

Minor Setback

Weekly Report 4/2/17 to 4/8/17

As I eagerly worked on my printer throughout this past week, I made great bounds in progress; even managing to finish assembling the printer and wiring the electronics. After the wiring and assembly process of the printer, it was time to flash the firmware to the Arduino which would actually “drive” the main functions of the printer such as motion and printing. This step actually was somewhat tricky as several settings in the Marlin firmware which I was using had to be tweaked manually before flashing the Arduino. Several settings included certain safety features such as detecting minimum temperature to detecting max temperature or even preventing the printer from operating when the nozzle is too cold. Once the Arduino was flashed I used a software called “Pronterface” to interact with the printer and operate its motion and control. Upon doing this I ran into several problems such as the stepper motors making a clicking noise, the nozzle not heating up, and the end stops not fully triggering when a component came in contact with it. In order to fix this, I went back and made sure my wiring was fully correct and that there weren’t any loose wires on the board which were creating a poor connection. Once rewired, several of the aforementioned problems were solved but the X-axis motor was still clicking and not moving properly while the other 2 axes were working perfectly fine. After some investigation, I found the problem to be as a result of a faulty stepper driver for the X-axis motor which I attempted to remove, but in an act of blunder I had left the power on which created a short when the driver was removed. This led to damage being caused to both the RAMPS board as well as the Arduino connected beneath. After an extended period of frustration and anger, I decided to move on from this experience and reorder the faulty parts which are due to arrive next

week. Now that I have finally completed the printer itself, I can begin designing parts or improvements which I can hopefully begin printing soon.