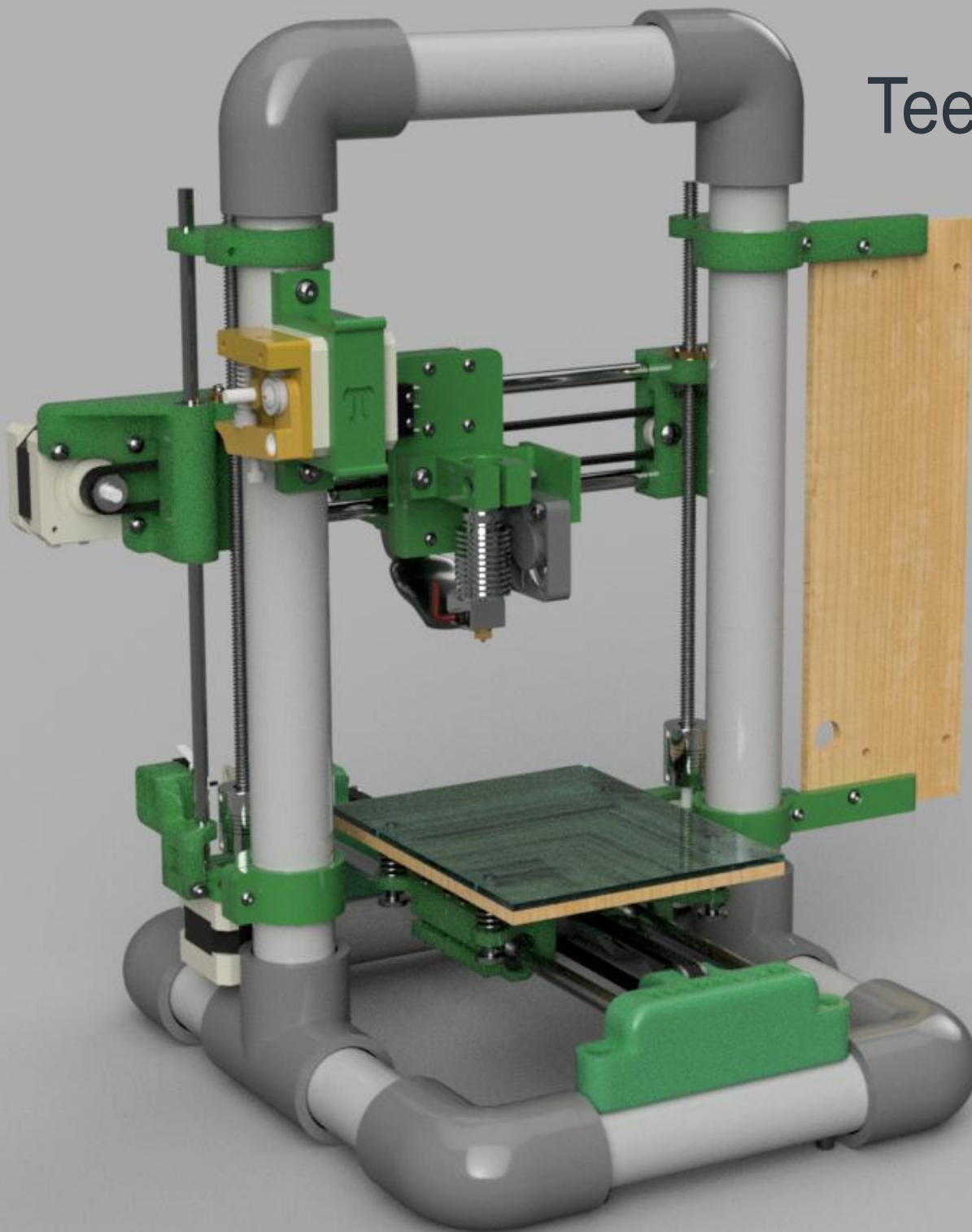


TeeBot-3D



**Open Hardware Design.
Free Plans, design, bill of
materials and build instructions.**

www.3dstuffsnl.com
www.3dstuffsnl.nl



Table of Contents

Section 1 --- List of Material.....	4
Section 1 --- Frame parts.....	5
Section 2 --- Printed Parts	7
Section 3 --- Drawings	8
Step 1 -- Y_AXIS_BACK.....	12
Step 2 -- Y_AXIS_front.....	14
Step 3 -- Bed Assembly	15
Step 4 -- X_LEFT	16
Step 5 -- X_RIGHT.....	17
Step 6 -- Z_Motor_Left.....	18
Step 7 -- Z_Motor_Right.....	19
Step 8 -- Printer_Base.....	20
Step 9 -- Y_Axis	21
Step 10 -- Z_Axis.....	25
Step 11 -- X_Axis	27
Step 12 -- Extruder Motor & Z Stop	30
Section 11 -- Wiring and connections.....	32
Section 12 -- Firmware.....	33
Section 13 -- Leveling the Bed.....	33
Section 14 -- Start printing and have fun!!.....	33

Introduction

To invent, you need a good imagination and a pile of junk.
(Thomas A. Edison)

Teebot-3D was designed and developed to build your knowledge of 3D printing! When you build, assemble and successfully calibrate your 3D printer, you will be prepared with all the knowledge needed to use the 3D printer and get quality prints all the time.

The choice of PVC, small print surface, easy assembling is all aimed to make the assembly/build as easy as possible. However, it is still not an easy project. I encourage you to embark on the project in groups or get a building partner. The animated assembly video is a must to watch to understand the process flow of assembling this printer. Start by gathering all the parts to need, I encourage you to buy a complete kit, this kit has been sourced and carefully selected to match every step of the video/documentation.

Support and Help

Register and join the online forum for help, feel free to post your questions, suggestion and comments in the forum. Be prepared with detail/specific question always include a video/photo to help make you point clear.

3D printing is fun and the future of digital personal fabrication. You also can be a digital fabricator, start by building your own 3D printer yourself!!

I hope that Teebot-3D, will inspired you to get started into the exciting world of 3D printing and start being a producer/manufacture of cool stuffs!

Emmanuel A. Adetutu

Links

Online forum: www.teebot-3d.proboards.com

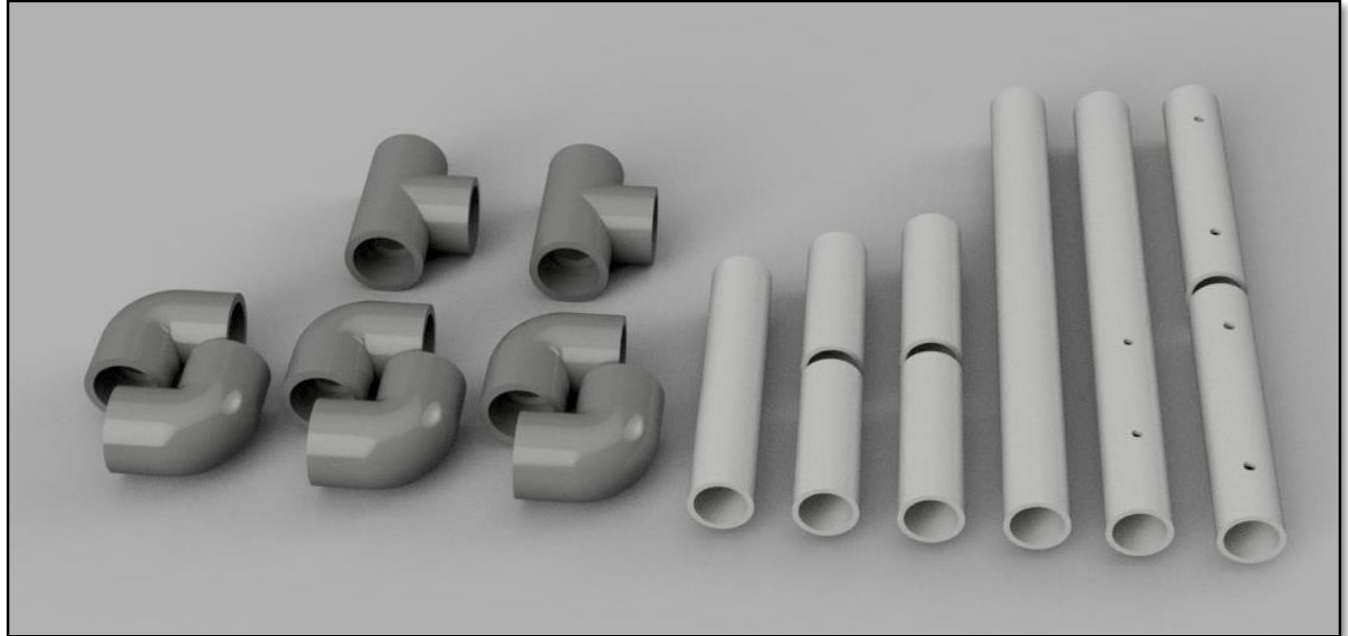
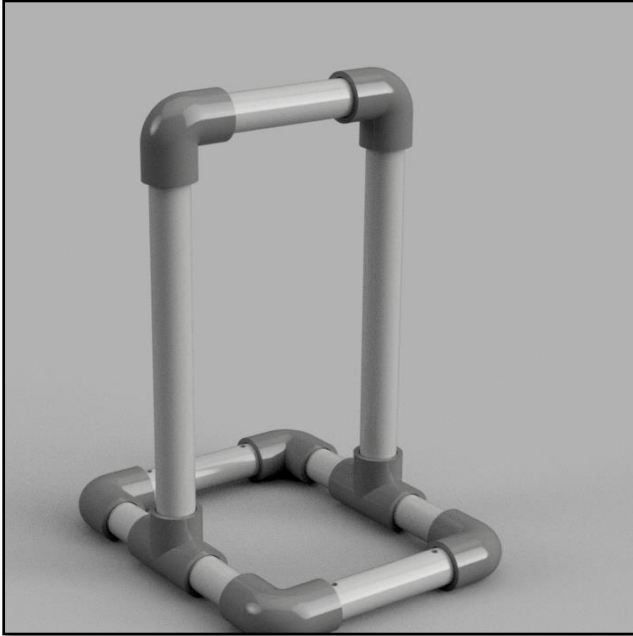
Assembly video playlist: <https://youtu.be/5hCQPauHWwh>

3Dprinted parts: Thingiverse <https://www.thingiverse.com/thing:2937906>

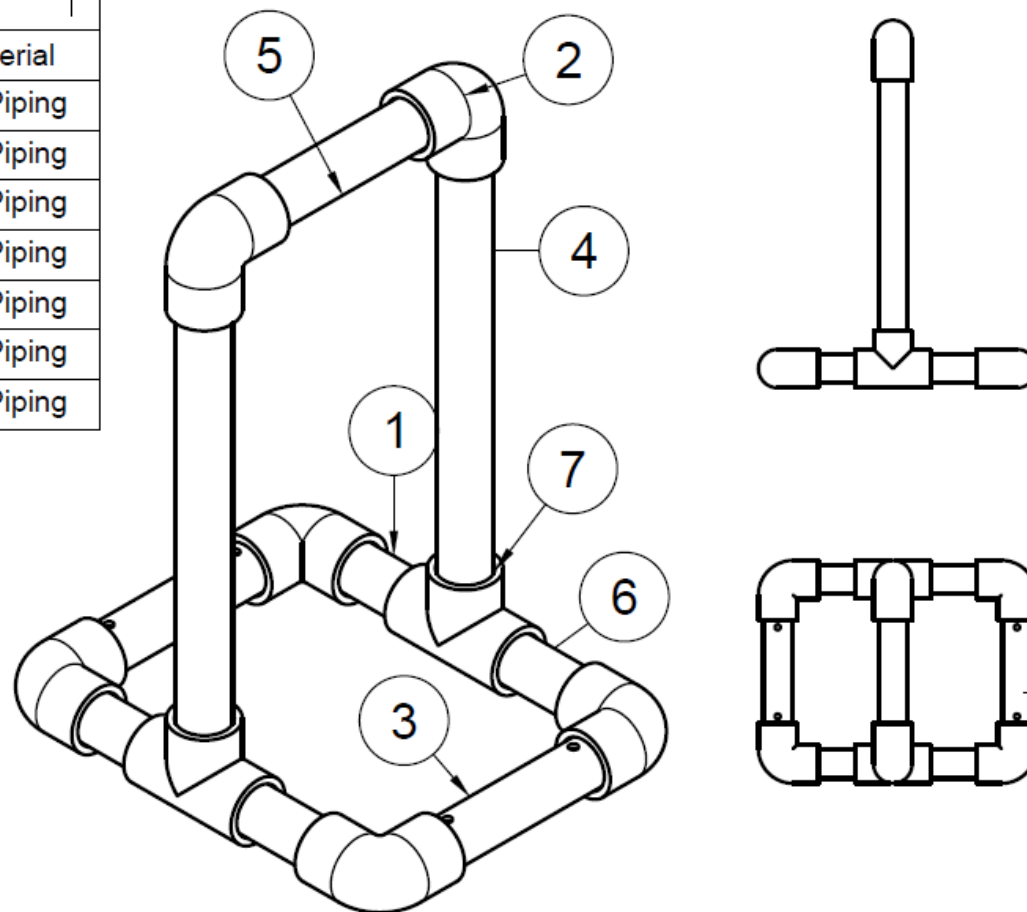
List of Material

Item	Qty	Part Number	Item	Qty	Part Number
1	1 set	PVC pipe and fittings	Bolts		
2	2	Bearing 625ZZ	1		Bolt_M2_16mm
3	2	Coupler 5mm_5mm	2		Bolt_M3_10mm
4	1	Hotend V6 assembled	3		Bolt_M3_20mm
5	1	Glass_3_150_120mm	4		Bolt_M3_30mm
6	4	Linear_Bearing_6MM	5		Bolt_M3_40mm
7	5	Linear_Bearing_8mm	6		Bolt_M4_10mm
8	1	MK8 EXTRUDER	7		Bolt_M4_25mm
9	2	Pulley_Gt2_16t	8		Bolt_M4_45mm
10	2	Rod_6mm_270mm	9		Bolt_M4_60mm
11	2	Rod_8mm_235mm	10		Bolt_M5_25mm
12	2	Rod_8mm_280mm	Nuts		
13	4	Springs_8mm_20mm	11		Nut_M2
14	2	T5_Leadscrew_240mm	12		Nut_M3
15	2	T5_LeadScrew_Nut	13		Nut_M4
16	2	Timing_Belt	14		Nut_Thumb_M3
17	1	Wood_150_120mm	15		Nut_M5
18	1	Wood_245_80mm	Washers		
Electricals	Qty	Part Number	18		Washer M5_10
1	3	Micro_switch	19		Washer_M4
2	5	Stepper Motor Nema_17	20		Plastic spacer
3	1	Fan_5015_DC12V	20		Bed springs
4	1	Fan_40mm_DC12V			

PVC Frame parts

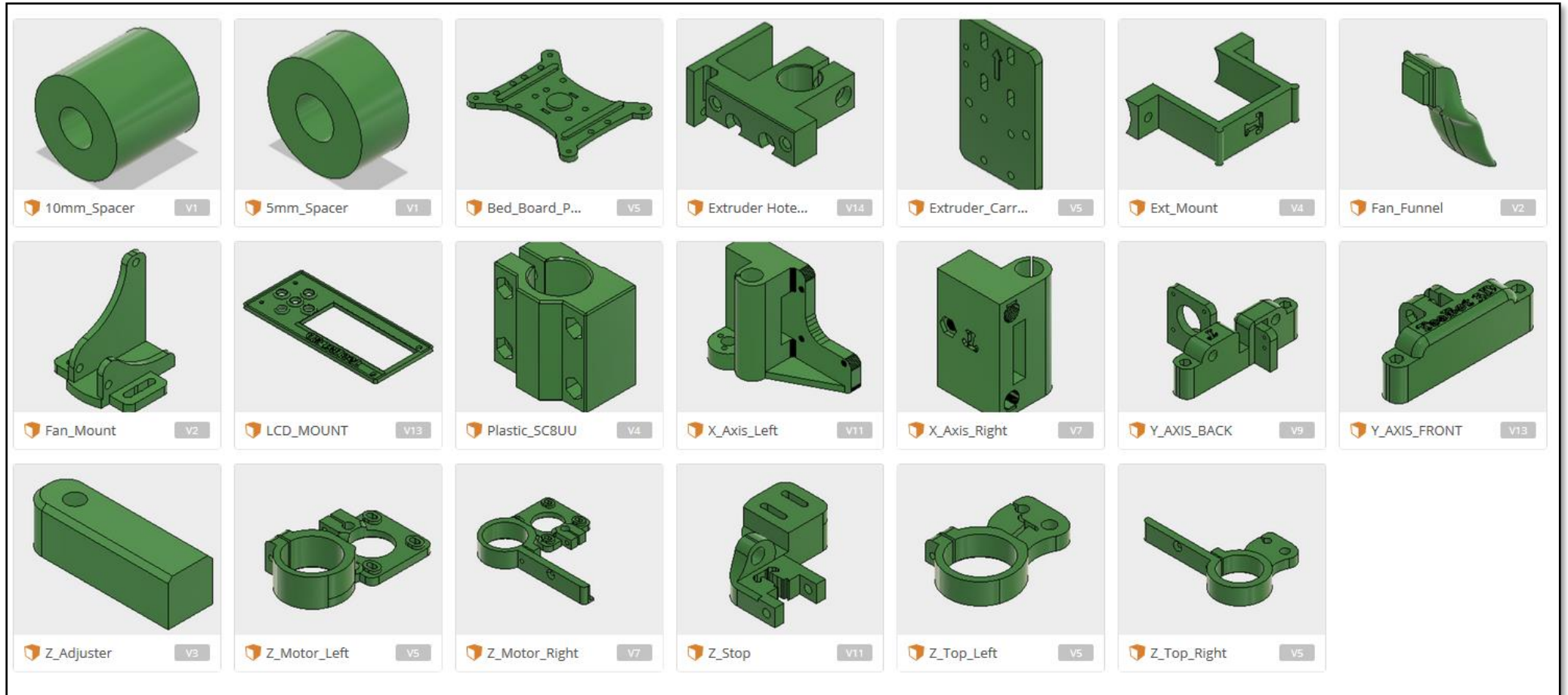


Parts List				
Item	Qty	Part Number	Description	Material
1	2	PVC_Y_Axis	32mm x 90mm	PVC-Piping
2	6	PVC_90_Joint	32mm 90 deg Fitting	PVC-Piping
3	2	PVC_X_Axis	32mm x 165mm	PVC-Piping
4	2	PVC_Z_Axis	32mm x 330mm	PVC-Piping
5	1	PVC_X_Axis_Top	32mm x 165mm	PVC-Piping
6	2	PVC_Y_Axis	32mm x 100mm	PVC-Piping
7	2	PVC_T_Joint	32mm T Fitting	PVC-Piping



Dept.	Technical reference	Created by 3DstuffsNL	Approved by E.A	
www.3dstuffs.nl Dream and Create !!		Document type	Document status	
		Title TeeBot Make PVC Part Bill of materials	DWG No. 001	
Open Source Hardware		Rev. 1	Date of issue March 2018	Sheet 1/1

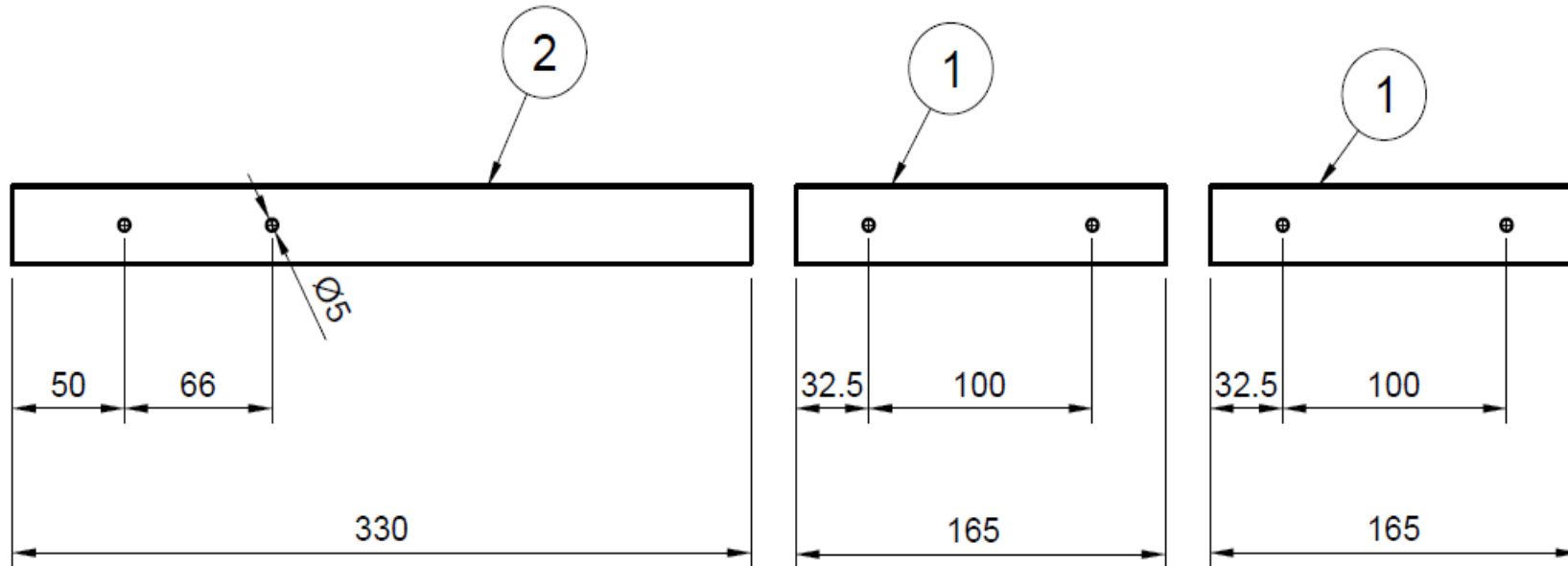
Section 2 --- Printed Parts



The parts (Plastic_SC8UU, X_Axis_Left and X_Axis_Right) when buying the complete kit, these are made of extruded plastic and preassembled .

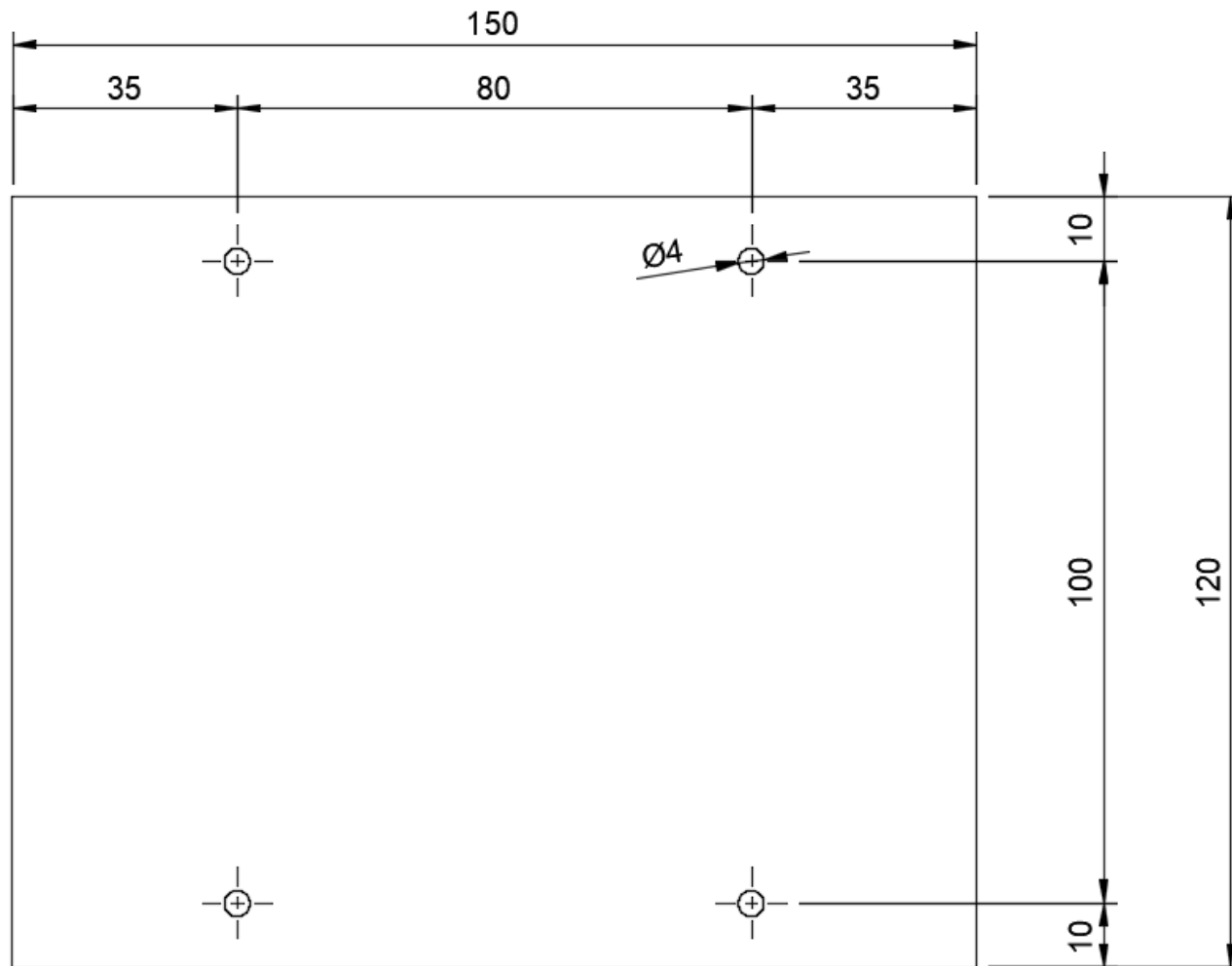
Section 3 --- Drawings

PVC drilling: It is important to cut and drill the holes of the pvc pipe as accurate as possible.

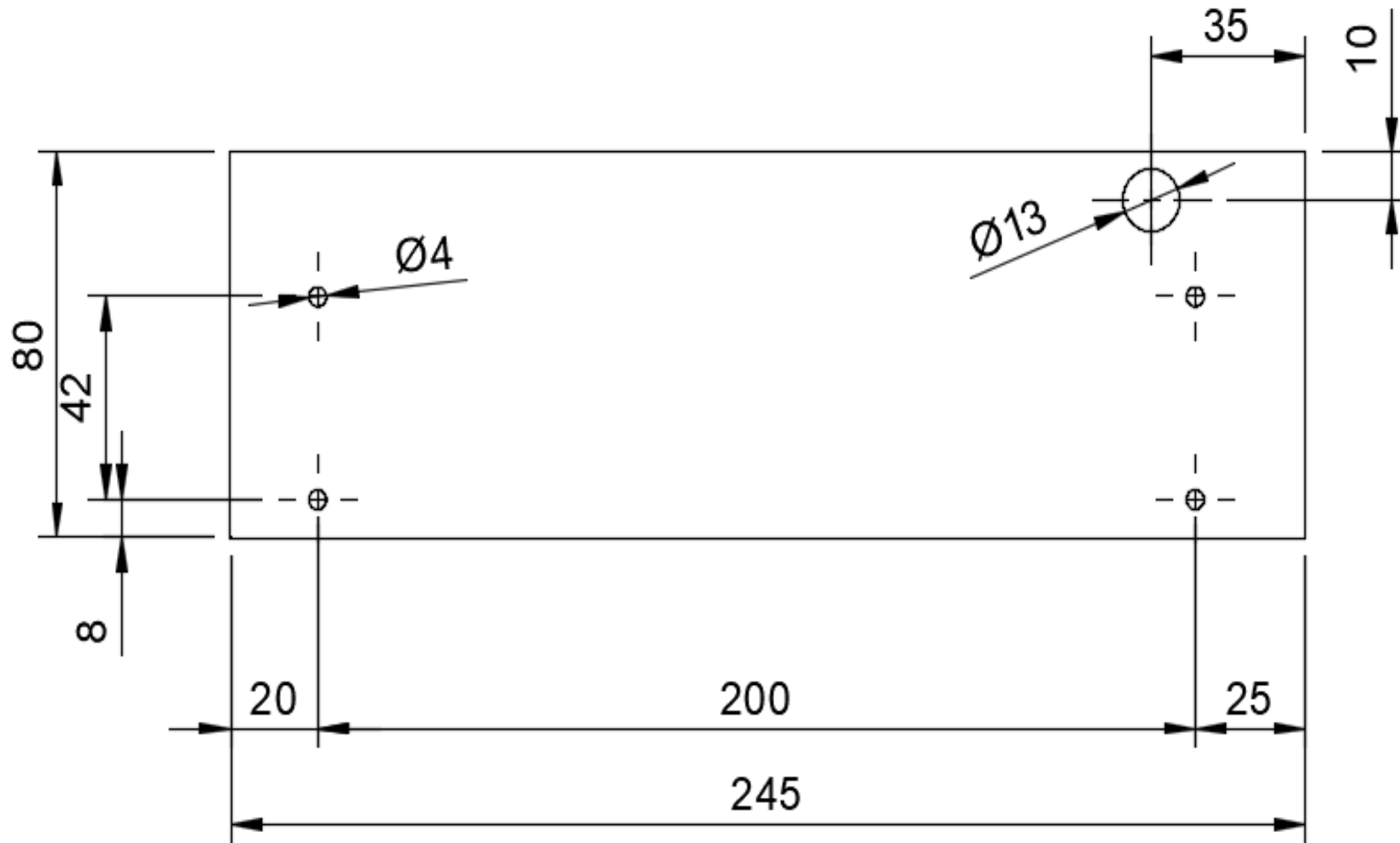


Drill all holes with 5mm. (Bolts will be 4mm, this gives space for adjustments)

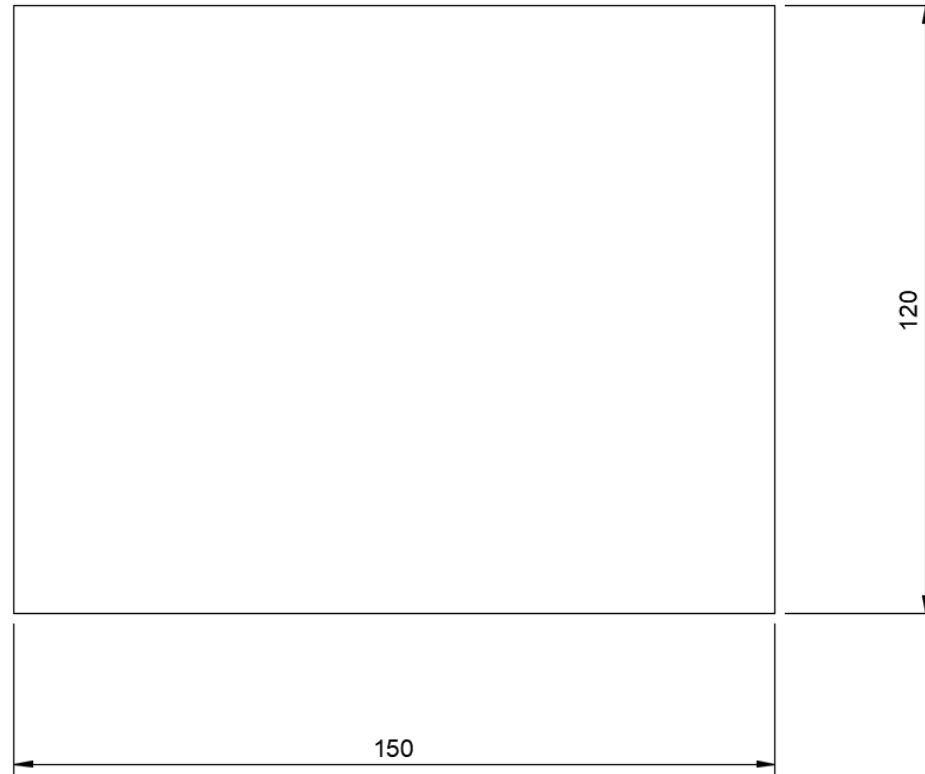
Wood_Bed 3mm thickness plywood.



Drill all holes with 4mm. (Bolts will be 3mm, this gives space for adjustments)

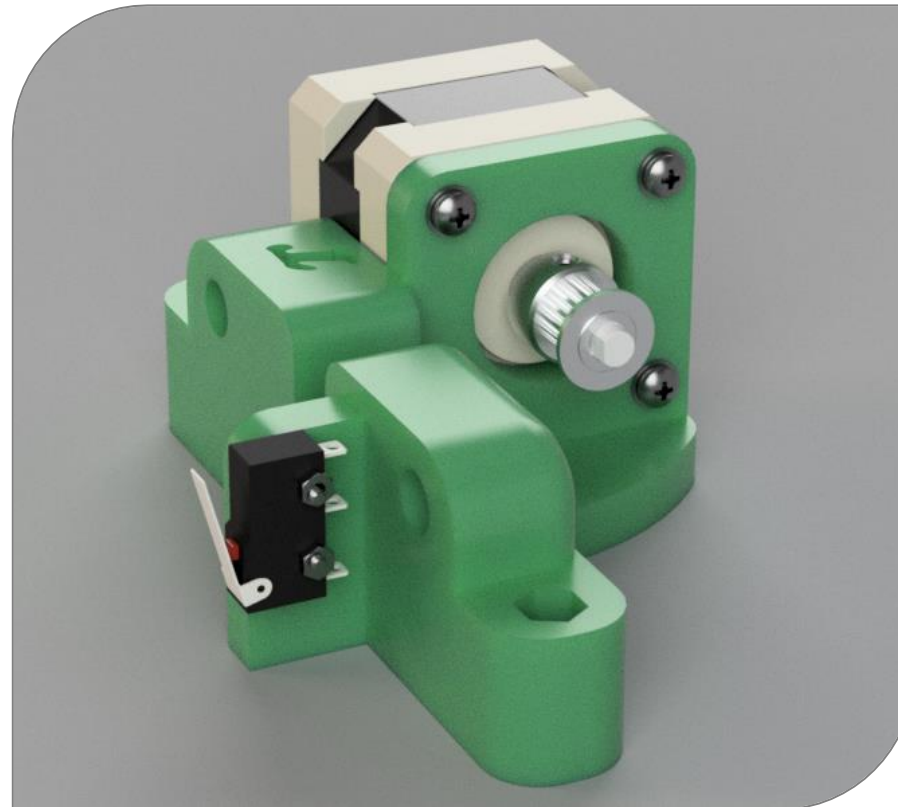


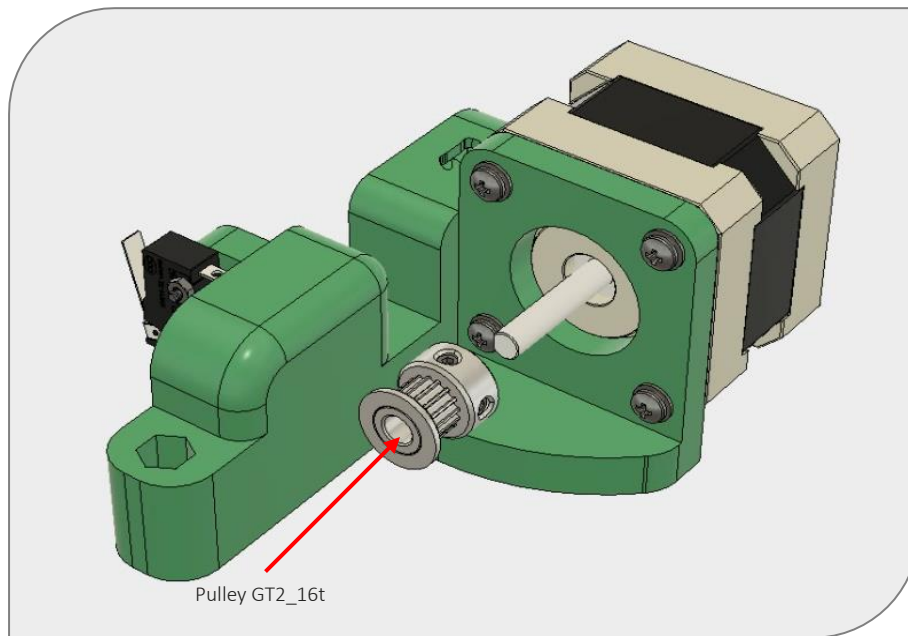
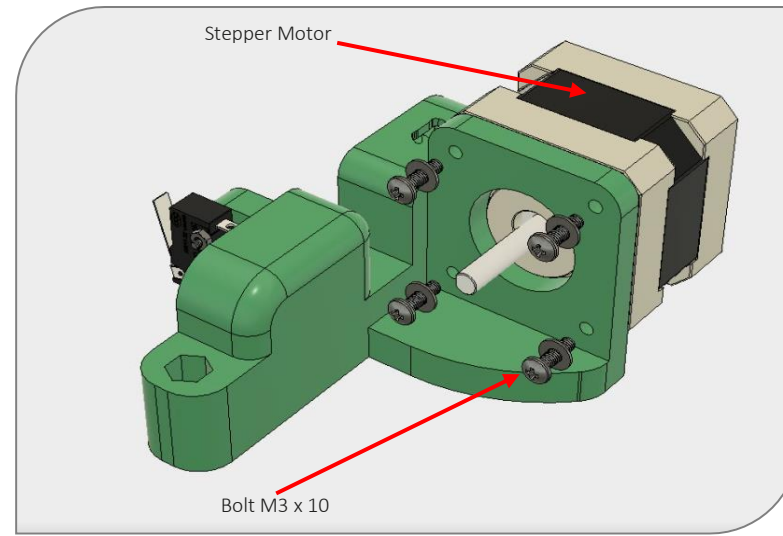
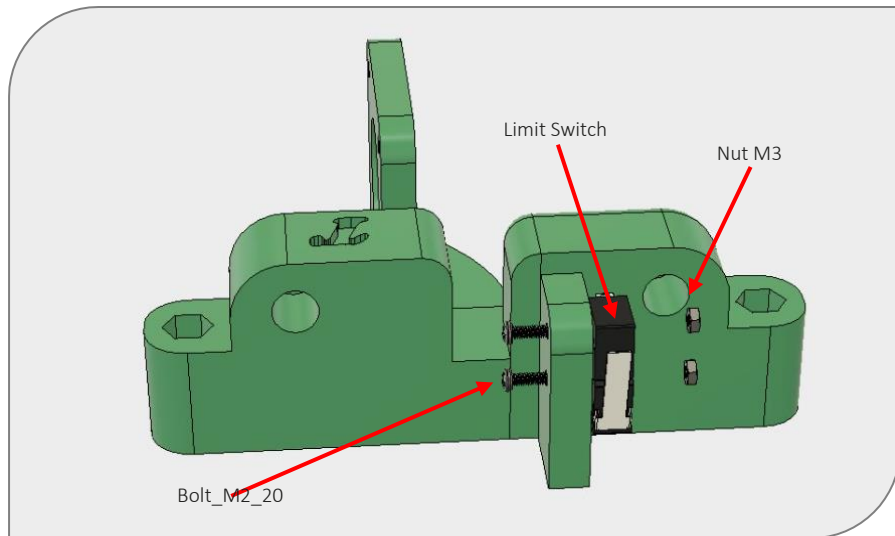
Glass Print Surface



Step 1 -- Y_AXIS_BACK

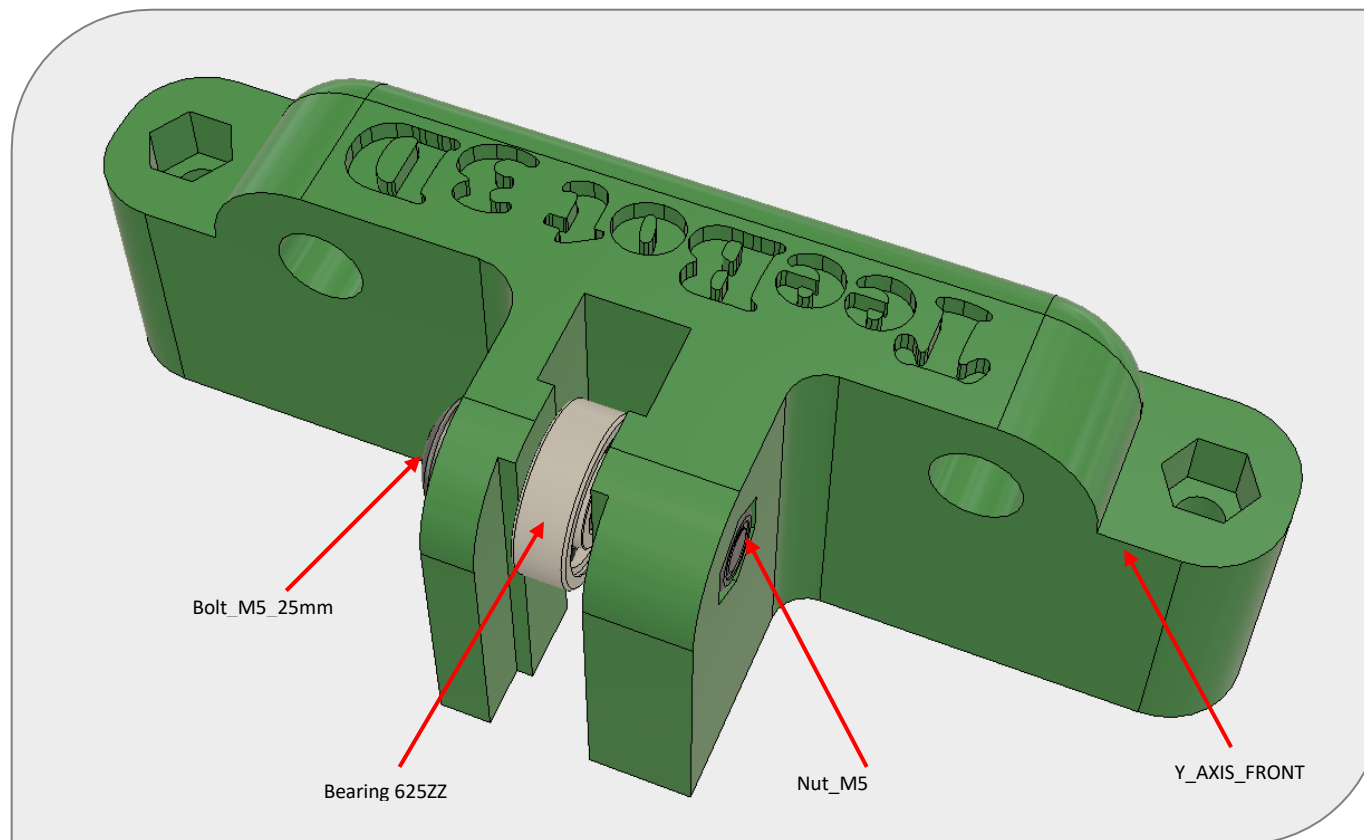
Part Number	Qty	Desc
Stepper Motor	1	
Bolt_M2_20	2	
Bolt_M3_10	4	
Nut_M2	2	
Washer_M3	4	
Pulley GT2_16t	1	





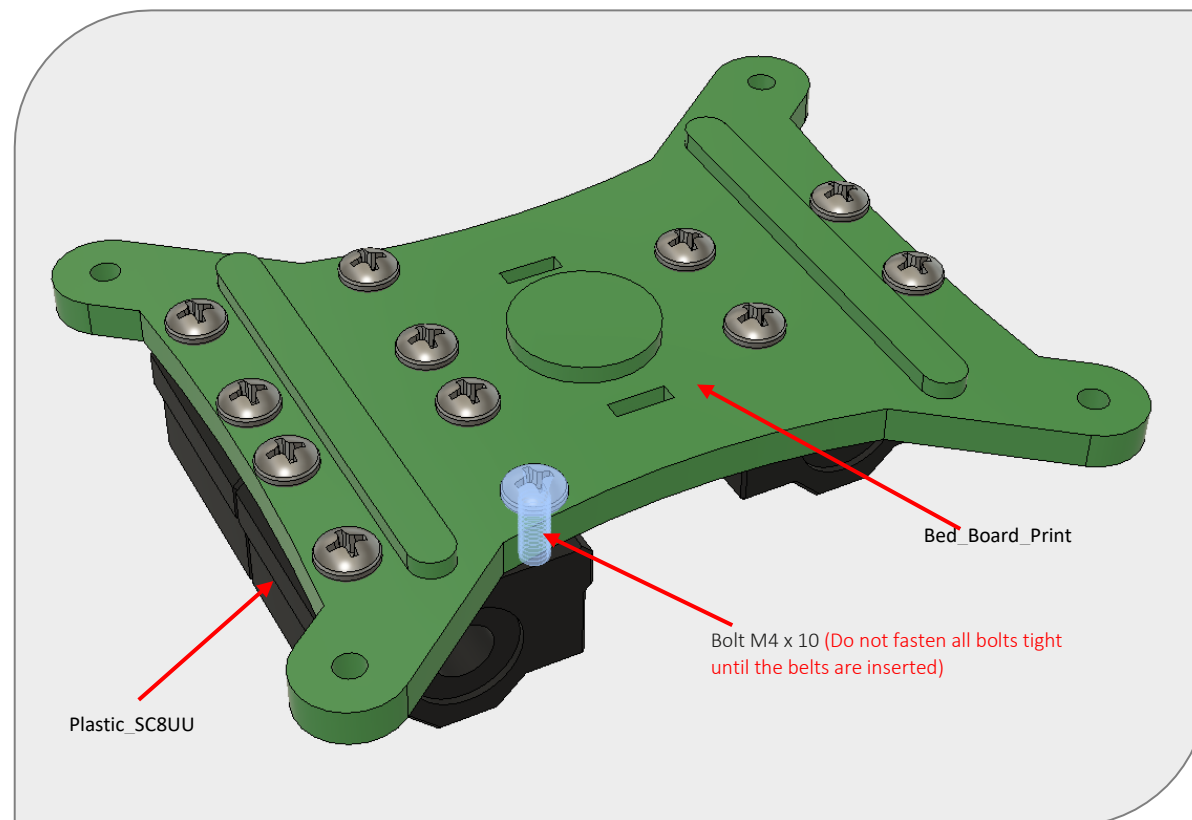
Step 2 -- Y_AXIS_front

Qty	Part Number	Description
1	Nut_M5	
1	Bolt_M5_25mm	
1	Y_AXIS_FRONT	
1	Bearing 625ZZ	



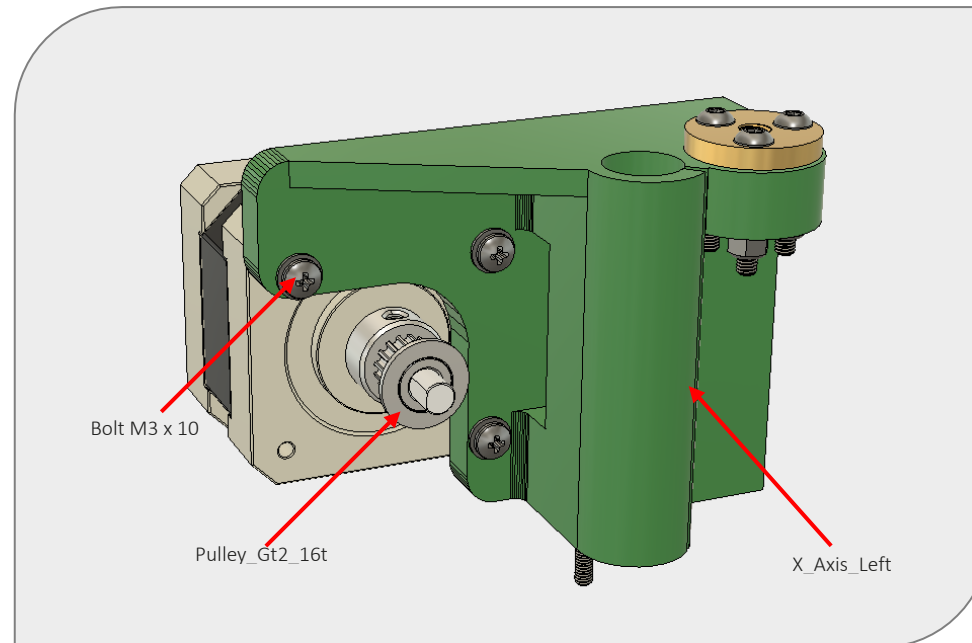
Step 3 -- Bed Assembly

Qty	Part Number	Description
12	Bolt_M4_10mm	
3	Plastic_SC8UU	
1	Bed_Board_Print	



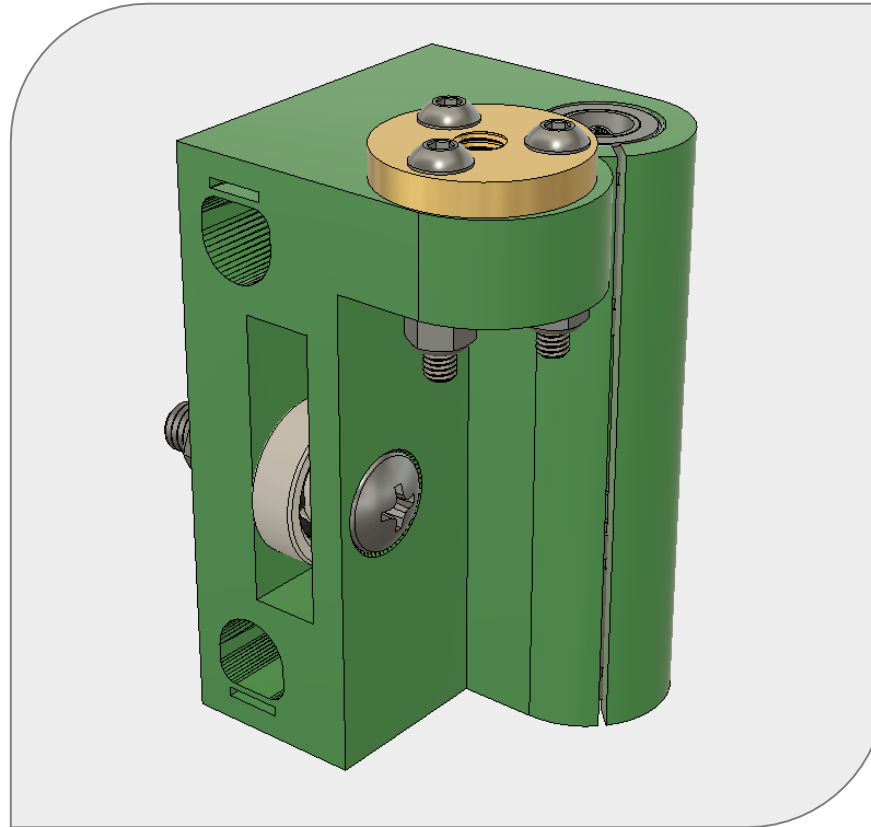
Step 4 -- X_LEFT

Qty	Part Number	Description
3	Bolt_M3_10mm	
1	Pulley_Gt2_16t	
1	Stepper Motor	
1	X_Axis_Left	3D printed part



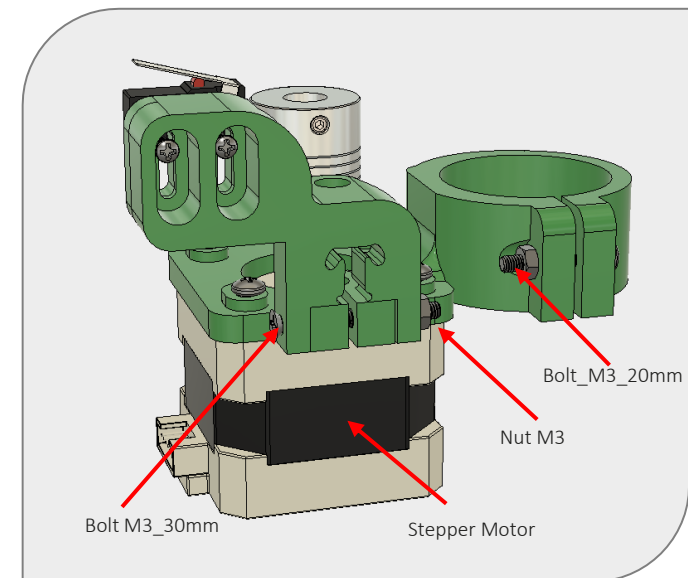
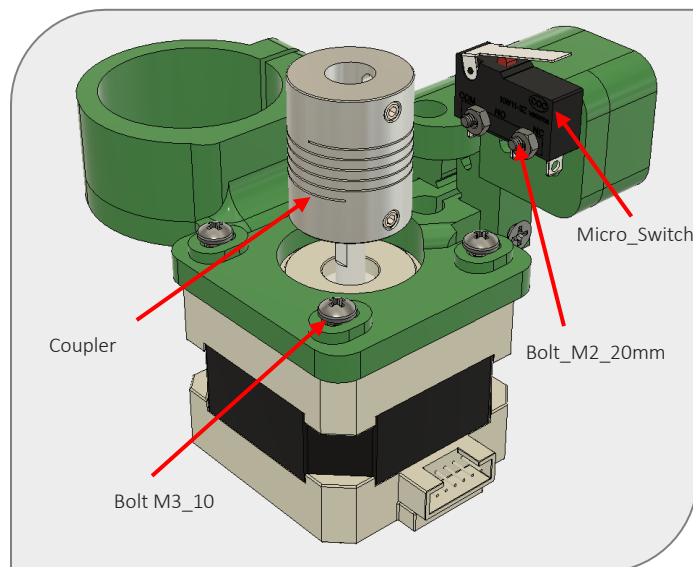
Step 5 -- X_RIGHT

Qty	Part Number	Description
1	X_Axis_Right	



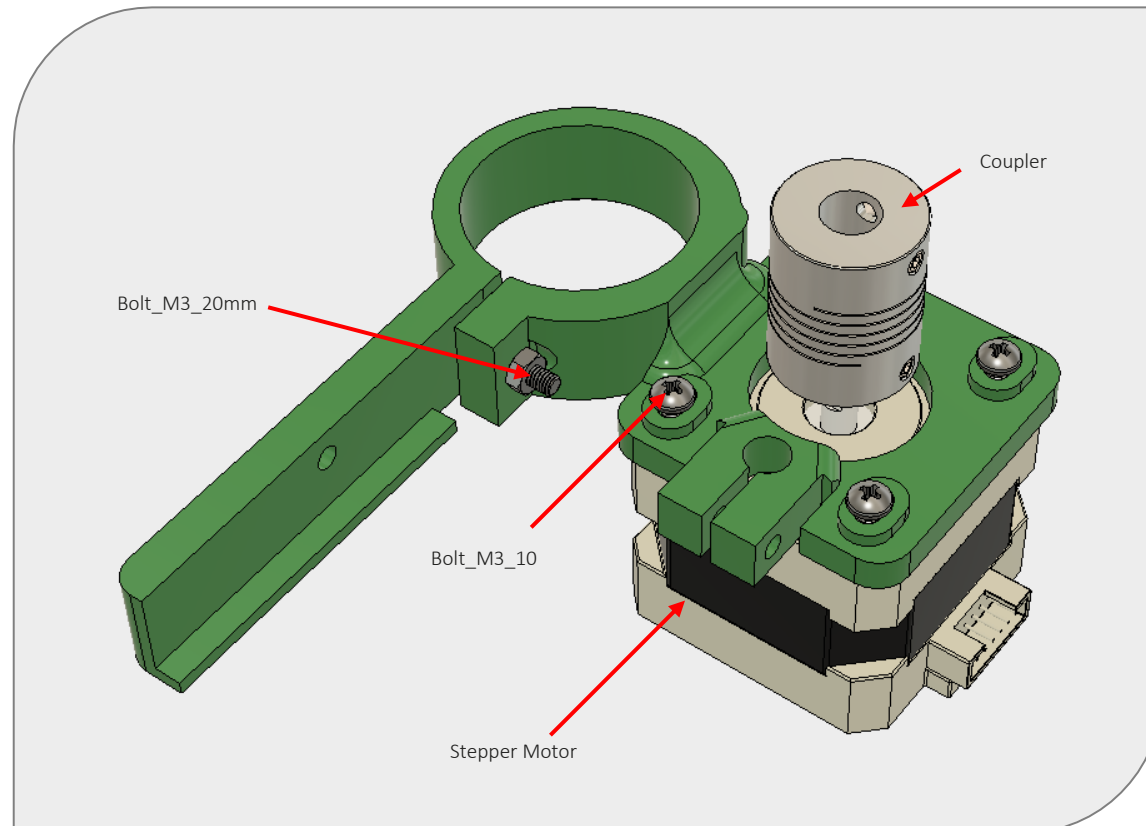
Step 6 -- Z_Motor_Left

Qty	Part Number	Description
2	Bolt_M2_20mm	
4	Bolt_M3_10mm	
1	Bolt_M3_20mm	
1	Bolt_M3_30mm	
2	Coupler 5mm_5mm	
1	Micro_switch	
2	Nut_M2	
2	Nut_M3	
2	Stepper Motor	
1	Z_Motor_Left	Plastic
1	Z_Stop	Plastic



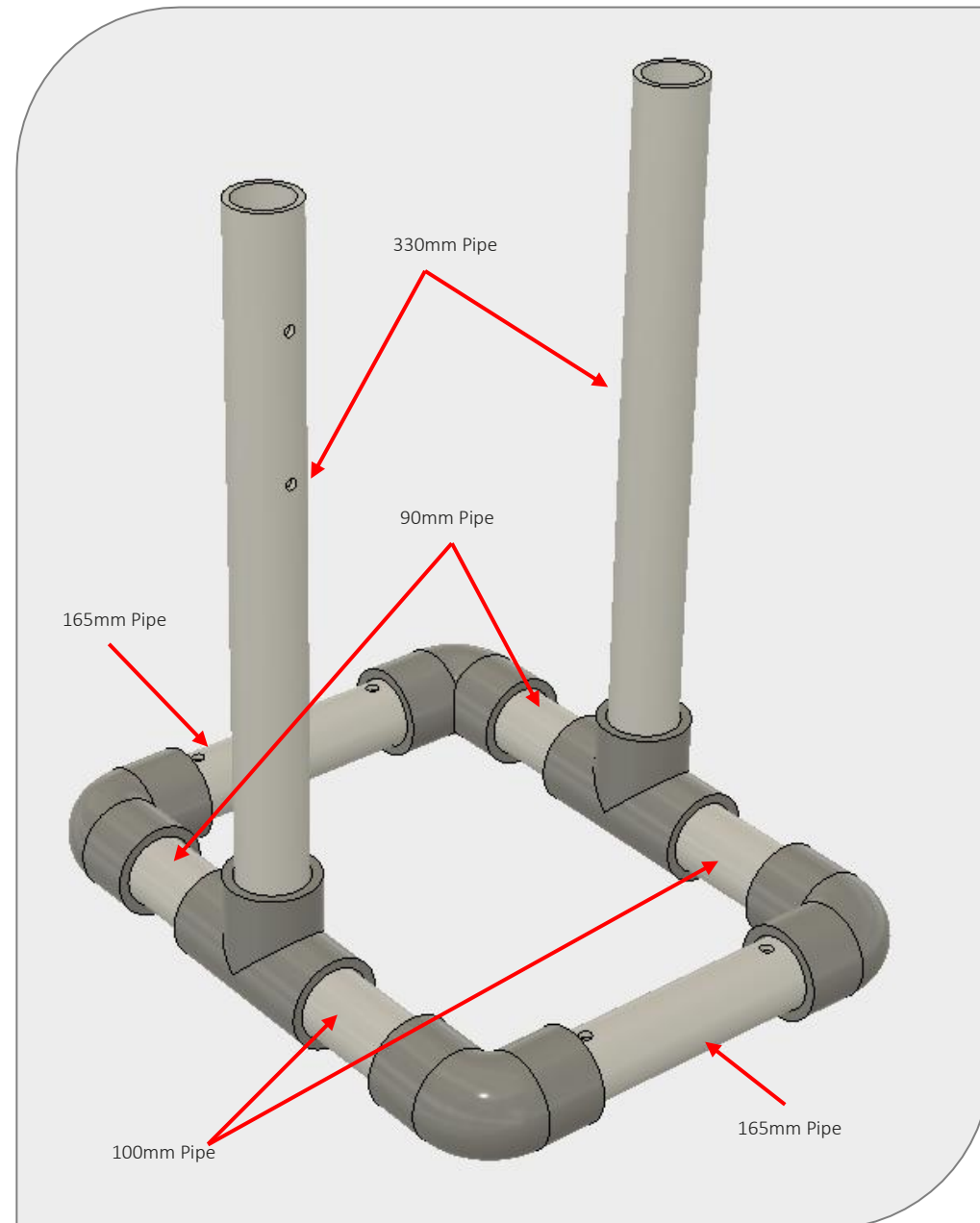
Step 7 -- Z_Motor_Right

Qty	Part Number	Description
4	Bolt_M3_10mm	
1	Bolt_M3_20mm	
2	Coupler 5mm_5mm	
1	Nut_M3	
1	Stepper Motor	
1	Z_Motor_Right	



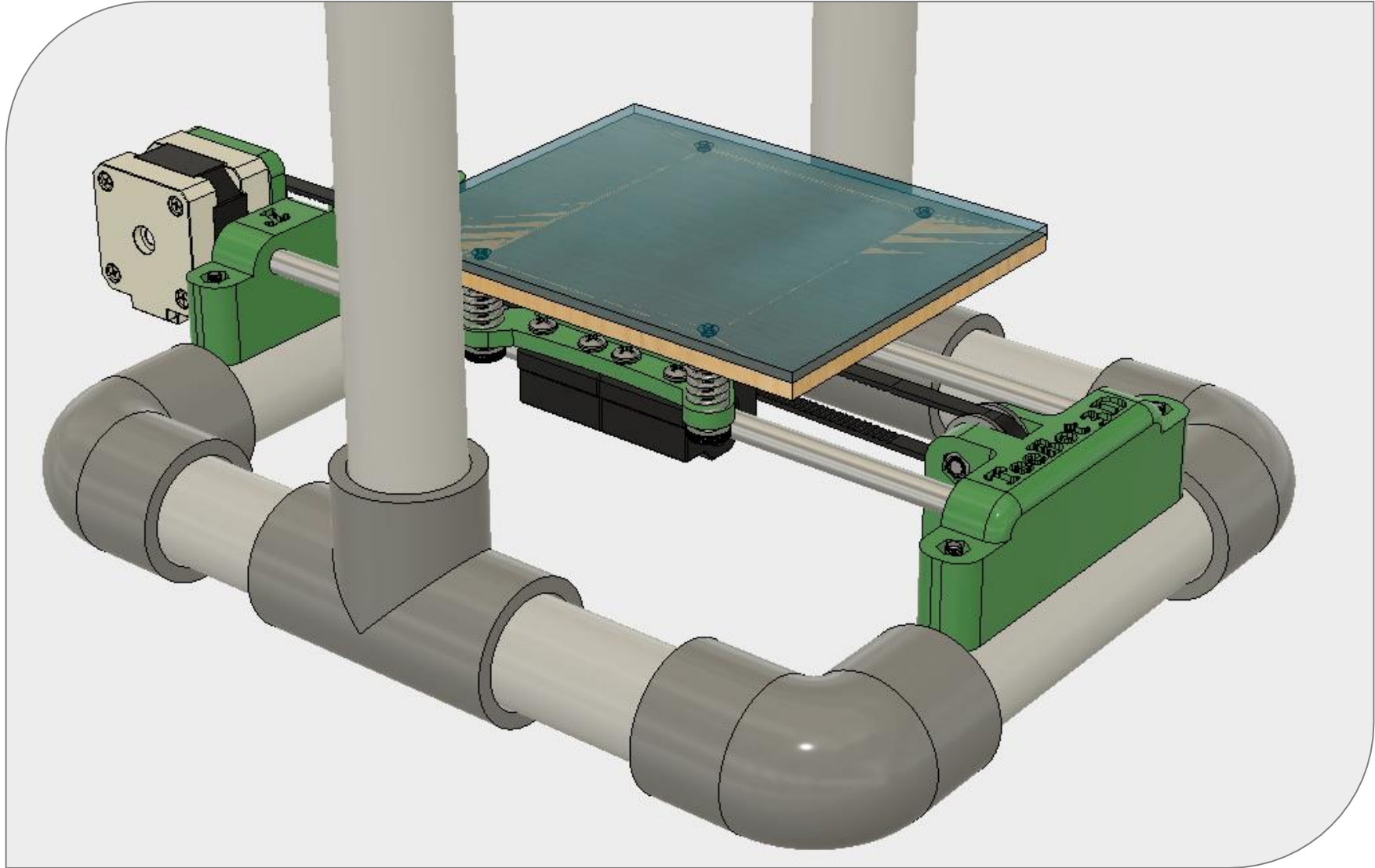
Step 8 -- Printer_Base

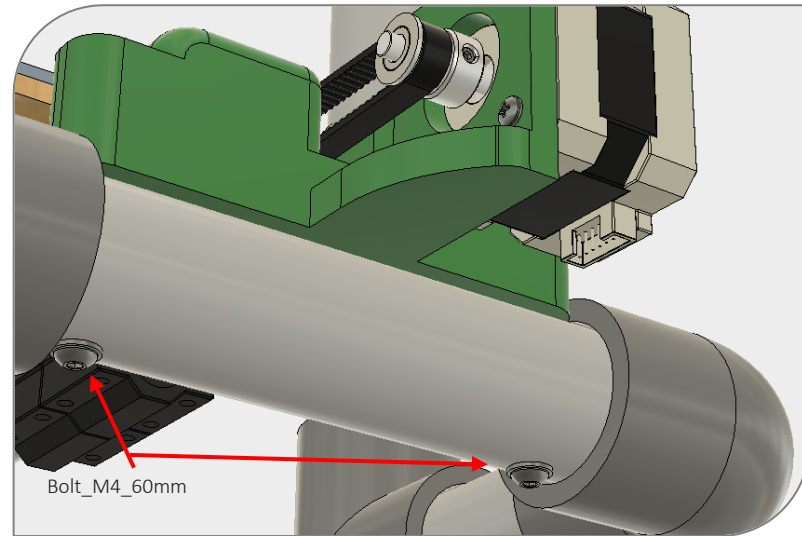
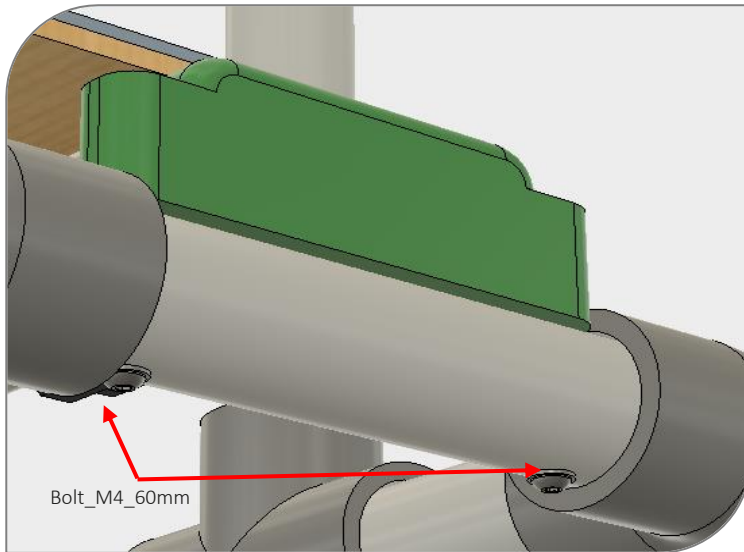
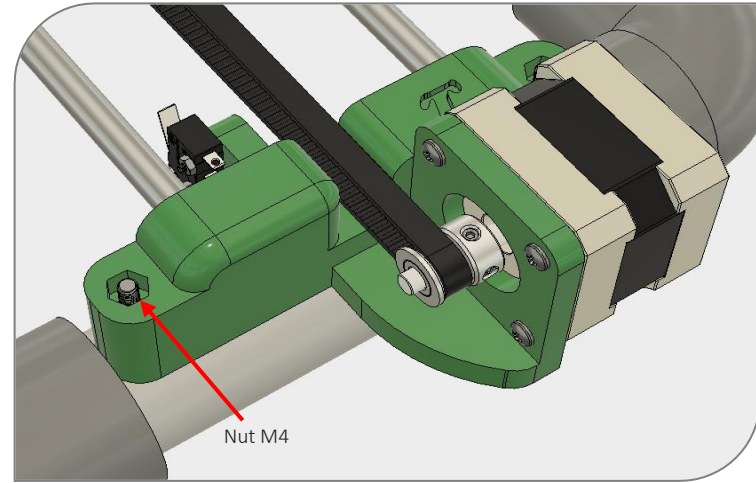
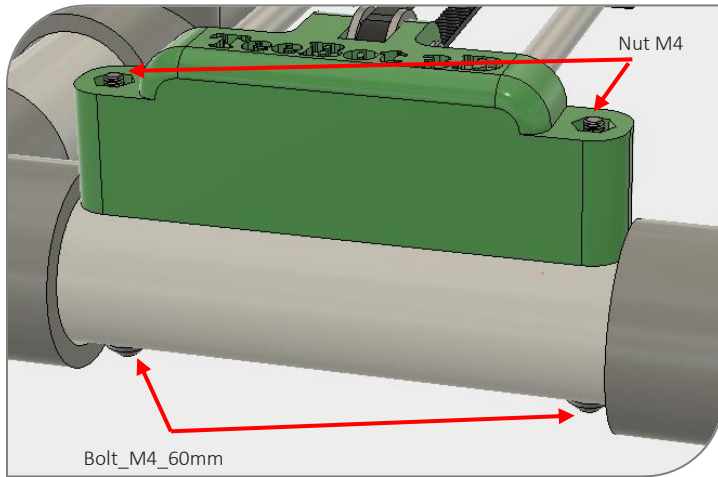
Qty	Part Number	Description
4	PVC_90_Joint	32mm 90 deg Fitting
2	PVC_T_Joint	32mm T Fitting
2	PVC_Y_Axis	32mm x 100mm
2	PVC_X_Axis	32mm x 165mm
1	PVC_Z_Axis	32mm x 330mm
1	PVC_Z_Axis	32mm x 330mm
2	PVC_Y_Axis	32mm x 90mm

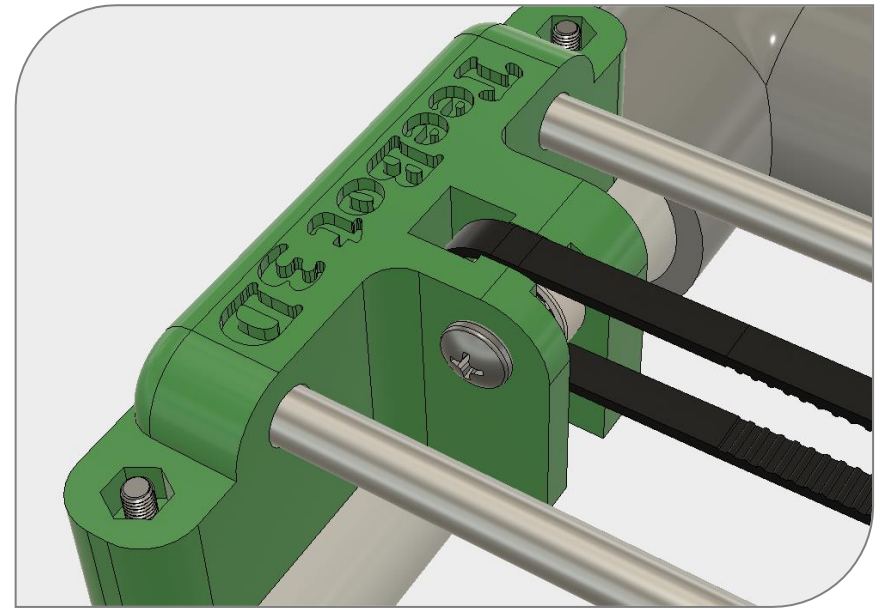
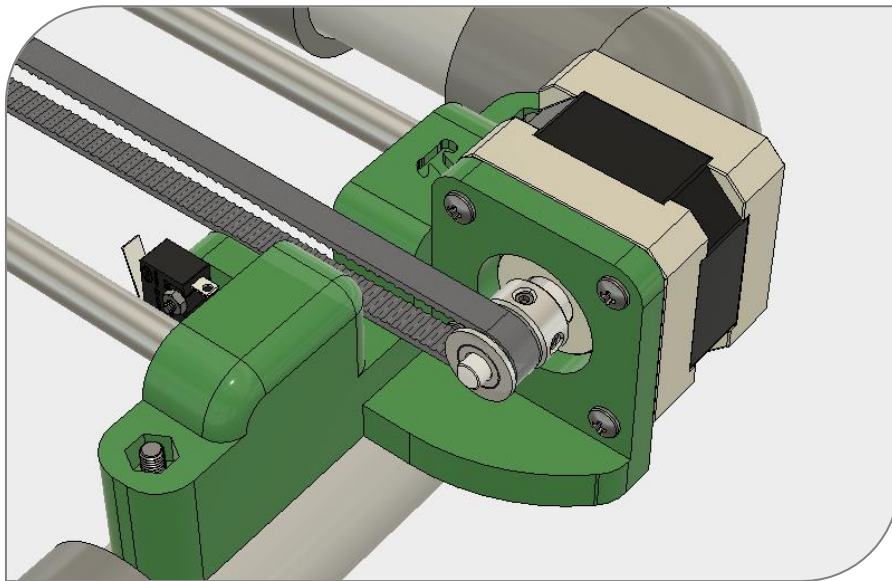
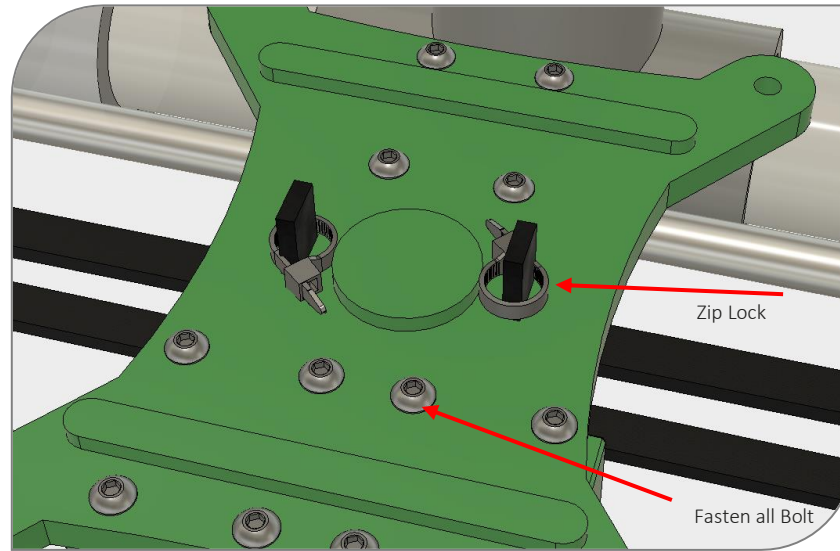


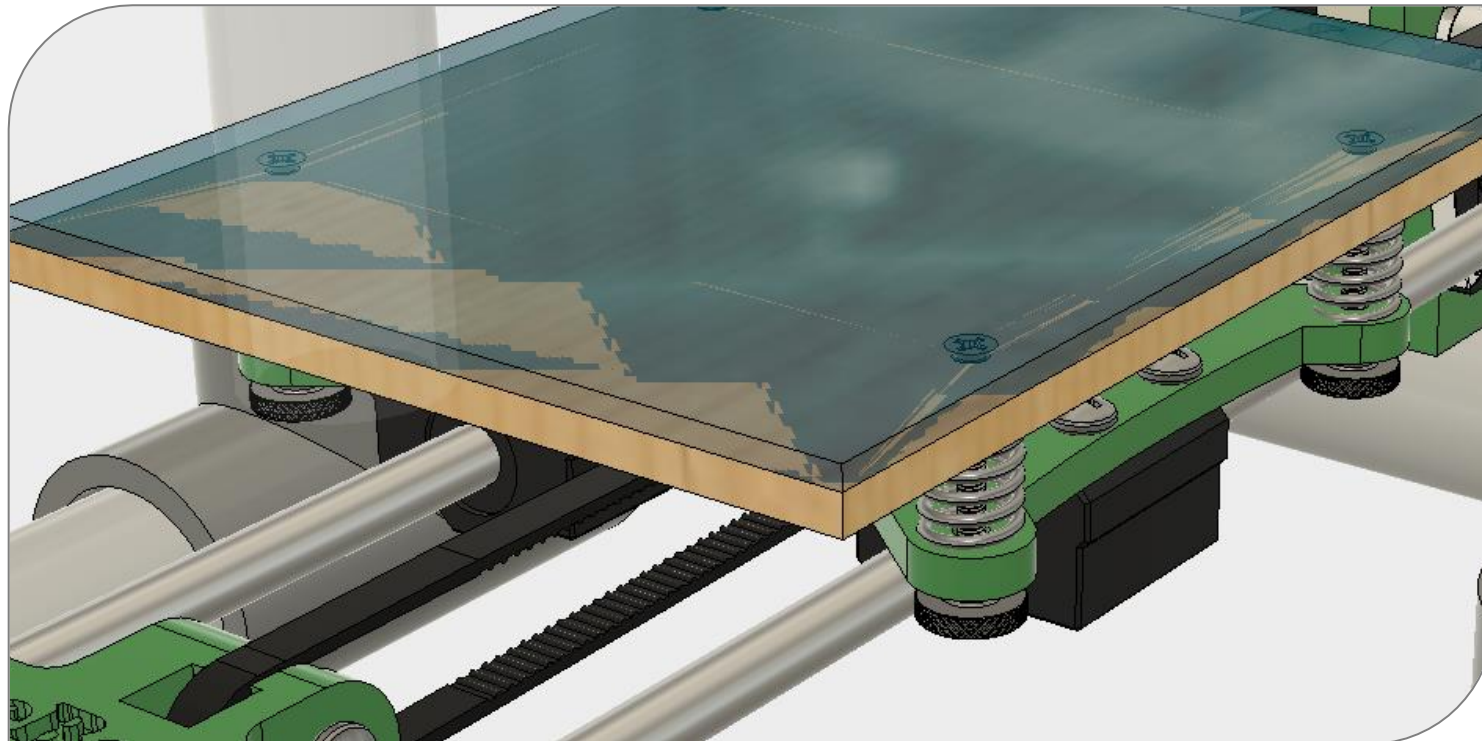
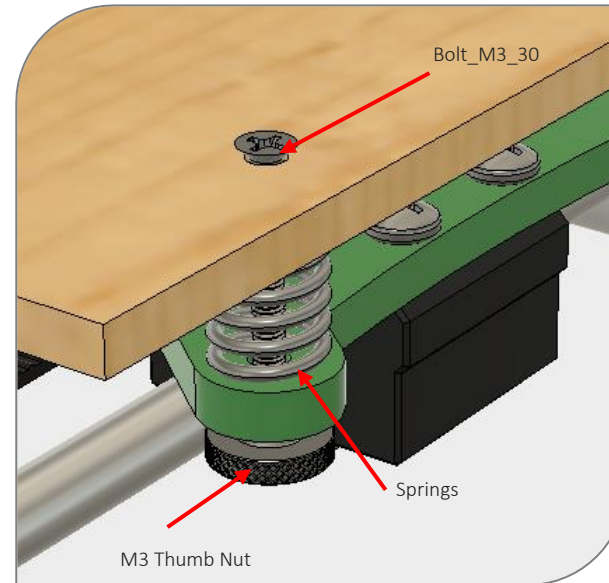
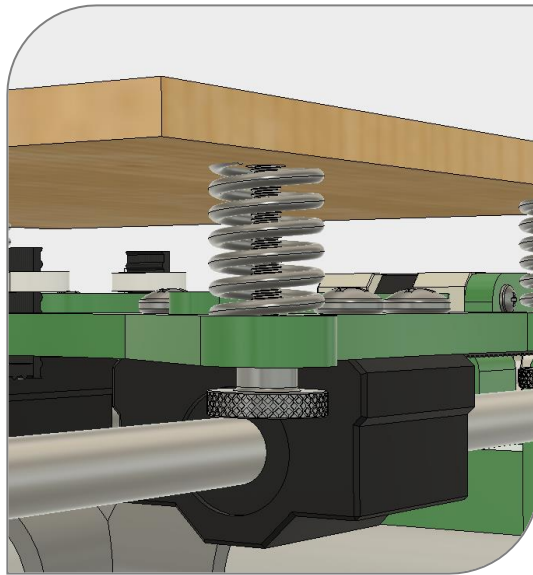
Dream & Create !!

Step 9 -- Y_Axis

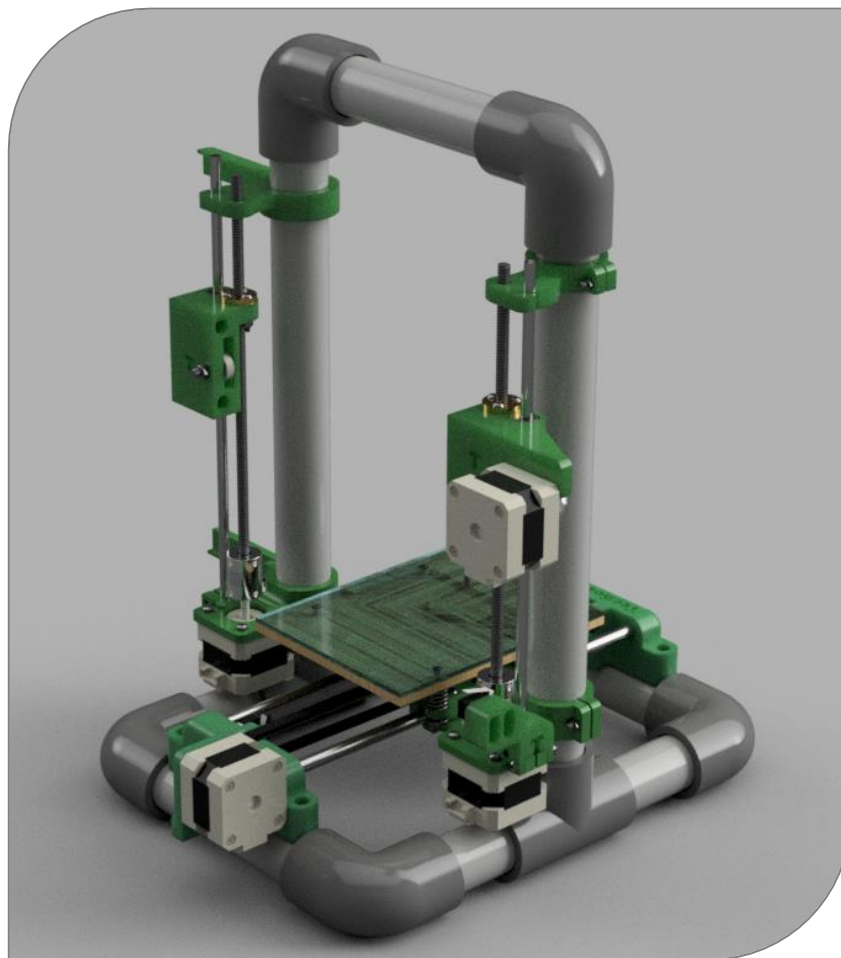


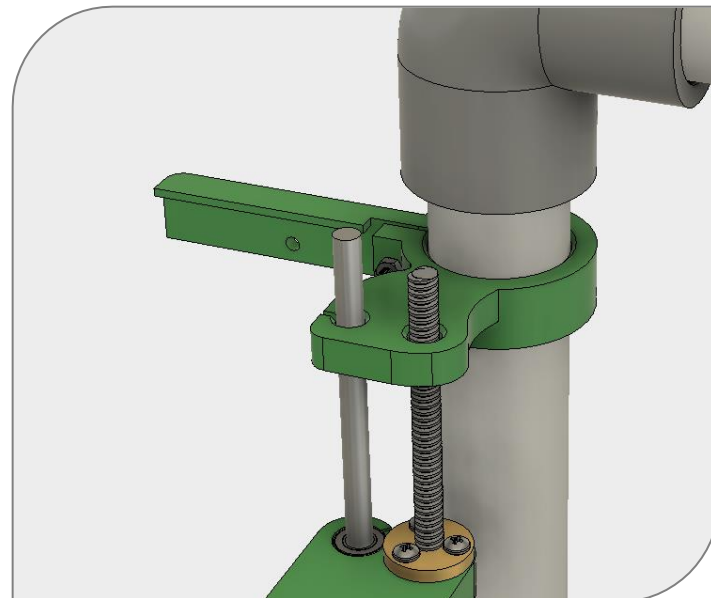
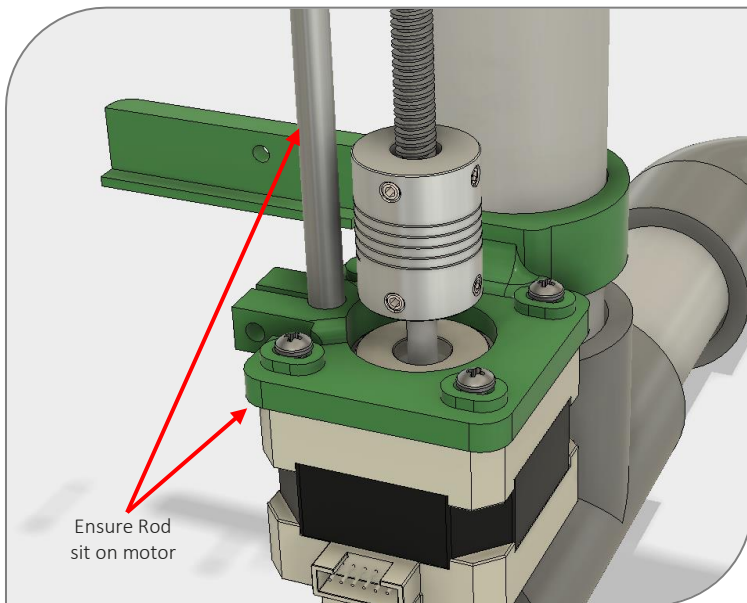
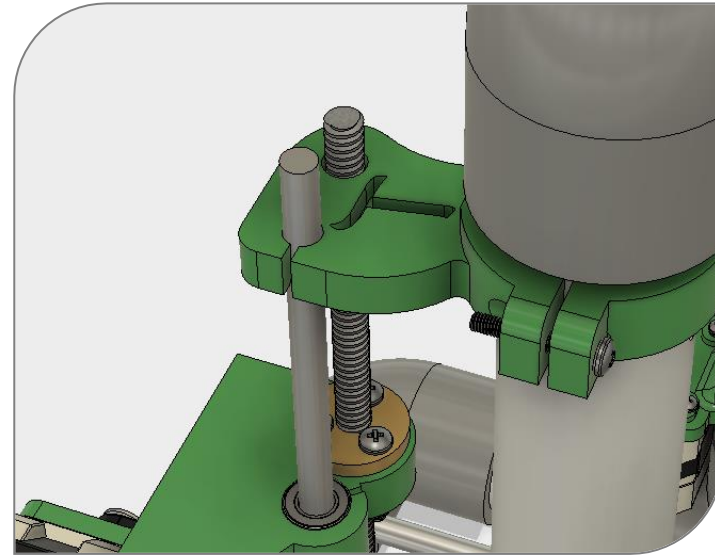
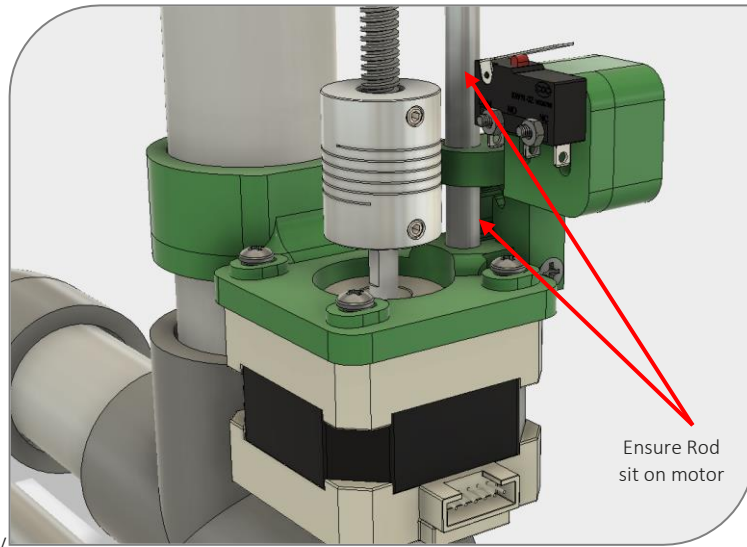




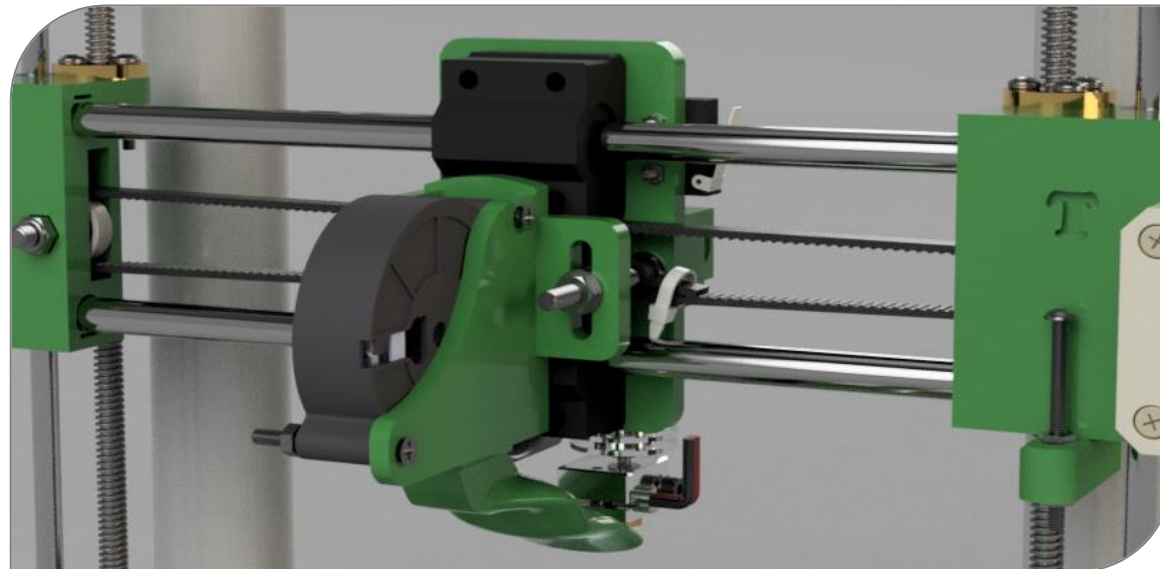
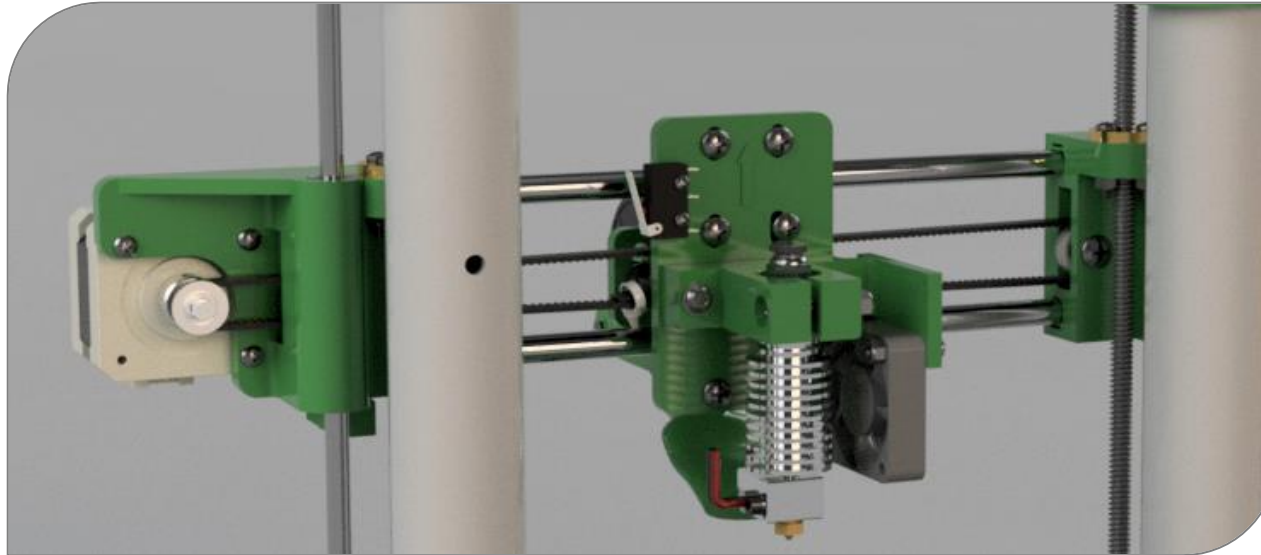


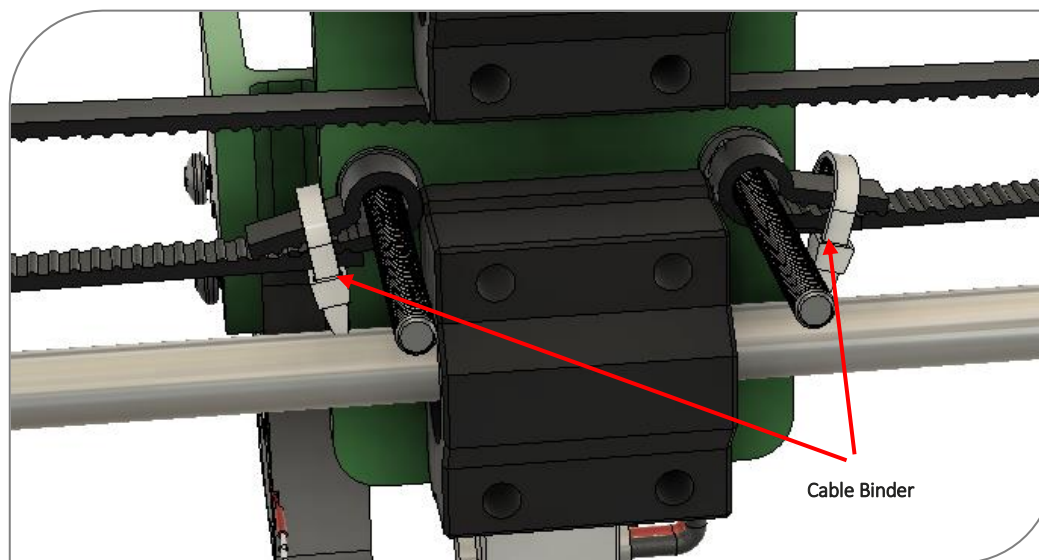
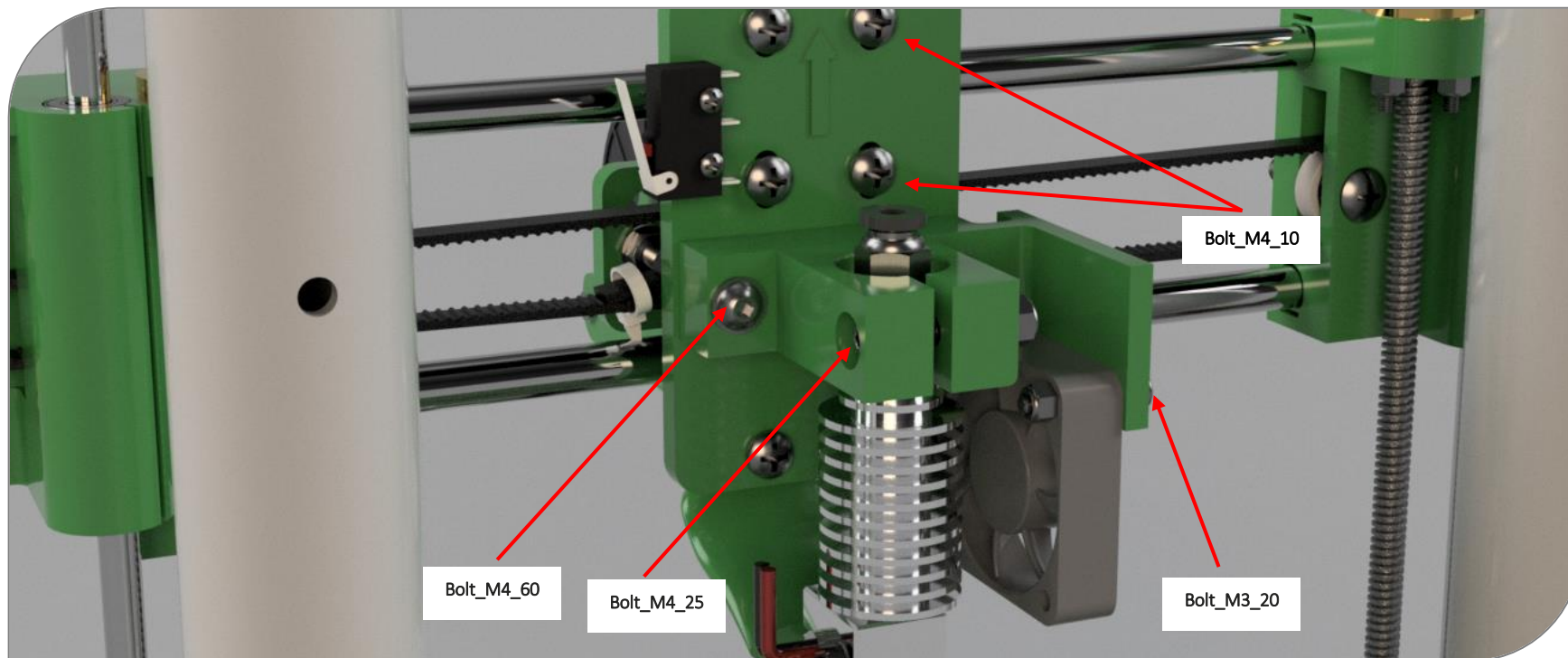
Step 10 -- Z_Axis



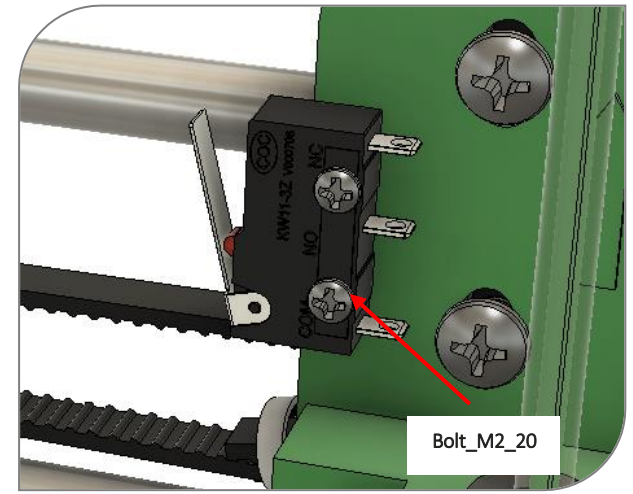
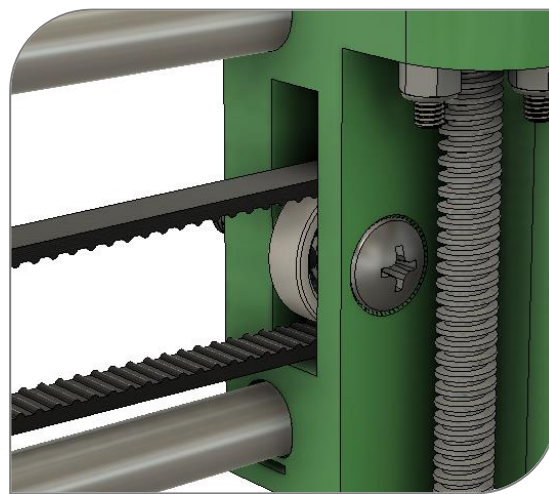
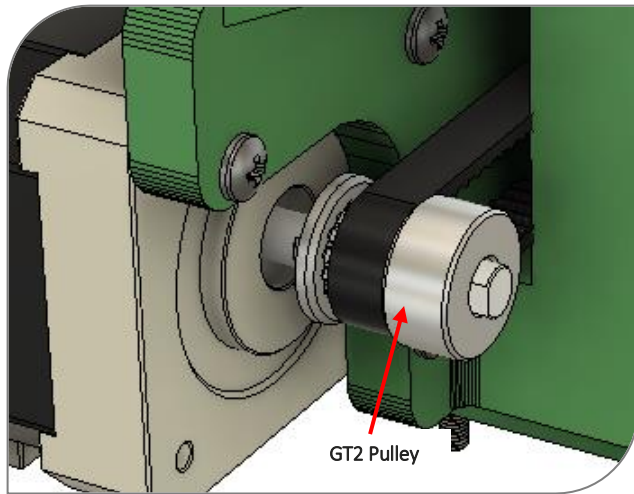
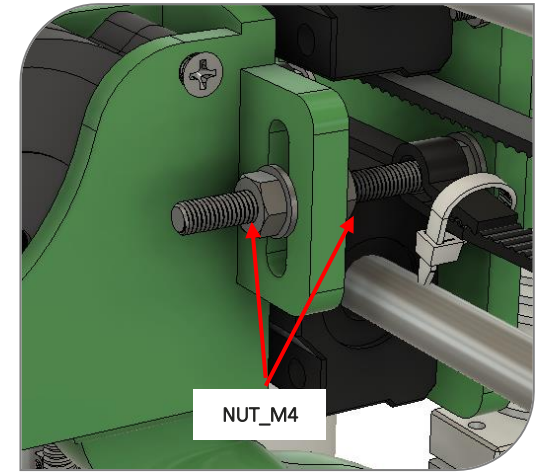
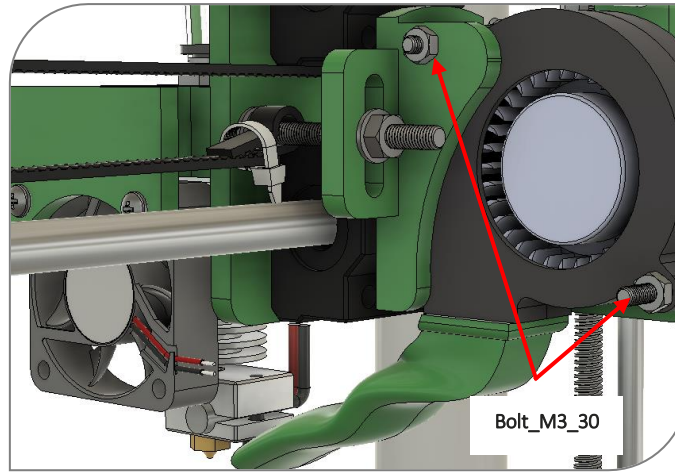
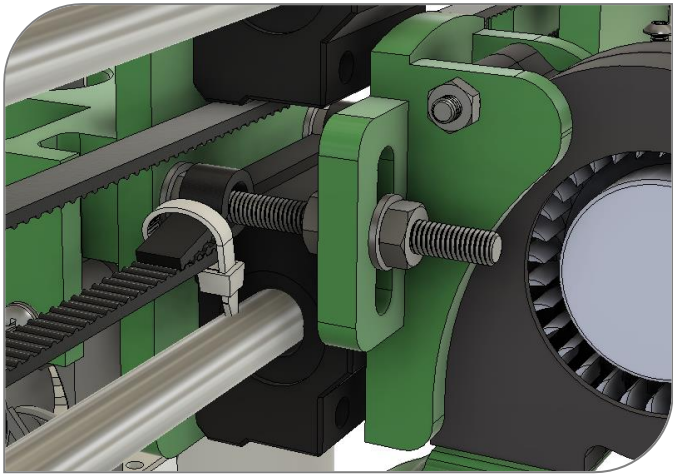


Step 11 -- X_Axis

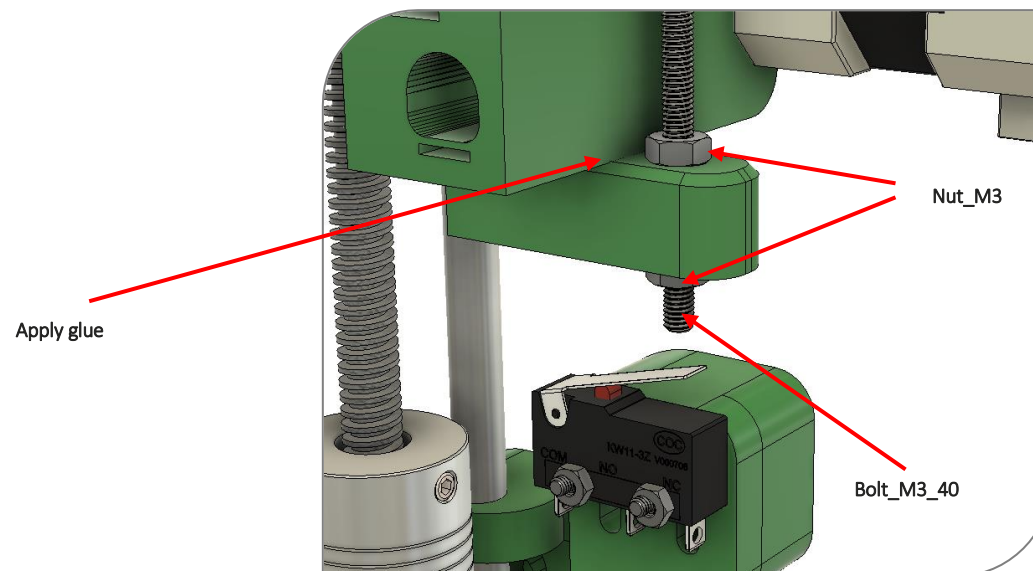
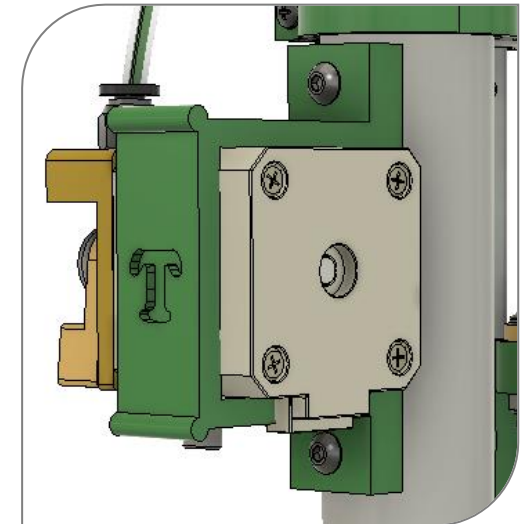
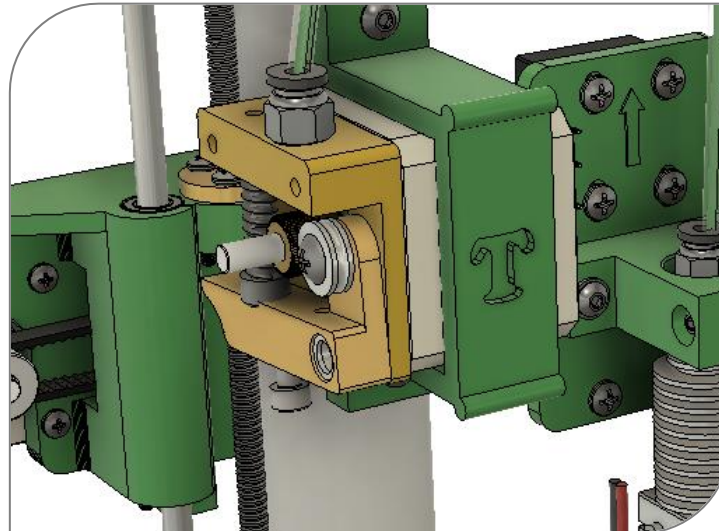
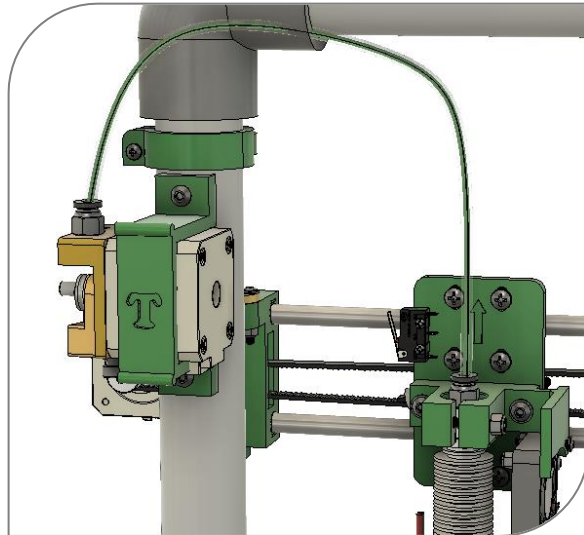


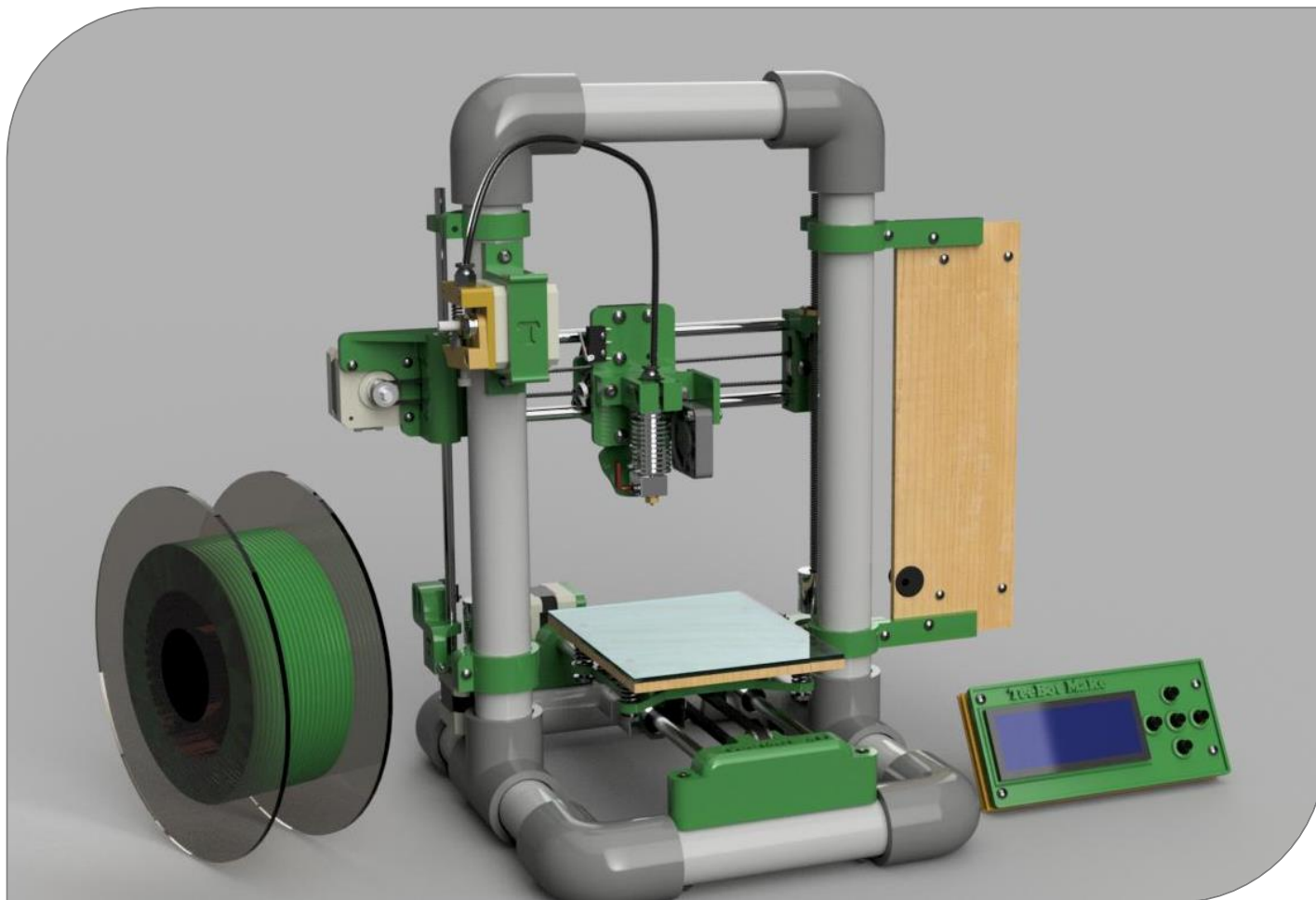


Dream & Create !!



Step 12 -- Extruder Motor & Z Stop

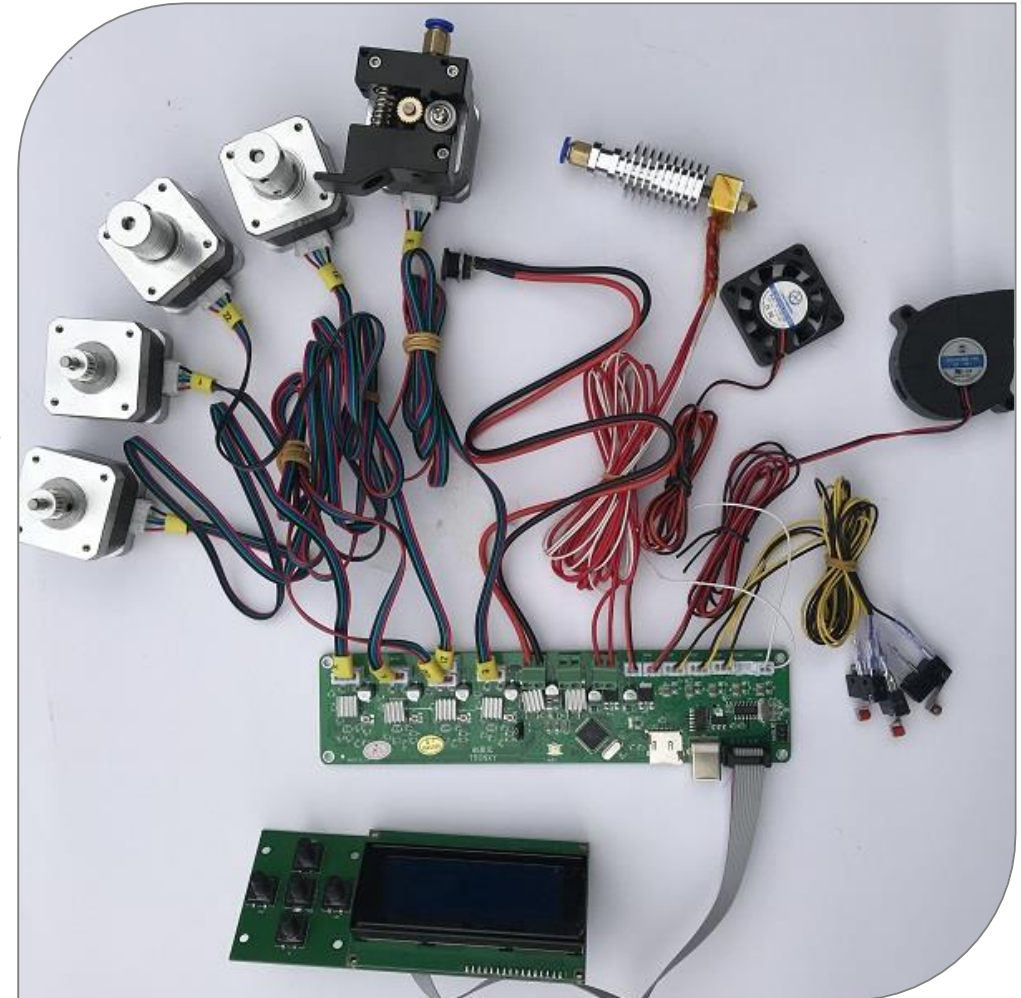




Section 11 -- Wiring and connections.

This wiring Guide assumes you are using the pre-flashed MELZI board from the complete Kit.
For other boards please check your supplier's documentations on how to properly connect and wire all the components.

1. Start by connecting the two Z stepper motor
2. Connect the X,Y and Extruder stepper motor.
3. Connect all Endstop.
4. Connect the Hot end and the thermistor.
5. Connect (40mm Square fan) This fan always stays on.
6. Connect the 50mm Radial fan for cooling the prints.
7. Connect the power input.
8. Connect the LCD Control.



Section 12 -- Firmware.

Depending on your control board of choice there are a few Firmware which you can use to drive the printer. All supplied kit comes with Melzi board which are preloaded with the right configured firmware.

If you are using other boards. Join the forum and post the type of Board, you will get help on compiling the right firmware.

For a list of boards visit (www.reprap.org/wiki/Comparison_of_Electronics)

Section 13 -- Leveling the Bed.

It is very important that the print bed is leveled with the print nozzle. This ensures that you have a good first layer print. 90% of failed print is caused by the bed not being properly leveled.

Section 14 -- Start printing and have fun!!

A Slicing software converts 3D models into machine codes (Gcodes). This Gcode is then trasfered to the printer using the Micro SD card.