

MAKER GEAR MICRO

WIRING GUIDE

SCRATCH BUILT EDITION

#MAKEYOUROWNMICRO



WHAT YOU'LL NEED

TO SUCCESSFULLY WIRE UP YOUR MICRO

HARDWARE

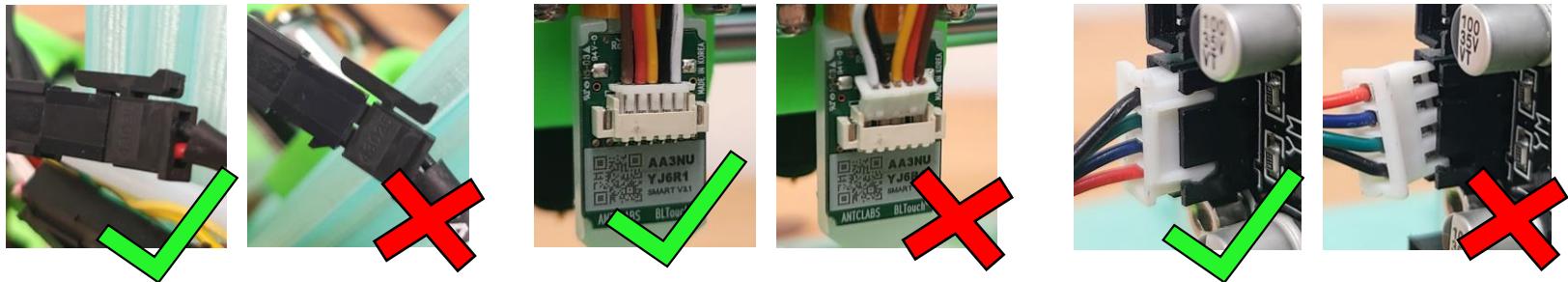
2 Pin JST Connectors (JST XH-2P-F)	x6
4 Pin JST Connectors (JST XH-4P-F)	x4
5 Pin JST Connectors (JST XH-5P-F)	x1
6 Pin JST Connectors (JST XH-6P-F)	x2
22 Gauge Ferrules (E0508 or E7508)	x2
18 Gauge Ferrules (E1008)	x2
18 Gauge DC Power Female Barrel Plug	x1
Kastar AC Power Supply (12v 6A 72W)	x1
Female Spade Connectors (optional)	x4
An Assortment of 22 Gauge Wire	~18ft
EXP & TFT Cables included with TFT Screen	x1
Small Zip Ties	x~8
.25 inche Wire Loom (optional)	~50in

TOOLS

Wire Cutters
Crimpers
Ferrule Crimpers
Small Flat Head Screwdriver
Soldering Iron (optional)

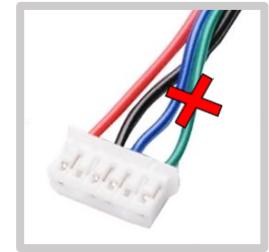
WIRING TIPS & WARNINGS

-Due to minor variations in makes/models of the electronics, the proper orientation of some of the board's ports may vary from the way they are pictured in this guide. Make sure to plug them in correctly as designated by their keying. **DO NOT FORCE THEM INTO PLACE THE INCORRECT DIRECTION.**



-Pay very close attention to the orientation of the JST connectors in the following diagrams & use the colors of the wires to confirm that they align with the proper pins/wires of each part they are connecting to.

-As pictured on the righthand side of the page, some NEMA 17 Stepper Motors will ship from suppliers with their own cables & often 2 of their pins will be placed differently than in our design. This will essentially flip the polarity of the Stepper causing it to spin opposite of our firmware commands. These pins need to be removed & swapped to match our diagram, or the axis directions can be flipped by editing the firmware.

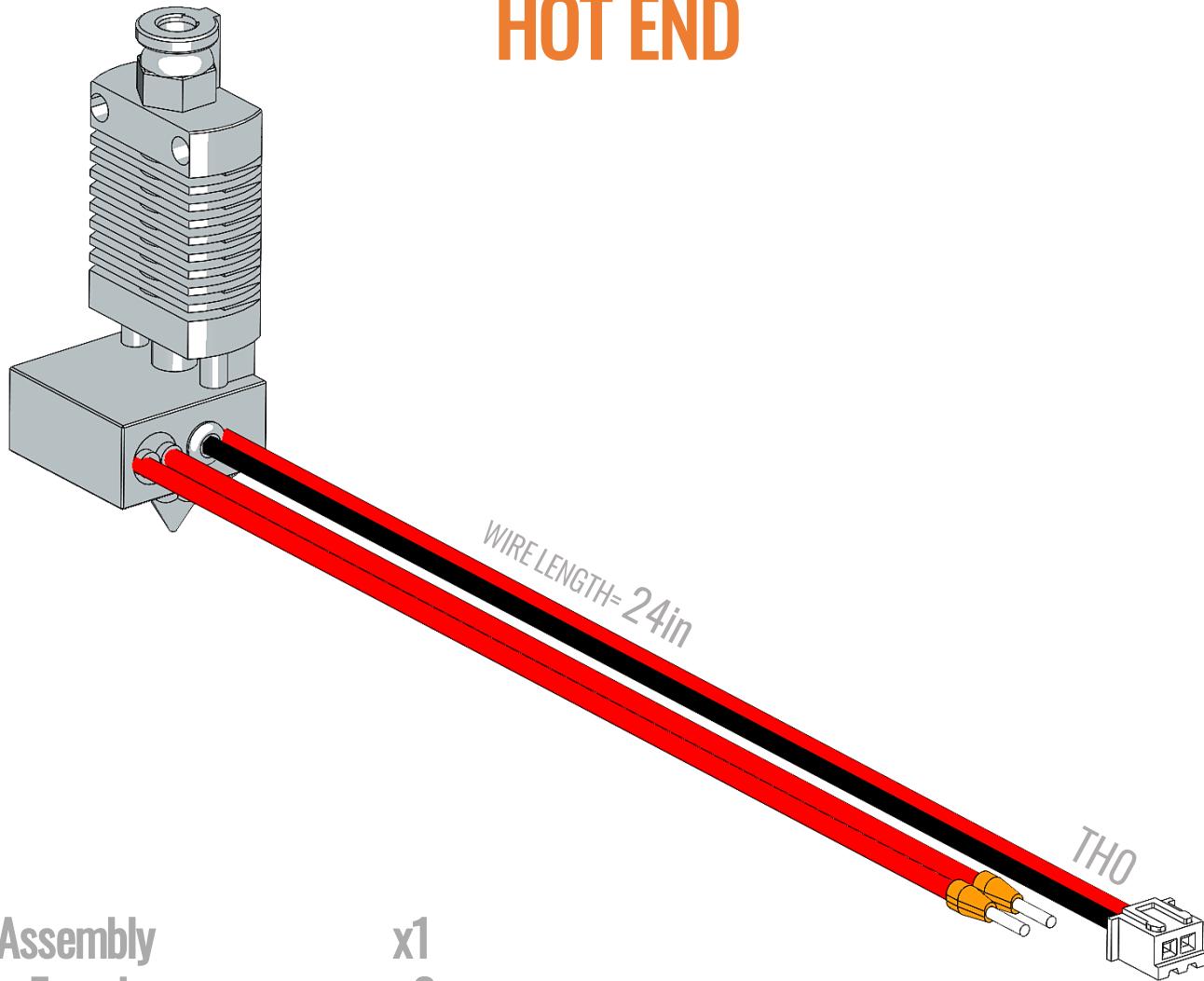


-Never remove connections by pulling solely on the wires. Grasp/pinch them via their plastic connectors

-Be cautious when handling the motherboard, not to accidentally connect/short any of the pins.

-Do NOT plug in or power up your machine until ALL connections are made. Once plugged in & powered up, do NOT connect or disconnect any pins or connectors & do not touch or adjust any of the screw terminals. Always disconnect power when making adjustments to the harnesses or their connectors.

HOT END



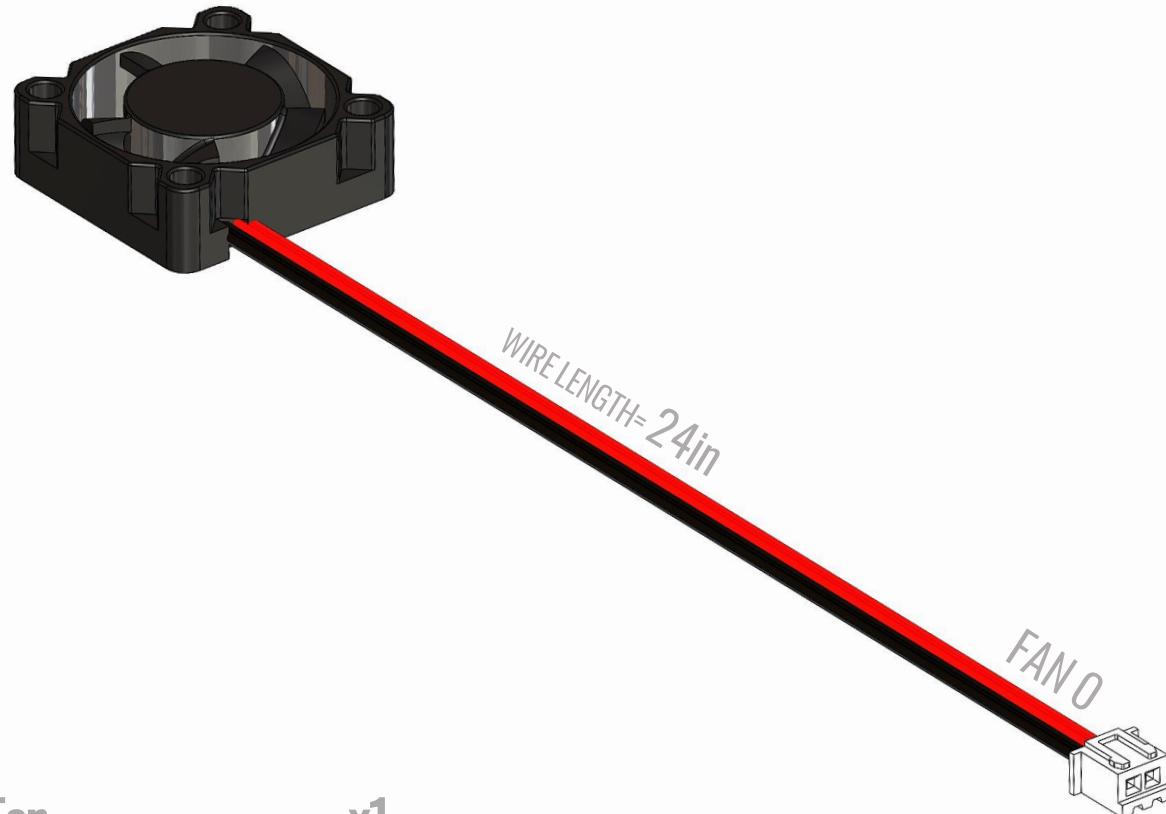
Hot End Assembly
22 Gauge Ferrules
JST XH-2P-F

x1

x2

x1

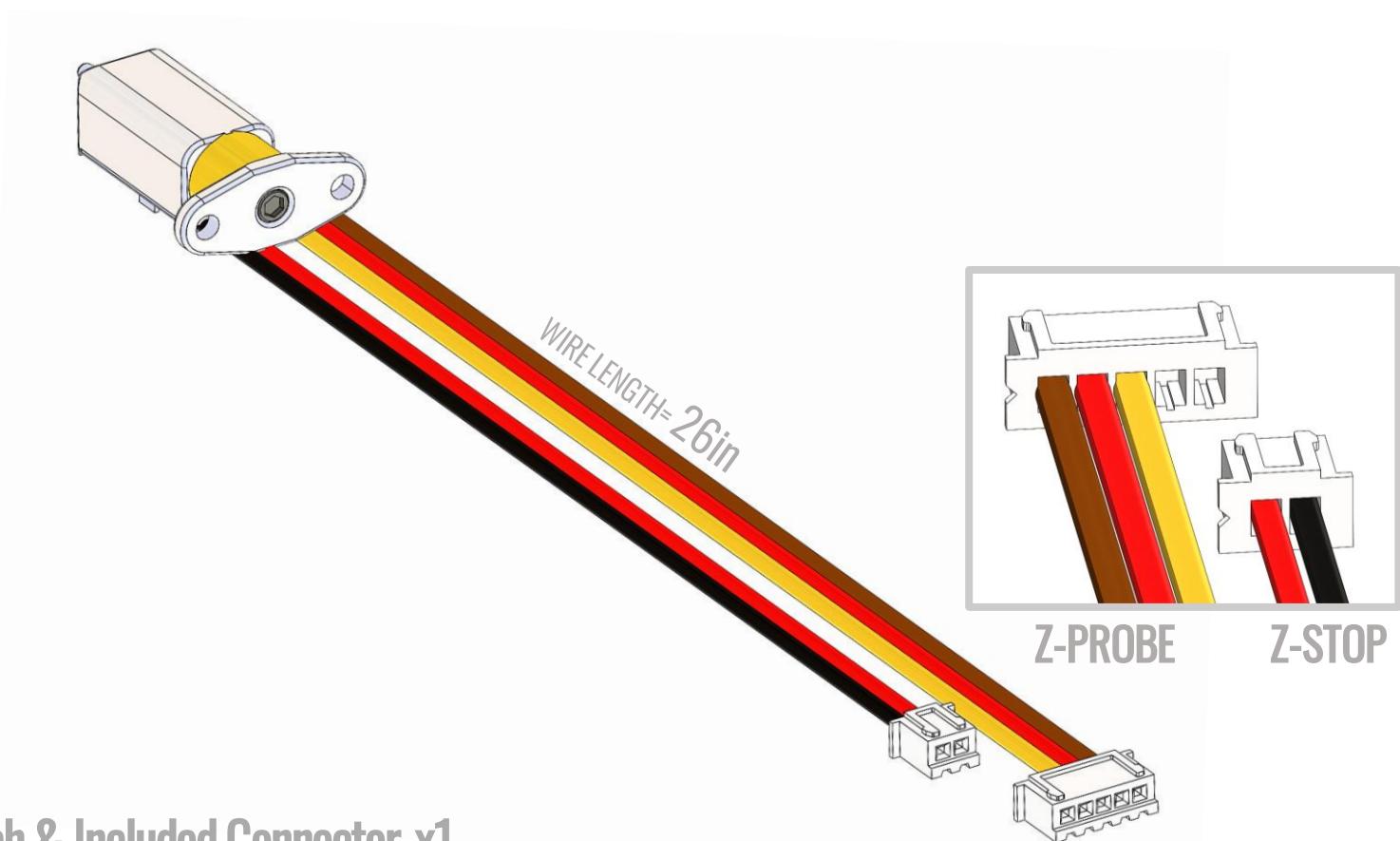
EXTRUDER FAN



30mm 12V Fan
JST XH-2P-F

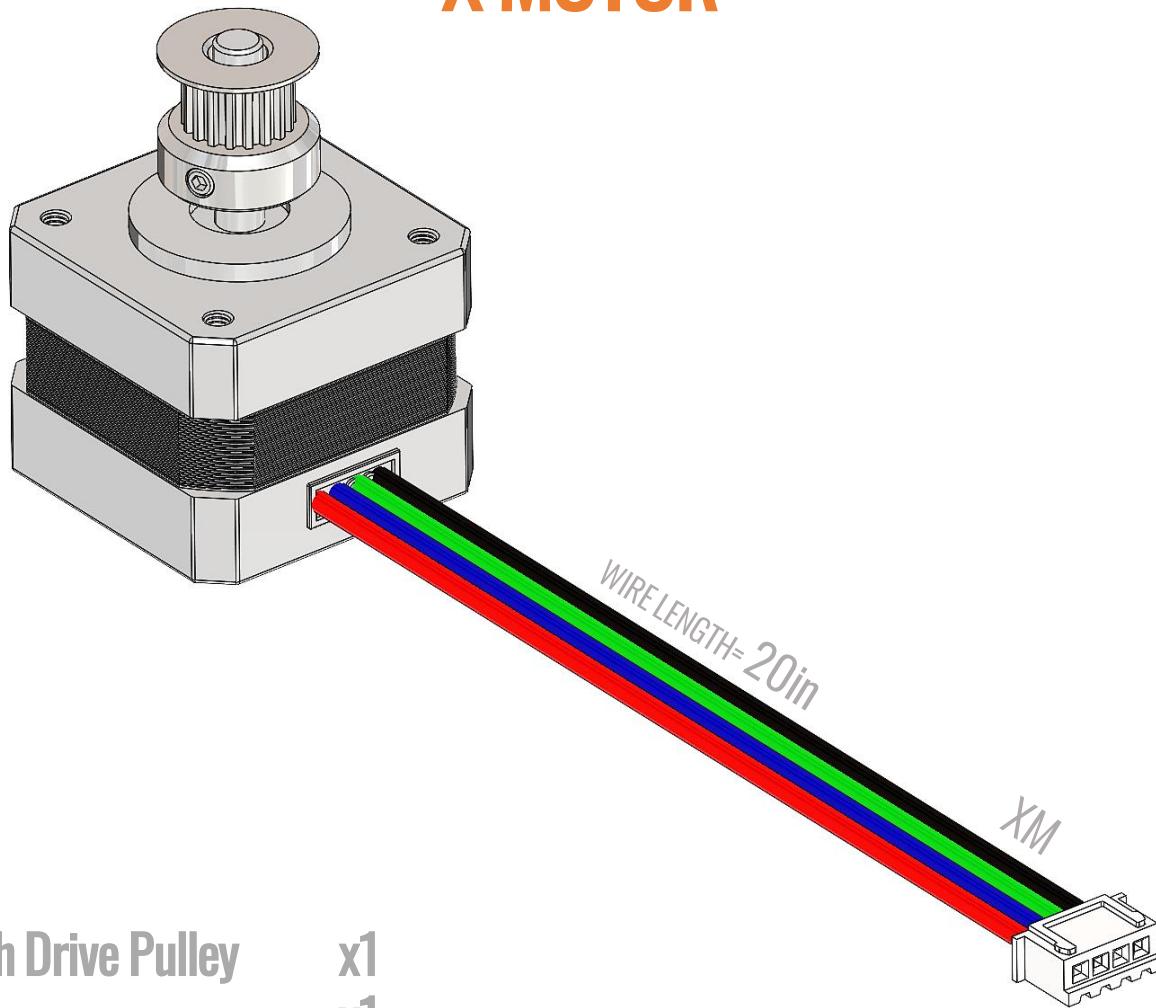
x1
x1

BL TOUCH

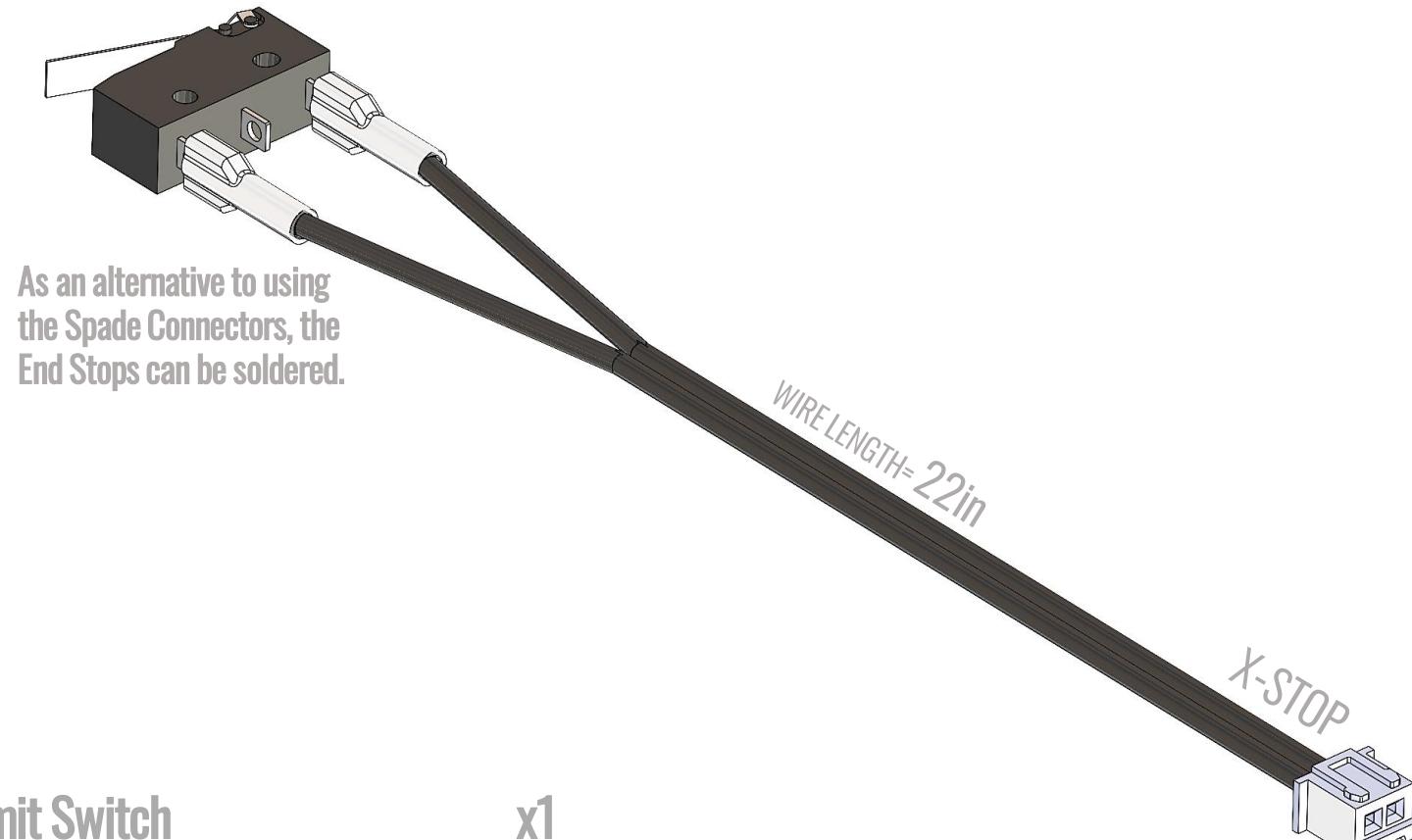


BL Touch & Included Connector x1
JST XH-5P-F x1
JST XH-2P-F x1

X MOTOR

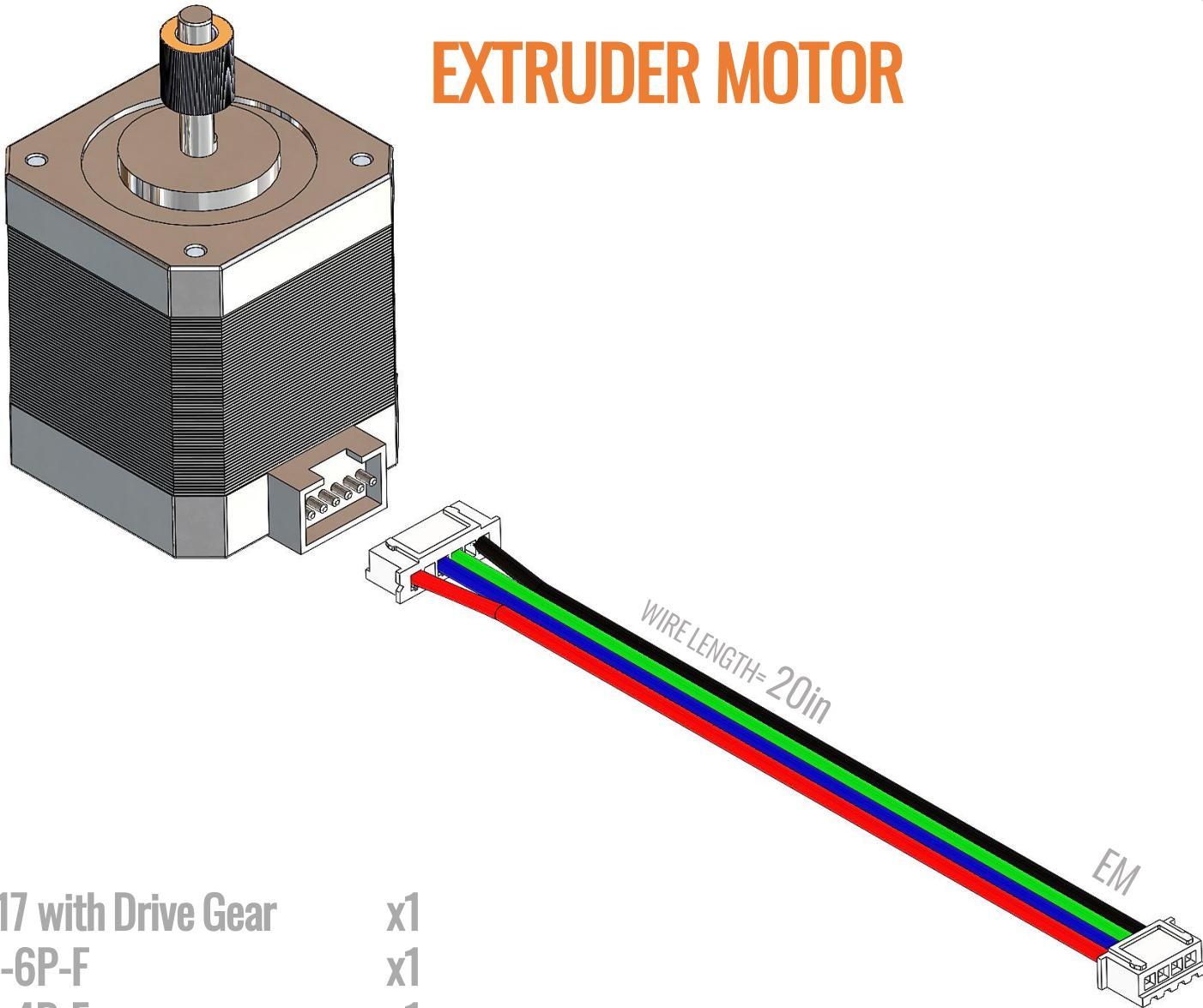


X END STOP

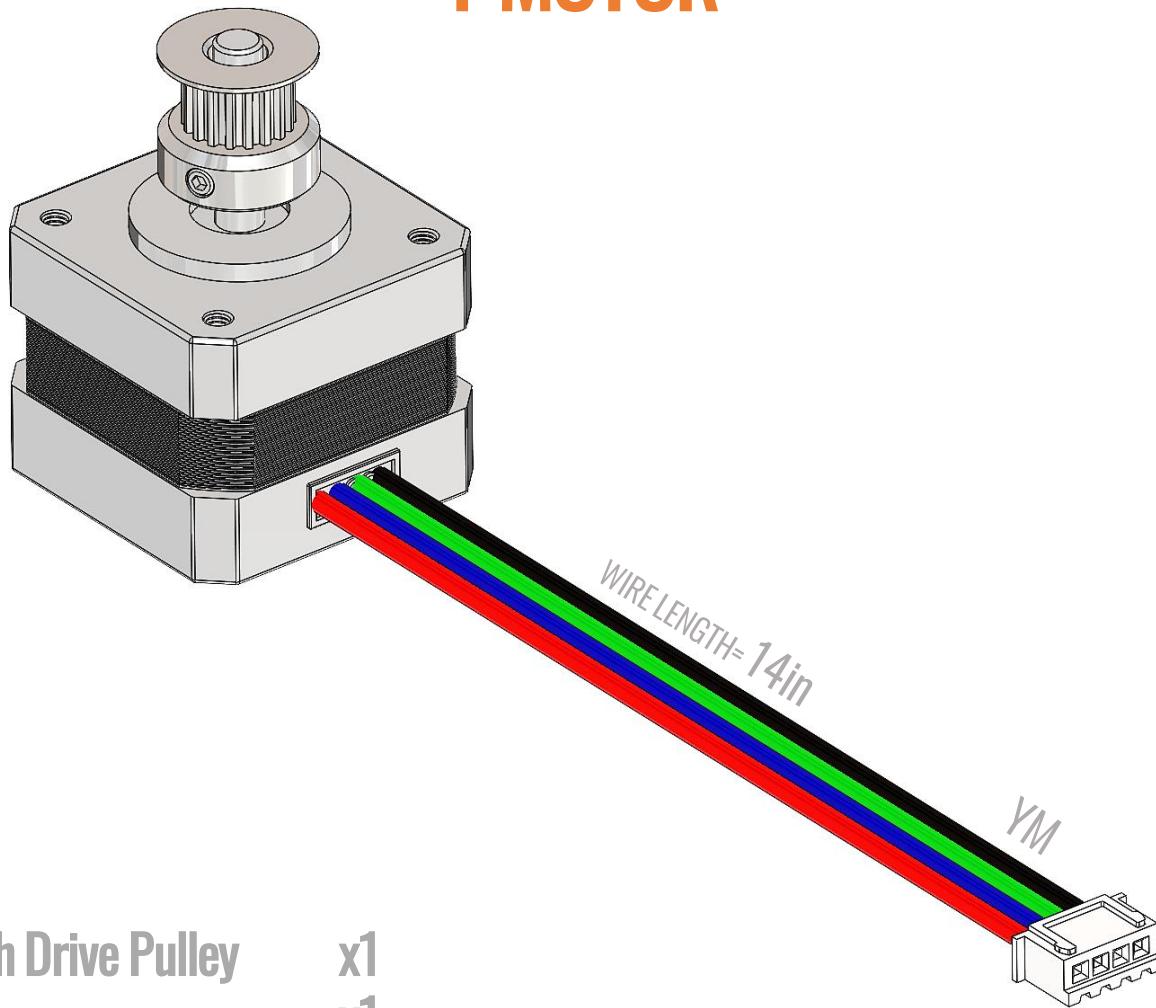


Limit Switch	x1
Female Spade Connectors	x2
JST XH-2P-F	x1

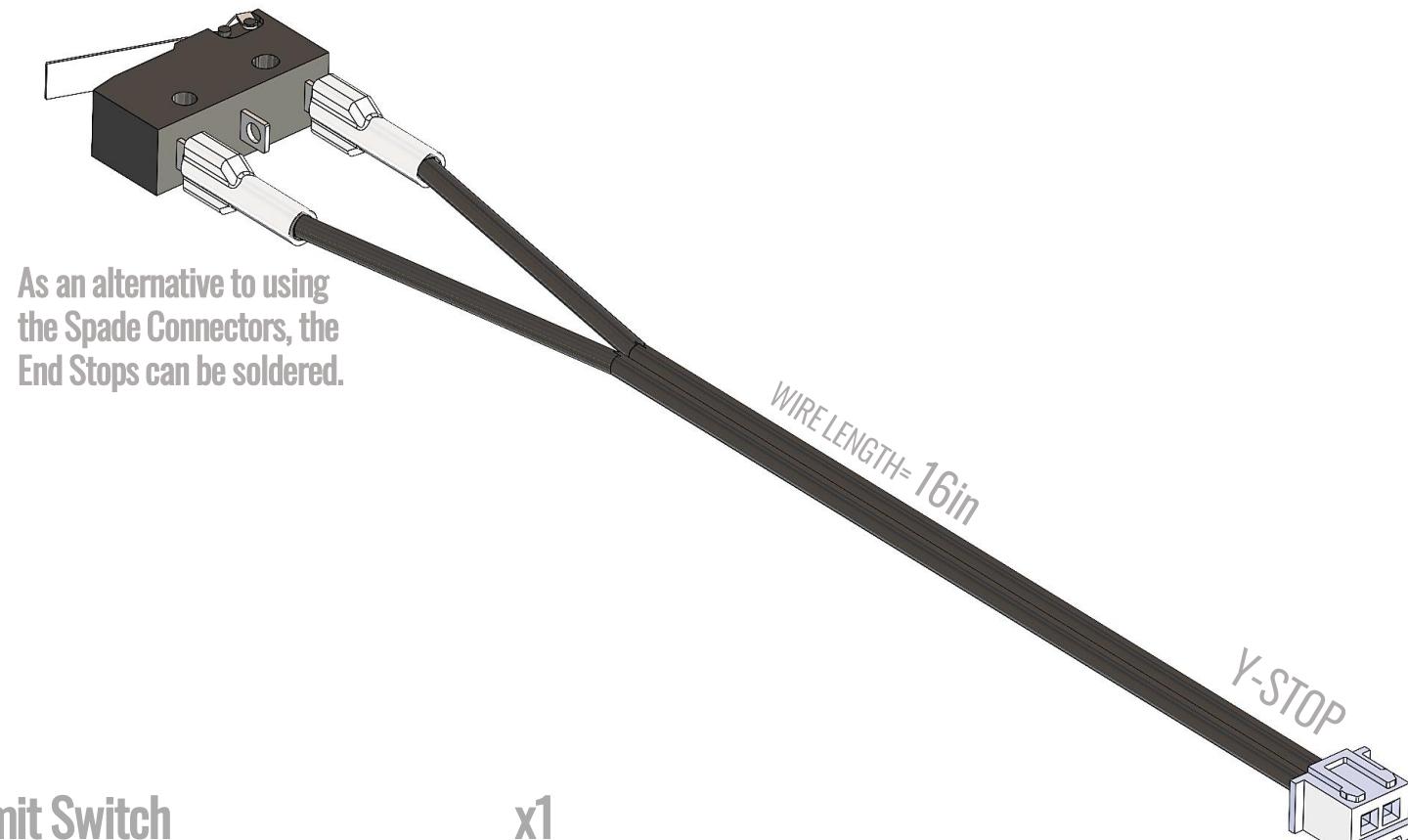
EXTRUDER MOTOR



Y MOTOR

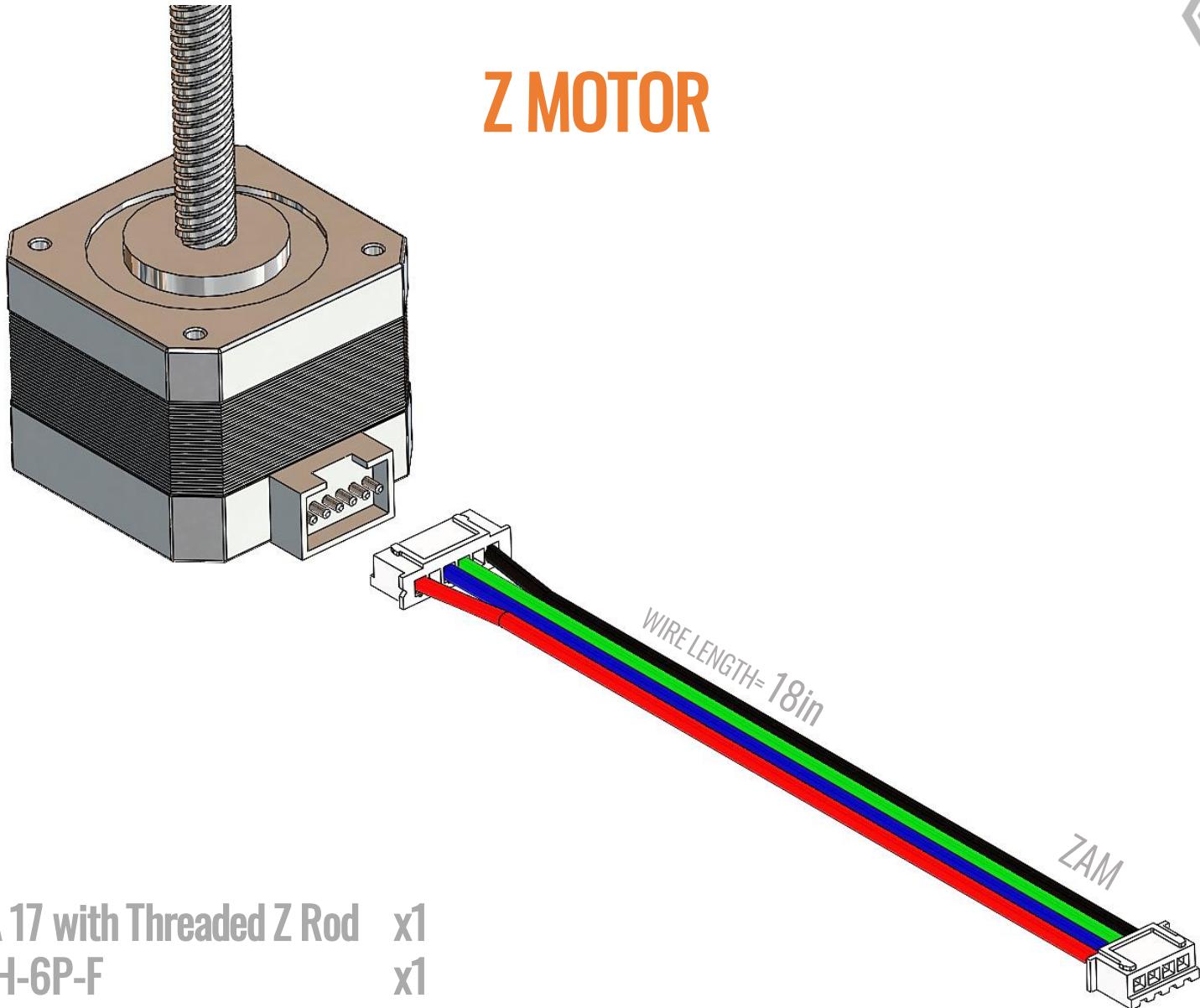


Y END STOP



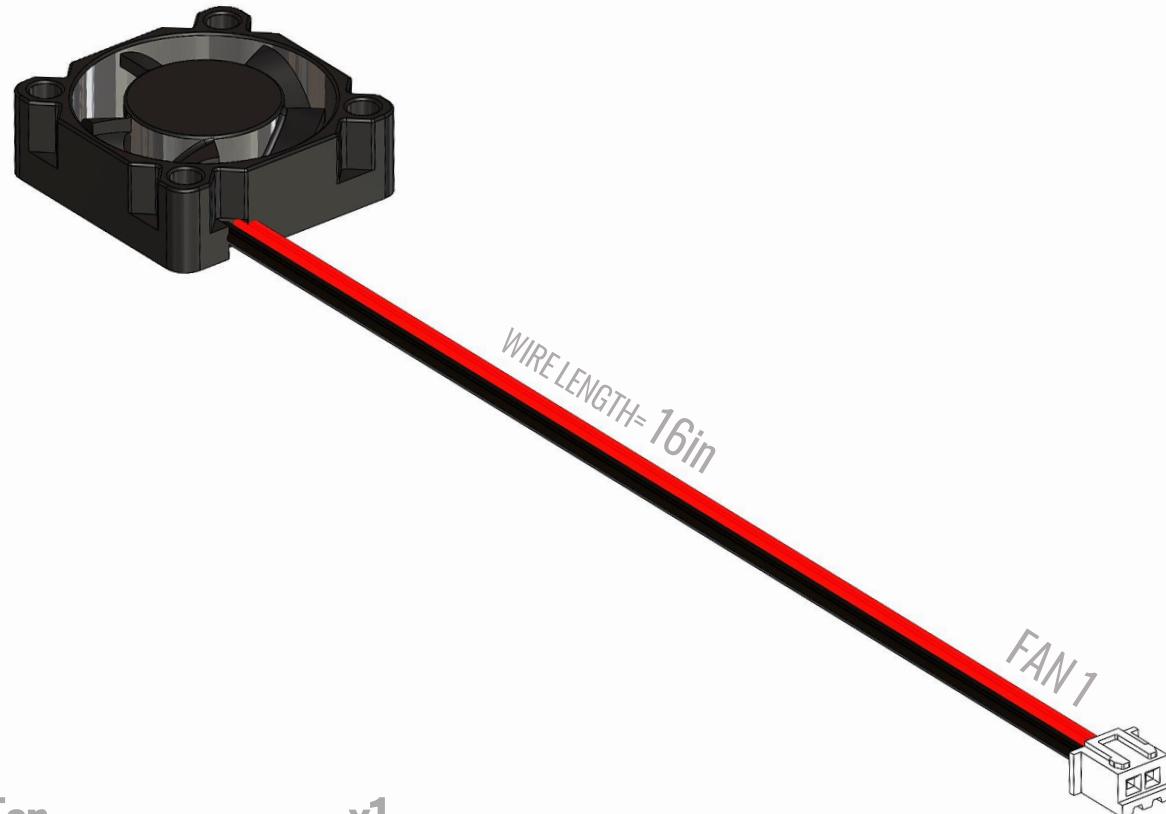
Limit Switch	x1
Female Spade Connectors	x2
JST XH-2P-F	x1

Z MOTOR



NEMA 17 with Threaded Z Rod x1
JST XH-6P-F x1
JST XH-4P-F x1

ELECTRONICS CASE FAN



30mm 12V Fan
JST XH-2P-F

x1
x1

DC POWER PLUG

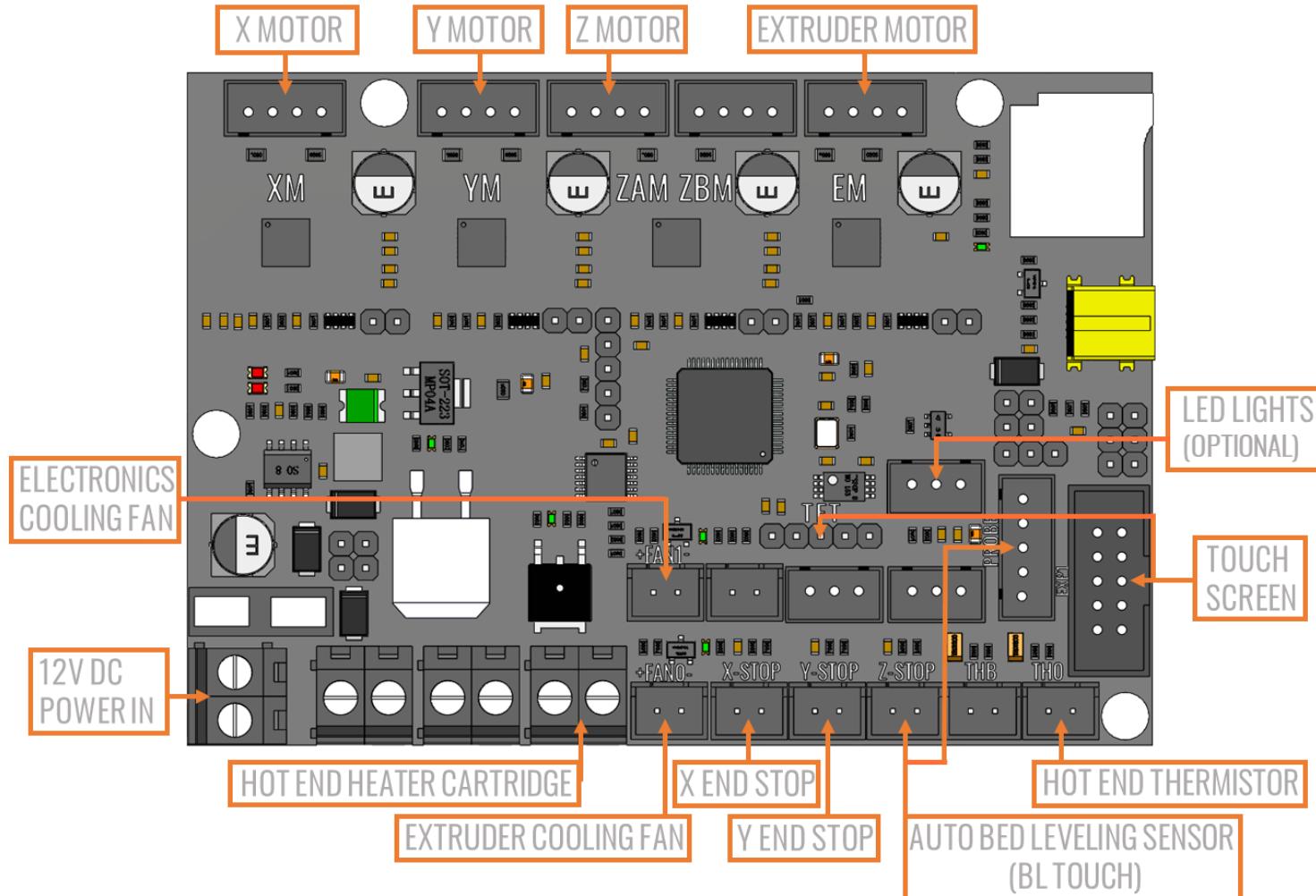


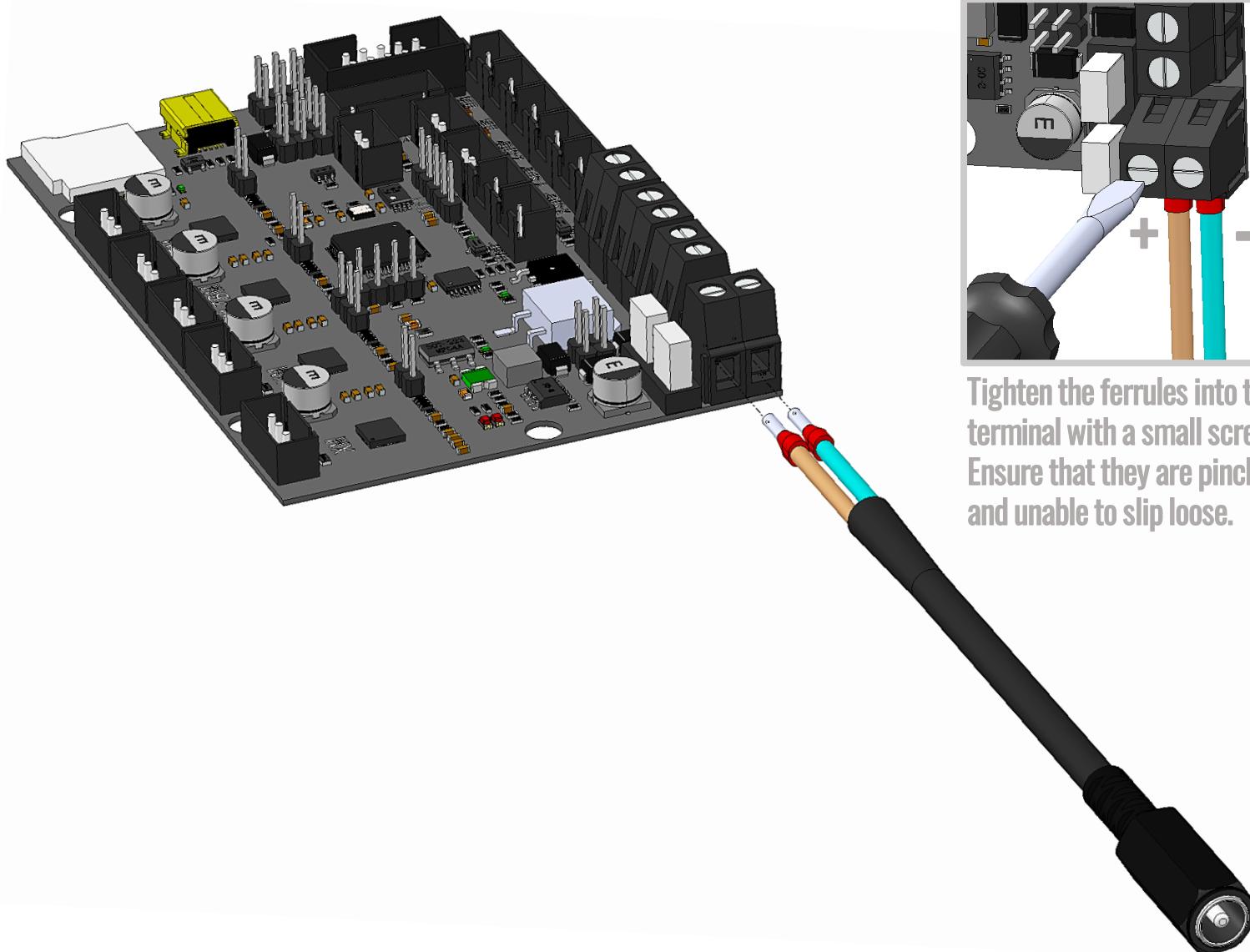
DC Female Barrel Plug
18 Gauge Ferrules

x1
x2

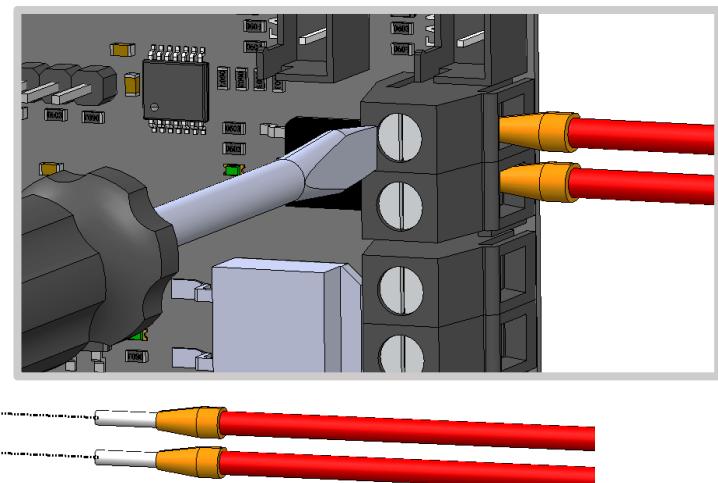
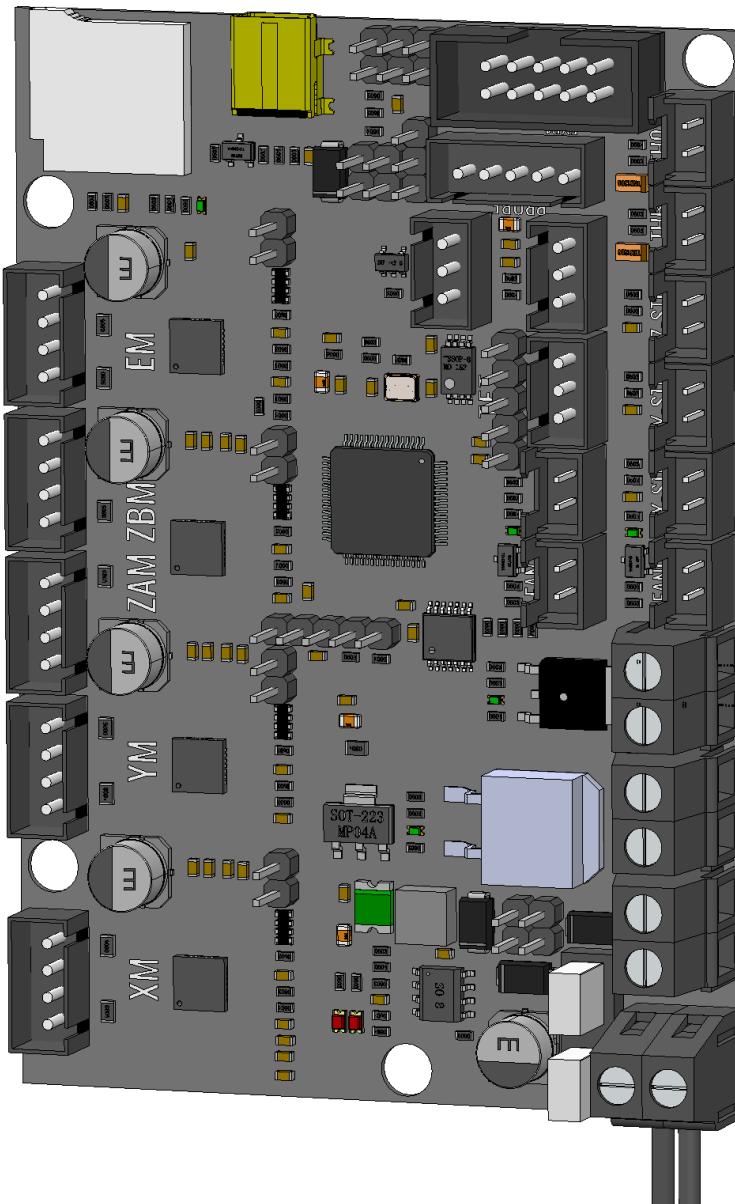
MOTHERBOARD OVERVIEW

WHICH PORTS YOU WILL USE & WHAT THEY ARE FOR

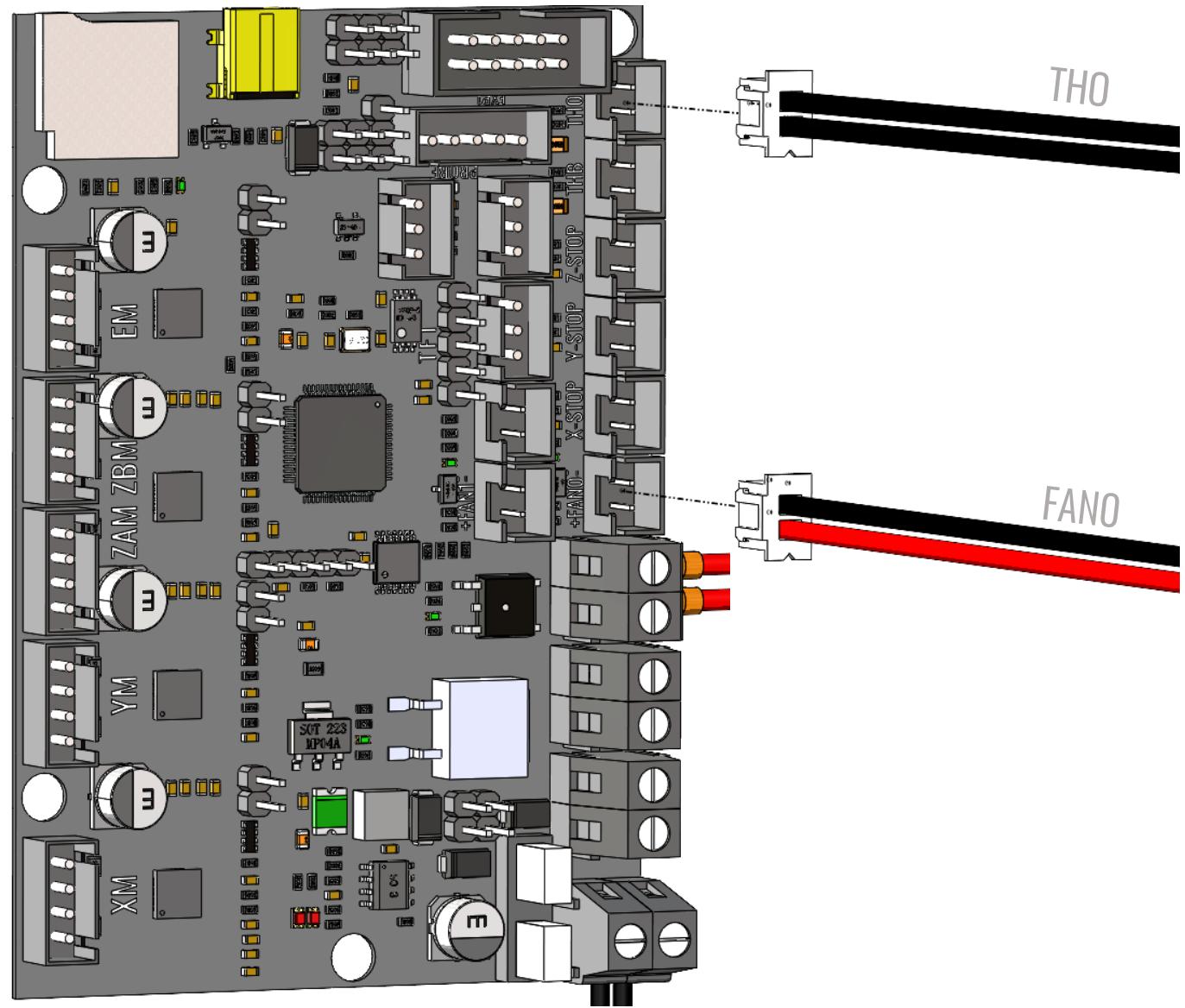


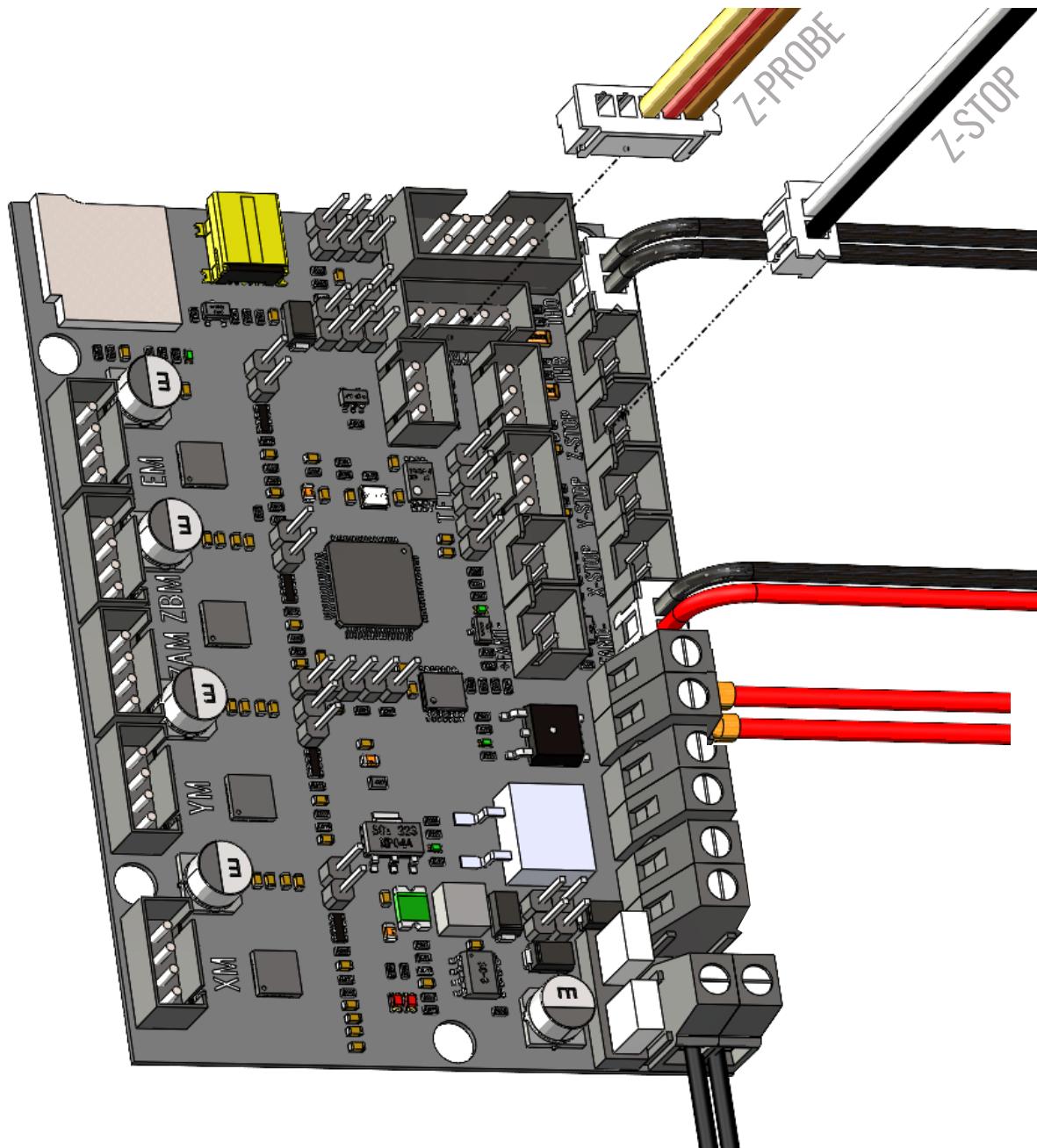


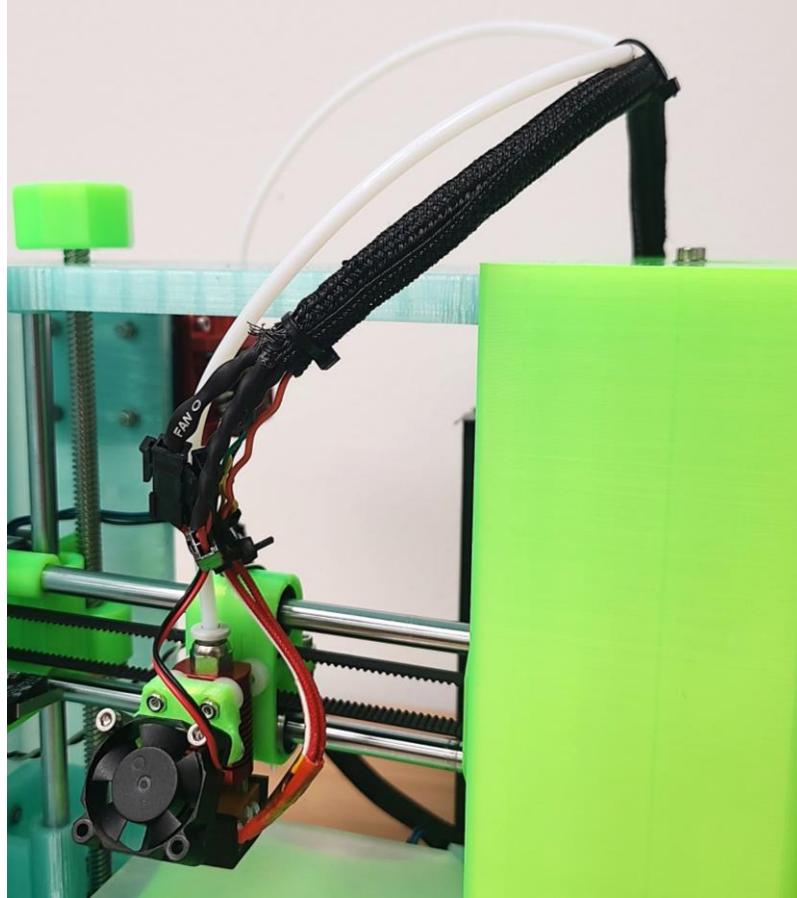
Tighten the ferrules into the screw terminal with a small screwdriver. Ensure that they are pinched tight and unable to slip loose.



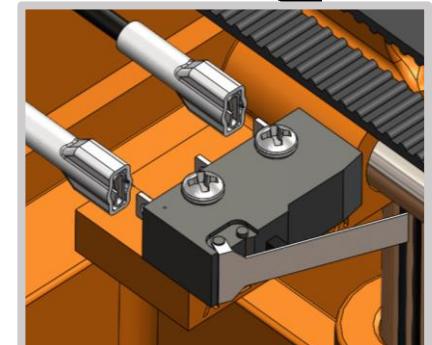
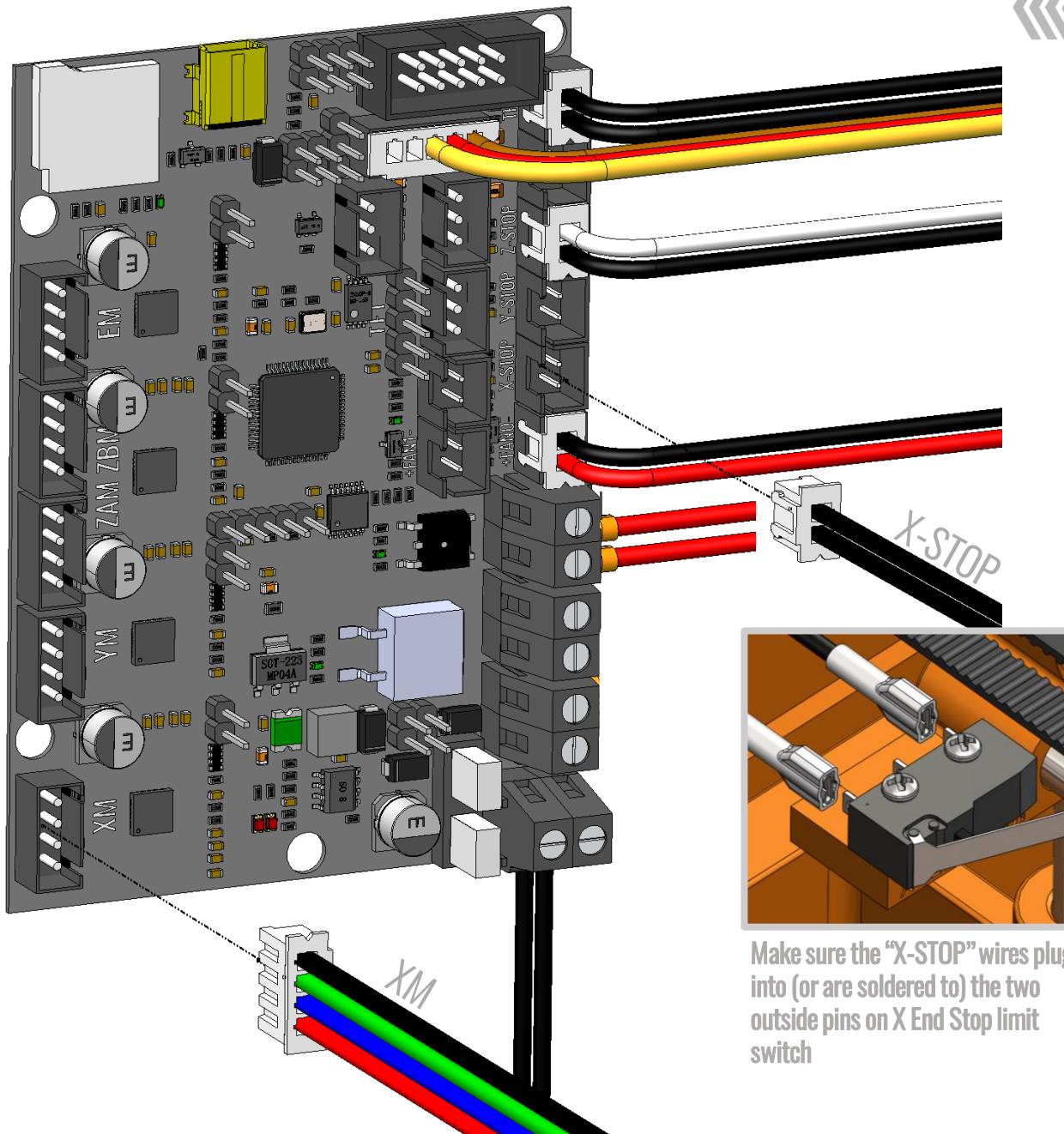
Tighten the red “HOT END” wires into the screw terminal with a small screwdriver. Ensure that they are pinched tight and unable to slip loose.



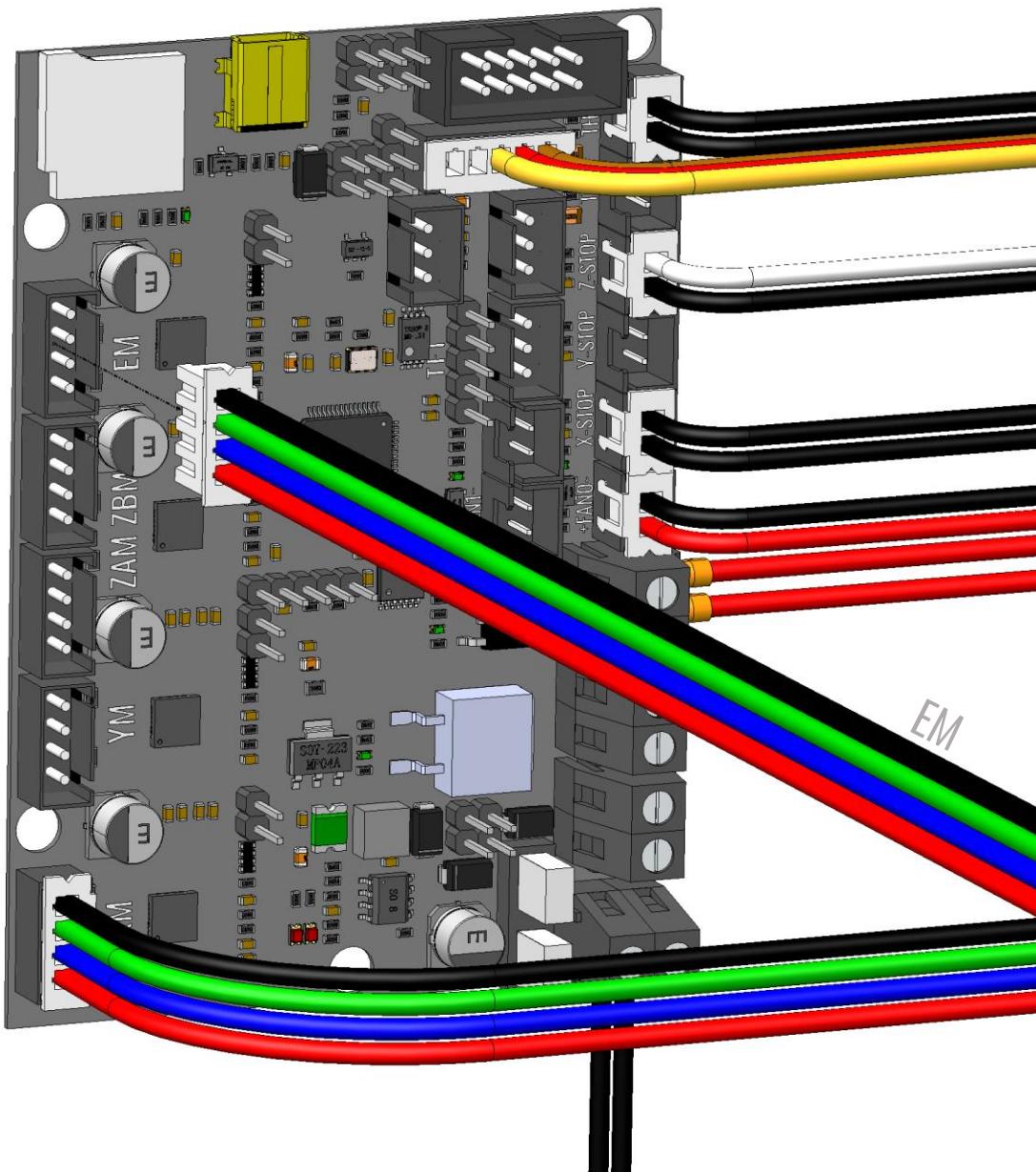


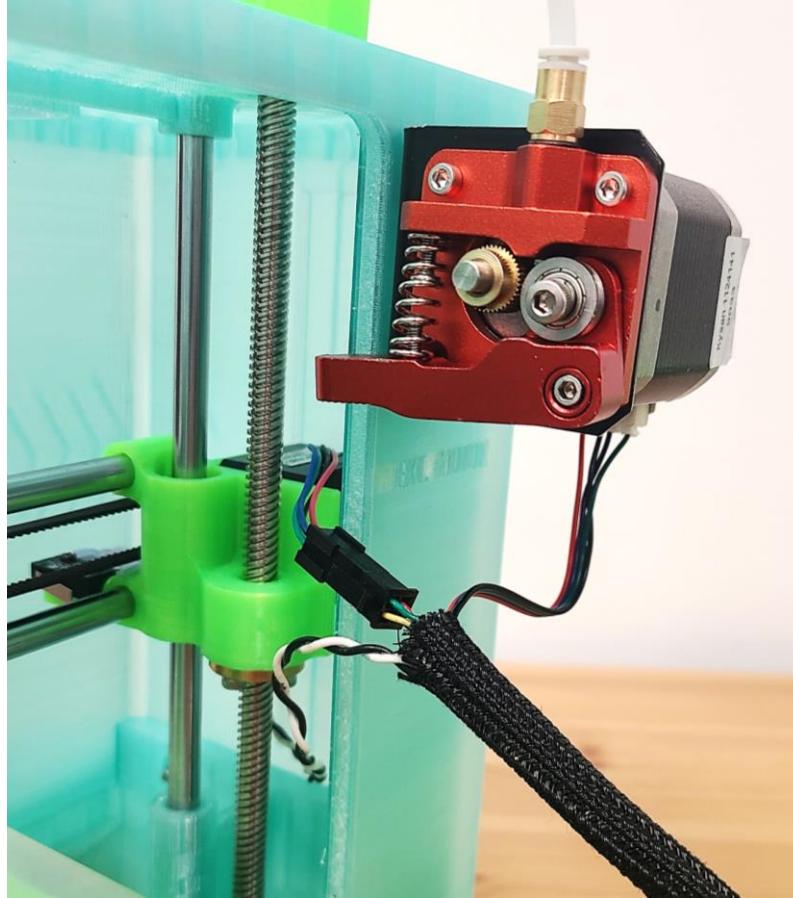


The Red Heating Cartridge cables, THO, FANO, PROBE, & Z-STOP wires can all be loomed into one bundle & zip tied together to form "Harness A." This completed harness must run OVER THE TOP of the MICRO rather than under where it might get in the way of moving parts. Use several additional zip ties to help manage the wires & bind the harness to the PTFE tubing. This will limit the harness from scraping the top of the machine & keep it out of the tool head's way.

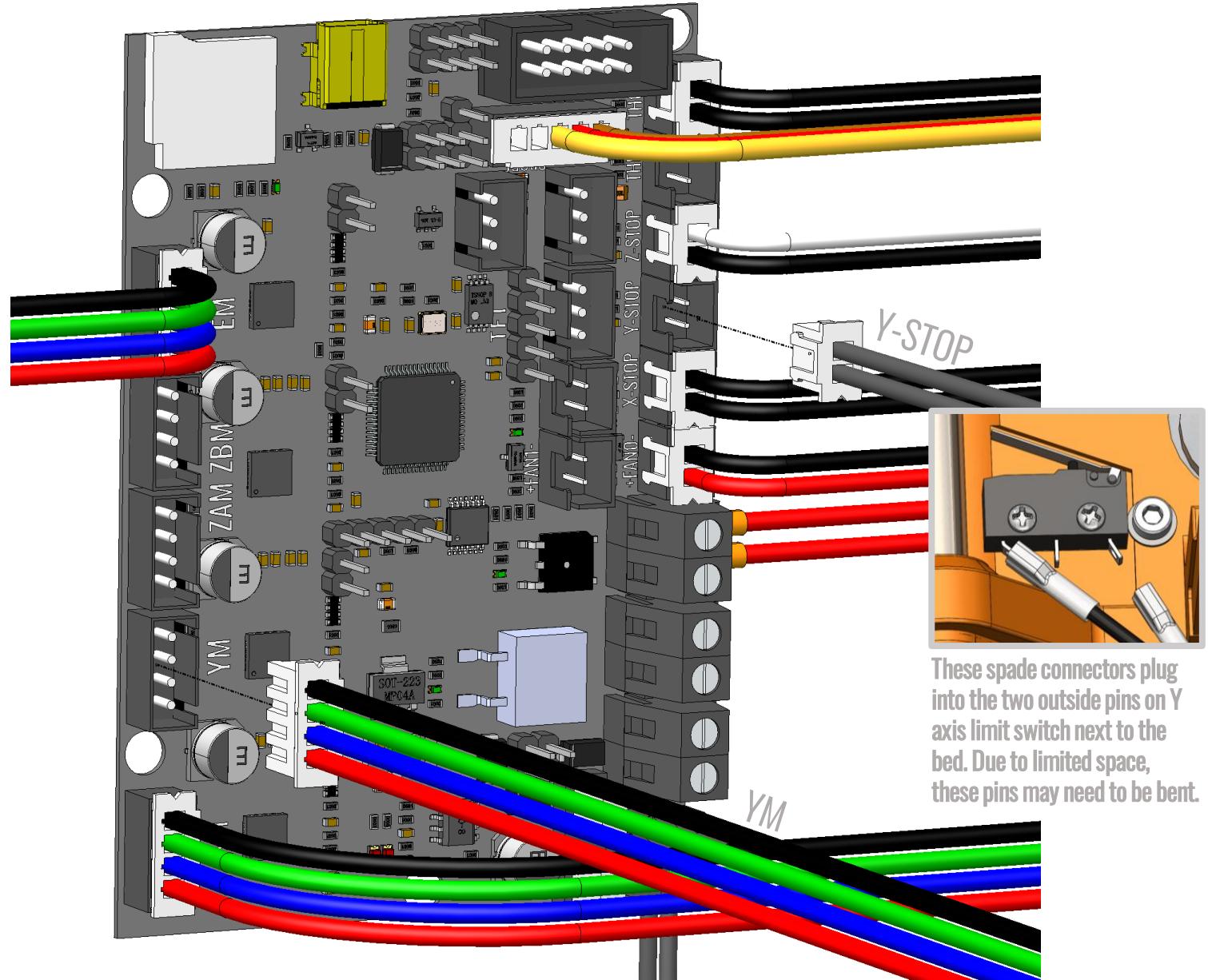


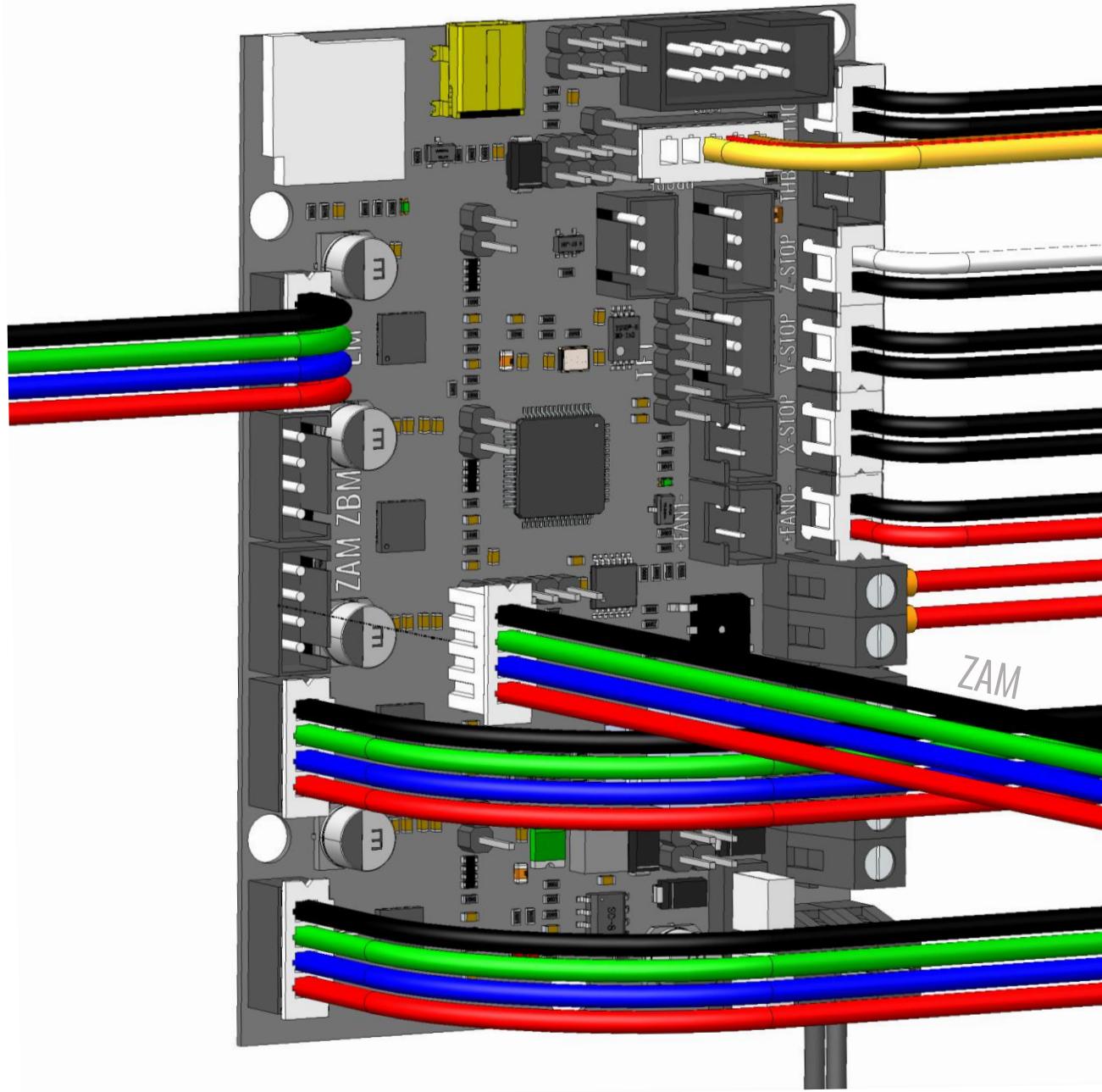
Make sure the "X-STOP" wires plug into (or are soldered to) the two outside pins on X End Stop limit switch

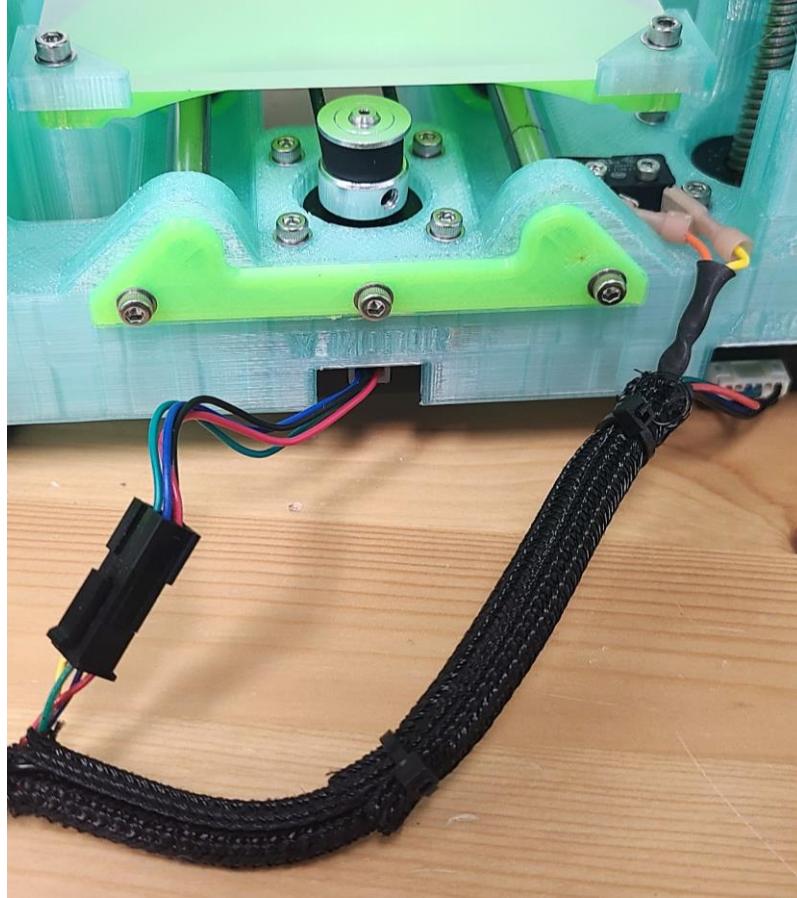




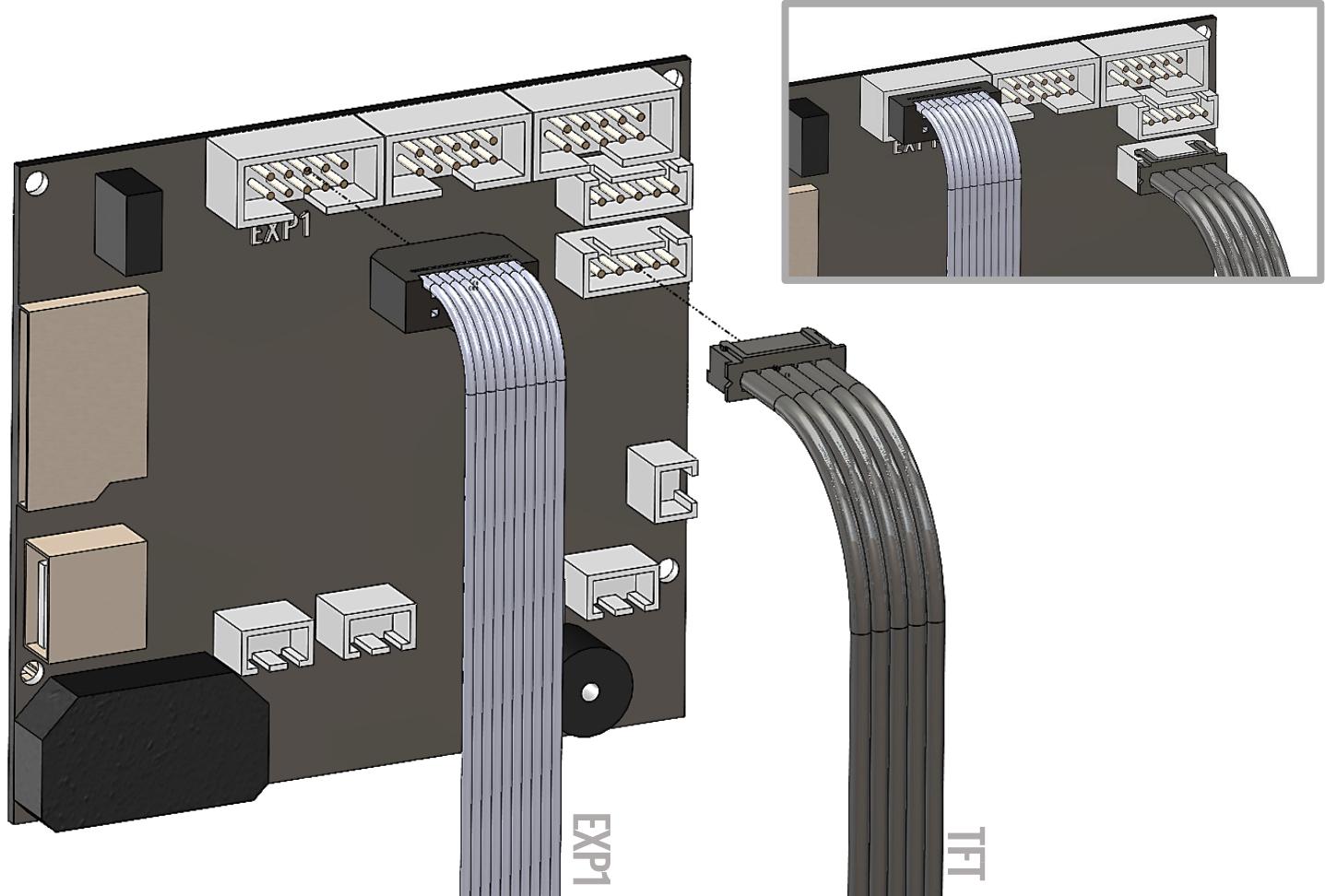
The XM, X-STOP, & EM cables can be bundled into a single loom with zip ties to form “Harness B.” Make sure to run the X Stop wires BEHIND the Z Motor & Z Linear Motion Rod. The updated Top design includes a cut away slot for both the X Motor & X Stop wires to run through to help distance these from the moving parts of the machine.



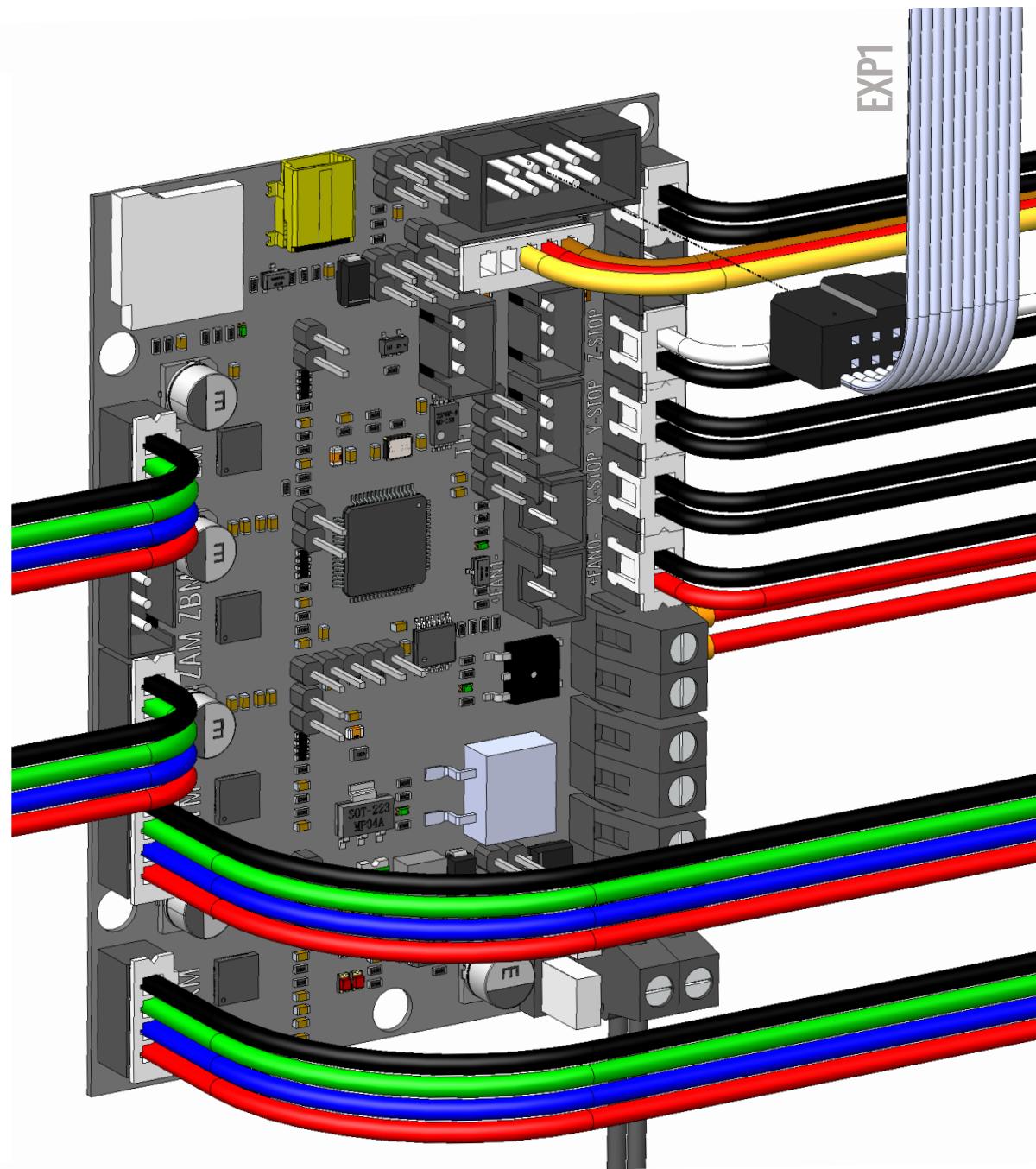




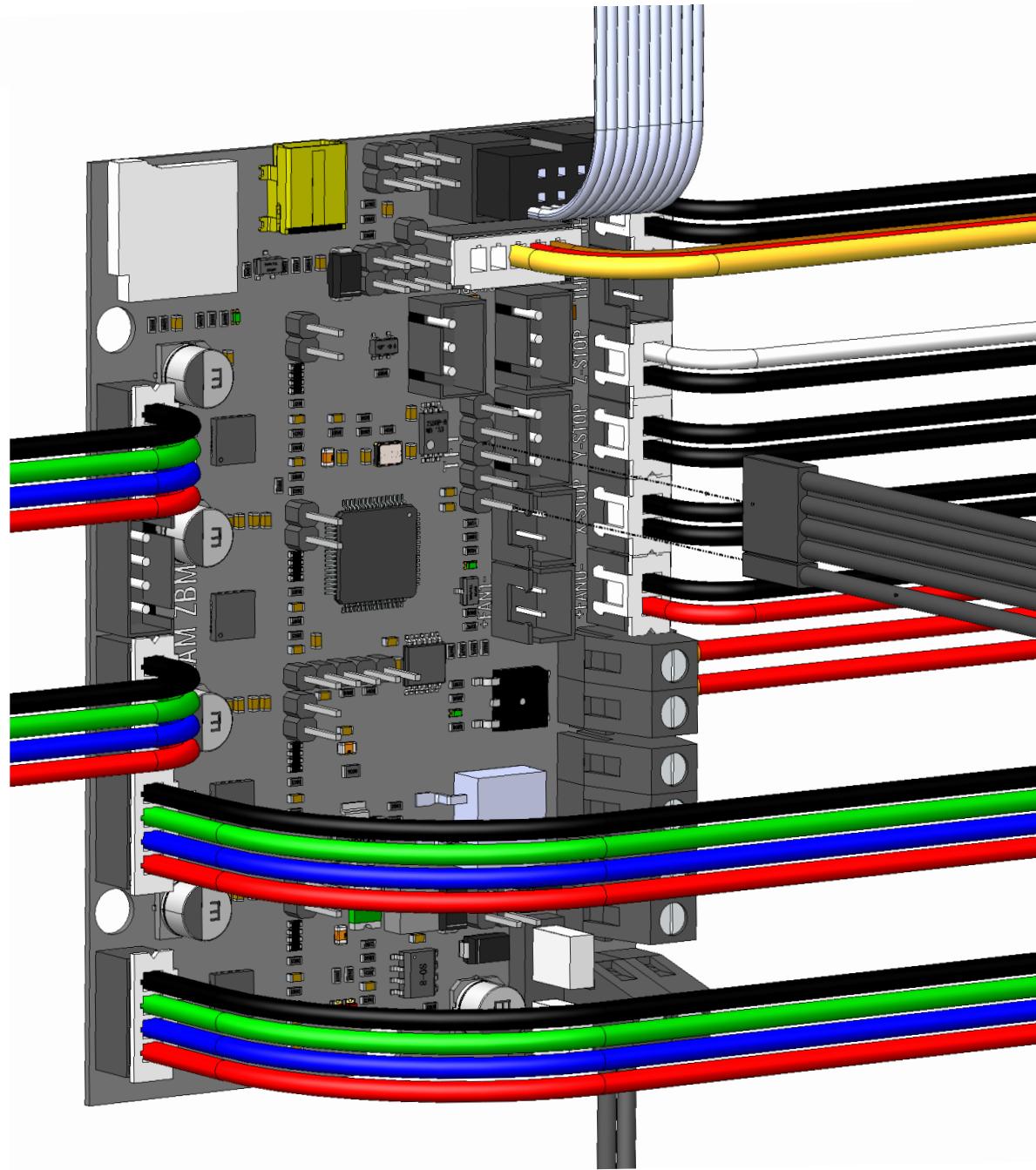
The YM, Y-STOP, & ZAM cables once bundled will create “Harness C.” Make sure no portions of this harness are in the way of the bed’s linear path in the Y direction.



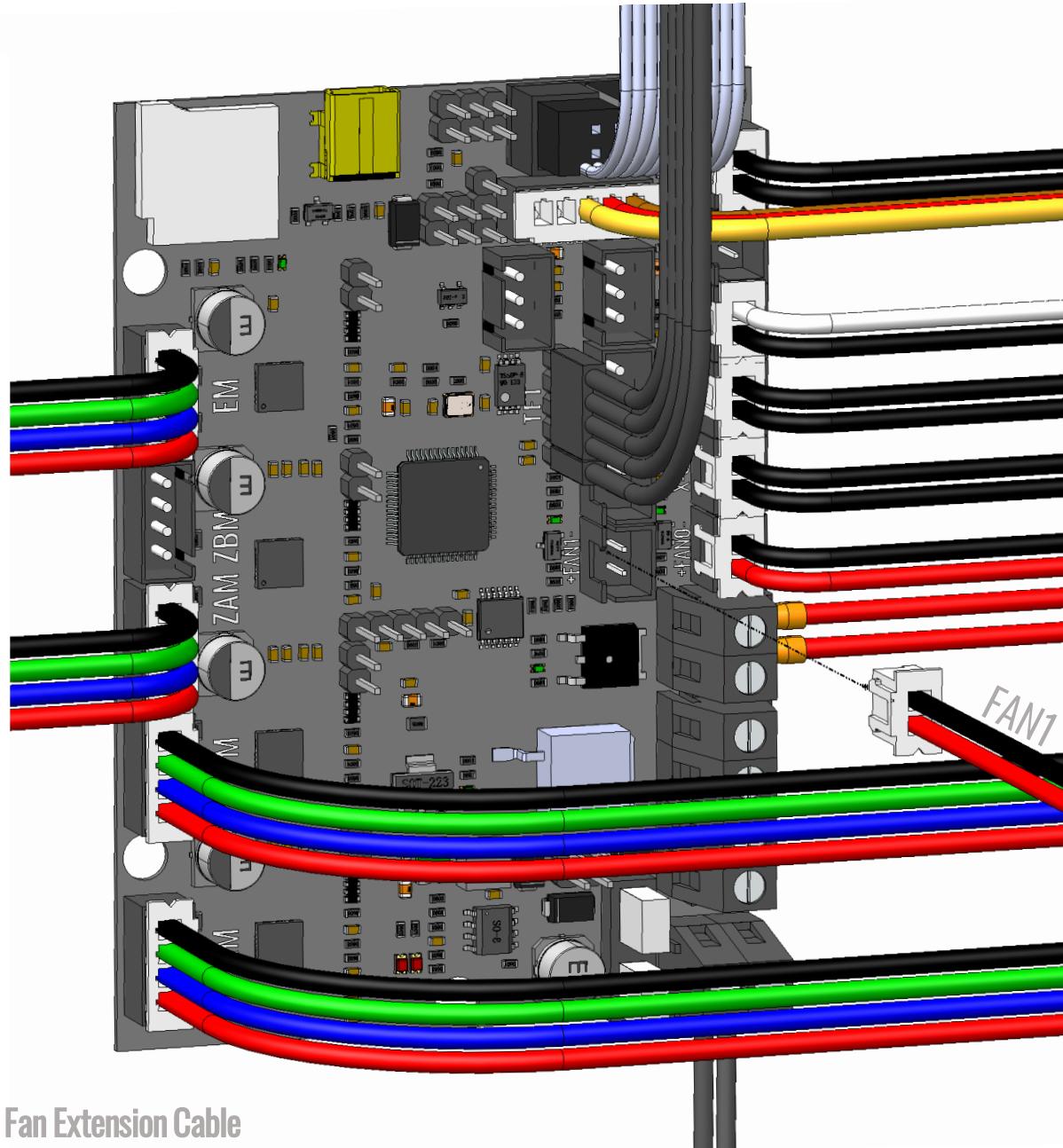
TFT 28 Touch Screen
Touch Screen Cables (included with screen)



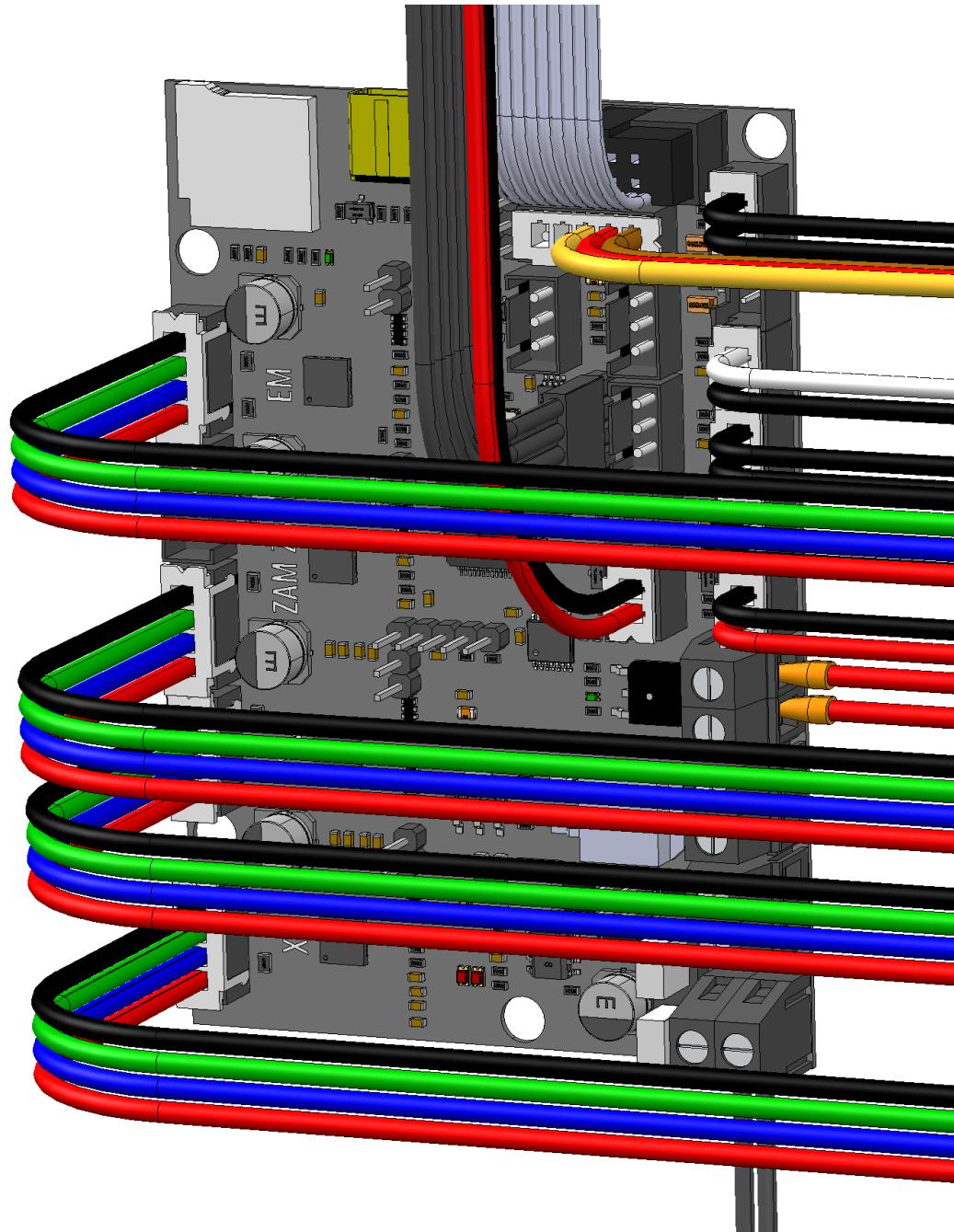
Touch Screen Cables



Touch Screen Cables



Electronics Case Cooling Fan Extension Cable



Well Done.