

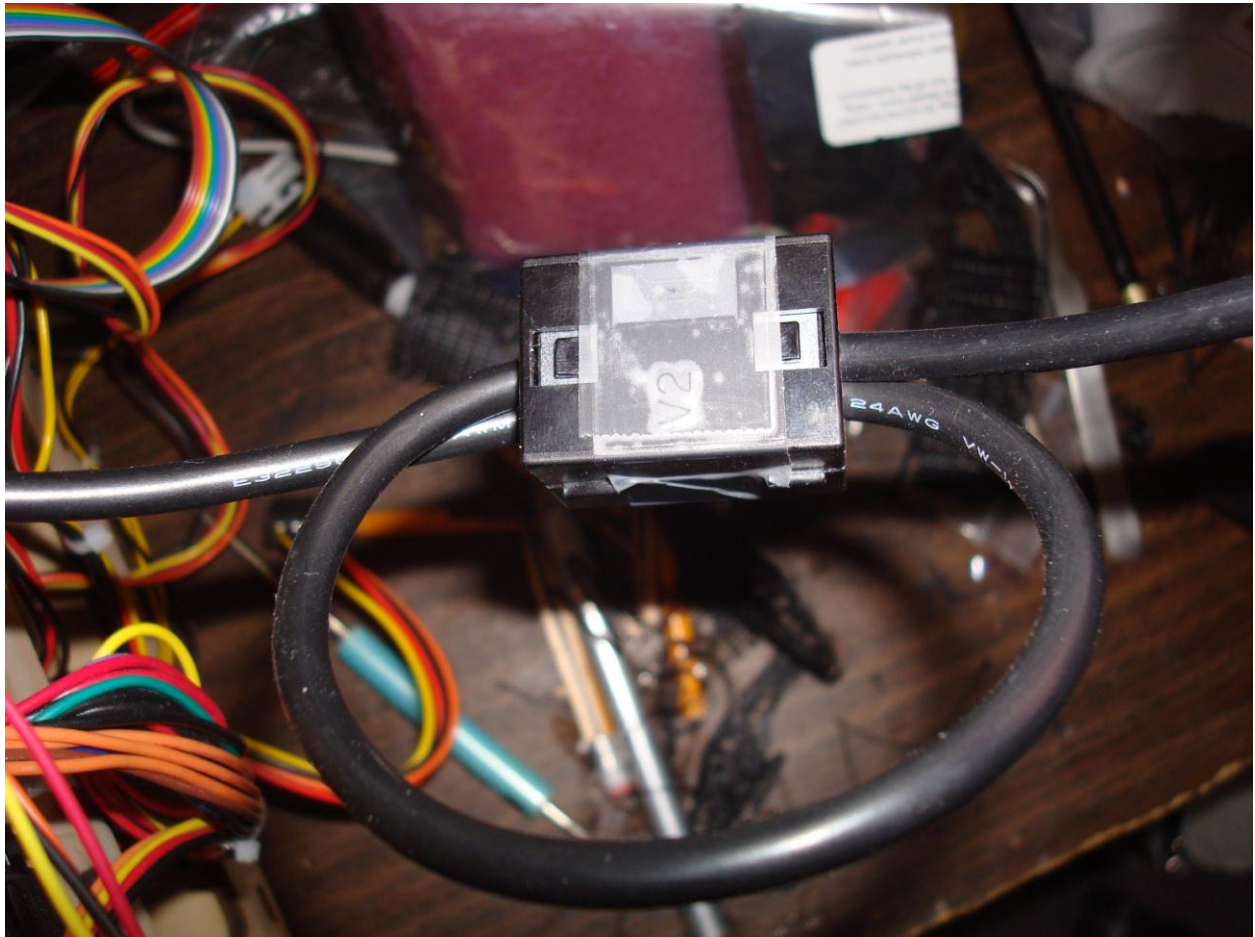
# Troubleshooting the Makerbot

Tycho Jaquish 1/23/11

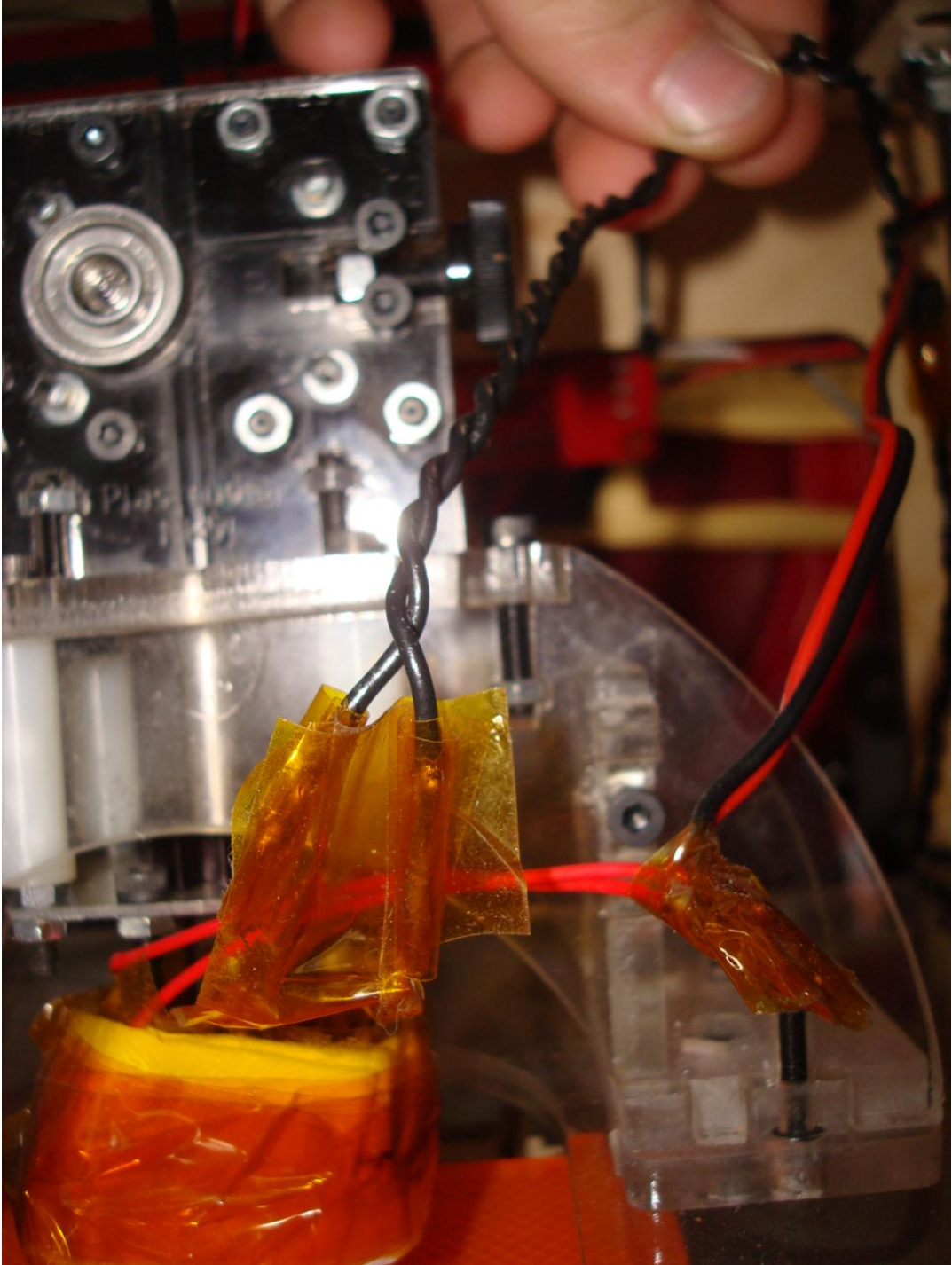
After I finished building the [makerbot](#) 3D printer I chose a bottle opener to be the test build. While printing, the makerbot would stop in the middle of the build and an error would say **Read timed out**. It would stop in random places in the build without warning. I looked on the makerbot forums and found that other people had the same problems. They recommended twisting the cable leads together and building a circuit to cut down on the noise that the DC extruder motor made.

This is what I did:

The first thing I did was to put a snap-on ferrite clamp on the USB cable to shield it.

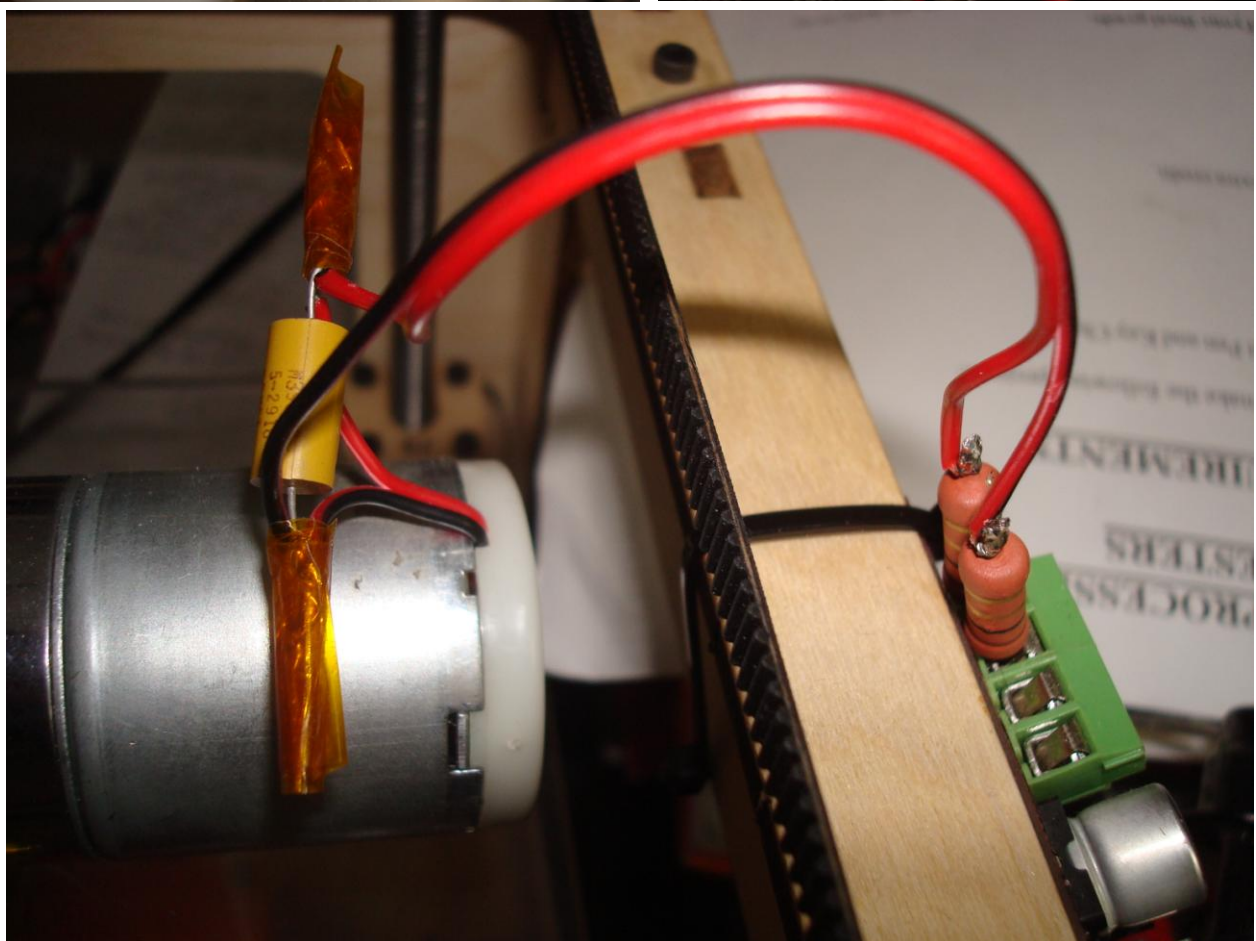
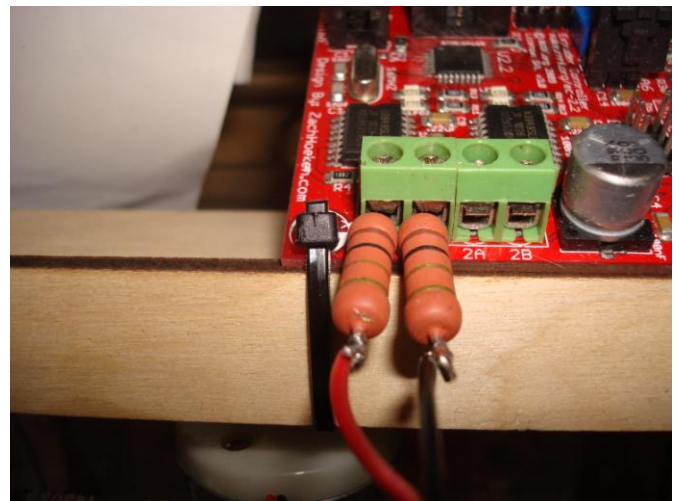
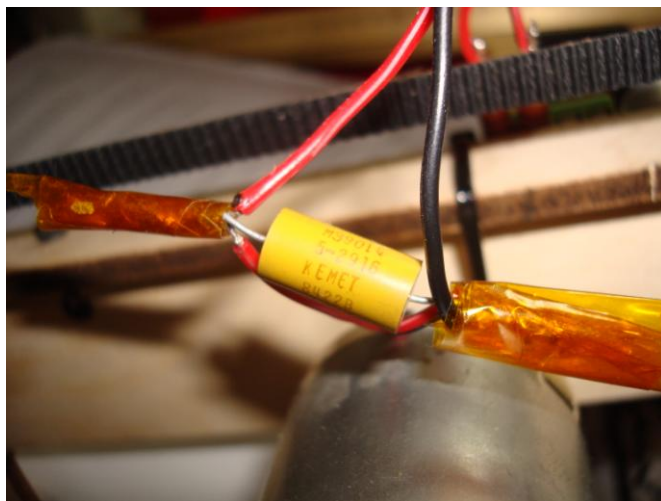
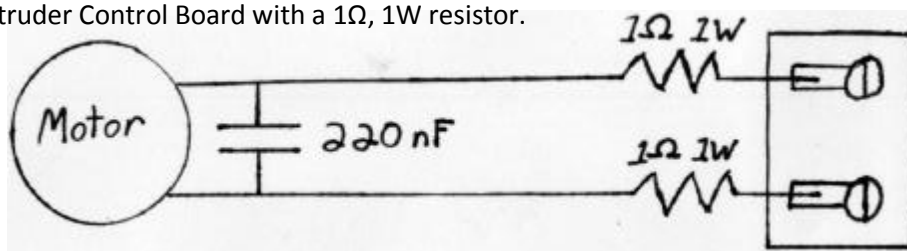


Next I twisted the extruder heater thermistor wires together and put a ferrite bead on it.



<-Ferrite Bead

Finally I connected the DC motor wires together with a 220nF capacitor and connected each lead into the Extruder Control Board with a 1Ω, 1W resistor.



The makerbot works almost perfect now. It doesn't stop in the middle of builds anymore. The only problem is that sometimes the extruder motor will strip the filament and not extrude plastic. So now I turned up the temperature to 235°C and have to sometimes push down on the filament to make sure it doesn't strip. So far all the changes have worked out great and I don't see any problems with it stopping anymore.