ATLAS GAME Shop

RROD
REPAIR KIT

First let's gather materials to save time:

- 1 Standard size Phillips screwdriver, + shape.
- 1 Small pliers or vice grips
- Paper towels or lint free, static-free cloth
- Cotton swabs, such as Q-tips
- Recommend : electrical tape

Required materials, supplied or you already must have:

- 8 vis de précisions -
- 16 rondelles en nylon -
- 16 rondelles en fer -
- 1G de pâte thermique
- 4 Pads thermiques pour RAM -
- 2 ventirad en cuivre -
- 1 Tournevis TORX T8H -
- 1 Tournevis TORX T10 -
- 1 cale caoutchouc CPU
- 1 cale caoutchouc GPU

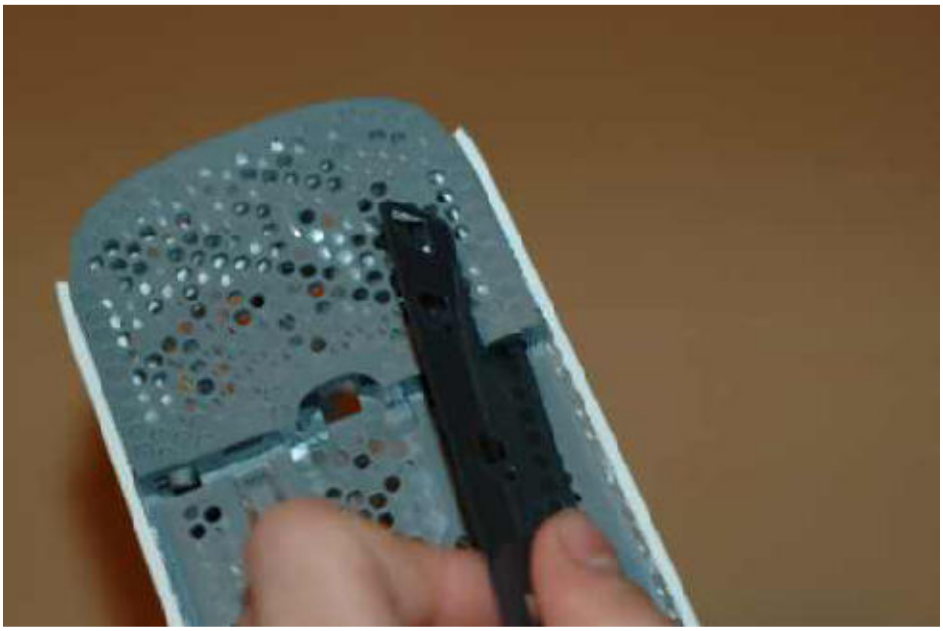
Cleaner and Purifier… If you don't have it:

ACHETEZ LE KIT SUR MATERIEL.NET

The special opening tool kit

1. Opening the Case Part 1 – Removing the Faceplate, Top, and Bottom Cover

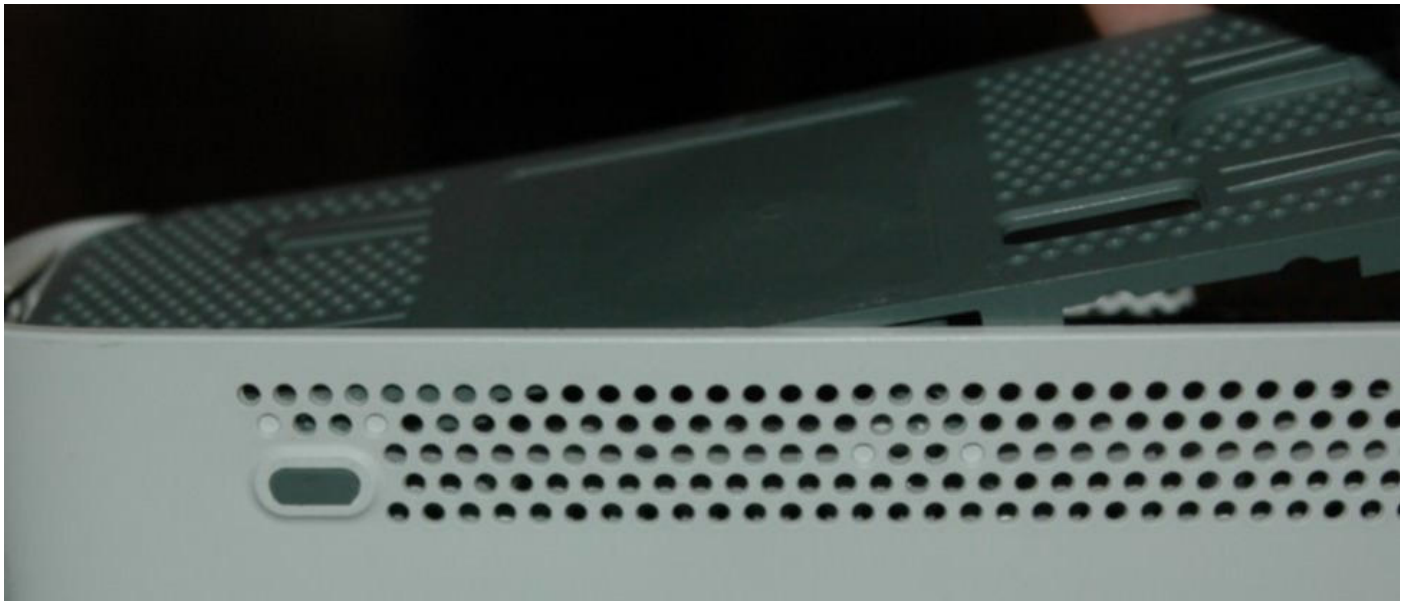
Pull up the bottom side of the front faceplate, and completely detach the whole piece.



If you bought the special opening tool kit, insert the pin into the whole on top of the XBOX where the hard drive is docked. See below if you do not have the tool.

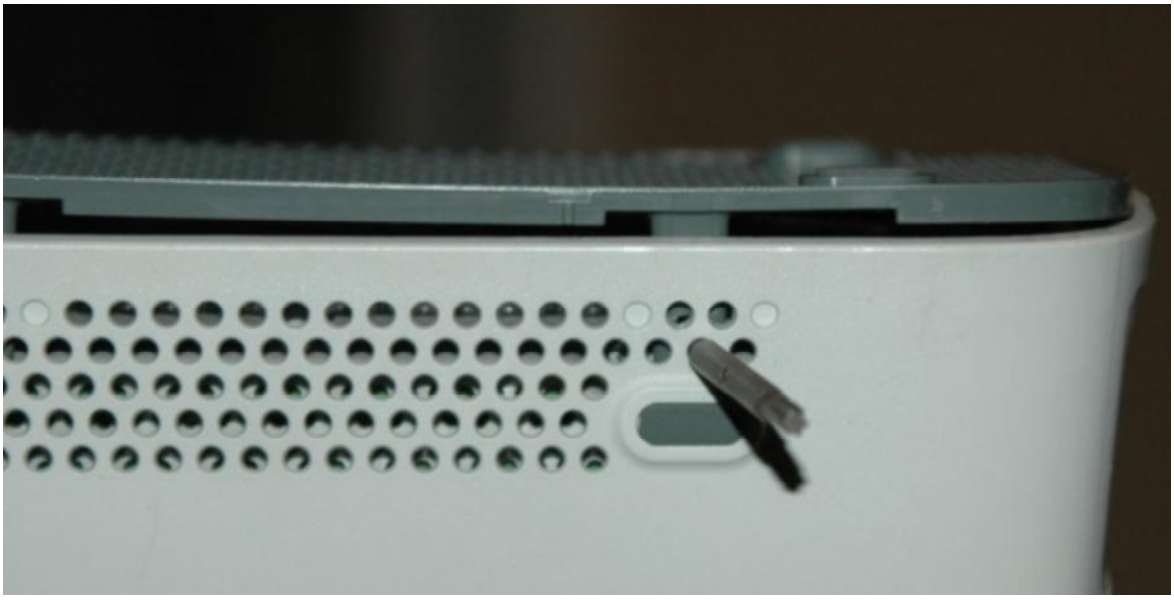
Instead you may put your finger under the top cover to the side of the DVD drive and pull up until the first two clips come out. Just lift the first 1/3rd.

Next with the torx screwdriver or special open tool pin, poke the whole in the exact place as illustrated to unclip the next clip. One on each side. The exact location is in-between and below two solid holes of white plastic seen above.



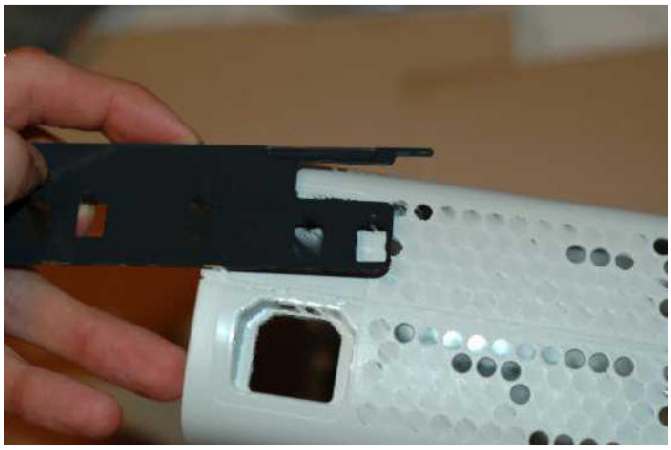
The last clip on the side pictured of the top cover is accessible by removing the rubber support. However, I prefer stick my hand under and pull up so I do not have to remove it. Careful not to break the clips when you reach in and push the plate up. (If you remove the rubber pad, you can super-glue it back on.)

Now we have to turn the console over and take off the flat grey cover on the other side. Poke the 3 places as shown. Here is the 1st hole. There is another in the middle.

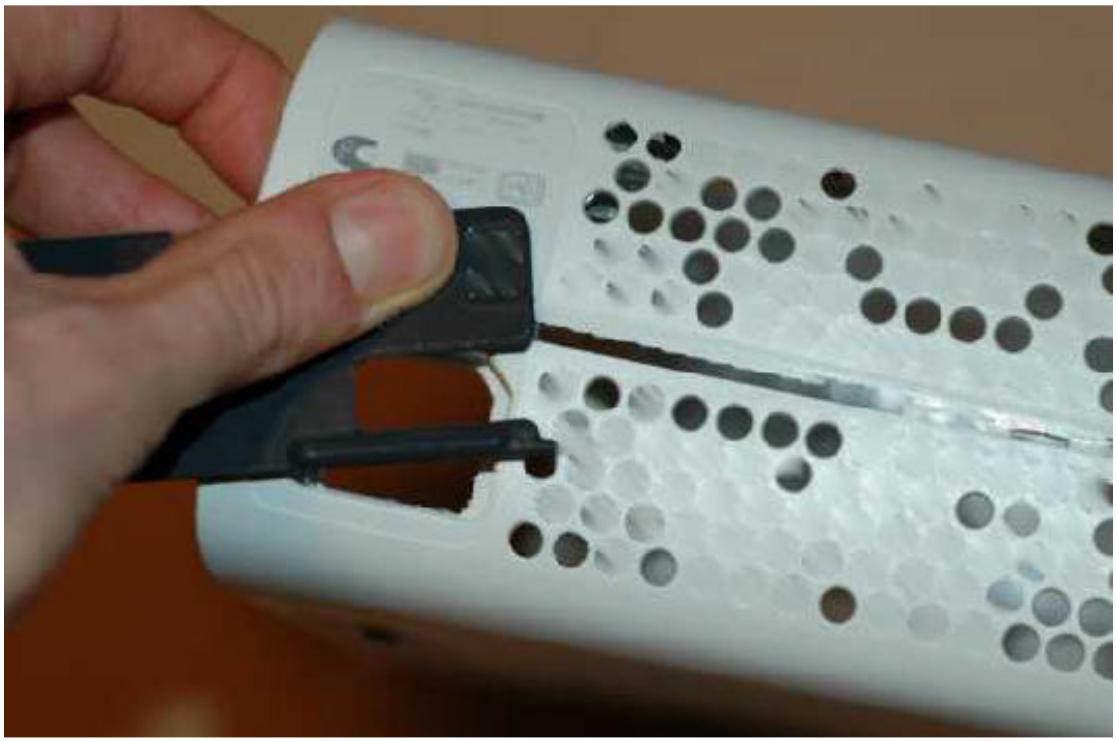


Here is the 3rd hole on this side. Next do the 3 clips on the other side the same way. Remove the piece, and set it aside. End Step 1.

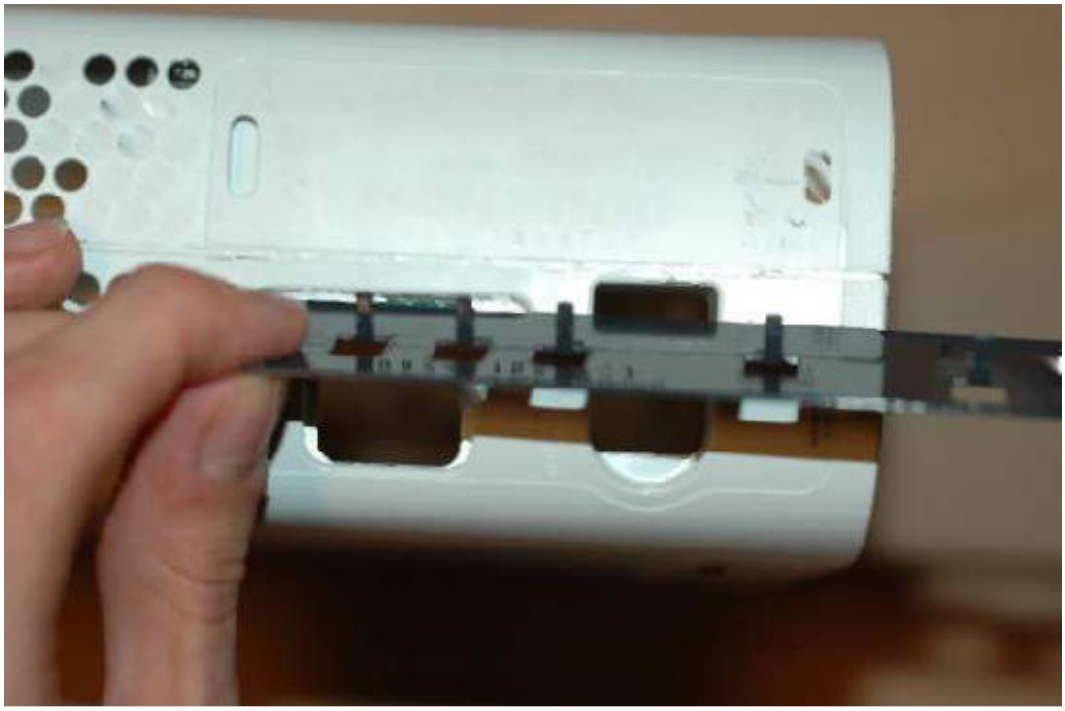
2. Opening the Case Part 2 – Removing the White Outer Shell



(Continue to next page if you do not have the special tool.) Otherwise, turn to the back of the console, and put the 2 pegs on the side with the pin into the two holes above where the power cord plugs-in. (See below.)

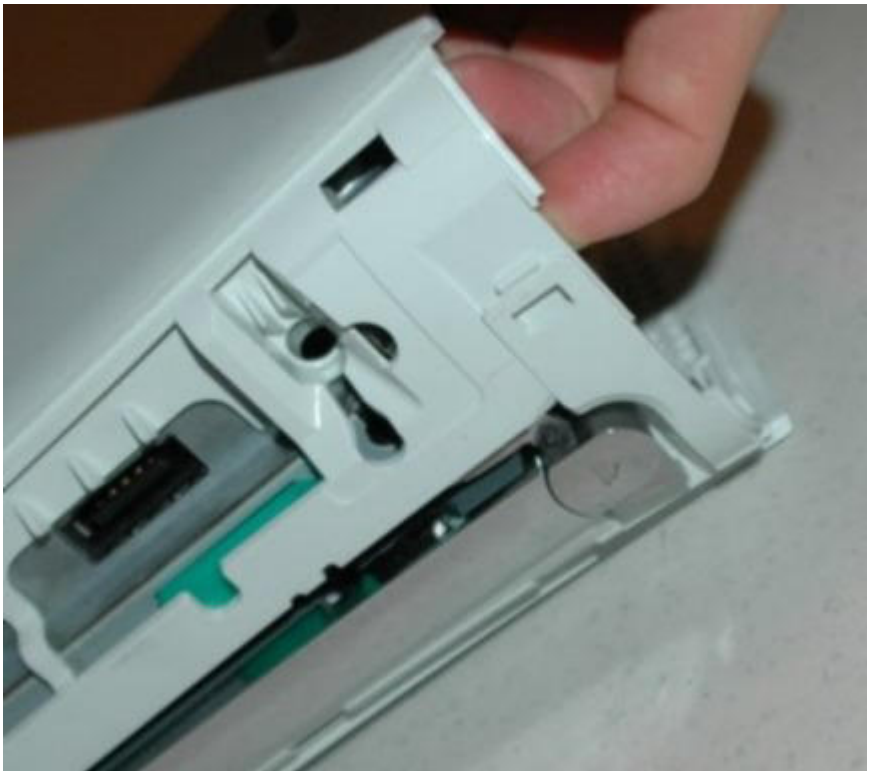


Turn or push apart the case to loosen that side.



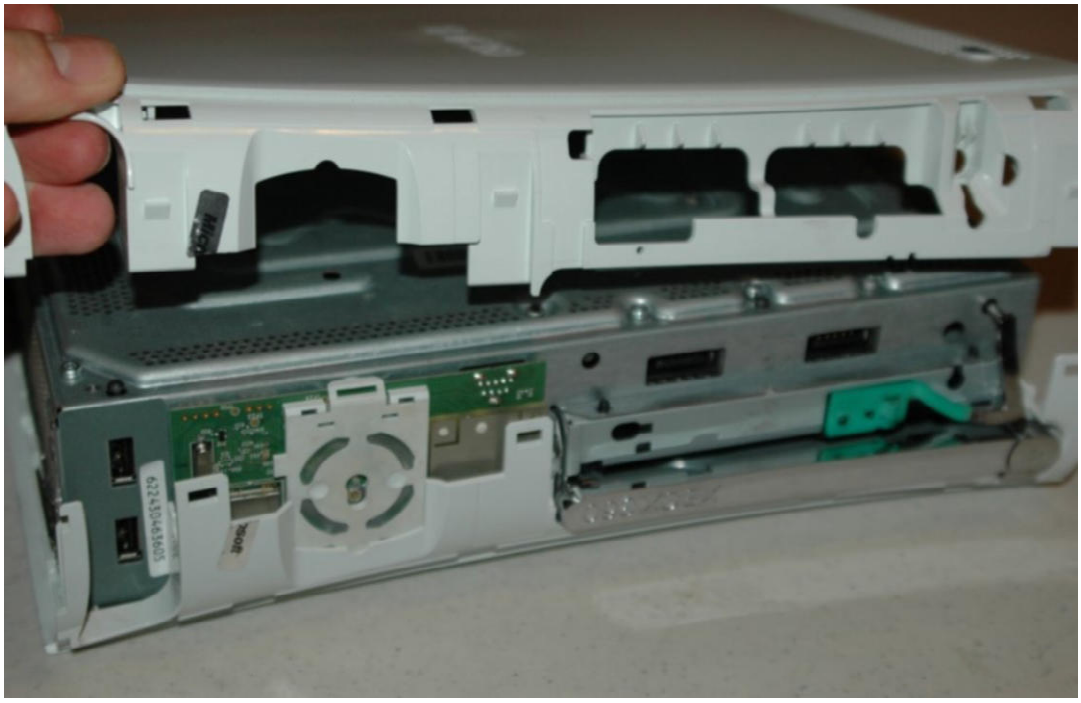
On the other side, put the corresponding pegs into the holes above the AV/HDMI TV port.

Turn or push to separate the console pieces.

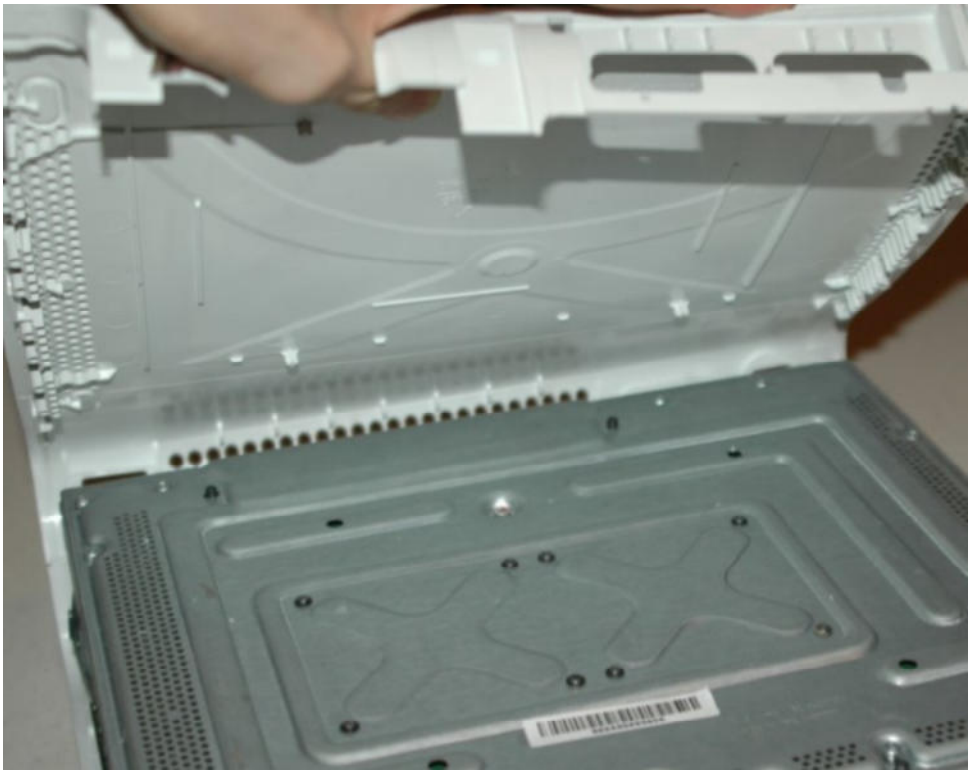


Now for all users: Turn the console flat (horizontal), but also upside down as pictured. Notice the 4 clips on the front… Disconnect these with your finger, and pull up on the side of the case as pictured while you unclip the other side. Note that you will be voiding the warranty at this point by opening the console.

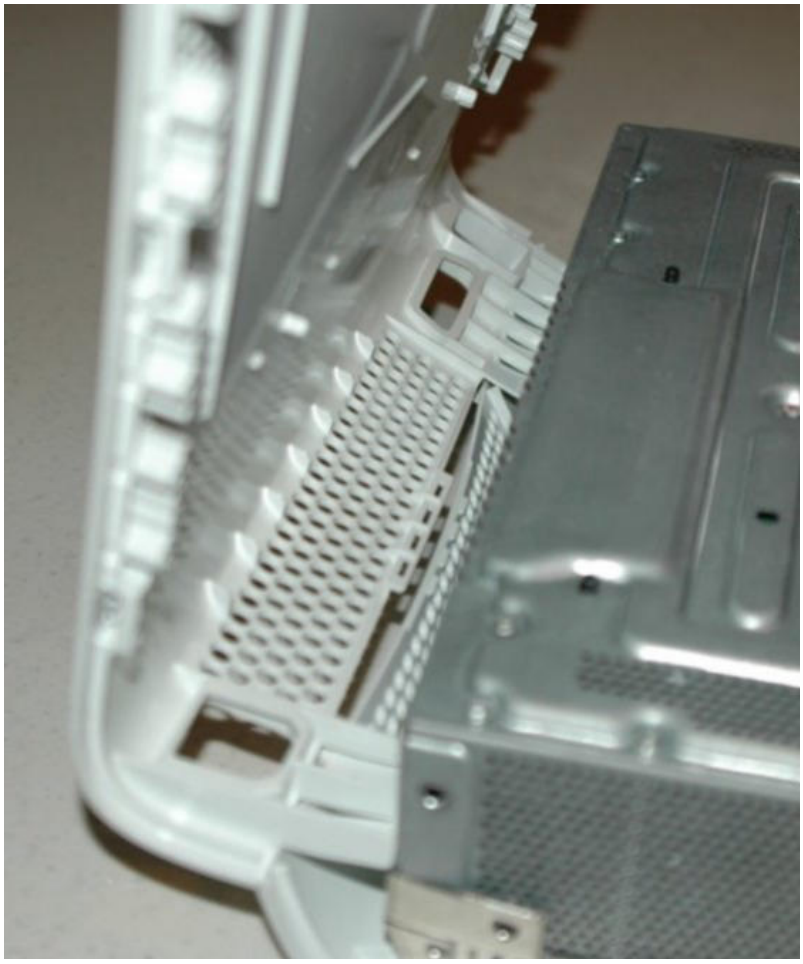
Here is the other side. Undo all the clips and pull the top of the case up (Technically the bottom-side since the console is upside down.) It should be lose and you can lift up the cover now.



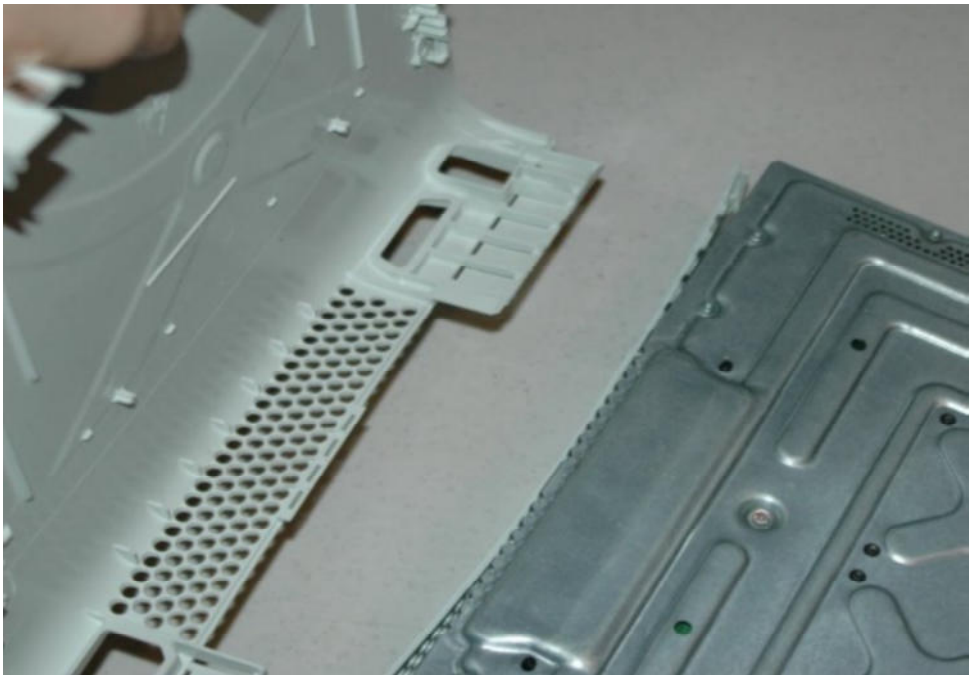
Here is a picture of the removal of the first half. If you have used the open tool you're done.



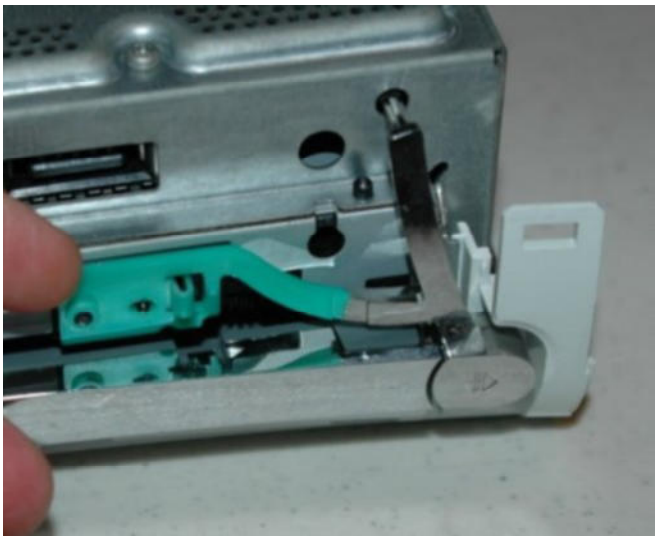
If still attached, hold the steel case XBOX down, and push the case cover backwards.



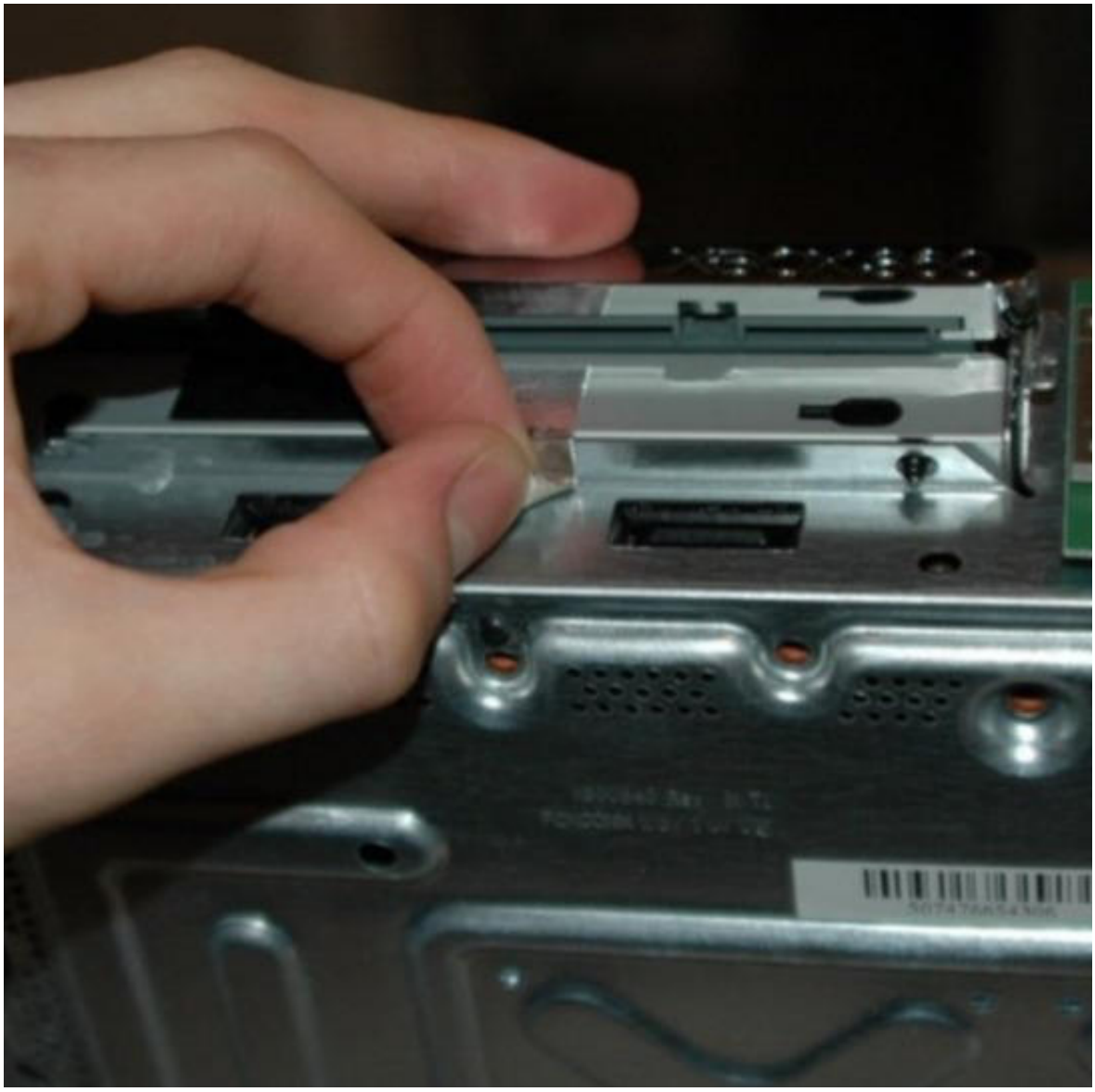
Here is a side view. Careful! It will pop out.



Now the top cover is off. Set aside.



With the case fully apart, remove the DVD tray eject button. Just slide your finger behind the green tab and gently nudge it off.

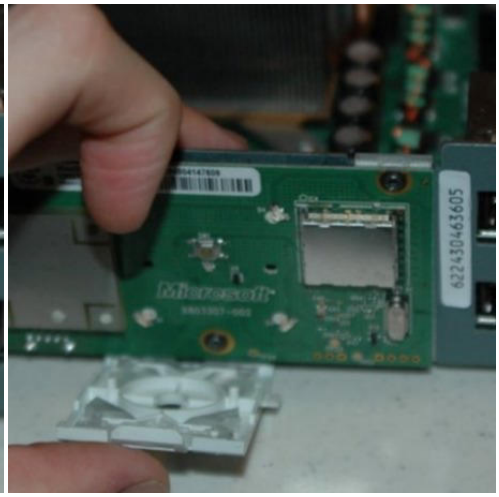


Remove the silver metal tape from the DVD player. Optionally save it for re-installation.

Get the screwdrivers now. Use the Torx T10, which is the larger of the two, on all grey screws as pictured. They are around the outer edge of the system. You will unscrew the small black screws later with the T8.

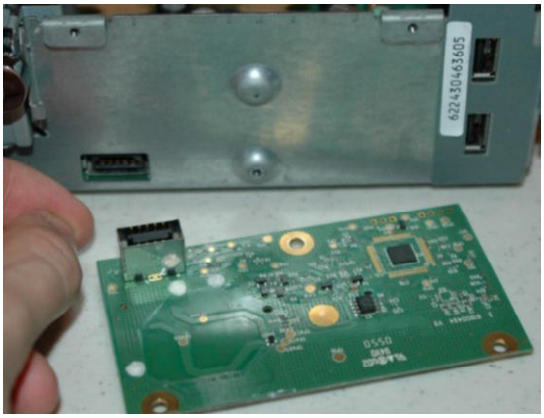
Once you have removed all of the grey screws from the last step, turn the console over and pull off the cover. Step 2 is done.

3. Remove the Radio Frequency Module, DVD Drive, Fan Shroud, and Case Fan

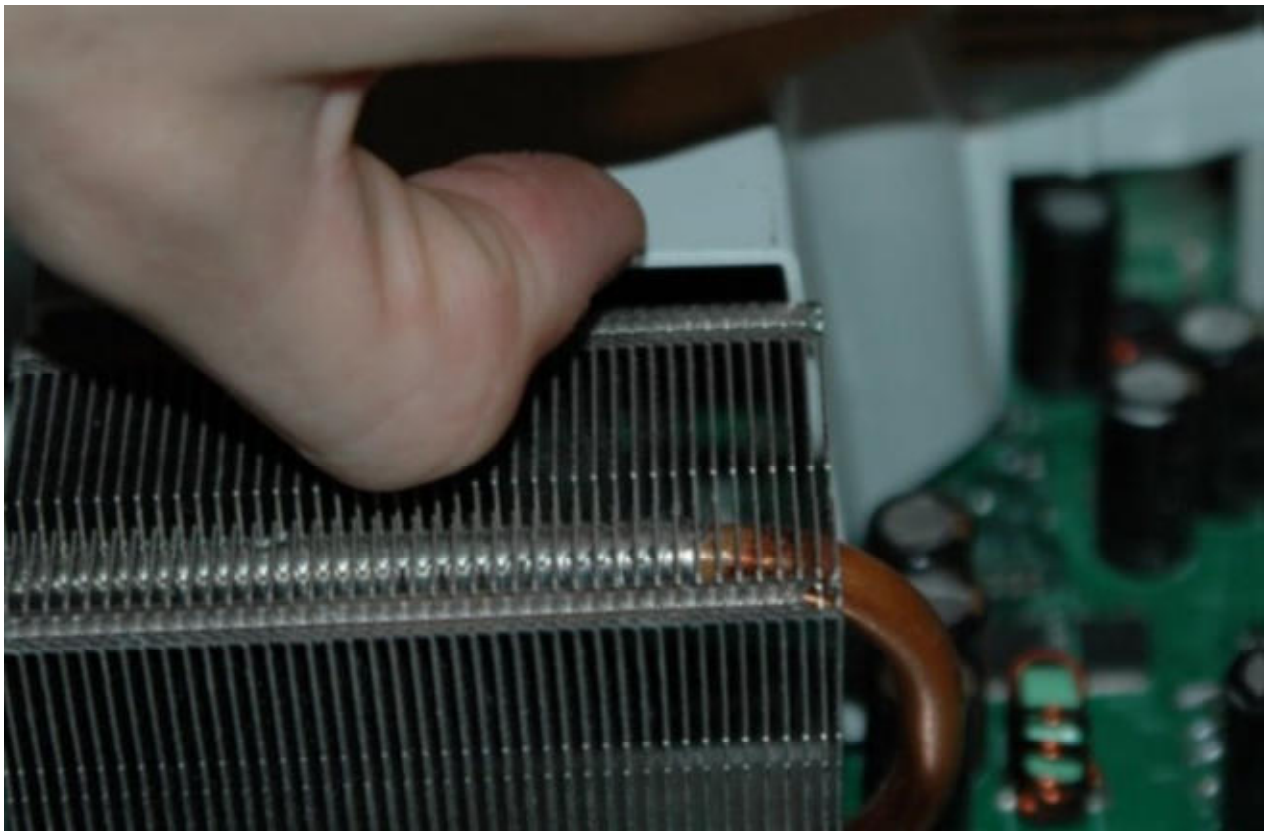
Pop off the white plastic piece on the front right of the console, by the USB port, and ring of light.

Now switch to the smaller Torx T8 to remove the 3 black screws and keep these for when we put it back on.

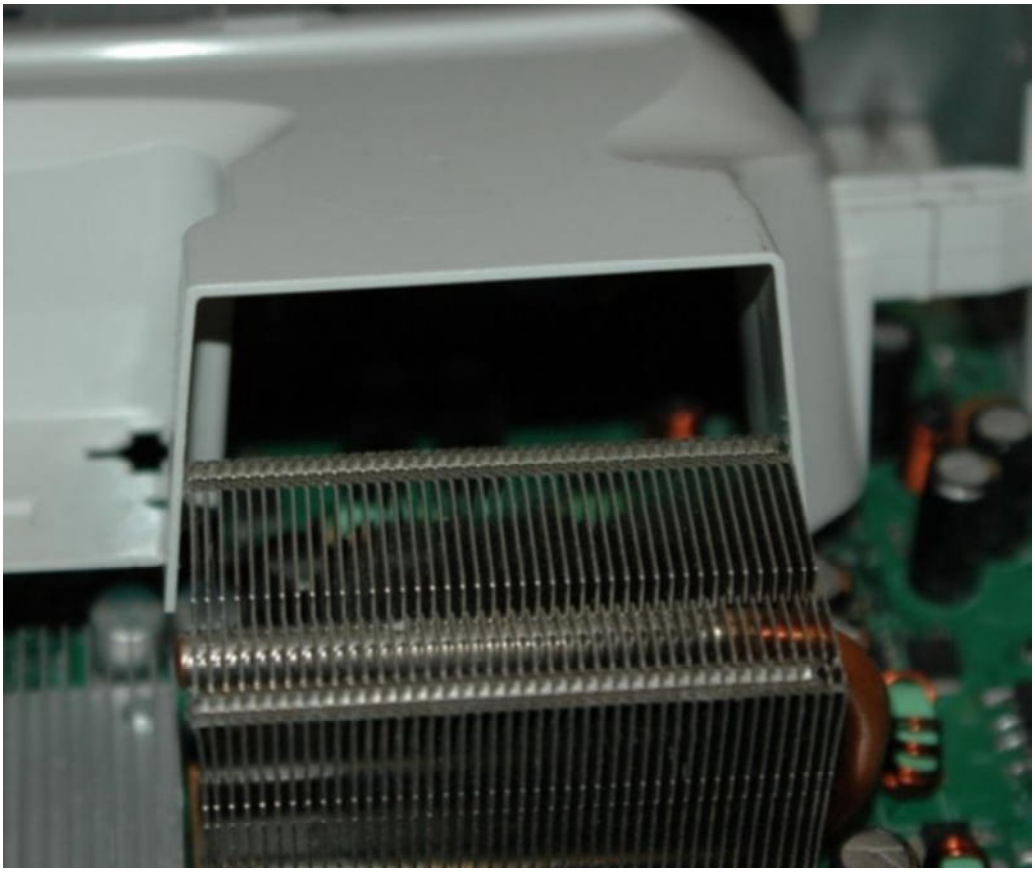



Pull off, and set aside the RF Module.

Carefully remove the 2 cables from the back of the DVD drive. You can leave the cables attached to the motherboard, just not to the DVD drive. Now set the DVD drive aside.



Next to the taller of the two heatsinks, slip your thumb under the top and sides of the fan shroud and pull it out/up a bit.

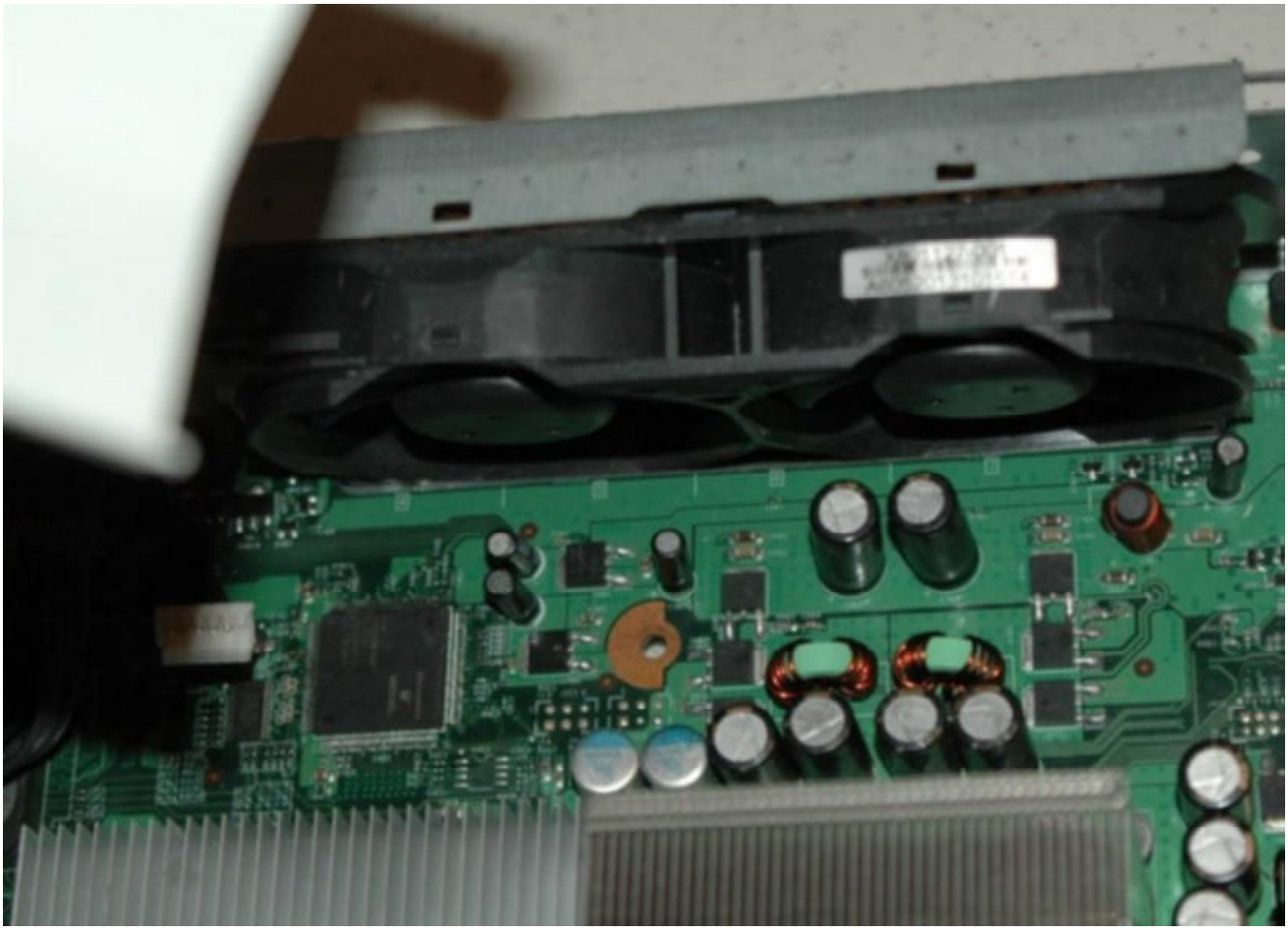


This is what it should look like after you have lifted it up a little.

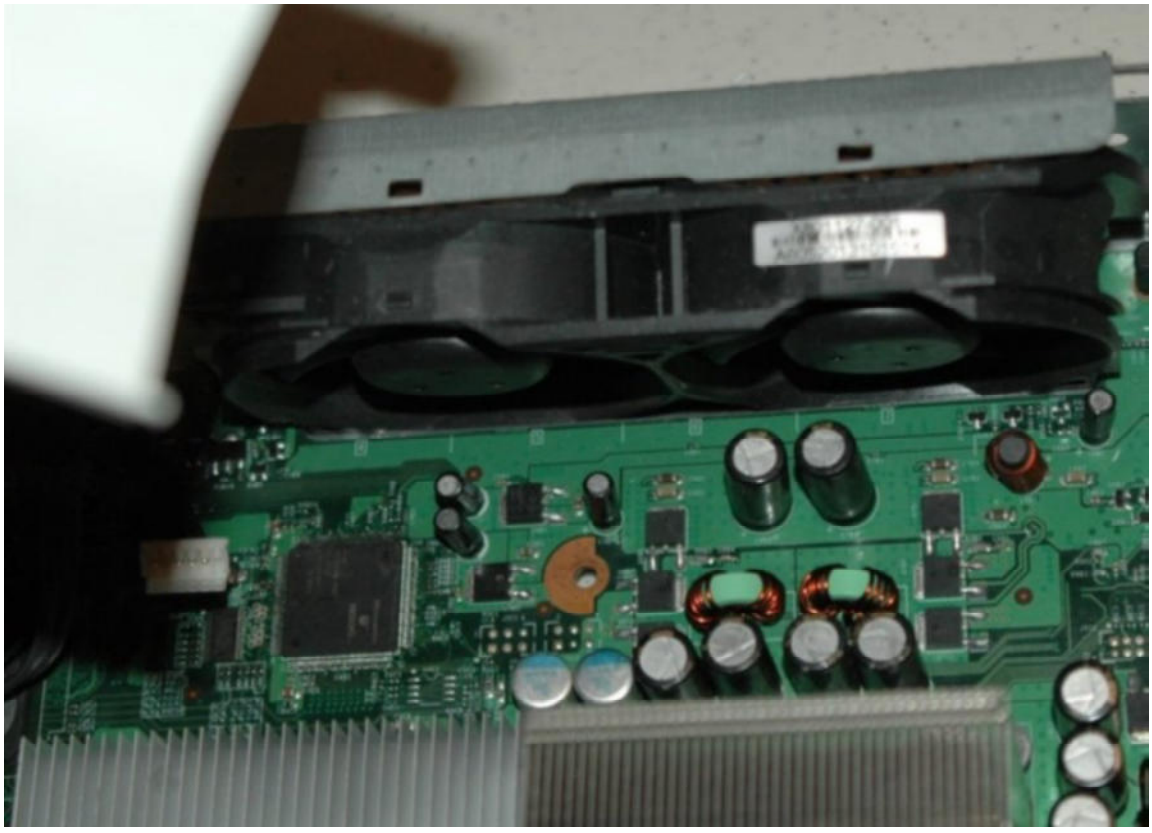
Continue to wiggle it around to remove it. Push up on the metal part of the case that is securing the case fan. Continued…

As you are holding it up, pull out on the case fan so it unlatches from its top clip.

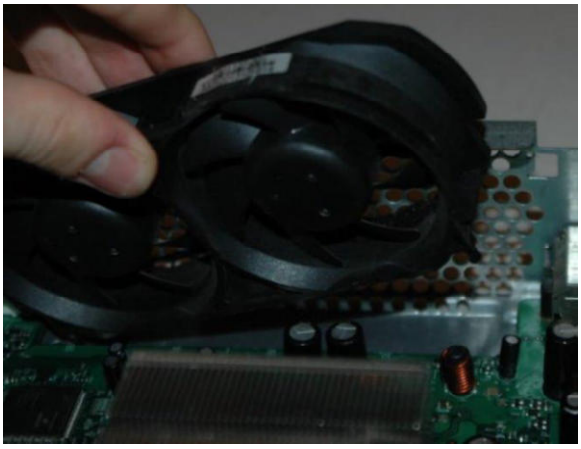
Then once you pull it back a bit, you should be able to jiggle out the white fan shroud without breaking its clip.

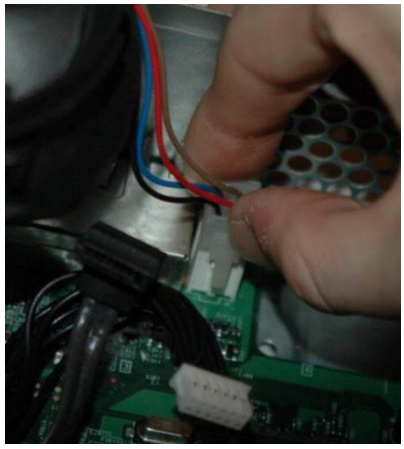


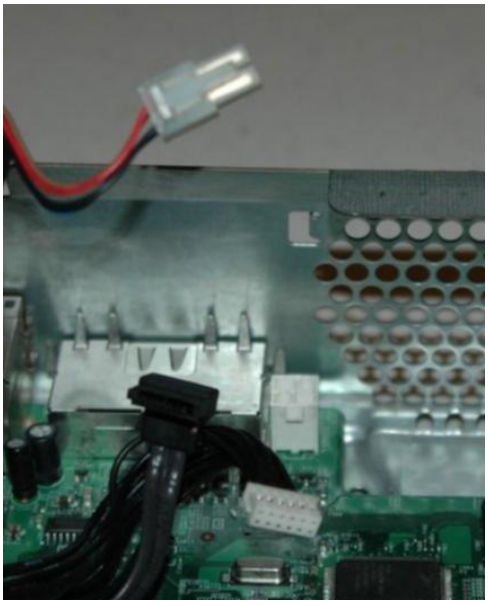
Take the fan shroud out and next we will remove the case fan.



Pull the case fan back, and then lift it out.







Where you see the power connection, unclip the wire, and put the fan aside.

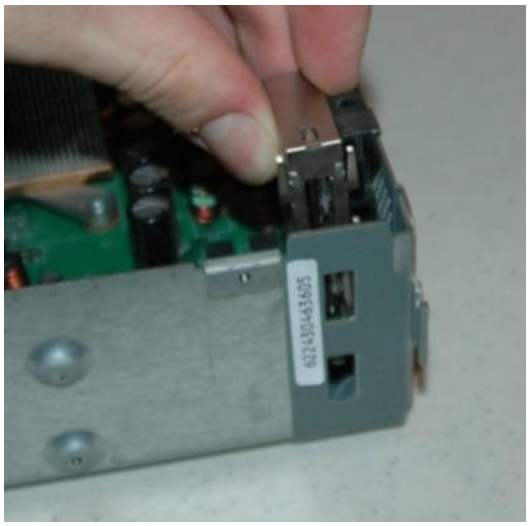
This is a good time to clean it, and in fact your whole case, with canned air, or by using a vacuum in reverse to blow the air out.

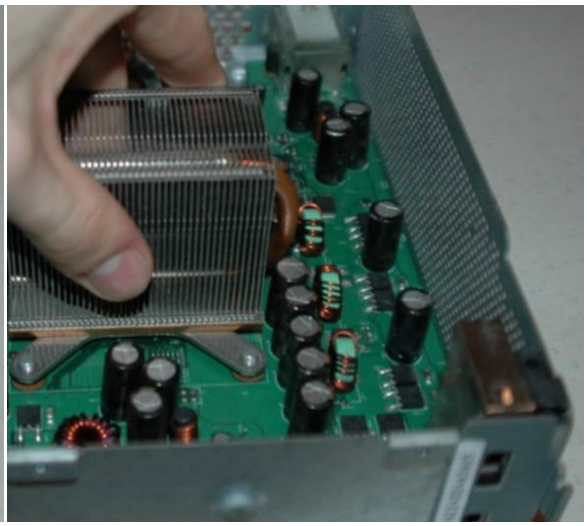
A leaf blower would also work if you want to terrorize the neighborhood. Dust trapsheat. Make sure to get the heatsinks free of dust also.

WARNING: Do not dust out the DVD drive, you'll damage the lens.

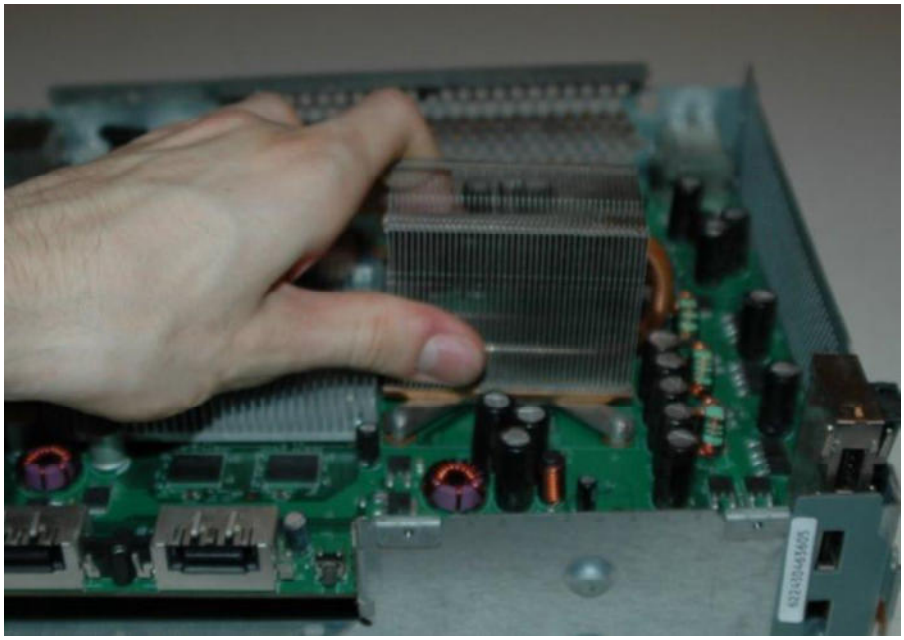
4. Removing the Motherboard (Green Mainboard) from the Grey Case

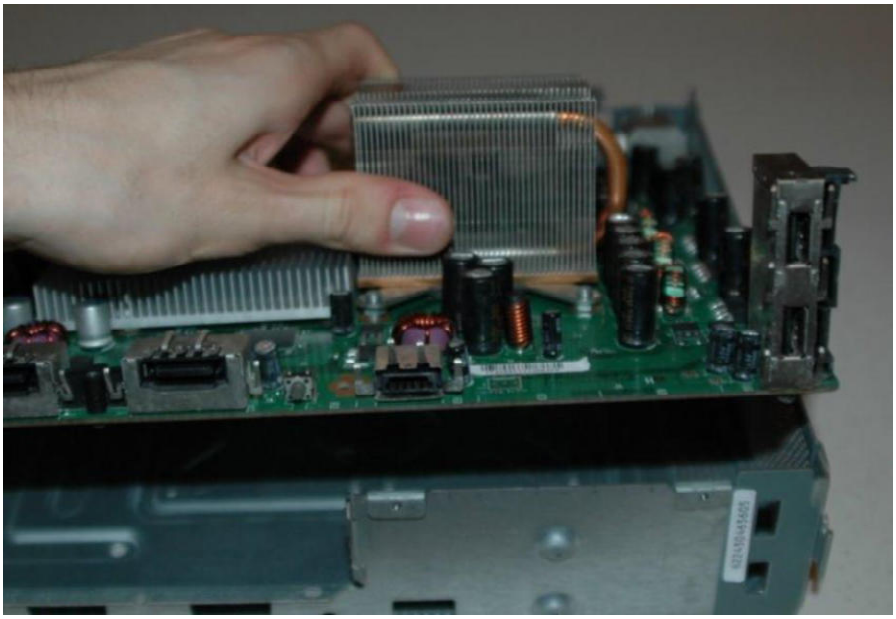
Turn the console back over to where the screws are. Now take the smaller Torx T8 and remove the 8 black screws.



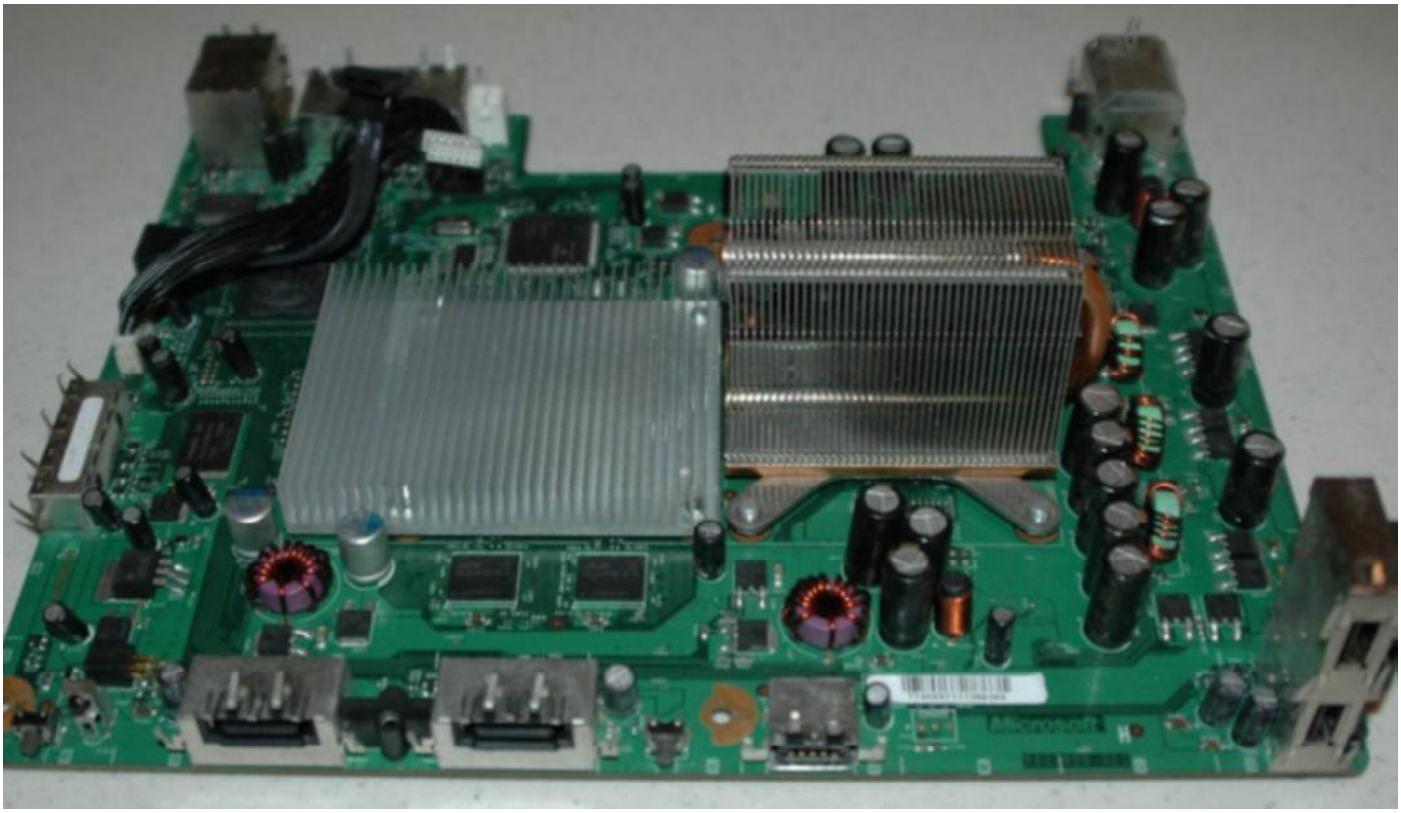


The board will now be free. Turn it back over, and take it out by pulling up a little on the heatsink, and the USB port. The USB is in the corner of the case, and pictured in the left picture.



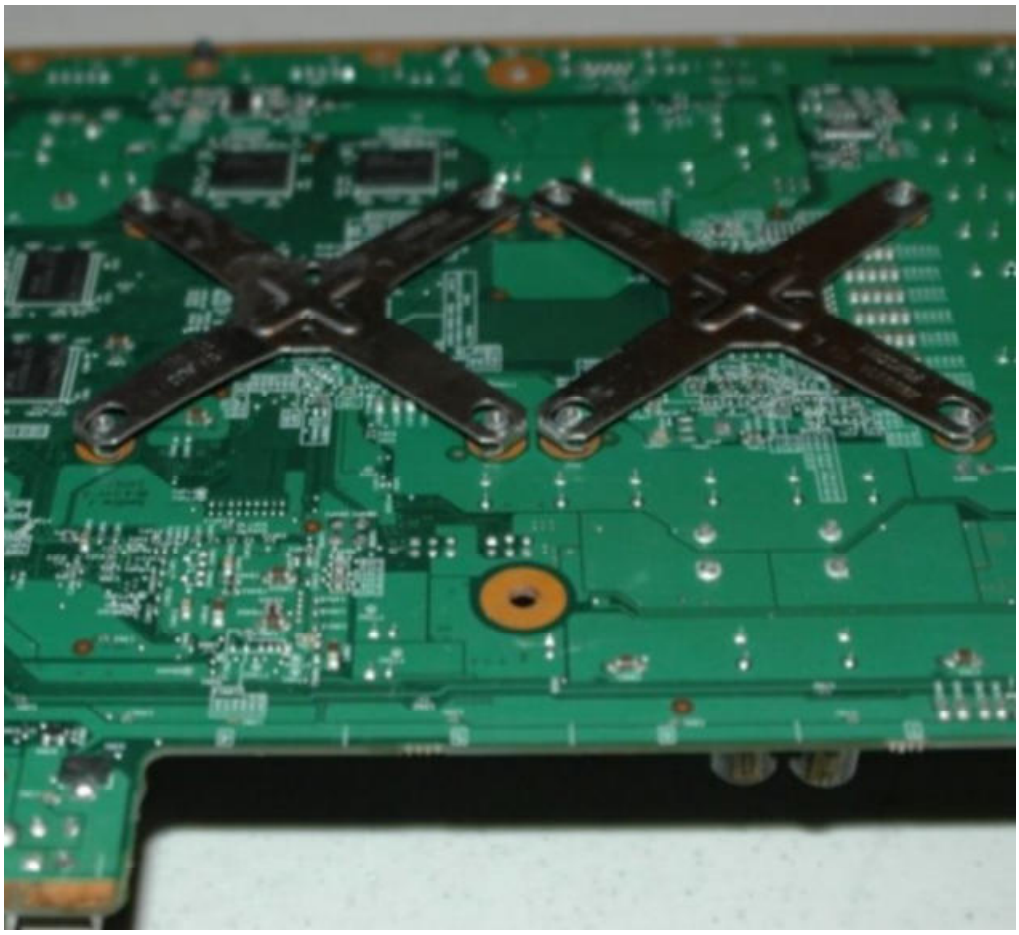


Here are pictures of the removal of the motherboard. Use two hands.



Now that the motherboard is free, put it on the table where you have free space. Do not put it on a metal table, and if you put it on wood, you might want to put newspaper down so you don’t scratch the wood. Do as you wish. Step 4 finished.

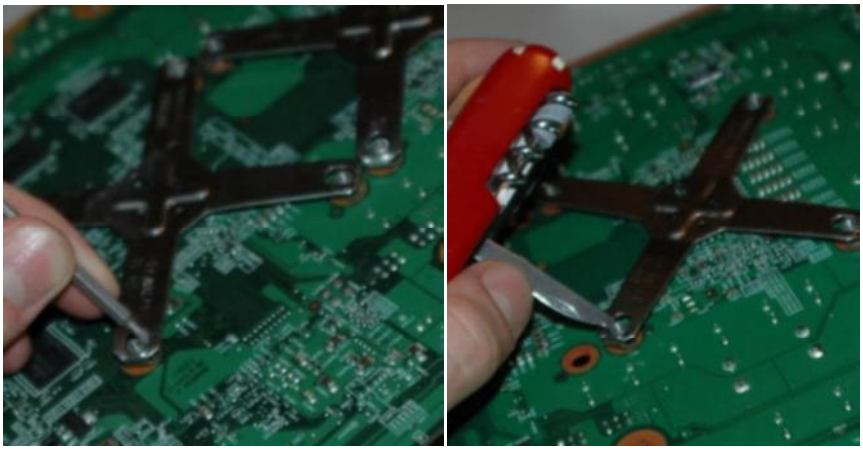
5. Removing the X-Clamps and Heatsinks



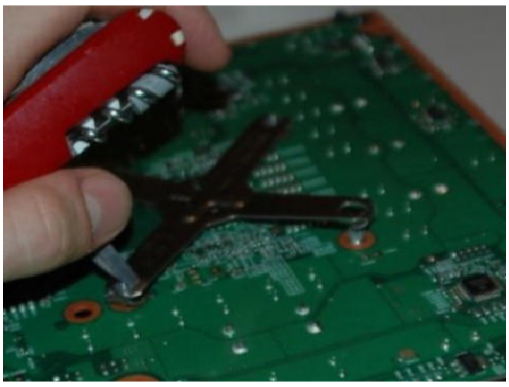
ATTENTION

Static electricity, which can build up on your clothing, may damage your board!

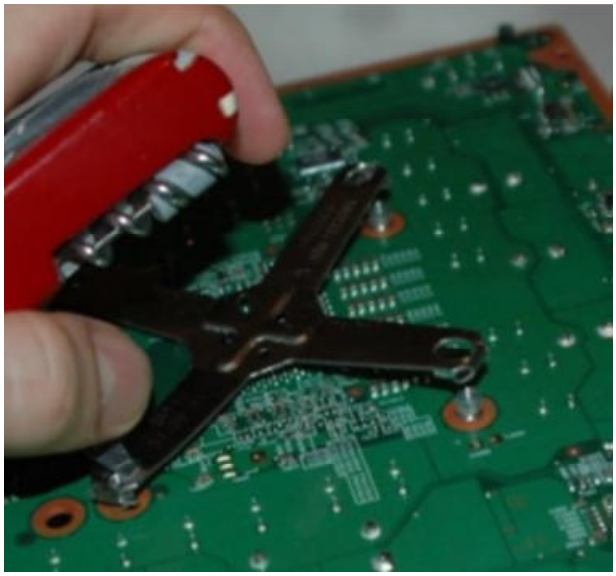
Handling the board by the edges, and try to minimize contact with the components.



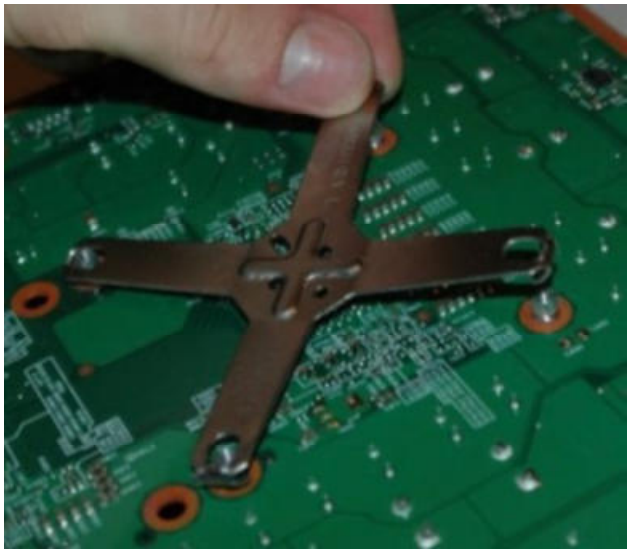
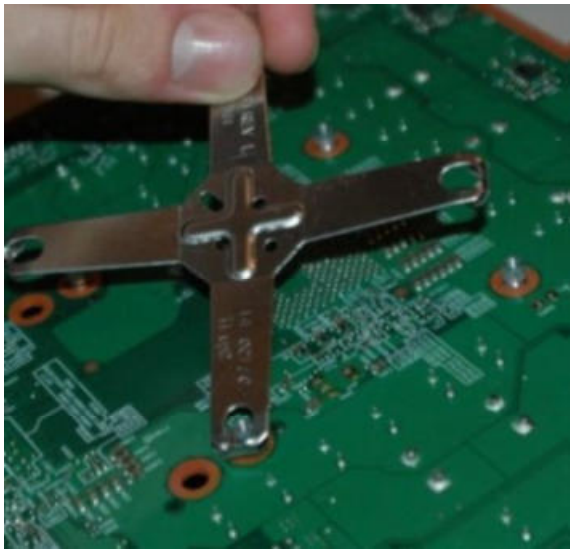
The smaller torx T8 can be used to help remove these X-clamps. The point is not to unclip the corner you are working on, but to apply downward pressure on one side of the clamp, which will make the opposing side pop off. Apply varying pressure and wiggle it until that side, or the opposite side pops out. Continue…



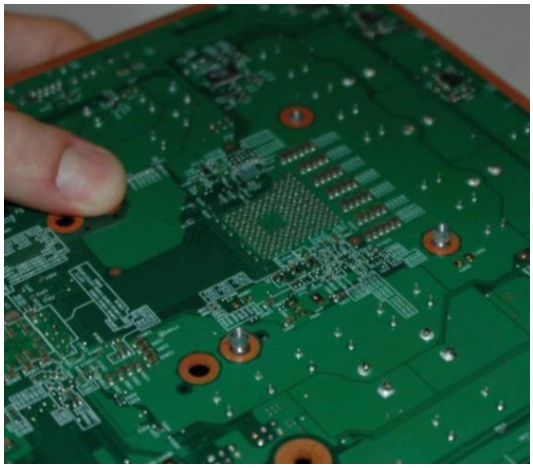
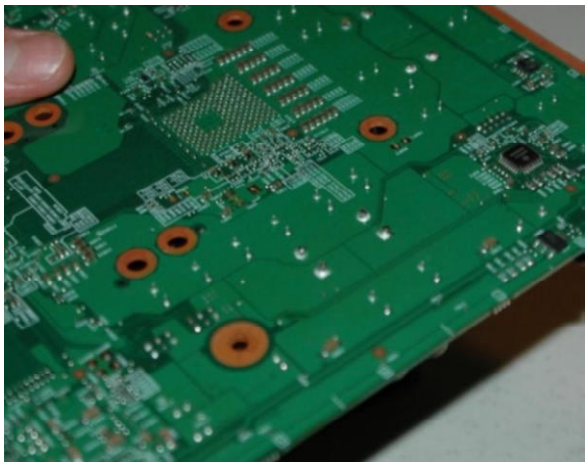
You will need to get two sides undone and then you can remove the X-Clamp. Shown here is what happens when 1 side of the 4 pops off.



Once you get 2 adjacent corners unlocked, you can slide off the whole piece.

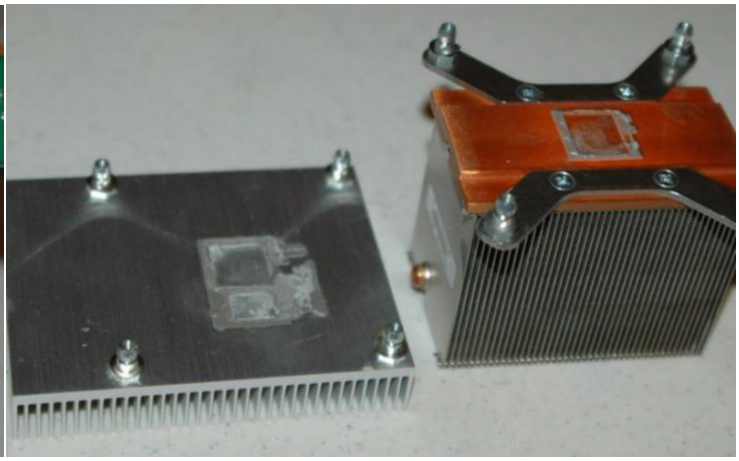



Lift to slide it off. Then repeat the process for the other X-Clamp.

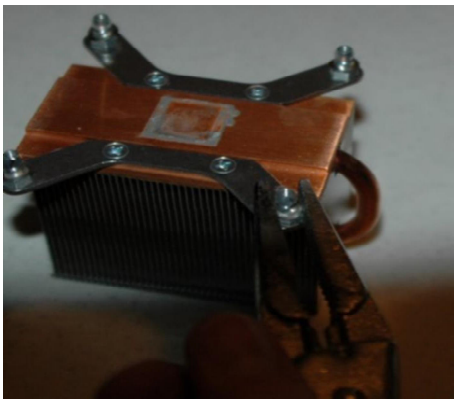
Once the X-Clamps are removed, you can remove both. The chips are fragile like glass, so remove the heatsinks off them carefully.

6. Cleaning the Thermal Compound off CPU GPU and Heatsinks

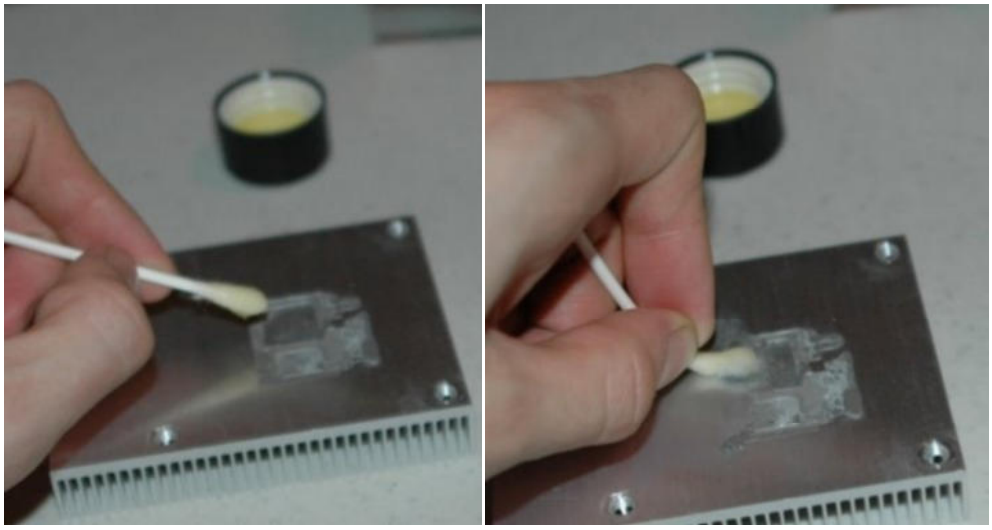


Here is a picture of the two heatsinks once they've been removed.

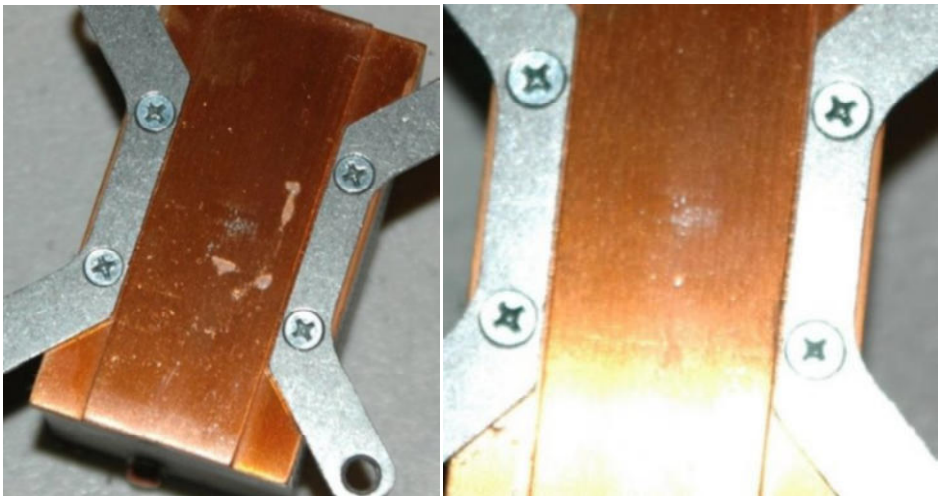
Newer XBOX's will feature a 3rd heatsink attached to the grey one. Leave this.



Before we clean the heatsinks, we will use our pliers or vice grips to remove the 4 bolts on each heatsink. You can discard the old screws. This can be hard if they are very tight, but they will come out.

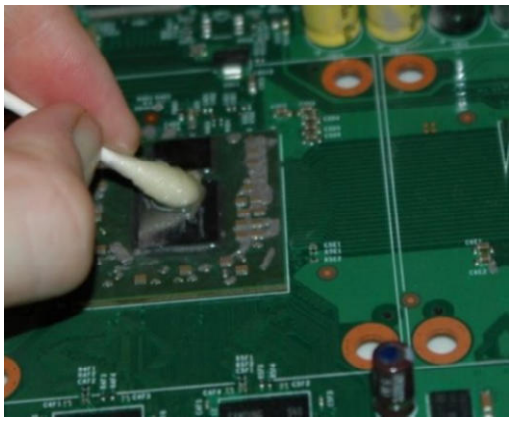


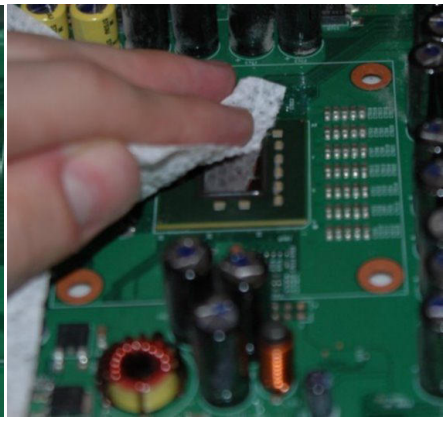
Apply some of CPU/Heatsink Cleaner #1 to several Q-tips (cotton swab) and wipe away ALL the old thermal paste. You can use any lint free cloth. Microfiber works well. Paper towel is good too.
Then use Purifier #2, or very high purity alcohol to scrub off the residue. Please repeat this so you get all of the cleaner off.



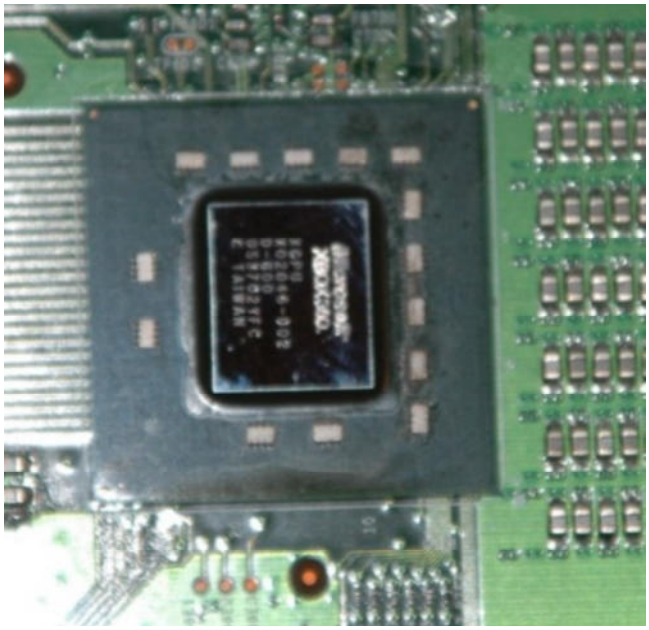
The one on the left, it is not clean enough. On the right, it is much better.

7. Cleaning the Old Thermal Compound off the CPU and GPU (The 2 Core Processors)





Now that both heatsinks are clean, we can proceed to cleaning the CPU (central processing unit) and GPU (graphics processing unit). The GPU has the short grey heatsink, and the CPU has the tall copper heatsink.
It is important to remove the paste from the tops and sides of the core, but if you can't get every bit from around the outer green area beside the chip, that isn't a concern.
Once you've cleaned it with and purified the surface a couple times, make sure there is no lint, and proceed.



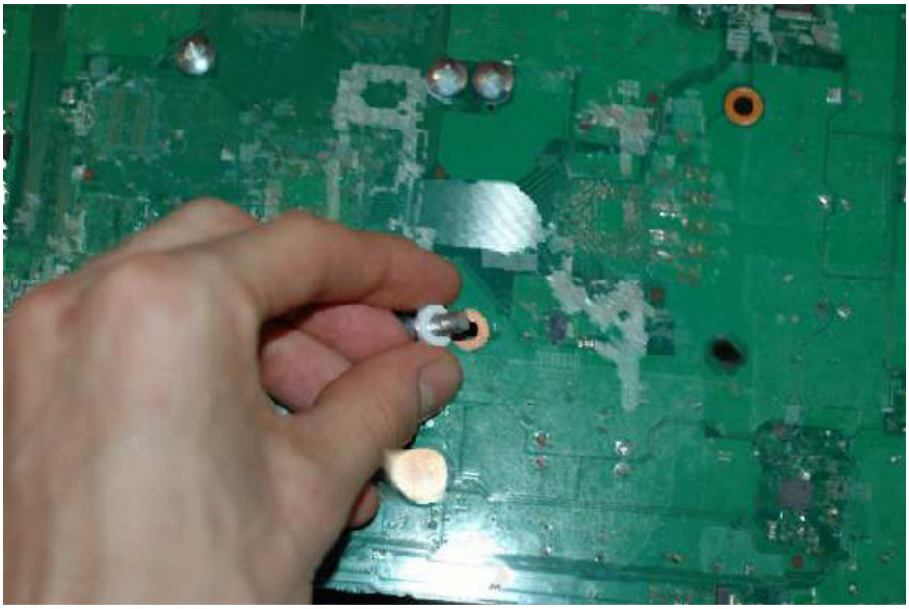
The cores should look like this or better. Like glass.
When you are finished, you have completed step 6.

8. Apply Southbridge Clamp, RAM Pads, Replacement Hardware, Thermal compound, and Reinstall Heatsinks

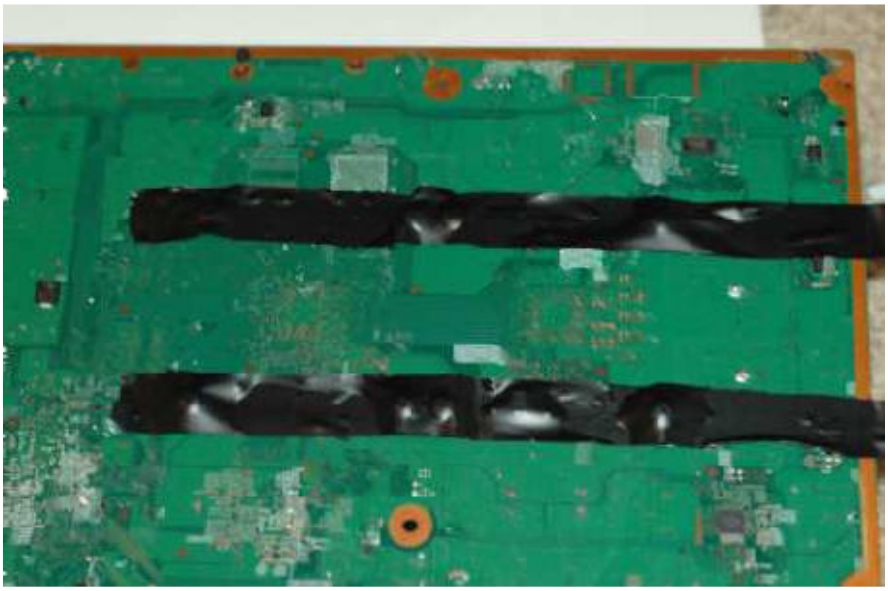
OPTIONAL STEP : Improve reliability with this step, sanding the case stand-offs.

In the case sand down the two standoffs where my thumb and finger are pointing only.
Remove at least 0.75 mm about the thickness of each washer.
You must make each standoff less than 3 mm high, the height of 3 steel washer (they are currently 3.75 mm)

Note: some Elite model or newer xbox's from 2008 and on already have this bug fixed, so you don't need to sand it if you measure it with 3 washers and see it is equal to the surrounding perimeter of the enclosure case.



Turn the board over and put one wite nylon washer on each screw, then put it through the hole.
One the bottom side you can use only nylon.

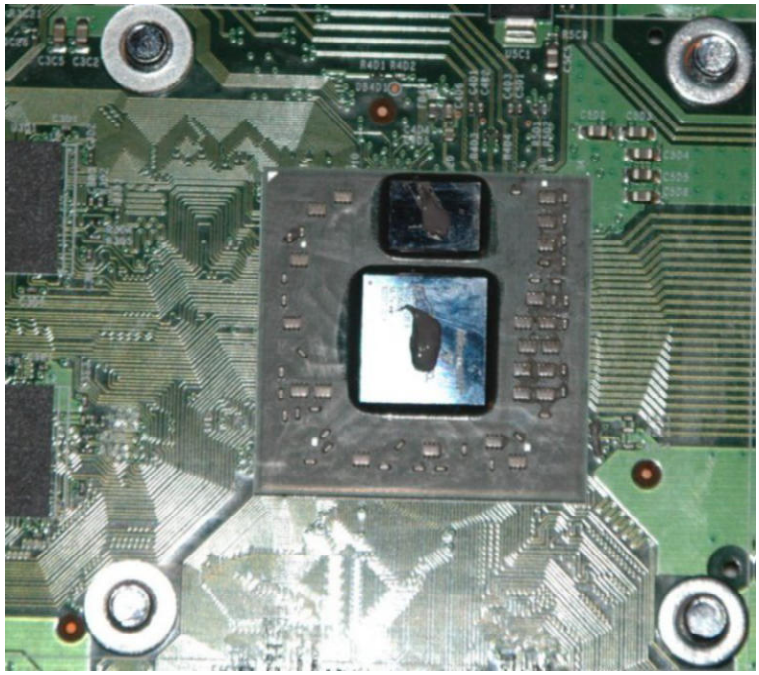


Insert all 8 screws, 1 per hole. Use electrical tape, or other easily removable tapeto secure the screws for now.

It was revealed that this saves 1mm of space in the xbox reducing flex.

(You will end up with 8 extra steel screws by this method)

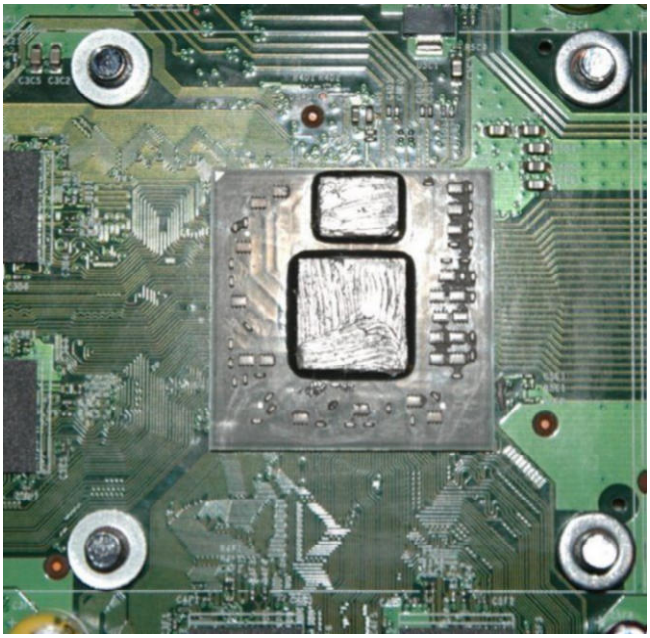
Turn the board again, to the chip side, and put 1 nylon washer on top of each screw. (8 total)
Follow with 1 steel on top of each of those.



Apply the thermal paste. About ½ size of 1 long grain rice.

The blister pack of thermal compound comes with many kits and must be mixed now.
Squeeze it in the tips of your fingers from side to side for 30 seconds.

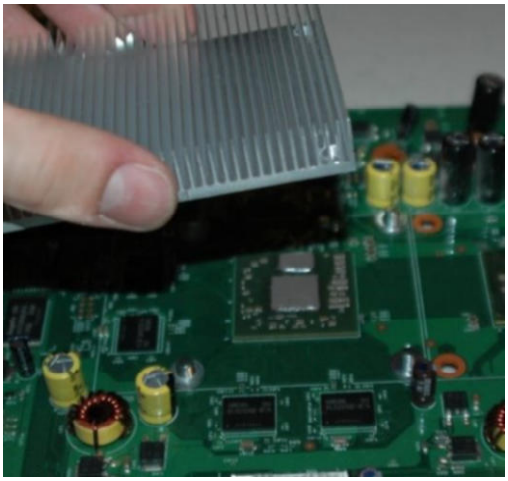
Also, it is unlikely that you will need to use the whole packet. It will dry once opened.



Spread out the paste. It is best to use a plastic credit card.
When you spread it out, try to keep it even.
You don't want there to be air bubbles.

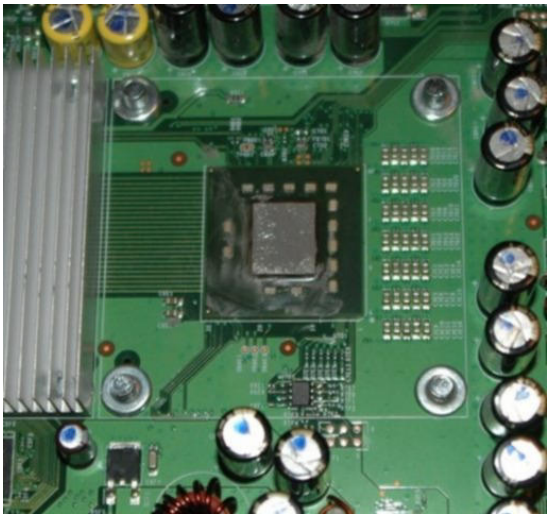
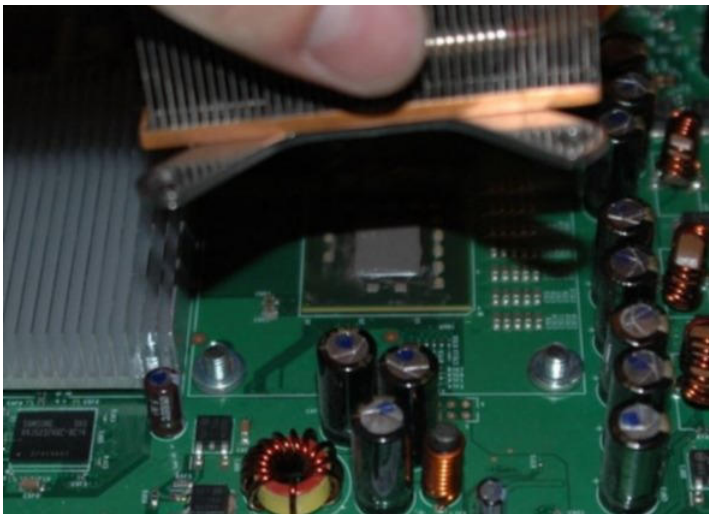
When you screw down the heatsink the excess paste will ooze off the side of the core. For this reason, don't apply too much paste.
For reference, the amount the factory had on was more than you need to apply now.
They surprisingly most always put too much on.

Apply the GPU and CPU foam shims. The smaller square goes on the CPU, right side by the power plug.
The 3-sided shim goes on the GPU as pictured, with the missing edge on top, by the TV input side.

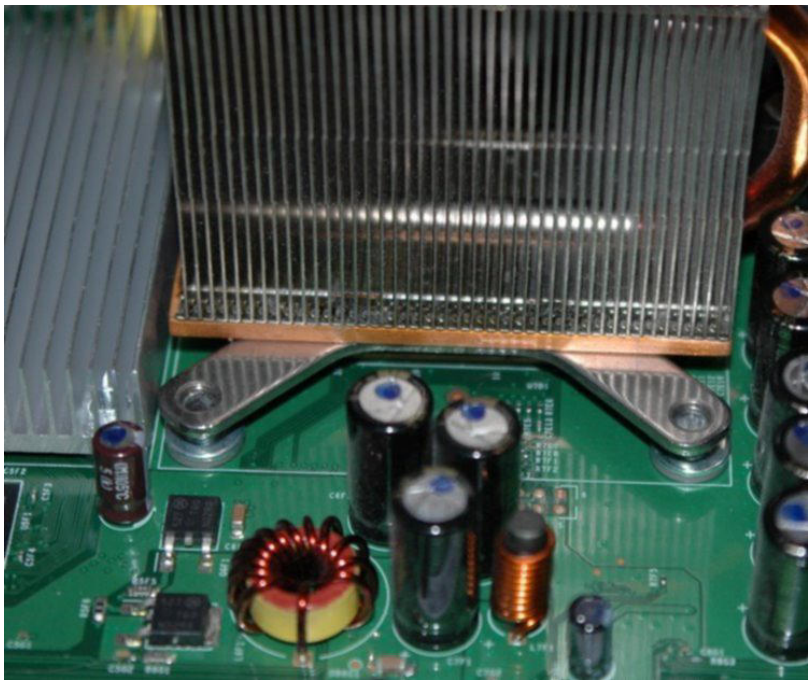



To tighten the screws slide the motherboard slowly over the edge of the table to access one screw at a time if you did not use tape, until 1 corner reaches over, or else the other screws will fall to the door.
If you taped them, hold the heatsink o the screws, and turn the board over and begin tighten them by brand one by one.
You don't want any coming out because the washer may come out.
(Precaution: If one of the screws drop out while you are doing this is you should redo it to ensure the washer are all there).

Hand tighten screws for now.

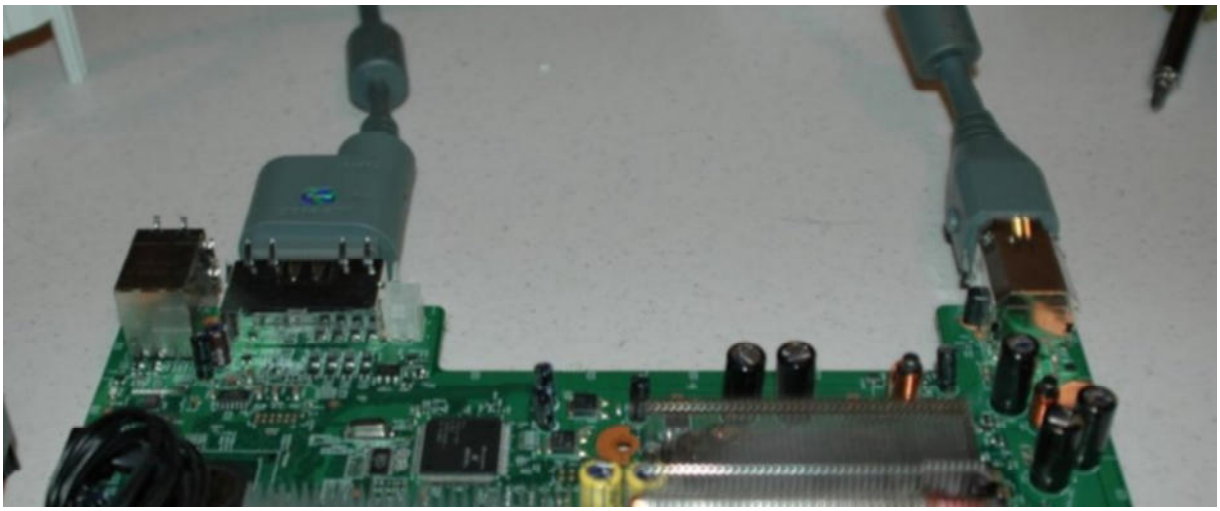
Now follow the same process for the single CPU on the other side using the large heatsink



When you have hand-tightened all 8 screws, take a screwdriver and tighten them lightly until secure.
Don't put much force on the board. It should be screws in all the way, but excessive pressure is not needed. It is also important the pressure be equal. To get your system working, adjusting the pressure may be needed. You could need to play with it a bit later on.

Before we can turn the console on, we must connect some things.
Don't turn the system on without the DVD player attached. I've been advised that this could possibly be detected by XBOX Live.

First attach the cables into the back of the DVD drive, and then put the RF module in the USB port.



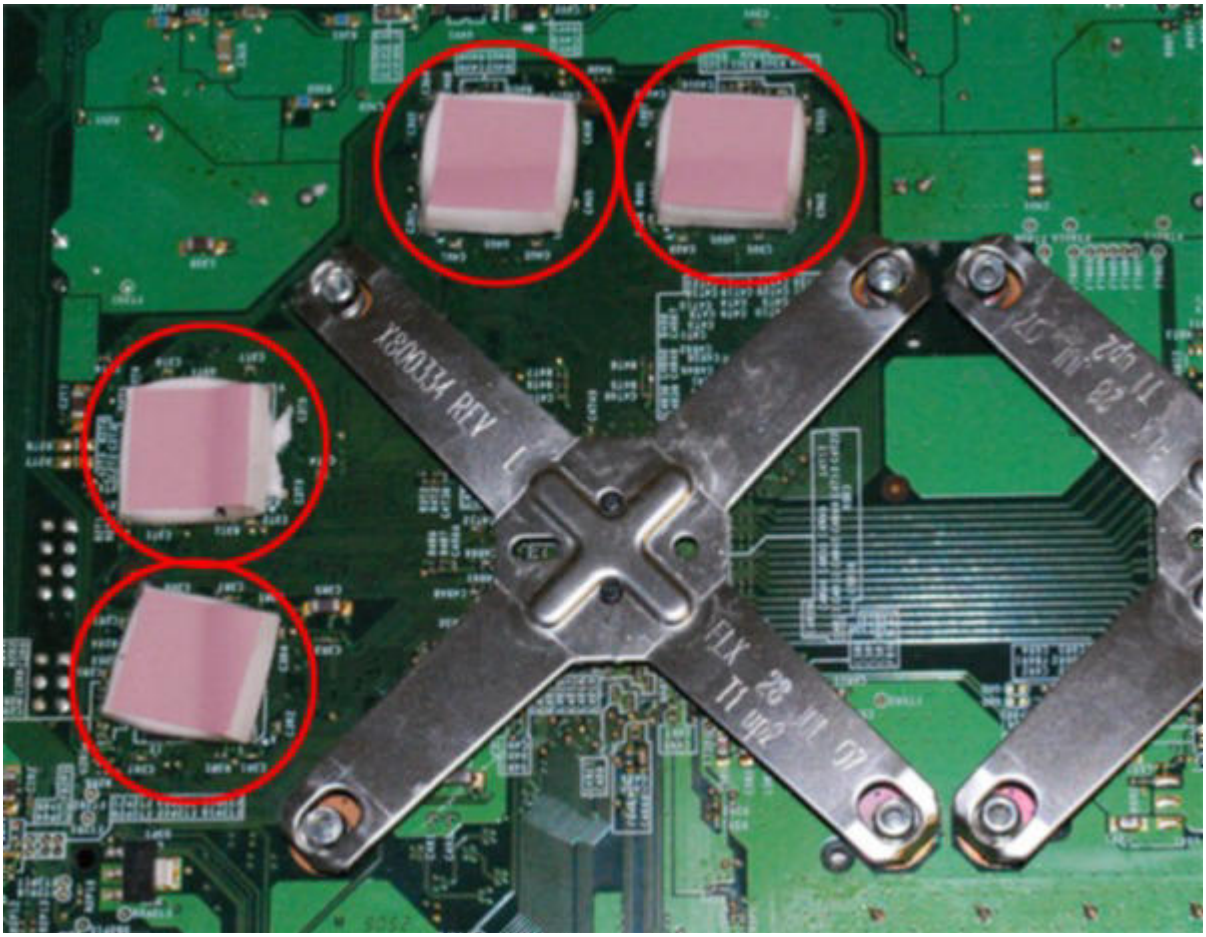
Attach the **Audio Video Cable**, and the Power Adapter. Make sure the power adapter is plugged into the wall too. The Audio video (AV) cable has to be in or you will get 4 red lights.

Make sure the AV Cable, power cable, DVD player, and RF module are all attached.

At this time you can power on the system and for many it will already be working.

OPTIONAL : Installing Pink/White RAM Pads

Only some models will require these!



The underside of the older XBOX models where the RAM is on the bottom. Put the pads on each. They will transfer heat to the outside of the steel case which they will touch. The pads themselves are not heatsinks.

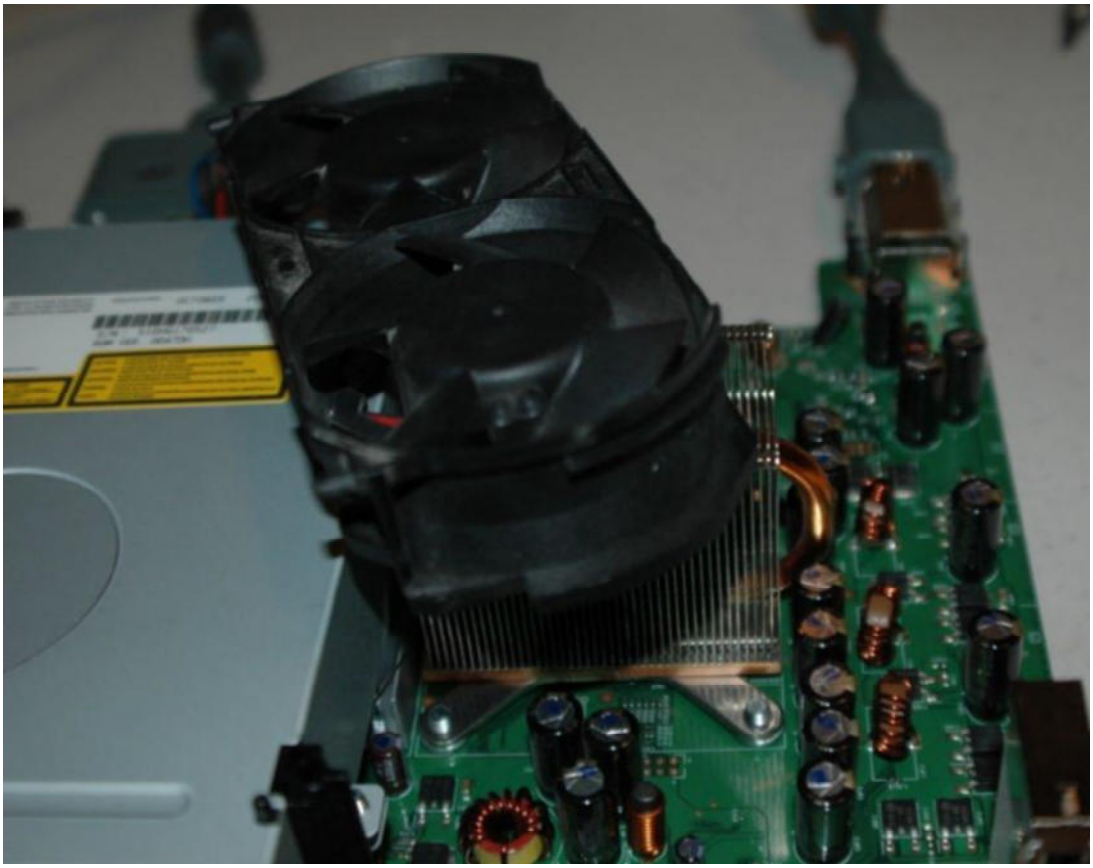
Newer models have the RAM on top such as the XBOXs that have the 3rd heatsink.
If you want to, you can make a heatsink by folding some aluminum foil and gluing/taping it to the RAM chips, but you must be cautious that it does not touch the board.

9. Overheat the GPU

THIS NEXT STEP IS OPTIONAL. WE RECOMMEND IT BECAUSE YOUR SYSTEM IS ALREADY OPEN.

It is something to try **ONLY** if your system isn't working yet.

First method - Case Fan



You can rest the case fan on top of the DVD player as pictured, and make sure it isn't knocking anything when you turn the system on because you can damage your case fan.

It is also sharp when moving, so be careful not to cut yourself.

Cool Hair Dryer Method

I prefer to use a hair dryer with the COOL switch very firmly taped down.
This works better than the case fan method, but obviously requires a hairdryer than can do cool air only.

Sometimes when a system is overheating quickly, (2 red lights), the hairdryer will apply more cooling and allow you to finish this step. I use CDs or something similar to the air from getting to the GPU side, since we need the GPU side to get hot. We do this all to help the solder make better connections.

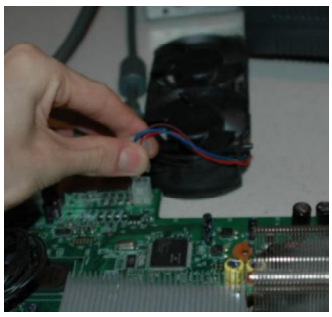
I usually prop the back of the hair dryer up on the power brick so it is close to the CPU.
The case fan has to be attached to turn on the console.

/!\ THE GPU OVERHEAT /!\

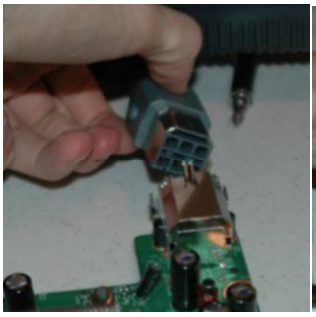
1. You should loosen the GPU screws a bit for the overheat. They should still be screwed in all the way, just not under much pressure. This allows the GPU to get hotter.
2. To turn on the system, press the small silver button on the middle of the RF Module connected to the USB. It is ok to get 3 red at this time. (Green lights are ok at this phase too.)
3. Let the system heat up for at least 15 minutes. Keep the fan over the CPU portion (tall) for this. **Watch the system to make sure it doesn't go to 2 red lights early.** If it does, do it over, but you will need to cool the CPU down more, or adjust the tension of the CPU screws, (PROBABLY slightly tighten). Consider better cooling by using the method with a hair dryer on cool setting if you are still having issues.
4. After 15 minutes is up, verify that the system didn't go to 2 red lights yet.
5. The final step of the over heat is to take the fan away from the CPU, so that it is not blowing air on either heatsink.
6. For about 2-3 minutes, we will let the system run without any fans until it does finally get 2 red lights, which means overheat.
7. Let it sit for about 15 minutes to cool down. Don't speed up the process by blowing air on it. This can crack the solder joints.
8. If the system is working after it has cooled down, tighten back the GPU screws and you may being to take it apart to put it back into the case.

10. Powering up the System –Testing for Green Lights

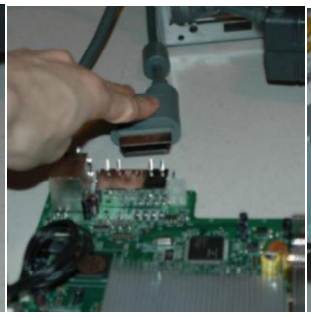
After dissembling everything to tighten the 8 screws, put it all back.



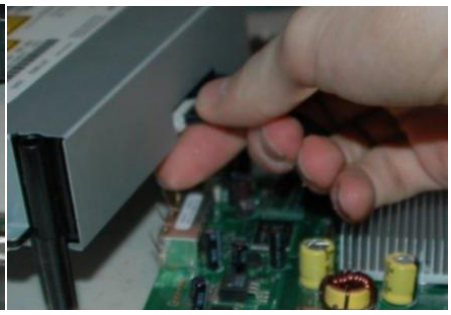
Fan



Power cable



AV cable



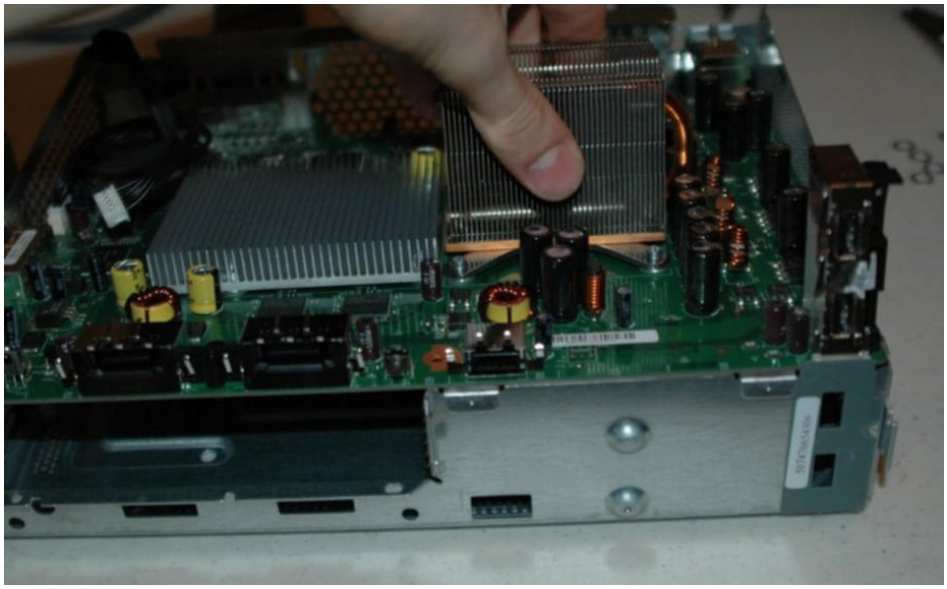
DVD drive

Finally, put the RF module back in and watch for the green light that you would see when you normally turned on your XBOX 360.

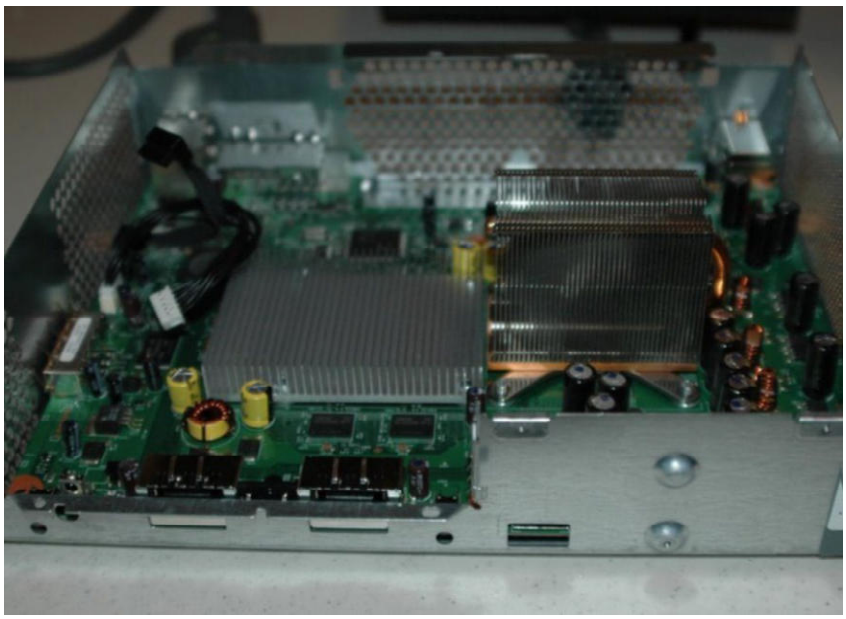
If you see the green lights, you are ready to put it all back together.

If you still have an XBOX that isn't working, you can try that:

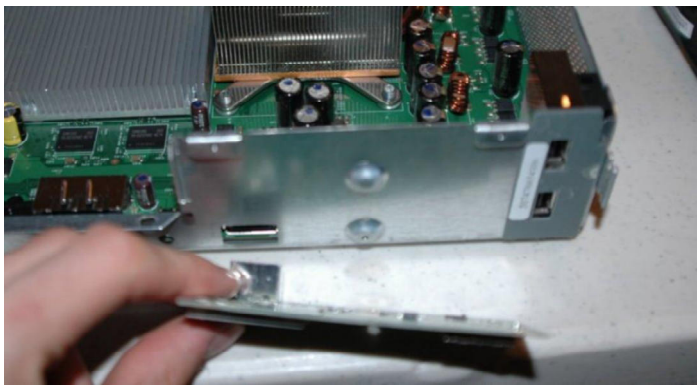
- ✓ Adjusting the pressure of the screws is the first and most frequent thing you should do.
- ✓ You may be successful loosening the screws, or tightening them.
- ✓ Ensure equal pressure.
- ✓ Sometimes for E74, 1 red light, it is advised to try tightening the two screws on the north-side of the GPU, closer to the fan. If you have 2 red lights, this can be the RAM chips. This needs to be reflowed.
- ✓ Some report success using a hairdryer on the RAM chips and then holding them down with pressure until they cool.

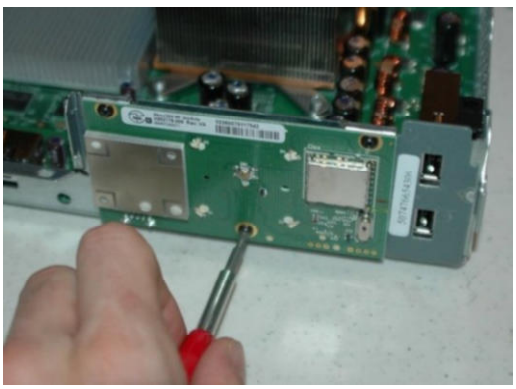


The first part of putting the system back together will be putting the motherboard back into the grey casing. Use two hands.

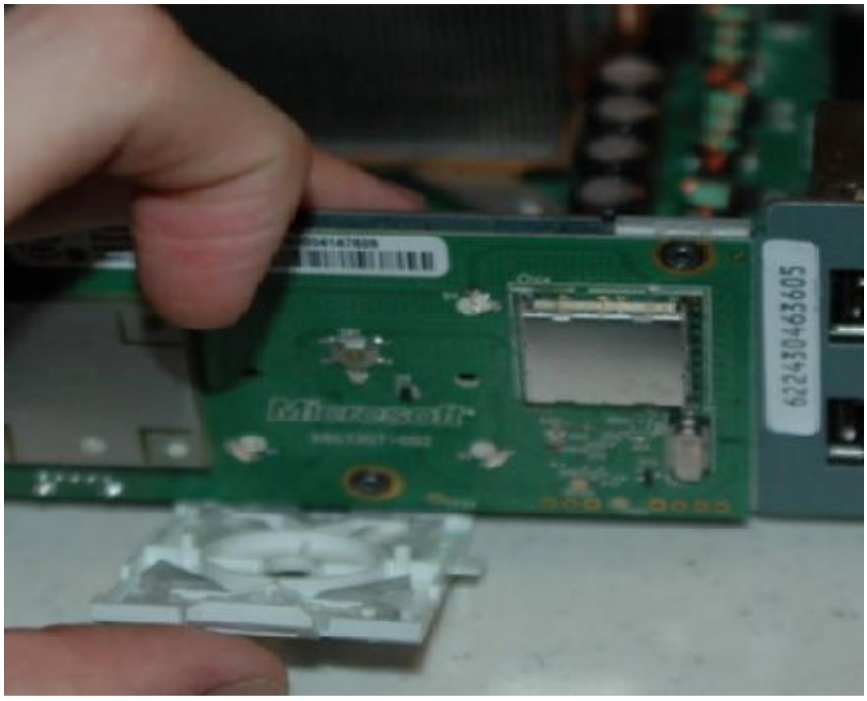


There it is back in the casing.

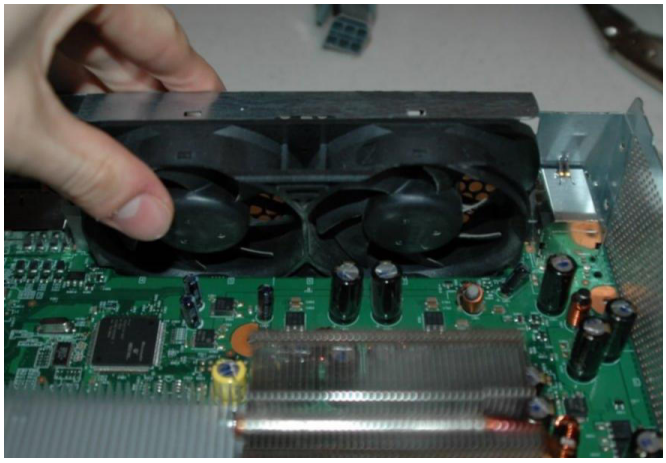


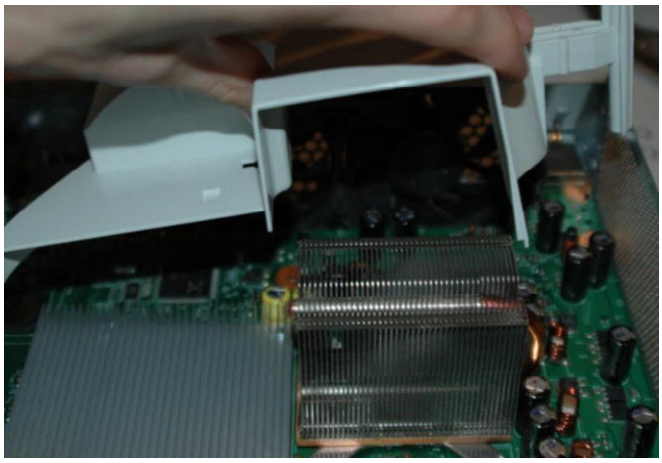


Next, reattach the RF module. You will probably need to push down a bit on the inside of the case to get the USB port to line up with the slot. Then, screw the 3 black screws back in place.

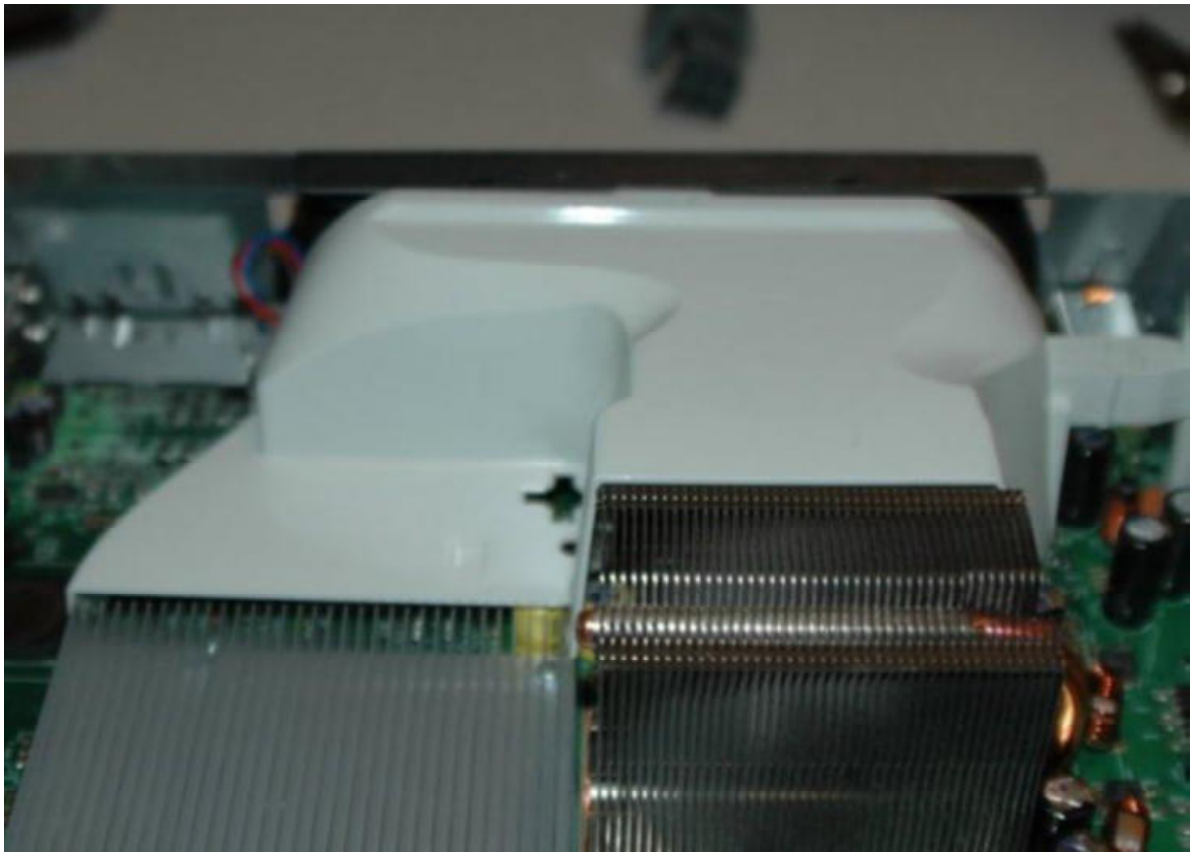


Don’t forget, this is the time to put the white cover back on top of the on switch too.





Now put the case fan back in again, and attach the fan shroud after this.

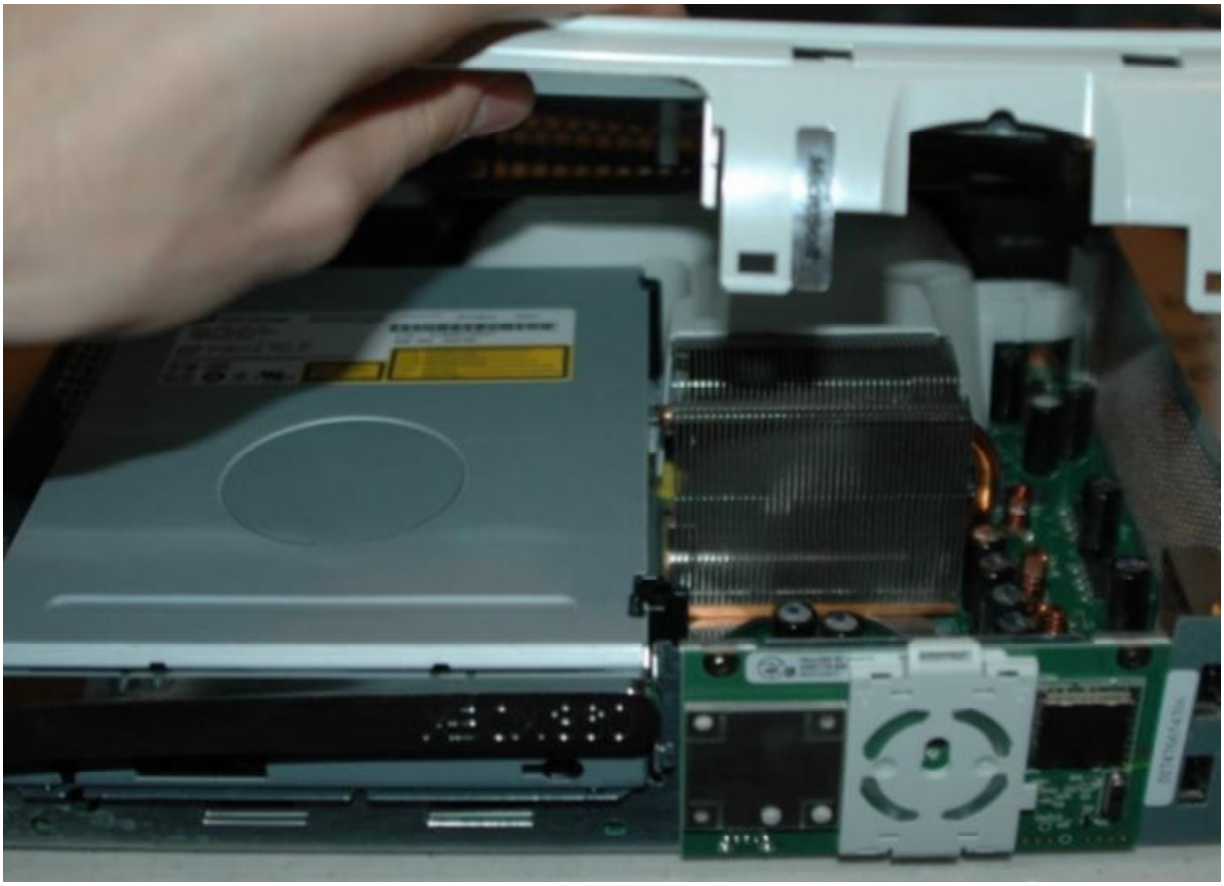


The fan and fan shroud when you are done.

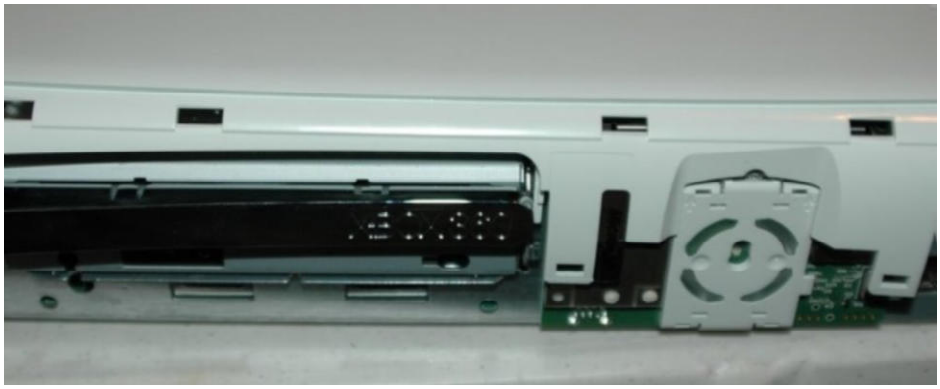
Connect the DVD player again and line it up into place.

The DVD drive has small plastic pins at the bottom. Be warned they are easy to break. Line it up right

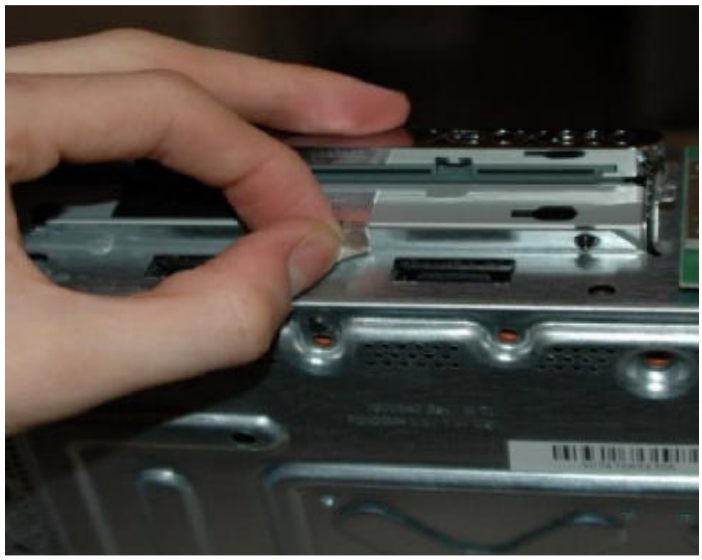
Make sure the DVD player is securely lined up.



Now we can put the cover back on.



Here is a picture of the cover in place.



Re-apply the metal tape that helps secure the DVD player. (Optional)

Put the DVD player eject button back on.

Screw in all of the silver screws that you removed earlier. The black screws that were here before are trash.

For the top cover, line it up at the proper side, slide it into place.

Clip together the other side as well.

Secure it. This picture shows it is secure.

Then put this piece back on top. Do the same with the flat piece on the bottom.

Then snap the faceplate back on. That is all of the steps.