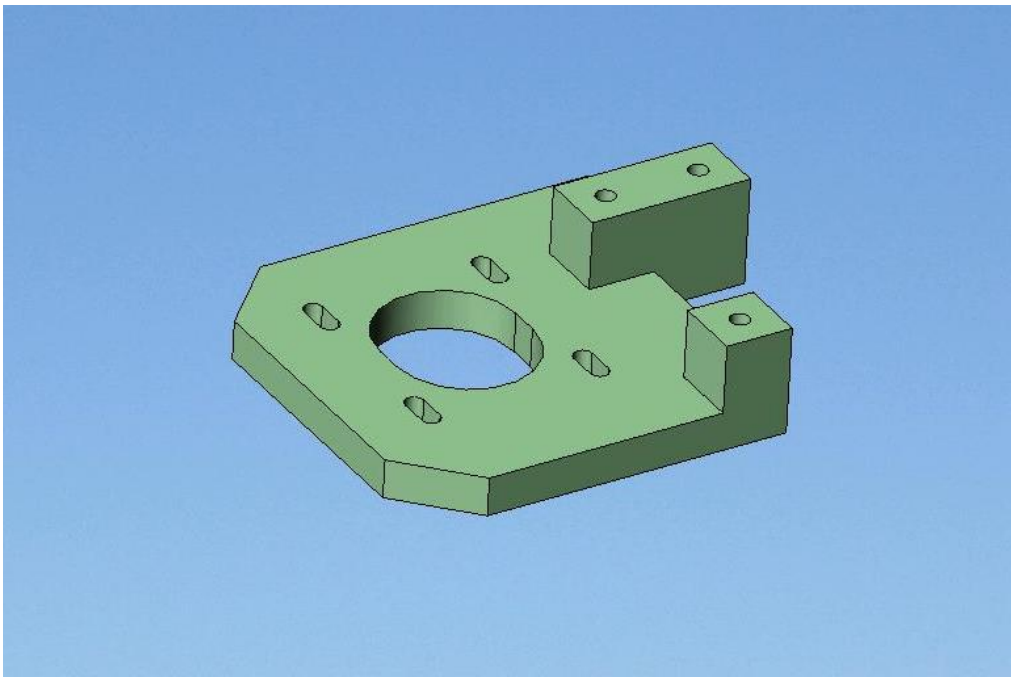
Section 7: **X Axis Left Side**

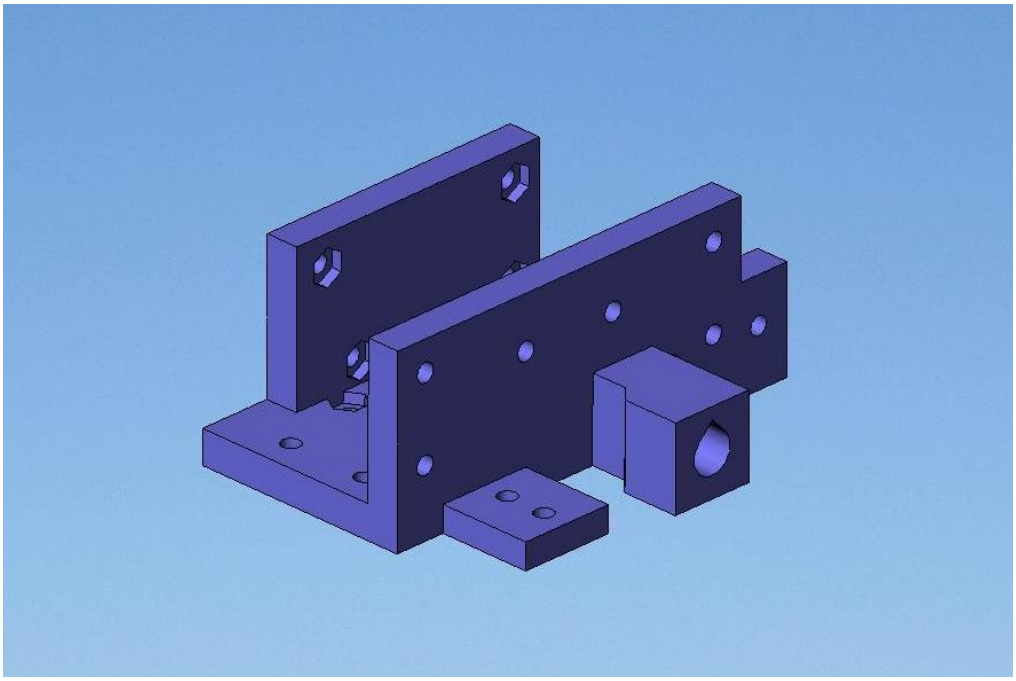
The following is the assembly instructions for the X axis left side assembly. The complete Mendel uses a total of 1 of these assemblies. The bill of materials for this assembly is:

Description	Printed/Made/Purchased	Quantity
ja_z_bearing_mount	Printed	1
ja_x_motor_mount	Printed	1
ja_z_drive_nut_holder	Printed	1
ja_xl_20t_pulley	Printed	1 (1)
ja_360_bearing_assm	Made	2
M8 brass nut	Purchased	2
Spring	Purchased	1 (2)
M3 X 12 SHCS	Purchased	7
M3 Nut	Purchased	7

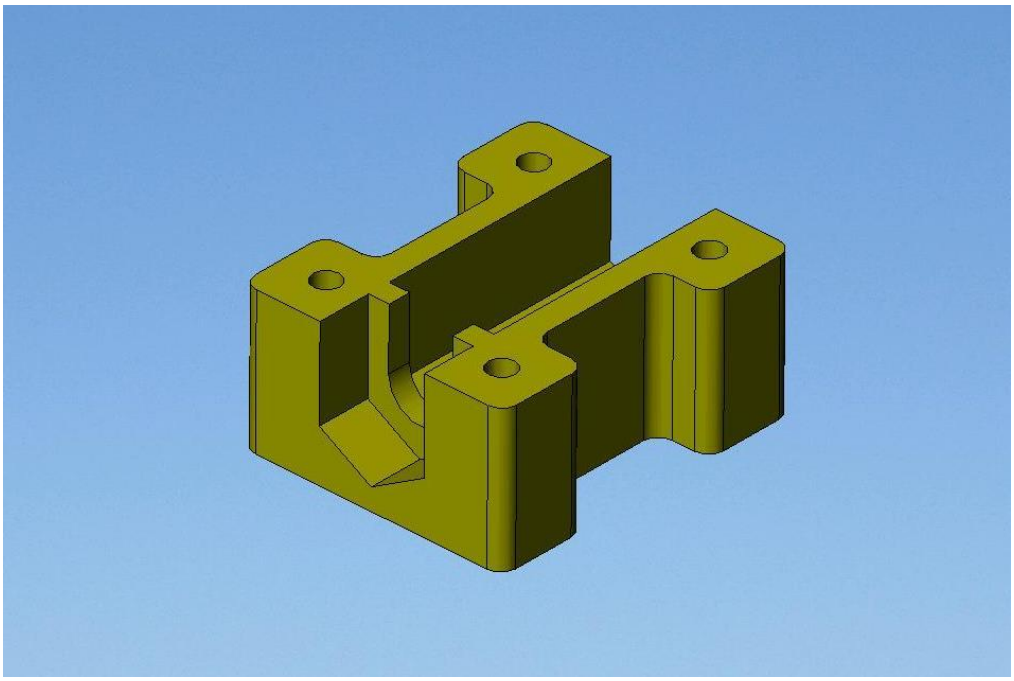
1.) For XL belts. If using T5, use alternate part “ja_t5_20t_pulley”.
2.) Servalite 84XAU or equivalent, purchased from hardware store.



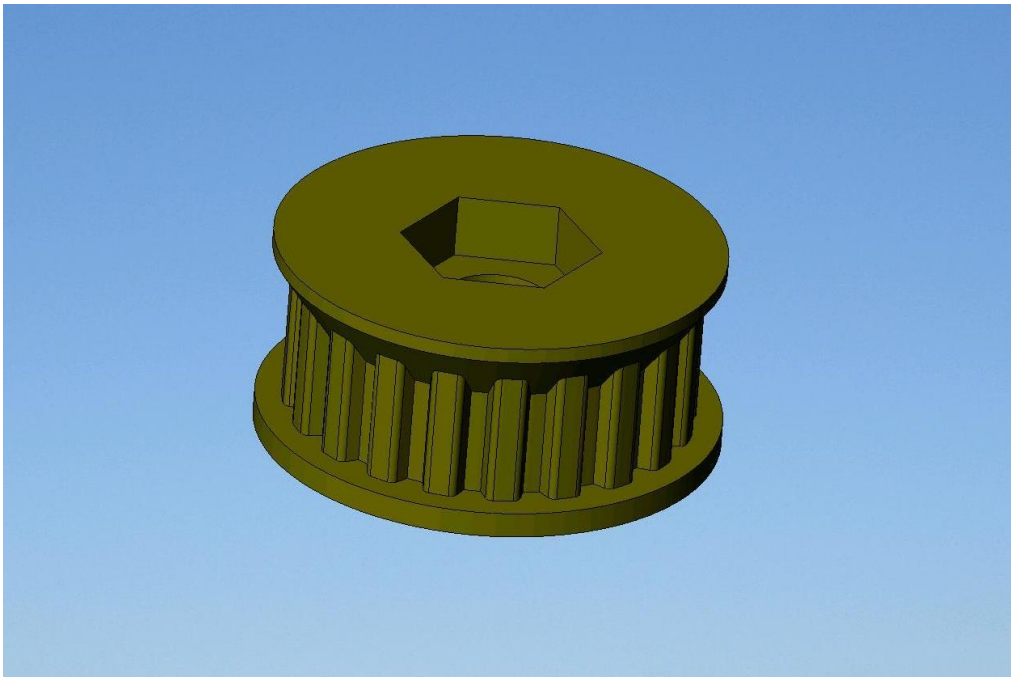
The part :”ja_x_motor_mount” in the build orientation.



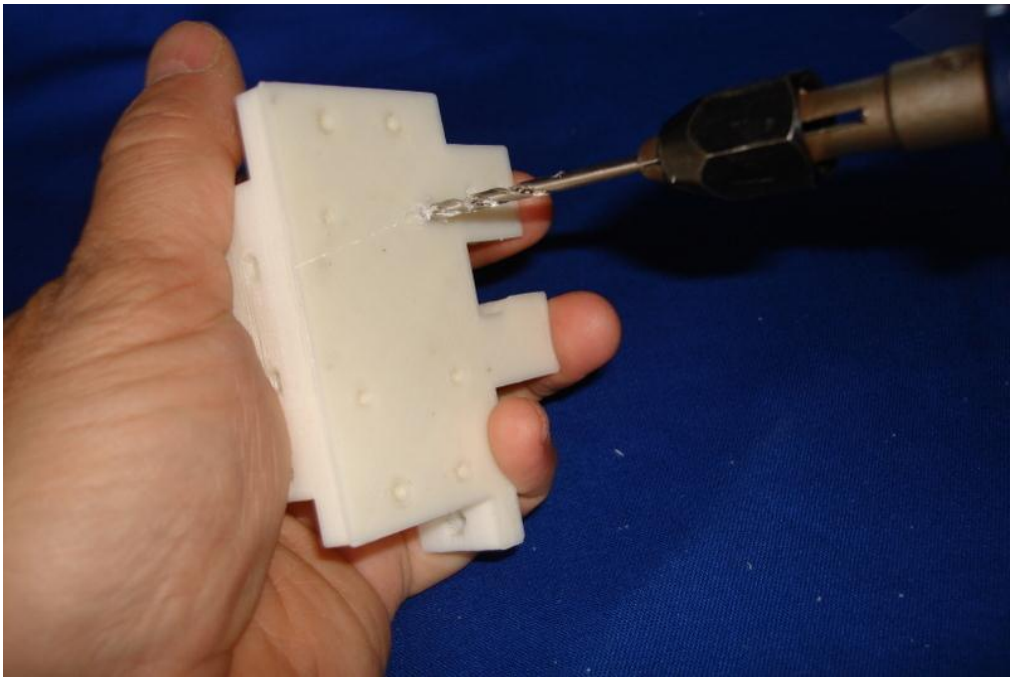
The part “ja_z_bearing_mount” in the build orientation



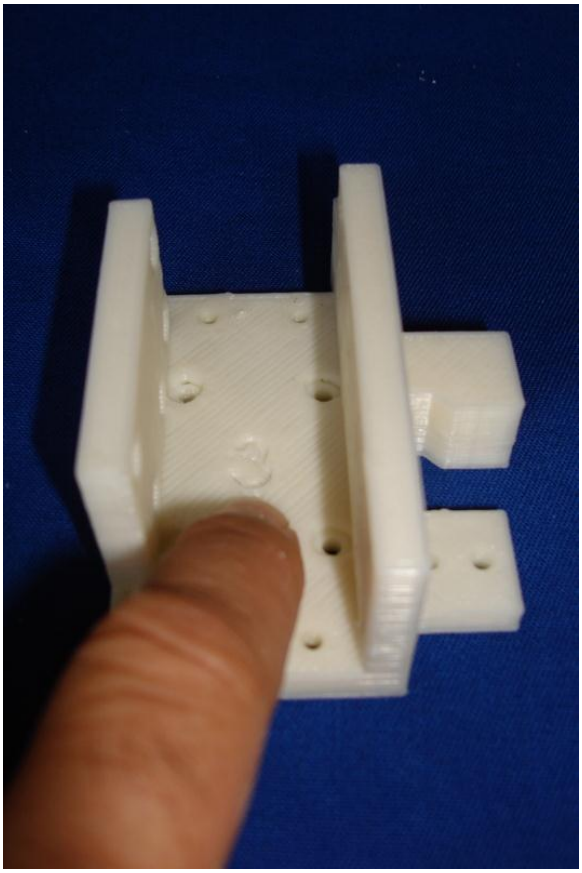
The part “ja_z_drive_nut_holder” in the build orientation



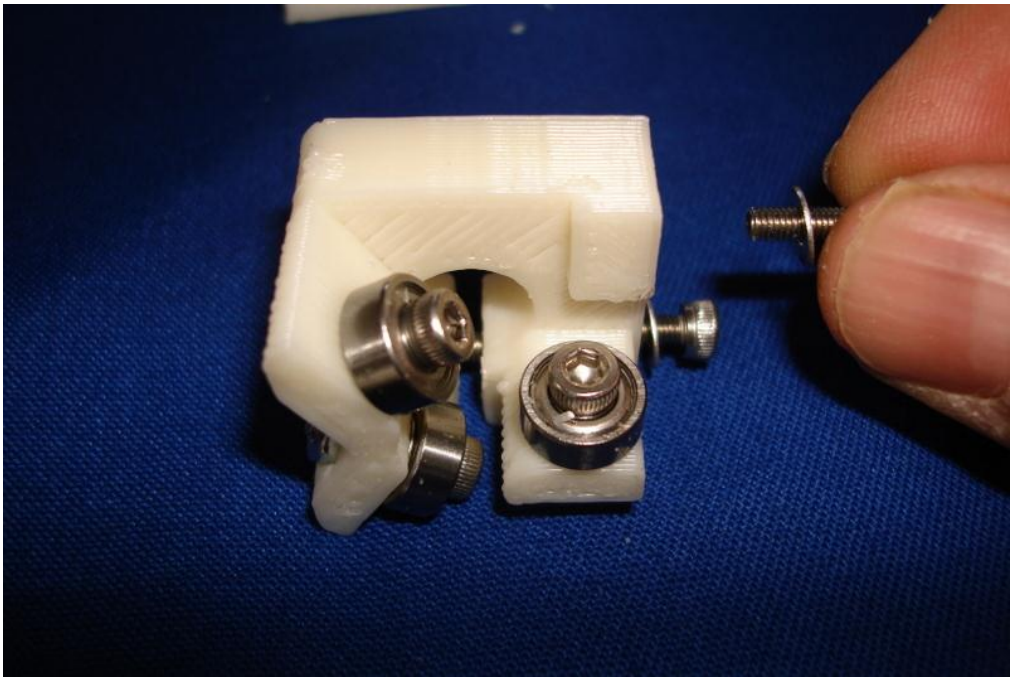
The part “xl_20_tooth_pulley” in the build orientation.



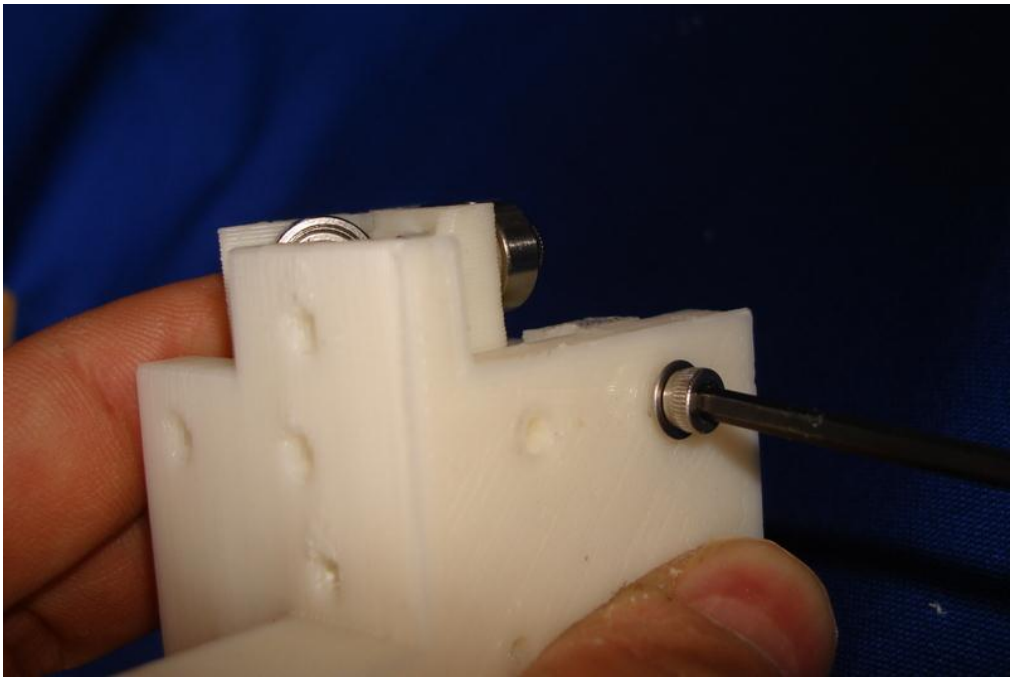
Ream out the M3 holes in the. “ja_x_bearing_mount”.



Note the “3” in the part to show the side where the 360 bearing holders (3 bearings) mount.

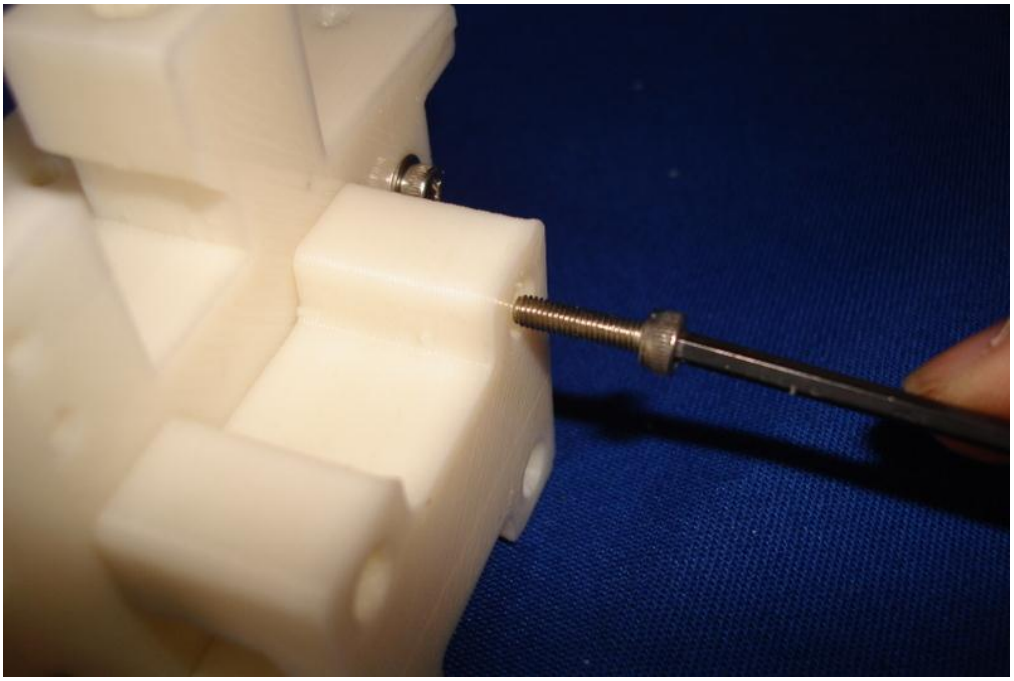


Remove the screws for mounting the bearing holders.

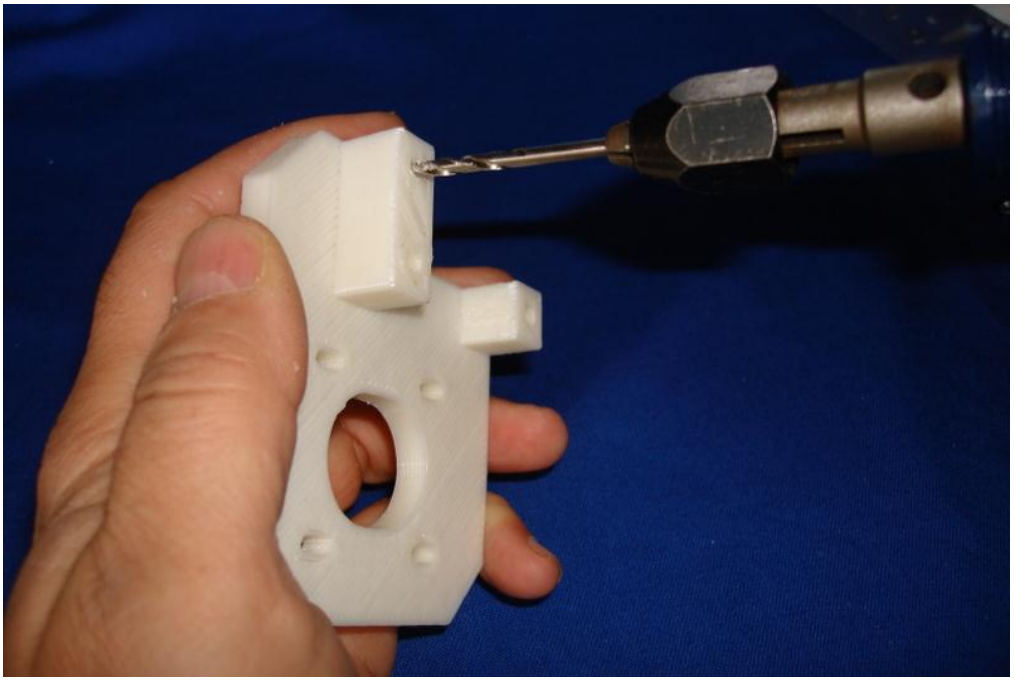


Place the bearing holders in position and replace the screws. Tighten snug but not so tight as to crush the plastic. Note bearing holders face bearings outward to increase the span of the bearings on the rods.

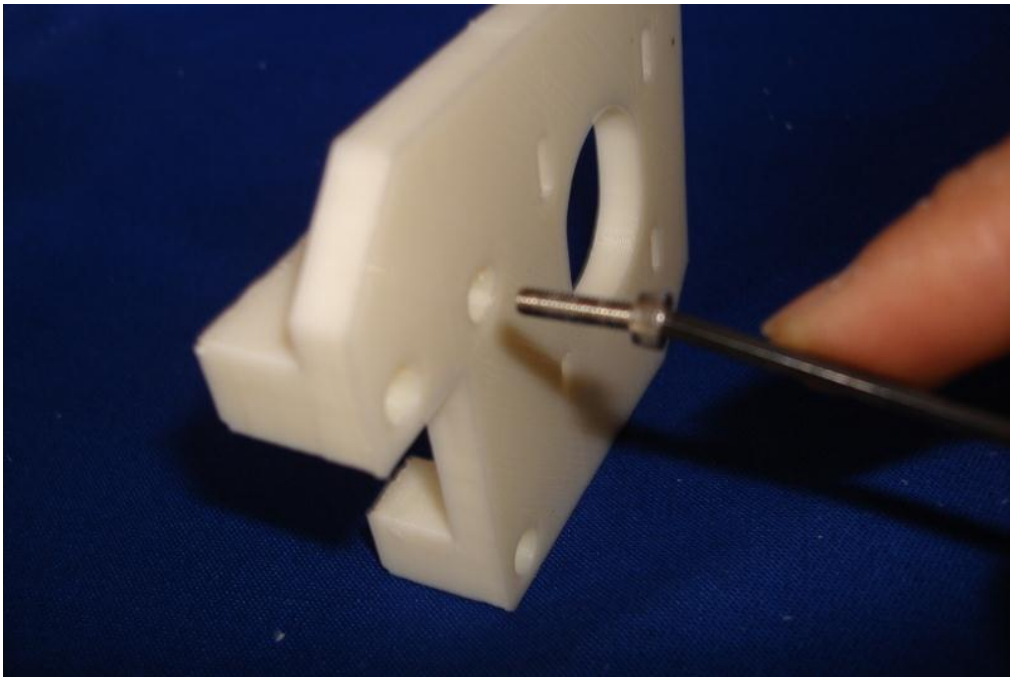
Drill out the M3 holes in the “ja_z_drive_nut_holder”. The part has a solid layer that must be drilled through in the screw hole. Its purpose is to make the slicing program work correctly for the printing orientation required.



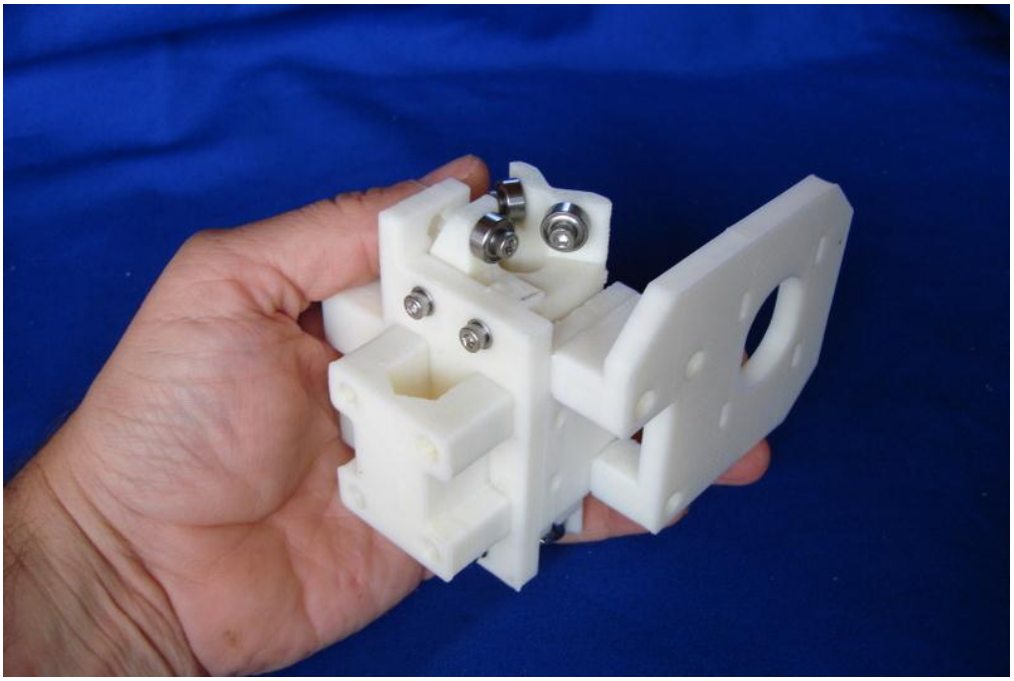
Hold nuts in place in the bearing holder, and put screws in counterbores and tighten (4X).



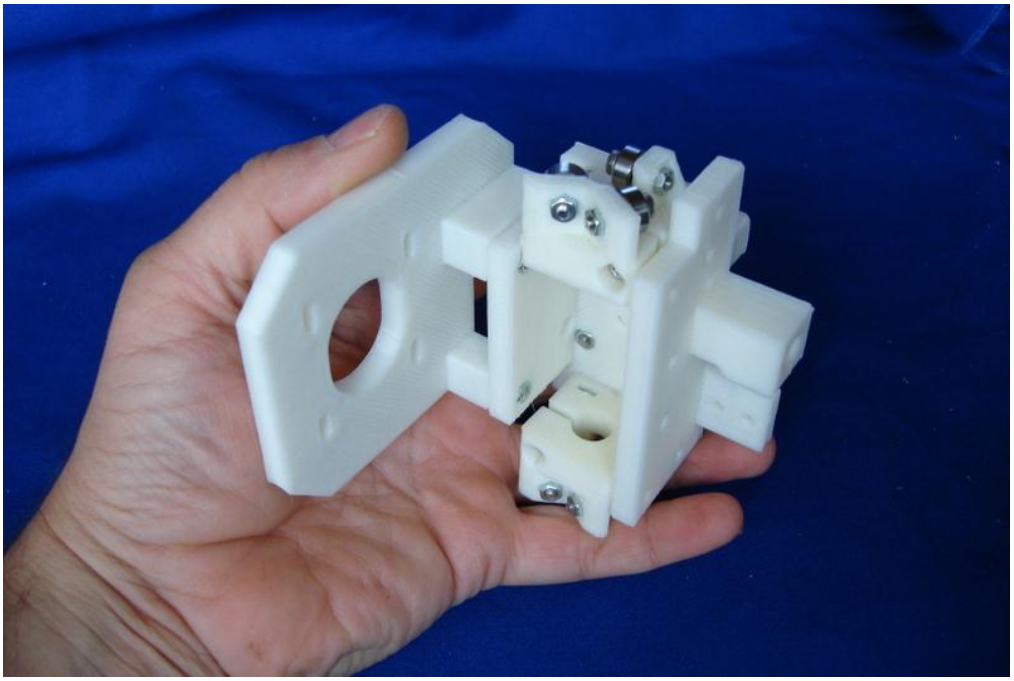
Drill out the M3 holes, which have the same solid layer for printability. Also clean out the slots so that an M3 screw can slide from end to end.



Insert screw into counterbores and then into corresponding holes in bearing holder. Place nuts in recesses and tighten as for other parts.

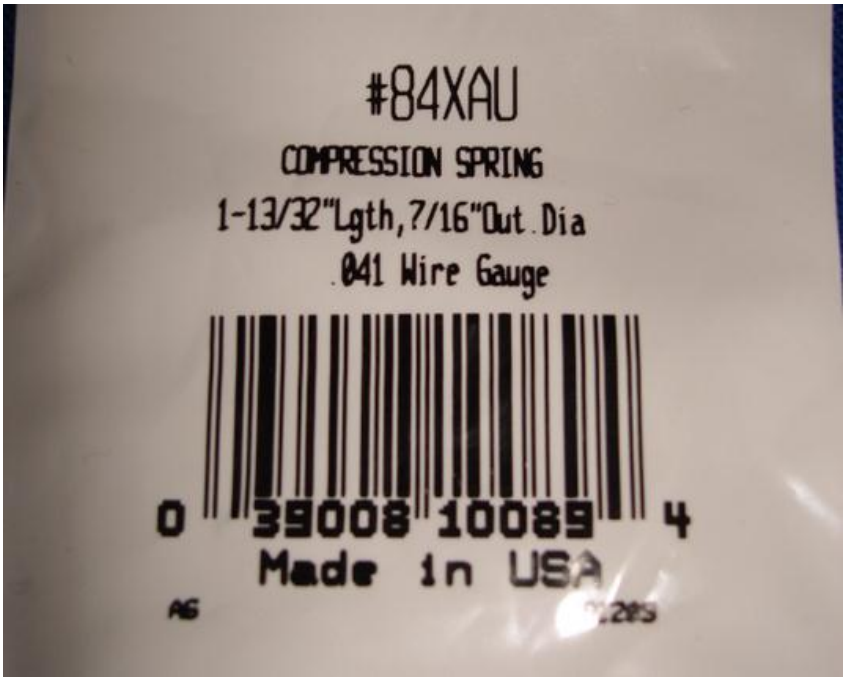


The finished product. NOTE THE DIRECTION OF INSTALLATION OF ”ja_z_drive_”. THE LARGE RECESS IS UP IN THIS PICTURE, THE SMALL ONE IS DOWN.

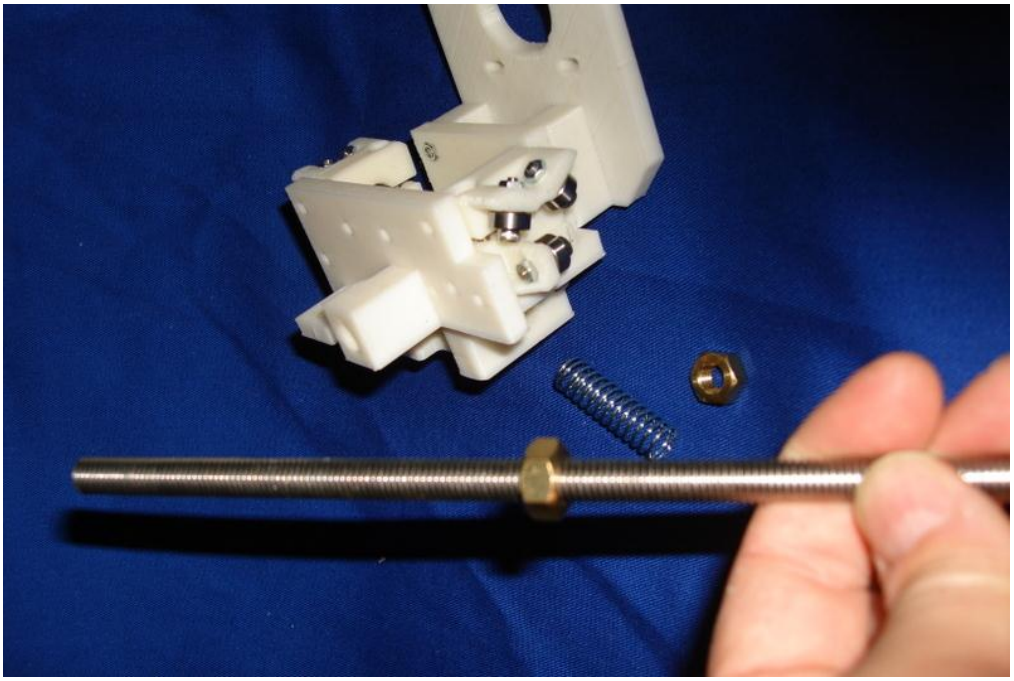


From the other side.

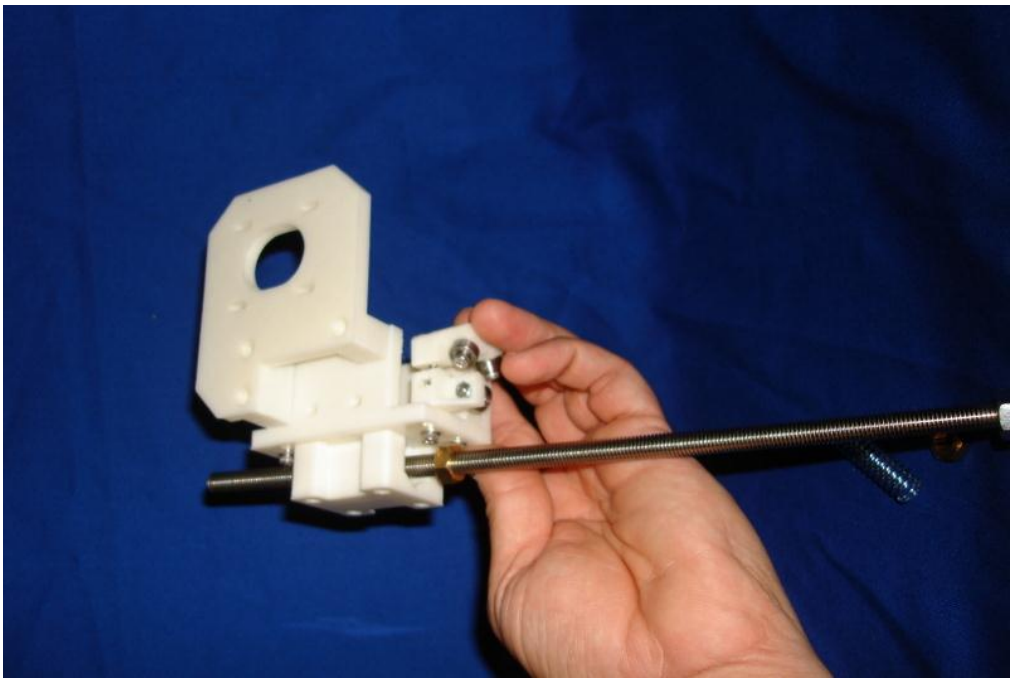
The spring used for the antibacklash nuts. Purchased at the local hardware store.



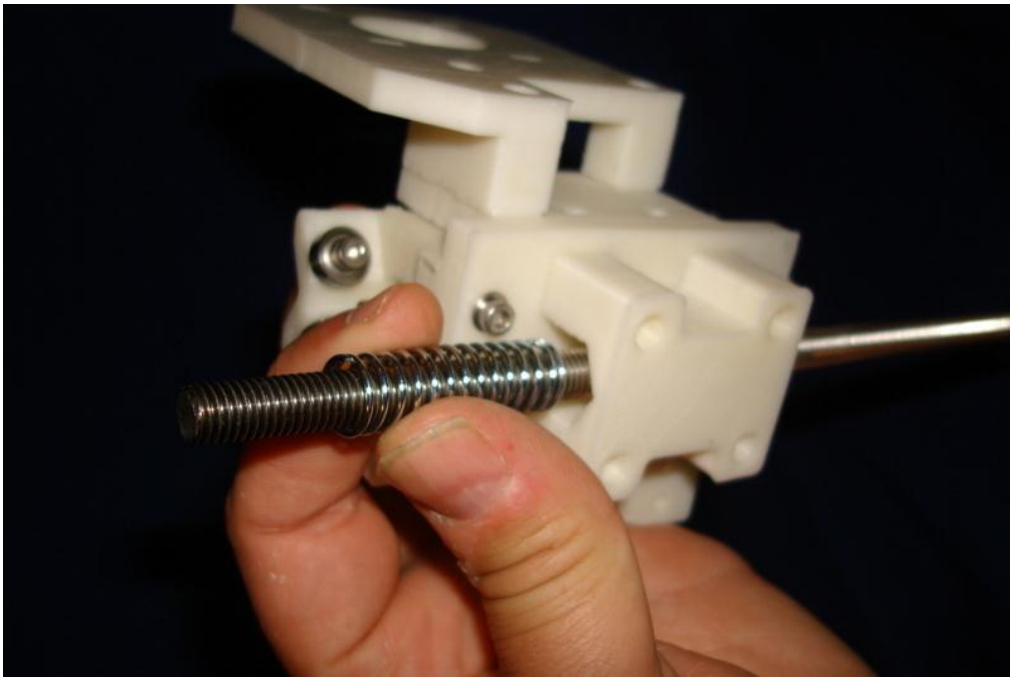
Spring label up close.



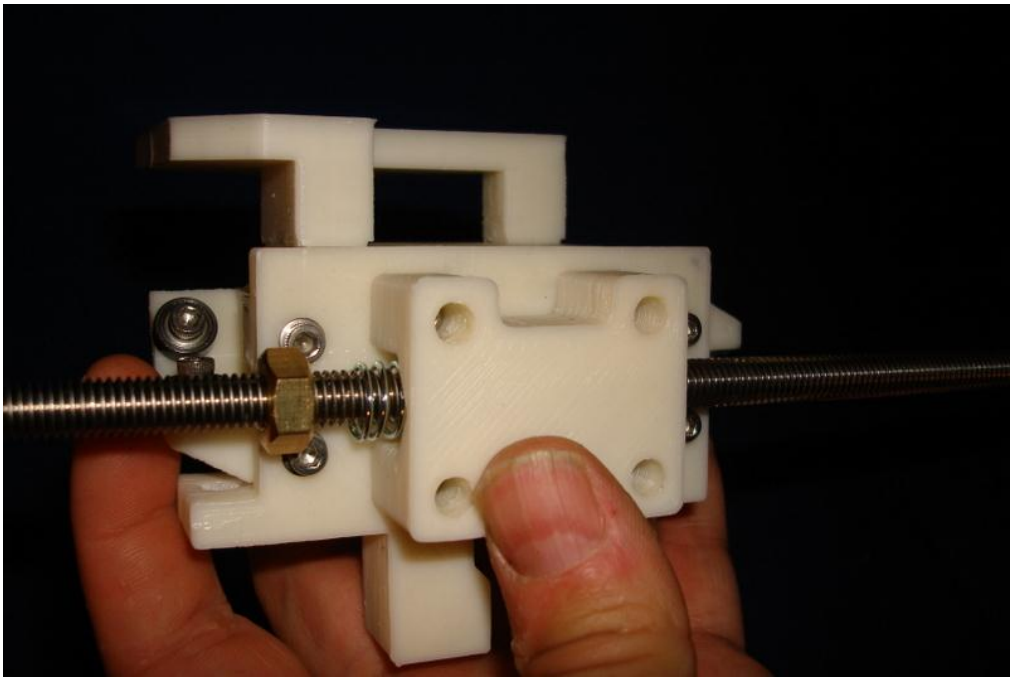
Take a brass M8 nut and put it on the z rod. Since we only need a few, I bought them at the local auto parts store. They are frequently used in auto exhaust systems, where you do not want the parts to rust together.



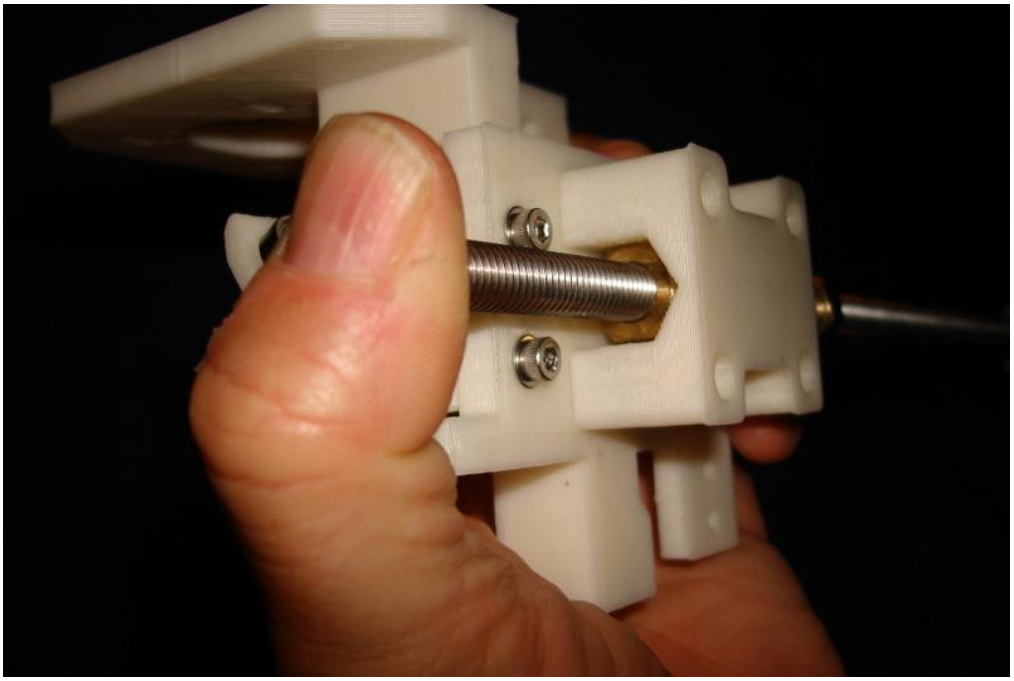
Place the assembly through the “ja_z_drive_nut_holder” in the direction shown.



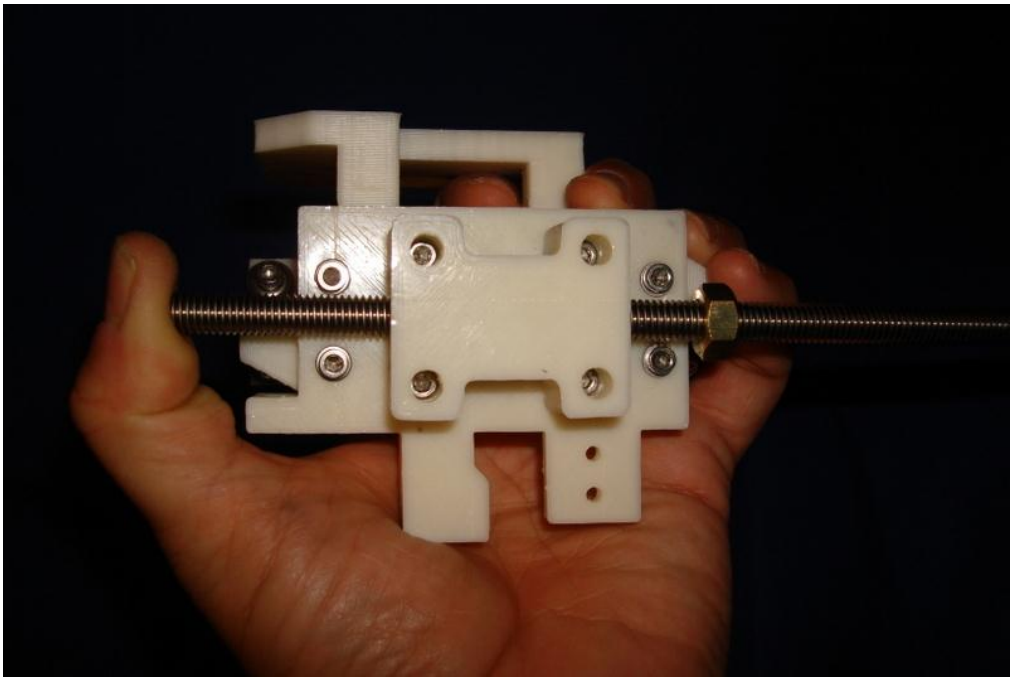
Place a spring over the rod and into the large recess.



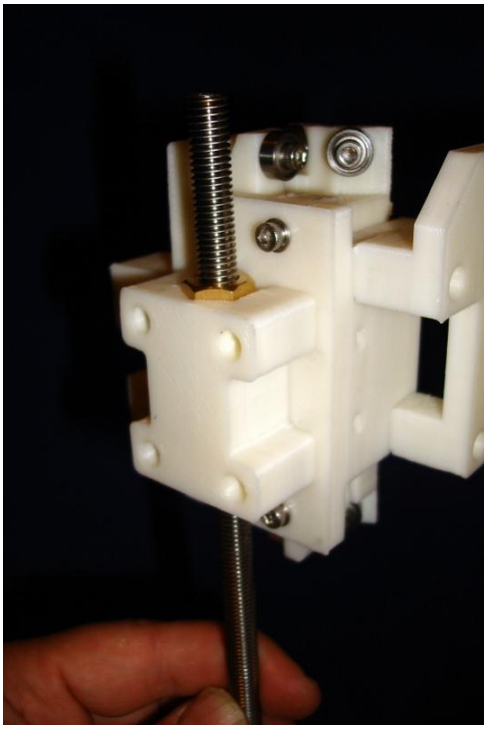
Run another brass nut down the rod about as shown.



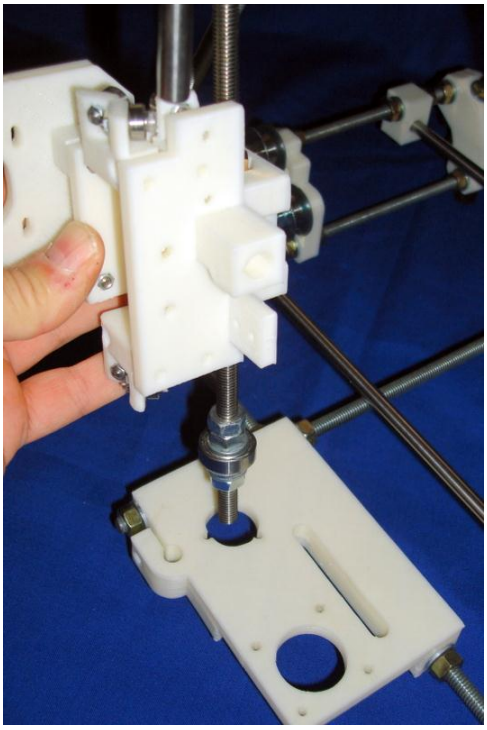
Press the nut and spring in….



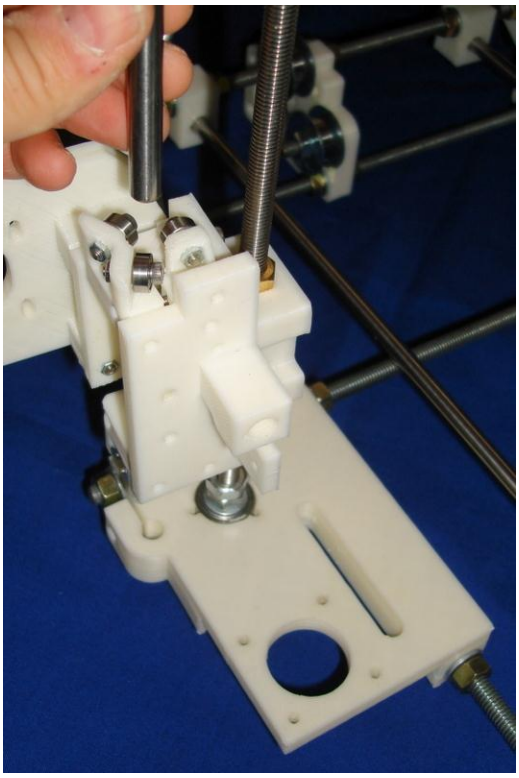
The nut is pushed out from the other side. Now tighten the nut until it is closer to the recess it fits in. Release and let the spring push the nut back in.



Repeat the process until the result looks like this (if you use the specified spring). The spring tension should be about 2 pounds preload with a different spring.

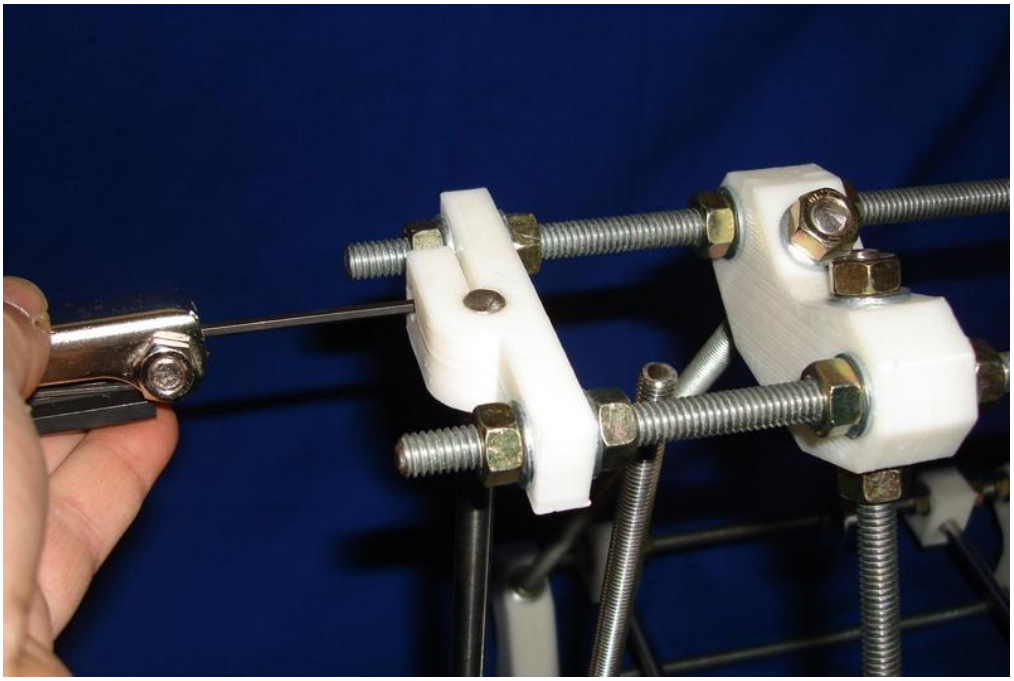


Raise the M8 smooth rod on the left side of the frame as shown. Place the completed assembly into the frame as in the picture above. Push the 608 bearing into the hole and make even with the top of the part (both are 7mm thick).

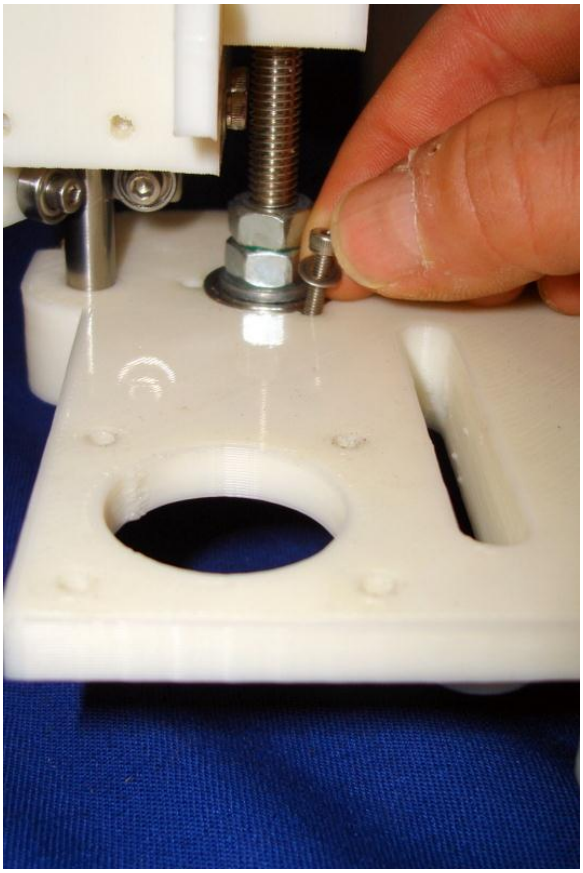


Lower the M8 rod through the assembly and into the clamp at the bottom.

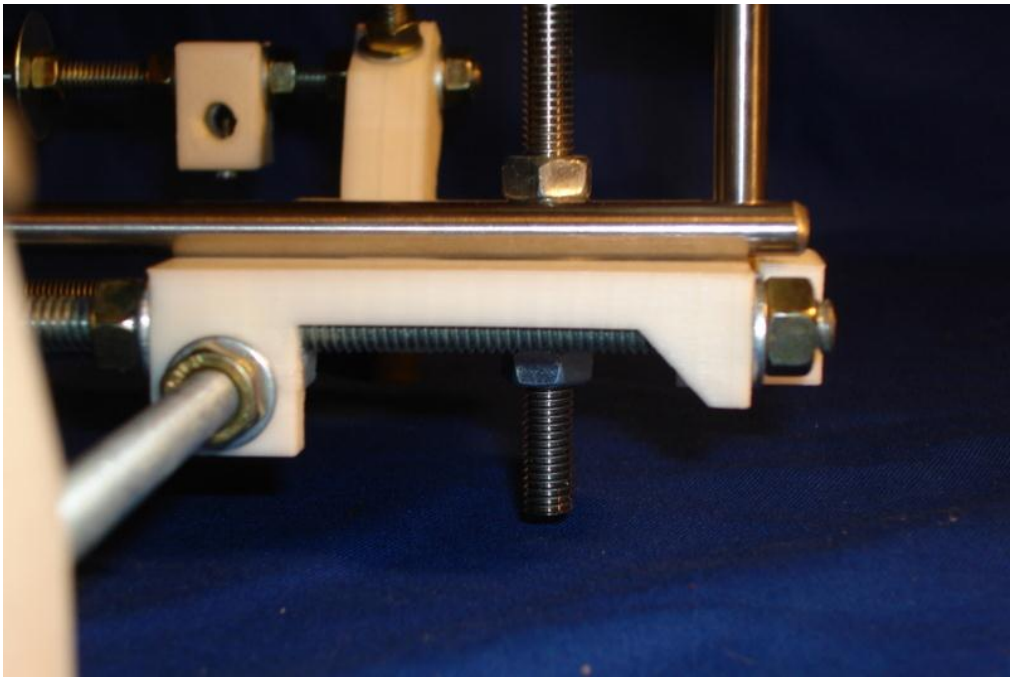
It should look like this. Make it even with the rod support at the top.



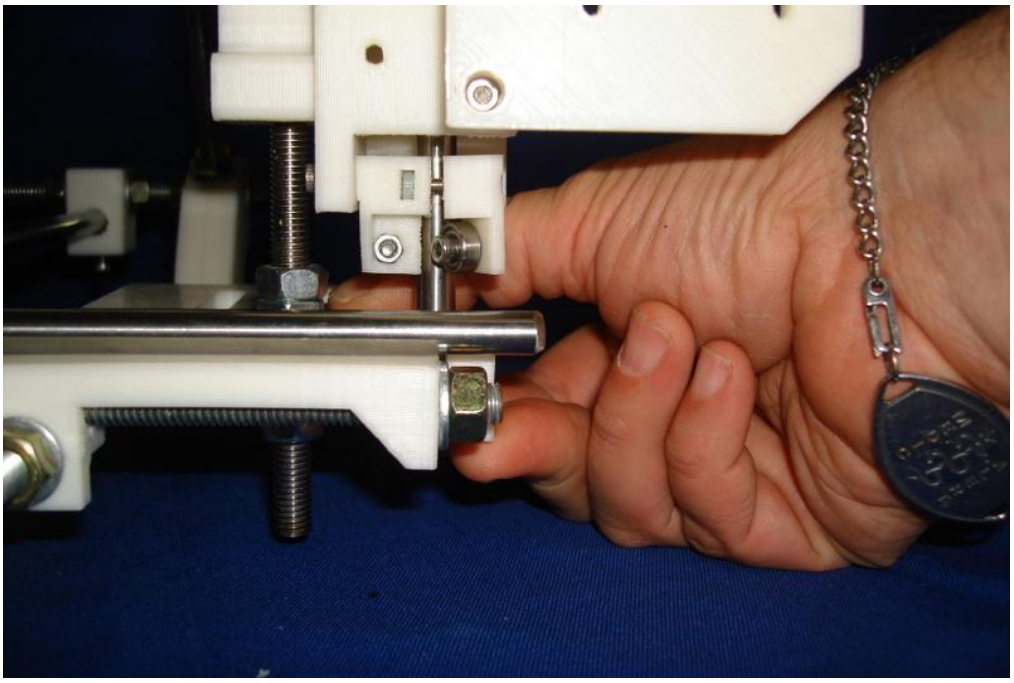
Tighten the clamp at the top only.

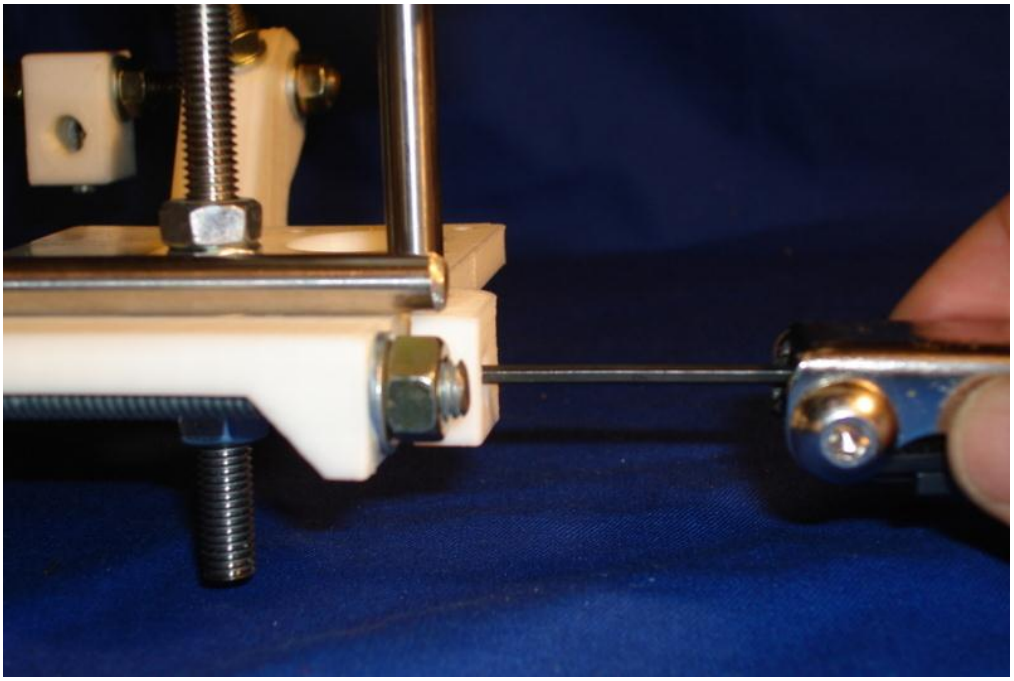


Put 3 M3 X 12 SHCS and washers down from the top into the slots. Then put 3 washers and nuts on from the bottom and tighten.



Now put one of the x carriage rods on the top of the left and right z mounts. Inspect if the mount is level at the extreme ends. If it is, flex upward and tighten the rod clamp screw. Repeat at other side.

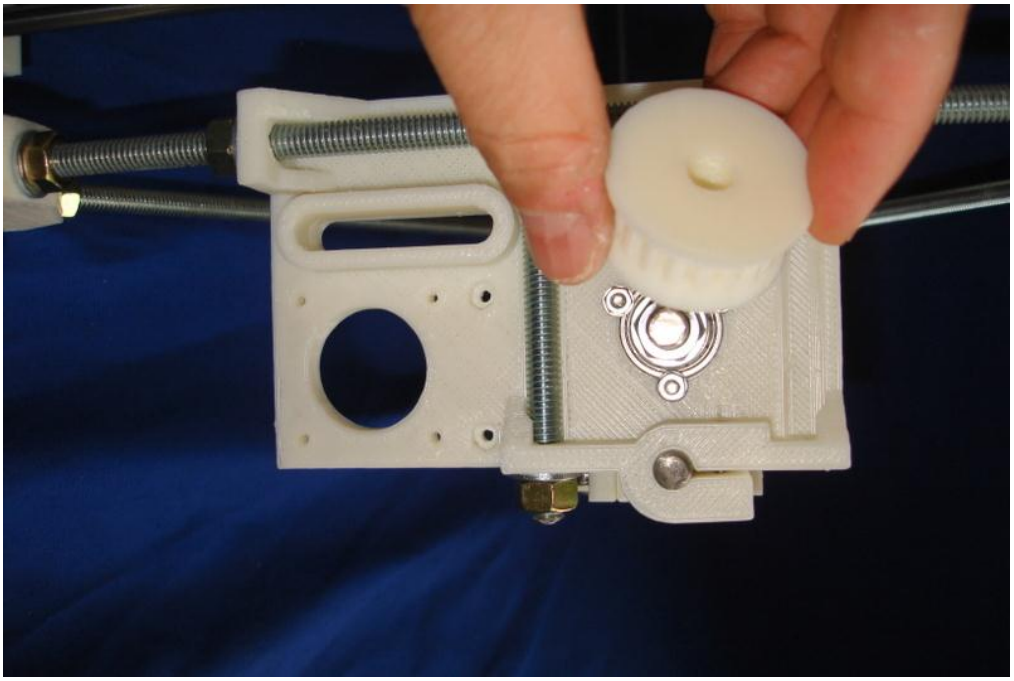




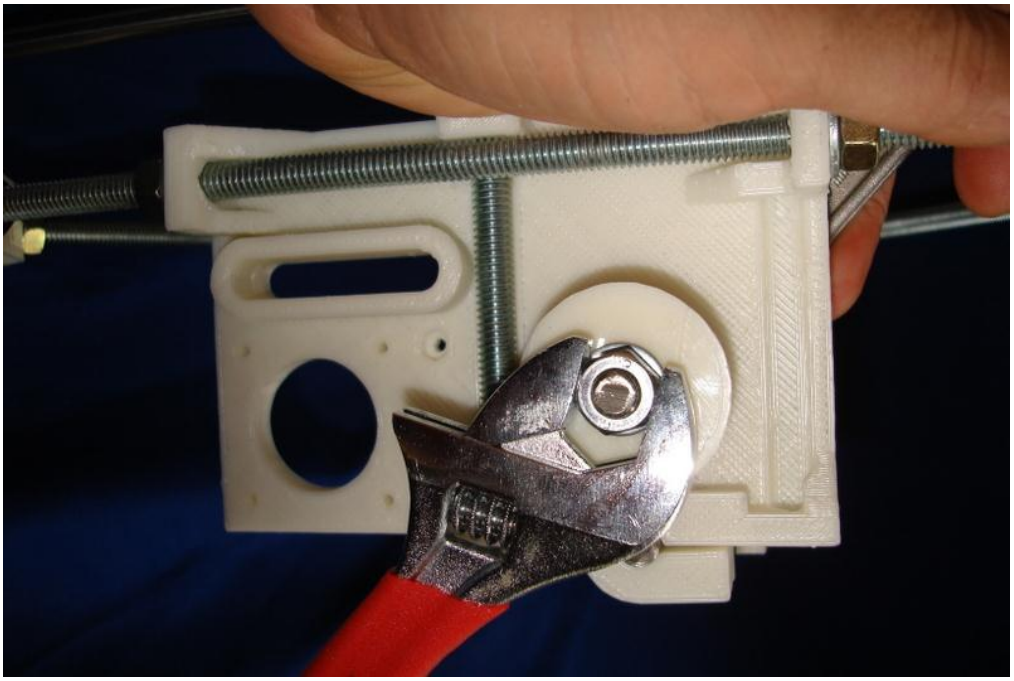
Tightening the screw as described.

Prepare the 20 tooth pulley by reaming out the hole to 8mm or size “O”. Note I am holding the drill bit in my hand and twisting it. I am not that stupid…

Press an M8 nut in the recess to check fit, then remove.



Place the pulley on the bottom of the shaft, engaging the nut recess with the nut.



Place an M8 washer and nut on the shaft and tighten.