Overview

In the middle of June I ended up getting my first 3D printer. The printer I ended up buying was Creality's Ender 3 Pro.

From what I looked up, the ender 3 pro offered great detail and print quality for entry level printers. It came with all

of the tools I needed to set it up and some white PLA filament. After this ran out, I bought a 1 kg spool of black PLA

filament to fuel my first large project. I designed a box that will be printed with this printer later for my led strip

project. More information will be posted about that soon in another tab on my site later. The idea of this page is to

share pictures of my more detailed or fun prints and also post my issues and solutions with the printer. Since 3D printing

is so complex, there are many issues that come up over time. As I use the printer more, I hope to document these problems

and my process in how I handled them. This could be helpful for any other new printers or people who are just curious about

how the printer runs. The dimensions of the ender 3 pro are around 8 x 8 x 9 inches, which allows me to print basically anything

I wish. I am looking forward to showing this thing off throughout the Summer!

Leveling the Bed

Leveling the bed is something that is crucial for any 3D printer. The bed refers to the plate that the nozzles pushes out the hot

plastic filament onto during the prints. There are four large gears under the bed that are used to raise or lower that respective

corner of the bed. The best way I have found to level the bed is to place a piece of paper between the bed and the extruder nozzle.

If the paper can not go between them, the bed must be lowered so it can. If it is too loose, the bed must be raised enough. After

leveling one corner, I go to the opposite back corner and work my way around to the other two corners after that. If the bed is too

low, the filament could dry before it reaches the bed, which can lead to your print not sticking and messing up during the middle of

the print. If the bed is too close to the nozzle, the extruder will not be able to push out the right amount of plastic and it will

become stuck to the printing bed. Luckily, the ender 3 pro uses a magnetic bed so you can take off the magnetic sheets and replace them

easily if it gets damaged. Leveling the bed is generally simple, since you have to lower the z axis of the printer to the bottom and check

the corners, but I have learned that it is very important for a successful print.

Fixing Layer Shifting

One of the first problems I faced with my prints was layer shifting. Layer shifting is when after each layer, your print slightly moves

off in either the x or y direction to create uneven prints. After narrowing down my problem, I discovered that it had come from two spots.

The wheels that mount the x axis and extruder were very loose, which led to them being very wobbly as it moved across the x axis belt.

After tightening it with a wrench, half of my problem was solved. The other issue had to do with the loose x axis belt on the printer.

When constructing the ender 3, I did not tighten the belt nearly as hard as I should have. Also, as the belt gets used, it will become looser.

So, if layer shifting ever becomes an issue again I will keep an eye on the belt or retighten it. This is done by using one of the jacks as a

lever to push the piece farther over so the belt gets tighter. After this, I rescrew in the two bolts that hold the piece to the bar. Now that

I know how to fix this issue, it shouldn't be a problem in the future if I regularly check the belt.

Fixing the Filament Spool

After I used up all of the filament that came with the printer, which wasn't that much, I ordered more black filament

that came in a large spool. Like before, I threaded the filament through the hole that held the plastic up, instead of

letting it hang and feed straight into the extruder entry. This led to lots of tension being built up when the plastic

couldn't bend around the corners as the extruder pulled more and more filament through. This led to two different prints

of the same thing being stopped. So, after this, I changed the filament so it hangs off more loosely. This will make it

so there will be no tension on the filament and no worry about feeding in more plastic for my prints.