

The Automatic XBOX Cooling System

by **TXTCLA55** on May 30, 2010

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Intro: The Automatic XBOX Cooling System

OK, so a few moths ago I got a the XBOX 360, the only problem was I couldn't keep it in the cabinet with the door closed while I played because it would get really hot in there, and everyone knows what heat does to a 360! At the same time however I didn't want to leave the door open all the time while I played. The solution was simple, a small cooling system. Now because I didn't want to turn it on and off every time I played I devised a simple circuit, a USB powered fan system that used a NO/NC (normally open/ normally closed) or SP/DT switch, a resistor, one PC cooling fan, some LED's, and a USB cord. Why USB you might ask? Simple, when the system turns on the fan or LED's will also, thus the only button I have to press to turn the system on is the power button on the 360. So let's get started!



Dont forget to visit my site also at:

<http://www.wix.com/SimpleCircuits/Simple-Circuits>



Image Notes

1. USB POWERED!!!
2. PRETTY BLUE LIGHTS!
3. HALO 3!!!
4. AUTOMATIC FAN!!
5. Works With any system!
6. ONE SWITCH TO CONTROL THEM ALL!

step 1: Materials and Tools

Note: The amount of each component is in the [#]. Most of these parts can be bought at your local Radio Shack or The Source (by Circuit City). As for the fan I suggest you find an old computer and rip one out of there as it would be cheaper than buying one for \$10. Overall this project should cost about \$10 to \$20 depending on whether you are able to salvage some of the parts.

Materials:

- PC cooling fan, must run on 5 volts, any size [1]
- 39 Ohms +/-5% Resistor (Orange, White, Black, Gold) [1]
- NO/NC (SP/DT) Switch [1]
- USB Cord [1]
- LED's [2]

Tools:

- Drill (optional)
- Hole Saw (optional)
- Soldering iron
- Solder
- Screws and Screw Driver (optional)
- Glue (optional)

The reason for the "(optional)" is because there are many ways you can build this project, choose the way that works best for you.

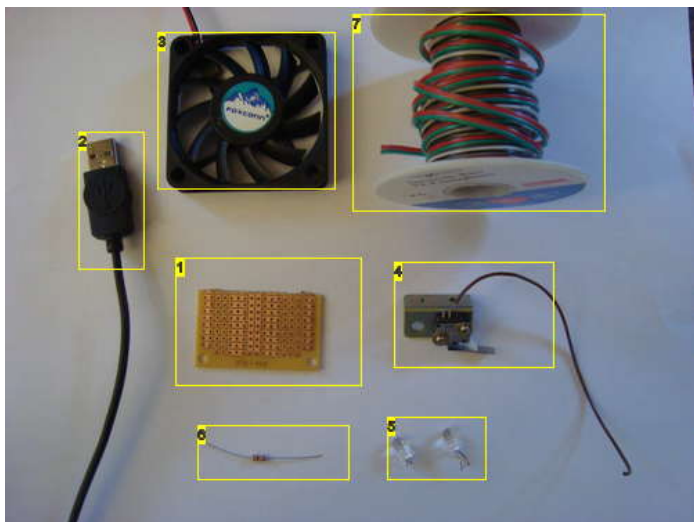


Image Notes

1. Perf board is optional, I use it so my connections are all neat and tidy and simple to fix.
2. USB Cord
3. PC cooling fan that runs on 5 volts
4. a NO/NC or SP/DT Switch
5. LED's mine are a pretty shade of blue, but yours can be what ever you want.
6. a resistor 39 Ohms +/-5% (Orange, White, Black, & Gold)
7. Wire

step 2: Modding the Cabinet

How you manage to retro fit the fan and holes is totally up to you, I just suggest you keep the cutting neat and tidy. In total three holes will have to be drilled, one to allow air to flow freely into the cabinet; and another to hold the fan which will be blowing air out of the cabinet. Also Depending if you cabinet has a hole for cords (from your system Ex: power cable and audio/video cable) you will have to drill or cut that out as well.

Once the holes are drilled all you need to do is insert the fan and screw/glue it in place; be sure the air flow arrow (located on one side of the fan) is pointing out of the cabinet. The NO/NC (SP/DT) switch will need to be glued next to the side of the cabinet close to the inside edge of the door. The purpose of this is so that the lever on the switch is pressed down when the door is closed, it will turn on the fan and off the LED's and vice versa for when the door is open.

The wires going to and from each component can prove to be troublesome. I suggest you glue them to the sides of the cabinet in neat organized lines, you can even paint them black to hide them. As for the USB plug you can simply lead it to the USB port on the system and plug it in. Make sure you measure out all the wire you need before soldering it all together, as you don't want to come short and have to make more connections.



Image Notes

1. Hole for fan
2. XBOX (no kidding)
3. Intake hole also doubles as the exit hole for the cords.

step 3: The Circuit

Follow this diagram on how to wire up your own XBOX Cooling System. Please note that this circuit is designed for use in a cabinet with a door so that if the door is closed the fan will turn on & the lights will turn off, and if it is open the lights will turn on and the fan will turn off.

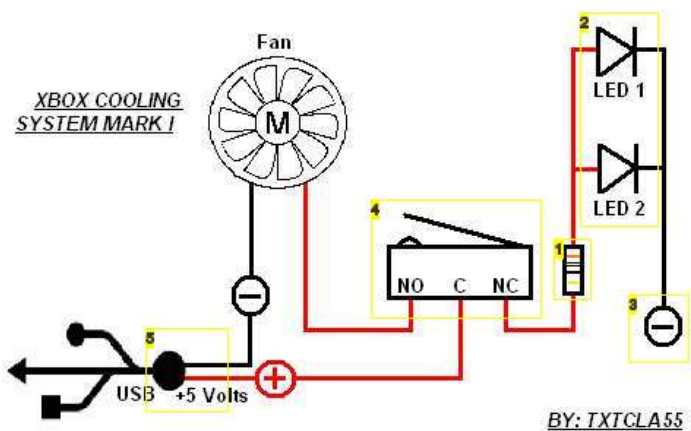


Image Notes

1. 39 Ohms +/-5% colors are Orange, White, Black and Gold.
2. Mine are blue, but yours can be whatever you please.
3. goes back to the negative contact on the USB cord.
4. NO/NC (SP/DT) Switch.
5. Power wires from USB cord are normally red and black, but test before you solder.

step 4: Putting It All Together

This is where the fun starts. Chose a corner for where all your connections will meet (Ex: USB power, Fan wires, LED's, etc.). Then once that place is found check if all other wires can reach their place easily; so see if the LED's can reach the front of the cabinet and if the fan can reach the hole you drilled for it. Because my cabinet had a bit of a ledge inside, I had to use a scrap piece of wood to keep the LED's and switch level with the top of the door. I would suggest that you check your cabinet and be sure a small issue like this doesn't get in your way. Once you have checked all of this its time to glue/nail it all down. I used No more Nails for this simply because its strong, durable, and wont cause any short circuits. After the glue has dried or your finished nailing, double check your circuit to see if its still functioning, if so congratulations! You are finished!

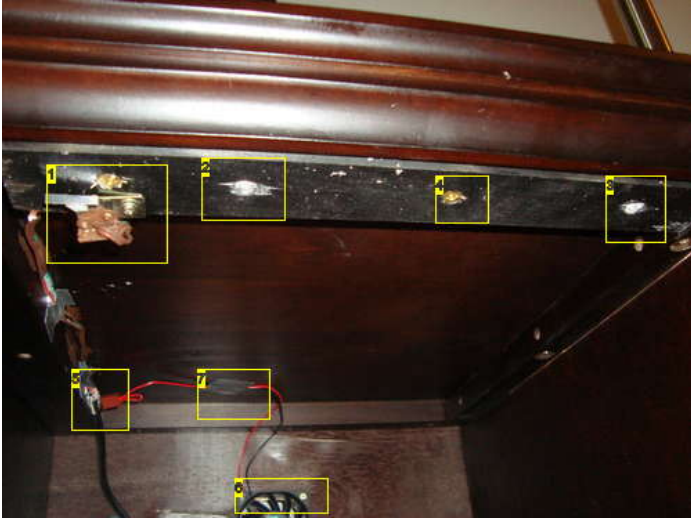


Image Notes

1. NO/NC (SP/DT) Switch
2. LED
3. LED
4. Screw holding "circuit mounting board" in place
5. USB power connection
6. Fan
7. Yes, this is in fact...duct tape :P

step 5: Testing, Testing, 1, 2, 3...

Now for the moment of truth. Turn on your system and see if the LED's light up with the door open, then close the door and listen, or look at the back of the cabinet for the fans turning on. If there is a problem double check your circuit and solder connections; however if the problem persists leave a message and I will try to answer it ASAP. Thanks for reading this instructable and the best of luck in your future projects! a full video of my system can be sen below.

<http://www.youtube.com/watch#!v=kP5T8ZVGxcM>



Comments

7 comments

[Add Comment](#)



LennyTheDub says:

Jun 23, 2010. 6:07 AM [REPLY](#)

Could "automatic" be achieved by using an old thermostat with a mercury switch?



TXTCLA55 says:

Jun 23, 2010. 7:35 PM [REPLY](#)

Yes that is true, and I was planning on doing something like that; but in the end the amount of connections and schematic would have been too difficult for some of the people who would be building this project. The whole aim of this project was to provide easy experience in electronics to the reader who could be new to the field. Overall this project is easy for people to build and because of the relatively cheap components, its also affordable.



LennyTheDub says:

Jun 24, 2010. 3:37 AM [REPLY](#)

I know it would be too advanced for me anyway. But since I started coming here, I'm trying to "think geek" more ;)



Reffner says:

Jun 11, 2010. 7:01 AM [REPLY](#)

It's a good idea, and the lights look cool. I would have left them on, but that's because I like shiny blinky stuff. Then again, it would probably take away from my gaming as I would be looking at them all the time ;).



TXTCLA55 says:

Jun 11, 2010. 8:00 AM [REPLY](#)

That's true, the LED's were really a last minute add on, I thought "why not make it look cool" and bingo the LED's were added!



Reffner says:

Jun 10, 2010. 1:24 PM [REPLY](#)

Automatic cooling system had me thinking it monitored the temperature of the xbox and controlled the fan. This is more of a fancy way to turn fans and lights on and off.



TXTCLA55 says:

Jun 10, 2010. 1:27 PM [REPLY](#)

LOL, yes it is! That's what makes it a great project for someone getting started! It requires no programming, complex parts, or expensive components! Overall it gives the maker a sense of accomplishment and easy experience.