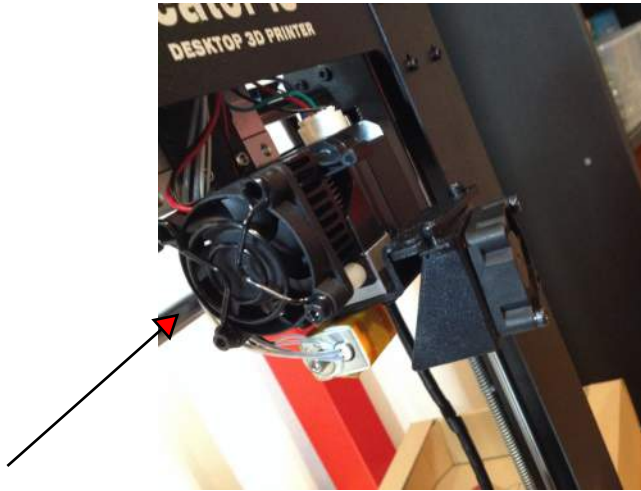


Wanhao Duplicator i3

A novice's guide to wiring the 40mm extruder fan to 'always on'

Disclaimer: I'm a complete novice at electronics. I put this together because I thought it might help another person who was unsure about how to proceed. Take photos along the way as well so you can document the initial situation. Not all printers will be the exact same.

1. **Unplug the power from the printer.**
2. There are two fans. Be sure you know which one we're working on today.



Two fans



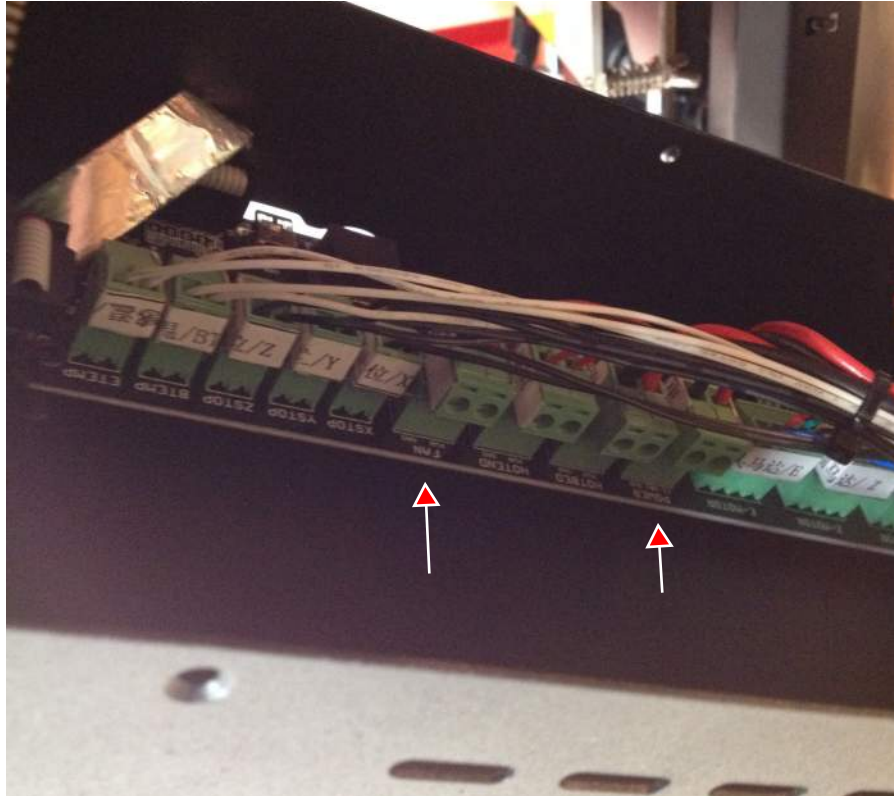
(It's this one)

3. Open the control box.
 - a. Remove the bottom three screws on the front.
 - b. Remove the bottom three screws on the rear
 - c. Remove the three screws on both sides.
 - d. Tilt the box back gently like this:



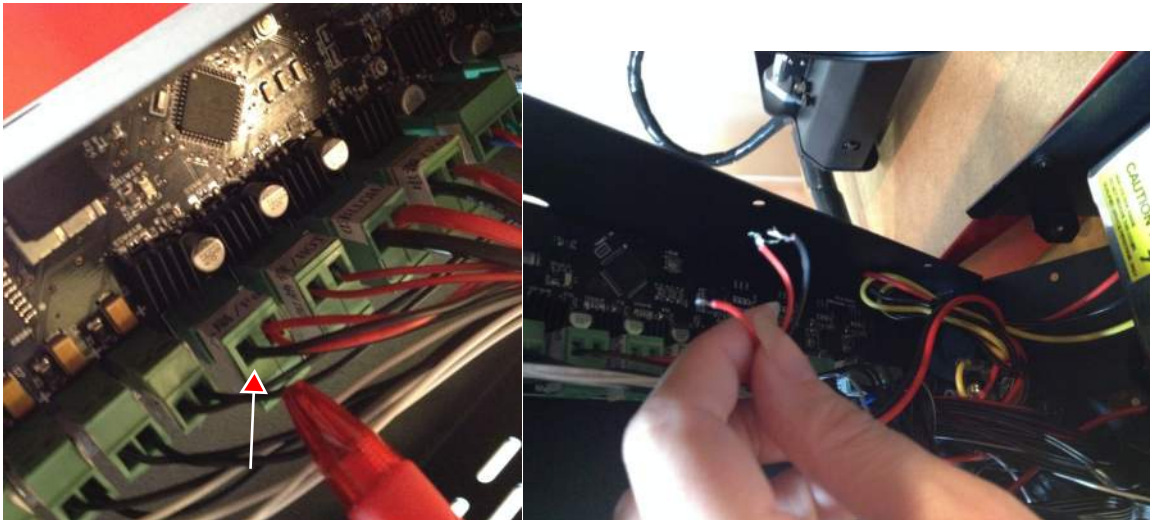
The lid doesn't come off: a mess of wires connect in the back so we'll just work with it tipped back.

4. The board is mounted to the lid. Everything's really clearly labelled. (I took this pic upside down)



Look at the FAN and POWER. That's what we'll work with. Screw terminals - no soldering!

5. There are four wires going into the FAN one. Two red, and two red-and-black. Loosen both screw terminals on FAN. I used an eyeglass screwdriver in this confined space.

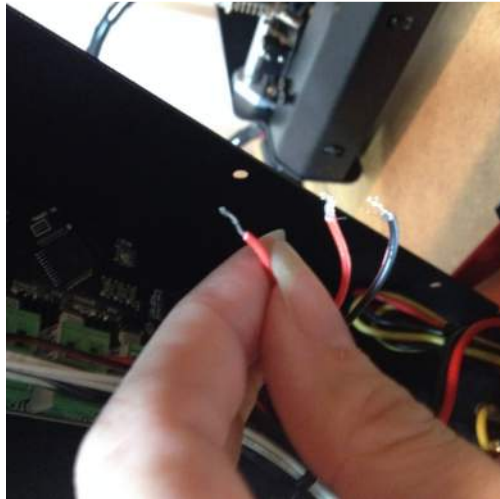


One of the strands fell off when I unscrewed it. I'll have to even up the wires in a minute.

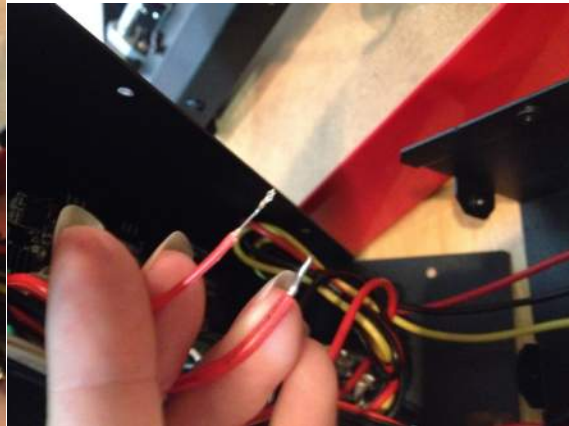
6. Take a 9-volt battery and press one red into + and one black into -. Try different combinations until the 40mm fan spins. Take the other two and put them back.

To use a screw terminal, pinch and smooth the strands together. Give a little twist, but be careful they are delicate. Fold the end in half, and insert it into the terminal. While holding it deep in there, screw down the

terminal. I had to strip back a little insulation to make the wires longer. Use a wire stripper. I used an exacto knife because my stripper was too large, and it took me a very long time to pare down the plastic without touching the wires.

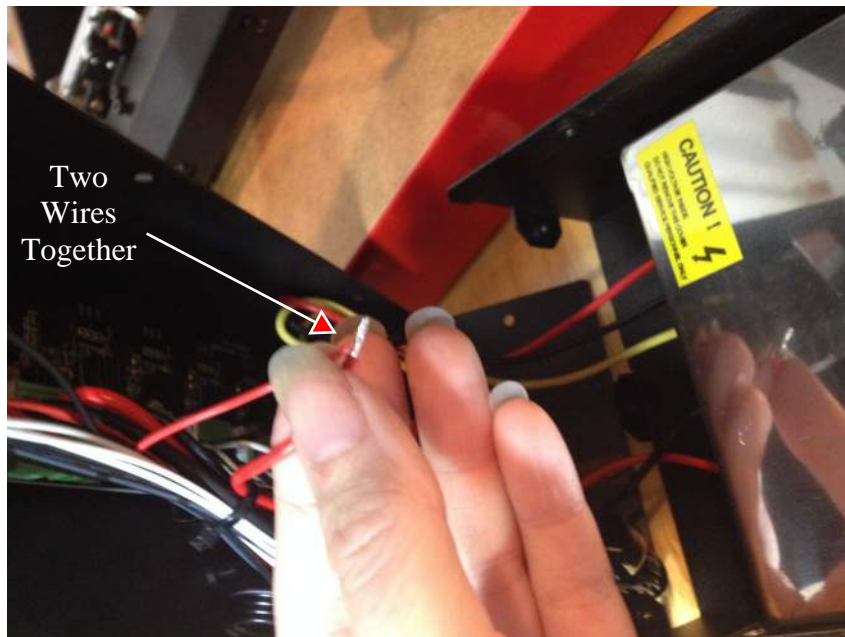


This wire has been smoothed



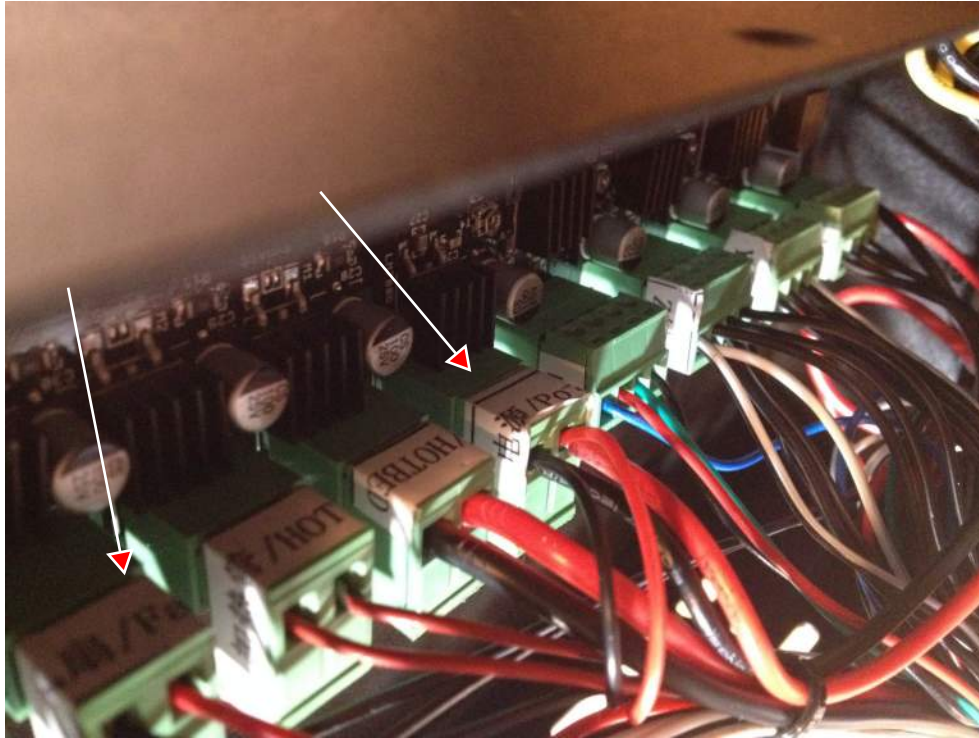
Here is where I stripped off the insulation

7. Now I moved to the POWER terminal. I loosened the screws and retracted the wires in the same way. They are solid – because they are tinned. This made it easier to twist the fan wire around the power wire. Match red to red and black to black, of course!

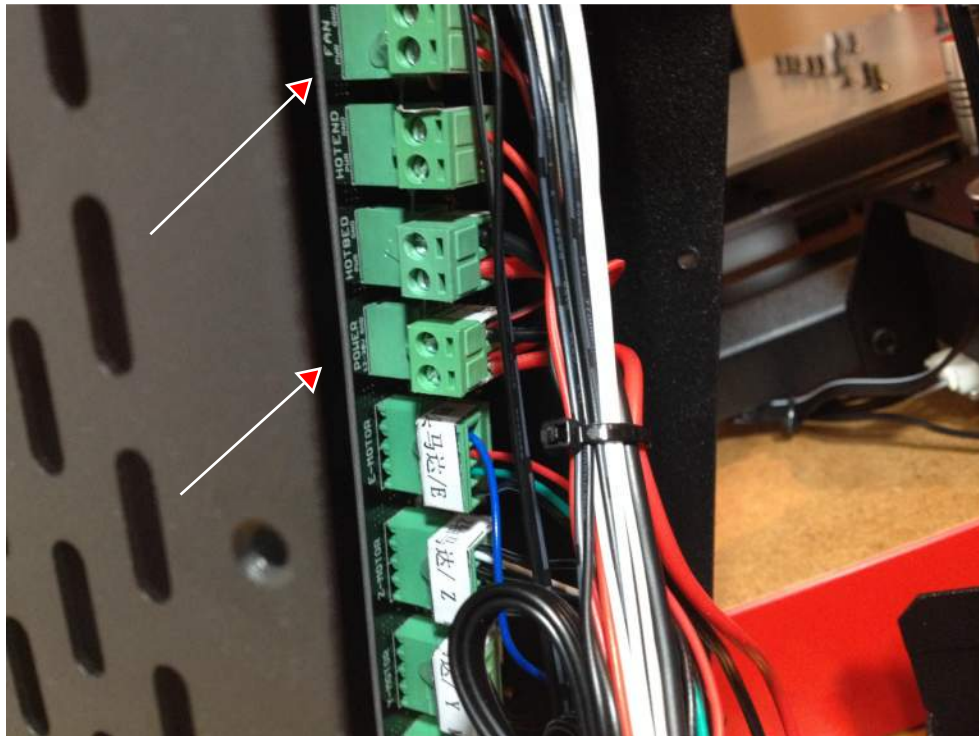


Insert the bundle into the correct hole and tighten it down. You can gently grasp the wire to make sure it will not come loose.

8. Take an extra moment to make sure black went into the GND side and red went into the PWR side and everything is secure. It's a good time to look at the other parts of the box as well.



The back side



The front side

9. Carefully fold the wires back into the box as you close it so that they are not pinched. Put in the screws half way until they are all in, then tighten, since the box has a little 'spring' to it (at least mine did).

That should be it. Hopefully that was easier than you thought. Mine took about an hour, yours will probably take less!