

1.



Complete extruder instructions to this stage:

<http://e3d-online.com/Documentation>

Then cut out a small piece of Kapton tape and place it over the hole for the thermistor and pierce it.

This will insulate the two legs of the thermistor from touching the heater block and causing a short.

2.



These two original parts will need to be removed

But be sure to keep the white cable insulators.

3.



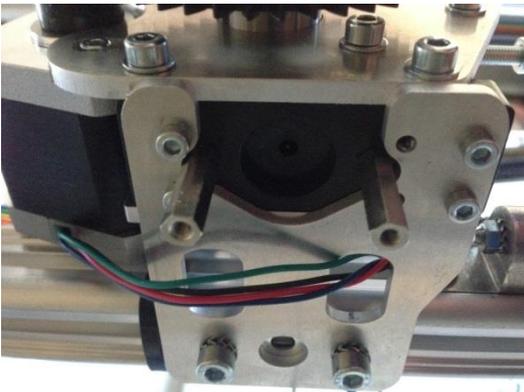
This is (one of the available) adaptor mounts that you will need, I got the .stl file from Thingiverse

<http://www.thingiverse.com/thing:221997>

This mount is a perfect fit for both the extruder and the fan. The standard mounting screws can also be used with this mount.

Mount the fan.

4.

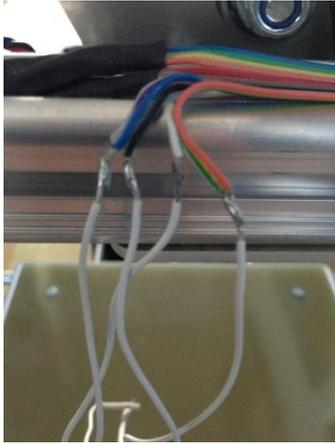


These spacers will need to be loosened.

(I had too because the heat sink appears to be wider, I believe the design of the heat sink has changed slightly since the .stl file was published)

Even though they are loose, once the bolts are lightened into the spacer, it is not a problem.

5.



Remove the heat shrink and cable ties from the existing extruder assembly and unsolder the wires.

6.



Once the cables have been unsoldered and removed the white insulators can be taken off.

7.



Cut one of them in half.

8.



The white supplied cable will need to be striped back about 20mm and the both inner cables will need to also be striped to 5mm.

Slide the two cut white insulators over the individual cables.

Tin the ends of the cables.

9.



Take the thermistor, open the legs and cut them down to about 8mm.

10.



Tin both of the legs.

11.



Solder both the wires to the two thermistor legs.

On the outside of the thermistor legs provides a better chance of them not shorting.

12.



It should look like this.

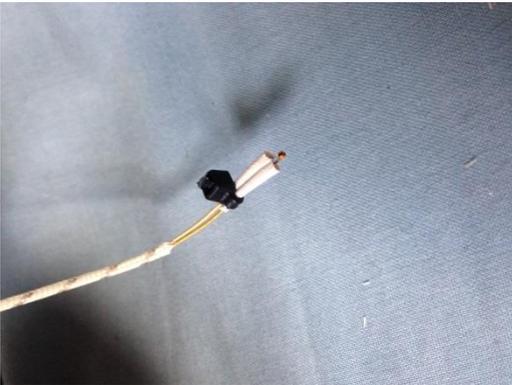
(making sure the two wires aren't touching)

13.



Slide the two insulating sleeves up to the thermistor.

14.



Push the insulating sleeves up against the thermistor and use a cable tie to secure them.

Cut off the excess.

15.



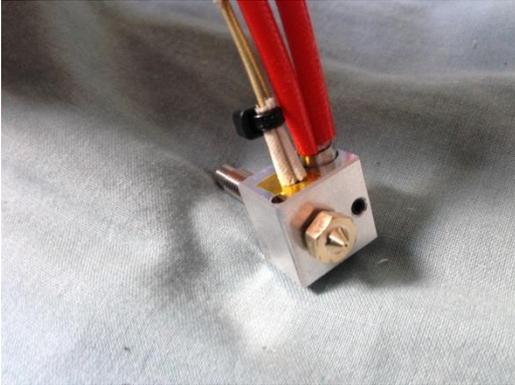
Secure the heater cartridge into the heat block with the grub screw.

16.



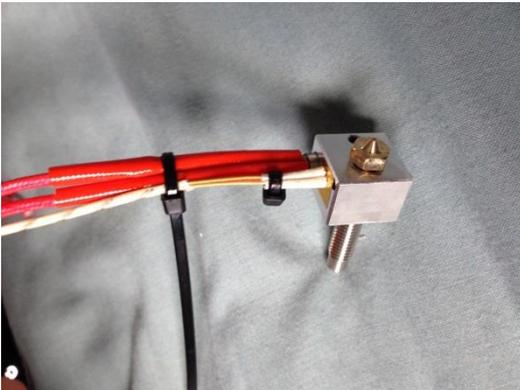
Cut the wires down to a reasonable length.

17.



Place the thermistor assembly into the hole surrounded by Kapton tape.

18.



Apply light pressure to the thermistor assembly making sure the thermistor is up against the heater block.

Put on a cable tie to bind the wires together, this keeps the pressure on the thermistor to prevent it falling out.

Cut off the excess.

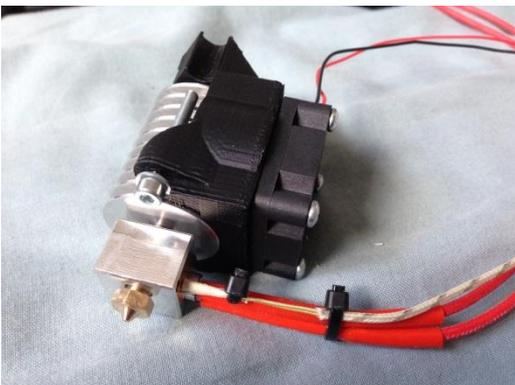
19.



Screw the heat sink on.

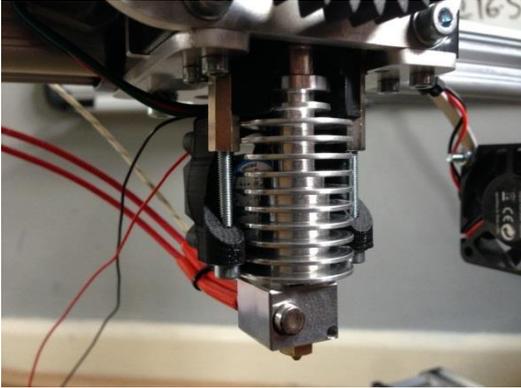
(finger tight)

20.



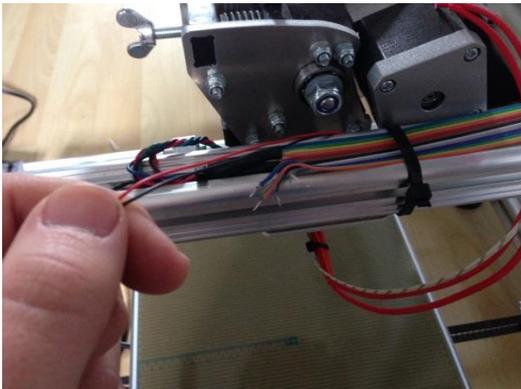
Slide the assembly onto the adaptor mount.

21.



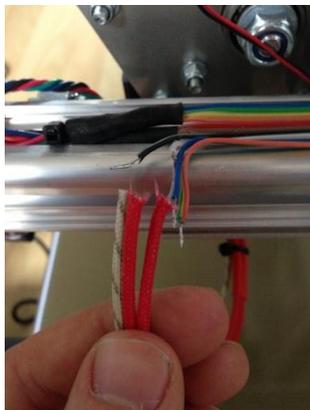
Screw the completed assembly onto the extruder frame.

22.



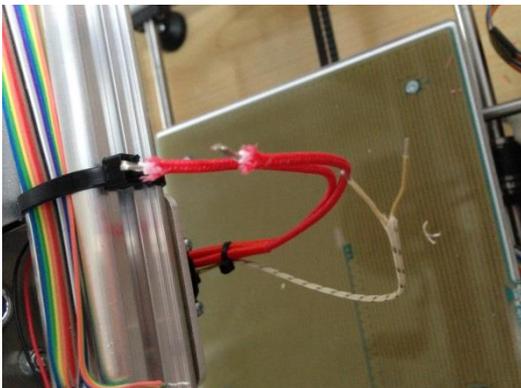
Thread the cables for the cooling fan behind the extruder frame.

23.



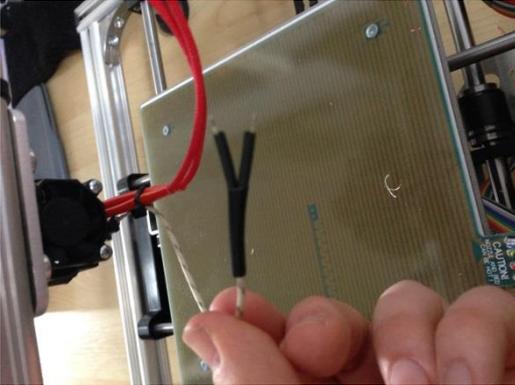
Pull the cables up so they don't hang below the extruder, cut them to size.

24.



Strip all the lengths of wire.

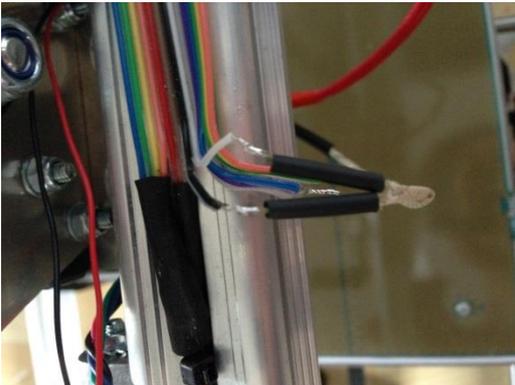
25.



Slide one large heat shrink on first.

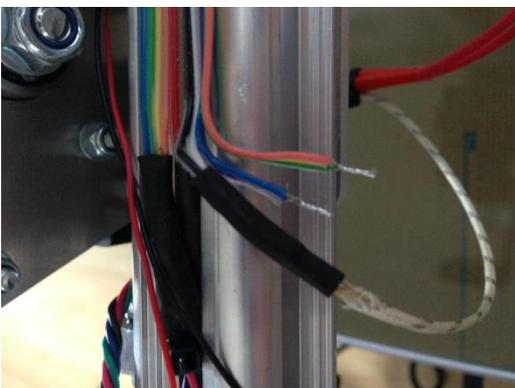
Then two smaller ones.

26.



Solder the wires for the thermistor together.

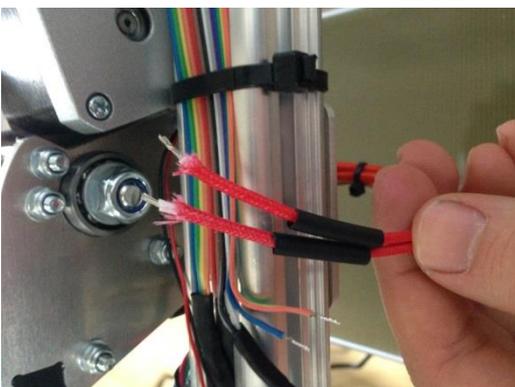
27.



Shrink the heat shrink over the cable joints.

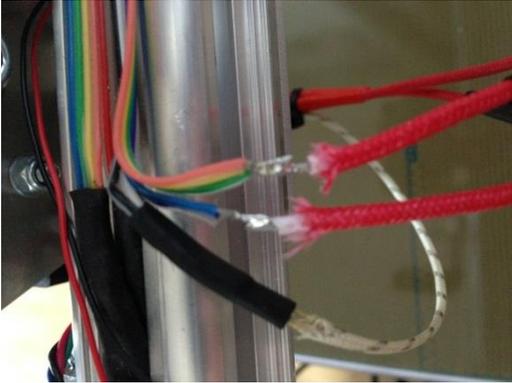
First the two separate ones then the large one over them.

28.



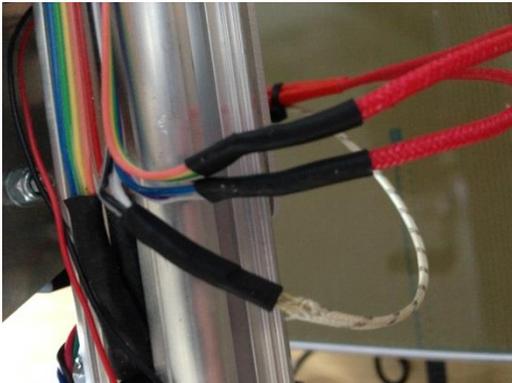
Slide a heat shrink tube over each wire.

29.



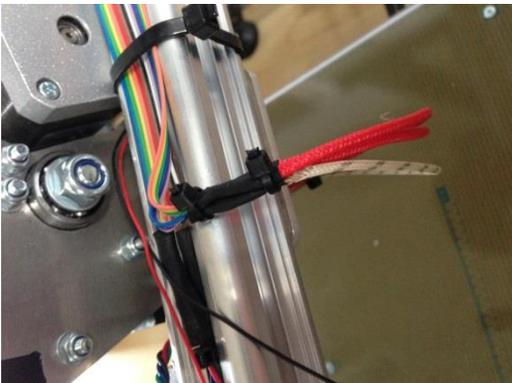
Solder the heater cartridge wires together.

30.



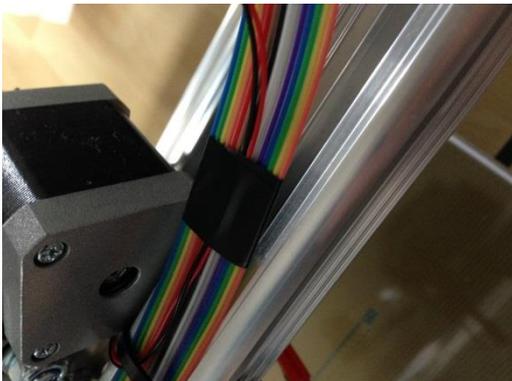
Shrink the tubes over the joints.

31.



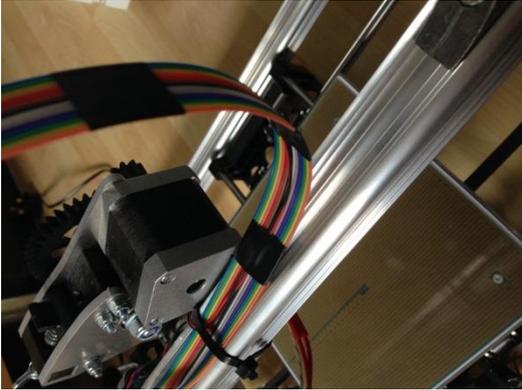
Use two cable ties to bind the wires together at the frame.

32.



Thread the wires for the fan behind the extruder motor and use electrical tape to attach the cable.

33.



Do this for intervals along the cable tape.

34.



Run the cables along the route of the cable tape towards the control board.

The wires are just not long enough and require an extension to be soldered on and insulated with heat shrink.

A resistor is also required for the fan.

35.

$$\text{Total circuit resistance} = \frac{\text{supply voltage}}{\text{fan current draw at 12V}}$$

$$\rightarrow \frac{15V}{0.08A} = 187.5\Omega$$

$$\text{Total circuit resistance} - \text{fan internal resistance}$$

$$187.5\Omega - \left(\frac{12V}{0.08A}\right)$$

$$187.5\Omega - 150\Omega = \underline{37.5\Omega}$$

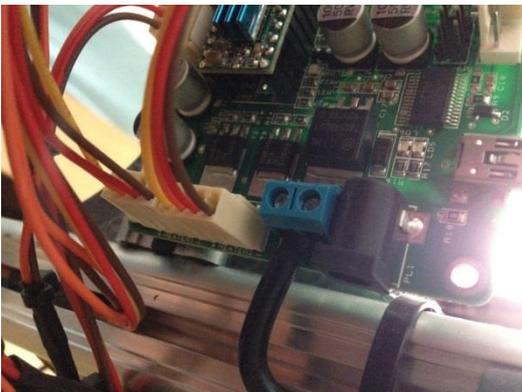
Using these calculations you will be able to calculate the resistor you would need for the 15V power supply on the K8200.

A 40Ω will do fine.

For help with these calculations for other power supplies:

<http://forum.e3d-online.com/viewtopic.php?f=7&t=2>

36.

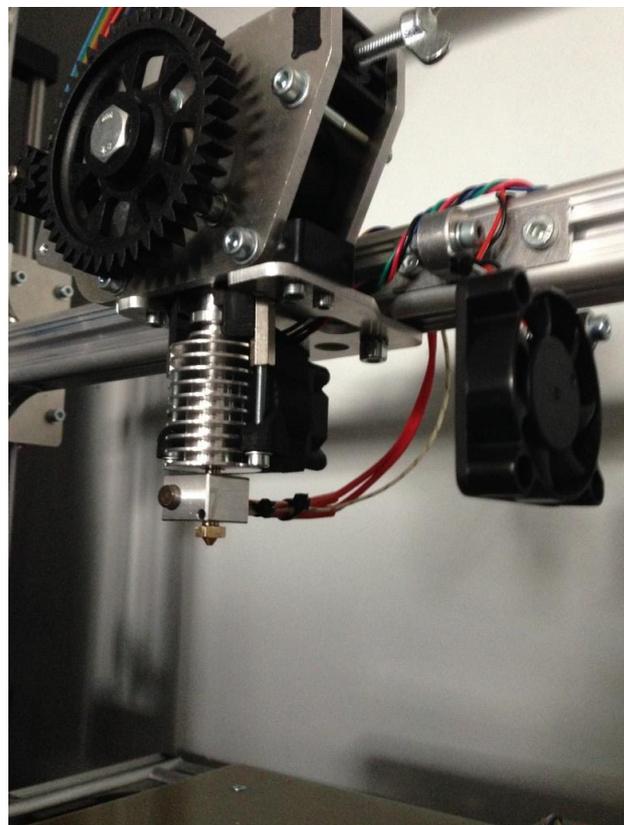
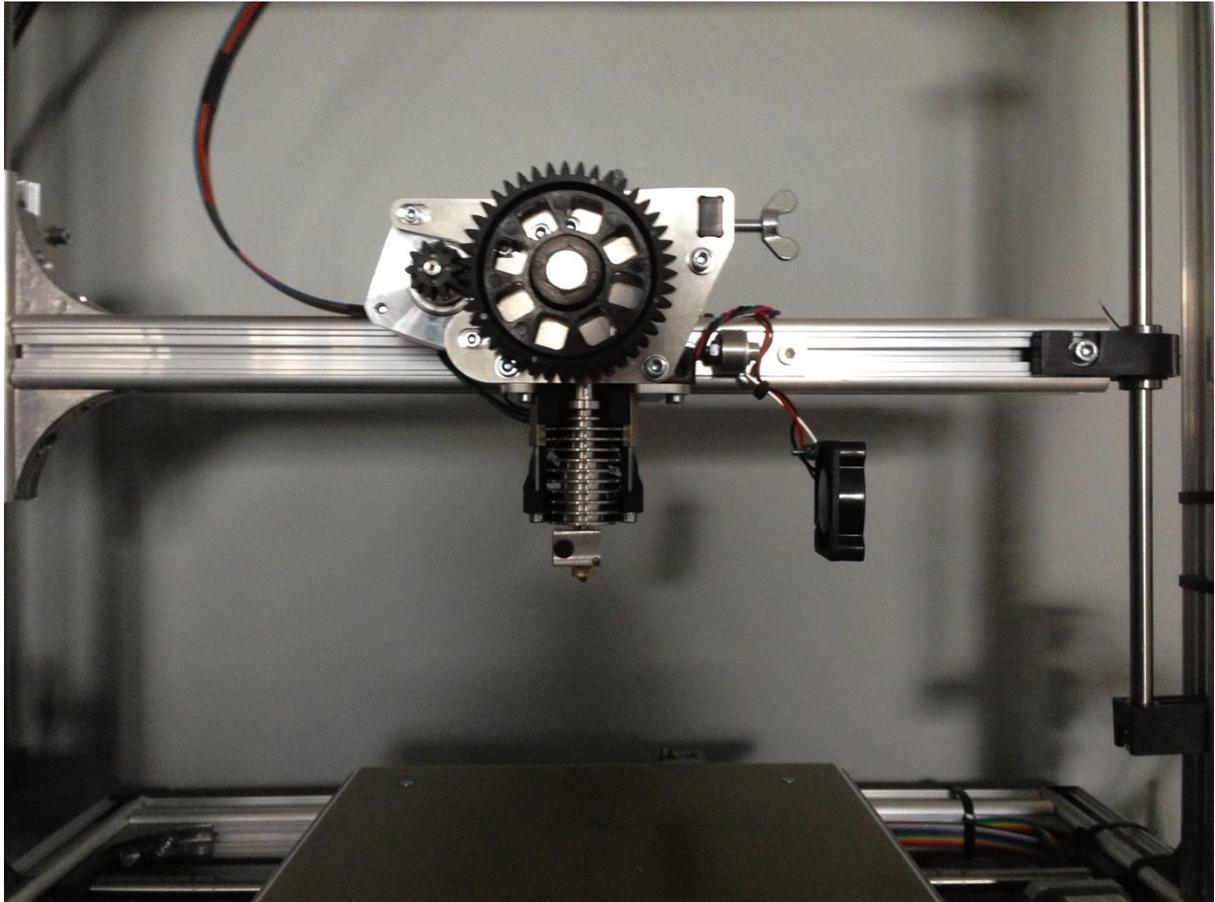


The motor can then be wired into the supply input terminal.

(blue terminal, centre)

Check polarity when connecting.

Steps for completing the assembly from E3D will need to be followed to tighten the extruder.



Tutorial produced By Jake Carter