# Oldham assembly

## Suivi des évolutions

| Indice | Date | Description de l'évolution | Auteur |
|---|---|---|---|
| 0.0 | 18/07/2022 | Création | FBR |
| | | | |

## BOM :

Printed parts

| Lower Part | X3 |
|---|---|
| Center A part | X3 |
| Center B part | X3 |
| Top part | X3 |

Hardware :

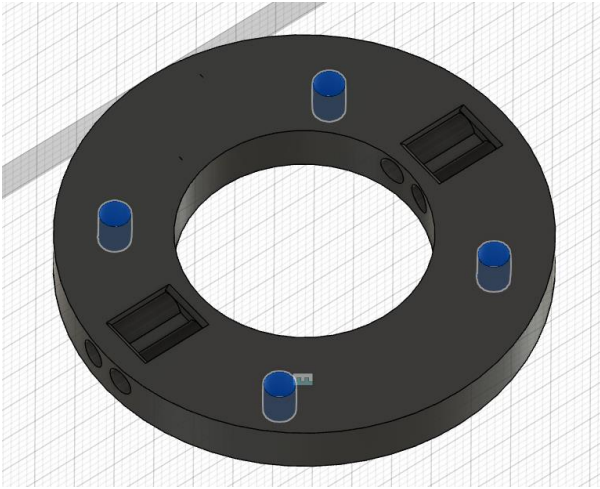| M4 Inserts | X12 |
|---|---|
| M3 inserts | X9 |
| M2 inserts | X12 |
| 4mm ball bearing | X12 |
| M2x8 | X12 |
| 12mm dowel pin | X48 |
| 8x3mm round magnet | X12 |
| M4x15mm | X12 |
| SFU1204 spindle | X3 |
| 1204 BS Nut | X3 |

## Part preparation

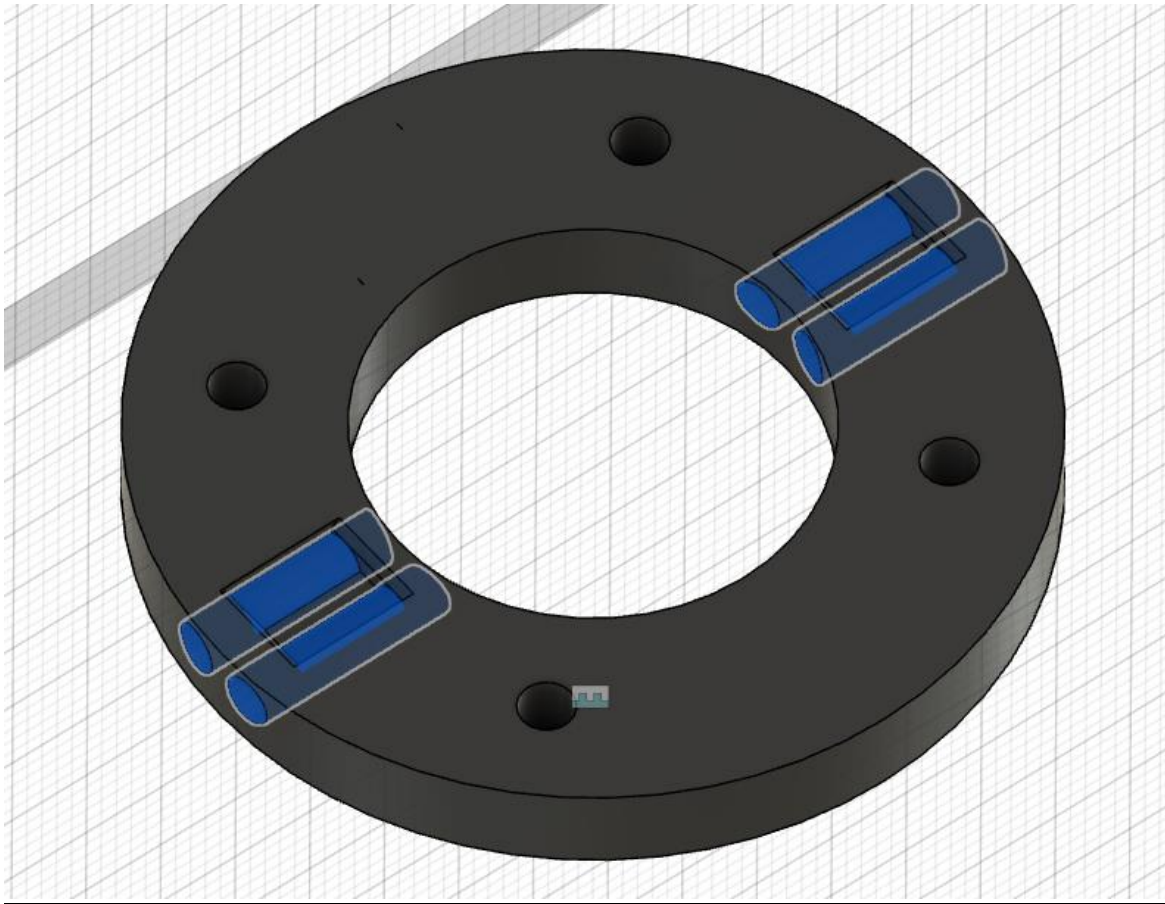Install all inserts and all the dowel pins



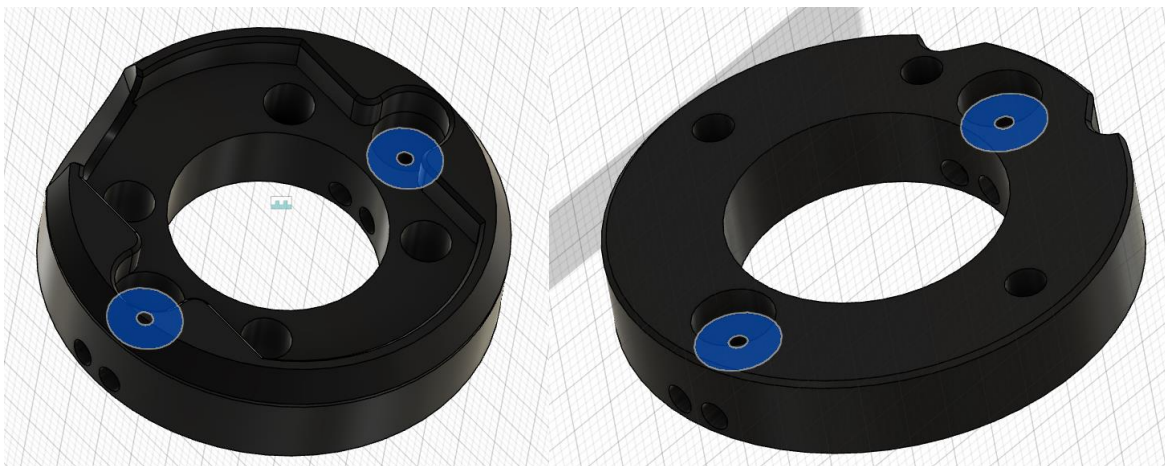*__M4 inserts here on the lower ring__*
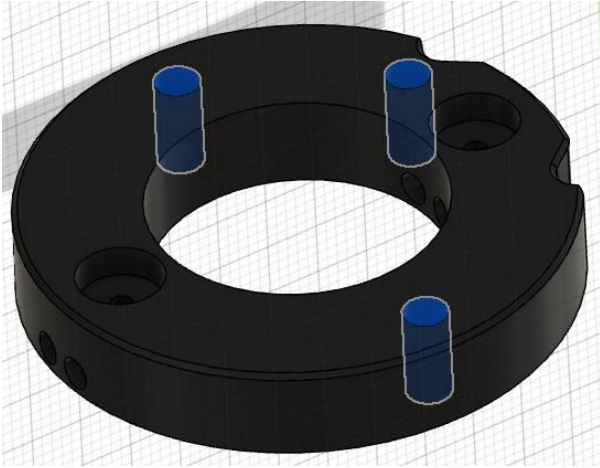


*__M3 inserts here__*



*__M2 inserts here__*
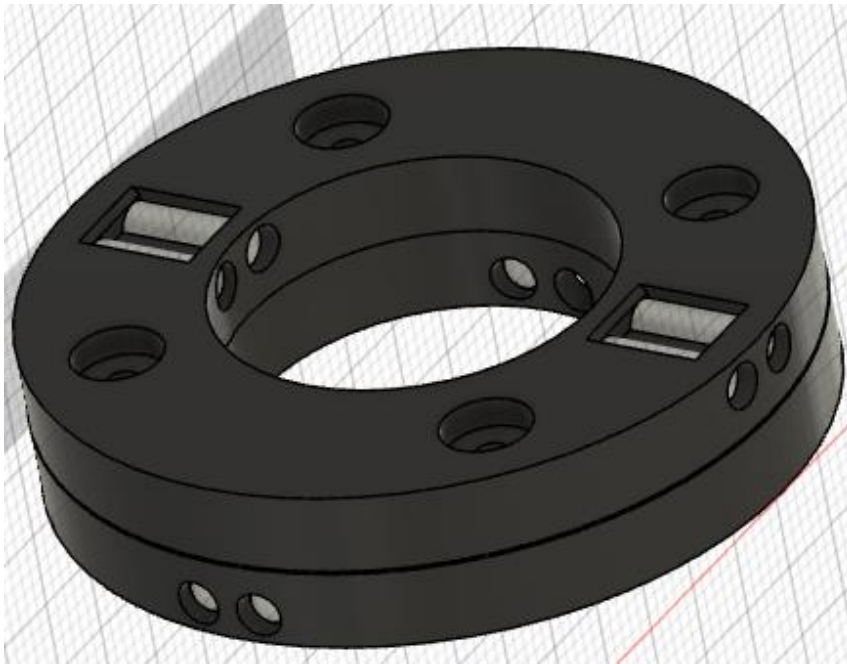
*Dowel pin on every 3mm holes*



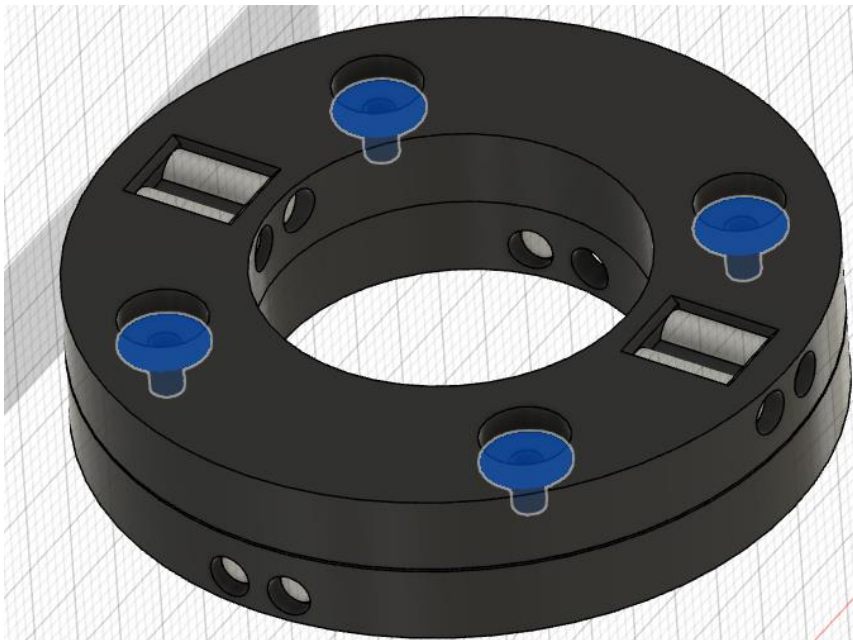**8x3mm magnets here on the lower and upper parts.**

**Magnets doesnt need to be placed with a polarity rule. They only affect the ball bearing. As each magnets are far from each other, there is no issue du a mismatch polarity since the goal is not to match them.**

## Center ring build

You can assemble the 2 middle parts

The discs must phase at 90°



Use x4 m2x8 screws to lock the disc

*This layout has been desing thy way to handle very high loads in time without deformation*

*EPAHT can handle 25Kg on ech disc without issue*

*Other materials can see this number bellow, but we need less than a 2Kg resistance in a VC300. This design is made to last or be used in a very heavy solution, like 8-10-12mm bed for custom size VC 800+*
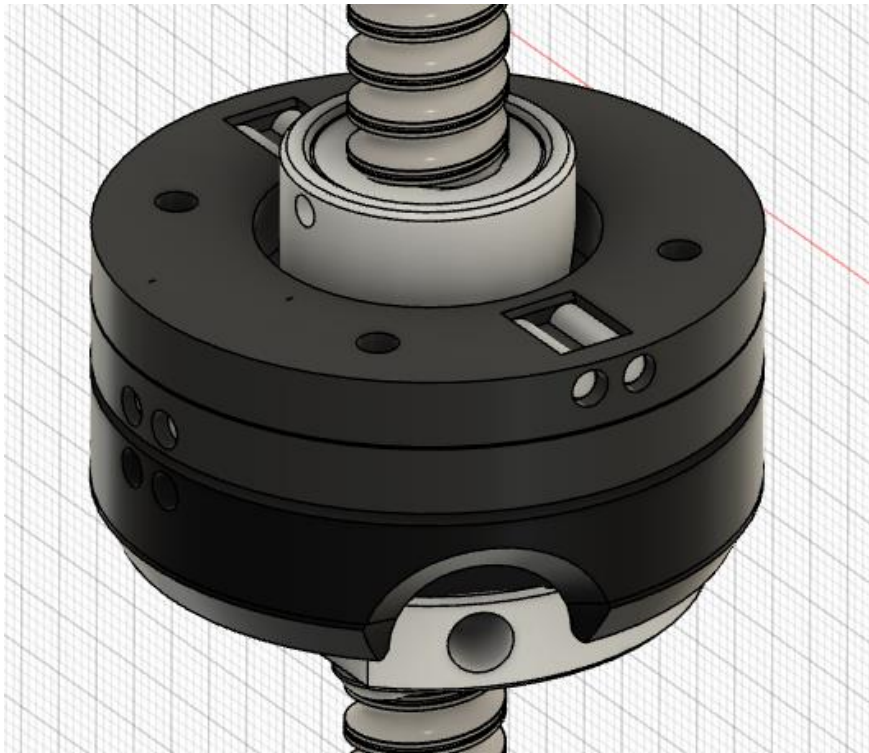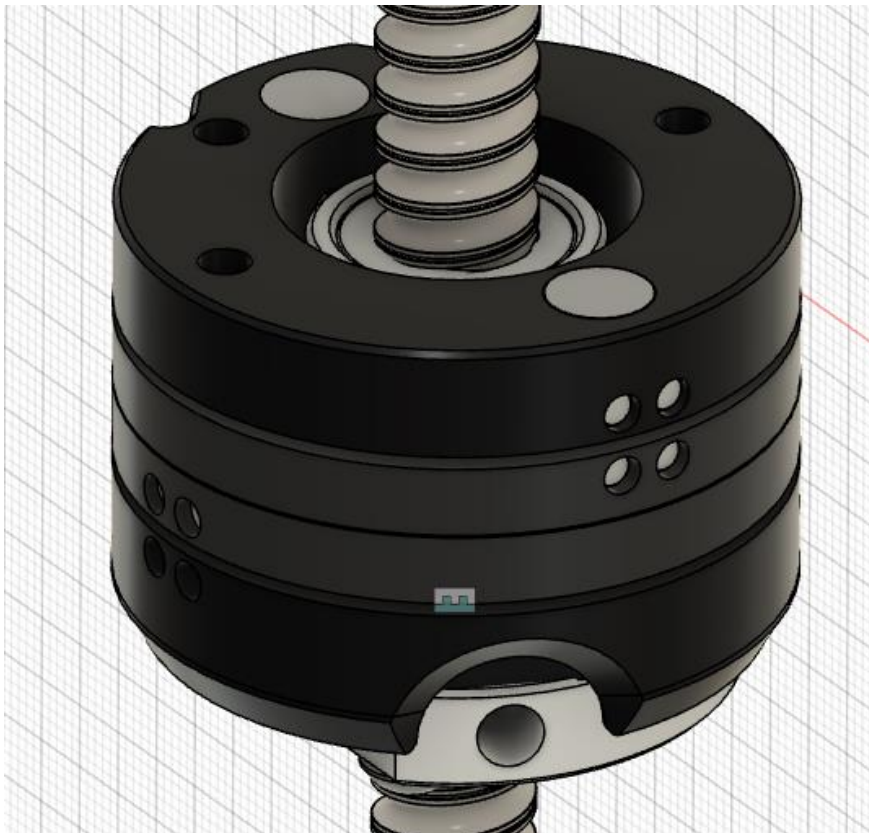
## SFU1204 assembly
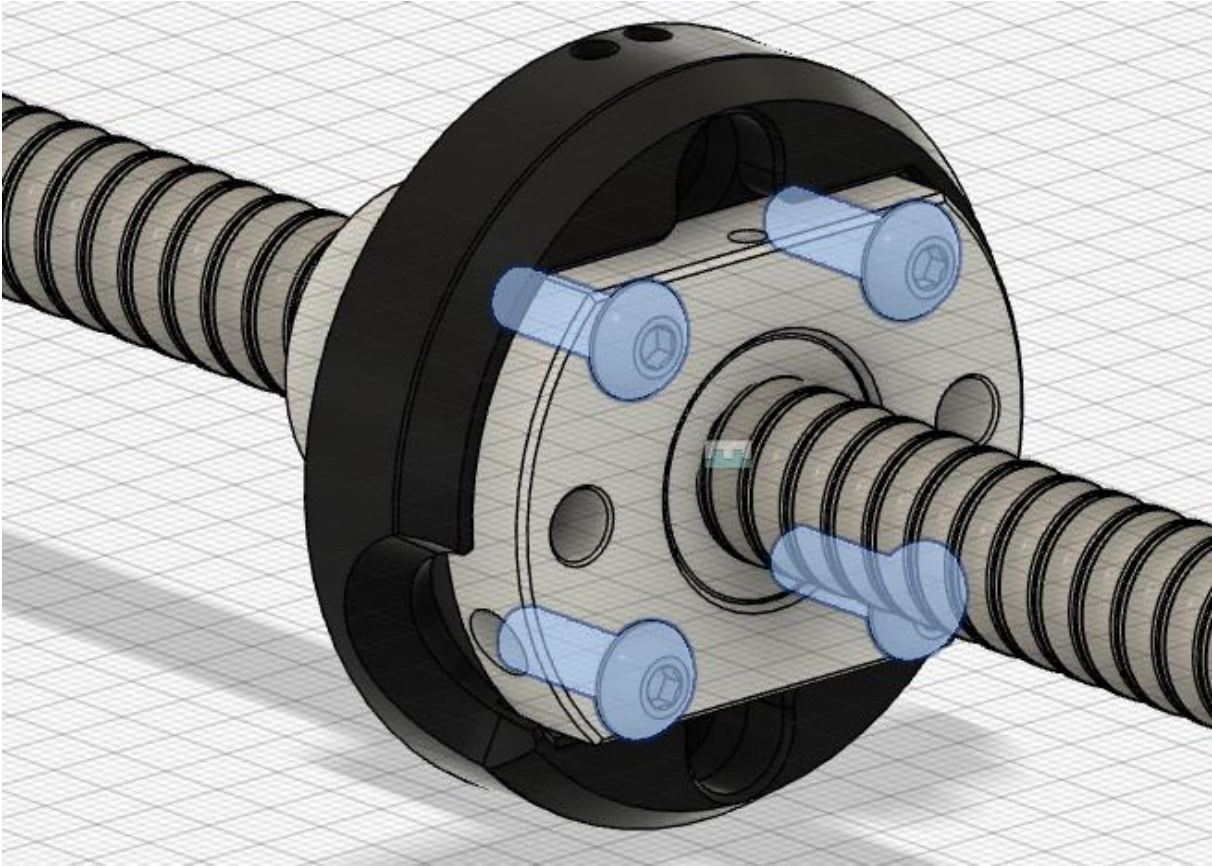


Install the lower disc, 4 m4x15 are needed fo each
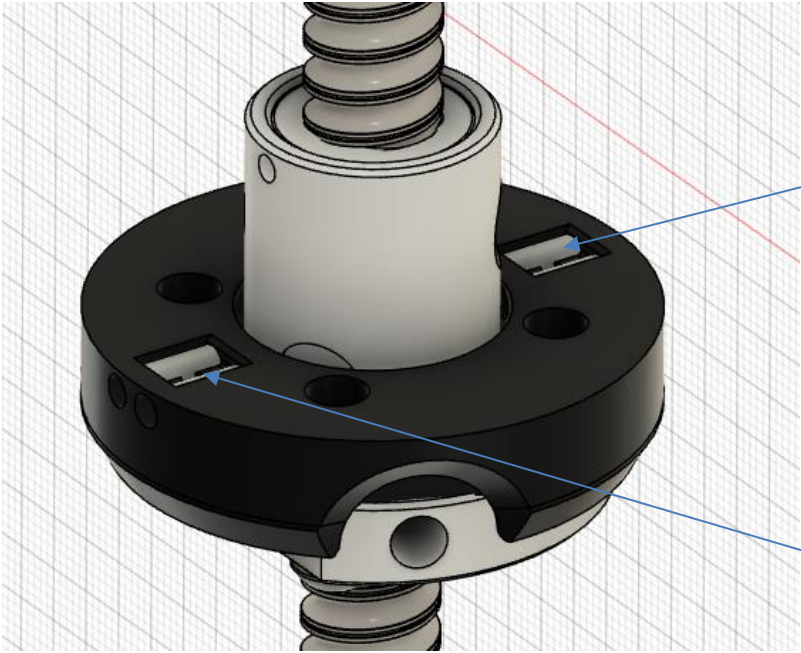


Install 2 ball bearingon the dowels.

Stack the assemble central disks and install the 2 other balls bearing



Stack the upper disk

Before fixing the top to the Arm, make sure everything is in place and can wobble without any hard point. The ball bearings can be a bit unstable, the load of the bed will secure it in place.

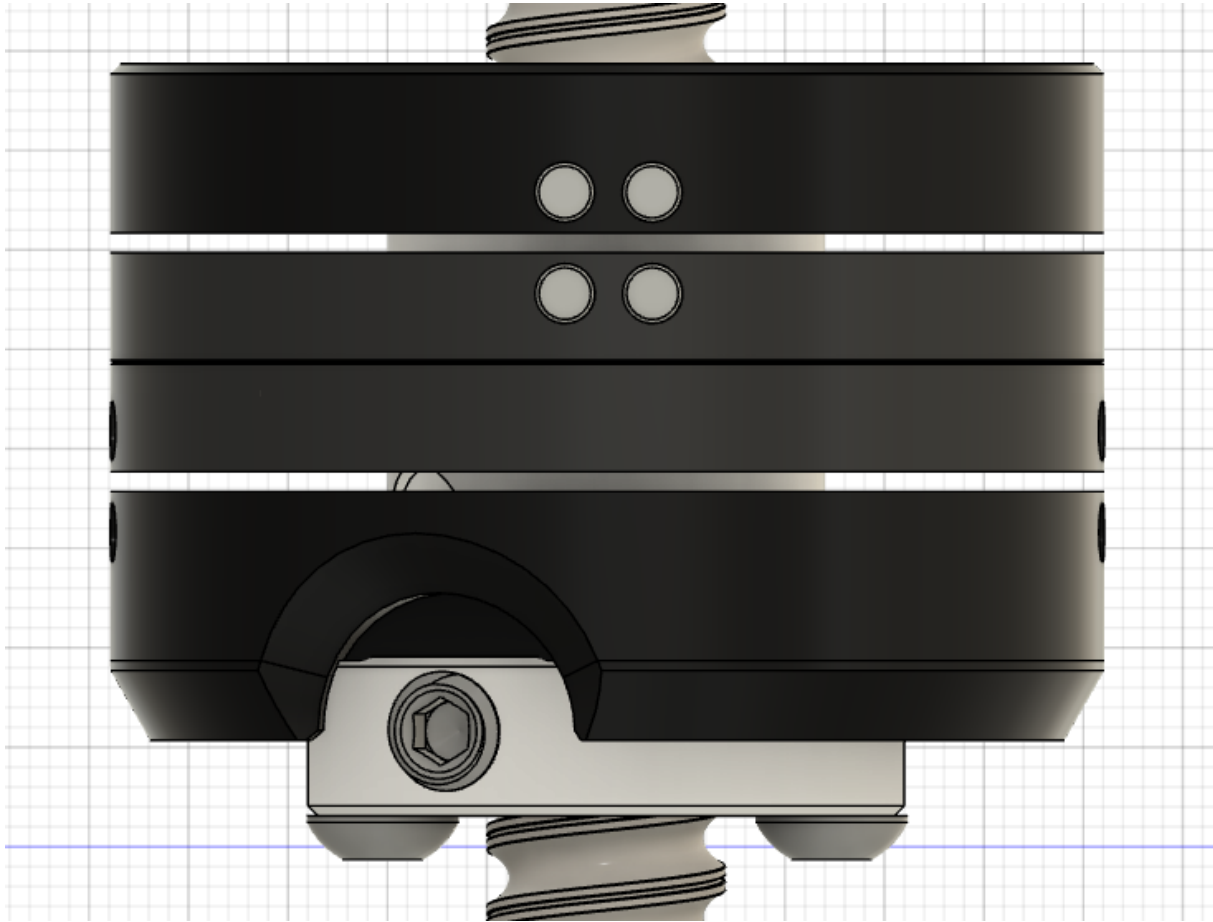| | **Oldham Assembly** | BRS-Engineering |
|---|---|---|
| | | |

## Grease it !



Apply grease un the nut, you can know if it's full by looking for grease presence under at the seal of the ballscrew, half a mm of it should appears. Close the hole with a grease nipple or a m6 headless 5mm screw

| | Oldham Assembly | BRS-Engineering |
|---|---|---|
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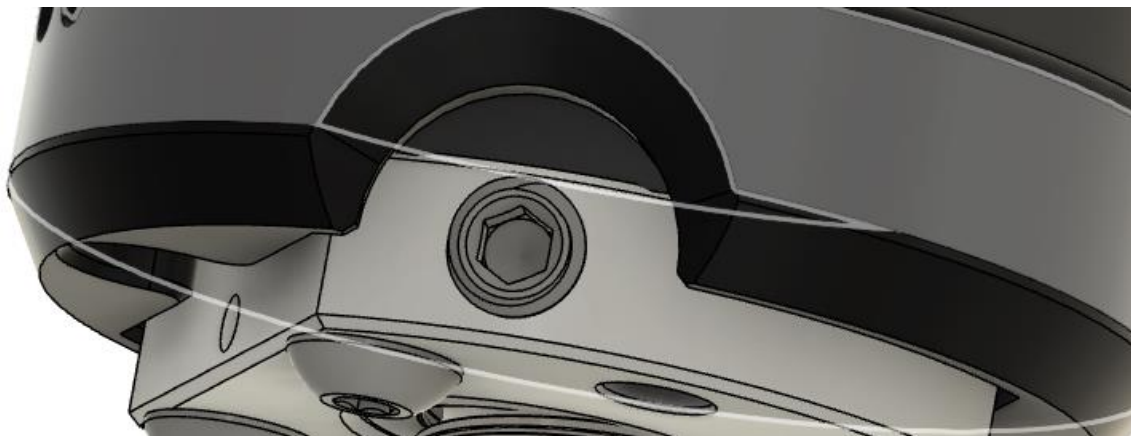
## Final checks



Check that the disks are paralells to each others

Check the balls bearing still in the dowel chanel

Make the kinematic works a bit: try to simulate a wobble by hands

DON'T FORGET TO TUNE THE Z_MAX distance in Klipper

**You can now resume the System assembly by the Z upgrade manual**