

ABOUT THE CABLE

The thermocoupler (see Fig 1.1) is brown in colour and screws into the back of the aluminum heater block with a hex nut connector (see Fig 1.2) and runs to the motherboard through the main extruder bundle.

WHAT CAN GO WRONG

This part is the most fragile within the machine. It can also break through use and get damaged along the wire at points where it is bent sharply. For these reasons **Bilby CNC now manufacture thermocouples in Australia**

ABOUT THE BILBYCNC THERMOCOUPLER

Our new thermocouples have numerous extra features that make it stronger and more durable including:

Resin reinforced sensor- to hold wires firmly inside the sensor probe(3mm hex screw). Many customers found this was where the thermocouples broke during use.

Thicker (3 strand) wire– The Makerbot thermocoupler had a tendency to get damaged from crimping along the wire and a high rate of partial breaks that result in false temperature readings. The stronger wire will help eradicate this.

Plug Connectors– There was a high rate (especially in the push pin style motherboard connectors) of the thermocoupler just falling out of the motherboard connection. We has terminal ends attached to help keep this connection more firm and dependable.

FITTING A THERMOCABLE

1. Unscrew the extruder assembly from the gantry.

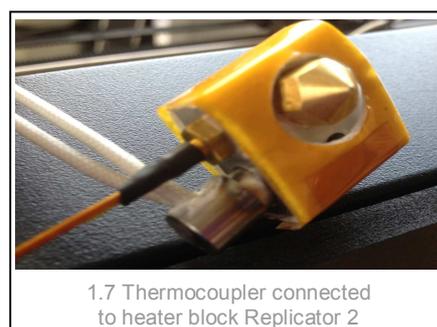
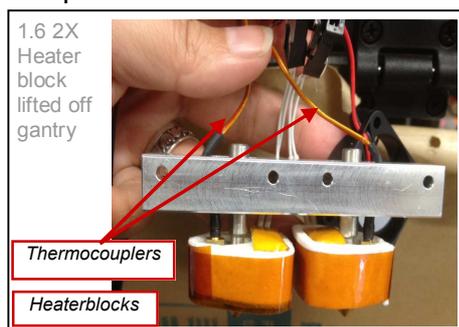
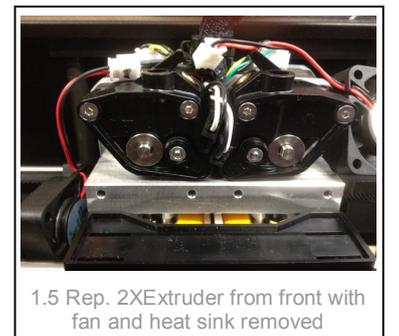
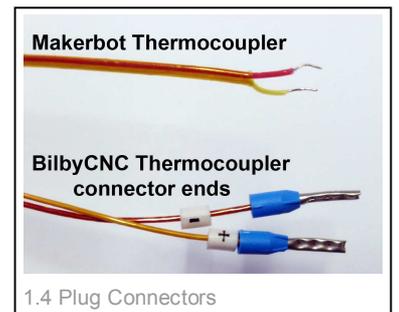
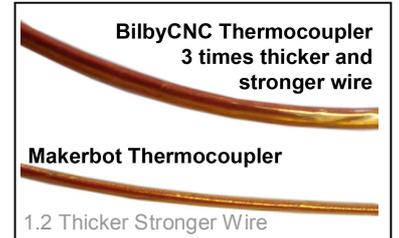
Unscrew the fan screws at the front of the extruder/s and remove the fan/s, small black spacers behind the fan/s, and the aluminum heat sink/s. You can now undo the two screws that are under the aluminum mounting block (the long block in Fig 1.5 which depicts Replicator 2x. Replicator 2 has the same fan, spacers and heat sink with a different filament feeder system behind it.) and lift out the heater block assembly to provide easier access to the thermocoupler/s.

2. Remove old cable from the Heater block and attach new one

Unscrew the hex connector from the heater block and screw in the new one.

IMPORTANT : try not to twist the cable or damage it when screwing in.

Fig 1.6 shows Replicator 2x where the thermocouple goes in from the top and Fig 1.7 shows the Replicator 2 where the thermocouple goes in from the back.



3. Change wire path : Replicator 2

BilbyCNC recommend wiring the thermocoupler straight up so that it runs up to the side of the stepper motor into the extruder cable bundle. *Fig 1.9 at bottom of page (prototype thermocouple shown in picture with black sheathing)*

3. Change wire path : Replicator 2X

Bilbycnc recommend wiring the thermocoupler straight up around the outside of the filament feeder system past the drive wheel viewing window, so that it runs around the side and over the top of the filament feeder. This path has less severe bends and thus is less likely to damage your cable than the original path. *Fig 1.10 at the bottom of page (prototype thermocouple shown in picture with black sheathing)*

4. Connect the new cable to the motherboard

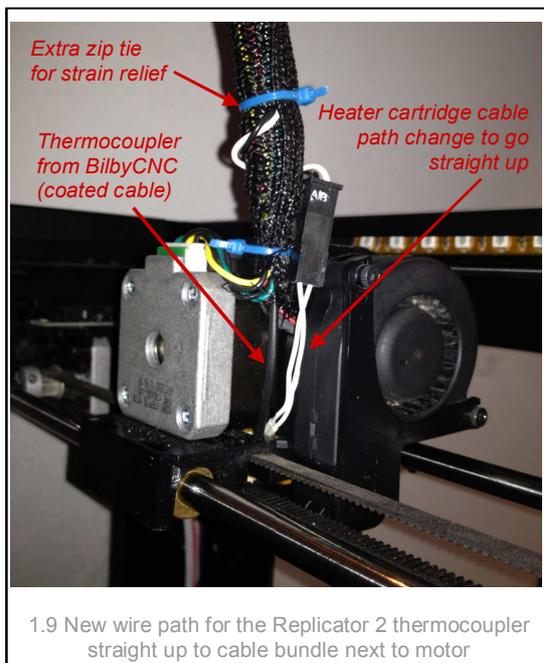
Turn your machine on its side and remove the plate protecting the motherboard. Connect the cable to the motherboard (note : the cable has a red and yellow cable. If you can not see this easily pull the gold coating back a bit). The motherboard labels the connections “red” and “yellow” (*Fig 1.8*) You will find that our new connector ends make this connection more secure and that the red cable it also labeled (-) and the yellow (+)



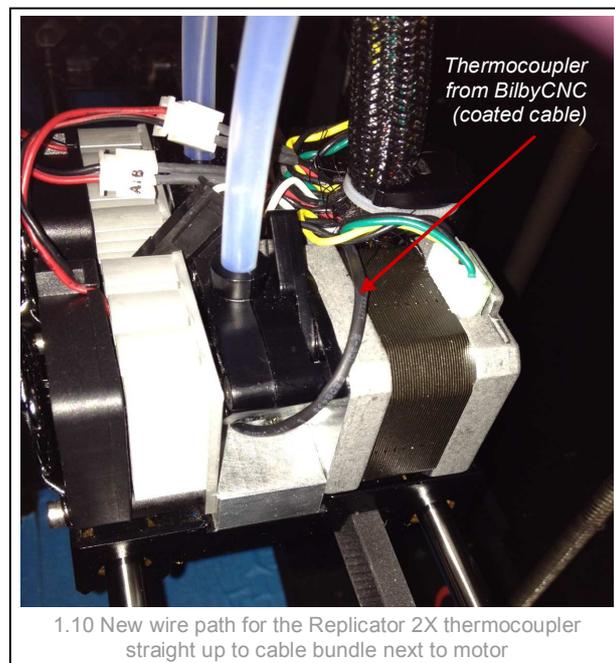
1.8 Thermocable connected to motherboard

5. Test it working

Run “load filament” and test it is all working. You can do this with the heaterblock just sitting in place—does the machine have any errors on startup? All good? Then fit it properly. You need to remove the old cable and insert the new one into the extruder bundle. This will require some zip tie removal and threading.



1.9 New wire path for the Replicator 2 thermocoupler straight up to cable bundle next to motor



1.10 New wire path for the Replicator 2X thermocoupler straight up to cable bundle next to motor

BilbyCNC hopes you found this helpful.

Please call 1800 245 297 if you need further assistance