



How to build your robot

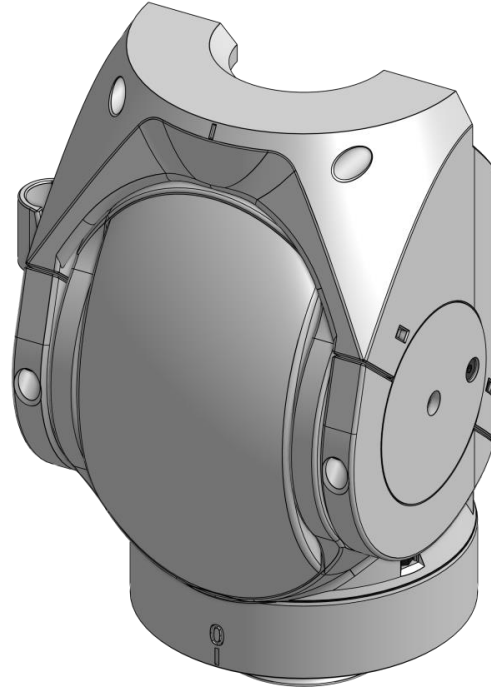
www.pib.rocks/build

assembly instructions for:

Elbow

pib#4

Assembly in this tutorial is for Elbow
right, for elbow left it will be mirrored



PRINT

BUILD

DEVELOP

YOUR OWN ROBOT

Printable and pre-assembled parts

Pib's elbow consists of **12 printable parts** and is assembled in **14 steps**.

In order to construct the elbow, you will need to print the parts as seen in the table.

Please note: For better readability we use the abbreviations in the tutorial: C08 instead of C08-Central_rotator_bracket.

Printable parts

C15-Central_rotator_motor_connector

C09-Central_rotator_connector

C41-Elbow_central_motor_flange

Printable parts

C39-Elbow_upper_shell

C36-Elbow_lower_shell

C31-Elbow_shaft_motor

C35R-Elbow_clamp_right

C38-Elbow_cover

C37-Elbow_rotator_bracket

C40-Elbow_upper_shell_lock

C34-Elbow_motor_connection

C33-Elbow_motor_flange

C35L-Elbow_clamp_left

C32-Elbow_axis_cable

C74-Wire_holder

Non-printable parts

You will also need the following non-printable parts from our pib.Box Master.

If you do not have it yet, you can buy in our shop
<https://shop.pib.rocks>.

Non-printable parts

1 x **E07** MG996R Servo

1 x **E15** DS5180SSG Servo

1 x **M17** Motor_clamp-18T

4 x **M16**-Servo_screw_adapter

1 x **M18** Metal-motor-Adapter-L

2 x **M20** medium sized ballbearings (50 x 65 x 7mm)

25 x **S01** M3 nuts

4 x **S02** M3 6 mm screws

2 x **S03** M3 8 mm screws

5 x **S05** M3 12 mm screws

6 x **S08** M3 20mm screws

4 x **S10** M3 25mm screws

5 x **S11** M3 30mm screws

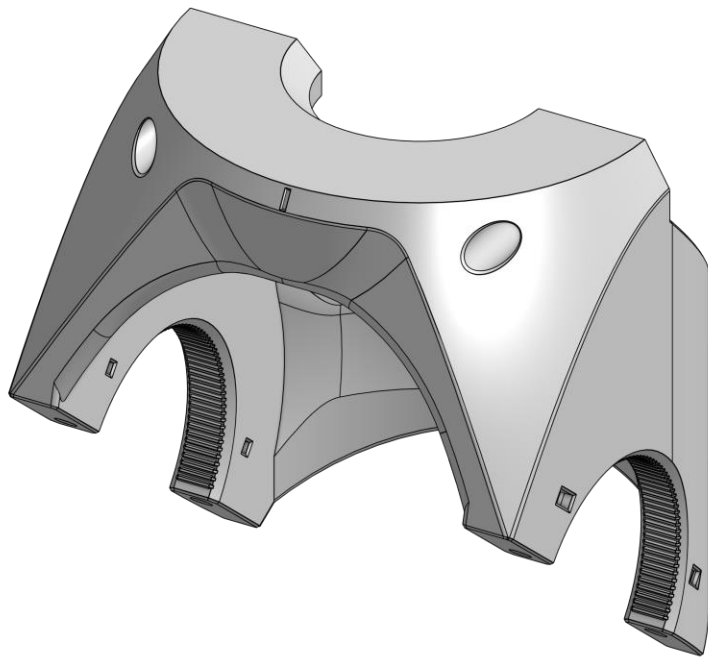
6 x **S13** M3 40mm screws

2 x **M06** Ballbearing_Axial (70x50x3)

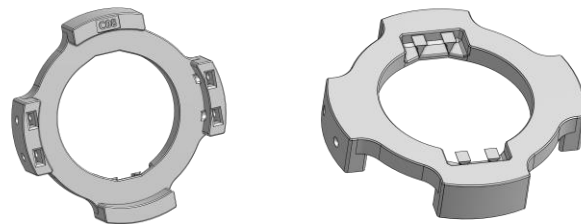
2 x **M07** Thrust_Bearing (70x50x1)

Printable parts - Overview

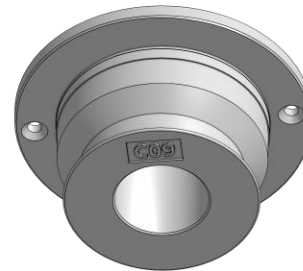
C39-Elbow_upper_shell



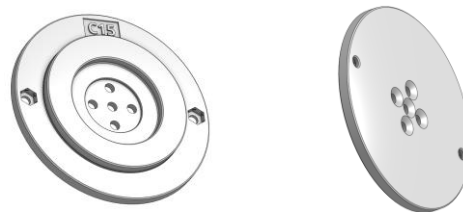
C08-Central_rotator_bracket



C09-Central_rotator_connector



C15-Central_rotator_motor_connector



Printable parts - Overview

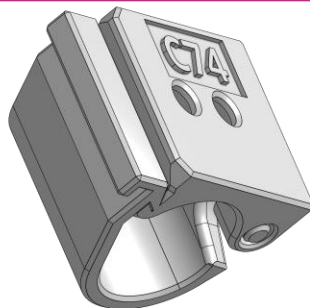
C36-Elbow_lower_shell



C31-Elbow_shaft_motor



C74-Wire_holder

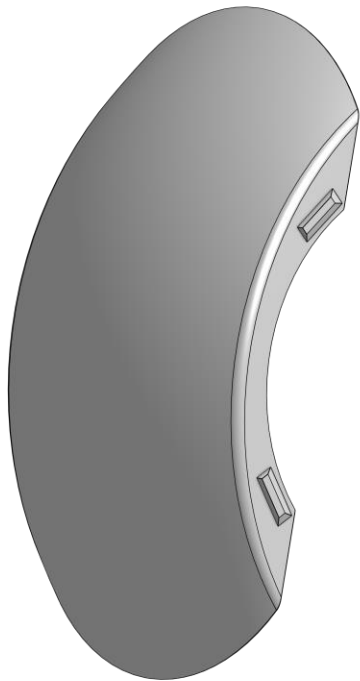


C35R-L-Elbow_clamp_right-left

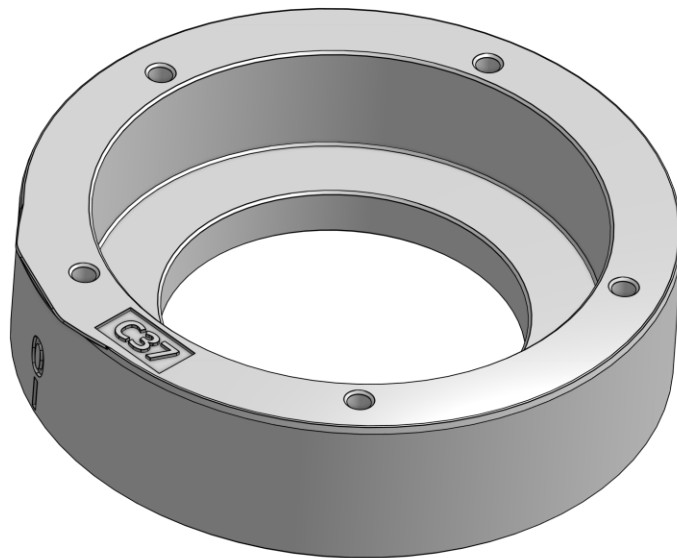


Printable parts - Overview

C38-Elbow_cover



C37-Elbow_rotator_bracket



Build it better: our suggestion for assembling pib



We recommend **tools** for each step. These are a suggestion, you can of course also use other tools.



1-5

We have categorized each step according to its **difficulty** - from **1-5** (1 being the easiest, 5 the hardest)



We also show you which **non-printable parts** you need for each step

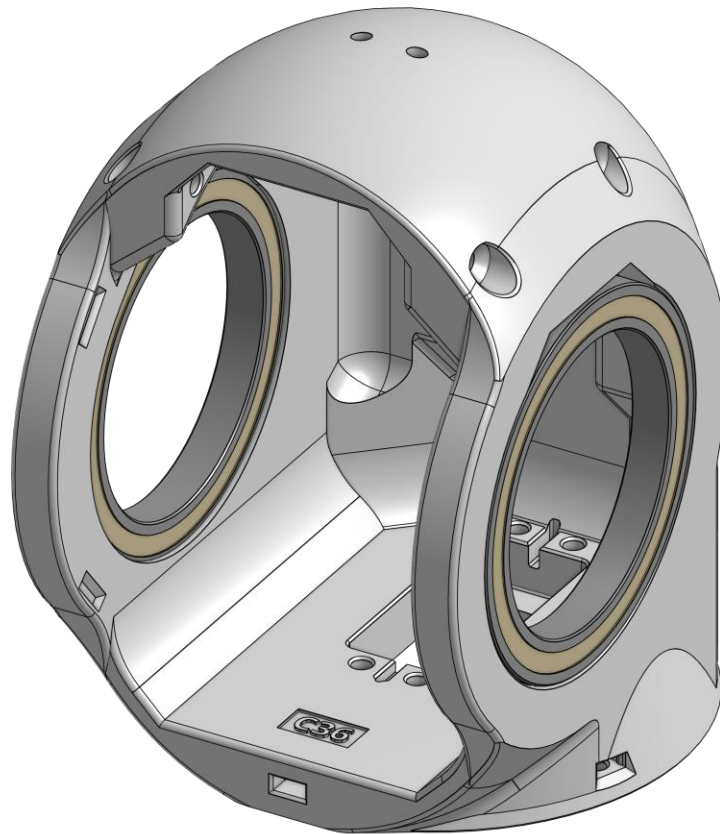
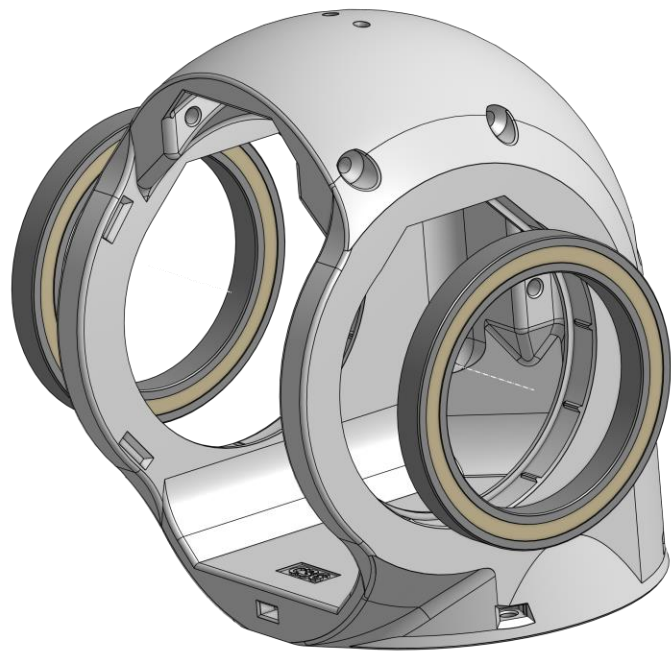
Step 0

Make sure all motors in this tutorial are calibrated according to tutorial "**step 1c motor calibration**"



Step 1a

Place 2 **M20** in the shown spots in **C36**.



Step 1b

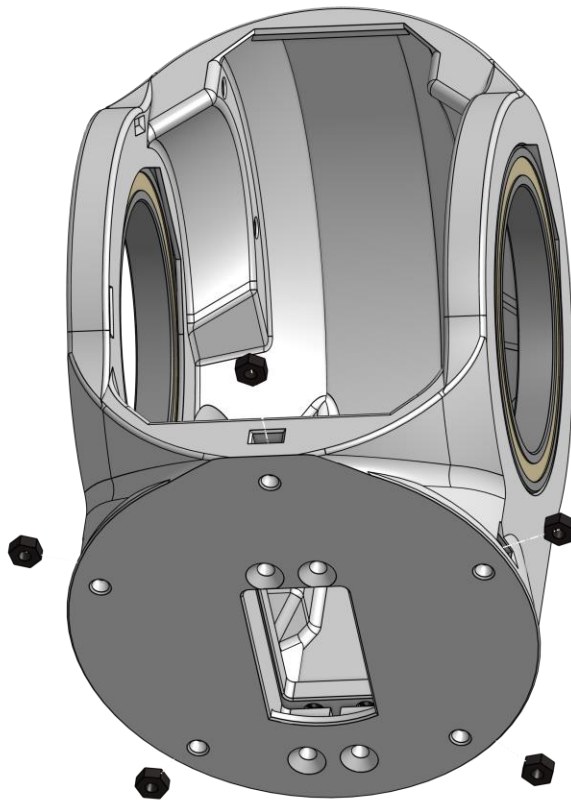
Place **5 x M3 nuts** in the shown spots in **C36**.



1

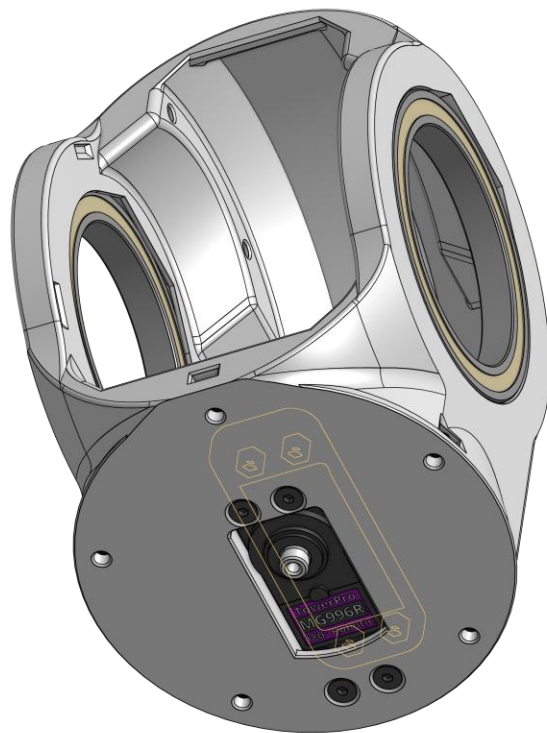


5x



Step 1c

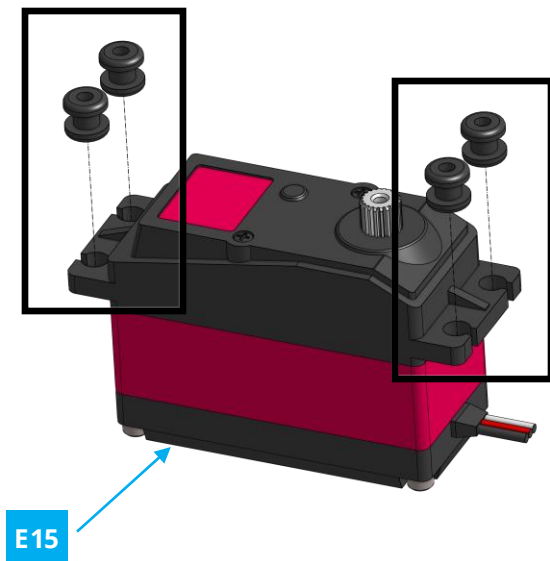
Attach **E07** to **C36** using **C41**, **4 x M3** nuts and **4 x M3 18mm** screws



Step 1d

Place **4 x M16** in the shown spots in **E15**.

Use a thin screwdriver insert it in M16 and slide it in the shown holes, then remove the screwdriver



Please revert to step 0 and calibrate the motor if it was not calibrated, this motor should be calibrated at 5500 and the elbow joint being stretched while assembled

Step 1e

Connect **E15** to **C33** and **C34** using **4 x M3 nuts** and **2 x M3 25mm screws**. Add **2 x M3 nuts** in **C34**



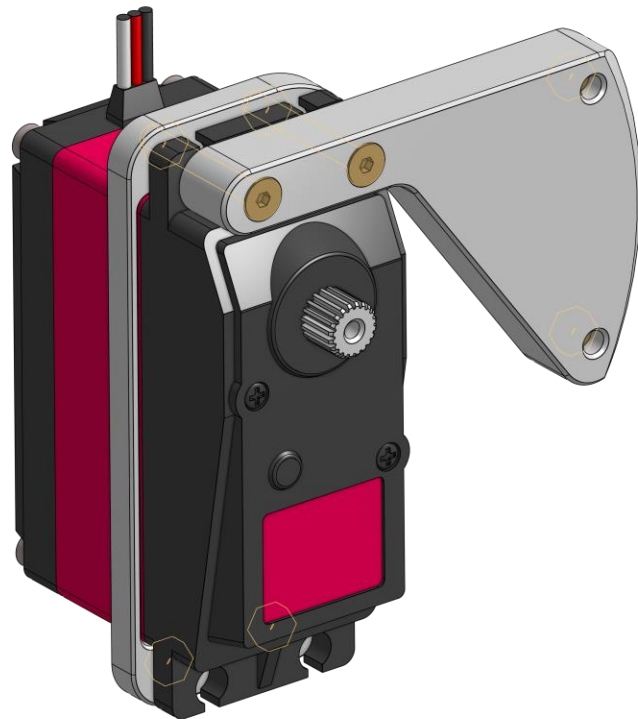
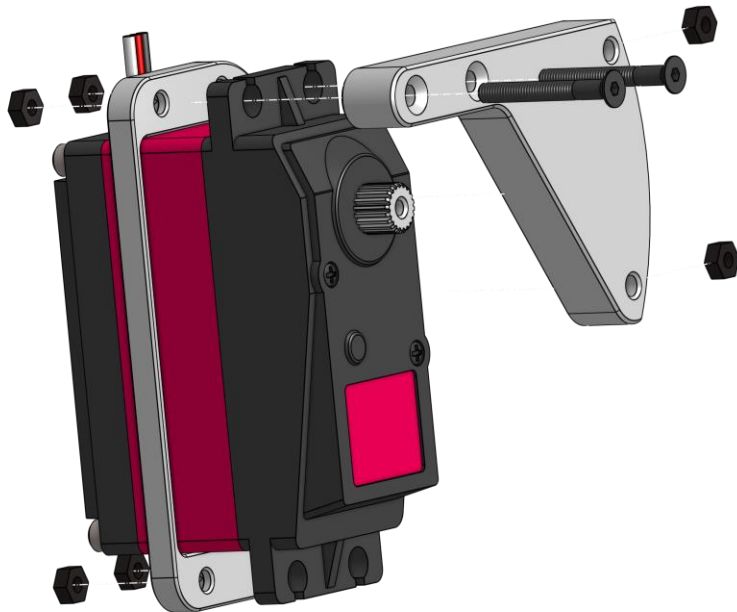
1



6x

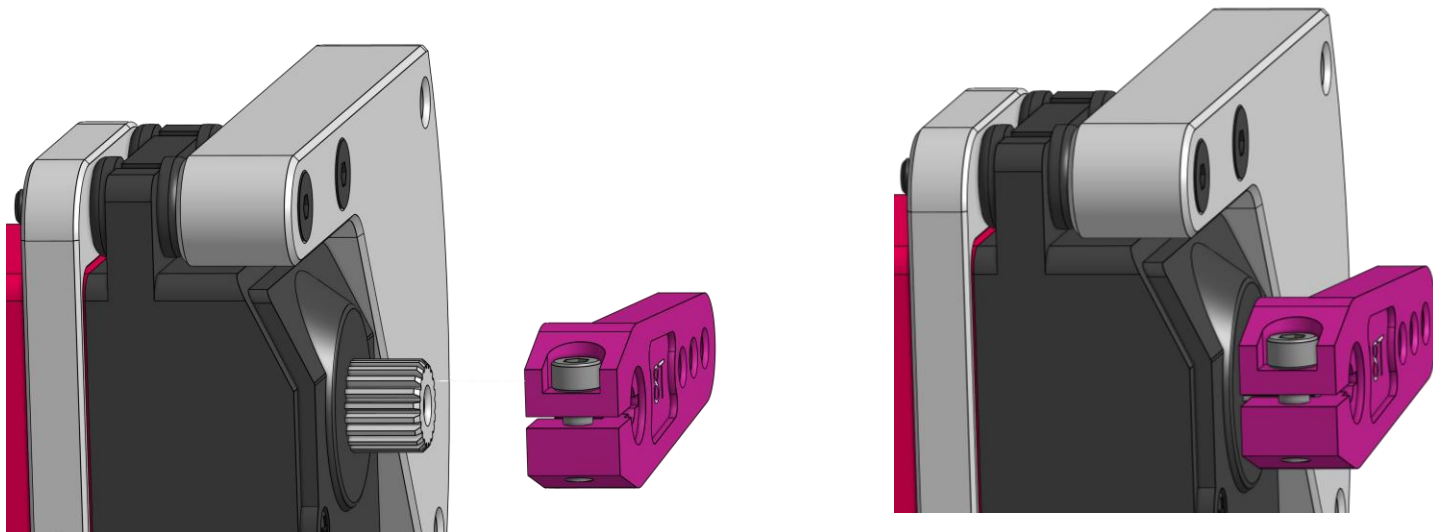


2x



Step 1f

Insert **M17** to **E15** and tighten the small screw



Step 2

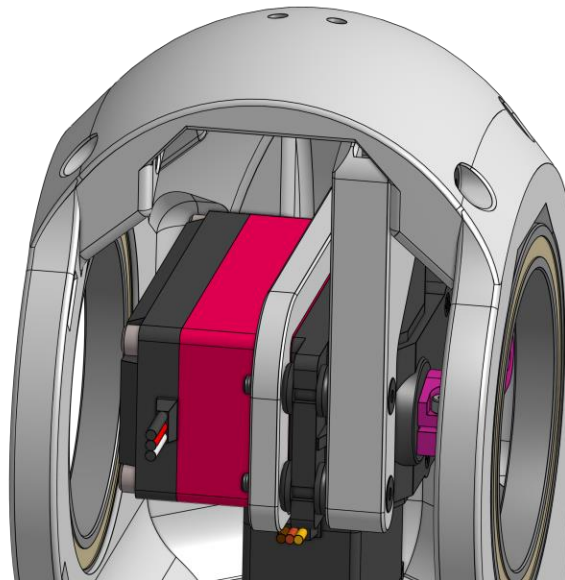
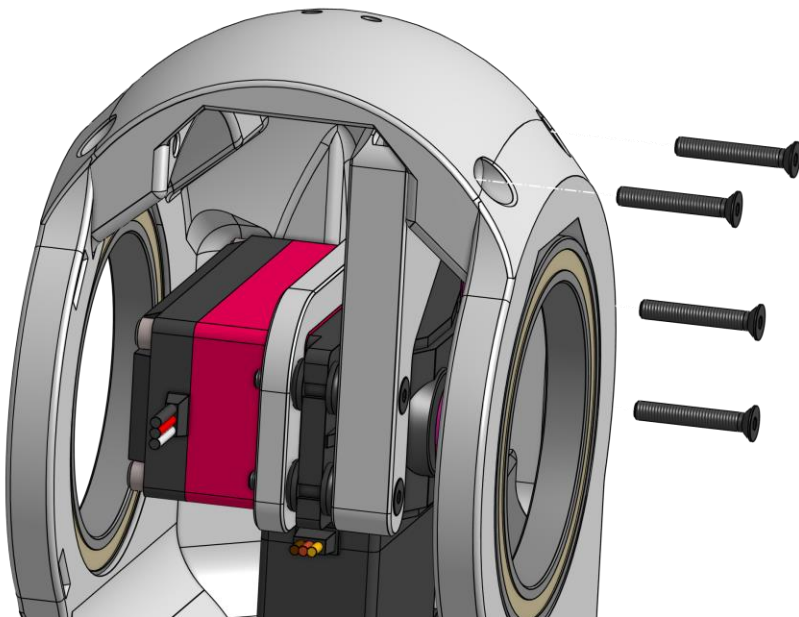
Connect assembly to **C36** using **4 x m3 20mm** screws



1

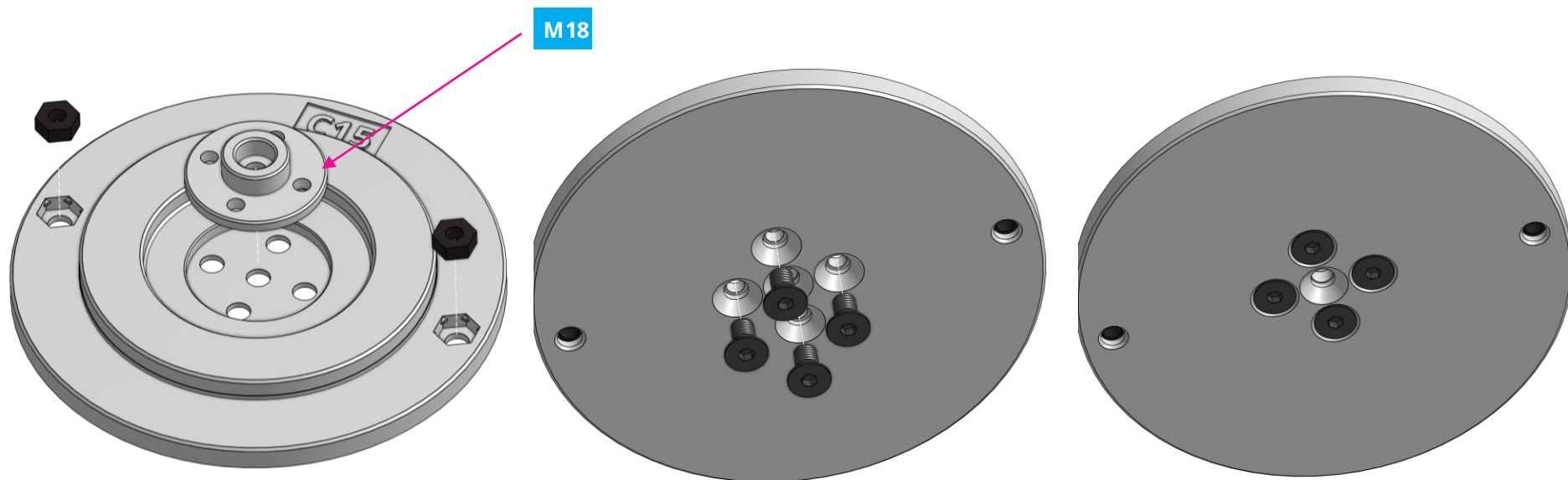


4x



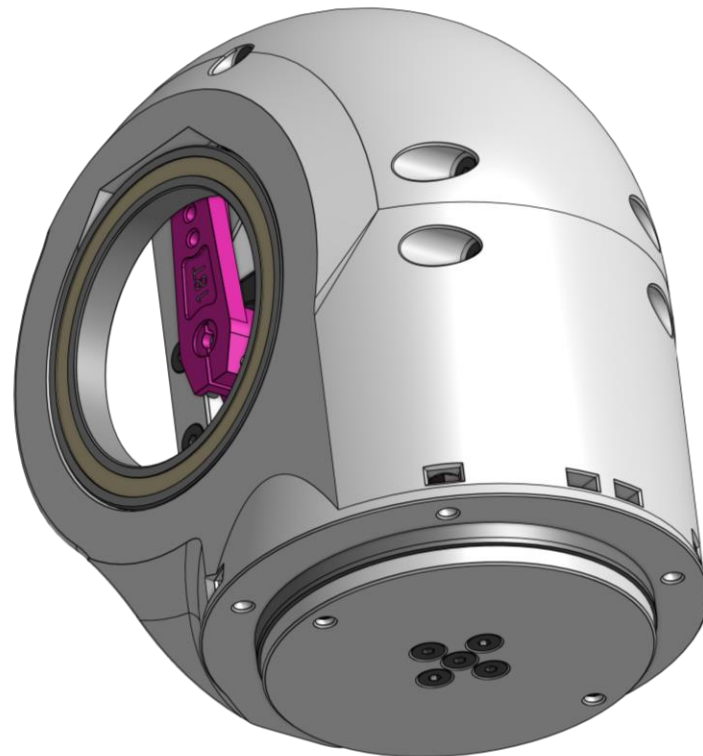
Step 3a

Insert **2 x M3 nuts** and **M18** in **C15**, then connect **M18** using **4 x M3 6mm** screws. Note **M18** is a metal part



Step 3b

Place **M06** and **M07** on top of **C15**, then connect the assembly to **E07** using **1 M3 12mm** screw



Step 3c

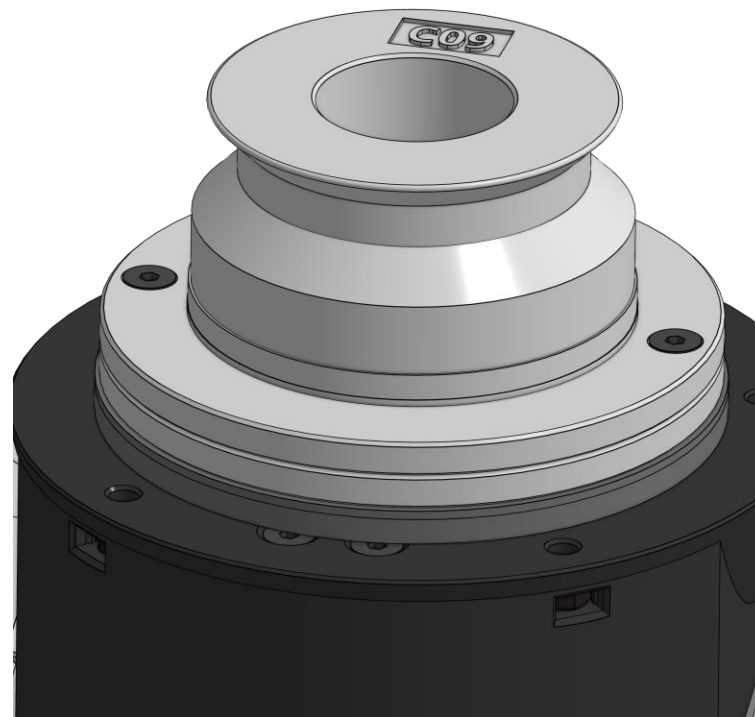
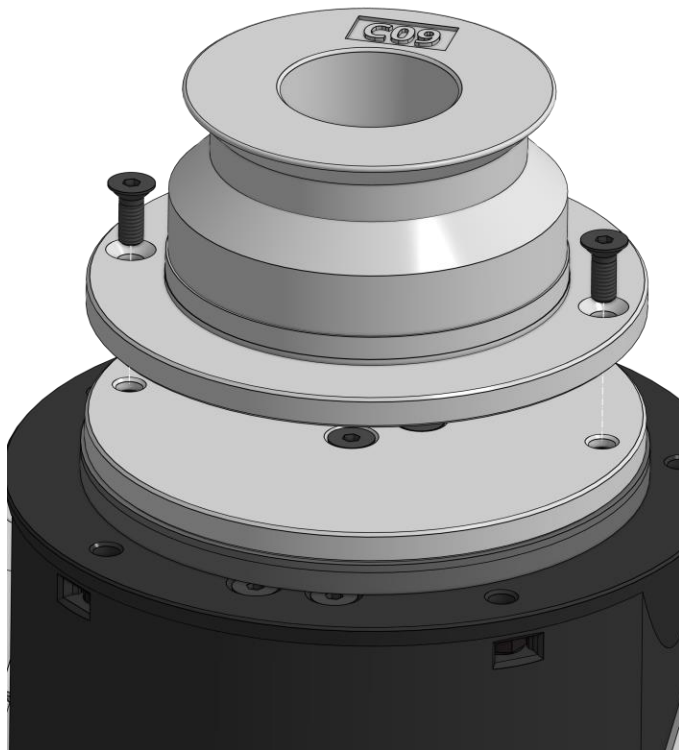
Connect **C09** to **C15**, using 2 x **M3 8mm** screws



1



2x



Step 3d

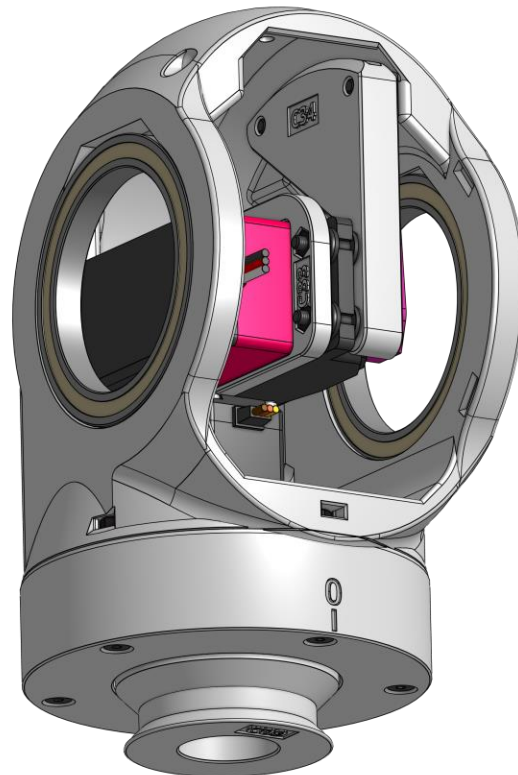
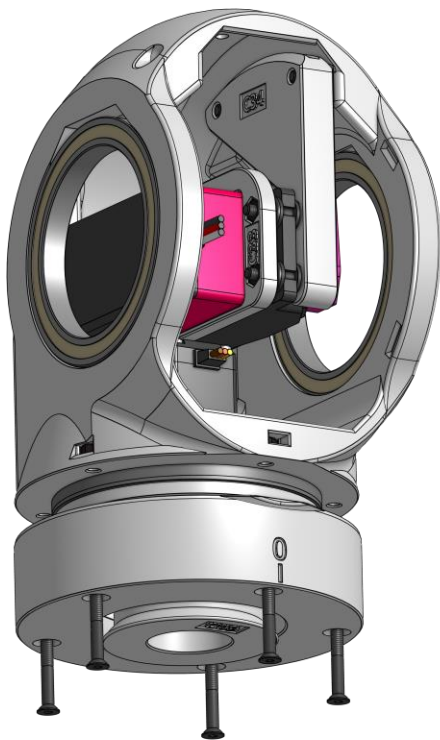
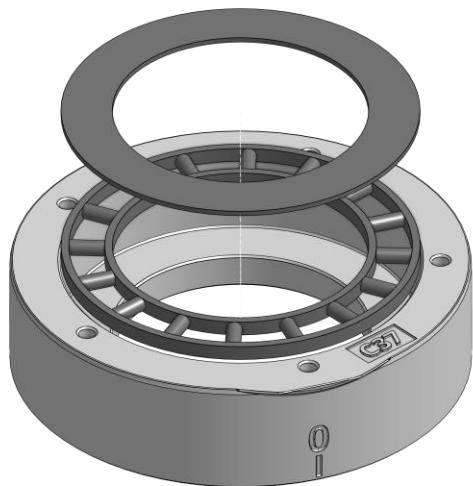
Place **M06** and **M07** in **C37**, then connect **C37** to elbow using **2 x M3 30mm** screws



1

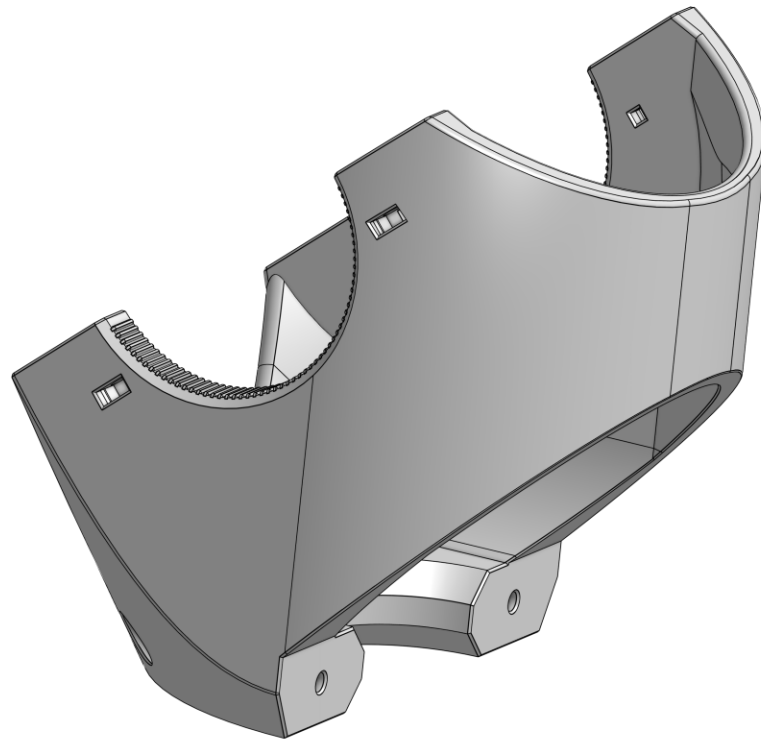
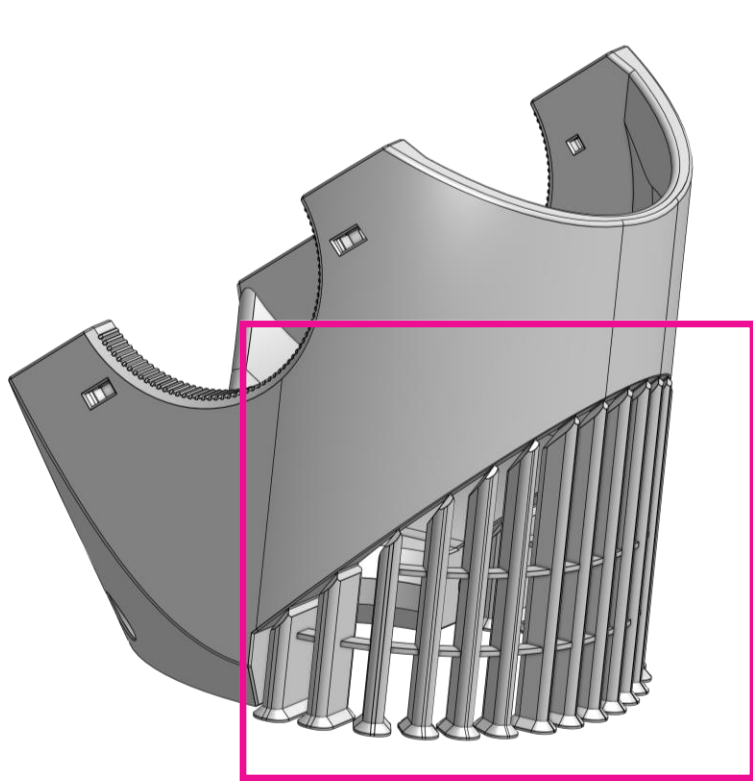


5x



Step 4

Remove print helpers gently from **C39**.



Step 5

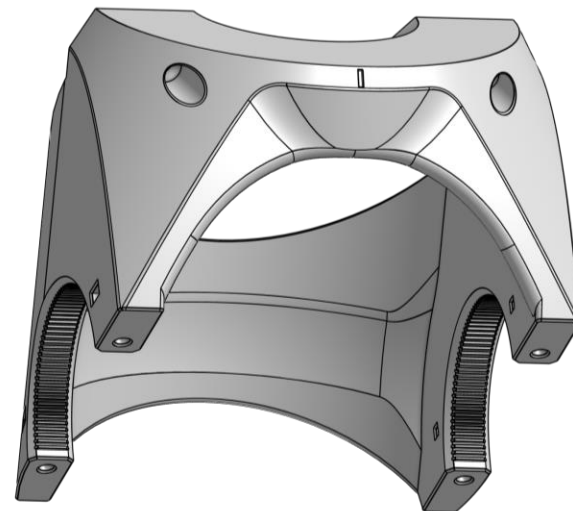
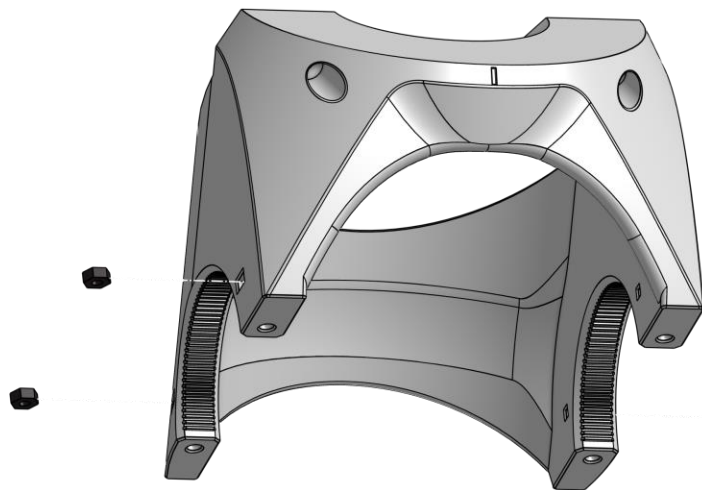
Place **4 x M3 nuts** in **C39**



1



4x



Step 6

Connect **C74** to **C32** using **2 x M3 nuts** and **2 x M3 20mm** screws



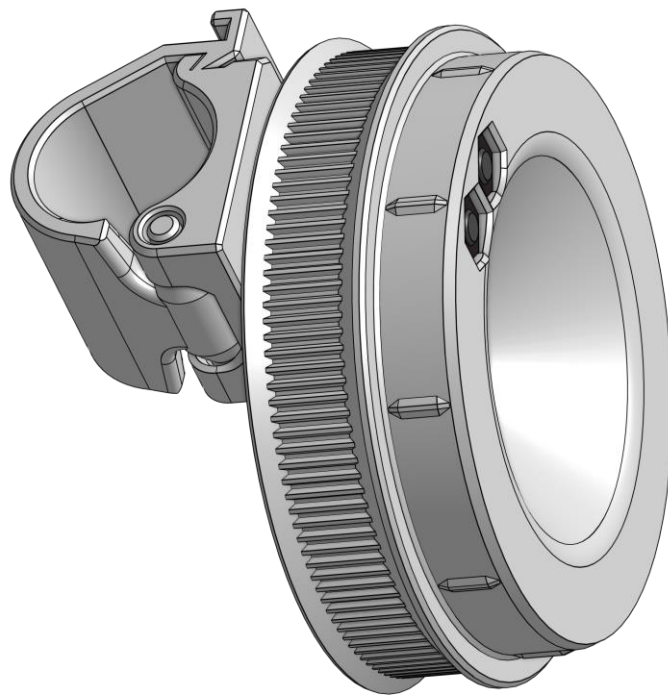
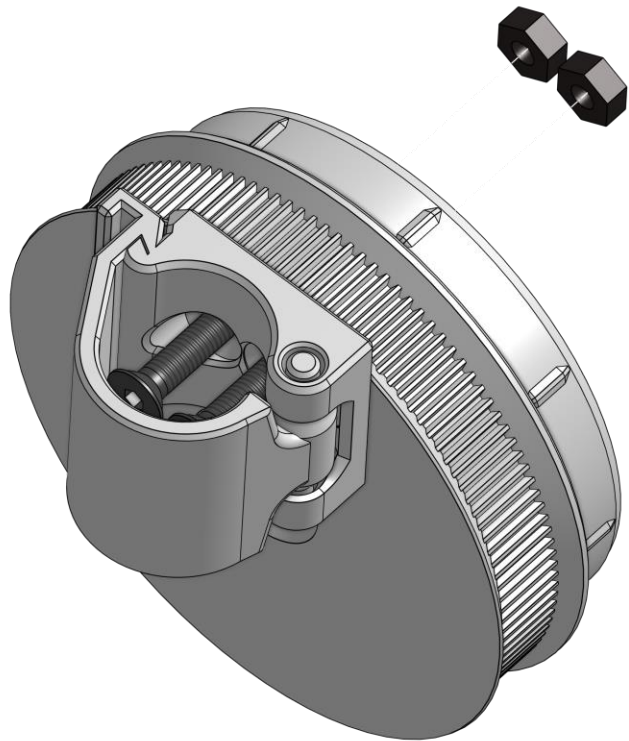
2



2x



2x

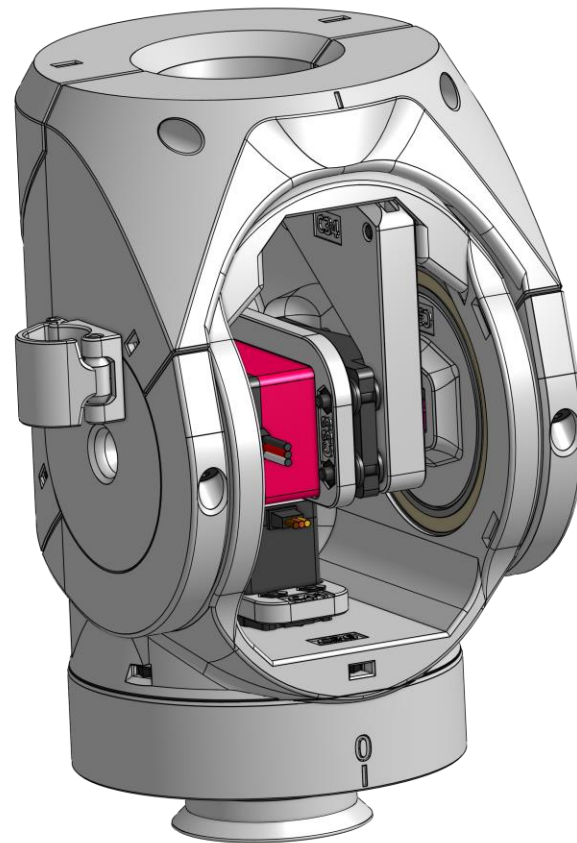
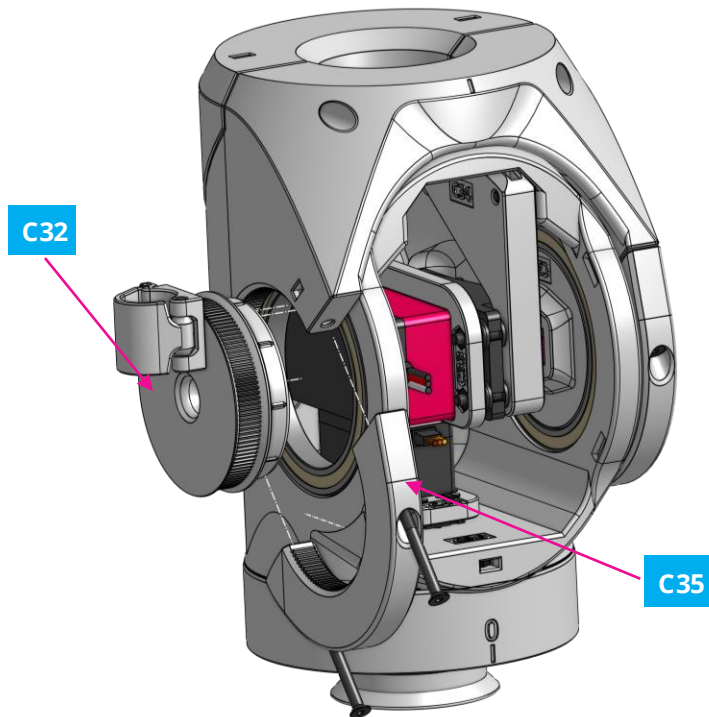


Step 7

Connect upper elbow to lower elbow using **C32** first , then **C35-L** and **2 x M3 40mm** screws.



2x



Step 8

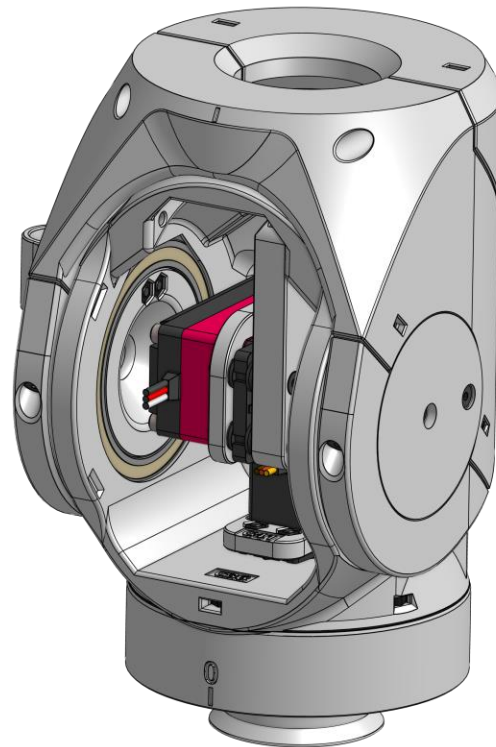
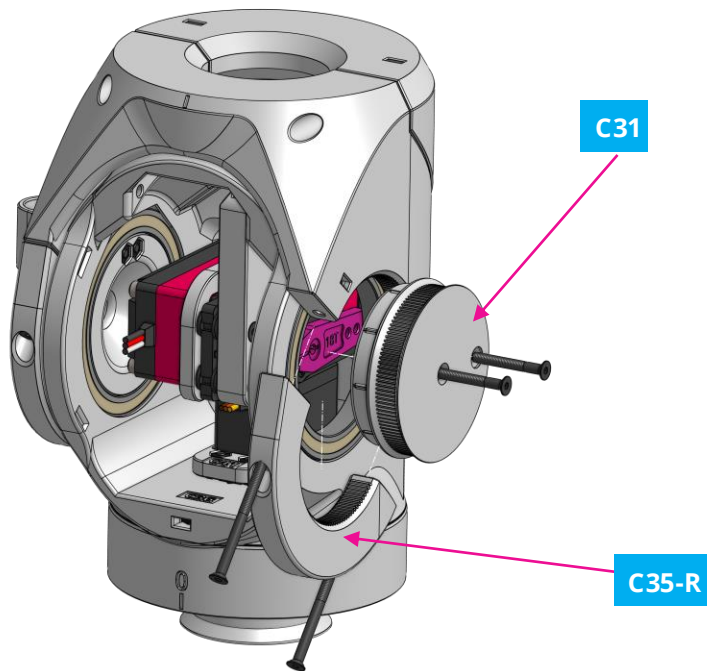


3



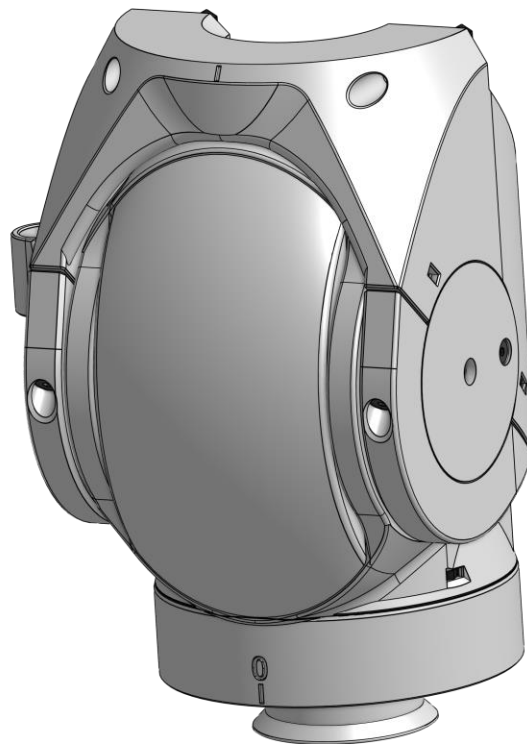
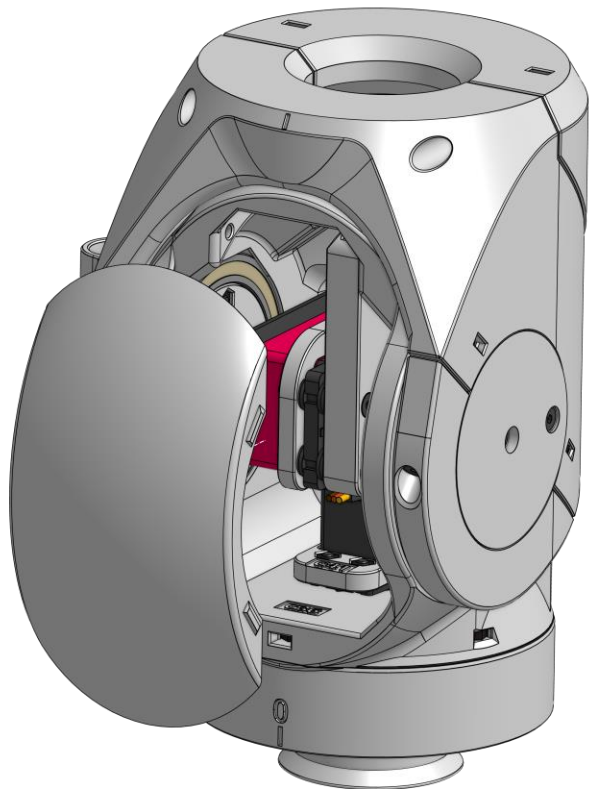
4x

Connect **C31** first and then **C35-R** to elbow using **2 x M3 40mm** band **2 x M3 25mm** screw.



Step 9

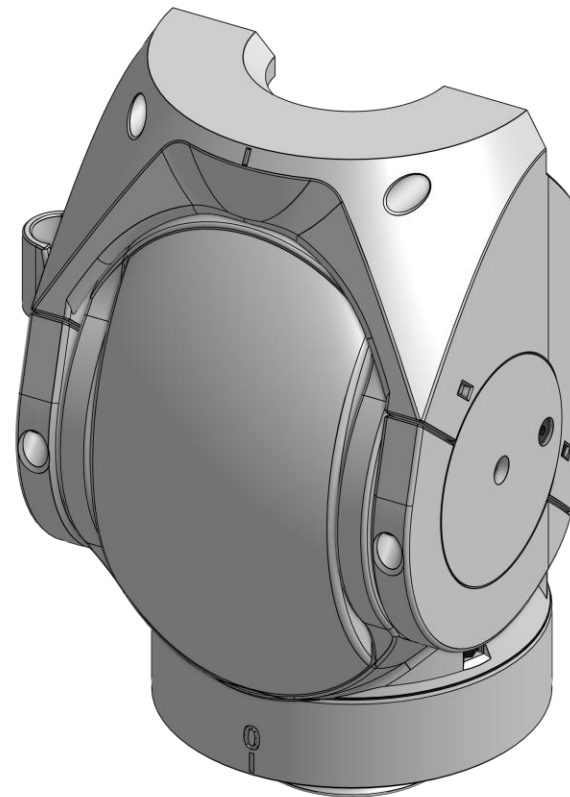
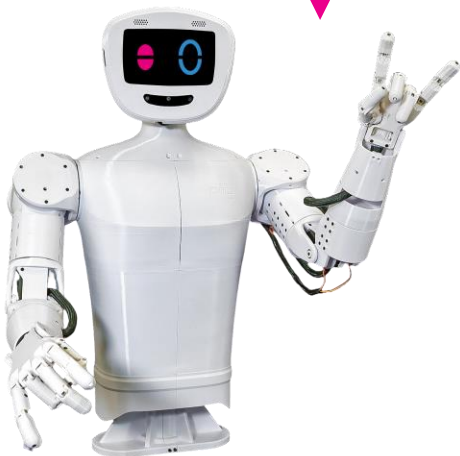
Attach **C38** to assembly.



Congratulations

You did a great job, pib's elbow is assembled!

Well done!



Do you need support?

Or do you need our pib.Box with all non-printable parts?

Or maybe you have some new ideas and improvements?

Please contact us.



team@pib.rocks

Send us an email.



discord.com/invite/GRdpyeDu7P

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