Manual for L3VER M2 motor blocks

Suivi des évolutions

Indice	Date	Description de l'évolution	Auteur
0.0	22/06/2022	Création	FBR
0.1	10/10/22	MAJ	FBR

BOM :

Printed parts

Top alpha	X1
Top beta	X1
Bottom alpha	X1
Bottom beta	X1
Lever	X2
Motor holder	X2
Motor base L	X1
Motor base R	X1

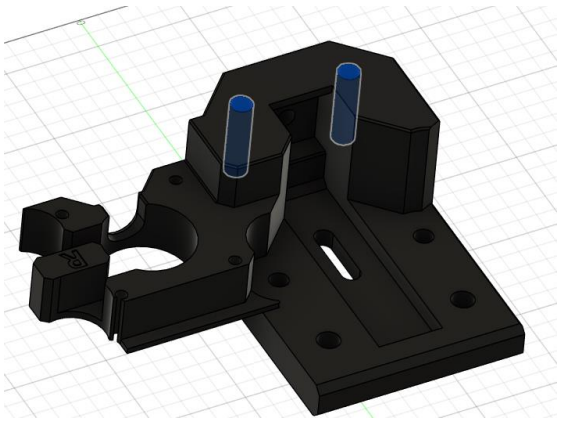
Hardware :

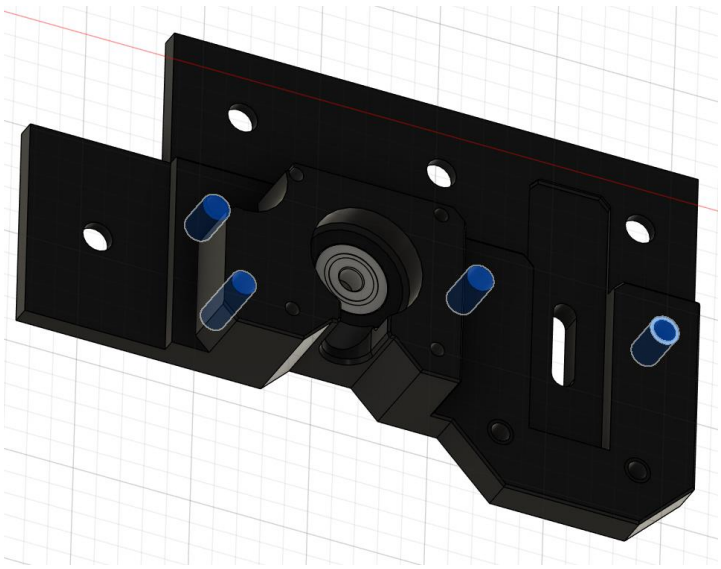
625-zz/2RS bearings	X4
Disk coupler 5-5mm	X2
Tnut M6	X12
alu spacer OR printed spacer	X6
Hex nut nylstop M5	X2
Inserts brass m4	X12
Inserts brass m3	X8
F695-ZZ / 2RS	X24

695-ZZ / 2RS	X12
Shoulder bolts m4D5 35mm	X8
Shoulder bolts m4D5 45mm	X2
Countersunk m6x12	X8
Washer M5	X4
Washer M4	X2
M3 35mm	X8
M4 20mm	X4
M3 30mm	X8
M3 12mm	X8
Countersunk M5 40	X2
Flanged M4 hex nut	X2
Microshim 1mm m5	X30
M6x16	X4

Part preparation

Insert m4 Inserts in the required places

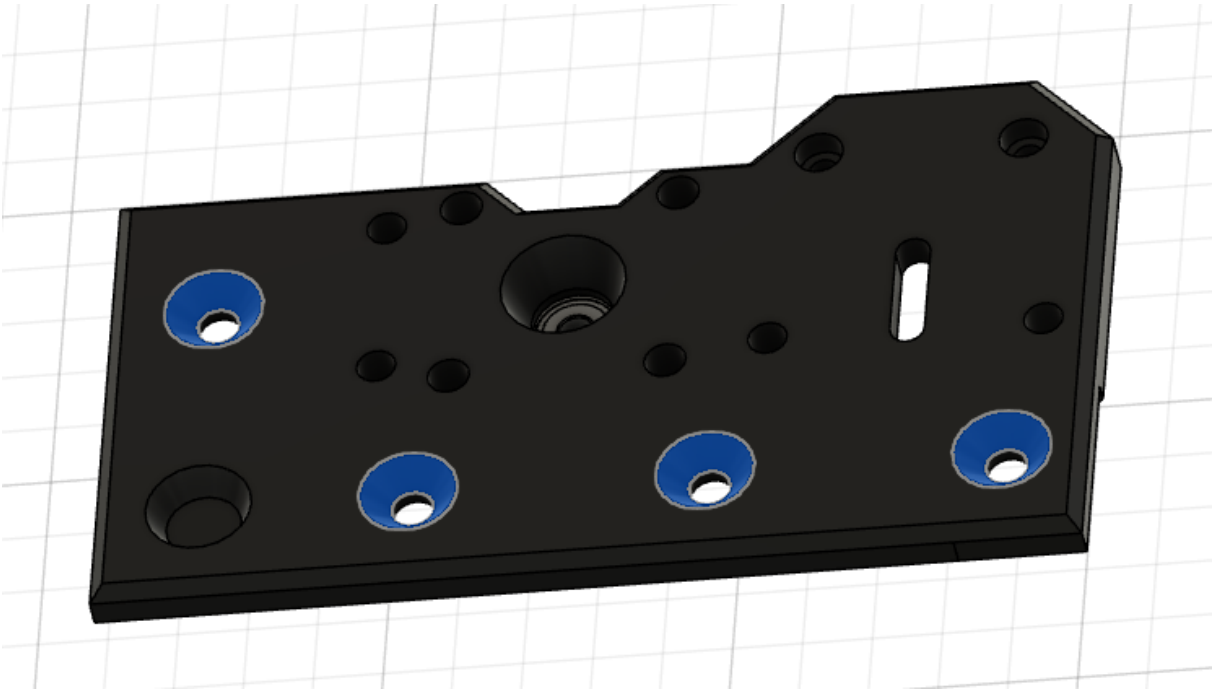


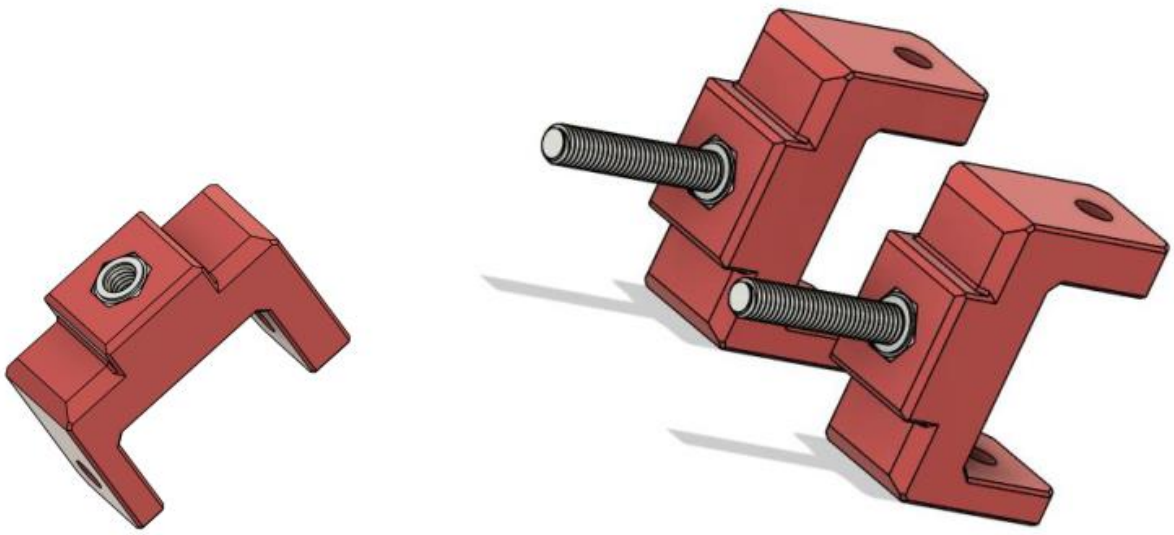


(For BRS-E Orders, those inserts are already installed)

You can already pressfit the 4x 625 bearing in the top parts, and on the bottom parts

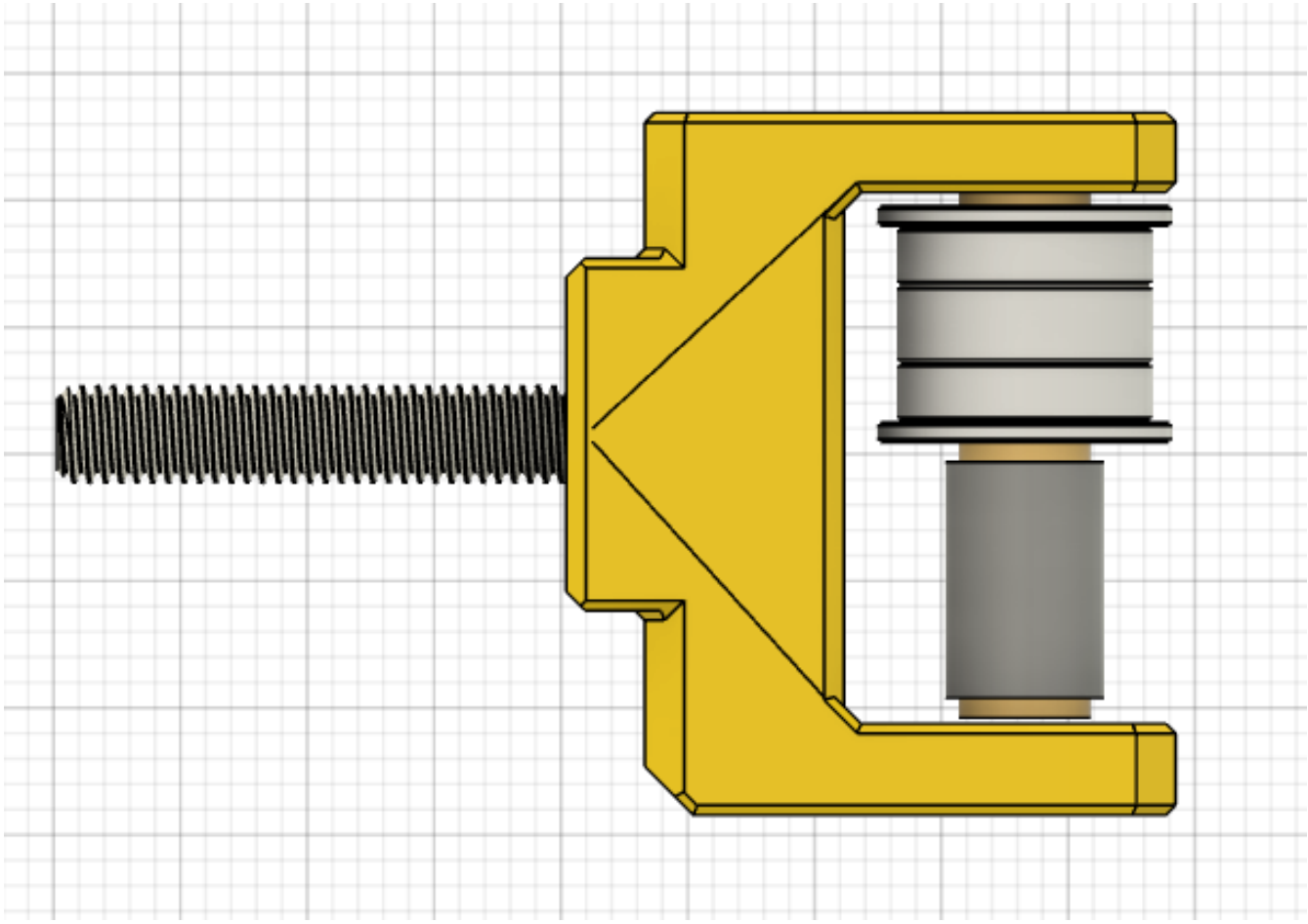
Install the M6 cuntersunk screw with the Tnut now, let it loose

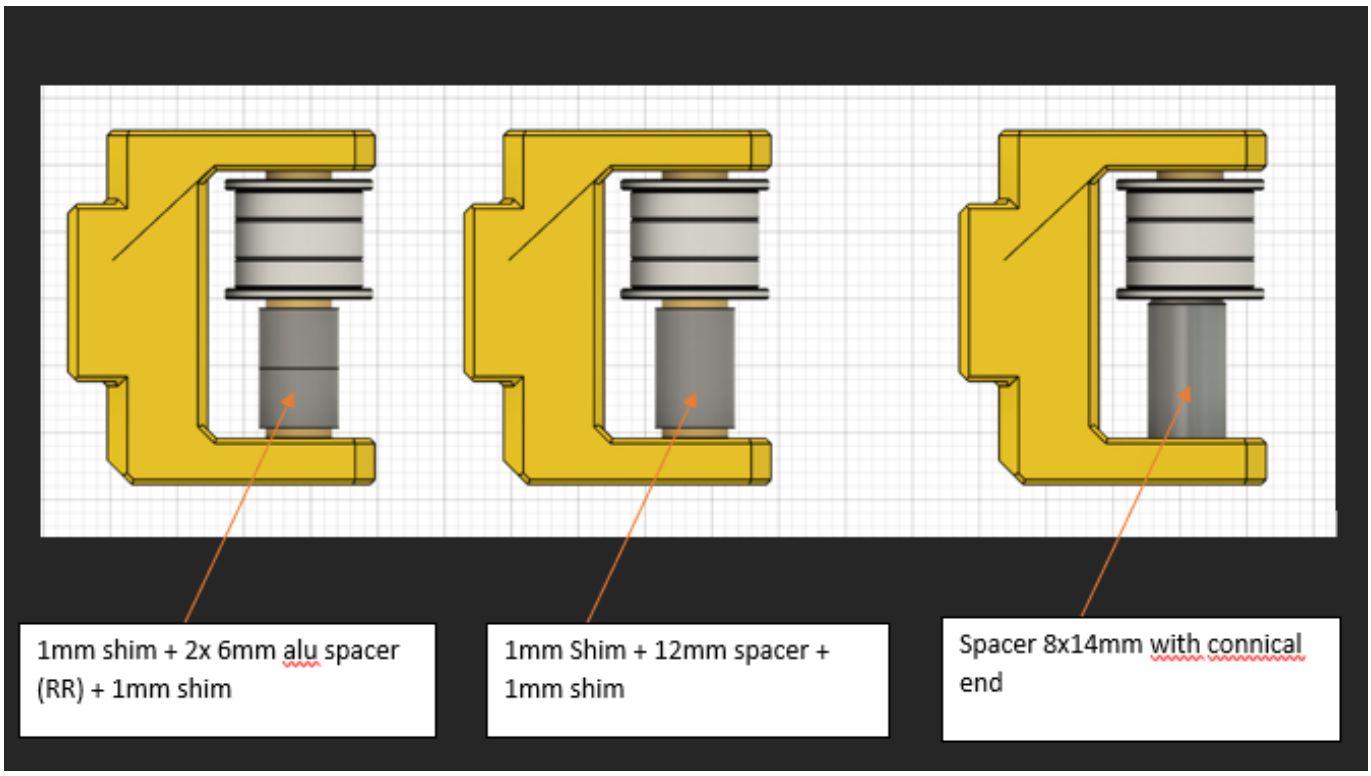




Insert a M5 Nyloc in heach lever and tighten the m5 screw to it with a dip of cyanoacrylate or threadlocker

You can already pre install the LEVERS stacks outside for ease of installation



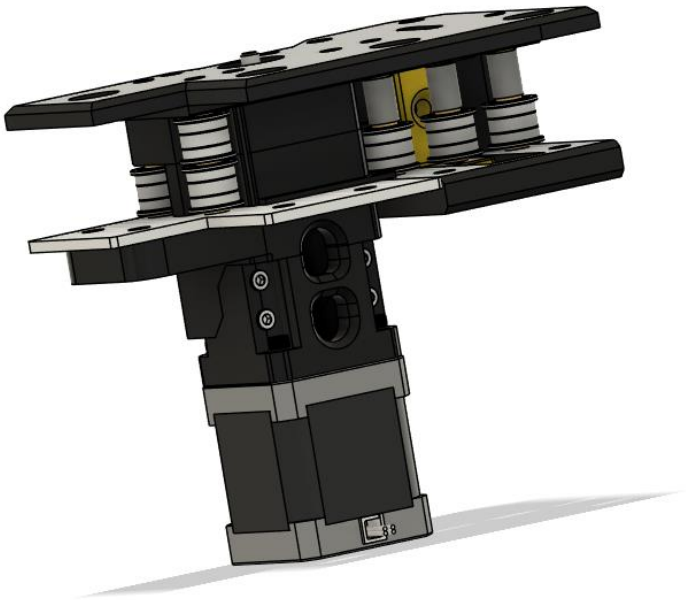


Be aware the stacking has to be reverted to the other Lever, as they are not symmetrical.

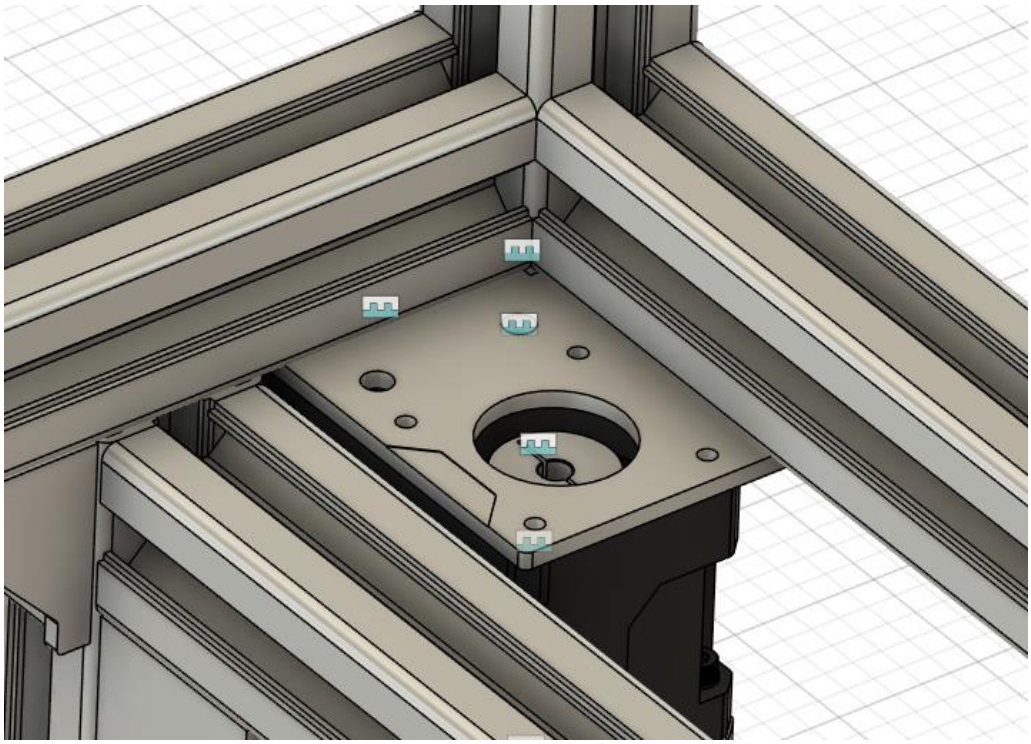
Install the m5 nylock in the Lever parts. Add a bit of threadlock in. Then screw the Countersunk m5x40 completely. This assembly is definitive. Repeat it for the other one

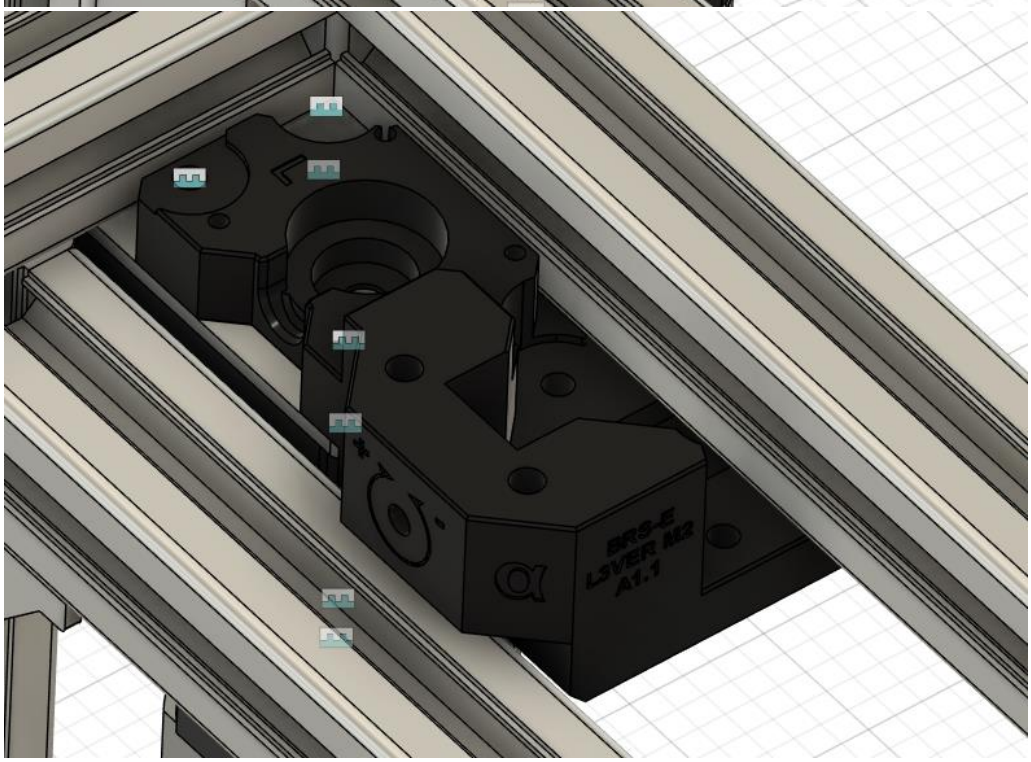
BRS ORDER GENERALLY ARRIVED PREASSEMBLED (If not told otherwise depending the ask)

You can try to make an assembly out of the machine to understand the mechanism



Mainparts installation

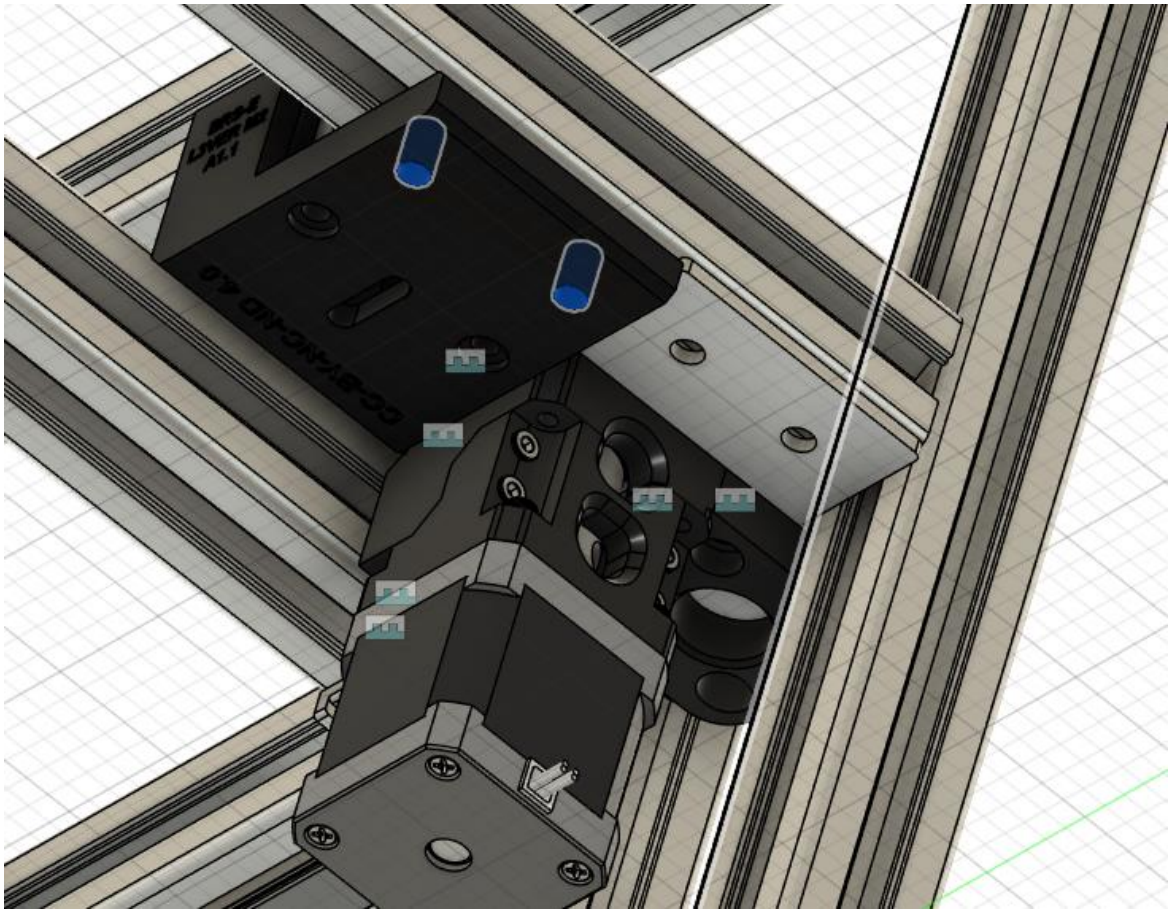


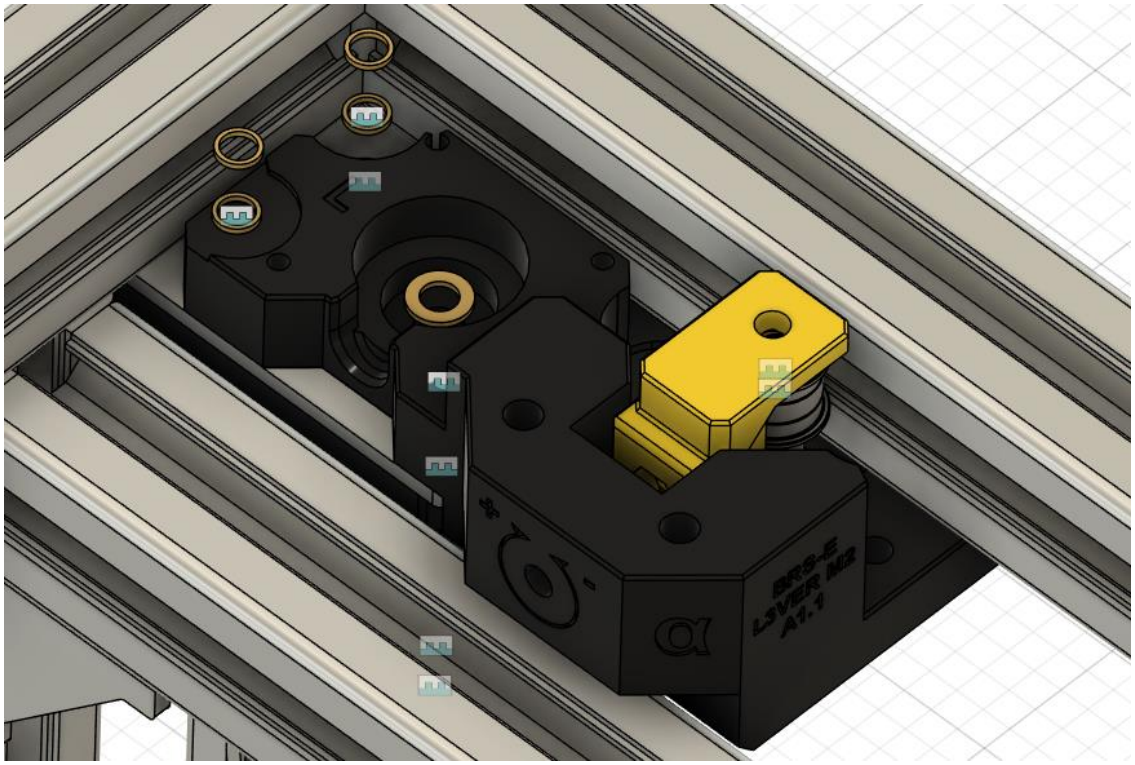


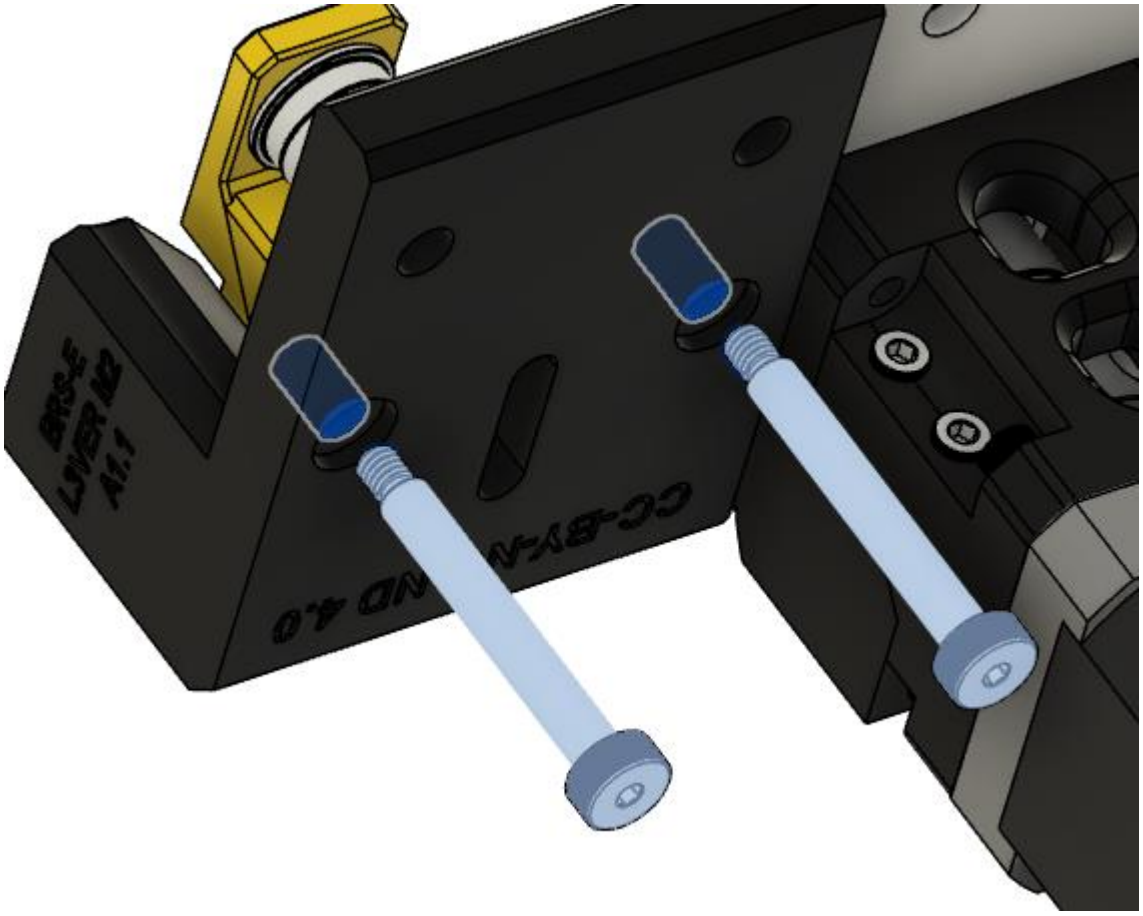
Now insert the lower part and secure it

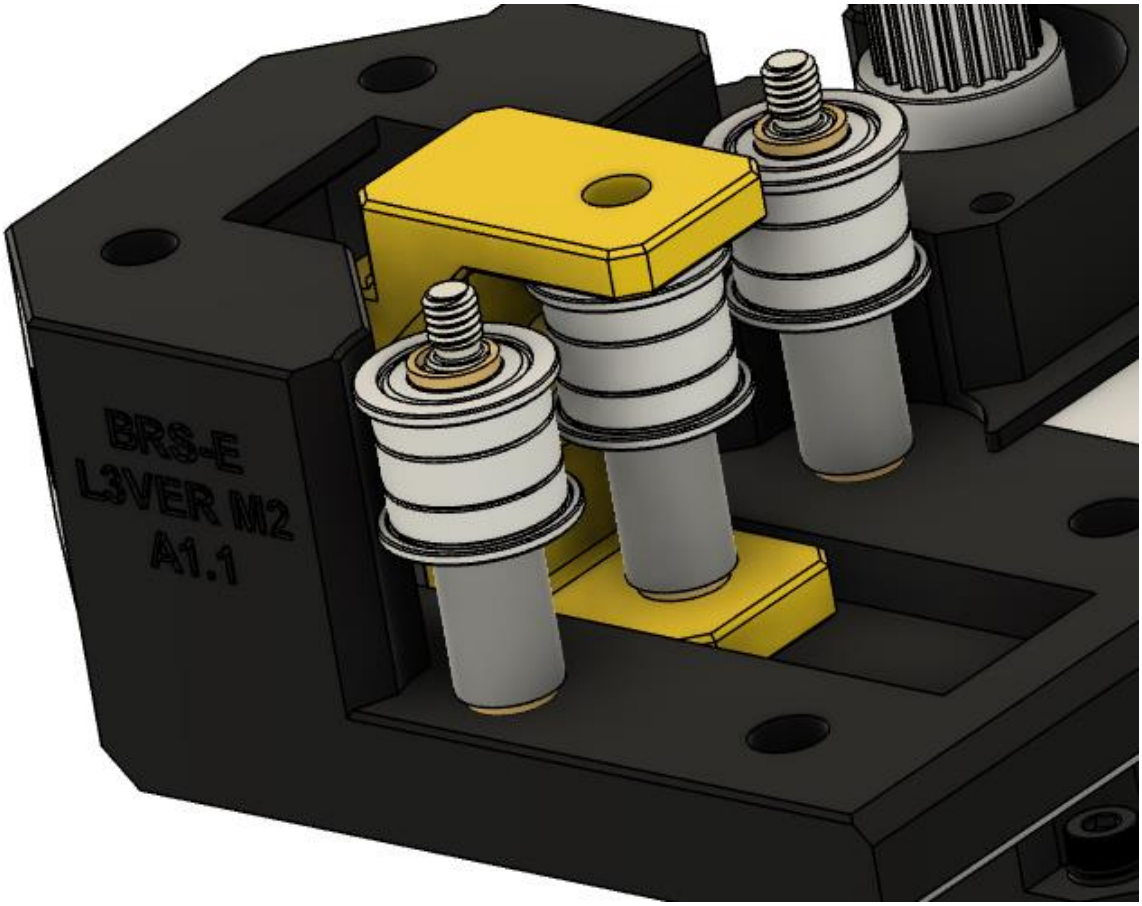
You can install the levers inside (one side is thicker) you can confirm the right assembly by gliding it iside the Rail, it need to be tight a bit)

Insert the 625 to support the shafts, be careful to make a proper alignment to be perfectly coaxial, if not the system will not work correctly

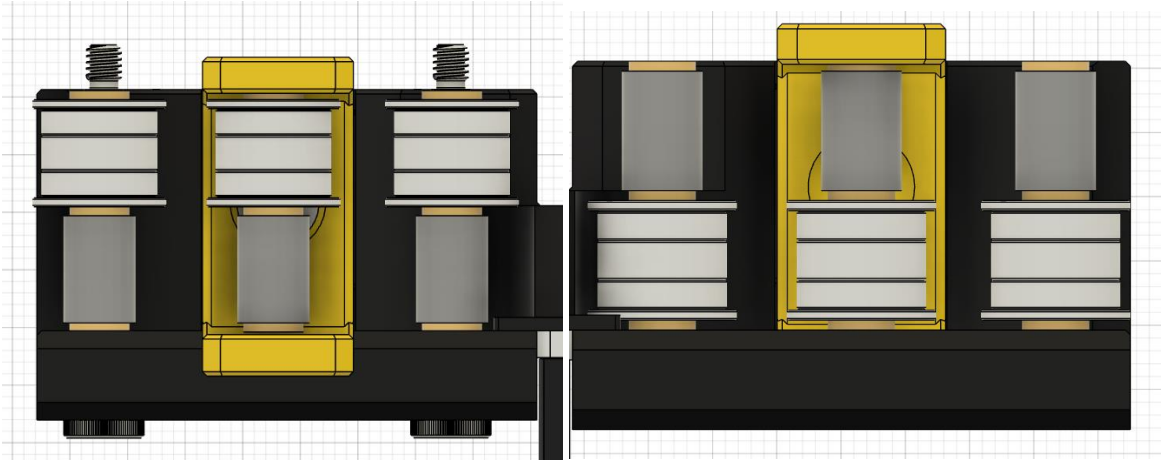




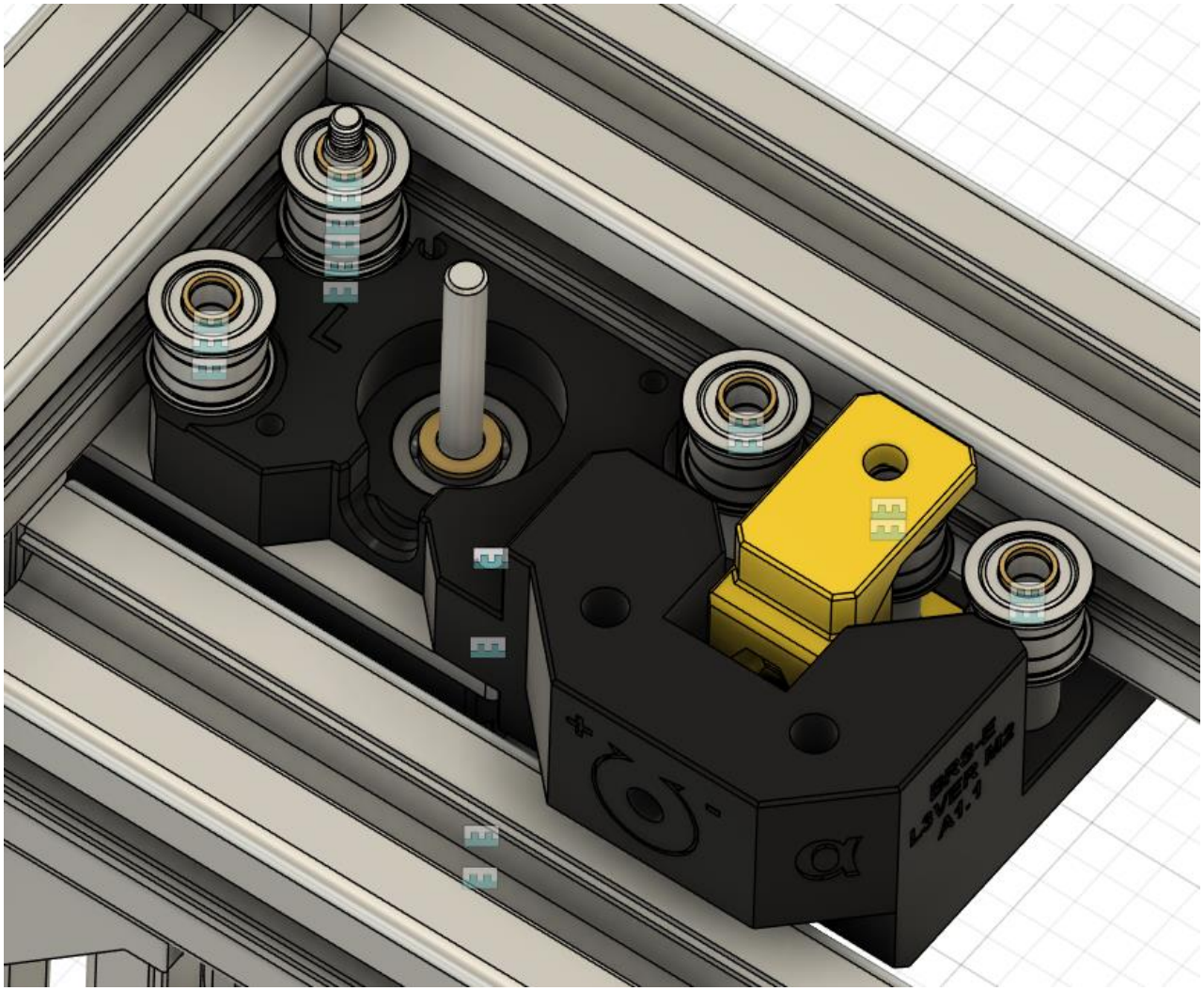


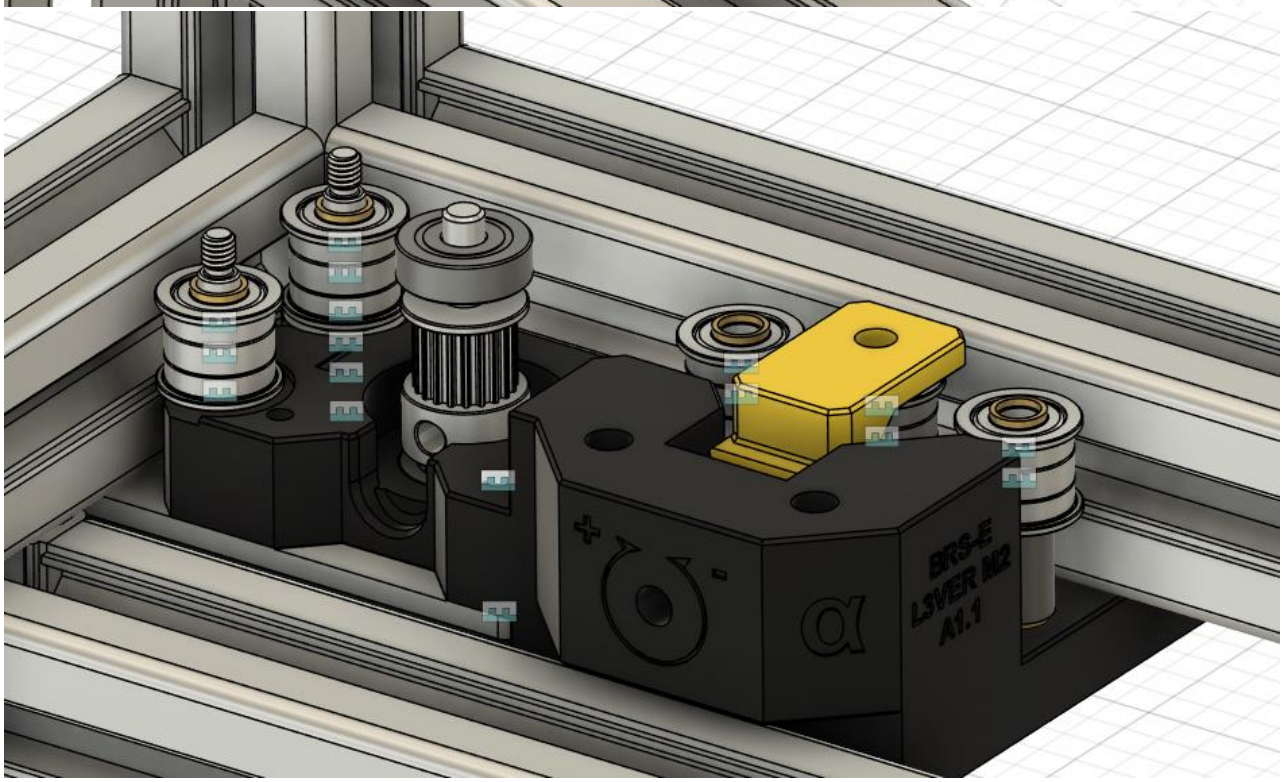


Install the bearings stack with spacer and Shim: here a detail of the order (be aware R and L has to be inverted to match each belts)

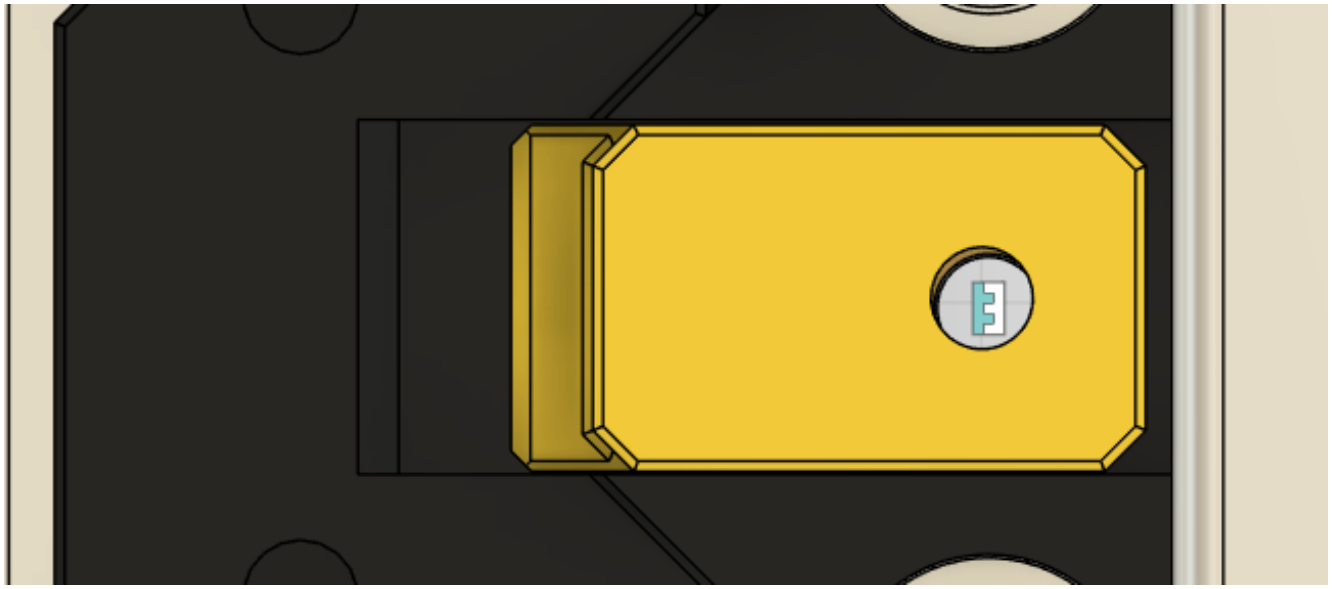


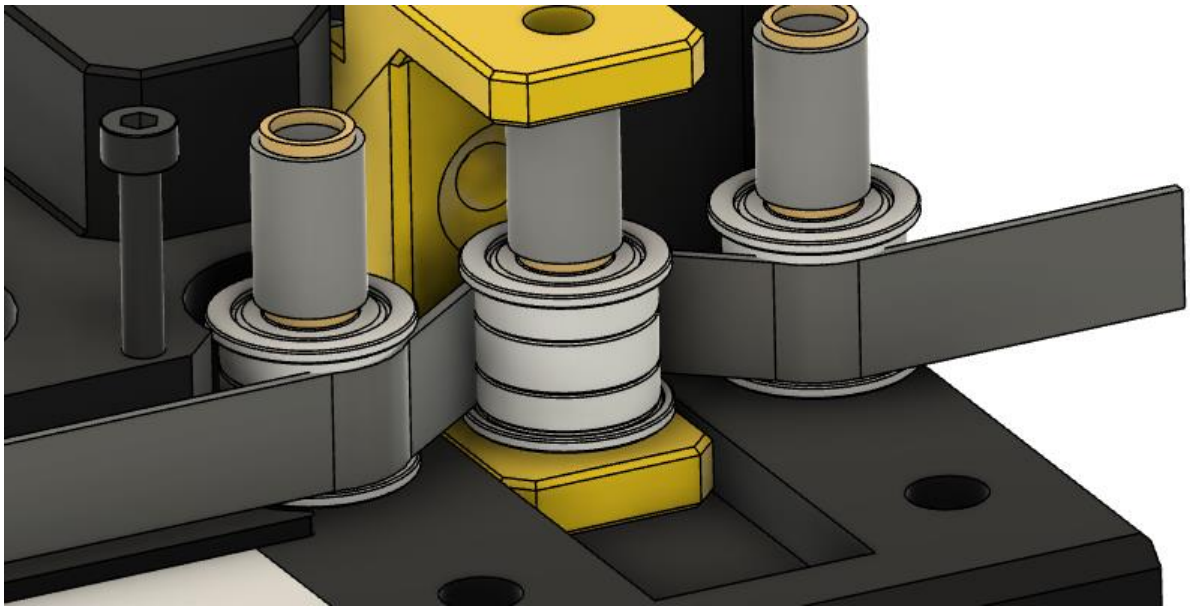
This is a sample exemple, You can use a 14mm spacer (no shim), a 12mm spacer (+2x 1mm shim) or 2x 6mm alu spacer like RR does, with 2x shim


BRS-E
L3VER M2
A1.1


BRS-E
L3VER M2
A1.1

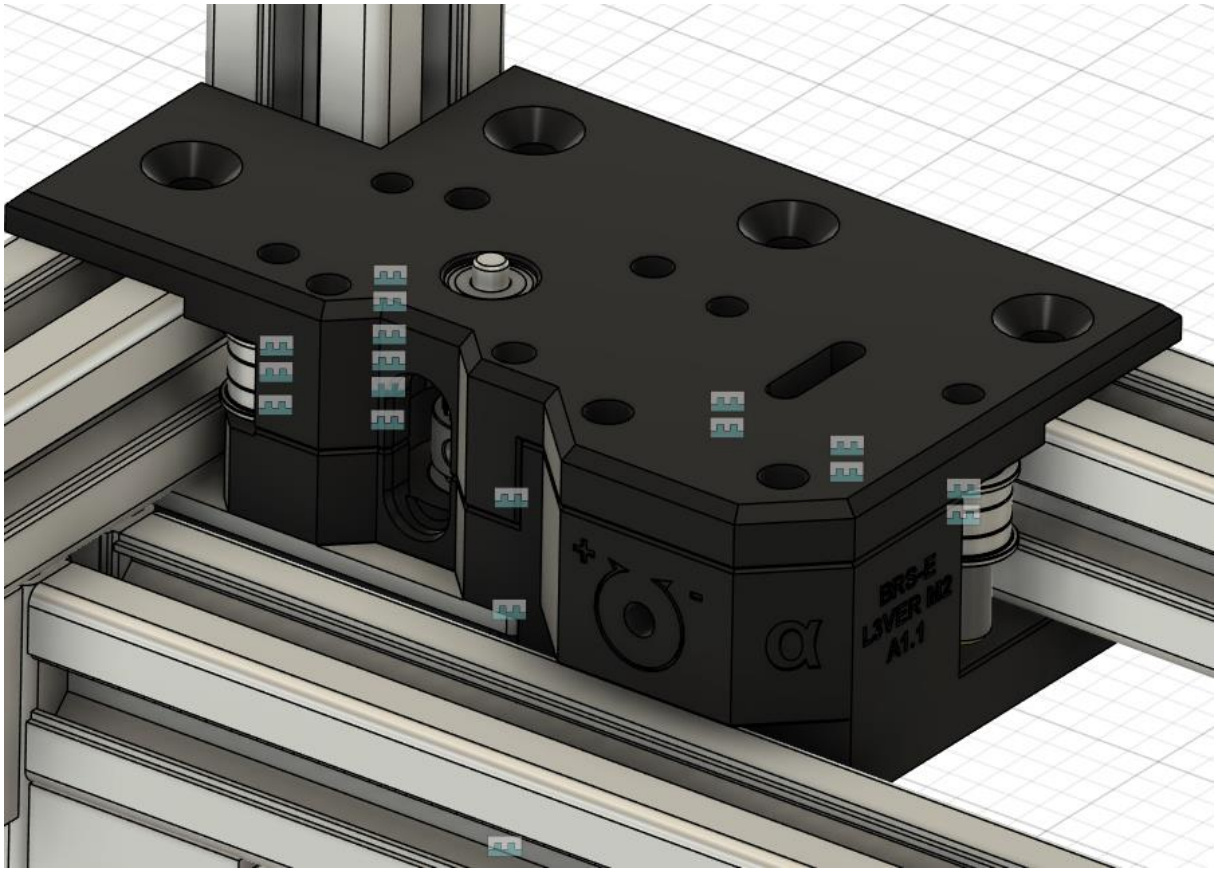
Do the 2 motors block in the same time. Once done you can begin the belt routing (like a stock block + the Lever passage detailed here), let it loosed the lever in the lower position (against the 3030)





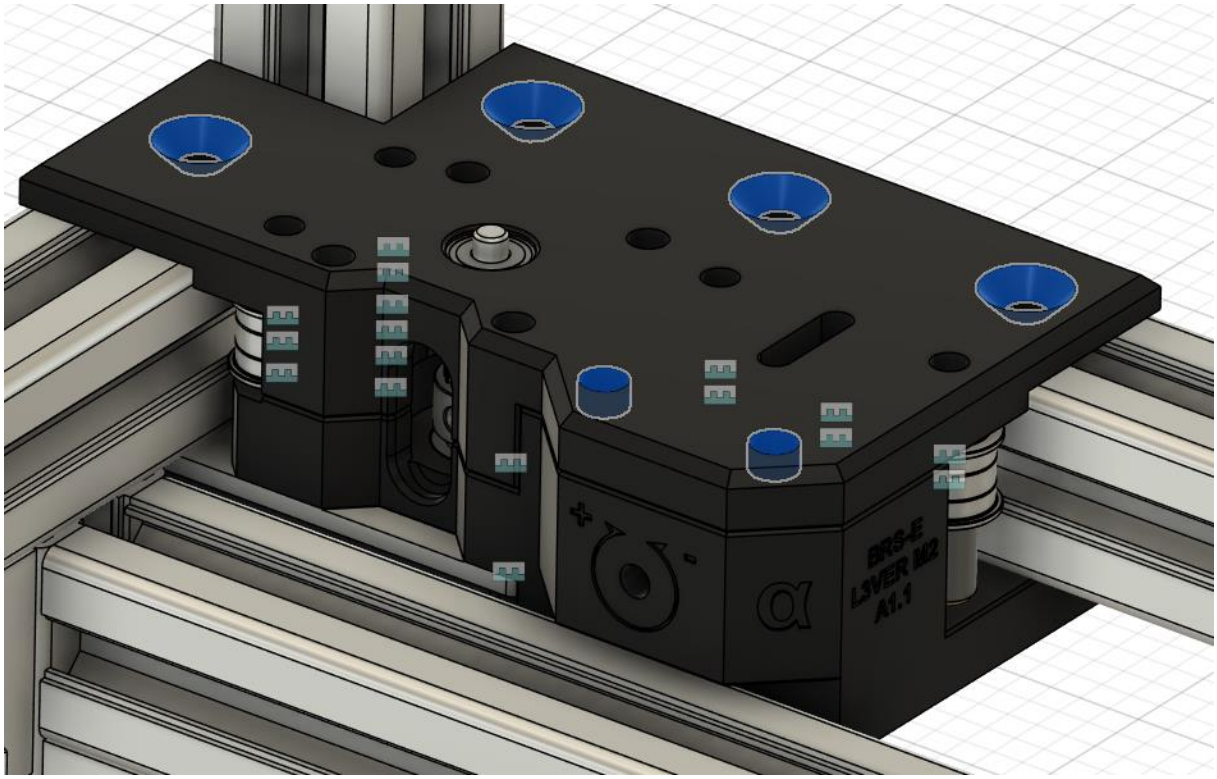
Than you can secure the whole assembly with the top plate, with the other 625 bearing already inside

Use the 4x 35mm shoulder bolts from bellow and adjust them few turns each to heavenly fix the top part

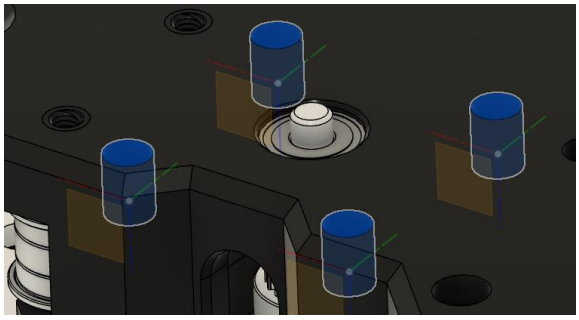


The secure the ensemble with the x4 M6 countersunk the and 2x m4 screws at the top

Then the x4 m3x35 to grab the motor from the top



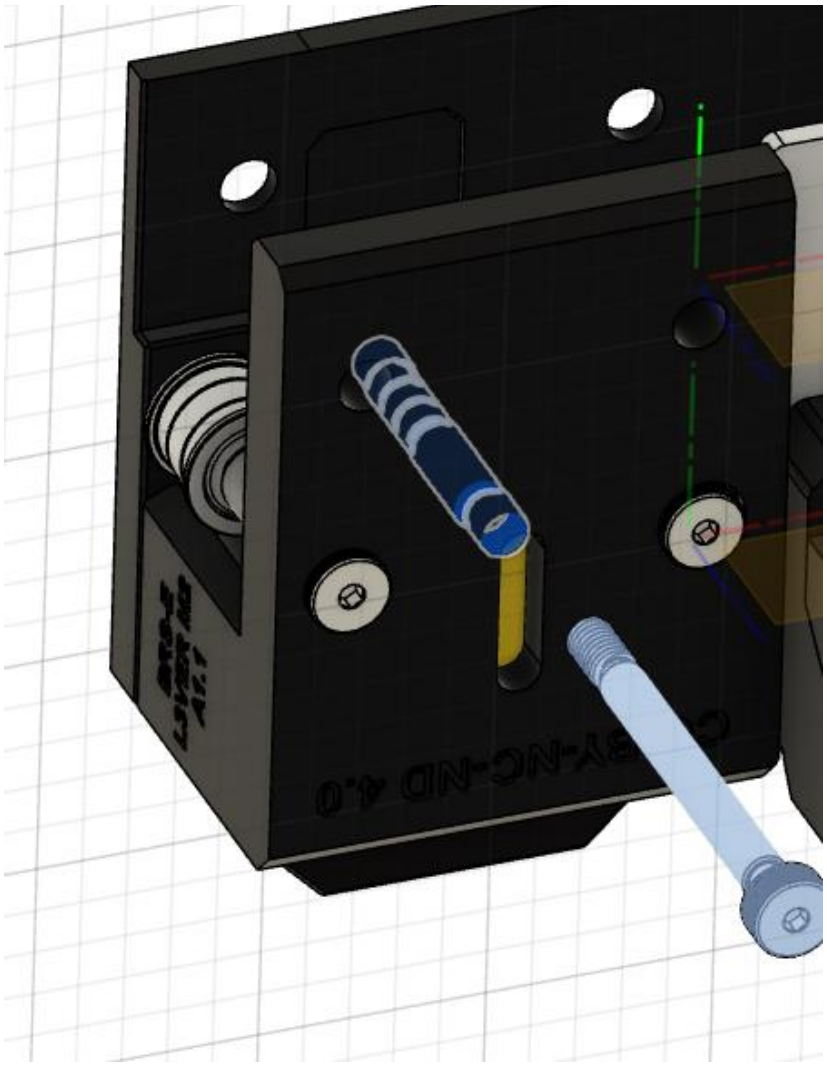
Now you can insert the 45mm shoulder bolt inside the Lever assembly:



I don’t specifically cover the rest of the assembly since it is already described in the PMB2.0 motor block and the Ratrig stock manual. Those parts shares some features.

Especially the Motor mount, and the shaft assembly:

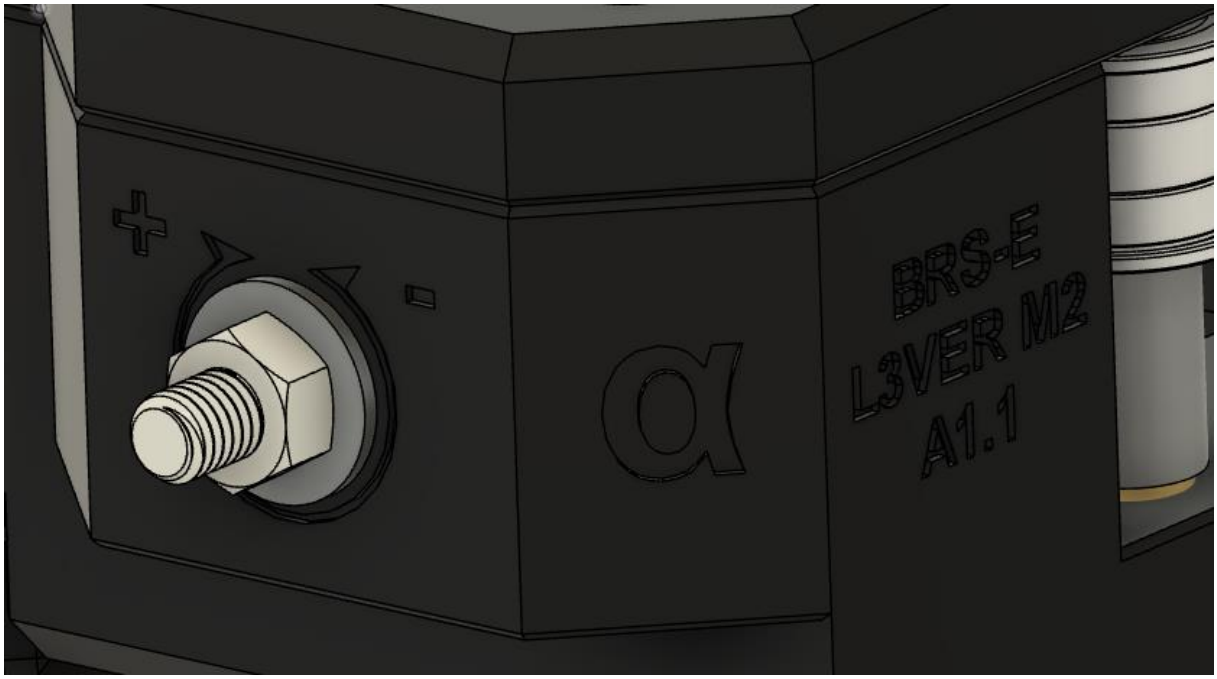
https://github.com/FlorentBroise/BRS-Printers-Mod/blob/main/manuals/Manual-PMB.pdf



Install a m4 washer with a M3 nyloc nut

At this point you can control the motion of it by gliding it inside.

There is +-14-17mm of travel here.



Install a M5 washer and a m5 nut to the Lever screw

Here you saw the same logic than the stock RR motor block, PMB2.0 and LEVER M1 A

https://github.com/FlorentBroise/BRS-Printers-Mod/blob/main/manuals/Manual-PMB.pdf

https://github.com/FlorentBroise/BRS-Printers-Mod/blob/main/manuals/Manual-Tensionner-L3VER-M1-A.pdf

https://ratrig.dozuki.com/Guide/02.+XY+Drive+Assembly/55?lang=en

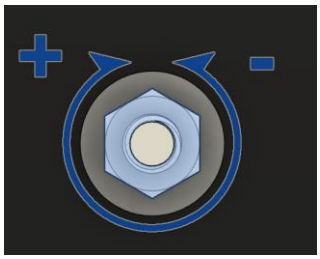
You can no proceed to finish the belt path routing, clanp them to the head when the LEVER are completely untight and apply a bit of a tension when doing so, this way you will be more accurate to finish the tension.

To use it:

-unscrew a bit the lever shafts

-place the gantry is the front position to check the matching on each side to the front blocks

-turn the M5 nut og the LEVER accordingly to apply symmetric tension



-Check the tension with the tension frequencies procedure

https://github.com/FlorentBroise/BRS-Printers-Mod/blob/main/manuals/belt.pdf

-Tight back the top m4 nylock to secure the block

-This tension procedure has to be done several time, over time, for the system to settle

-You can confirm the correct tension or adjust it in the Shaper, still be aware the system will settle over few days, with a usage of it, repeat it accordingly.

! This mod has been designed fot a 3mm plate for Electronic panel !

The open frame mod, Skeleton cover mod, stock version, use the same manual

Thanks for following this document, if any question occurs you can contact me!