of the old heatsink compound.


Step 5 — (Optional) Cooler cleaner re-assembly




- Re-insert the metal plate you removed before vacuuming. Place it in the hole and push it down with the handle of a pair of pliers or something similar to prevent it falling sideways.
- Re-insert the retaining mechanism, *note the metal plate is to spread the force of the clamping mechanism*
- *Carefully* Clip the fan assembly back on top of the heatsink.

Step 6 — Remove the the old Processor.

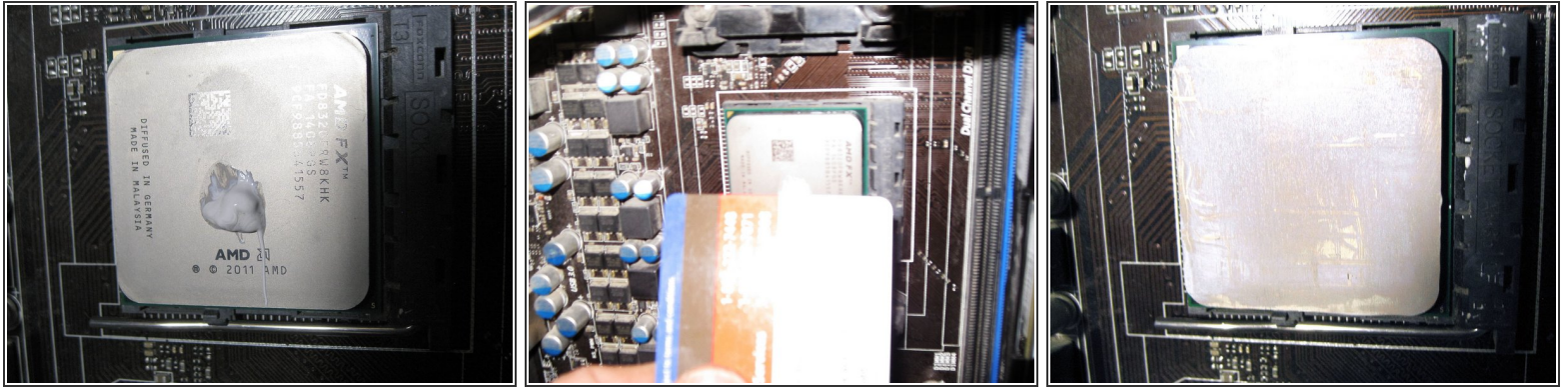


 The Processor socket is a ZIF socket. ["Z"ero "I"nsertion "F"orce](#). There should be no time when you have to apply any pressure or force when removing or inserting a processor!

- To remove the processor on an AM3+ board gently push the leave on the socket way from under it's retaining clip and lift it up into a vertical position. If the machine is a tower chances are the processor will drop out.
- Put the old processor into an anti-static container, **Ensure your anti-static strap is connected.** Remove the new processor from its anti-static container and gently place it in the socket. Both the processor and socket are marked as shown with a triangle to show the processor orientation.

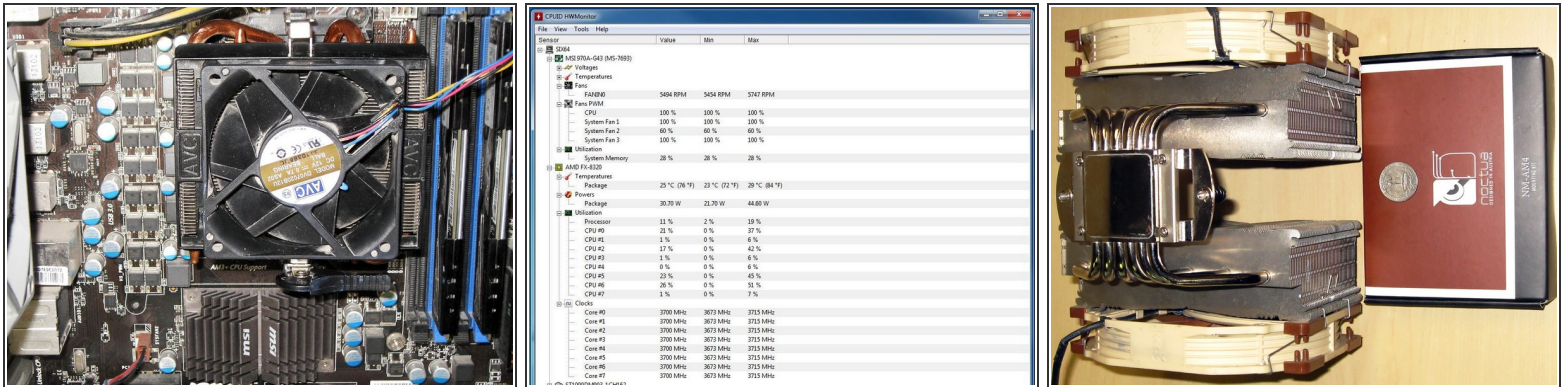
 If the processor does not drop into the socket cleanly invert it and ensure all of the pins are straight. If they are not box it up and return it if you can. Straighten processor pins is difficult and they can easily break.

Step 7 — Apply a Thin layer of Thermal paste



- Place a blob of Thermal paste to the processor and spread it with a plastic card or similar. The Thermal paste should be spread in a thin even layer. I placed the heat sink on the processor and moved it around a little to further even out the thermal compound.
- ⚠ Do not apply too much Thermal paste/ compound! Its purpose is to maximize the contact surface area, filling in scratches and imperfections in the cooler or CPU surfaces.

Step 8 — Fit the Cooler and connect its fan.



- ⚠ If you chose to replace your cooler, use a cooler approved by the processor manufacturer. If you intend to [Over Clock](#) your new CPU you may be exceeding its TDP and require more cooling. Buy the best cooling solution you can. Shown in the last photograph is a friend's Noctua cooler as you can see it has massive heat dissipation capacity.
- Place the cooler on the CPU. Attach the bracket without the locking mechanism to its notch first then attach the other side. Ensure both sides are attached, push the tension lever into the locked position.
- ℹ Once you have re-assembled your PC and powered it on you may be prompted to go into Setup/BIOS to save the new hardware configuration. If you have set any static voltage or timing values for the old CPU you may need to change them or set them back to auto.
- ℹ For Windows machines you can download a free utility to check temperatures and voltages: [HWMonitor](#)
- ℹ For Linux machines you can use [I-Nex](#) to check temperatures and voltages

To reassemble your device, follow these instructions in reverse order.