

MAKER GEAR

MICRO

MECHANICAL ASSEMBLY GUIDE

#MAKEYOUROWNMICRO



3D PRINTED PARTS

Preferred Print Settings:

- Use a nozzle diameter between .35-.5mm with a layer height between .2-.3mm
- Print parts with a minimum of 3 perimeters with at least 4 top & bottom layers
- Infill should be a minimum of 10% with an extrusion multiplier 2-3% higher than your typical settings
- Use extra dense support layers for any long or flat overhangs & have horizontal separation set higher than your nozzle diameter
- Parts will have surfaces labeled “FD” which should be oriented and printed “face down” to ensure easier printing and a better overall print quality
- Add skirts for large parts with long print times to limit lifting or warped corners
- Use slower print speeds for your perimeters to reduce ghosting

Printed Parts List:

Base	Bed Clips (x4)	Hot End Mount	X Motor Mount	Z Knob
Top	Electronics Case	Fan Mount	X Idler Mount	Spool Holder
Bed	Electronics Case Base	X Belt Grip	Y stop	

NON-PRINTED PARTS

Part	QTY
BIGTREETECH SKR Mini E3 V2.0 Control Board	1
BIGTREETECH TFT24 V1.1 Display	1
MK8 Extruder Original Replacement	1
BL Touch	1
30x30x10mm Cooling Fan	2
NEMA 14-size Hybrid Bipolar Stepping Motor	2
Nema 17 Stepper Motor with 230mm T8x8 Lead Screw	1
Nema 17 Stepper Motor	1
Aluminum Extruder Drive Feeder	1
Nema 17 Stepper Motor Mounting Bracket	1
8mm x 150mm Linear Motion Rods	4
8mm x 200mm Linear Motion Rods	2
8mm Bore Linear Ball Bearings	6
300mm Closed Loop Belt	1
400mm Closed Loop Belt	1
6mm Belt Tension Spring	1
5mm bore GT2 Timing Belt Idler Pulley	2
5mm bore GT2 Timing Belt Drive Pulley	2
Rubber Feet Bumpers	4
Momentary Micro Limit Switch	2
Sanded Acrylic Bed	1



HARDWARE

NUTS & BOLTS

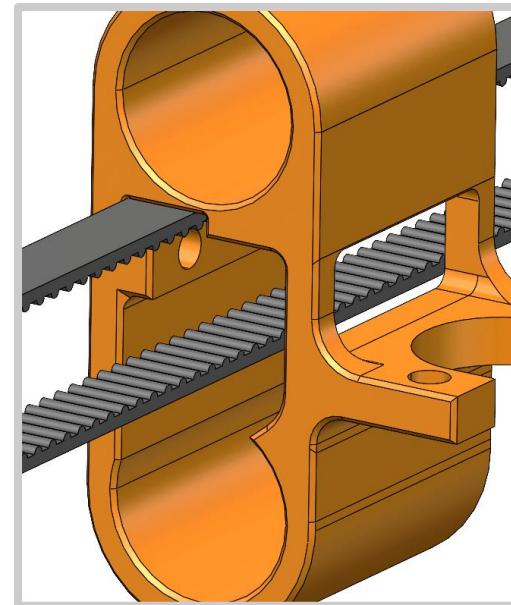
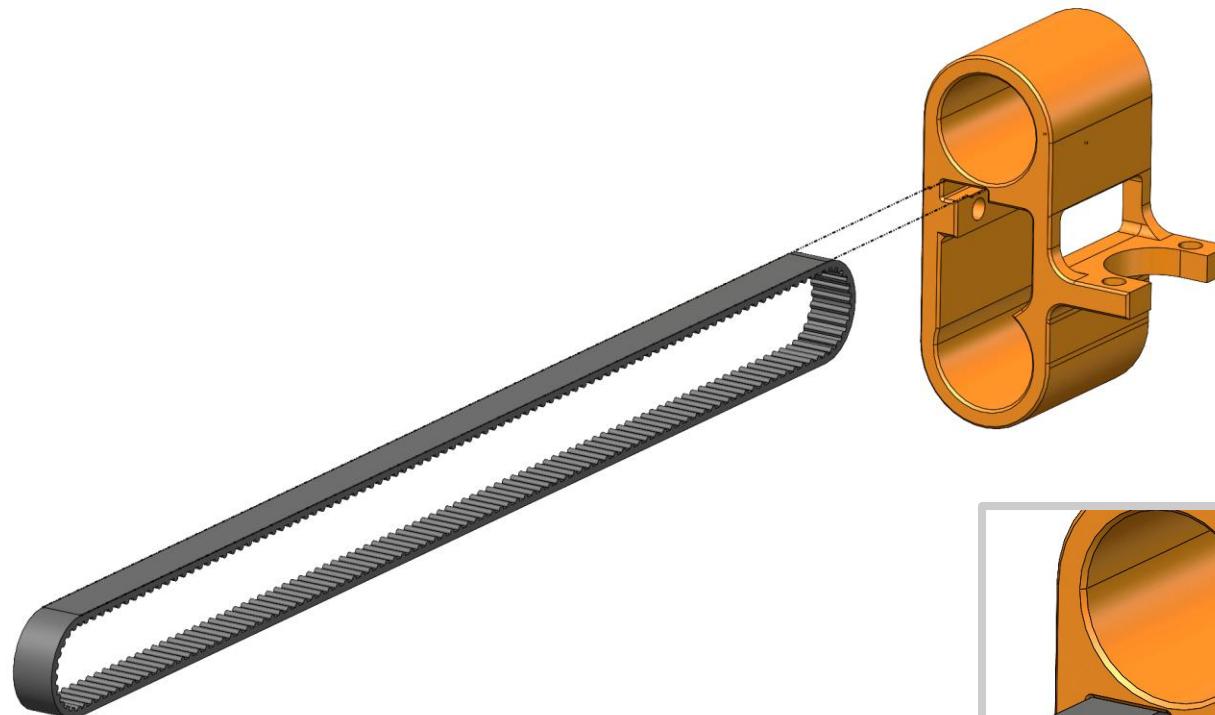
M3x8 Hex Socket Head Screws	x19
M3x10 Hex Socket Head Screws	x5
M3x12 Hex Socket Head Screws	x8
M3x14 Hex Socket Head Screws	x8
M3x18 Hex Socket Head Screws	x8
M3x35 Hex Socket Head Screws	x2
M3 Washers	x46
M3 Nylon Lock Nuts	x25
M4x14 Hex Socket Head Screws	x8
M4 Washers	x4
M4 Nylon Lock Nuts	x4
3mm Nylon Spacers (7mm OD)	x4
5mm x 14mm socket shoulder screw	x2
M2x10 Phillips Head Screw	x4
8mm Shaft Lock Collar	x1

TOOLS

2mm Allen Wrench
2.5mm Allen Wrench
3mm Allen Wrench
5.5mm Hex Wrench
Small Phillips Screwdriver
Precision Hobby Knife (optional)
Plumber's Tape (optional)

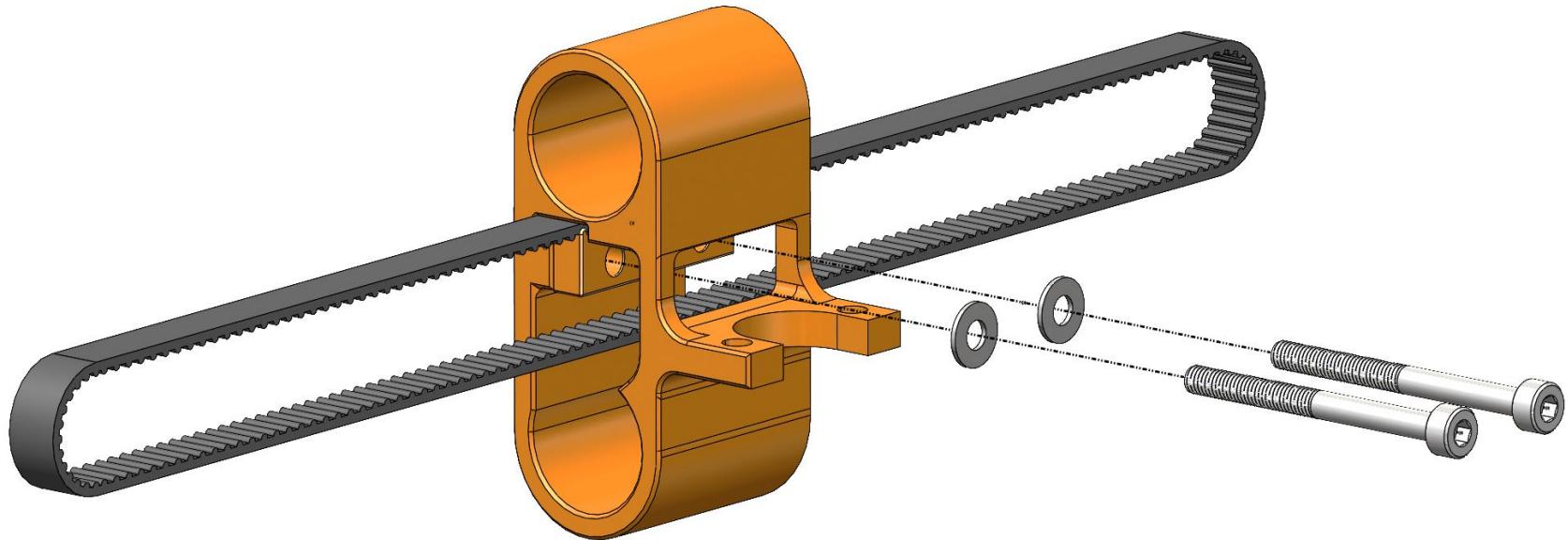
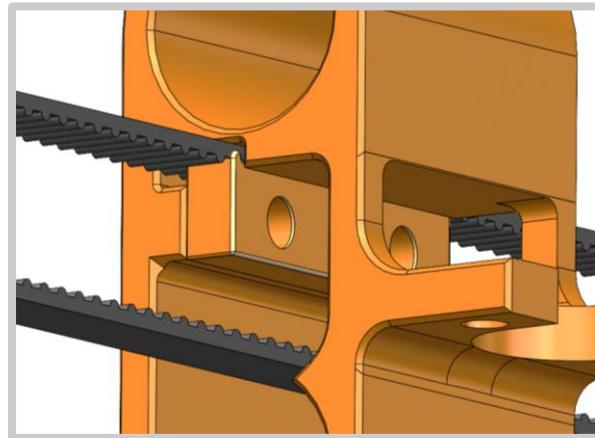
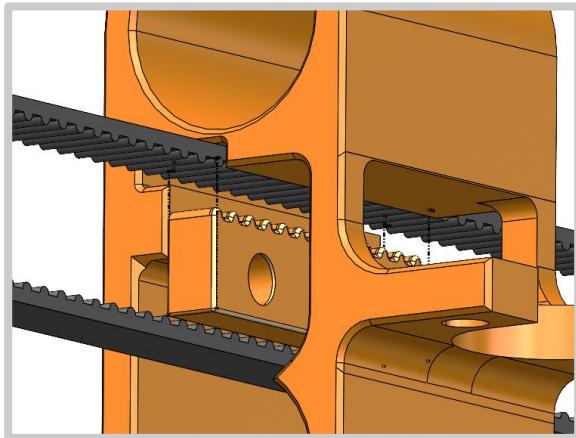
TIPS

- Use the precision hobby knife to clean up any print imperfections or to clean up any holes that are too tight of a fit
- Hole tolerances can vary based on filaments & machines; small bits of plumber's tape can be used if linear bearings or linear motion rods are too loose within the assembly
- While snug fits within the assembly are ideal, do not overtighten any bolts or use extreme force to fit parts into the prints



Hot End Mount
x1

400mm Belt
x1



X Belt Grip

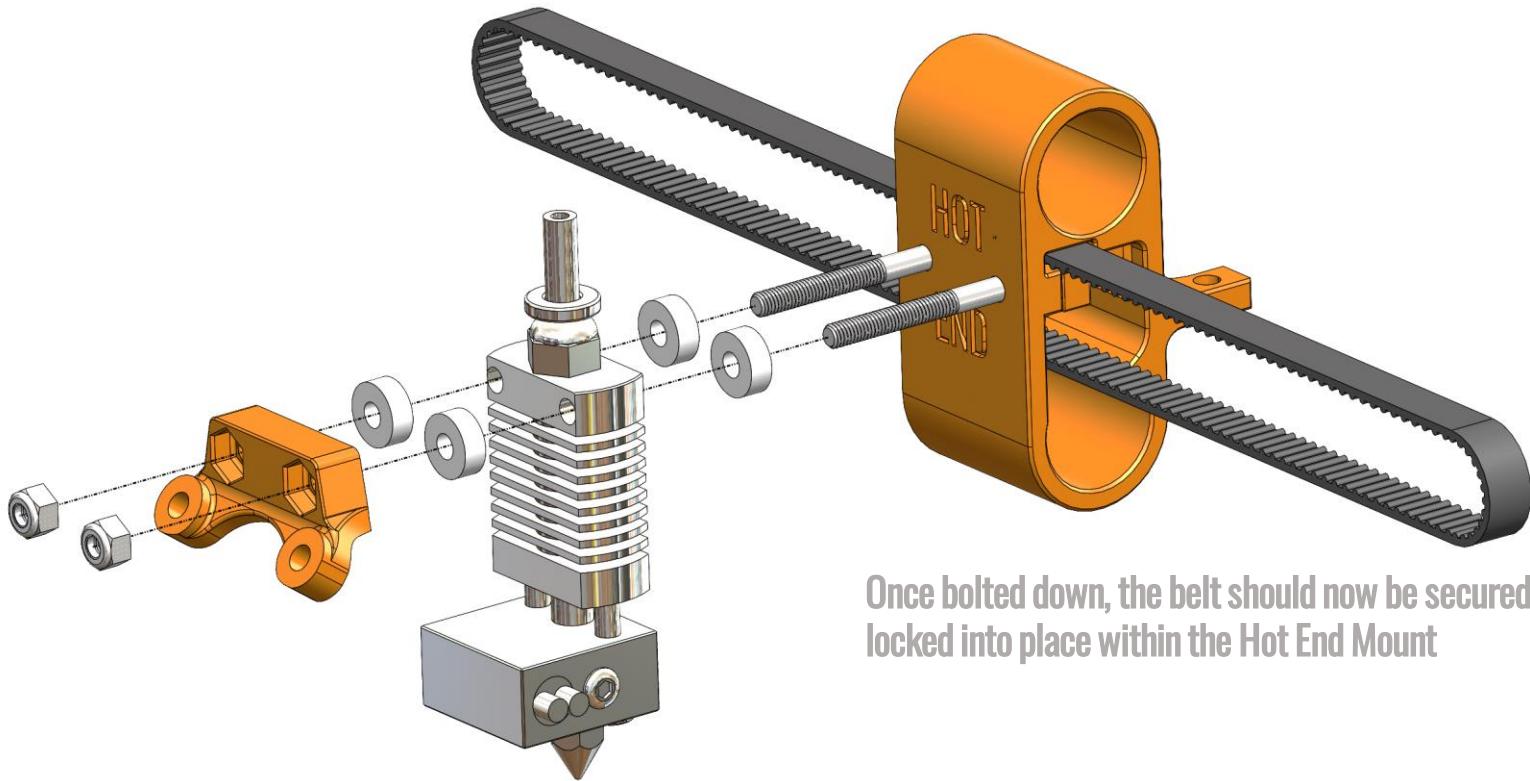
M3x35

M3 washers

x1

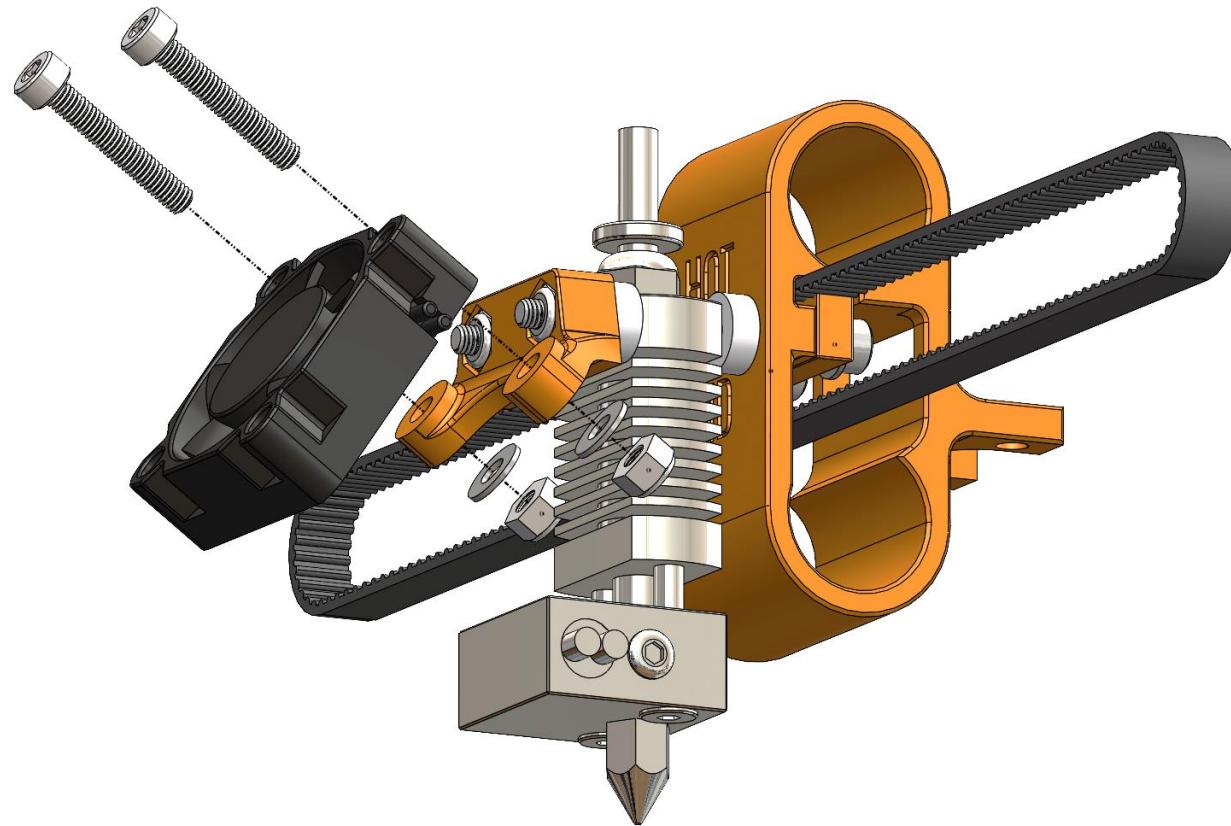
x2

x2



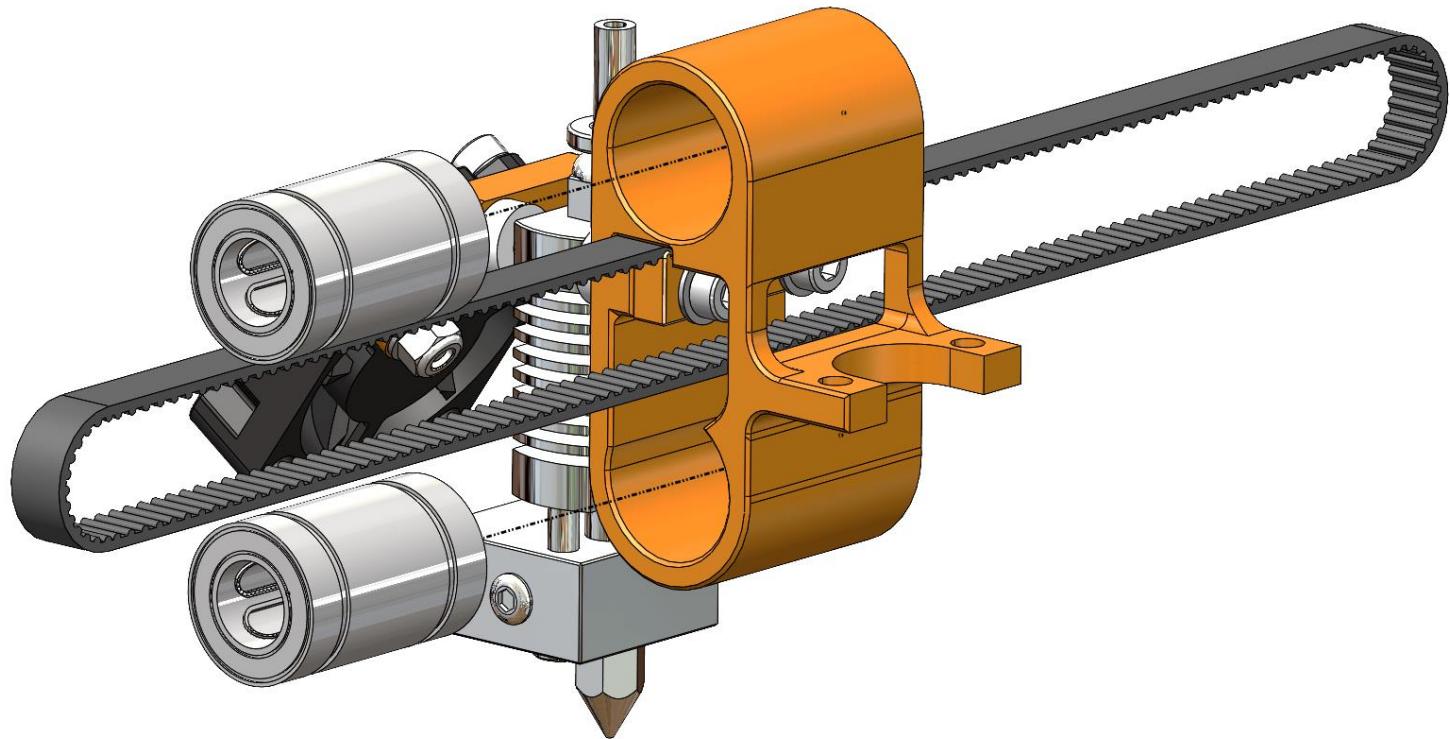
Once bolted down, the belt should now be secured & locked into place within the Hot End Mount

Fan Mount	x1
Hot End Assembly	x1
Nylon Spacers	x4
M3 nuts	x2

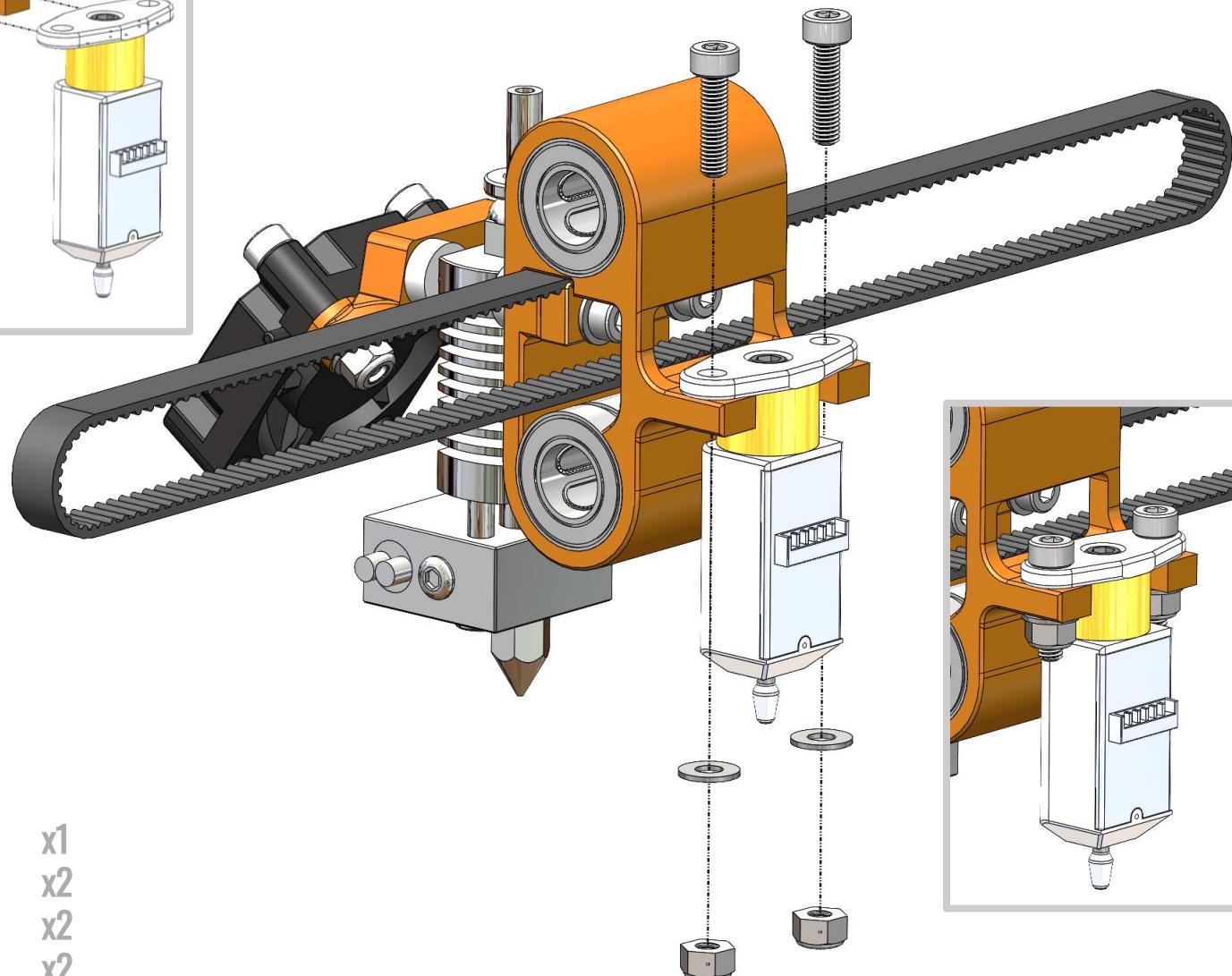
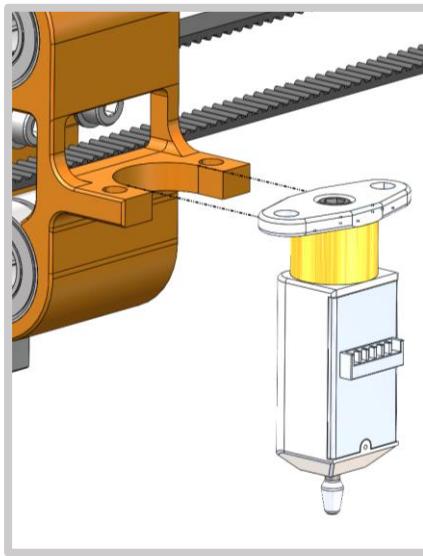


Cooling Fan
M3x18
M3 washers
M3 nuts

x1
x2
x2
x2

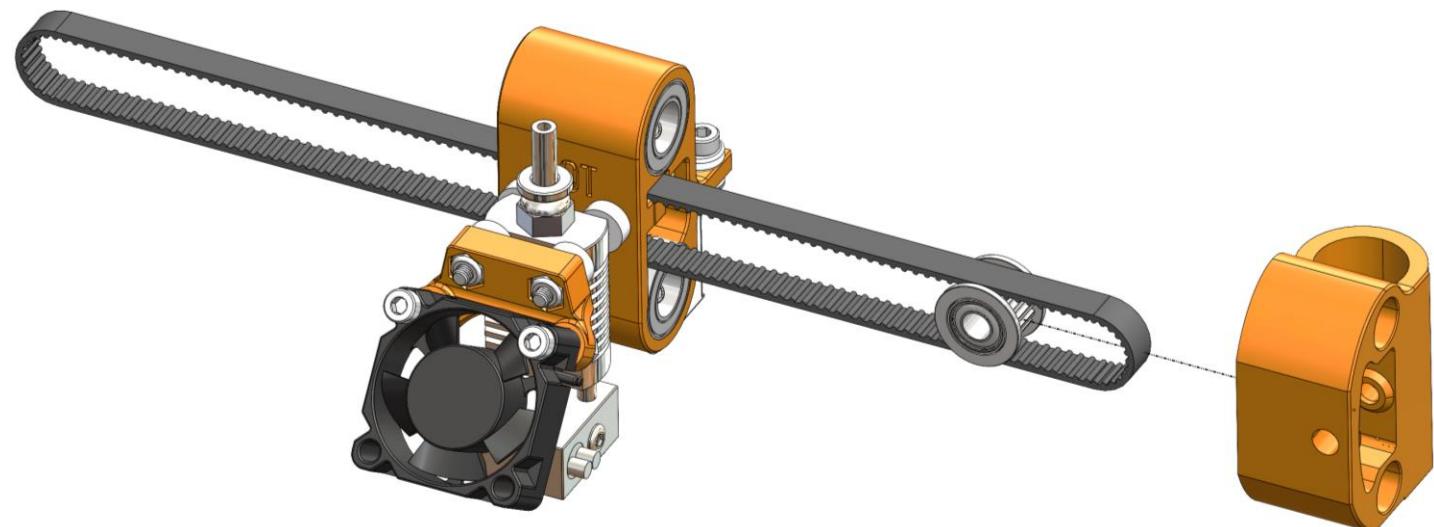
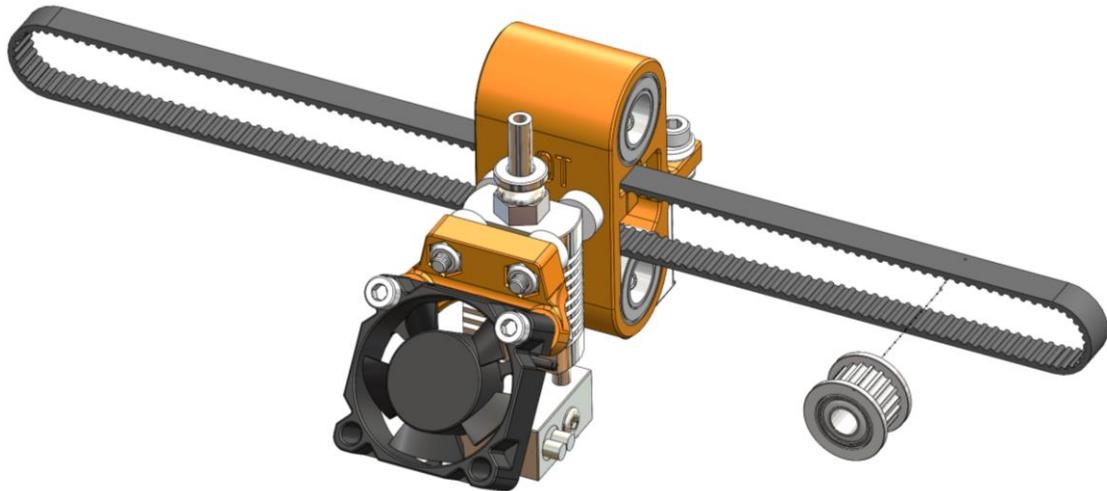


Linear Bearings x2



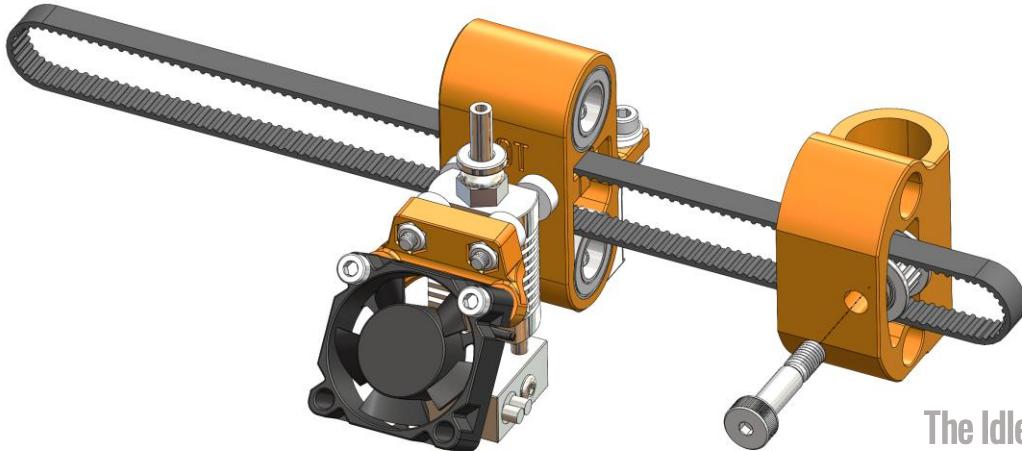
BL Touch
M3x10
M3 washers
M3 nuts

x1
x2
x2
x2

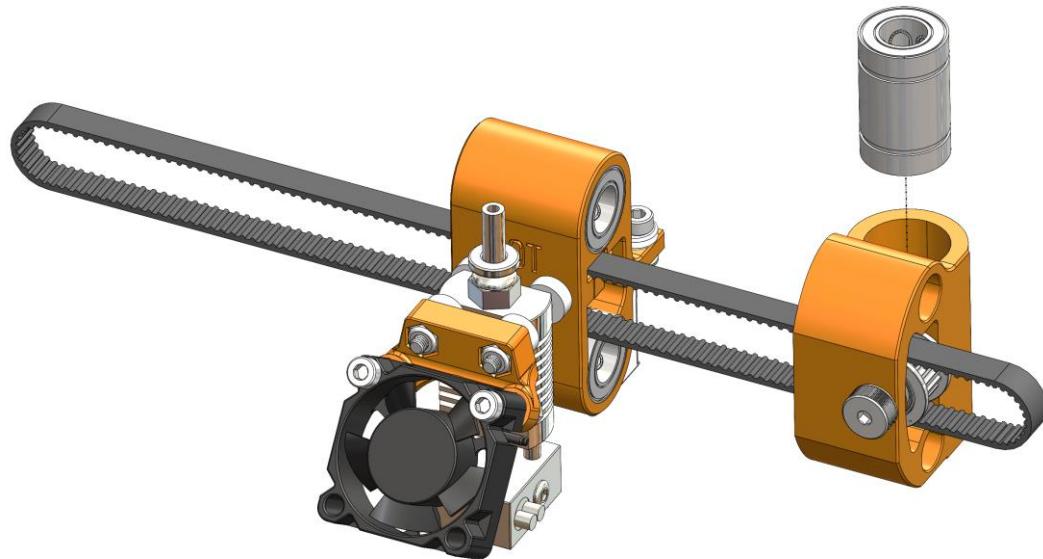


X Idler Mount x1
Idler Pulley

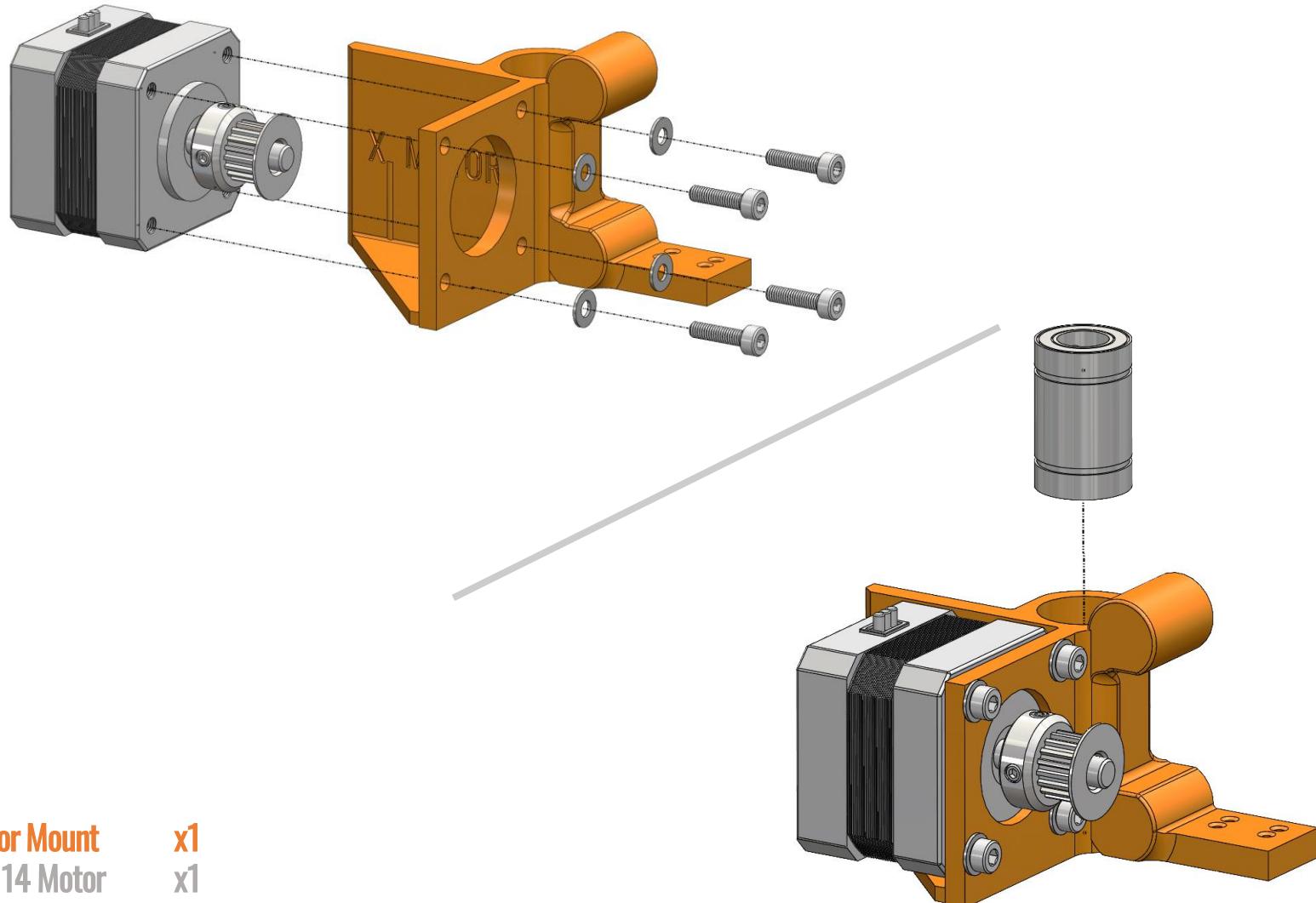
x1



The Idler Pulley should be able to
spin freely within the X Idler Mount



Shoulder Bolt x1
Linear Bearing x1

**X Motor Mount**

Nema 14 Motor

x1

M3x8

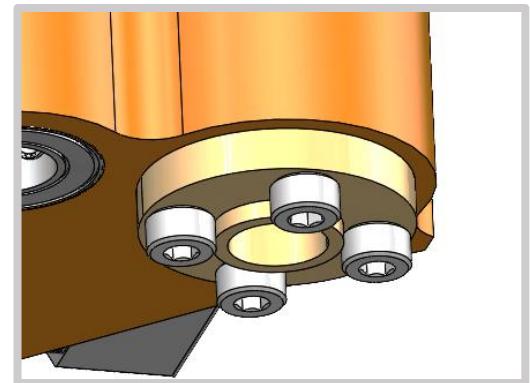
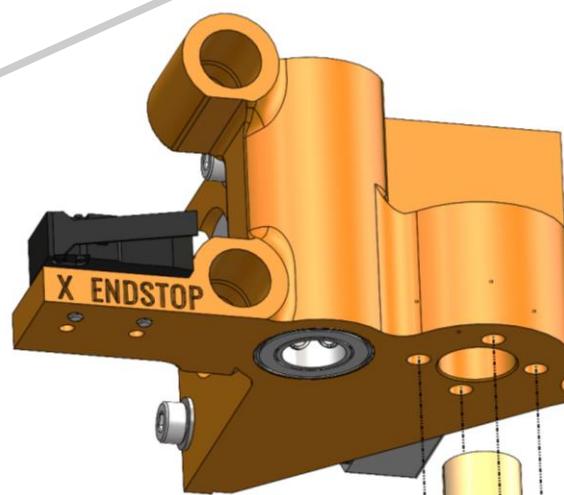
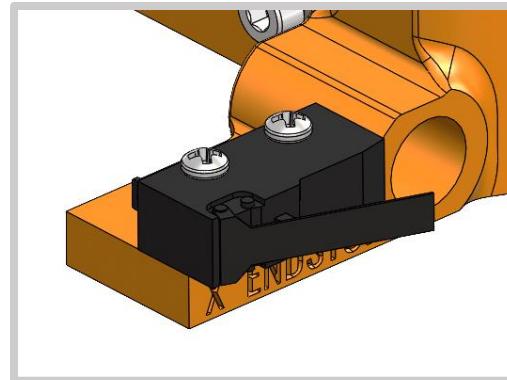
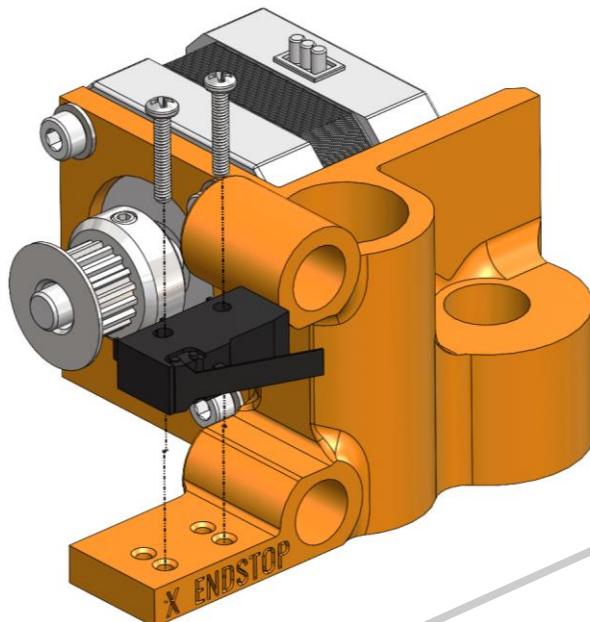
x1

M3 washers

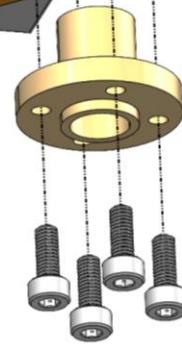
x4

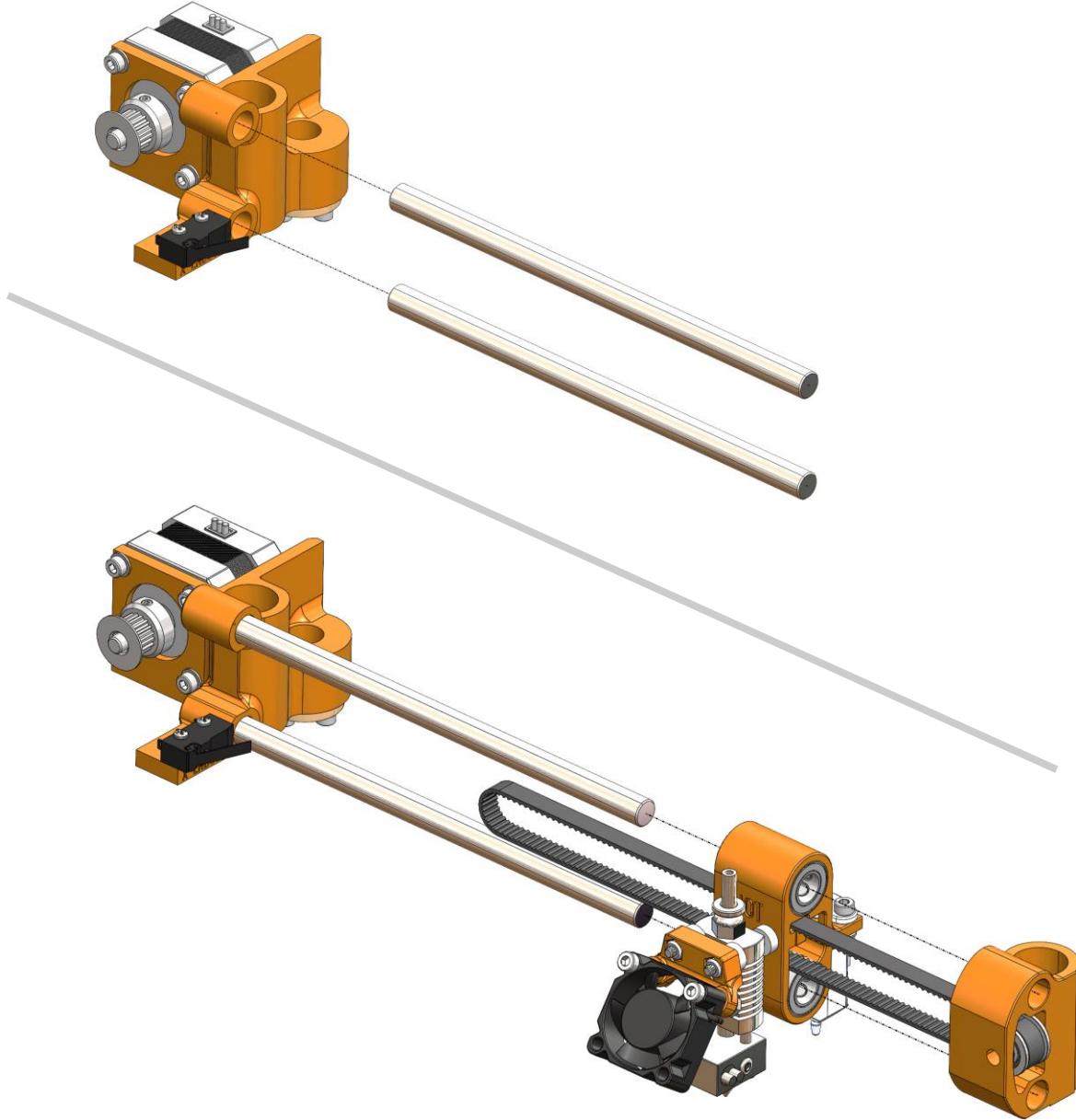
Linear Bearing

x1

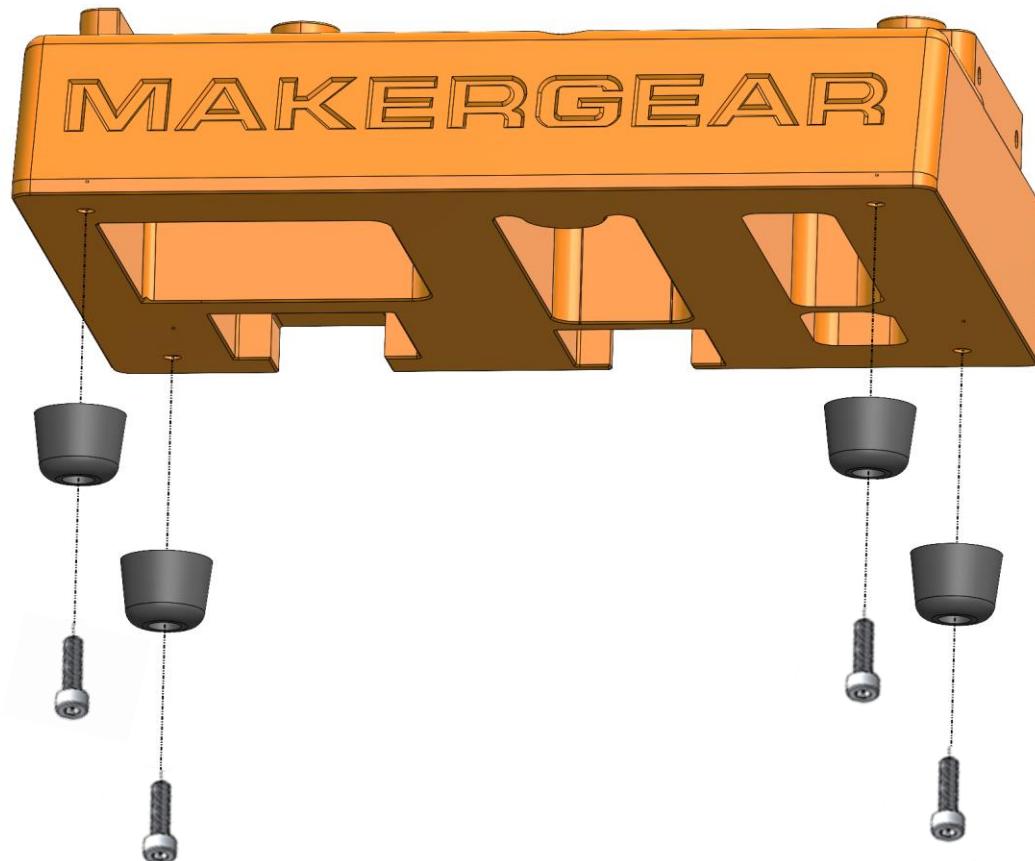


Limit Switch	x1
M2 Screws	x2
Z Rod Brass Nut	x1
M3x8	x4



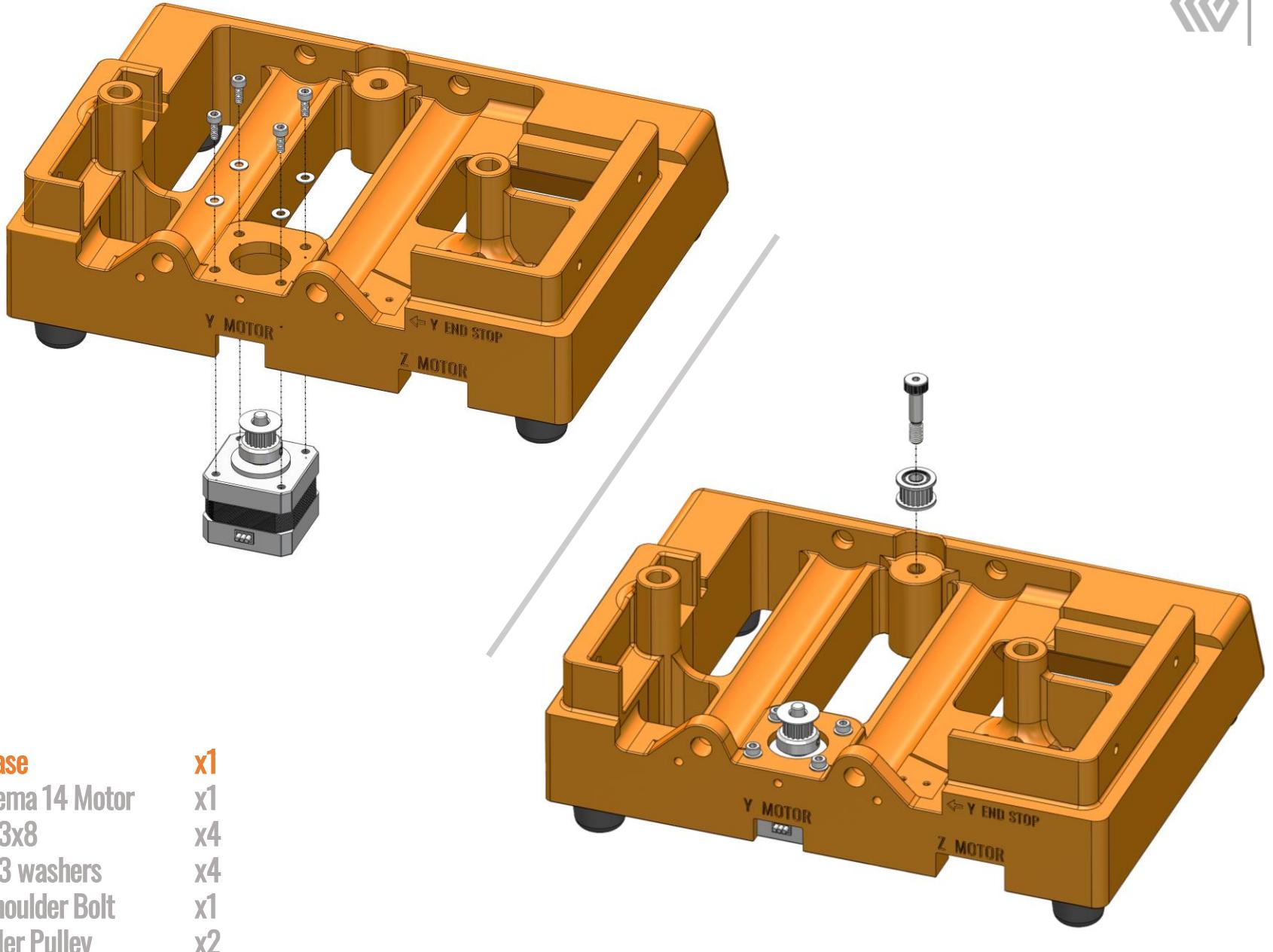


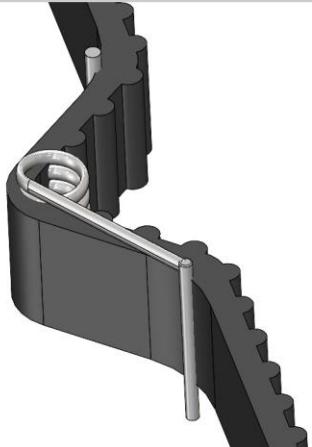
150mm Linear Rods x2



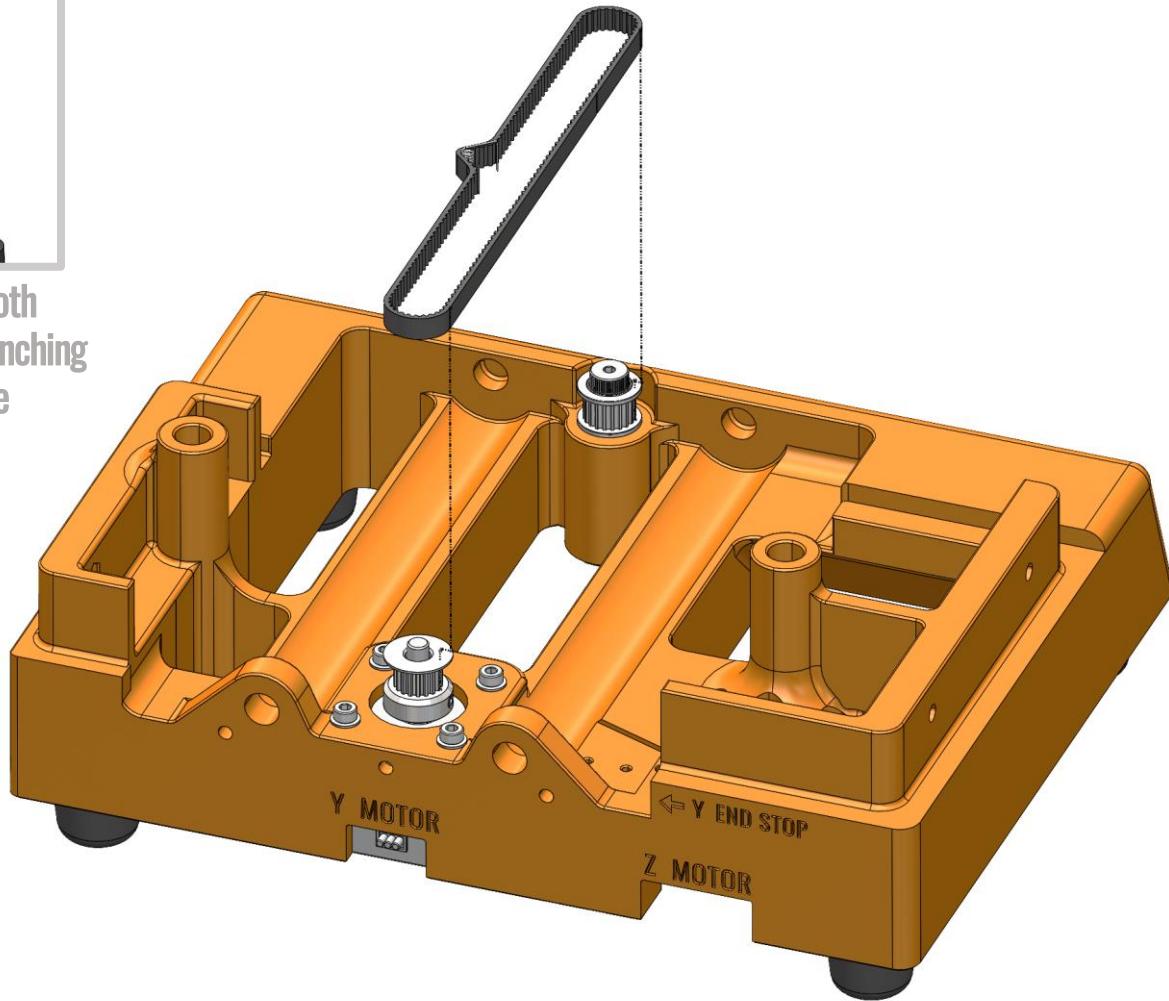
M4x14
Rubber Feet

x4
x4

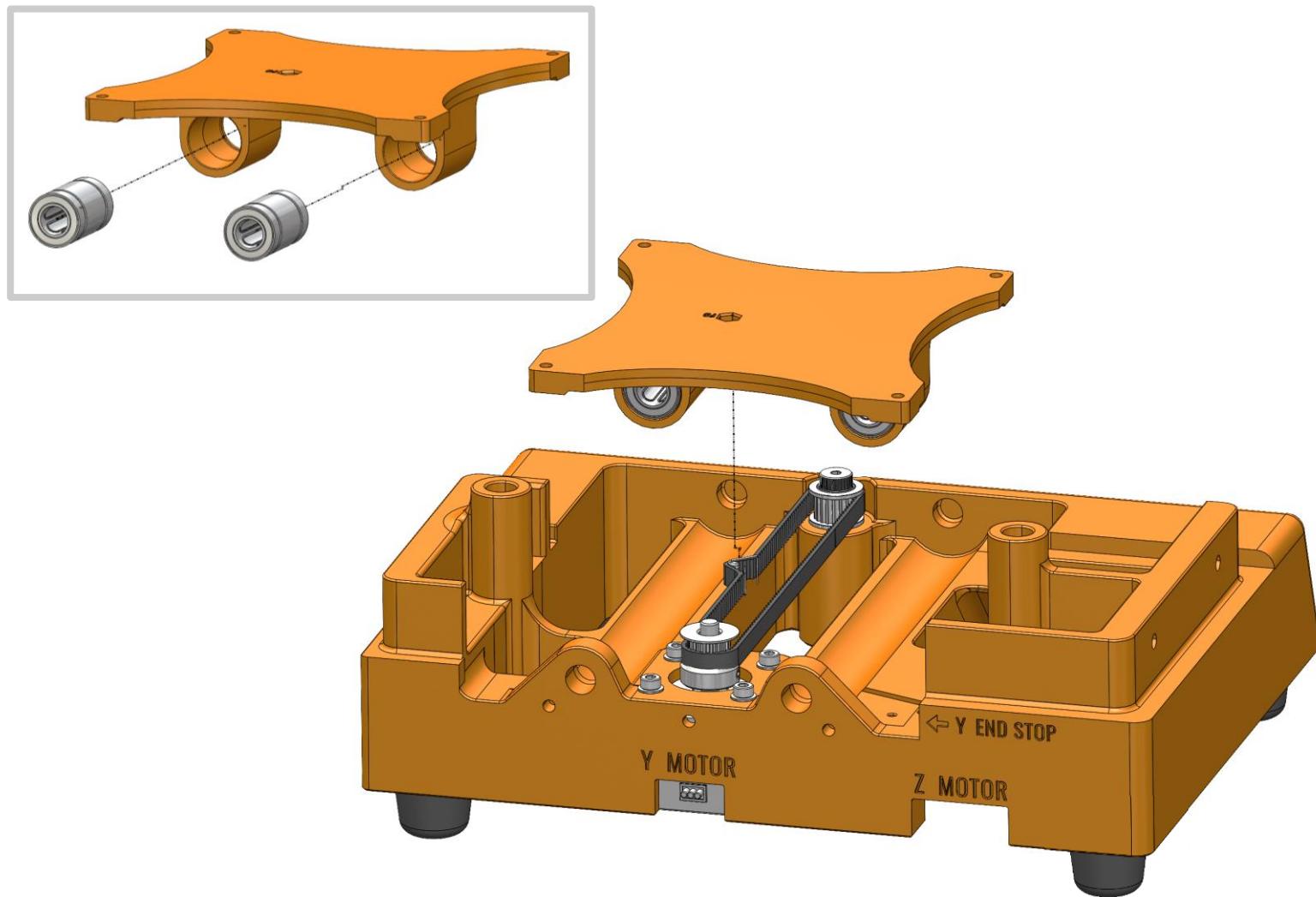




Slip spring tensioner into the tooth side of the belt with the arms pinching from the outside smooth surface

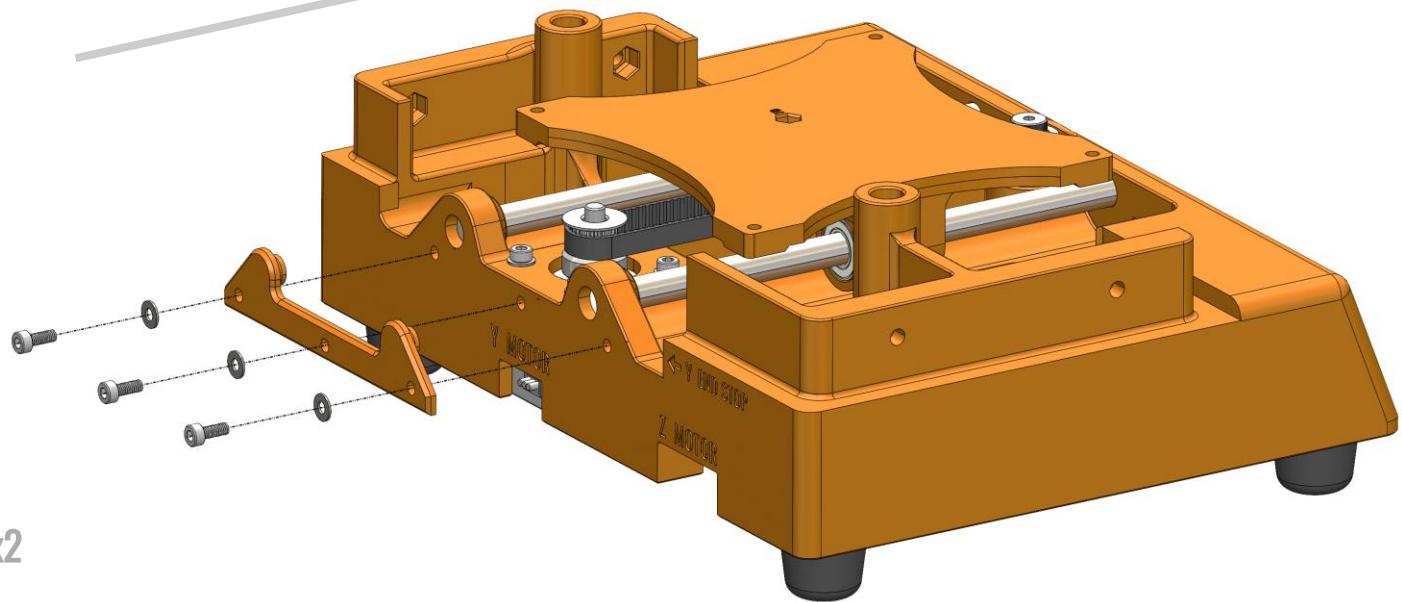
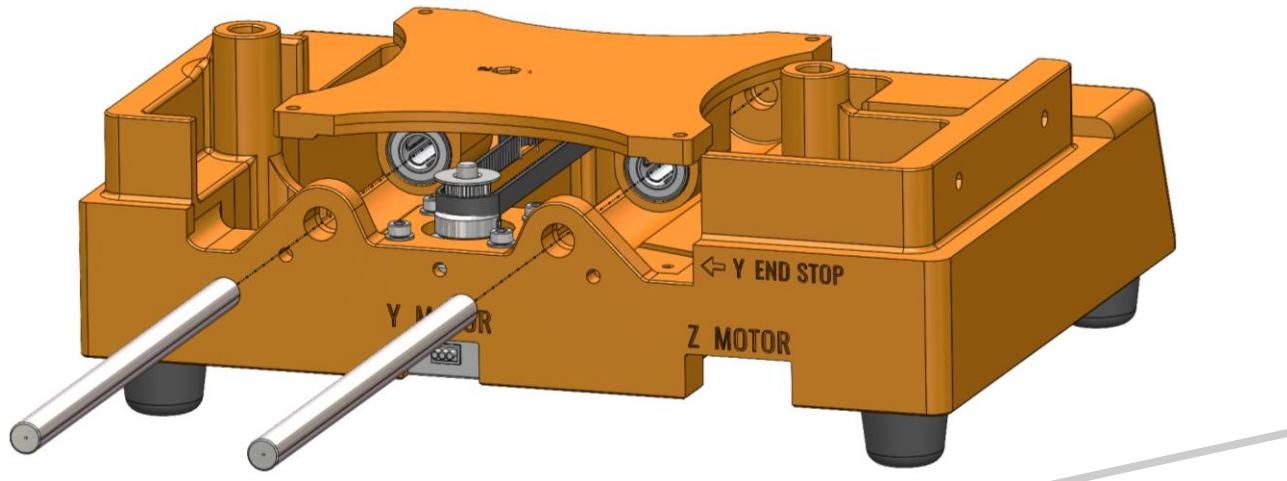


300mm Belt with:



Bed
Linear Bearings

x1
x2

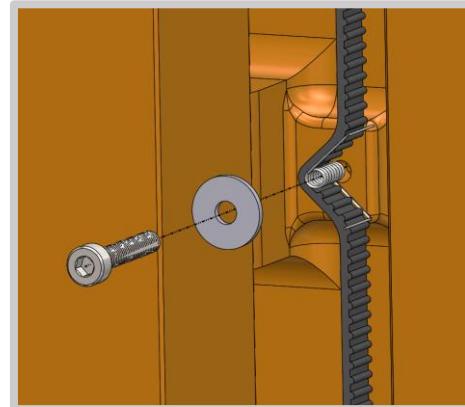
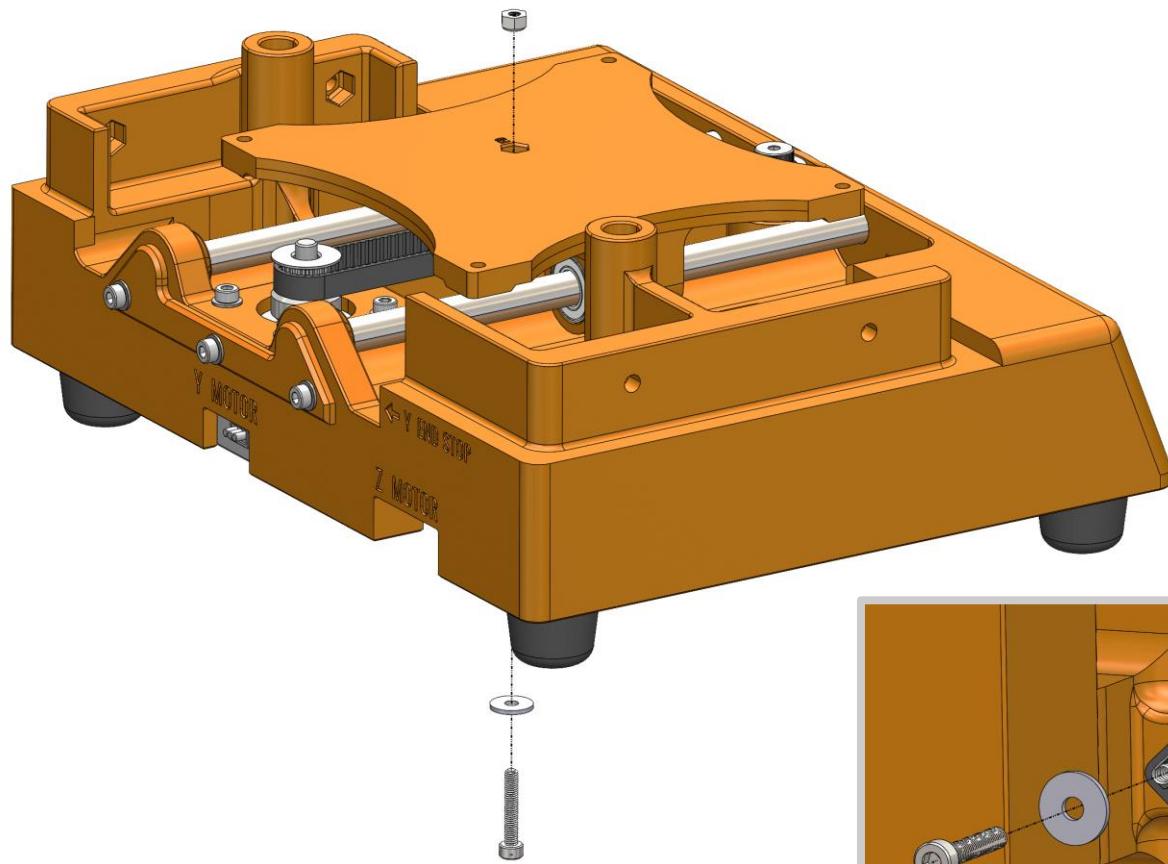


150mm Linear Rods x2

Y Block x1

M3x8 x3

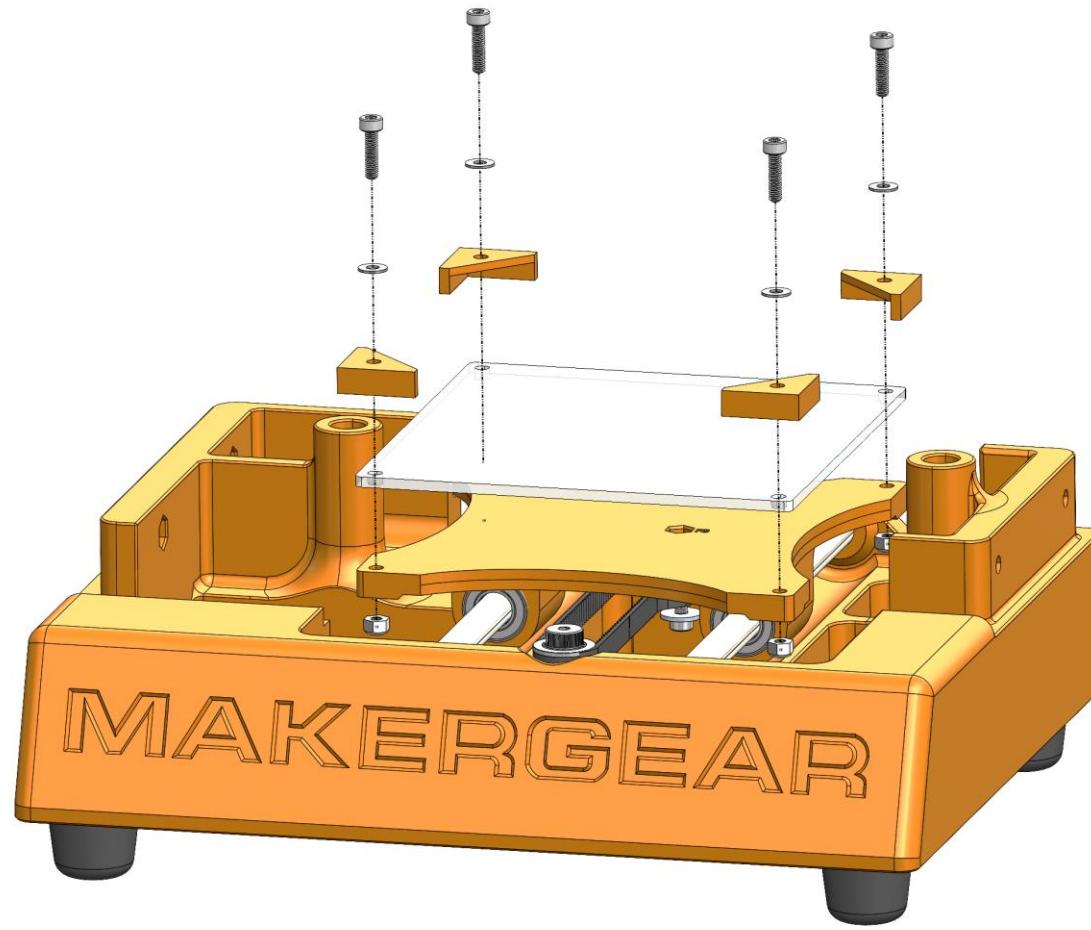
M3 washers x3



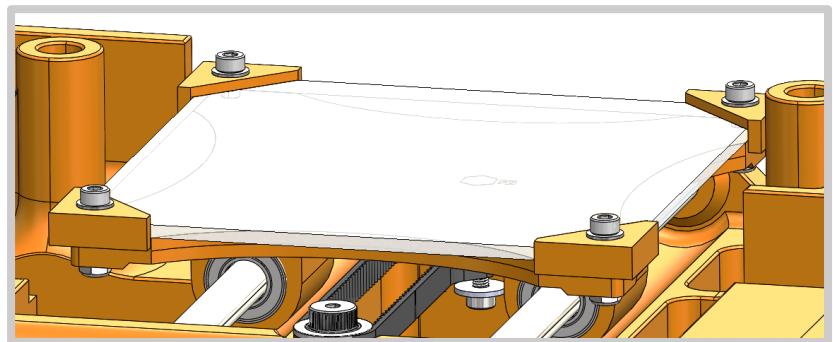
M3 nut
M3 washer
M3x18

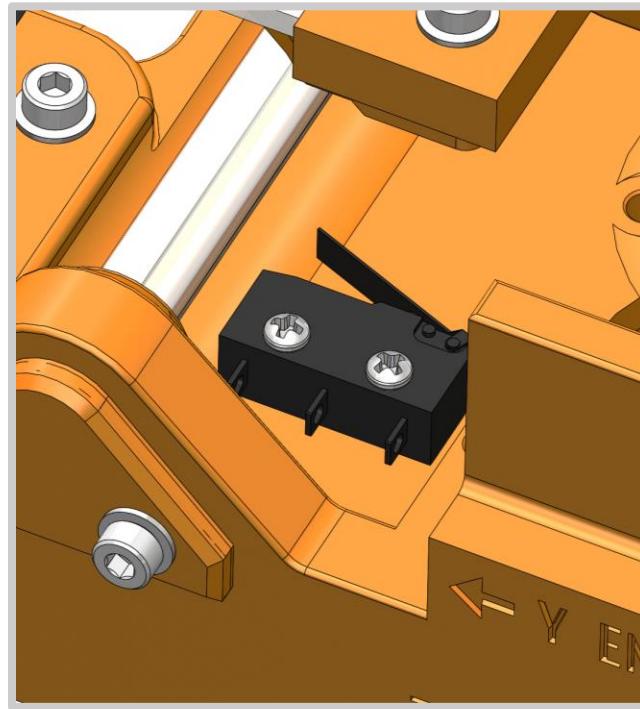
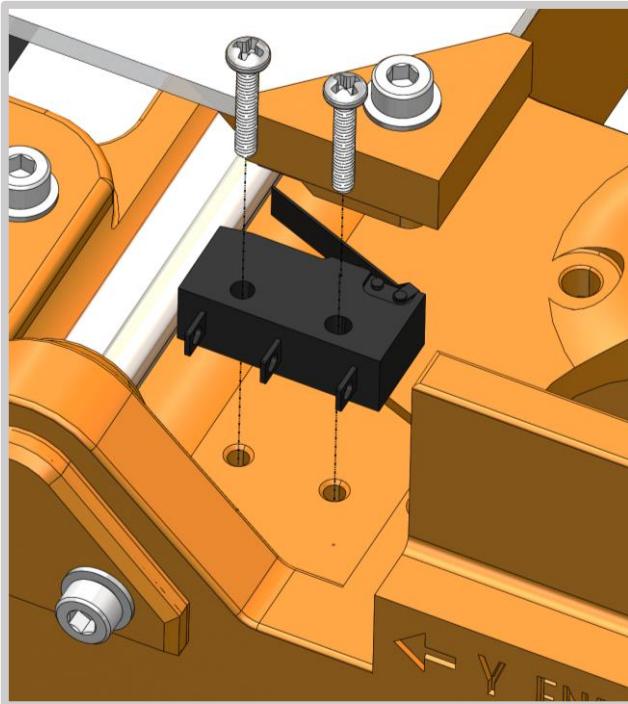
x1
x1
x1

The belt and spring tensioner
should now be fastened securely
to the bed.



Sanded Acrylic Bed	x1
Bed Clips	x4
M3x12	x4
M3 washers	x4
M3 Nuts	x4

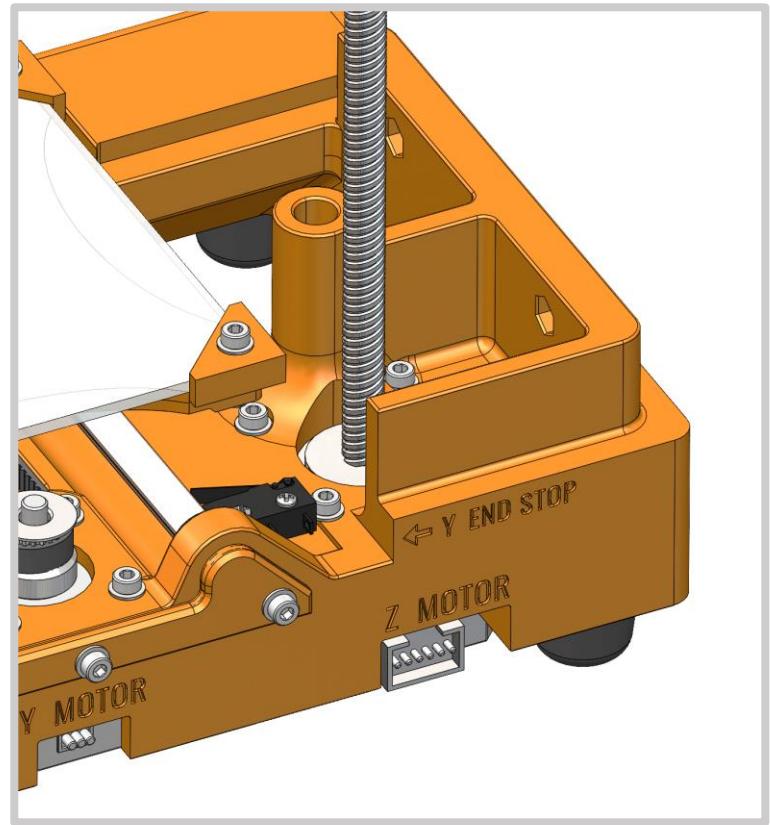
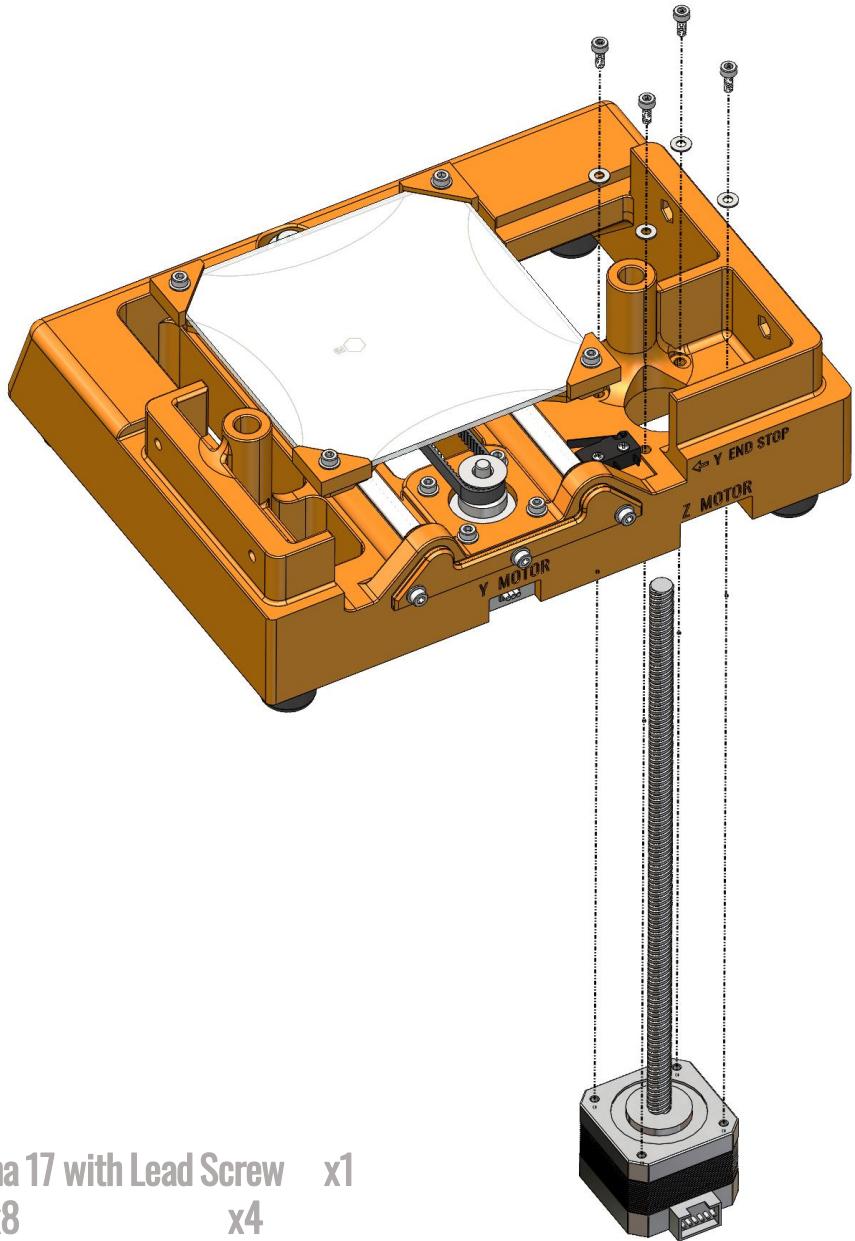




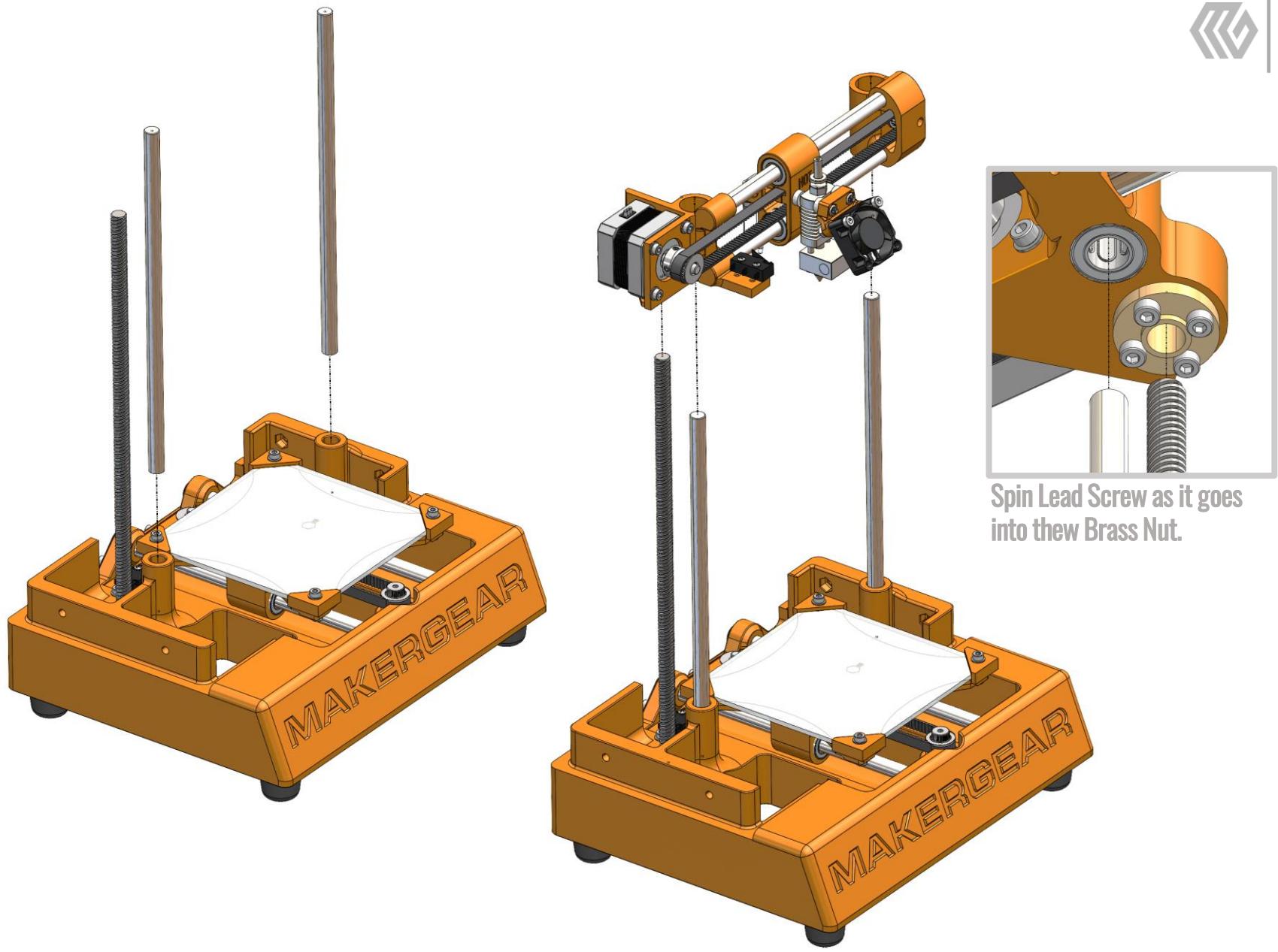
Slide the bed back and forth a few times to confirm it triggers the limit switch.

Limit Switch
M2 screws

x1
x2

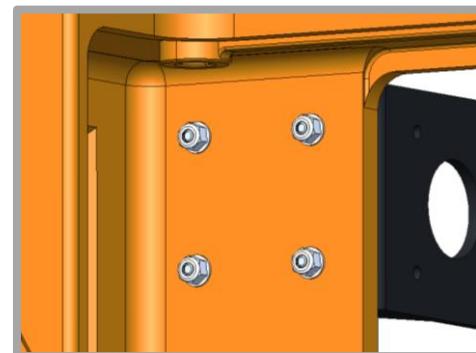
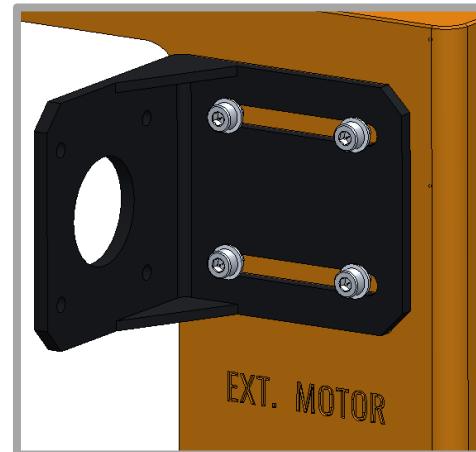
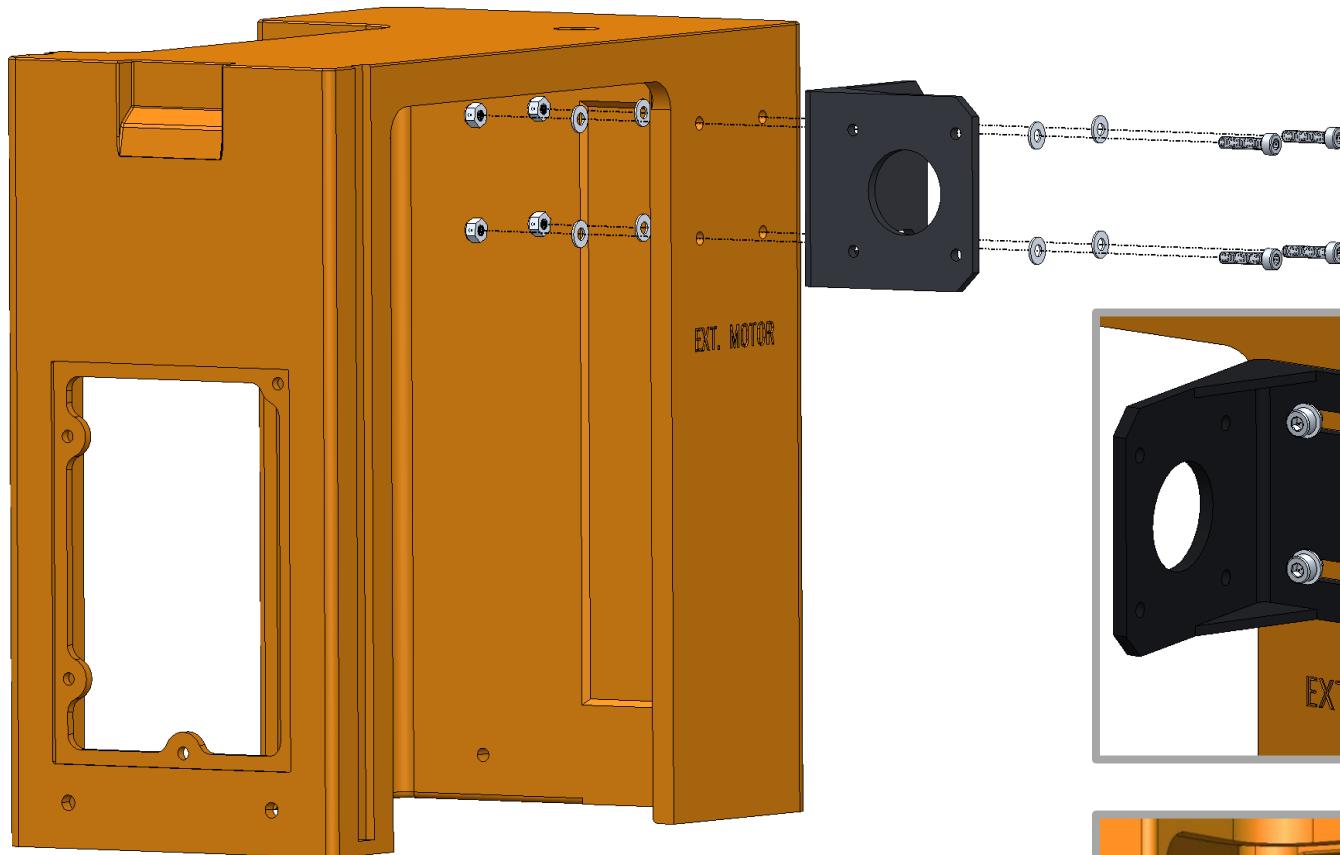


Nema 17 with Lead Screw x1
M3x8 x4
M3 washers x4

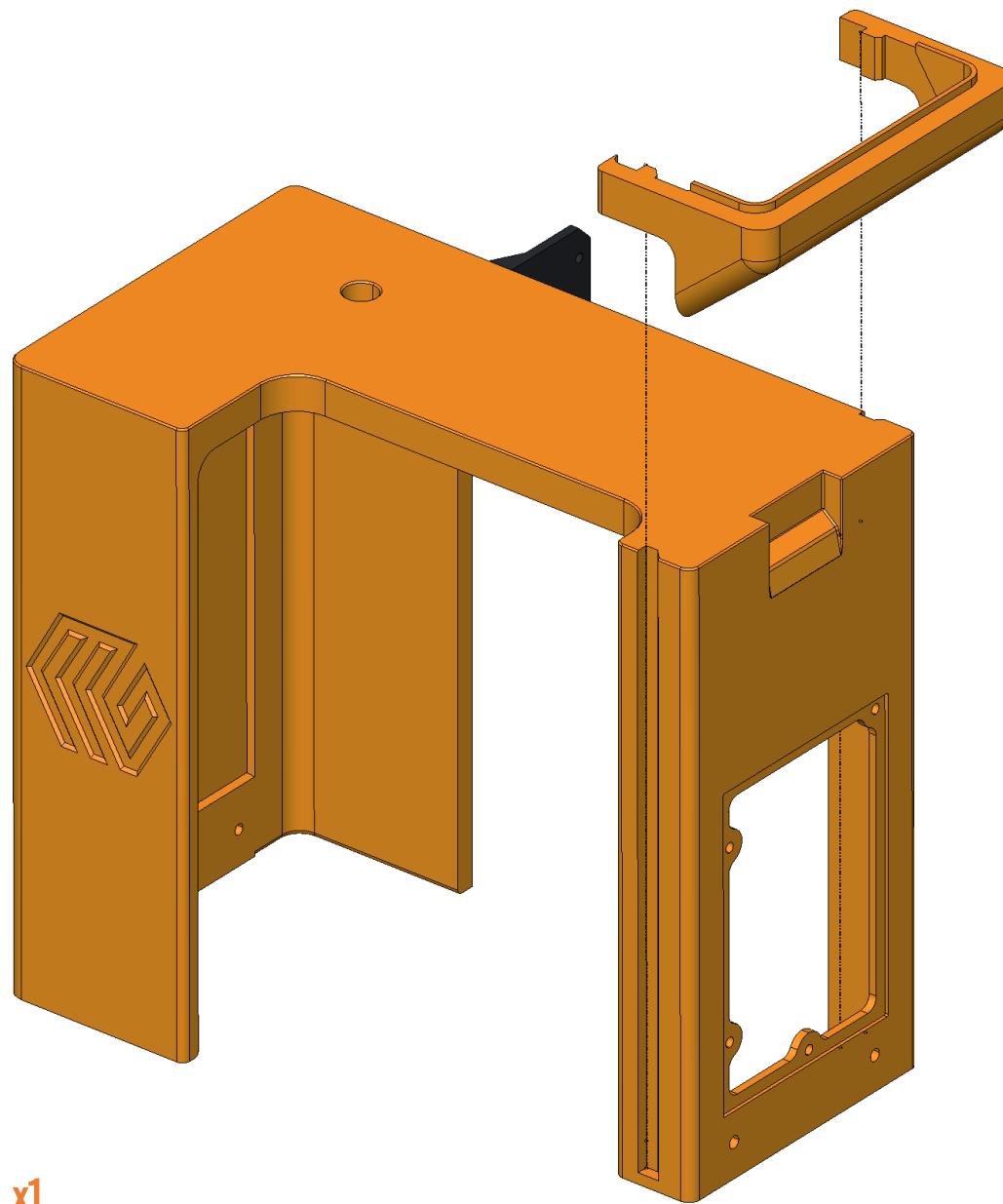


200mm Linear Rod x2

Spin Lead Screw as it goes into the Brass Nut.

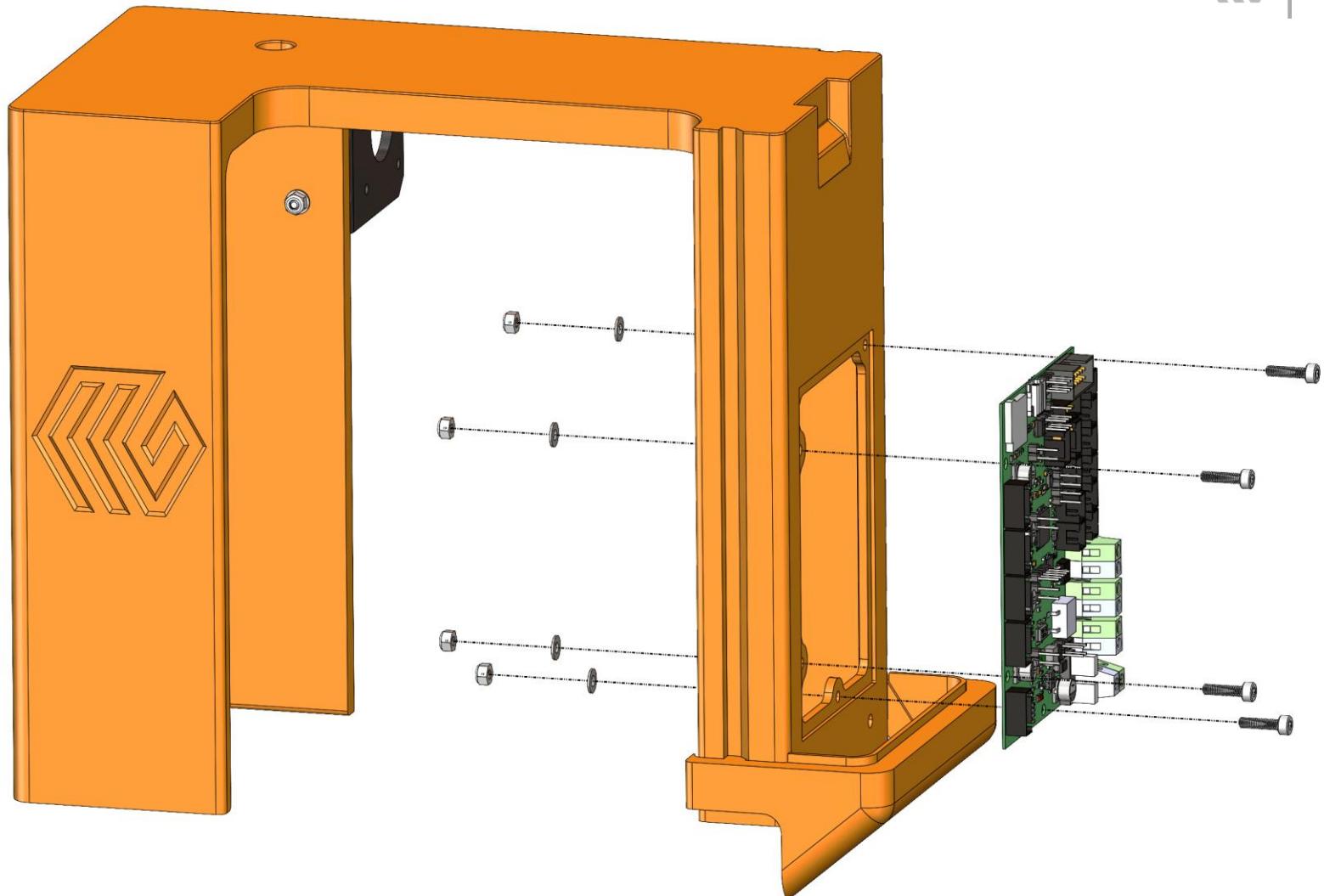


Top	x1
Extruder Bracket	x1
M3x14	x4
M3 washers	x8
M3 nuts	x4

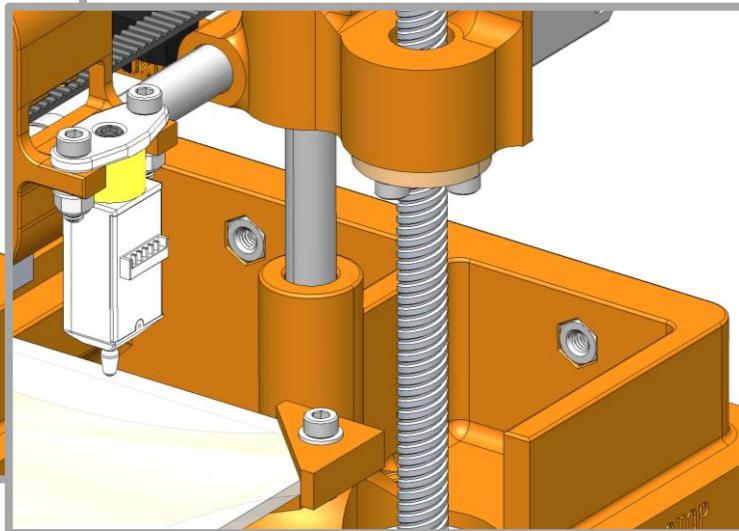
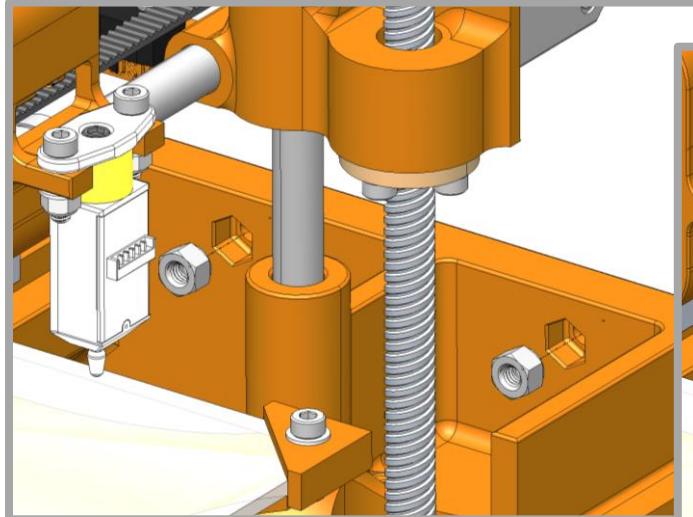


Electronic Case Base

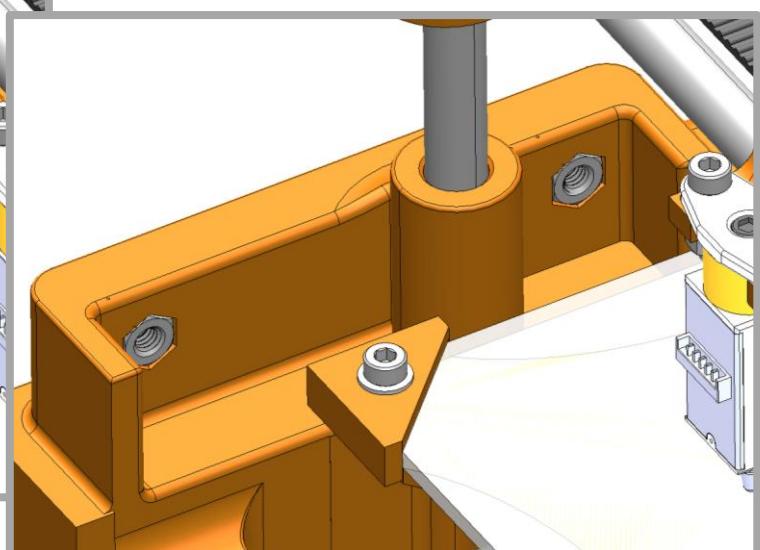
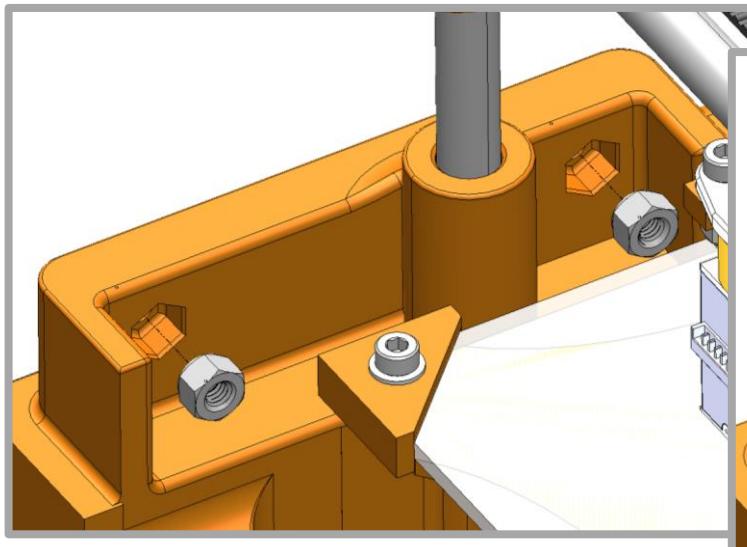
x1



SKR Mini Control Board	x1
M3x12	x4
M3 washers	x4
M3 nuts	x4

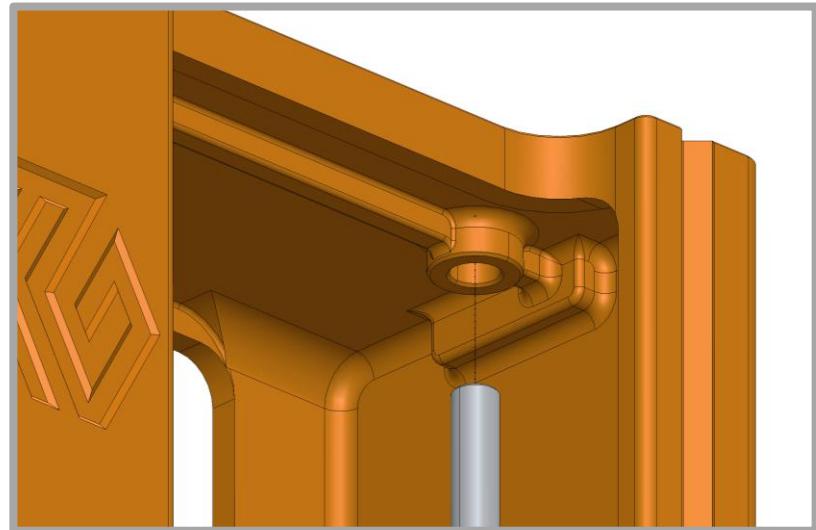
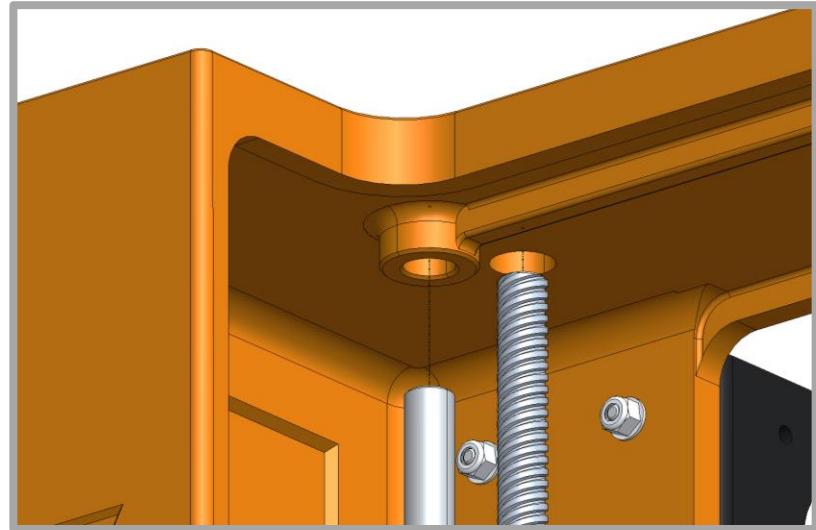
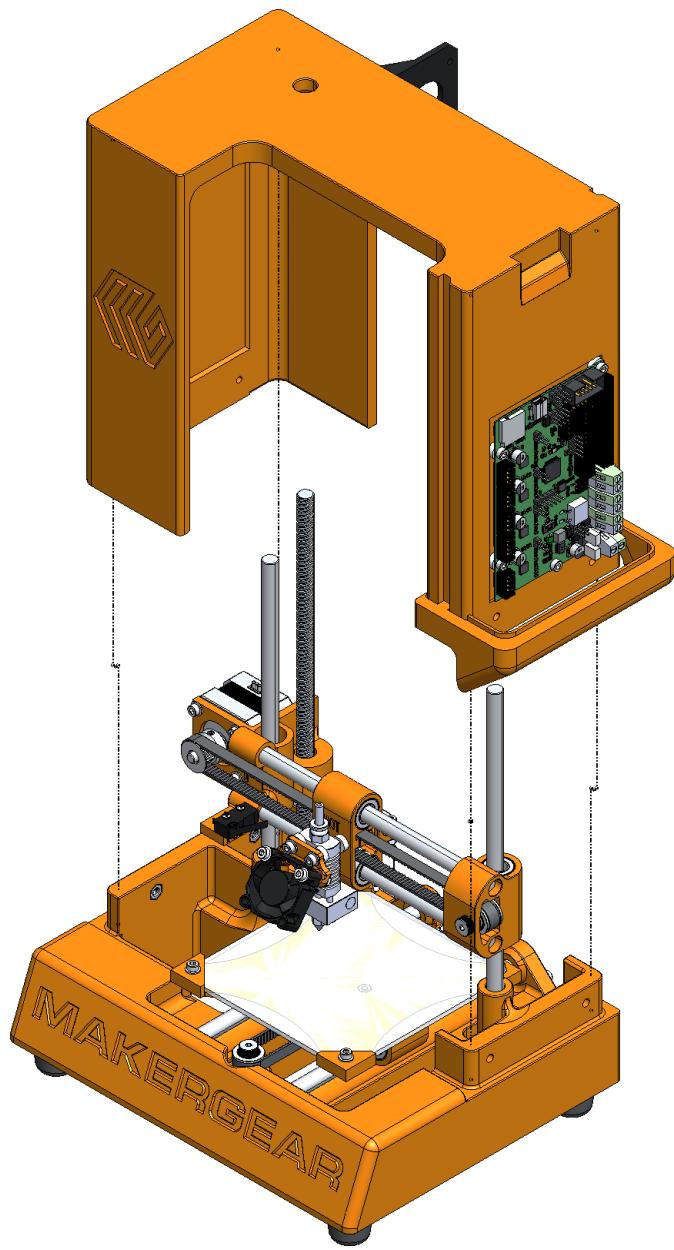


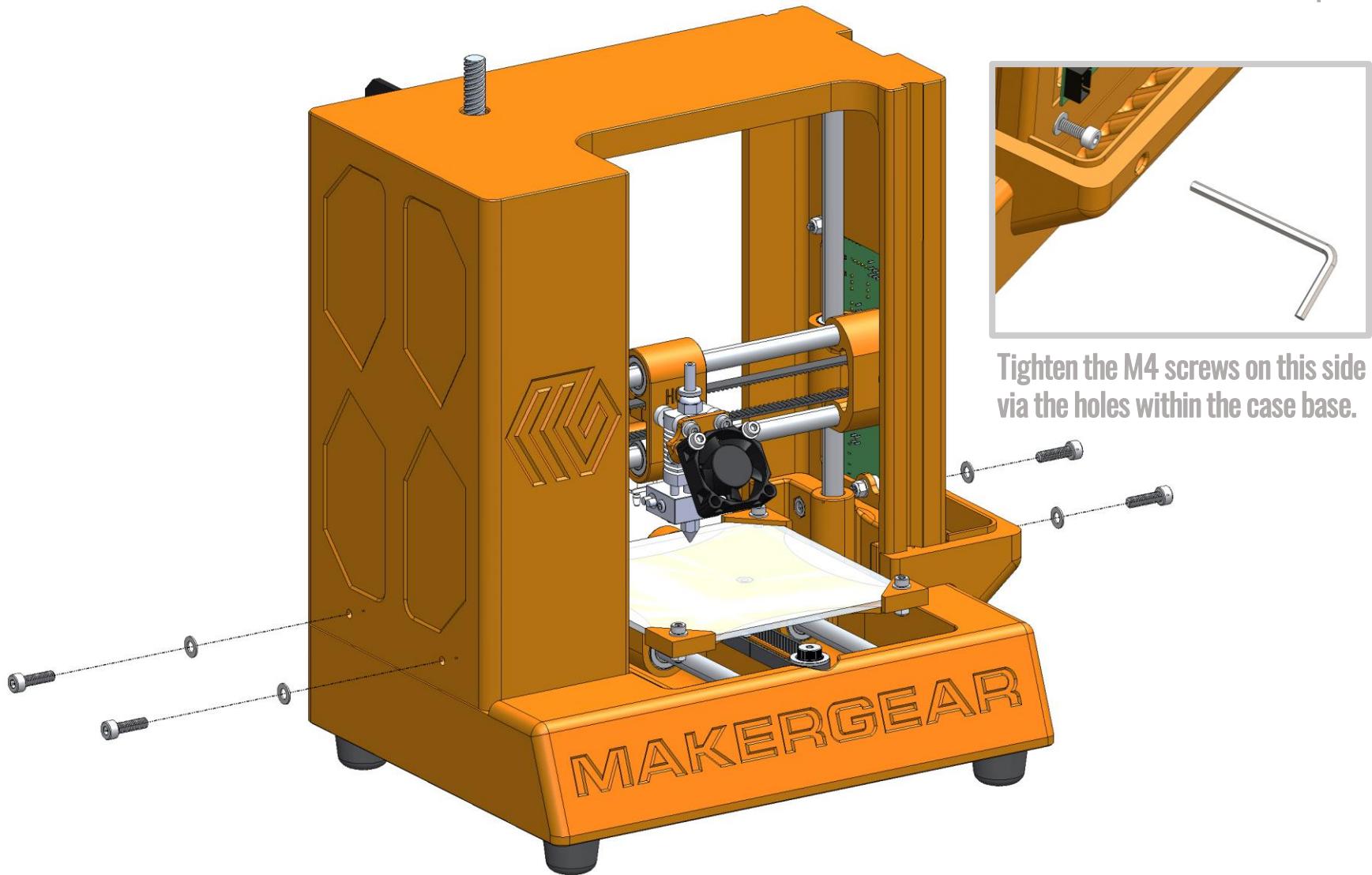
Insert M4 nuts into the Base Assembly.



M4 nuts

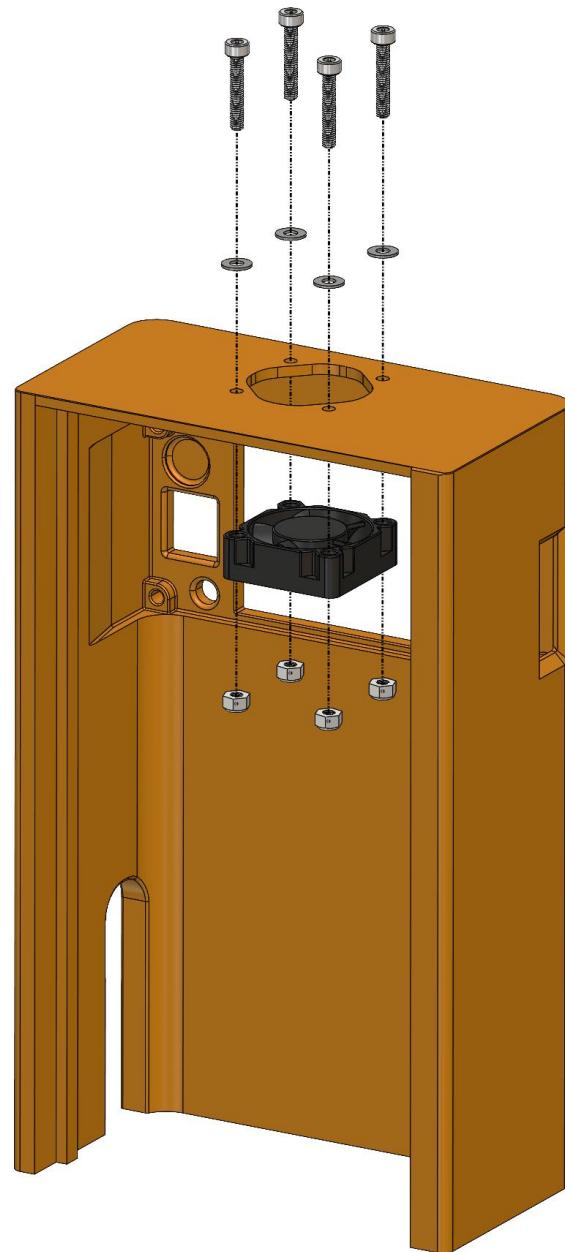
x4





M4x14 x4
M4 washers x4

Tighten the M4 screws on this side via the holes within the case base.



Electronics Case

x1

Cooling Fan

x1

M3x18

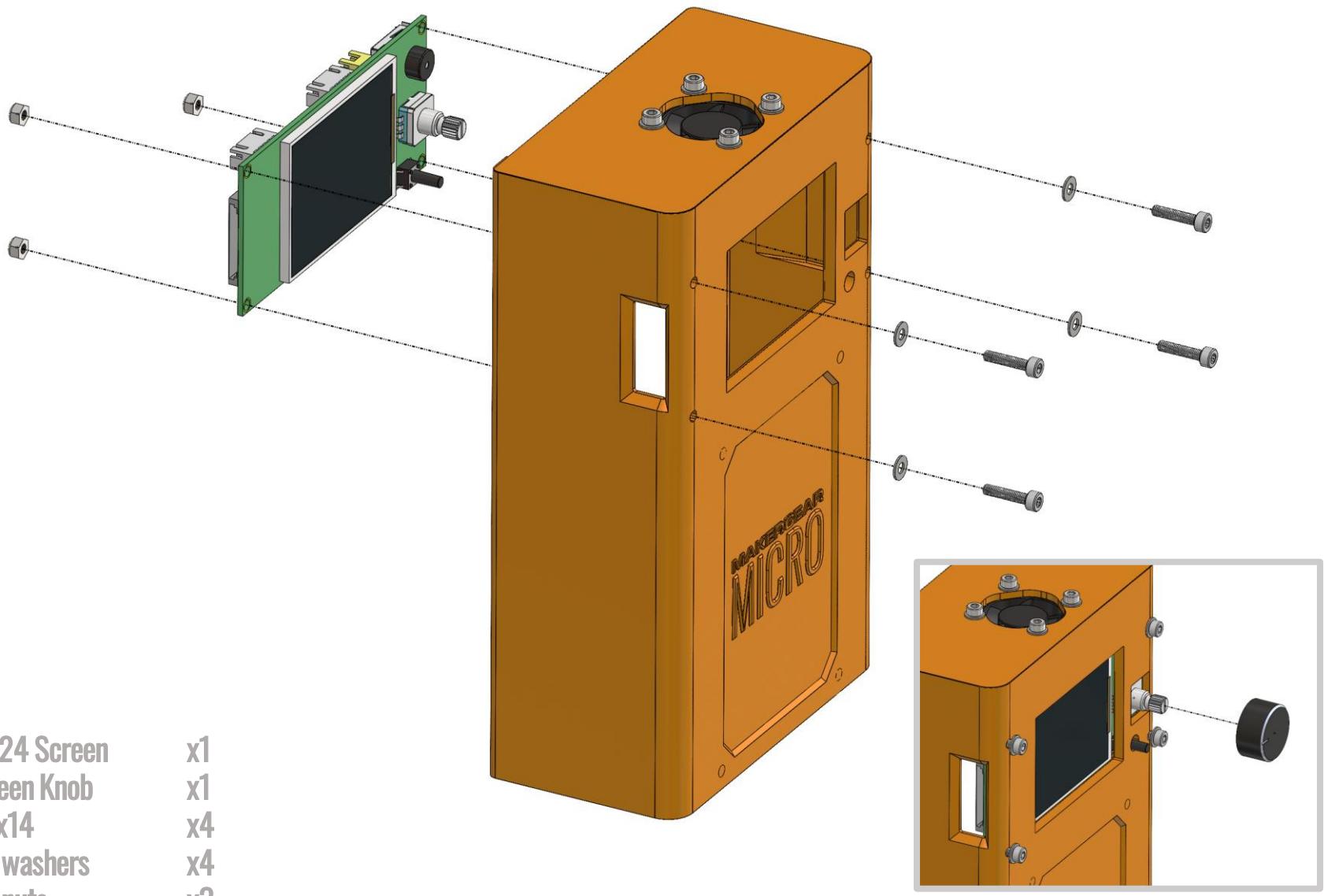
x4

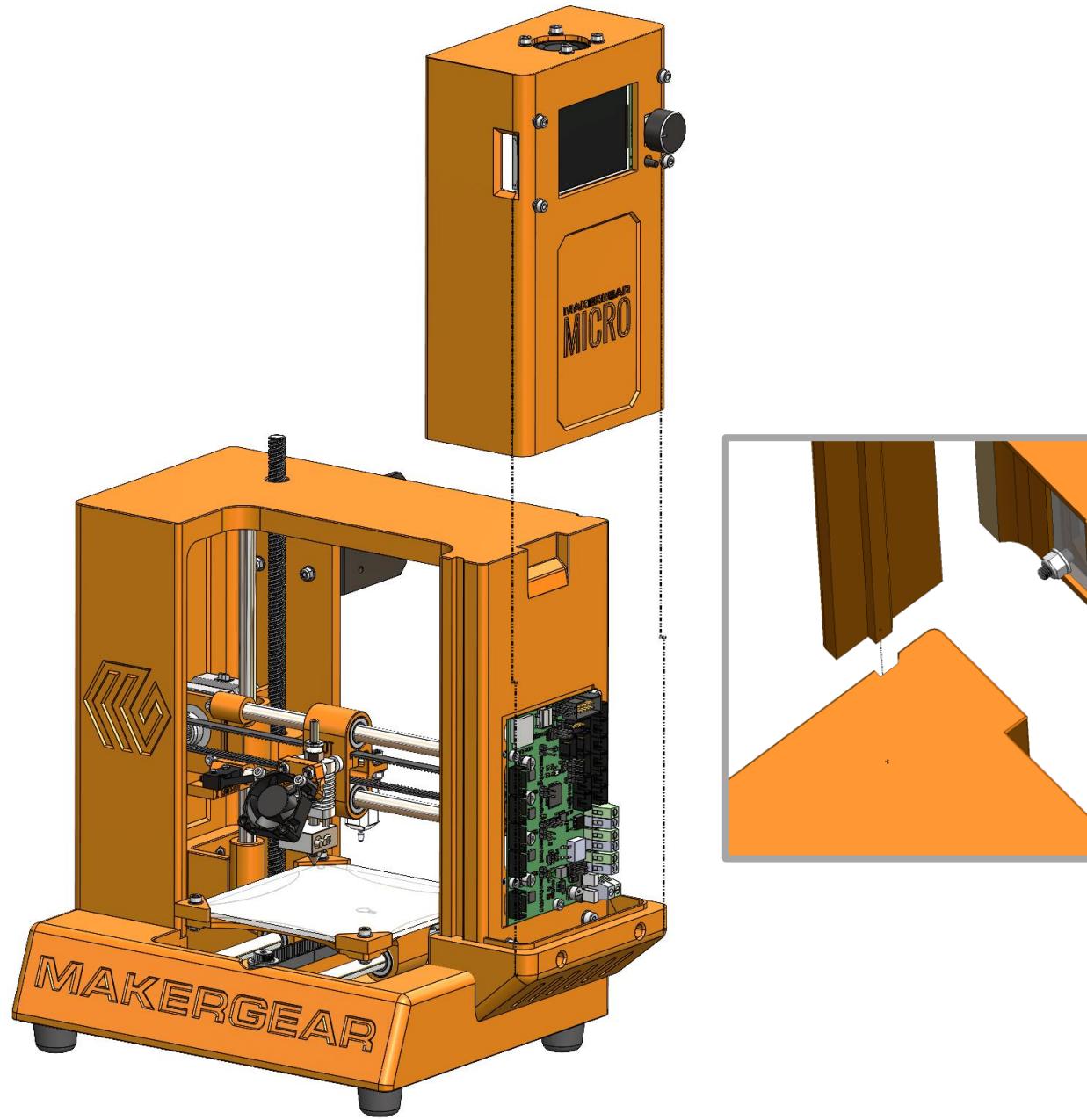
M3 washers

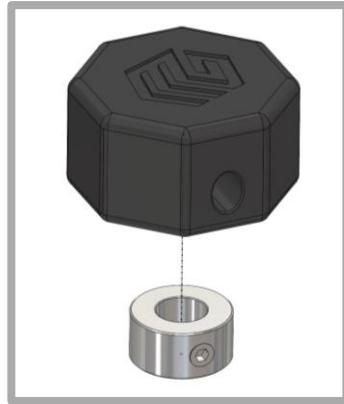
x4

M3 nuts

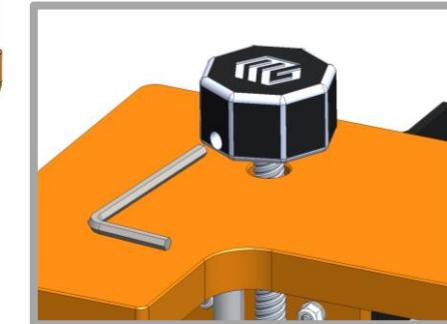
x4







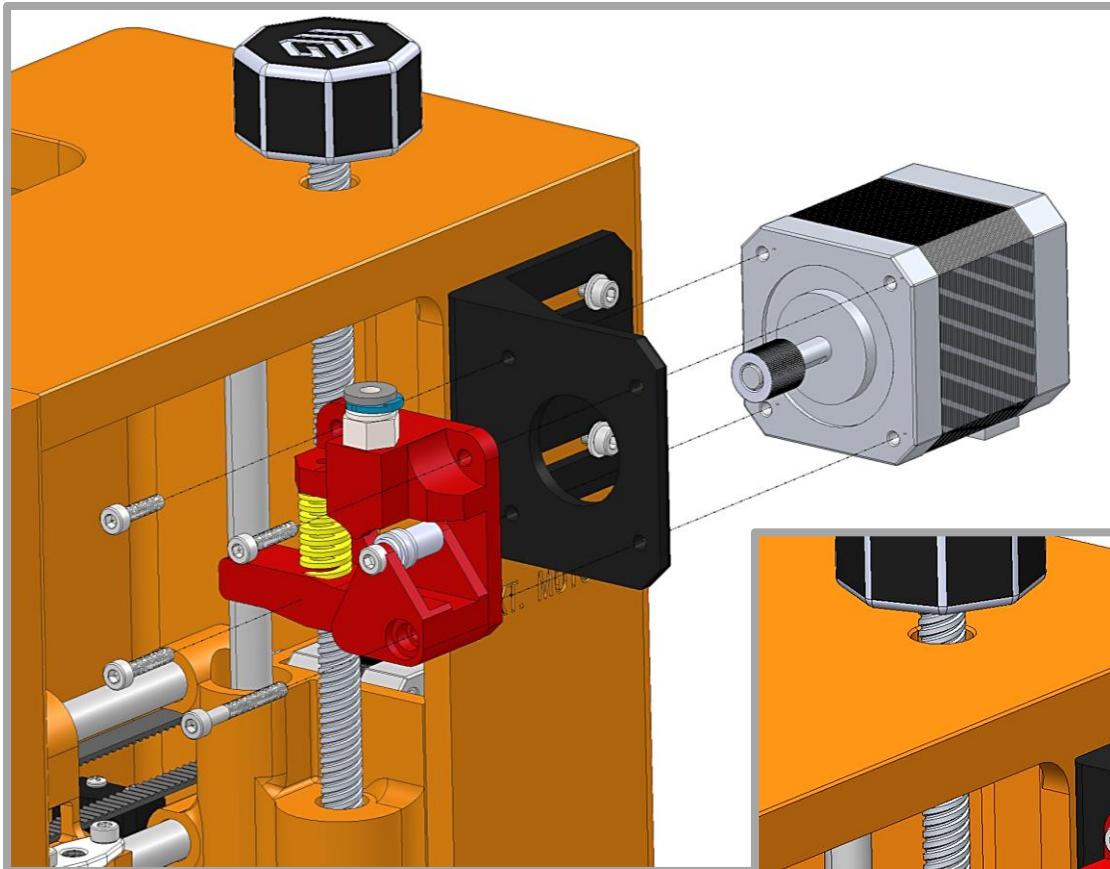
Insert Shaft Lock Collar into Z Knob with holes aligned. This needs to be a tight fit.



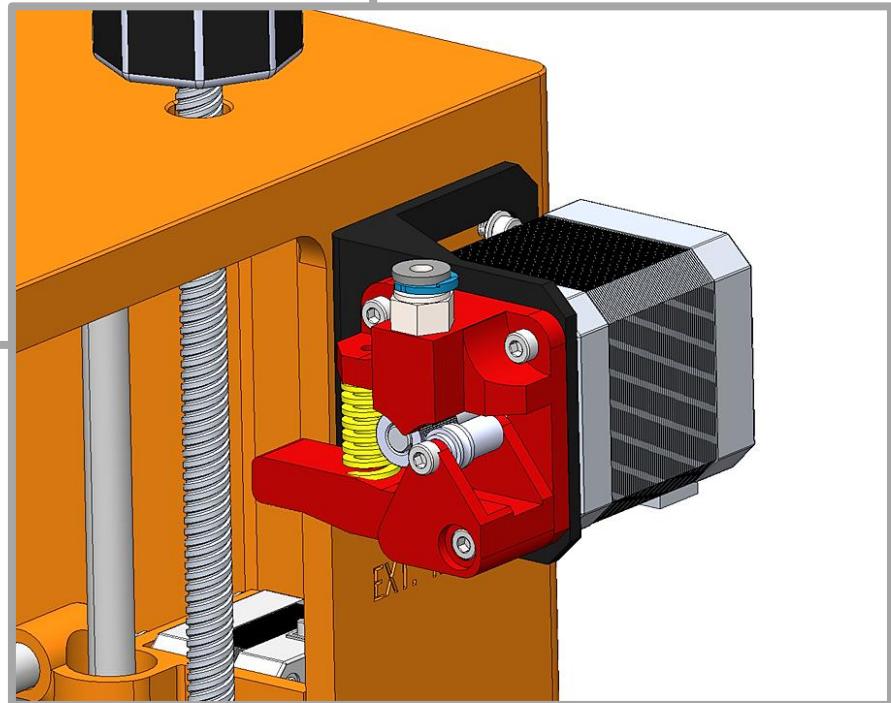
Z Knob
8mm Shaft Lock Collar

x1
x1

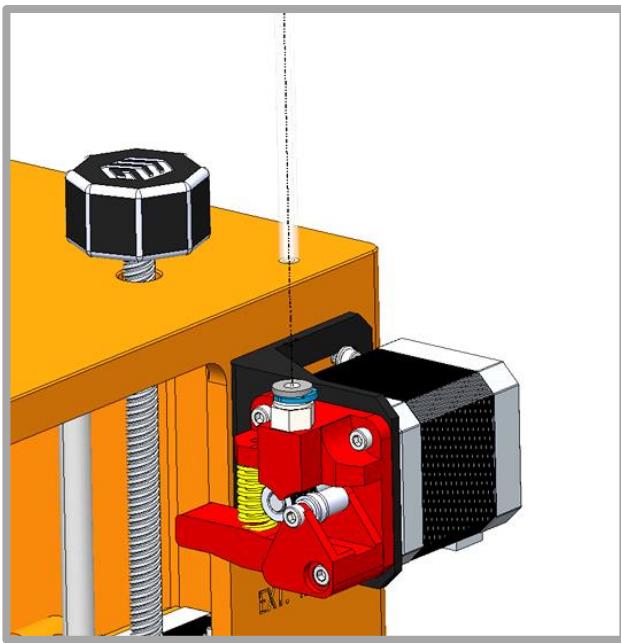
Use Allen Wrench to Tighten Set Screw.



Use M3 screws provided with the Filament Drive



Nema 17	x1
Filament Drive	x1
M3x18	x1
M3x10	x3



Insert Filament Guide Tube into the Quick Connect of the Filament Drive.

