VZBoT ALU Z Manual

About

This manual is intended for the aluminum parts for VZ330 and VZ235 as sold by F3D-Racing and Mellow. This manual will cover both VZ235 and VZ330 as the parts are mounted the same, mind that they are different in dimention. The aluminum parts are interchangeable with the printed parts, some additional hardware is required. Furthermore some printed parts are required in order to mount your new sexy parts!

https://f3d-racing-fdm.myshopify.com/collections/vzbot-vz330

https://mellow.nl.aliexpress.com/store/1531088?spm=a2g0o.detail.1000007.1.67f7726dJRpvIK\

*Disclaimer: VzBoT is an opensource passion project, this manual is not definitive, and we try to make it as polished as possible. Fortunately, we all make errors so use common sense when following this guide.

Print settings:

We recommend printing all parts in ABS, ASA or similar material to be able to withstand the high heat environment in the printer enclosure.

Print settings should always be tuned for your own material and tested for decent strength and layer adhesion.

We recommend the following settings:

For non-moving parts:

Layer height: **0.2mm**

Layer with: **0.4 to 0.6 mm**

Number of walls: **4**

Infill percentage: **40 to 50 %**

Top/bottom layers: **5**

For moving parts:

Layer height: **0.2mm**

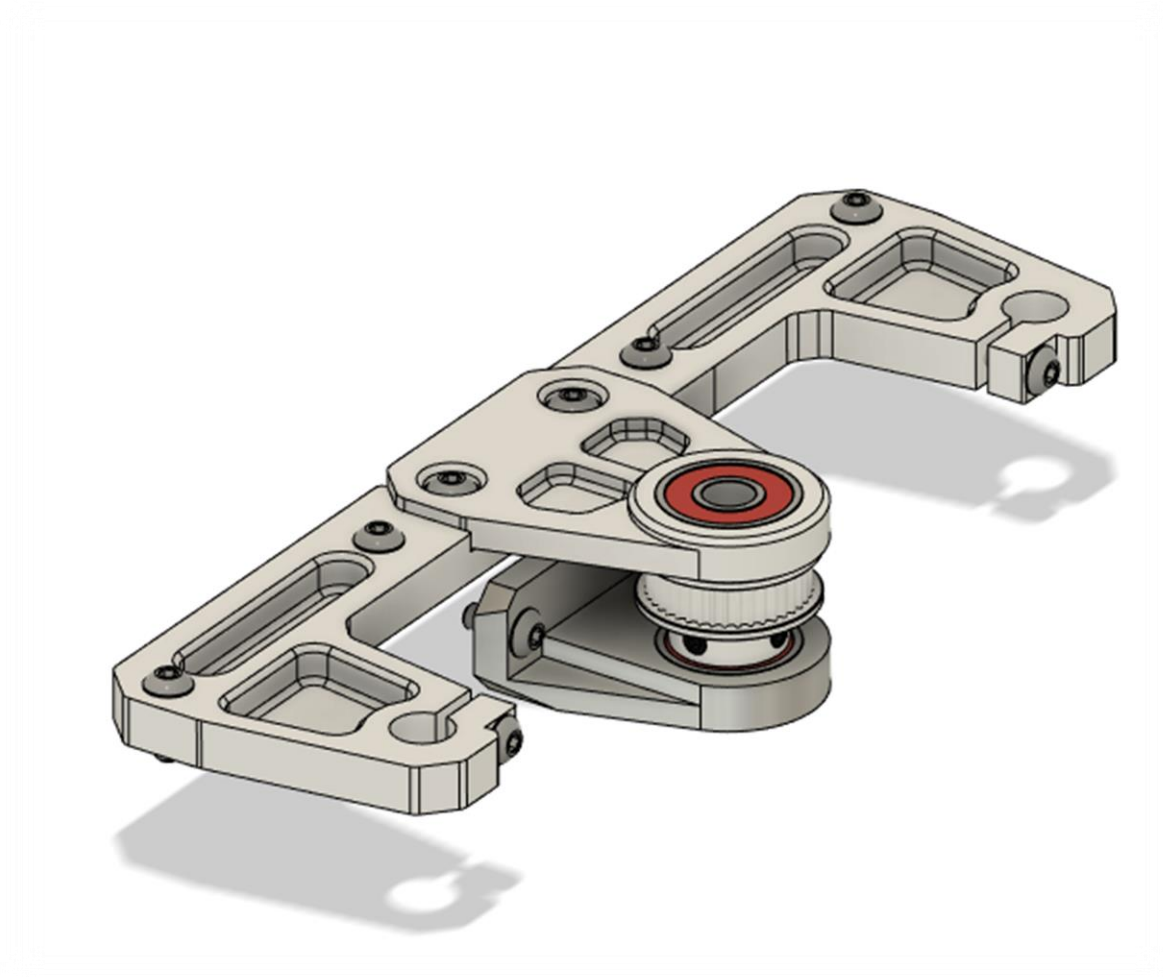
Layer with: **0.4 to 0.6 mm**

Number of walls: **4**

Infill percentage: **30 to 40 % depending on your material**

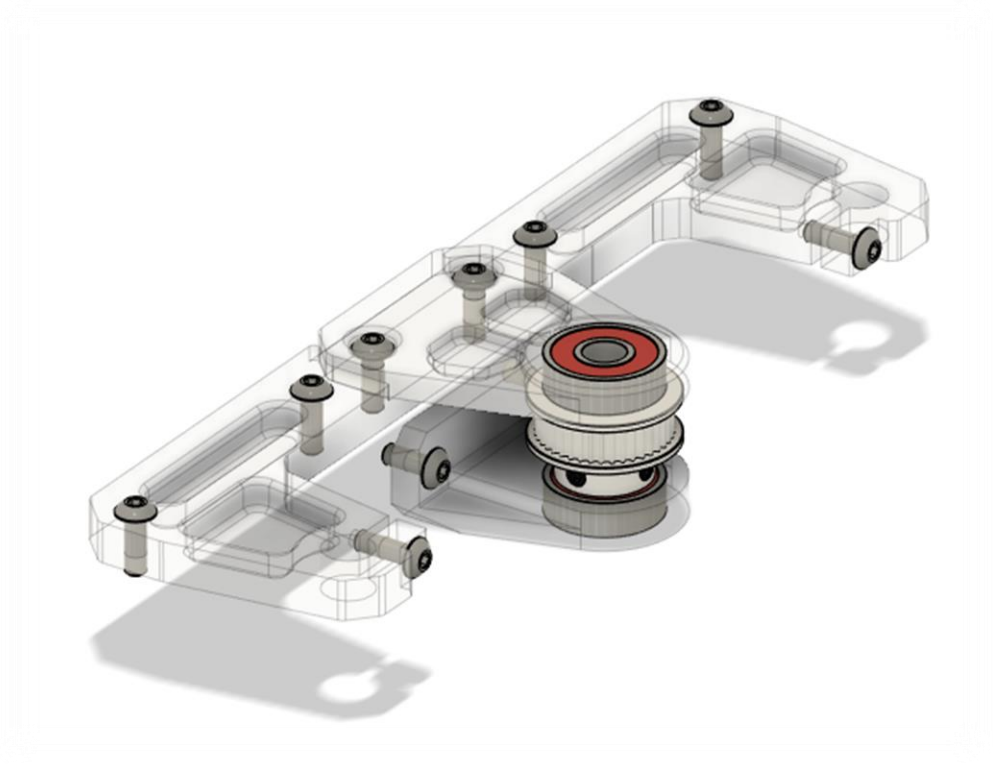
Top/bottom layers: **5**

Lower rod & leadscrew bracket



Bom:

Material	Quantity	Notes
10mm M4	4	
12mm M4	16	
608-2RS (skateboard) bearing	4	
GT2 40T 8mm bore Pulley	2	
300mm 10mm rods	4	
Belt GT2 closed, length 860-870 mm		



STL files:

File name	Amount to print
Z assembly alignment tool (either EVA/VZprinthead)	1

Step 1:

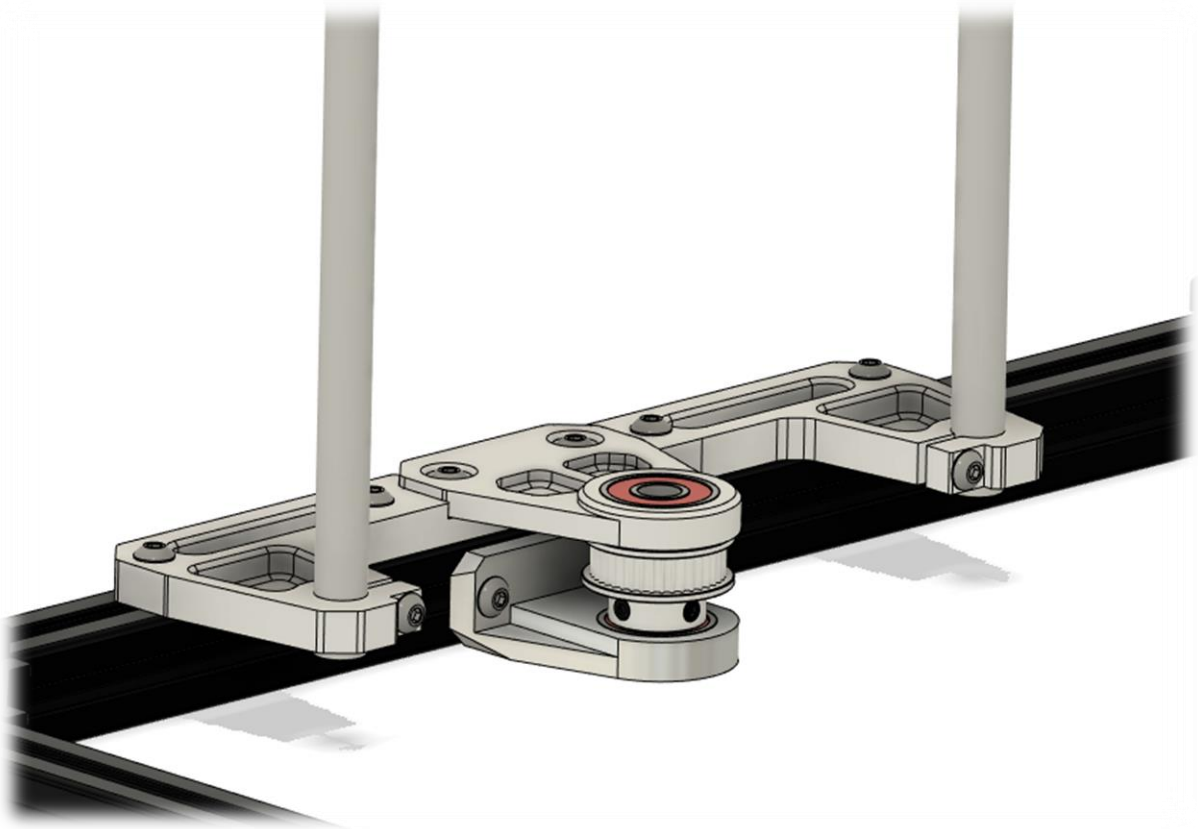
Mount the top bracket with the 12mm M4 hardware to the frame loosely. Then mount the sliding rods with 12mm M4 screws and align the assembly to the frame using the printed "Z assembly alignment tool". Be sure to secure all hardware. Be sure to either insert 2 T-nuts underneath the center two holes for the top leadscrew bracket or immediately mount the top bracket.

Step 2:

Mount the lower leadscrew bracket, using 2x 10mm M4 screws, loosely to the frame approximately in the correct position relative to the top bracket.

Step 3:

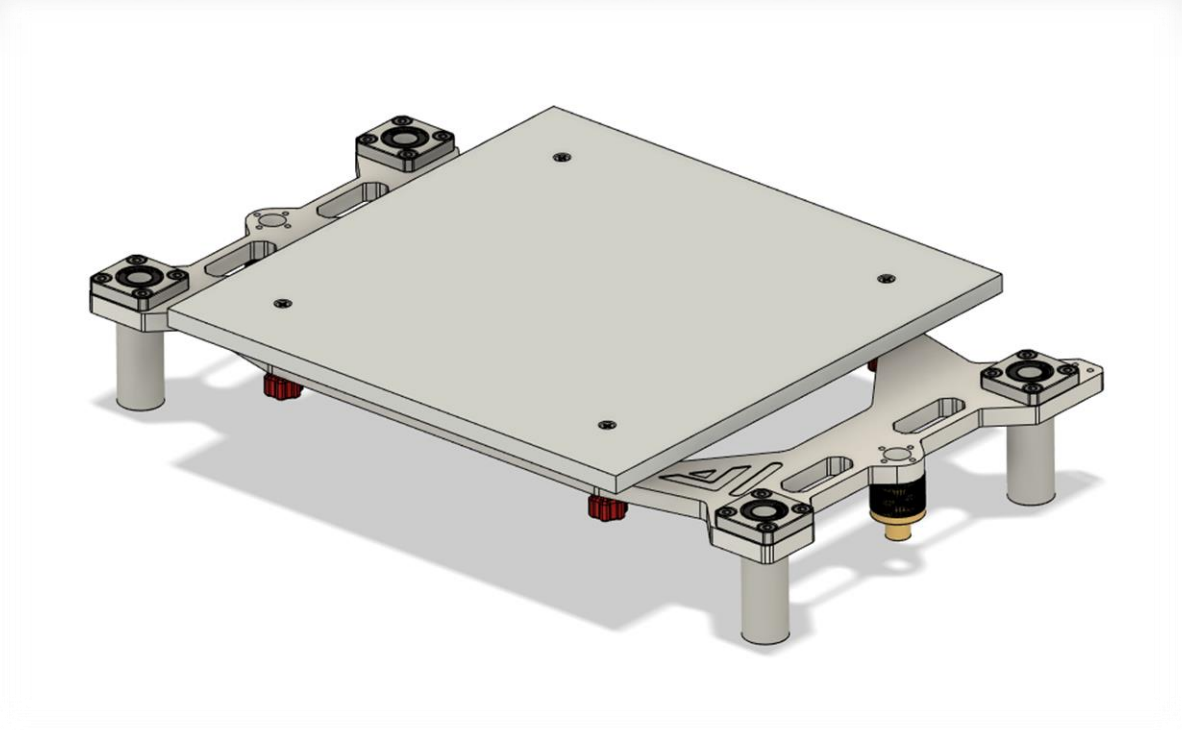
Mount the top leadscrew bracket to the assembly using 12mm M4 screws (skip when done in step one). Insert the pulley with the closed belt and insert the leadscrew. Then tighten the grub screws on the pulley. Lastly while making sure the leadscrew is perfectly straight up tighten the screws on the upper and lower leadscrew brackets. This can be checked by measuring the distance on both sides between the leadscrew (top position) and the 10mm Rods.



Step 4:

Repeat steps 1 through 3 for the other side.

Bed assembly



Bom:

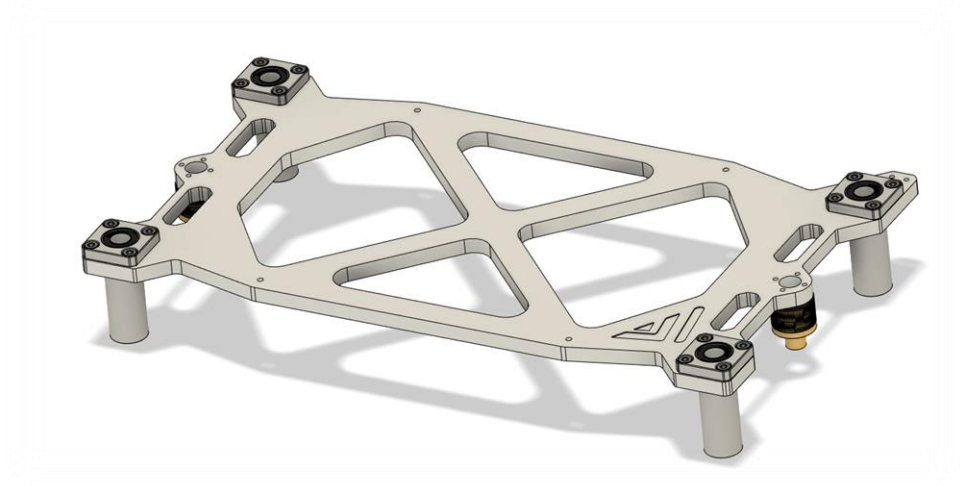
Material	Quantity	Notes
M4 8mm	16	
M3 8mm	16	
M3 50mm	4	Countersunk for the bed
M3 nuts	12	
LMK10LUU	4	
Oldham coupler	2	Optional but highly advised
Leadscrew nut	2	

STL files:

File name	Amount to print
Bed level adjustment knobs	4
Oldham couplers	optional

Step 1:

Mount the LMK10LUU using the M4 hardware to the bed frame. Then mount the Oldham couplers with the leadscrew nuts together with M3 hardware and mount that assembly to the bed frame using M3 hardware



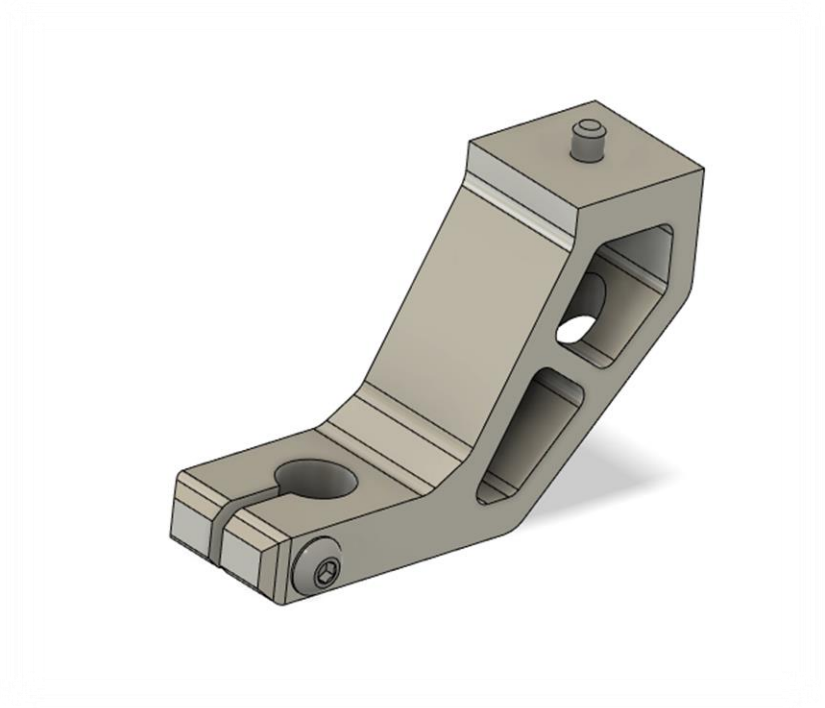
Step 2:

Place the bed assembly in the rods and leadscrew.

Step 3:

Mount the bed plate to the bed frame using the 50mm countersunk M3 screws. When using a cast aluminum bed make sure it is well prepped before mounting. It is recommended to always be safe and inform yourself properly on how to apply a AC silicon heating pad.

Top rod mounts

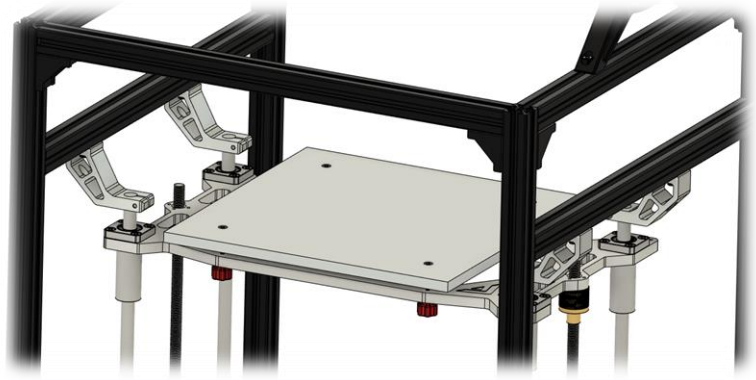


Bom:

Material	Quantity	Notes
M4 10mm	4	
M4 20mm	4	
M4 T-nut	4	

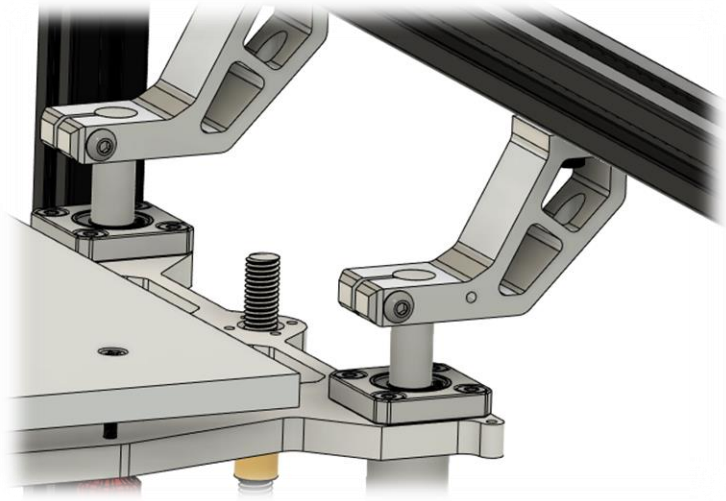
Step 1:

Mount the 10mm M4 screws and T-nuts to all top rod mounts and loosely turn in the 20mm M4 screws in the clamping mechanism.



Step 2:

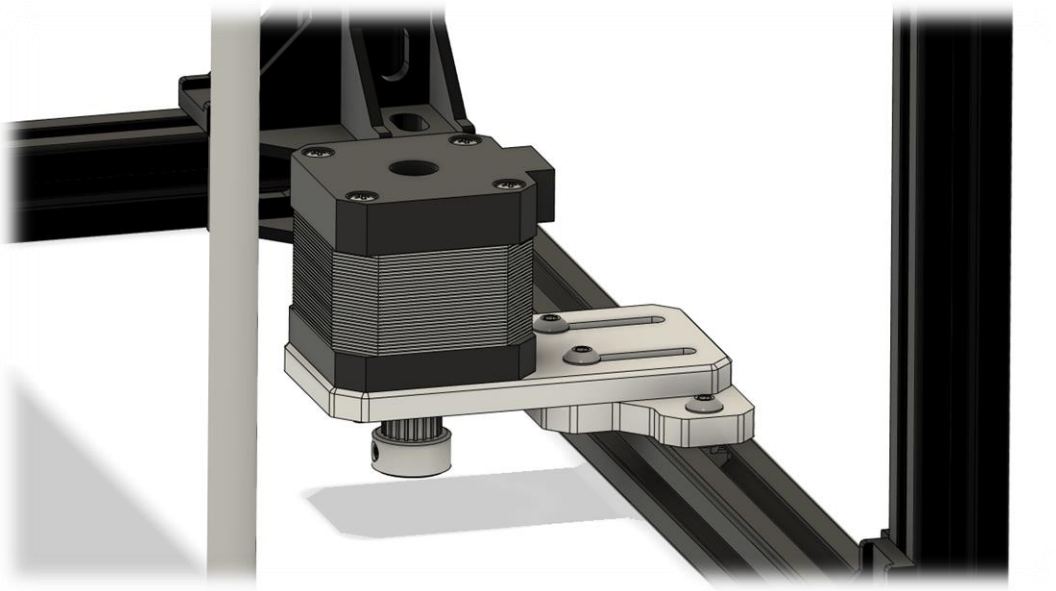
Mount all top rod mounts to the rod first. Make sure the rod mount with the extra hole (for the Z limit switch) is in the back right of the printer like shown below. Finally tighten the rod holders to the frame with the pre-inserted M4 hardware.



Step 3:

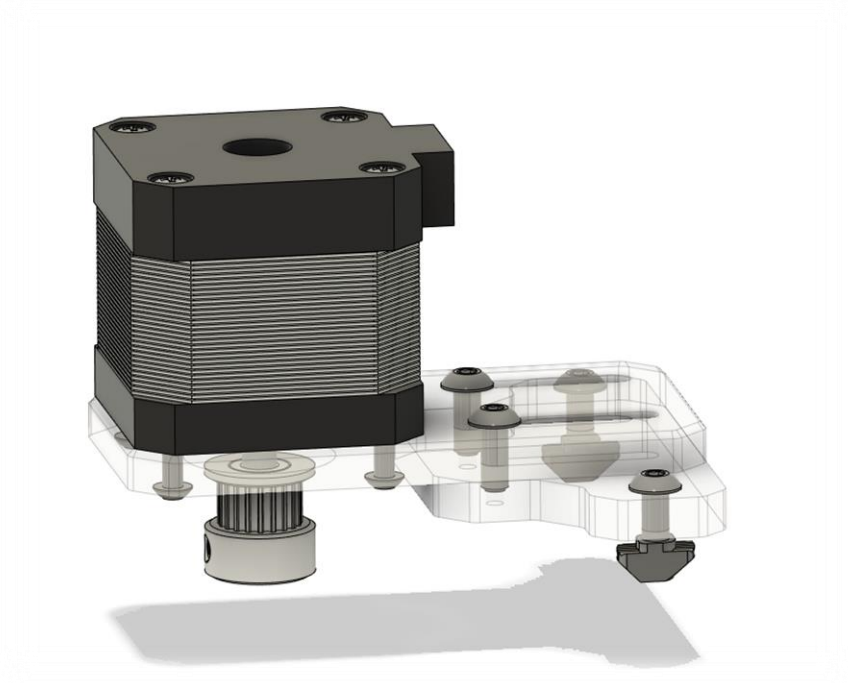
After installing check the movement of the bed assembly by turning the leadscrews. This should operate smoothly. If not, place the bed assembly in the top most position, untighten all top rod holders and retighten to align the rods.

Single z motor bracket



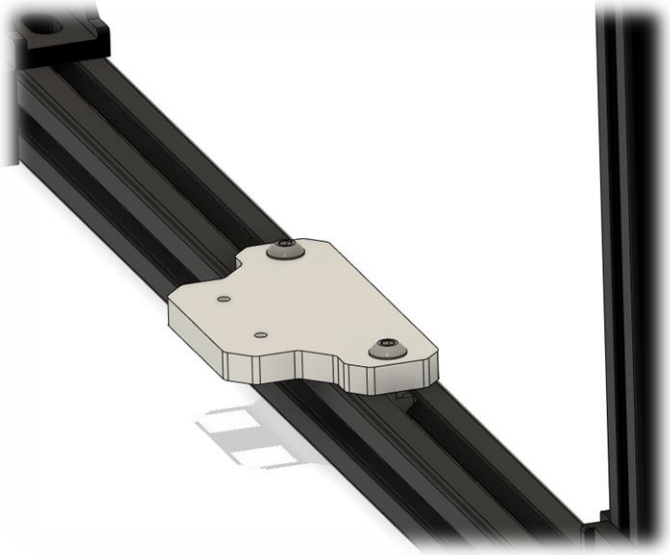
Bom:

Material	Quantity	Notes
M3 10mm	4	
M4 10mm	4	
M4 T-nut	2	
20t GT2	1	
NEMA 17 stepper	1	



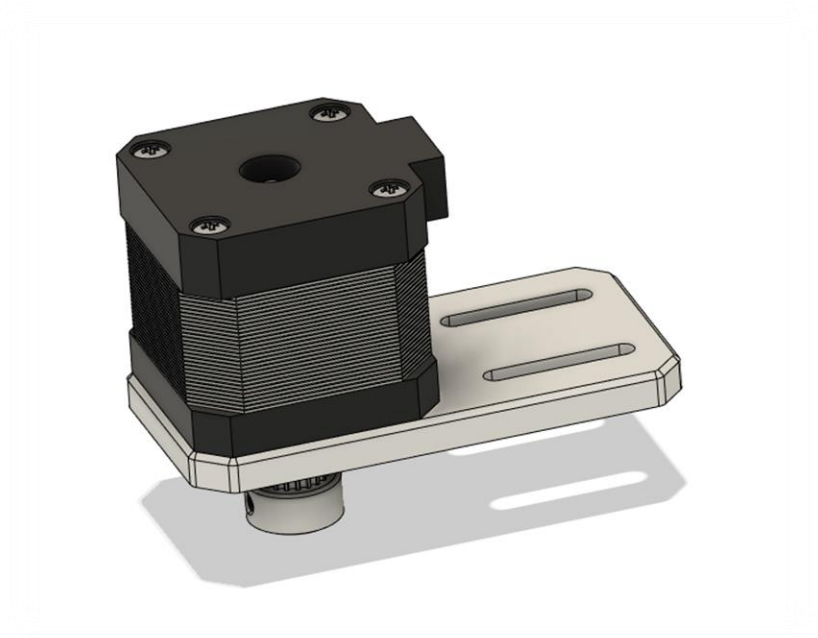
Step 1:

Mount the bracket shown below to the frame using the 10mm M4 screws and T-nuts. Make sure it is nicely centered in the middle of the frame.



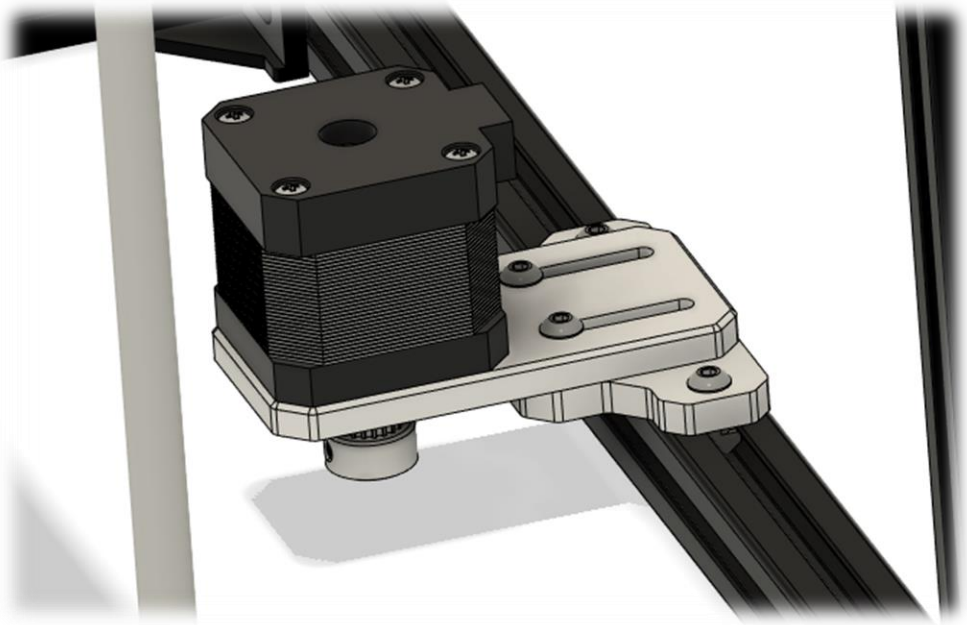
Step 2:

Mount the stepper motor to the top bracket using the 10mm M3 screws. Attach the motor pulley like shown below.



Step 3:

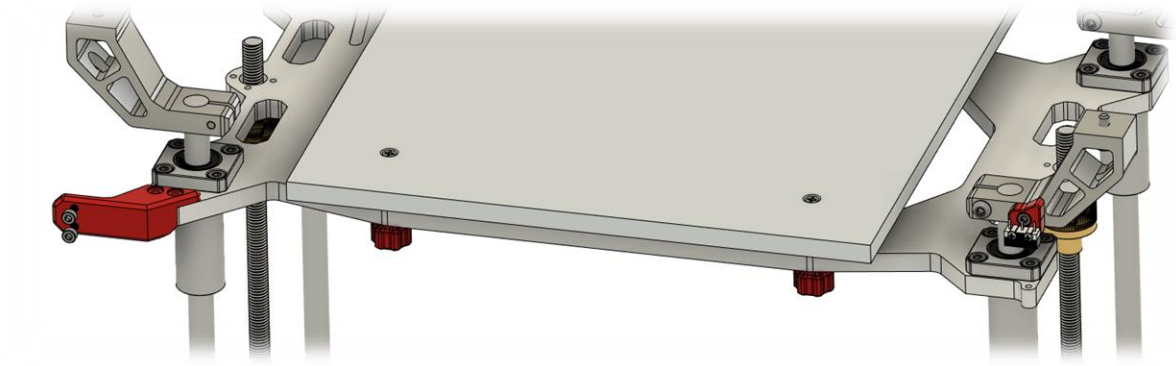
Mount the previous assembly to the bracket on the frame using 10mm M4 screws.



Step 4:

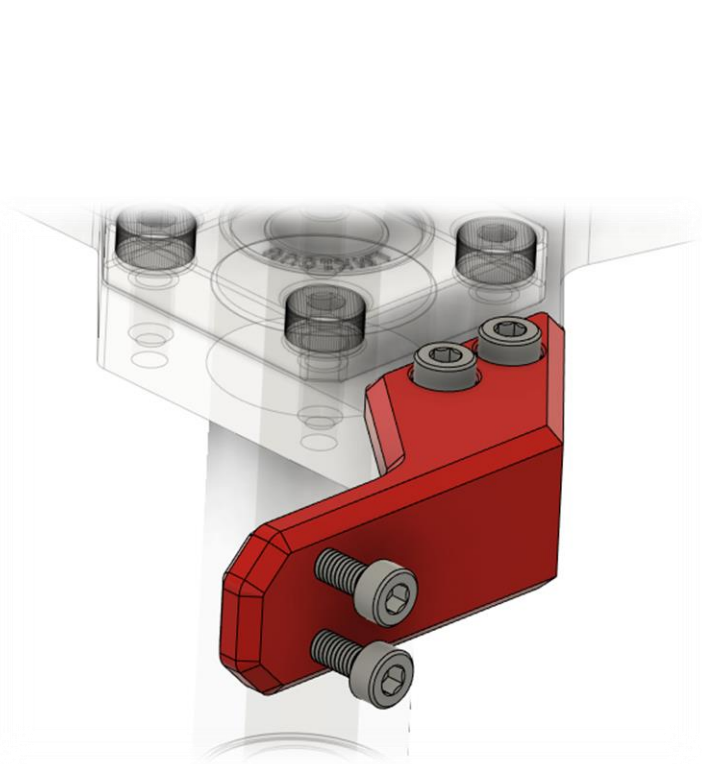
With the motor in the furthest position, loop the belt around the motor pulley and tighten the belt. Be sure to check if the belt is horizontally parallel to the frame for smoothest operation.

Z switch & bed chain



Bom:

Material	Quantity	Notes
M3 10mm	4	
M3 8mm	1	
M2 10mm	2	
M3 40mm	1	
M3 nut	3	
Microswitch	1	

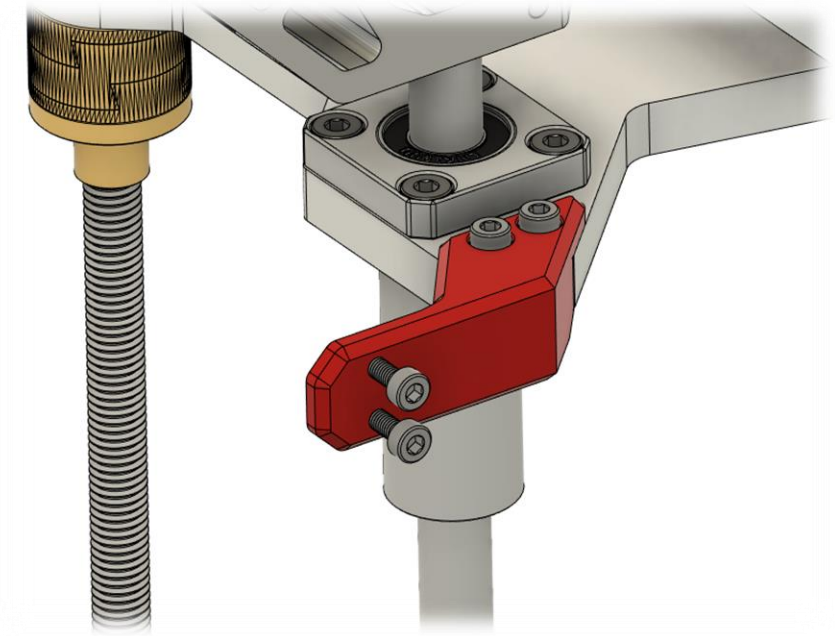


STL files:

File name	Amount to print
Printed z switch adapter	1
Z-chain mount	1

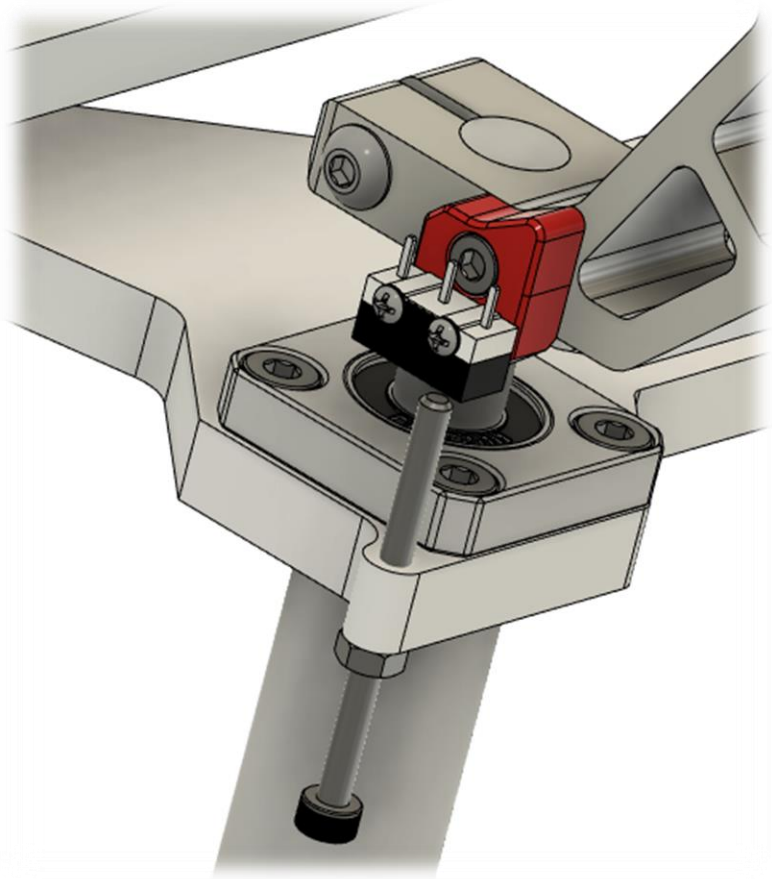
Step 1:

Mount the printed chain mount to the bed frame using the 10mm M3 screws. Then mount the cable chain using 10mm M3 screws and nuts like shown below.



Step 2:

Mount the microswitch to the printed adapter using M2 screws. Then mount the assembly to the top rod holder using the 8mm M3. Finally screw in the 50mm M3 screw and nut like shown below. After setting the correct Z-height using the adjustment screw use the M3 nut to lock the screw in place in order to make sure the screw doesn't drift off position.



Designed and developed by:

The VzBot Team


https://discord.gg/qmMeD6Vt3W


https://www.facebook.com/groups/4098868770205560/


https://github.com/VzBoT3D

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