Dual Fan Wiring Guide

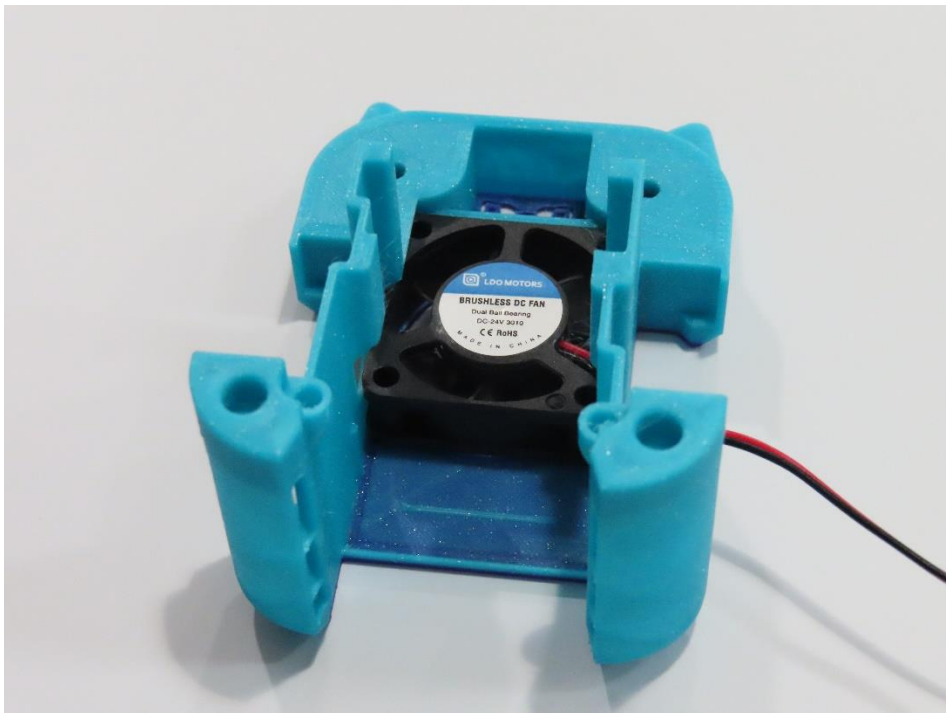
This guide is a breakdown of how I set up my tool heads. This principle applies to many toolheads. This will work with most tool heads that have a single body cowl that contains dual part cooling fans, hot end fan, and possibly some LEDs. Dragon Burner, Rapid Burner, Yavoth, etc.

If you are not comfortable with soldering (basic attaching a couple wires level) this may not be for you.

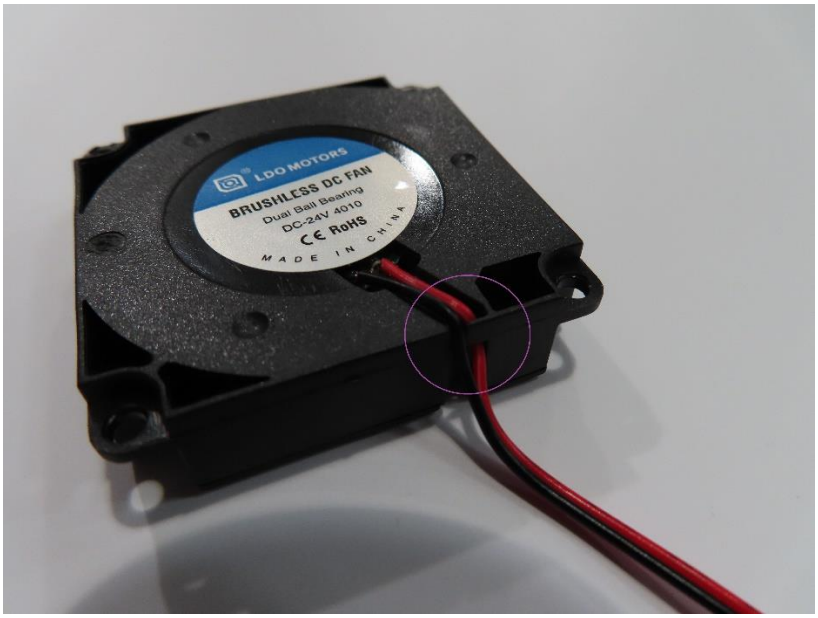
Let’s get started

1. Ensure you have enough snacks on hand. The type does not matter as long as it is something that with help calm the rage monster and allow you to focus!

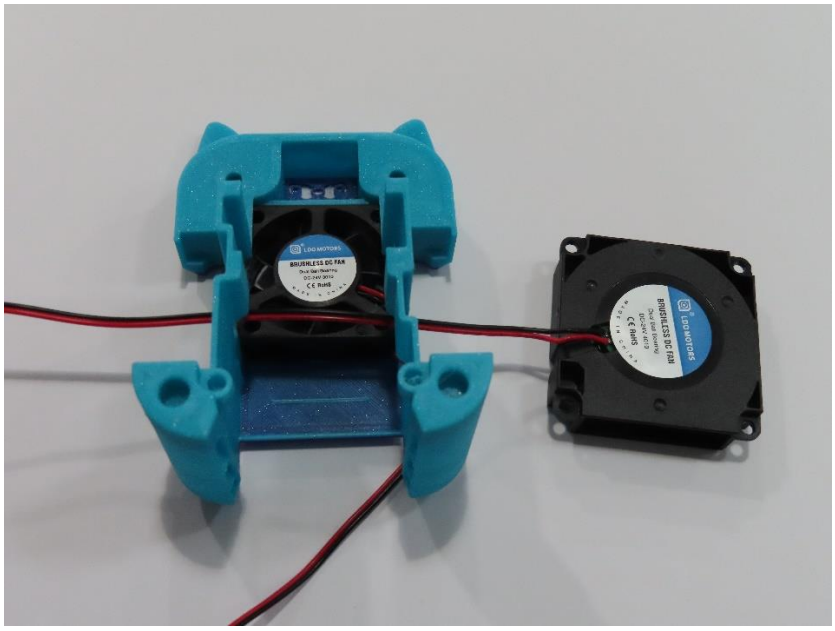
2. Mount your hot end cooling fan. In almost all cases your hot end cooling fan will need to go in first. Most of these cowl builds are pressed into the center of the body. Be very careful not to crack your cowl or you will end up having to reprint it. (Ask me how I know!)



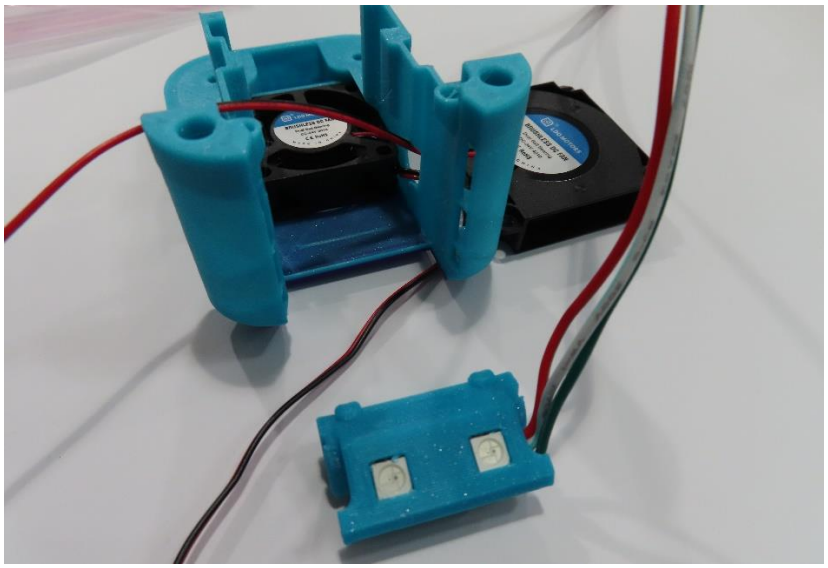
3. Break the small tab off your blower fans that hold the wire to the corner of the fan so that wires come straight out the back.



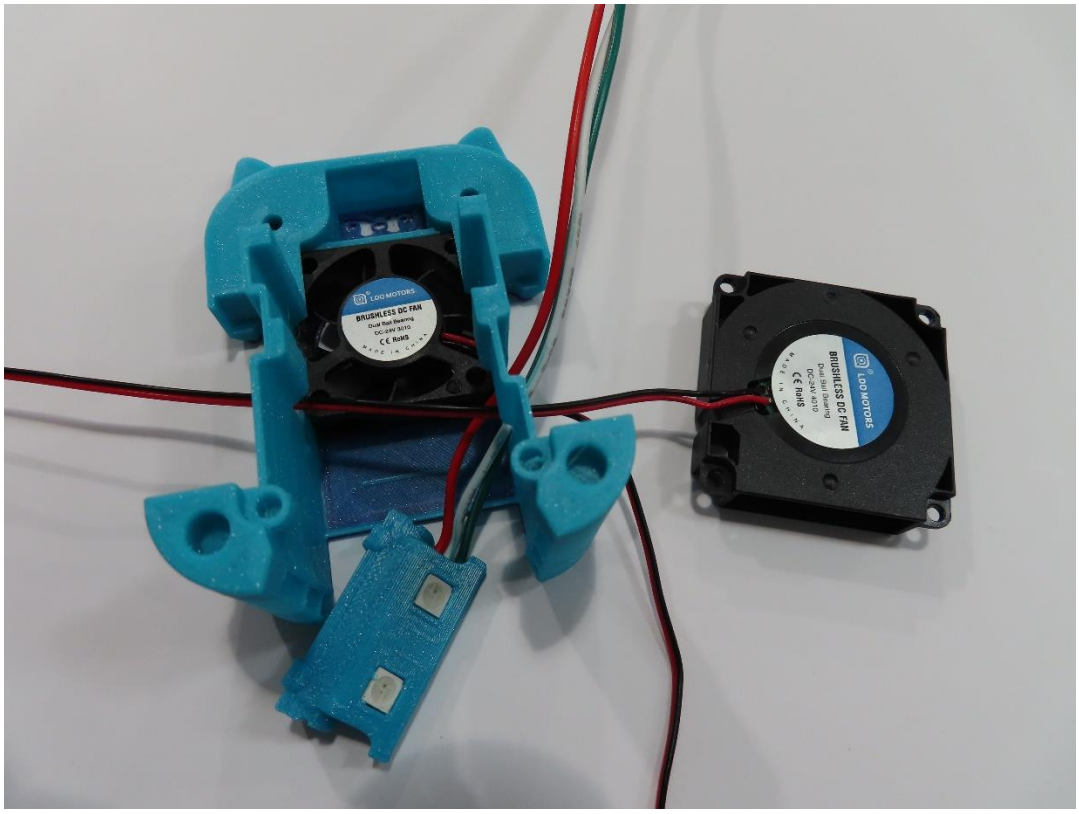
4. Now we want to feed the wire for our right fan into the hole on the right side and out the hole on the left side.



5. If you are planning to put LEDs in to light up your part while printing you will want to prepare that harness if you have not already. Ensure you have the LED or LEDs ready to go mounted in the LED holder with your 3 wires pointed to the right. (I also recommend putting a drop of super glue on each led in the back to hold them in place. If not they can come loose and you cannot get them back in place easy as you will see later on.)

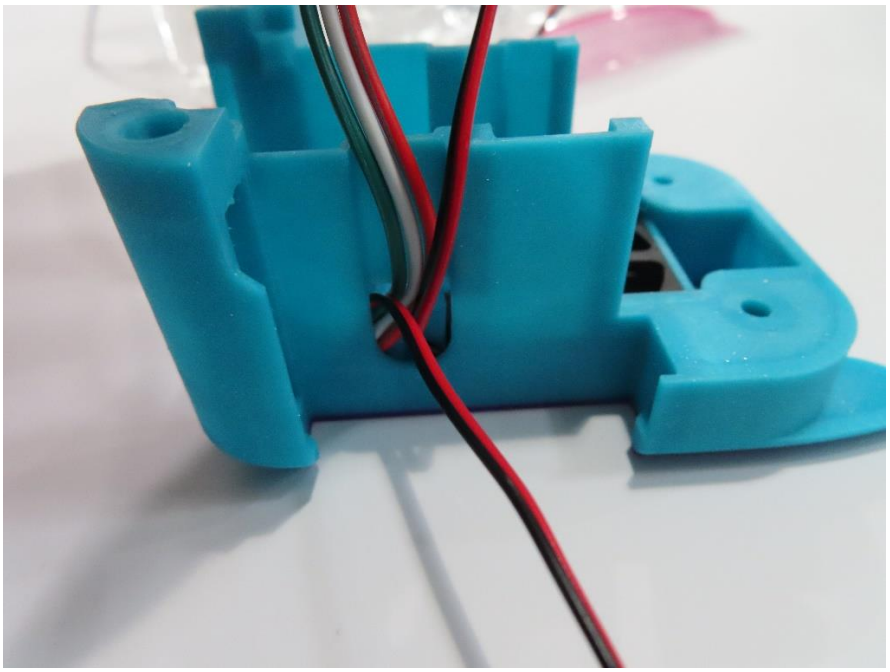


6. Now we need to feed the LED wires connector first through the hole on the right, until most of it is through and you have the part LEDs and just a tiny bit of slack left in the middle.

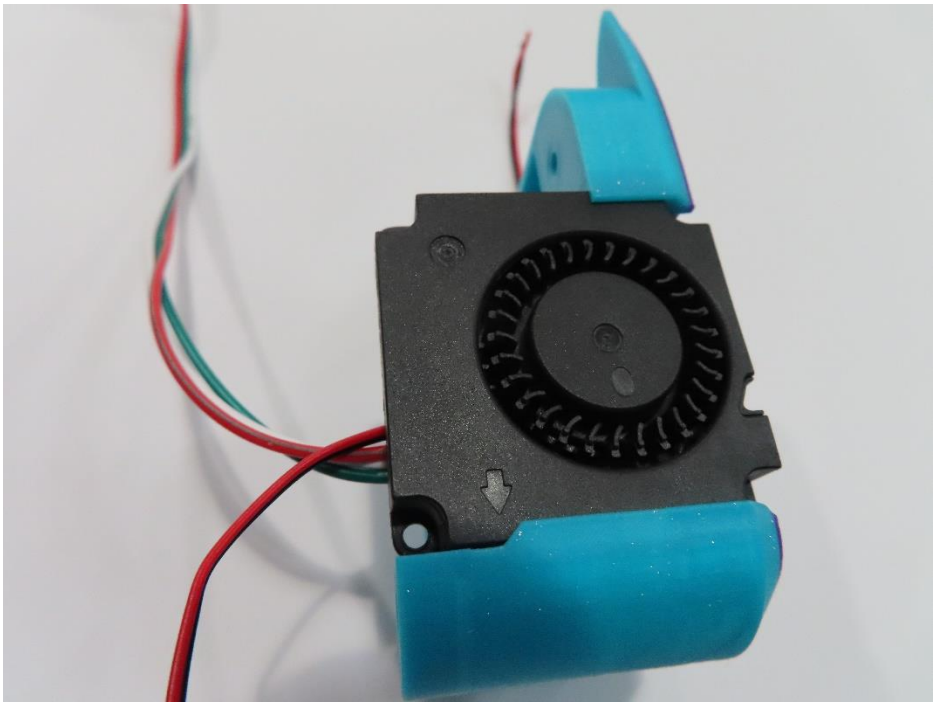


7. The next bit is going to be fun. We need to tuck the fan wire under the LED mount and slide the LED mount almost into place. (if you have extra room between the hot end fan and your LED mount you can just mount it as your fan wire will go in that space. If not it has to go behind the LED mount. Get this most of the way situated but with enough play to adjust the fan wire.

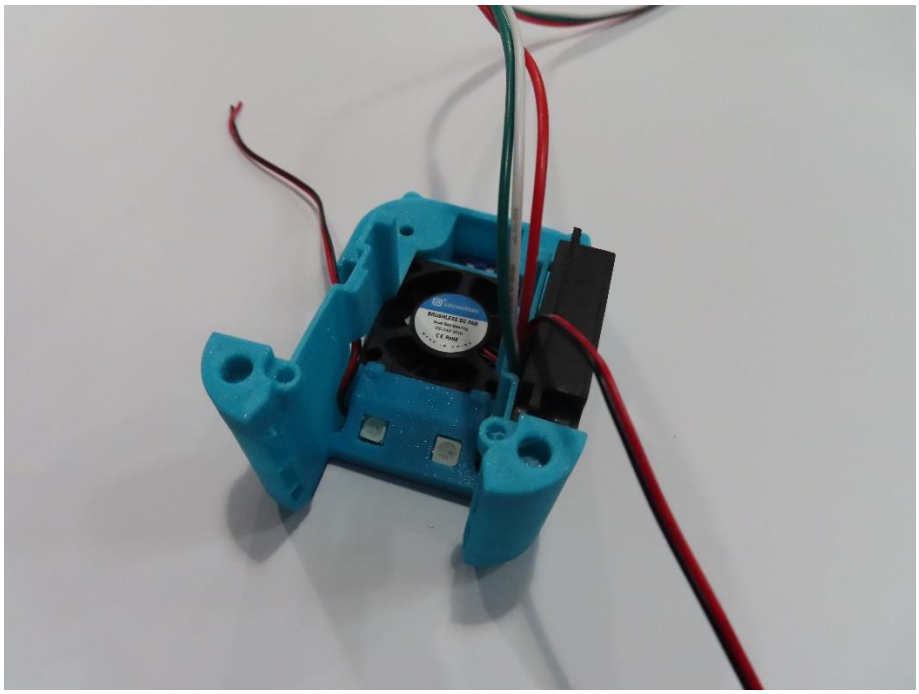
8. Once you have that started, press the wires for the LEDs into the wiring gap so that it is flat going from the front of the tool head towards the rear.



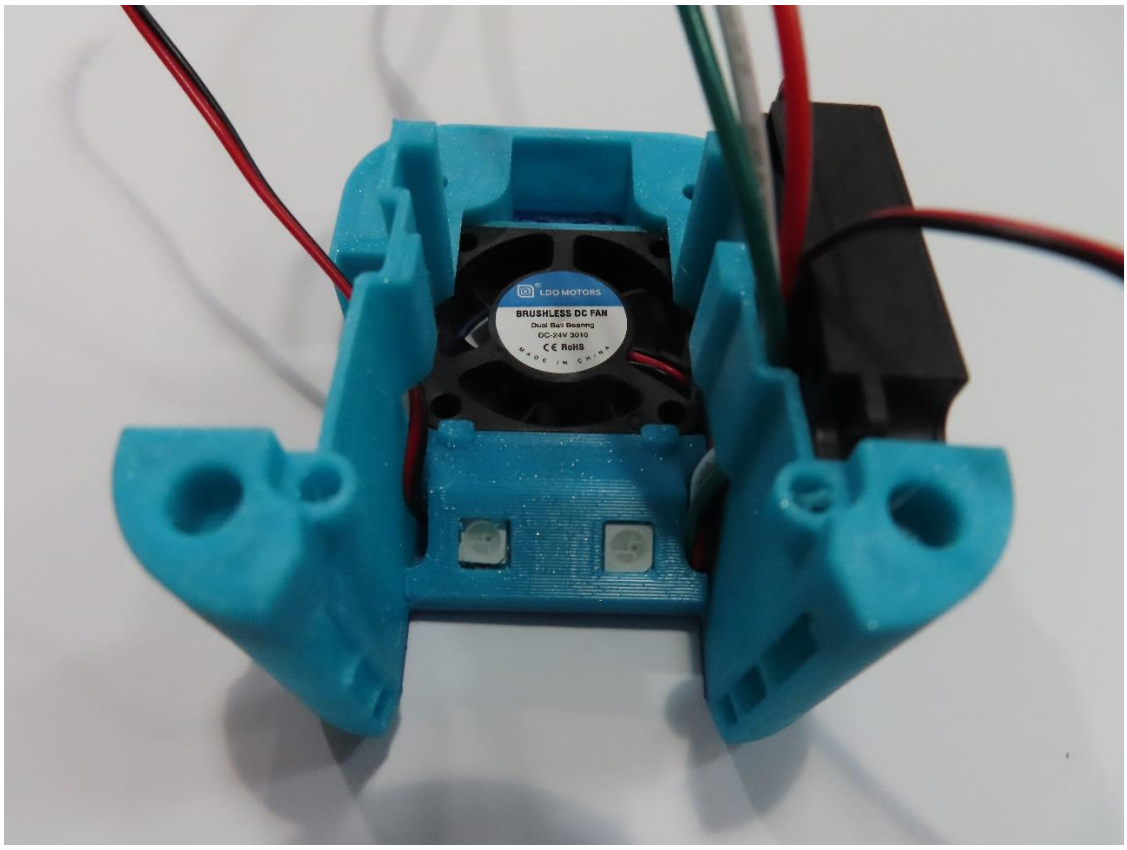
9. Take your fan and ensure it is orientated properly with the fan blades visible out the side and the open duct pointed down towards the ducting.

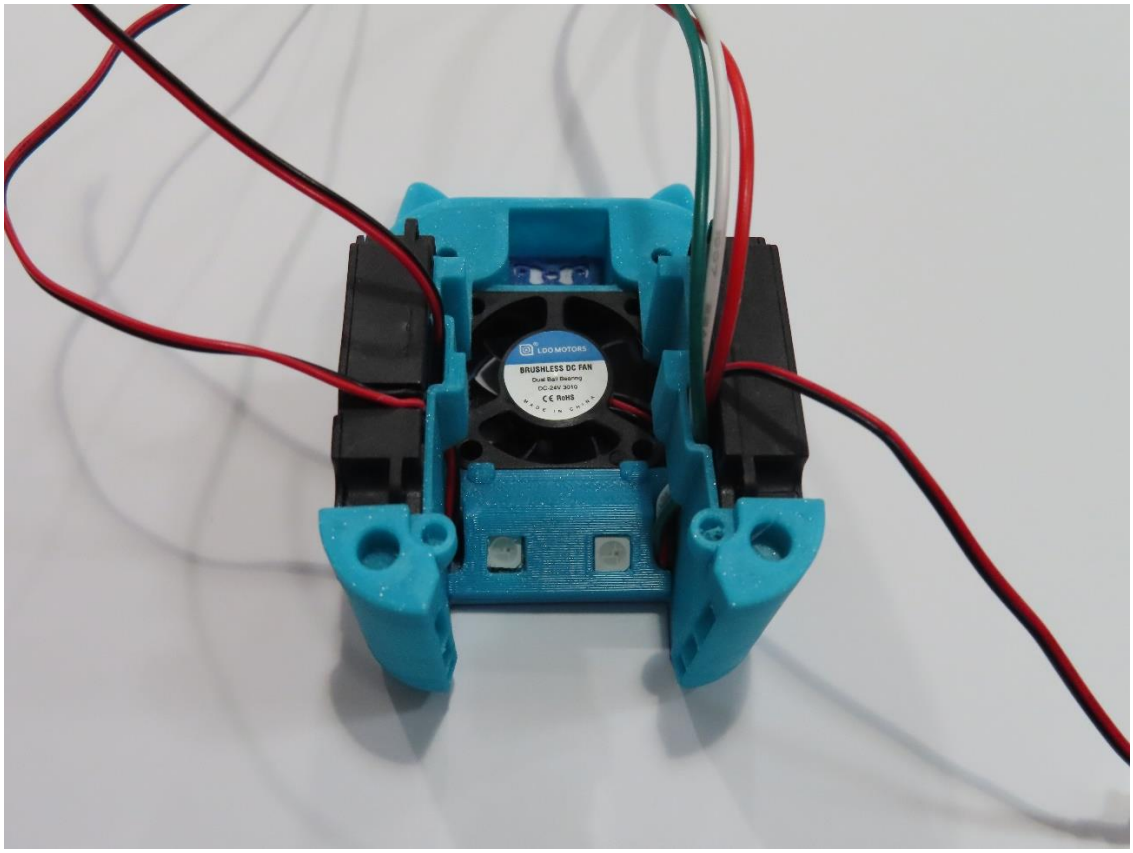


10. Now start to slide the fan in the slot on the right side while ensuing the wiring does not bunch up and get caught in the side of the tool head.



11. At this point we should have our right fan mounted as well as our LEDs. Next, we want to get our left fan in place. Some fans will have the wire coming out the side that will be facing out and others will not. Honey Badger fans will need to be moved to the back of the fan and run through the gap between the fan and the side of the tool head. LDO fans are in a different place and have a narrow cable channel it can stay in. While holding that wire in place position, as well as the right fan wire pulled up behind the fan, slide the fan in making sure the wires do not bind.


LDO MOTORS
BRUSHLESS DC FAN
Dual Ball Bearing
DC-24V 3010
CE RoHS
MADE IN CHINA


LDO MOTORS
BRUSHLESS DC FAN
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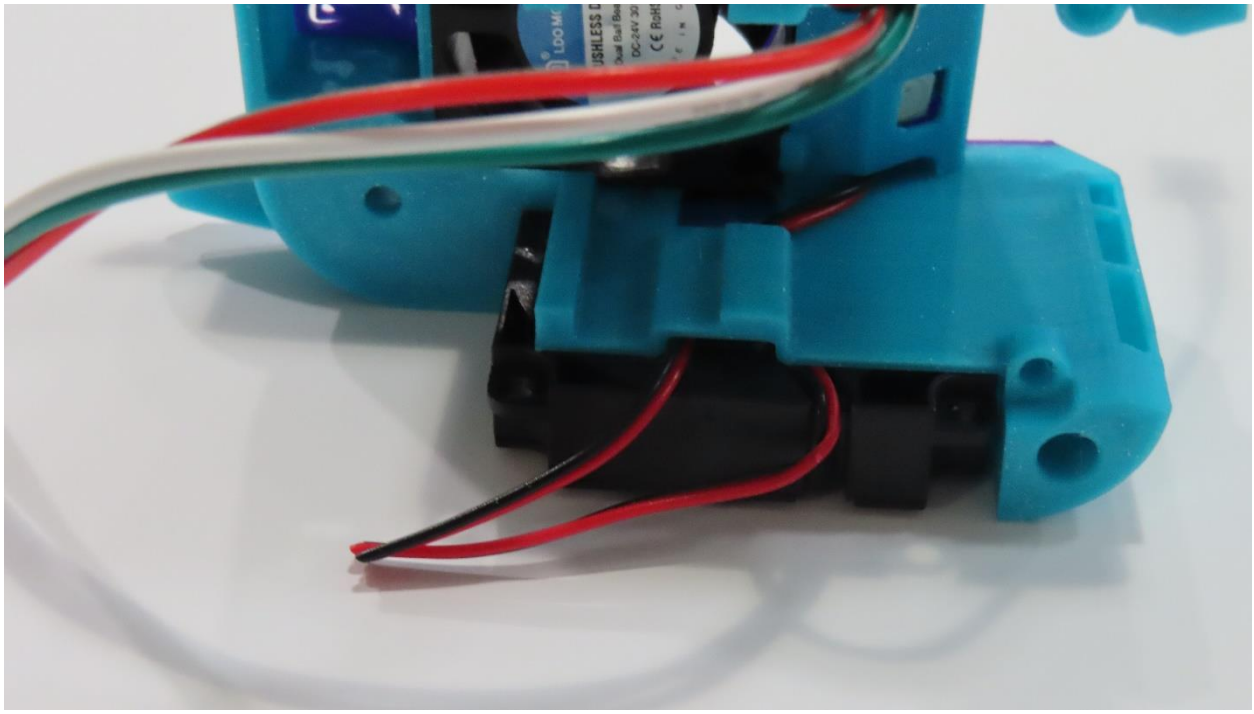
Now we should have our fans and LEDs mounted. You should have the part cooling fan and the LED wiring coming out on the right side and two part cooling wires coming out the left side. If you have everything correct thus far you can continue. If it is not correct resolve any issues before moving on.

Leave your LED wiring off to the right side as we will be soldering and working with the wires on the left and they are easier to keep out of the way this way.

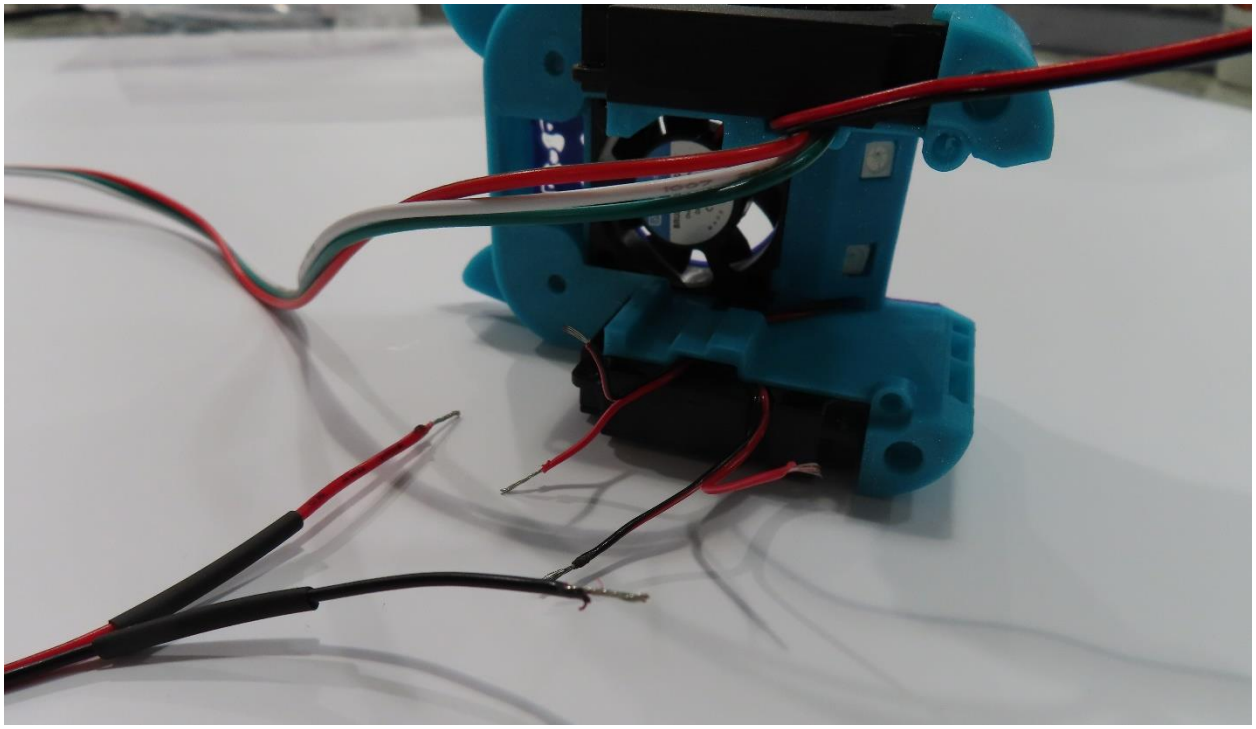
12. Hold both your part cooling fan wires on the left side of the toolhead together and going towards the top of the tool head. About 1 inch from where the fans come out from behind the fans cut the wires at the same length.



13. Take the longer of the two pig tails you just created with the connector on the end and separate the wires for about two inches. Separate the wires for the fans as well. (If the longer pig tail is too long you can use the shorter one. If it is too short you can make a longer one, I have just found in many cases that one works well. Make sure you check to see what you need for your build.)

14. On all 6 wires remove the insulation for about a quarter of an inch.

15. On the connector side of the wires slip a bit of heat shrink tubing as far from the bare wire as you can. Your tubing should be about three quarters of an inch long.

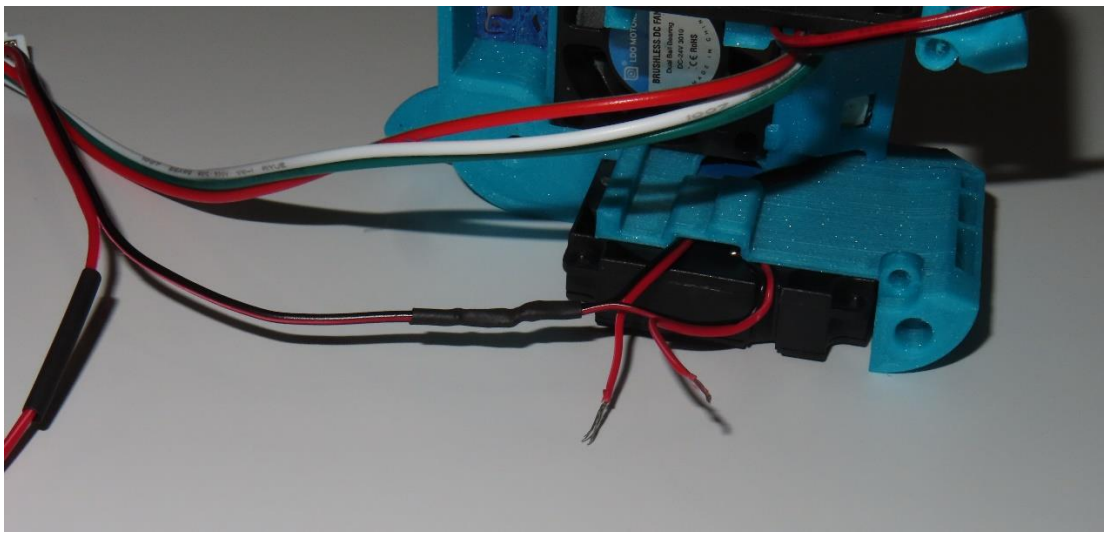


16. Now take your two black wires from your fans and twist them together along with the black wire going to the connector.

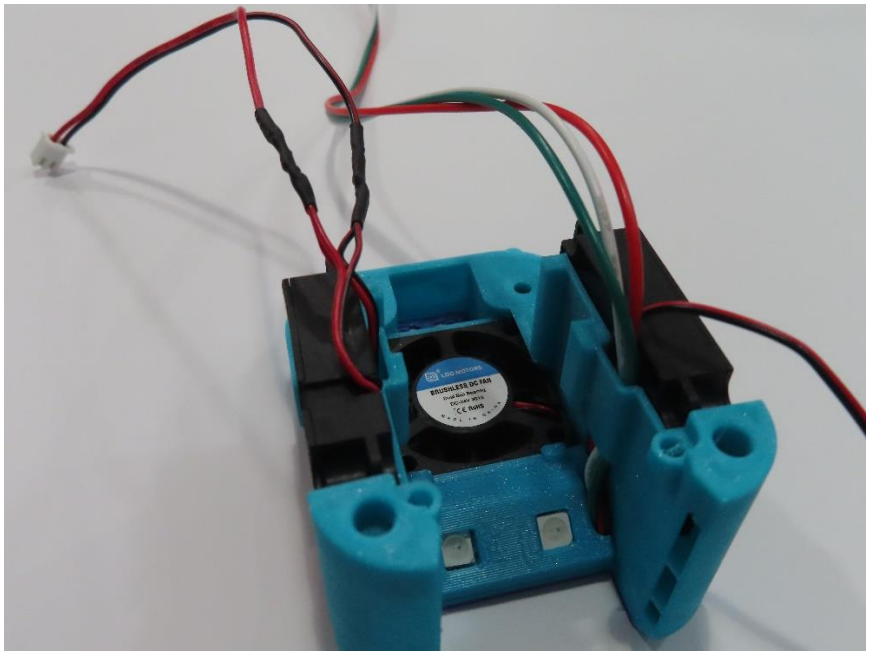
17. Solder these together carefully making sure not to shrink your tubing yet or burn your tool head parts.

18. Once those are soldered and it has had a moment to cool down, move your heat shrink tubing down so that it fully covers the section we just soldered.

19. Use a lighter to gently heat the tubing until it has conformed to the wiring and is in place not sliding around any longer. Do not use too much heat as it may make holes in the tubing.



20. Once this is done, we want to repeat the process with our red wires. Be sure not to let the soldering iron hit the heat shrink on the black wires and burn a hole in it.



At this point you should be fine to move forward with the installation of your tool head like normal.