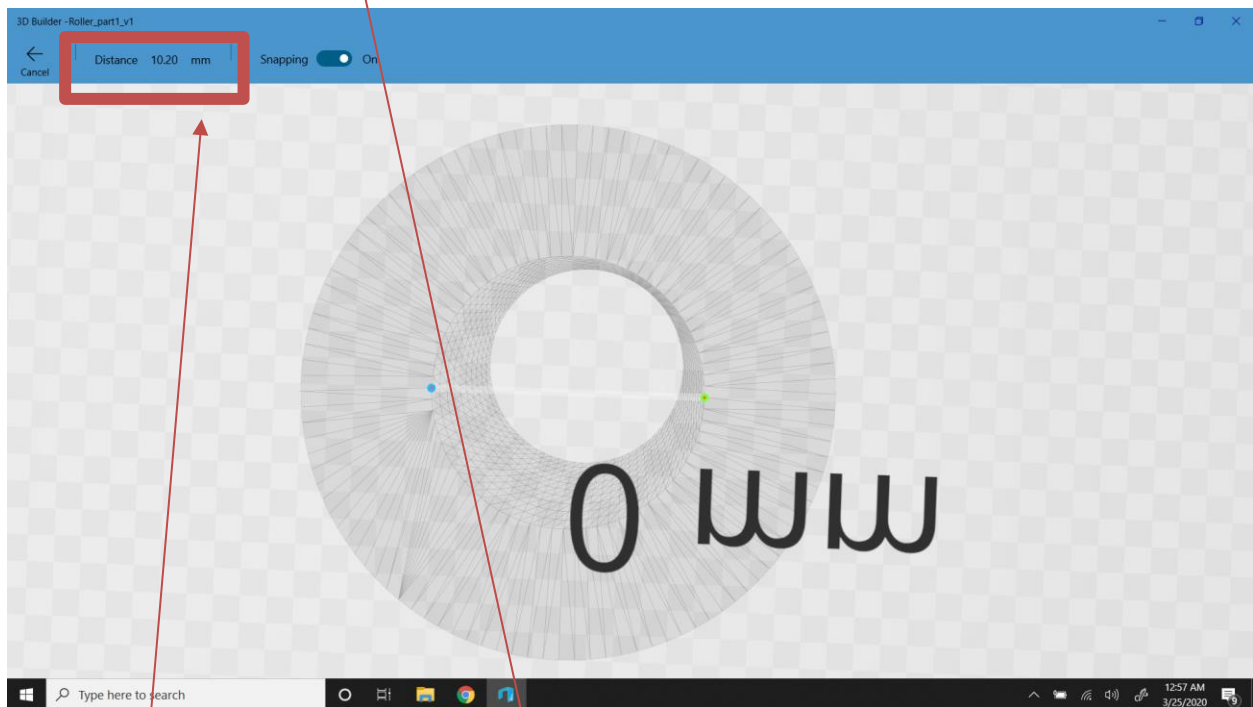
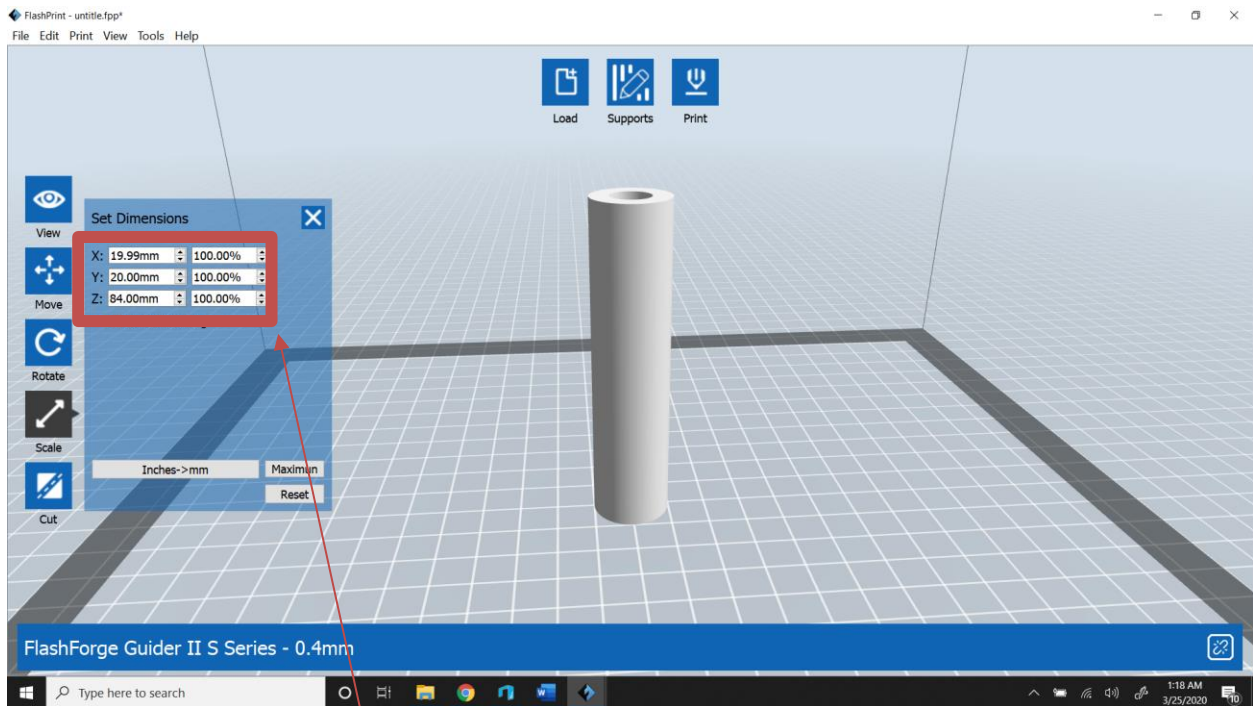


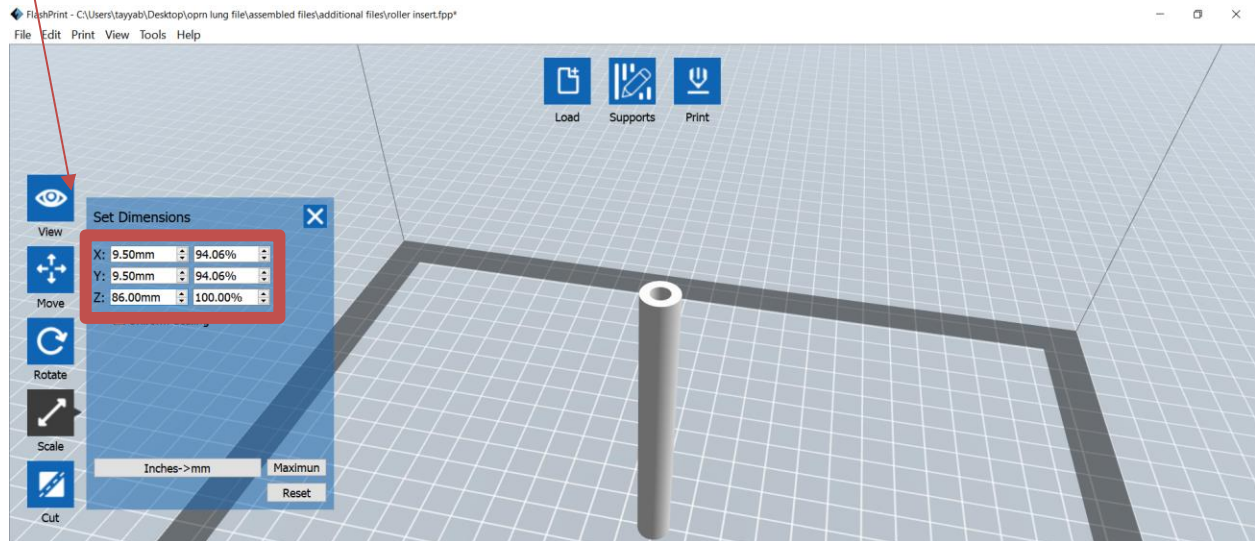
**Roller Part 1 (Belt Roller x3)**

**Inner Dia: 10.20mm – Outer Dia: 20.00mm – Length: 84mm**

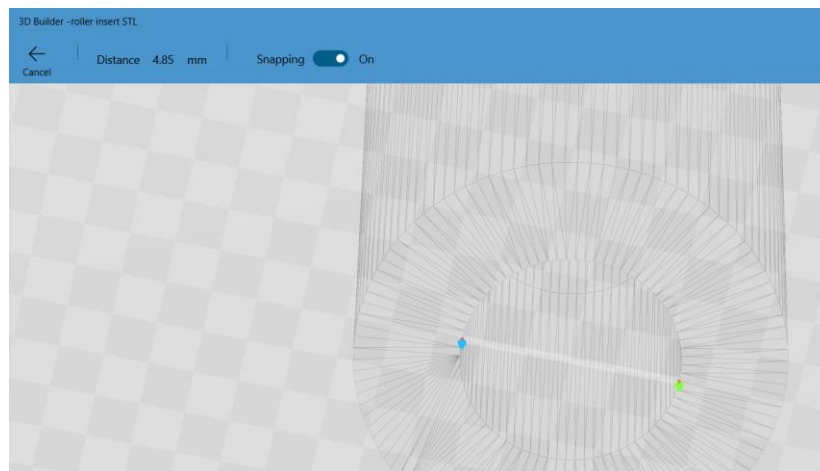
So I designed a **Roller Insert** (additional part) of following dimensions:

**Outer Dia: 9.5mm** (Standard clarence for moving parts in FDM is 0.5mm but considering that most people are using DIY printers, I increased the clearance to 0.7 [inner dia of roller 10.2mm – part clearance 0.7mm = **9.5mm – outer dia of insert**] even if its slightly loose it won't be an issue as roller will simply roll over the insert – tight will cause issue in the movement hence extra part clearance.

**Length: 86mm** (1mm extra (compared to roller) on either side so it could fix to the frame and and roller could easily move)



**Inner dia: 4.85mm** - we can manually thread **M5-12** or **M5-16** bolts (commonly available) on either side to fix the inserts to the frame.



I was concerned about the wall thickness of the final part but I'm happy to report that it'd be around **4.65mm** [outer dia 9.5 – inner dia 4.85 = 4.65mm] which is not very difficult for a simple DIY 3D Printers to make vertically.

Step 2 will be to repeat the process for the top rollers

Step 3 will be to design a pin/custom attachment for the the motor roller's empty side with no motor to fit with the frame.

Step 4 will be to modify motor roller's center hole to make it fit to the nema 17's shaft.

Ps here is the assembled model that I out together to check the assembly and fitting:

