



E3D-Online

High Precision, High Quality, High Temperature



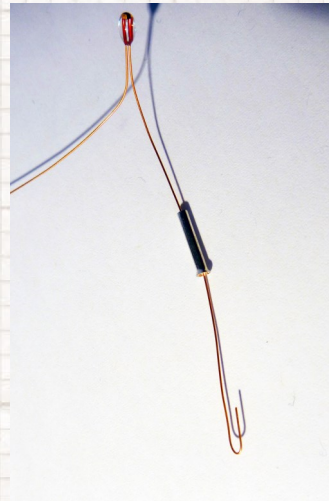
In the box:

1x Heat sink	1x 30mm fan	1x High Temp Wire	1x 1.5mm hexagon wrench
1x Heat break	1x Thermistor	2x Bootlace Ferrules	
1x 0.4mm nozzle	1x Heater cartridge	4x M3x20 button head screws	
		1x M3 set screw	



1:

Screw the short end of the stainless-steel heat-break into the heater block until the start of the constriction is flush with the top of the heater-block.



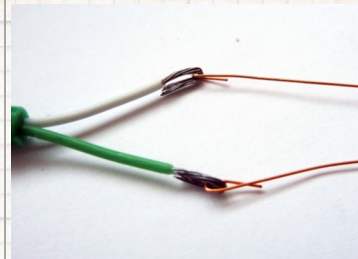
4:

Spread the legs of the thermistor slightly, just enough that they aren't touching, take the two bootlace ferrules and slide onto the thermistor legs with the funnelled mouth facing away from the glass bead.



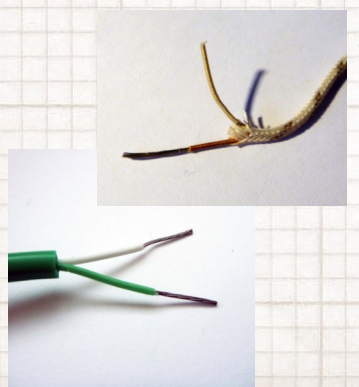
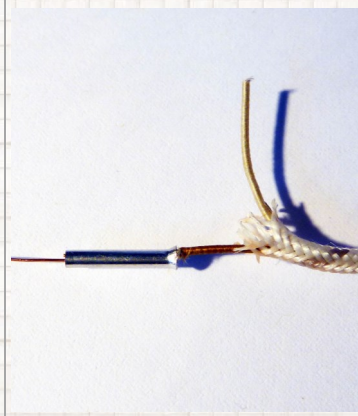
2:

Screw the nozzle into the heater block until it butts up against the heat-break inside the block, just finger tight is fine for now. The hexagonal flat portion should not touch the block, there should be a tiny gap between the flat area and the block - the nozzle should tighten up against the end of the break inside the block to form a seal. It should not tighten up against the block.



5:

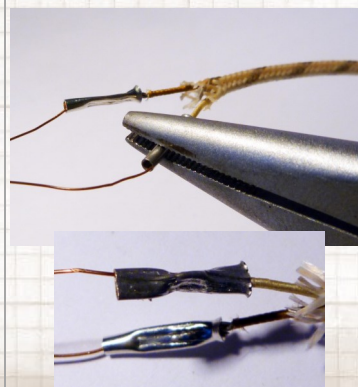
Form the ends of the legs of the thermistor into small hooks, do the same for the stripped ends of the wire, loop the hooks over each other and then push the ferrules up over the joined hooks.



3:

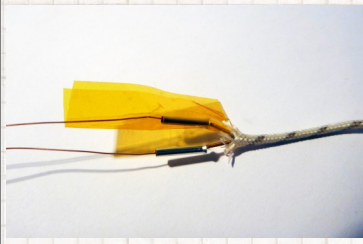
Strip the wire. For the glass fibre insulated wire you can simply pull back the outer sheath and strip 10mm off 10mm of the inner insulation from each of the two cores.

For the green wire strip 20mm of the soft outer insulation and then 10mm of the inner two cores.



6:

Using pliers or a proper crimping tool if you have one crush the ferrule tube tightly around the wire hooks to form a strong joint that is also heat-proof.

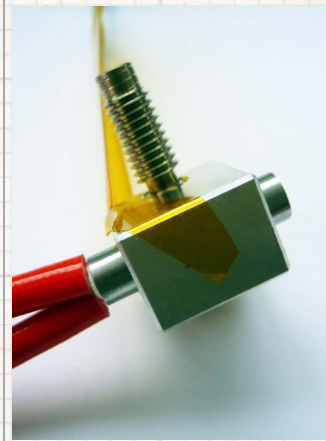
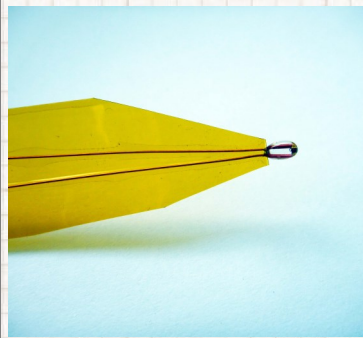


7:

First wrap a small amount of kapton tape around the crimped ferrules, to ensure they don't short against one another.

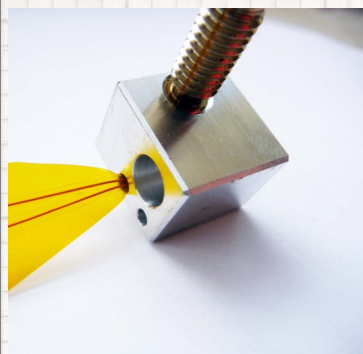
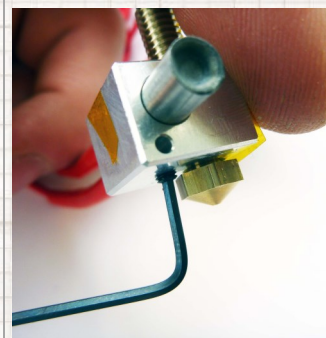


Insulate the thermistor legs with Kapton tape. Ensure you insulate right up to the base of the glass bead, and that all of the bare wire is covered. You will need a little more Kapton later so don't use it all. Trim the Kapton to a point at the base of the thermistor.



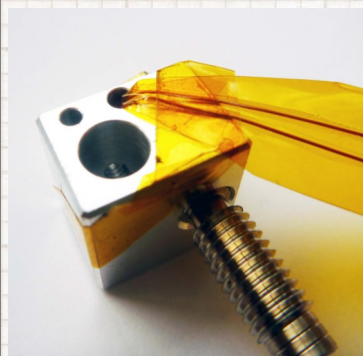
9:

The heater cartridge slides into the smooth hole going through the heater block, it should be centred with a small amount poking out each end. Then use the tiny M3 grub screw and the supplied small hex-wrench to secure the cartridge in place, do not over tighten the grub screw - it just needs to secure the cartridge in place.

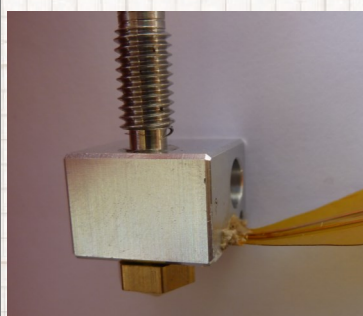


8:

The thermistor goes into the small blind hole on the side of the heater block, and is secured there with Kapton. It is best to use thin strips carefully placed than to use a larger piece that adheres with wrinkles.



Optionally, for better heat conduction you might want to consider using fire cement to fix the thermistor in place. Another alternative is a little patch or two of aluminium foil placed over the hole before pushing in the thermistor can secure things nicely and provide good heat conduction, but be careful the foil doesn't touch the legs of the thermistor causing an electrical short.



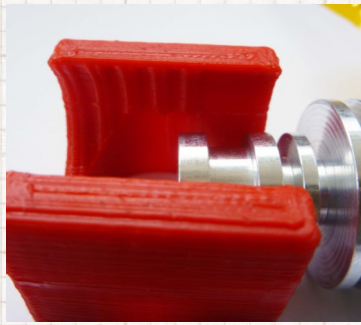
10:

Screw the heatsink onto the long end of the heat-break, firmly finger tight is fine, using a spanner and over-torquing will snap the thermal break at the constriction.



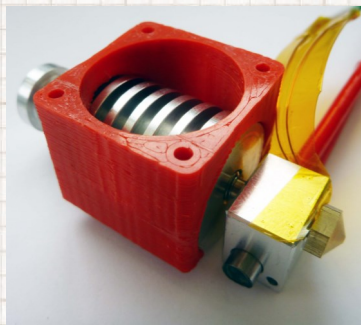
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11:

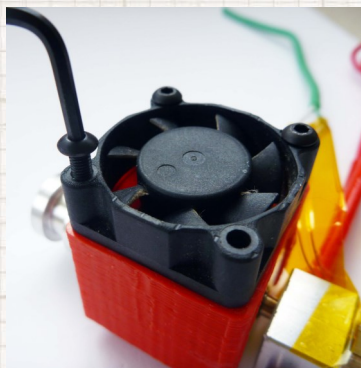
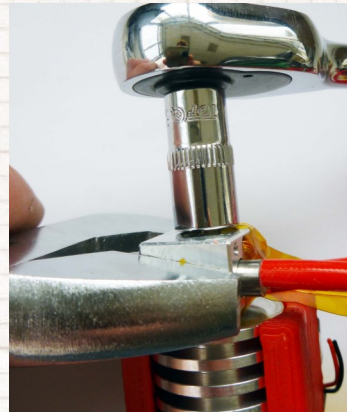
Slide the heatsink up into the printed fan-mount, the smooth portion goes nearest to the nozzle and the ridged portion goes closest to the top. It's a tight fit, be careful not to break the printed part, you may need to bend the sides out slightly while pushing the sink up into the fan-mount.



14:

Final step - DO NOT SKIP THIS STEP - using your electronics/software heat the now complete hotend up to 300C, then once up to temperature you need to do a final tightening of the nozzle against the heatbreak to form a good seal that prevents any plastic leaking. Use an adjustable spanner on the heater-block and another spanner or pliers to tighten the nozzle up.

The amount of torque needed is very low, using a spanner you can apply all the needed torque with a single finger.



12:

Use the four screws to secure the fan to the printed fan-mount, the fan must be mounted with the sticker facing the heatsink so that the fan blows over the heatsink.

15:

Remember to secure your wires and ensure that the thermistor wire in particular has some strain relief. The fan and mount should ideally be oriented so that the mount is opposite to the heater block to reduce radiated heat, but this is not strictly essential.

13:

Wire your thermistor and heater cartridge up to your electronics - refer to your electronics documentation for this step.

The thermistor is an EPCOS B57560G104F; In Marlin you can just select option 8 in new versions, or option 1 in older versions.

You must also wire up the fan directly to your 12v power supply. Do not use a "fan" output from your controller board. The fan should be connected directly to a 12v supply so that it is always on - as the HotEnd needs constant cooling when in use.

