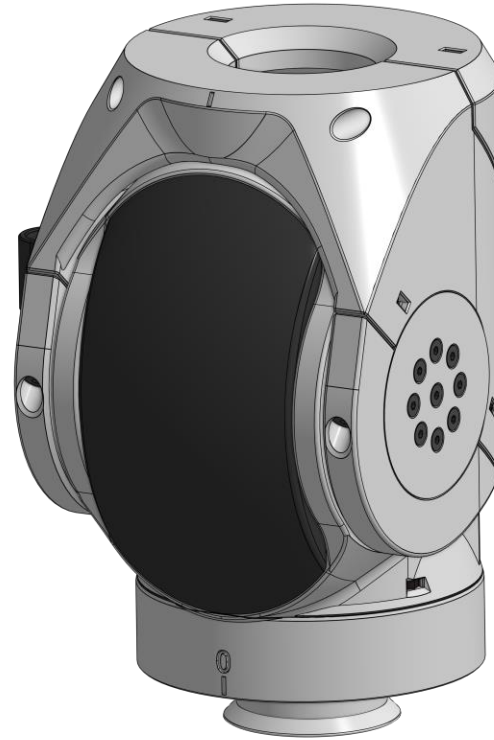# How to build your robot

www.pib.rocks/build

assembly instructions for:

Elbow

pib#4 advanced

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

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
C15s-Central_rotator_motor_connector
C09s-Central_rotator_connector
C77s-Motor_housing_central_rotator

Printable parts
C39-Elbow_upper_shell
C36s-Elbow_lower_shell
C31s-Elbow_shaft_motor
C35R-Elbow_clamp_right
C38-Elbow_cover
C37s-Elbow_rotator_bracket
C40-Elbow_upper_shell_lock
C34s-Elbow_motor_connection
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 **E18 STS3095** Servo
1 x **E19 STS3215** Servo
1 x **M18** Metal-motor-Adapter-L
2 x **M03** medium sized ballbearings **(**10 x 19 x 7mm)

23 x **S01** M3 nuts
4 x M2 6 mm screws
4 X M2.5 8mm screws
2 x **S03** M3 8 mm screws
14 x **S08** M3 20mm screws
1 x **S10** M3 25mm screws
5 x **S11** M3 30mm screws
15 x **S13** M3 40mm screws
2 x **M06** Ballbearing_Axial (70x50x3)
4 x **M07** Thrust_Bearing (70x50x1)

Printable parts - Overview

C39-Elbow_upper_shell
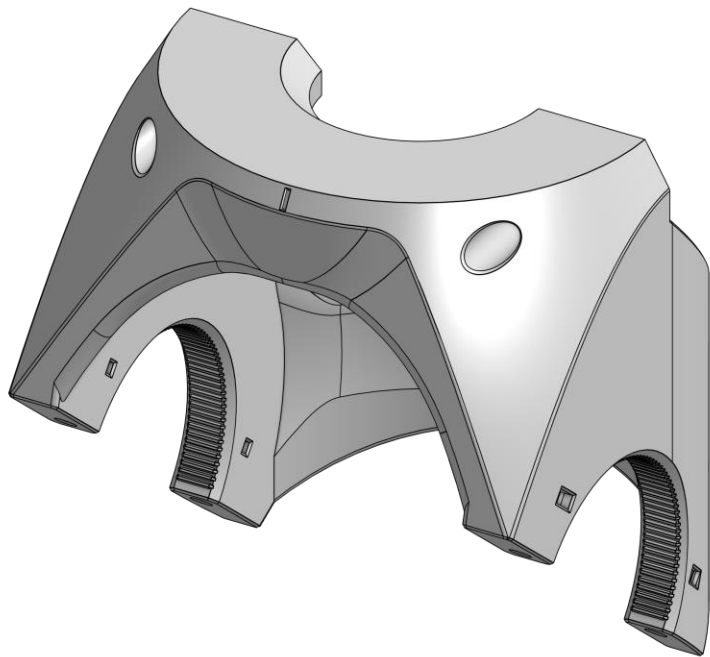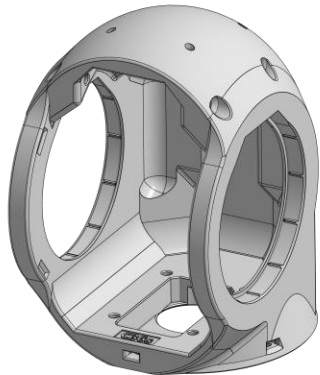

C09s-Central_rotator_connector
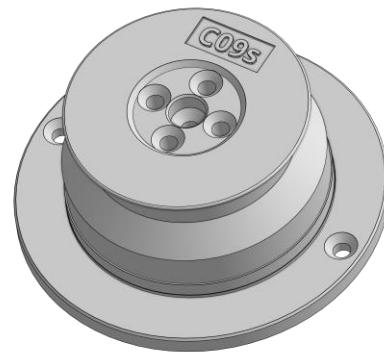
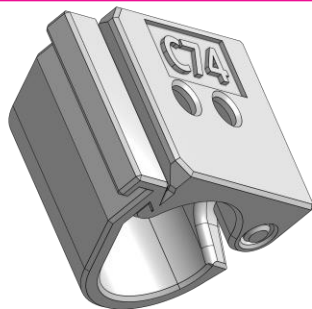## C15s-Central_rotator_motor_connector
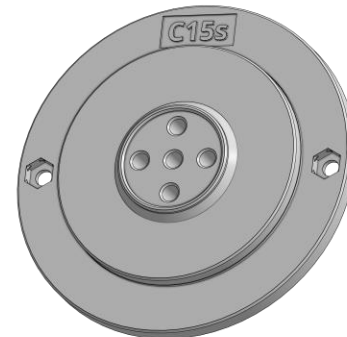
Printable parts - Overview

C36-Elbow_lower_shell

C31s-Elbow__shaft_motor

C74-Wire_holder

C35R-L-Elbow_clamp_right-left

Printable parts - Overview

C38-Elbow_cover

C37s-Elbow_rotator_bracket
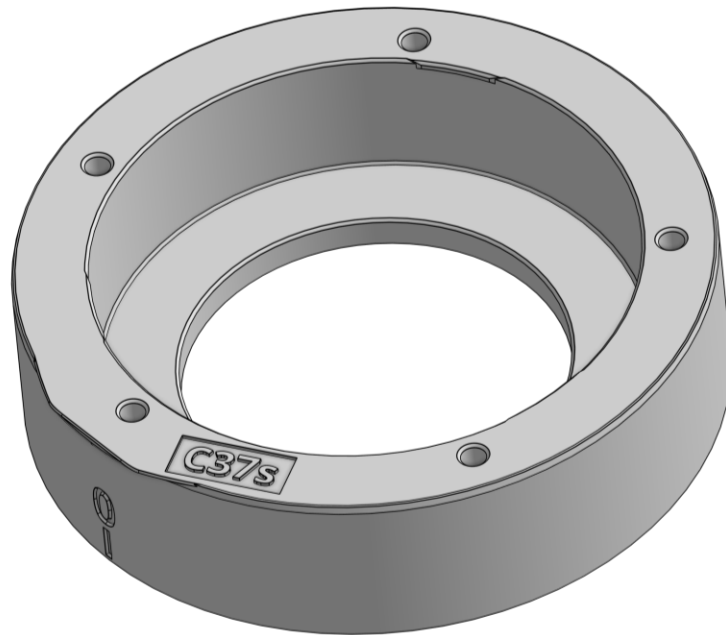
Build it better: our suggestion for assembling pib

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

1   5x
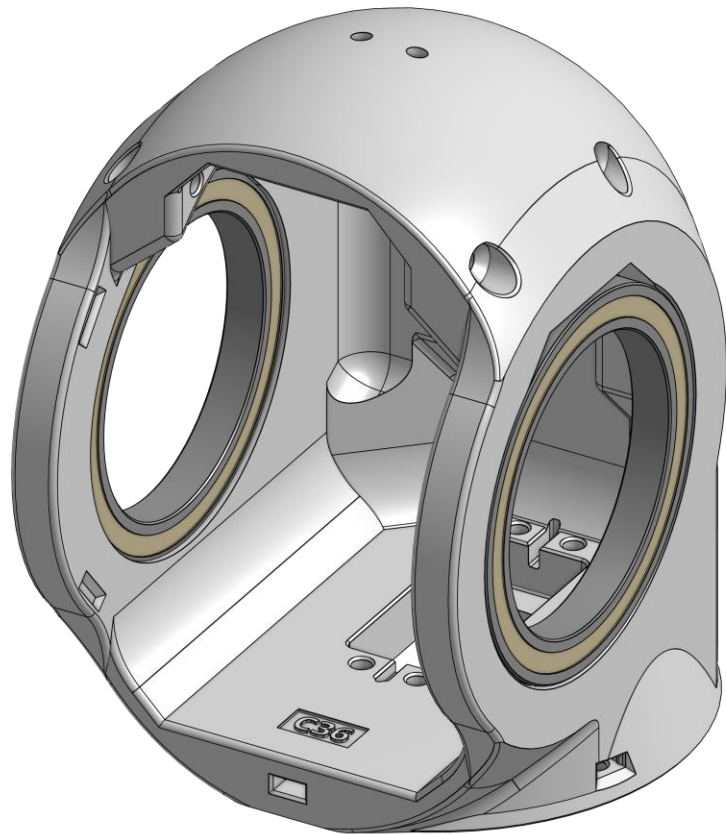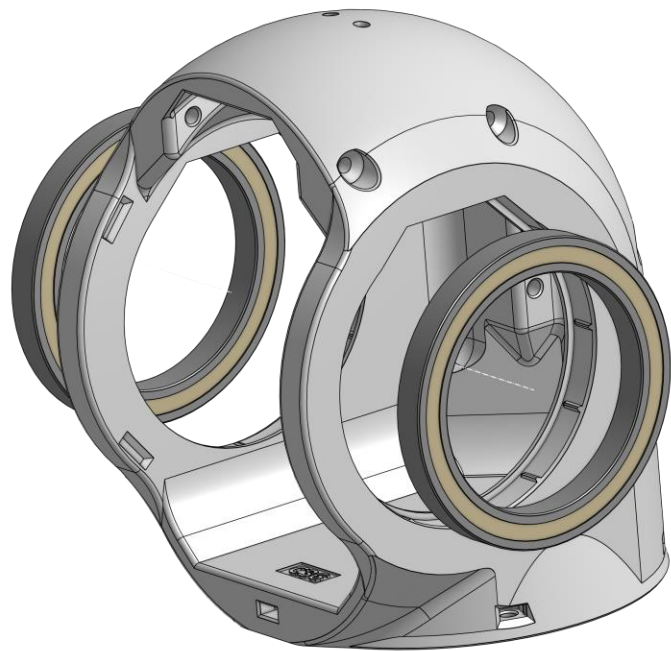
Place **5 x M3 nuts** in the shown spots in **C36**.

Step 1c

1 4x
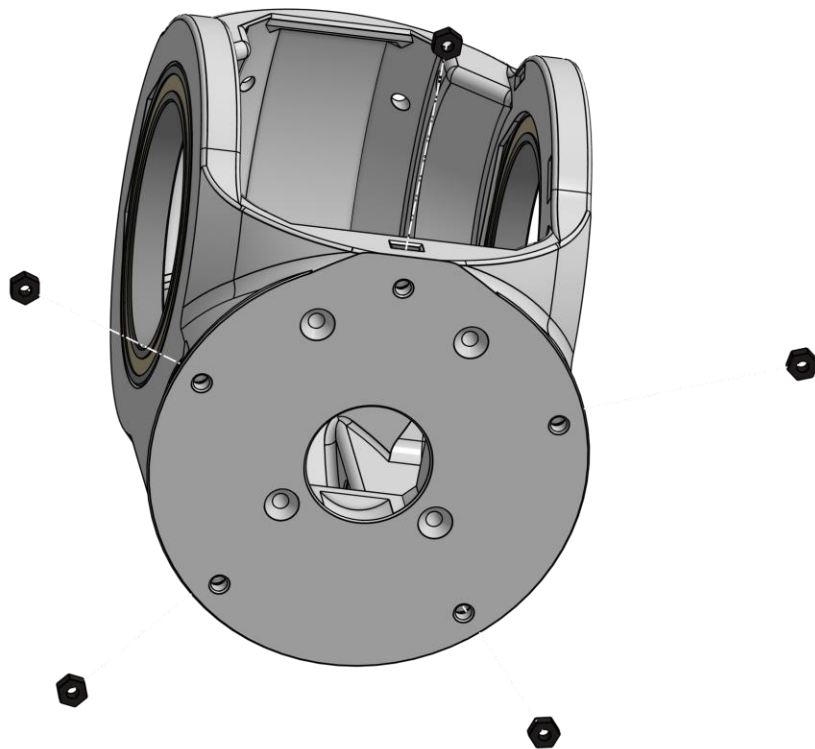
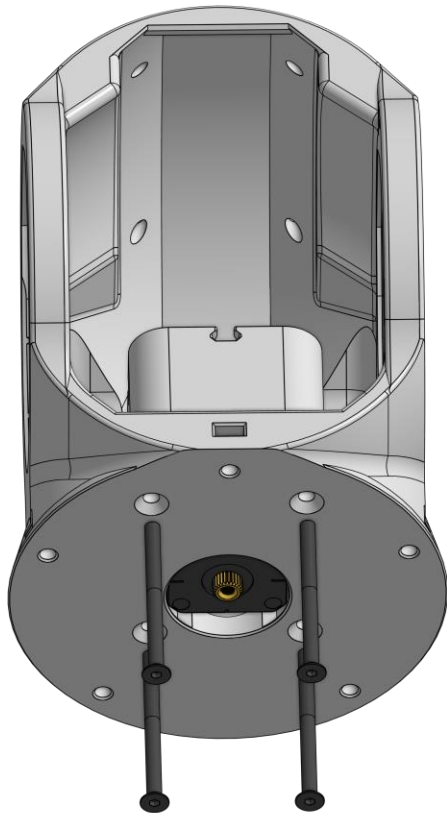Attach **E19** to **C77s** using **4 x M2 10mm screws** and add **4 x M3 nuts**

Step 1d

1   4x
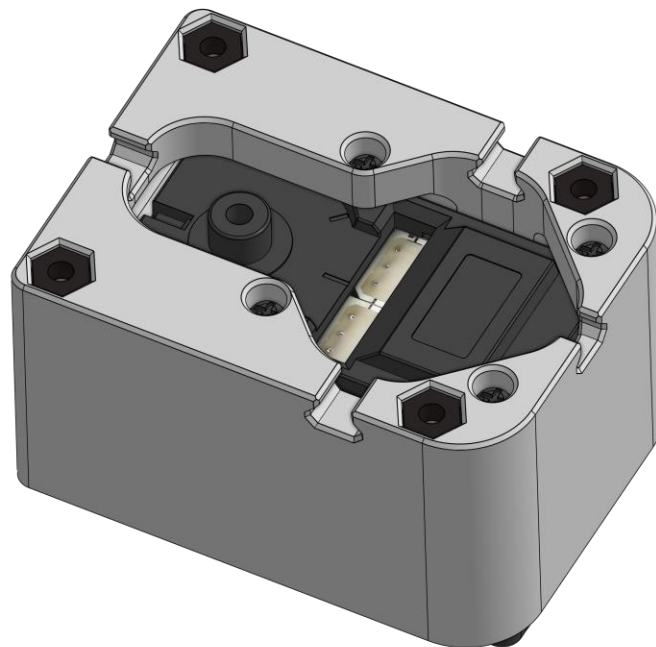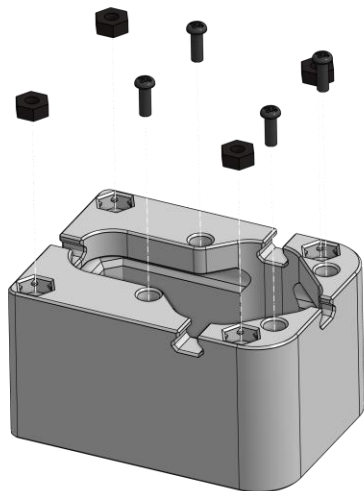
Attach previous assembly to **C36s** using **4 x M3 40mm** screws

Step 1e

1   6x   2x

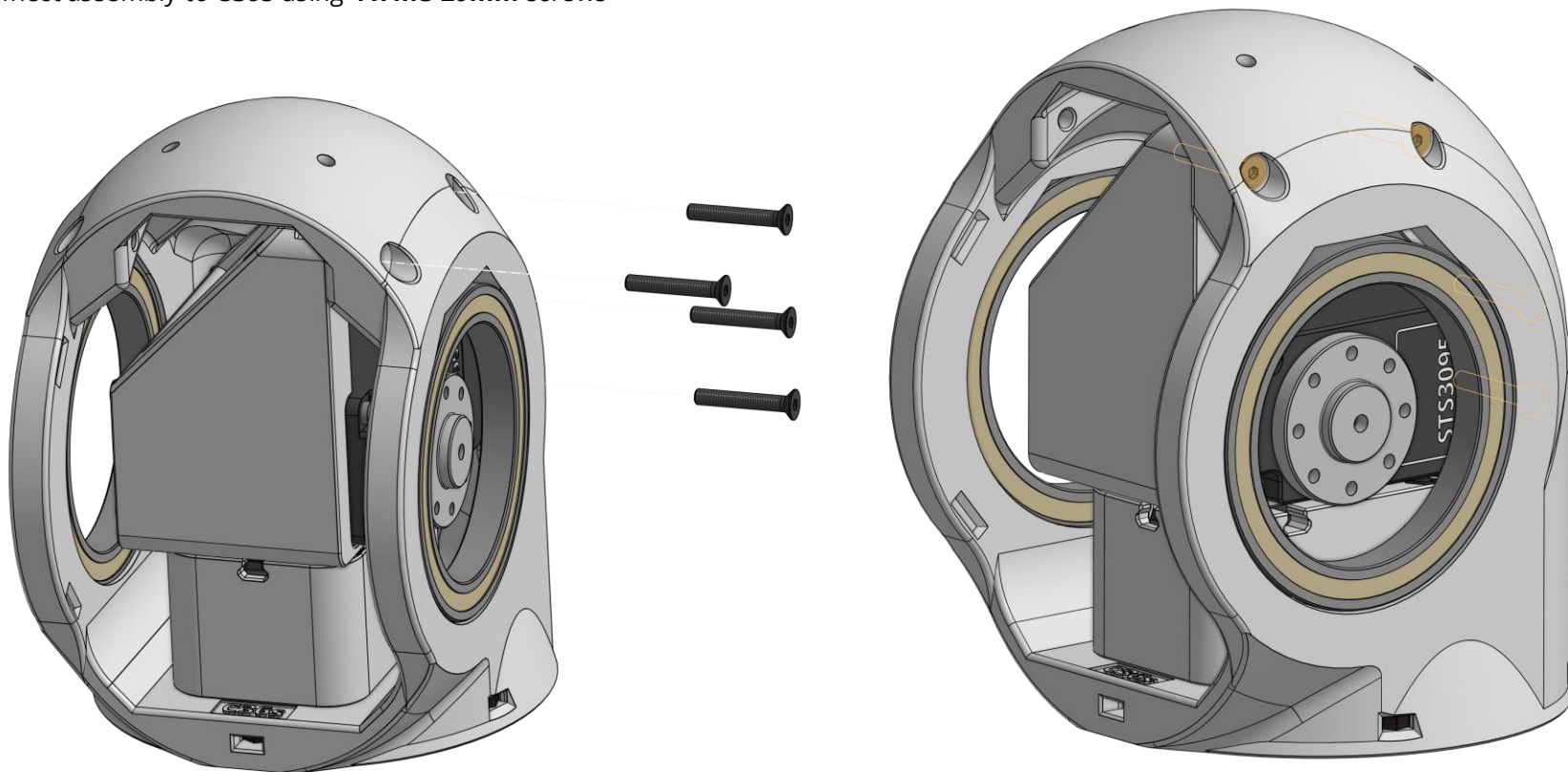Connect **E18** to **C34s** using **4 x M2 10mm screws** and add **4 M3 nuts**

Step 2

1   4x
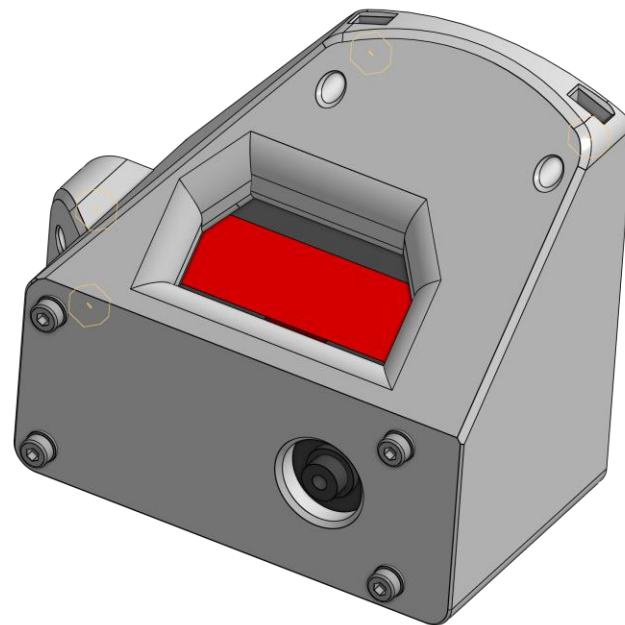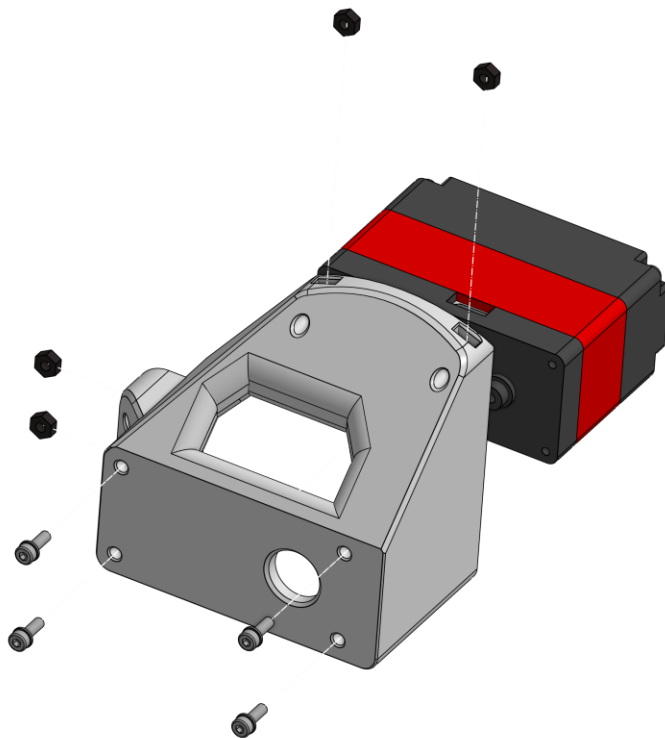
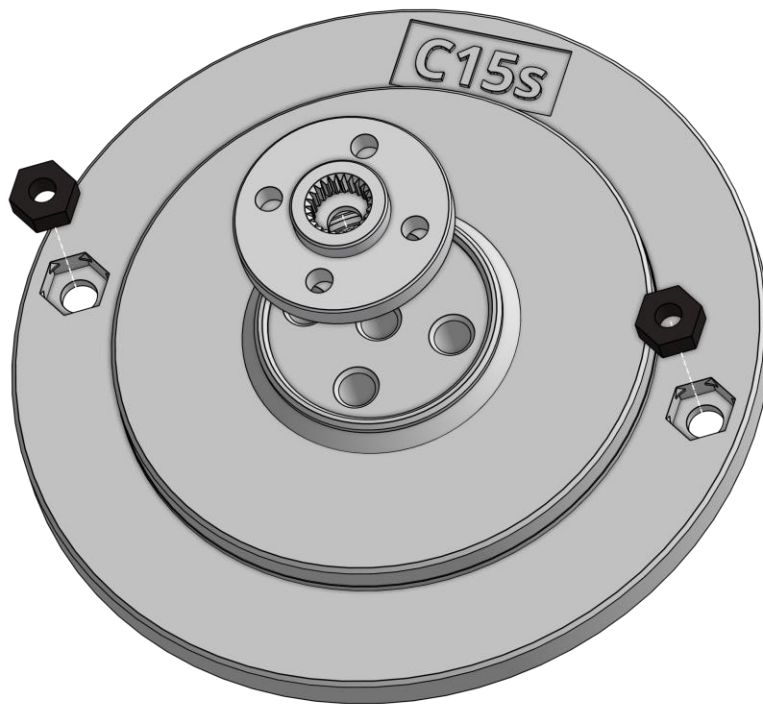Connect assembly to **C36s** using **4 x m3 20mm** screws

Step 3a

Insert **2 x M3 nuts** and **M18** in **C15s**

Step 3b

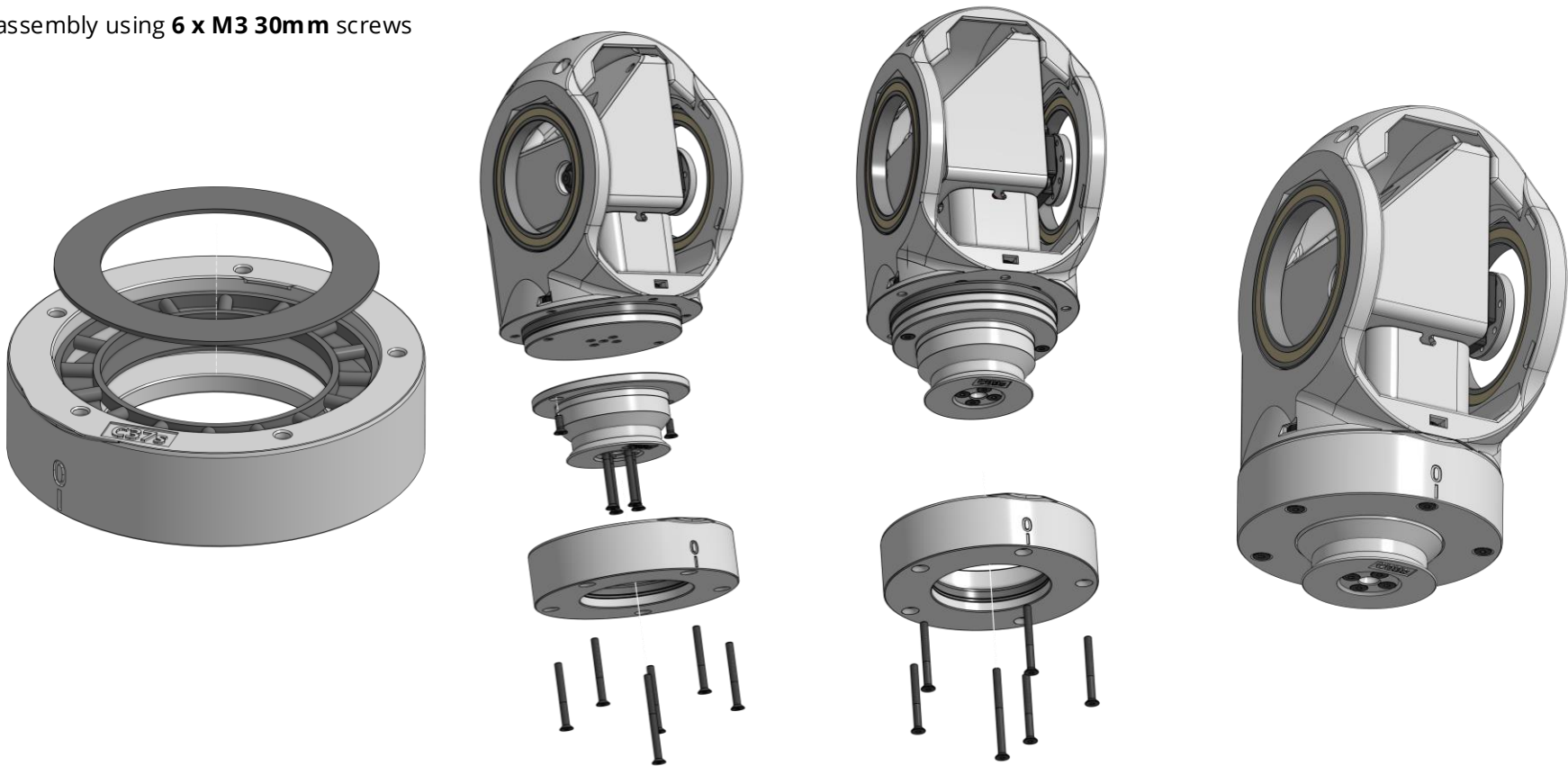Place **M06** and 2 **M07** on top of **C15s**, then connect the assembly to **E18**
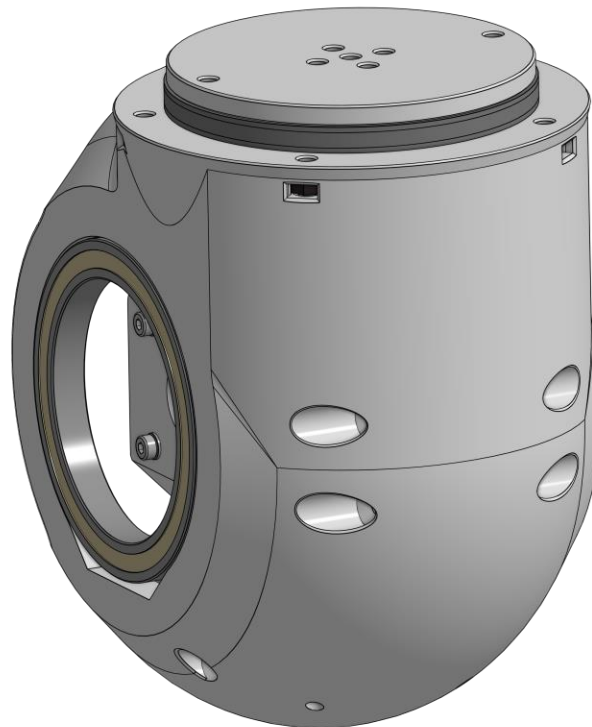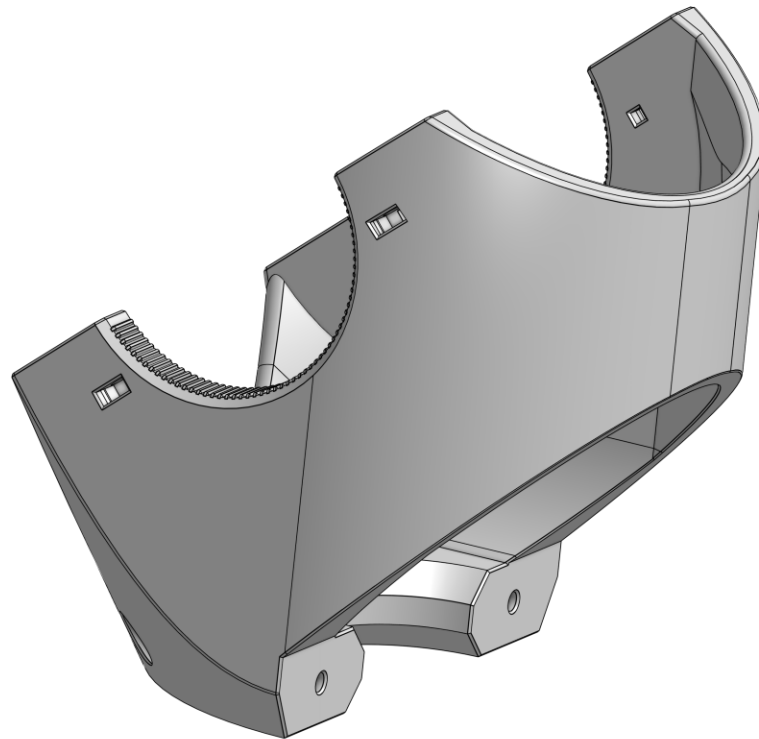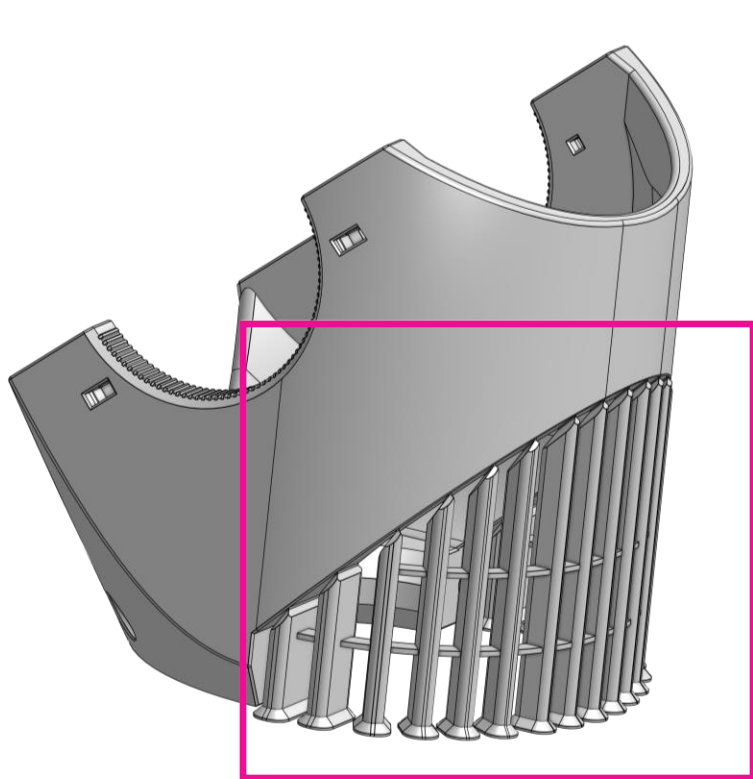
Step 3c

1 5x

Place **M06** and 2 **M07** in **C37s**, then connect **C37s** to elbow using **2 x M3 30mm** screws and **5 x M3 40mm** screws. Finally connect **C37s** to the assembly using **6 x M3 30mm** screws

Step 4
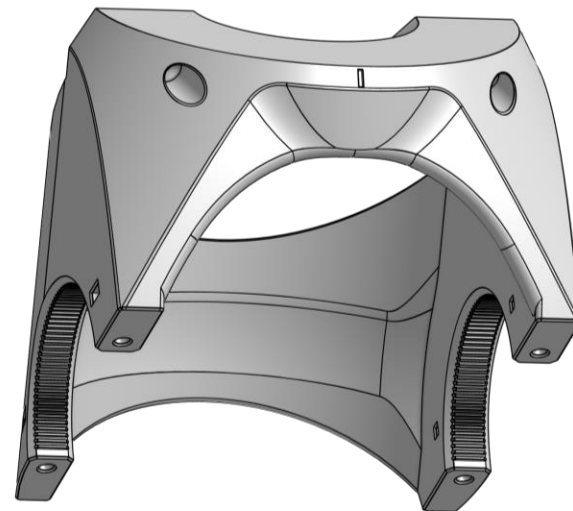
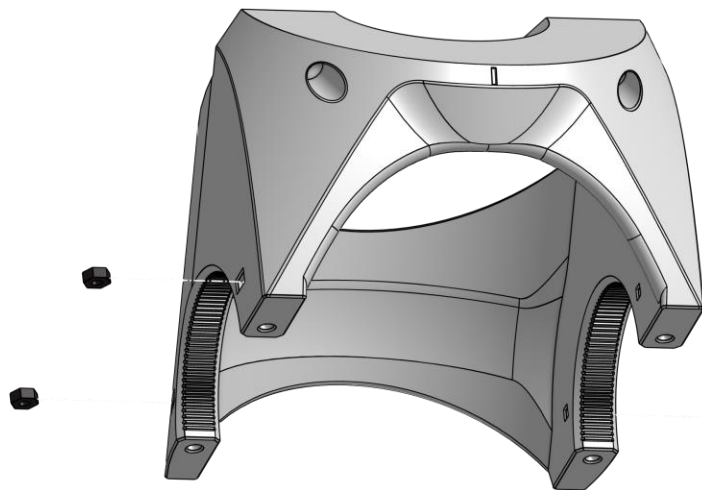Remove print helpers gently from **C39**.

Step 5

1   4x

Place **4 x M3 nuts in C39**

Step 6

2

2x

2x

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

Step 7

3 2x

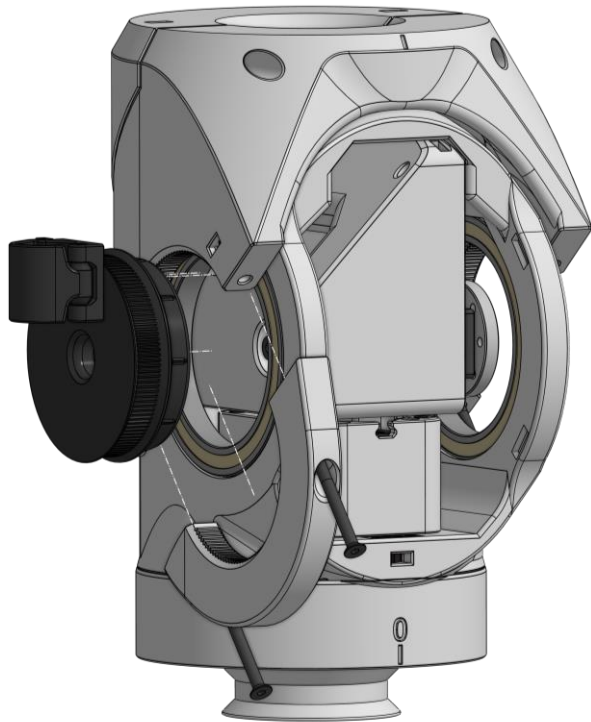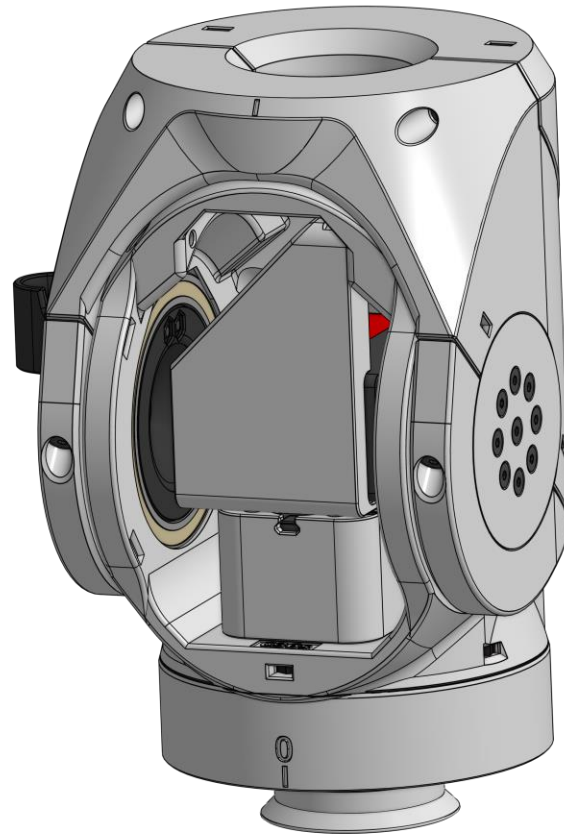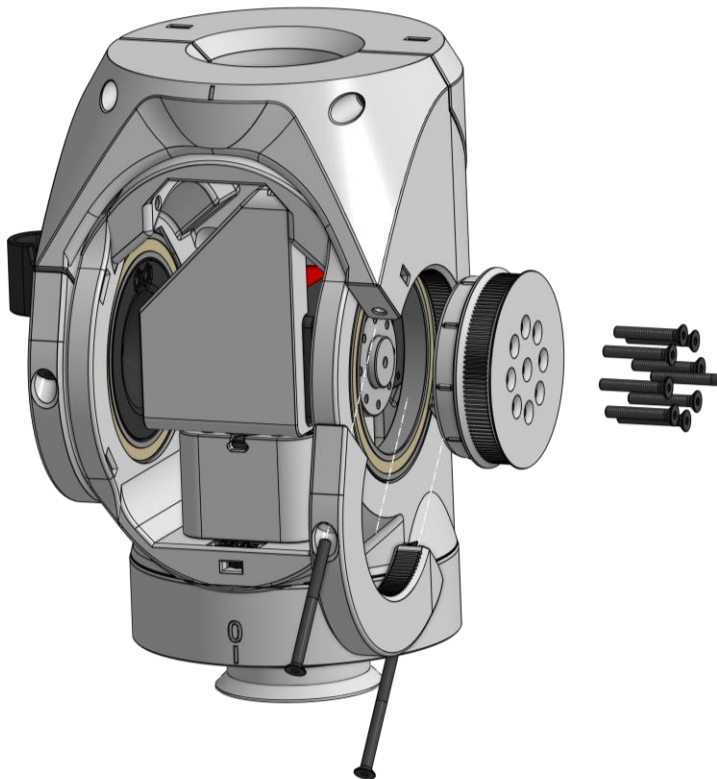Connect upper elbow to lower elbow using **C32 , C35-L and 2 x M3 40mm** screws.

Step 8
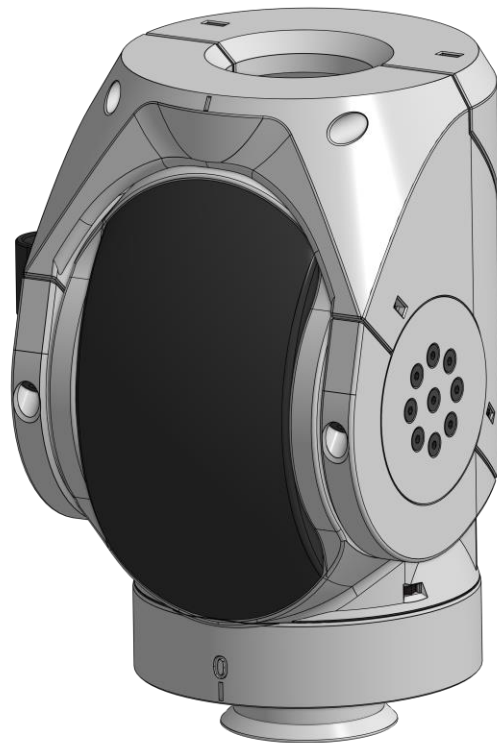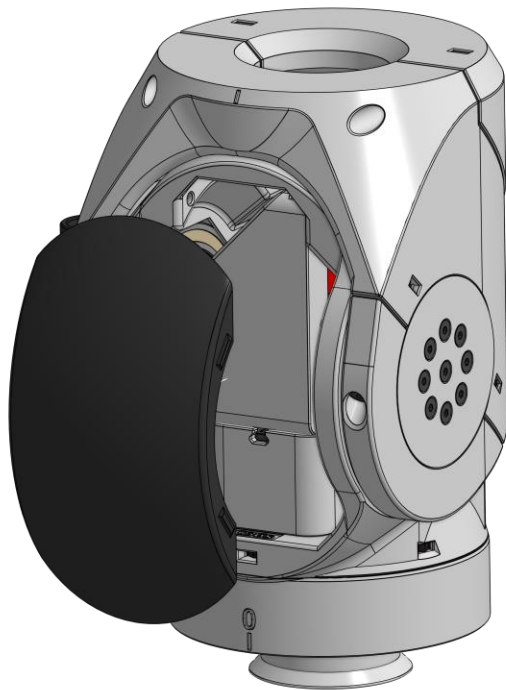
3   4x

Connect **C31s** and **C35-R** to elbow using **2 x M3 40mm and 9 x M3 20mm** screw.
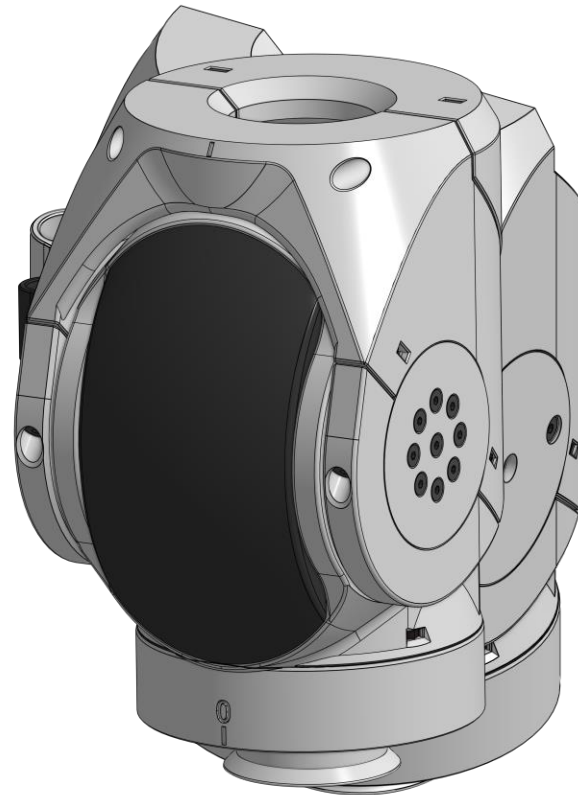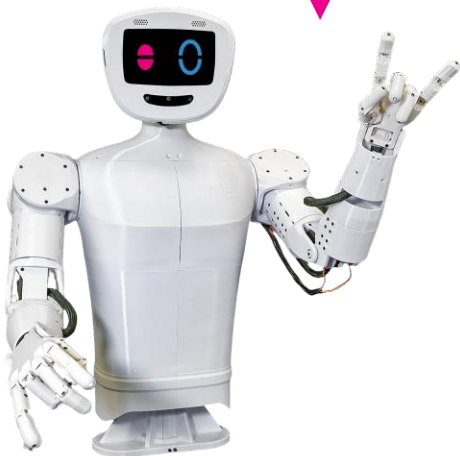
Step 9

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
Join us on Discord.

shop.pib.rocks
Order non-printable parts for pib.