PRINT
BUILD
DEVELOP
YOUR OWN ROBOT

How to build your robot

www.pib.rocks/build

assembly instructions for:

HEAD

pib#4

Printable and pre-assembled parts

Pib´s head consists of **6 printable parts** and is assembled in **11 steps.**

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

Please note: For better readability we use the abbreviations in the tutorial: A01 instead of A01-Face.

Printable parts
A01-Face
A03-Face_Plate
A04-L-Head_side_left
A04-R-Head_side_right
A05-Mic-array_mounting_insert
A06-Mic-array-knob

Non-printable parts

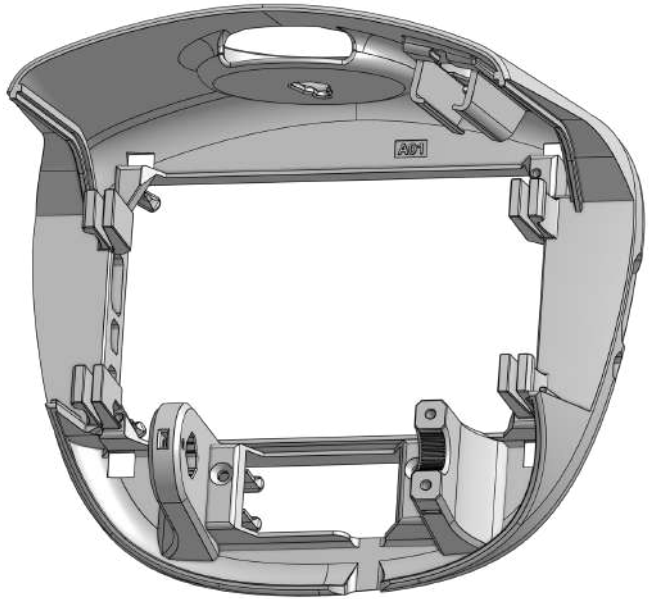
You will also need the following non-printable parts from our pib.Box Master.

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

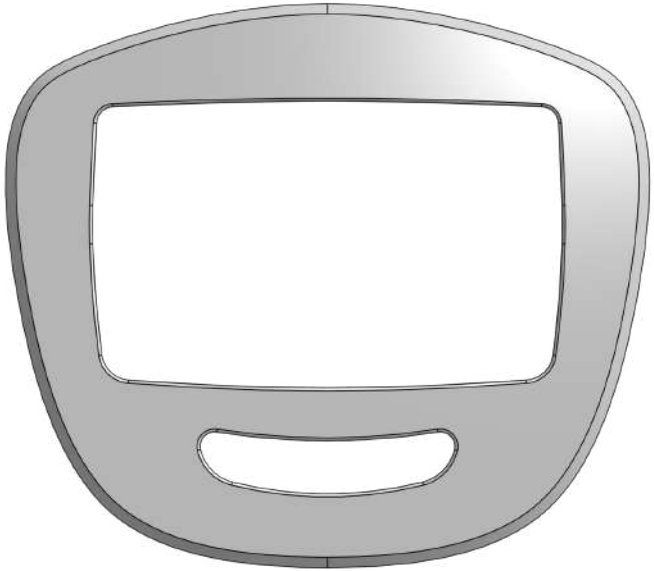
Non-printable parts
1 x **E01** Raspberry Pi_5
1 x **E02** TinkerForge HAT (with 2-pole-connector)
1 x **E04** OAK D-Lite
1 x **E05** LCD screen with screws, distancer, speaker, connectors
1 x **E12** USB Microphone
5 x **S01** M3 nuts
2 x **S15** M2.5 12mm screws
4 x **S14** M2.5x6mm
1 x **S07** M3x18mm
4 x **M19** M2.5X22mm distancers
1 x Micro-SD-card

Printable parts - Overview

A01-Face



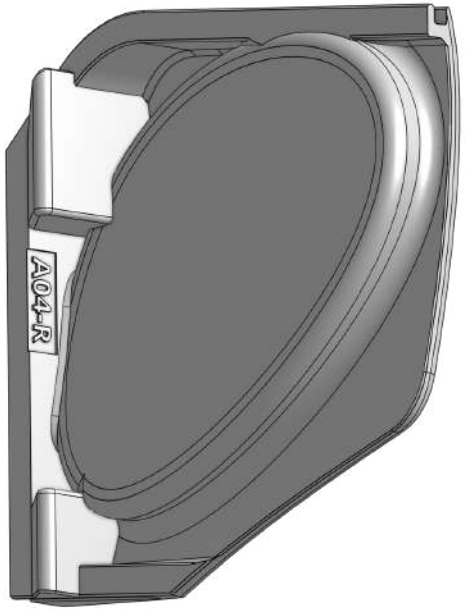
A03-Face_Plate



Printable parts - Overview

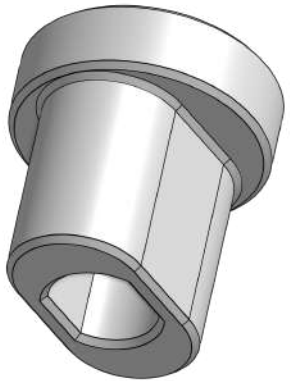
A04-L-Head_side_left

A04-R-Head_side_right

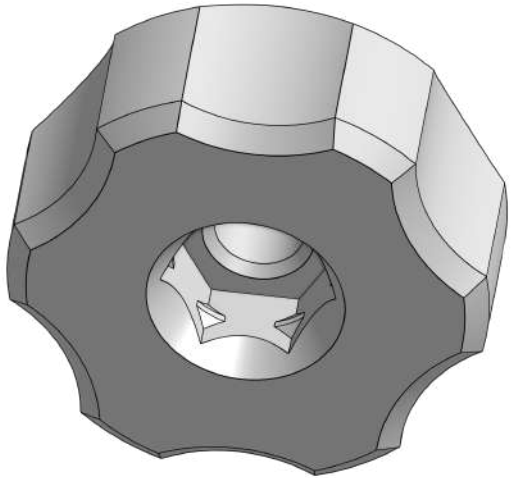


Printable parts - Overview

A05-Mic-array_mounting_insert



A06-Mic-array-knob



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

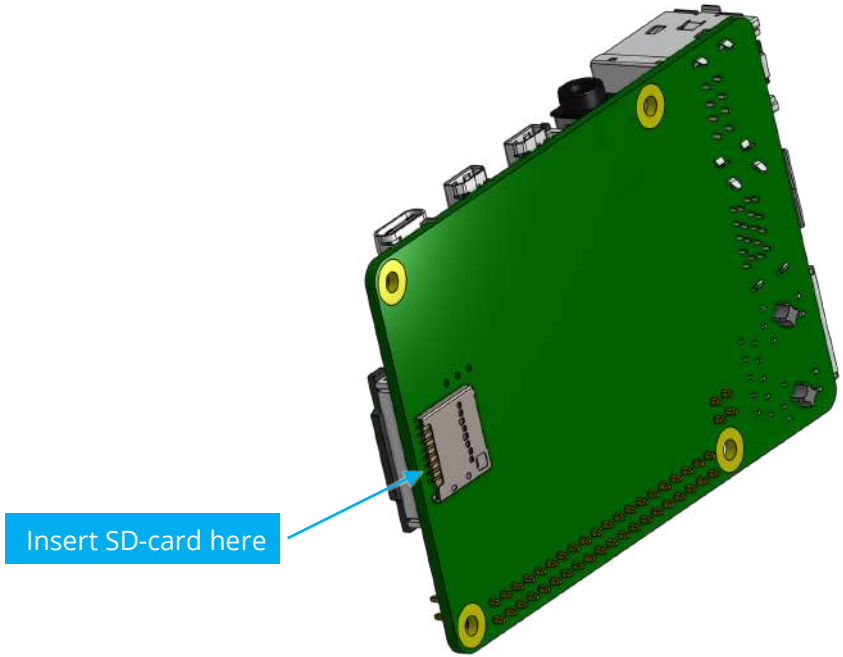
Step 1

1 1x

Insert the **Micro-SD-card** into the **Raspberry Pi**.

Before you insert the SD card make sure you have installed the pib.software on it.

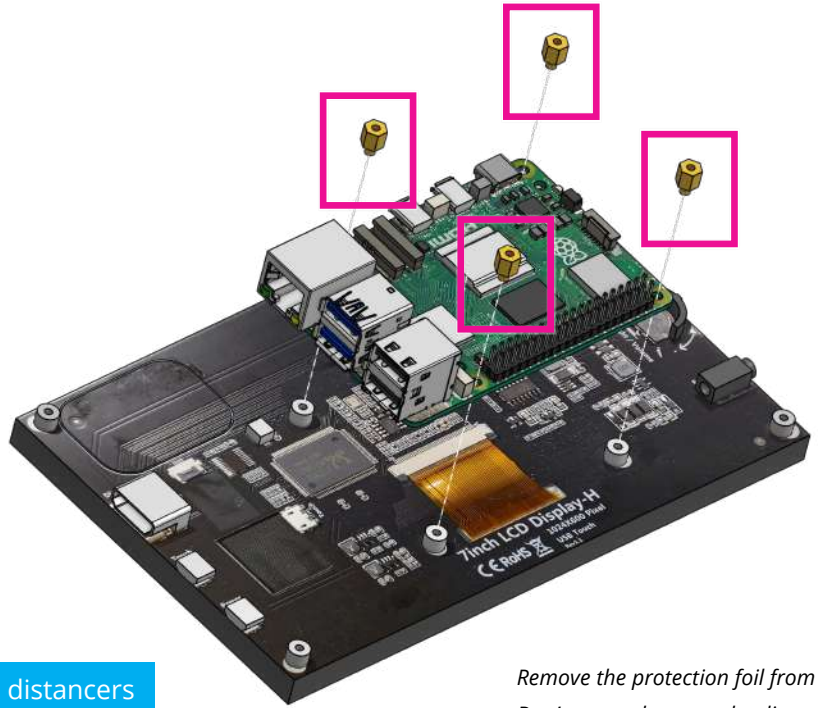
You can find the tutorial here:
https://pib.rocks/build/how-to-install-raspberry-pi/



Step 2a

1 4x

Insert **4 x M2.5 distancers** (part of the screen package) in the shown spots in LCD screen.



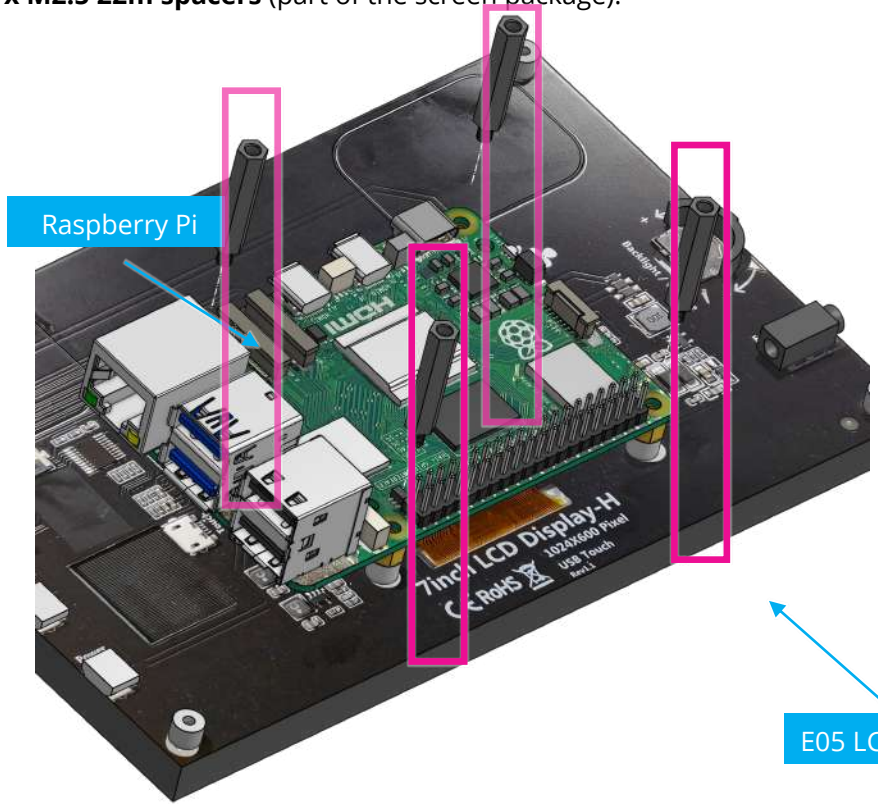
4 x distancers

Remove the protection foil from the shown spots.
Don't use tools to put the distancers in.

Step 2b

1 4x 1x

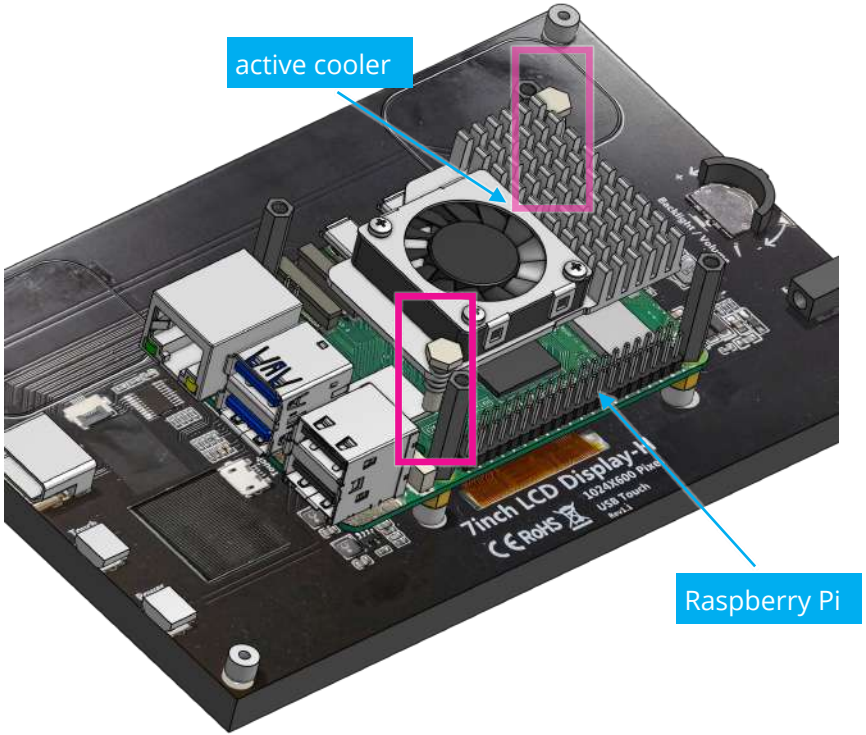
Place the **Raspberry Pi** on top of the **LCD screen** and fix it with with **4 x M2.5 22m spacers** (part of the screen package).



Step 2c

1  1x

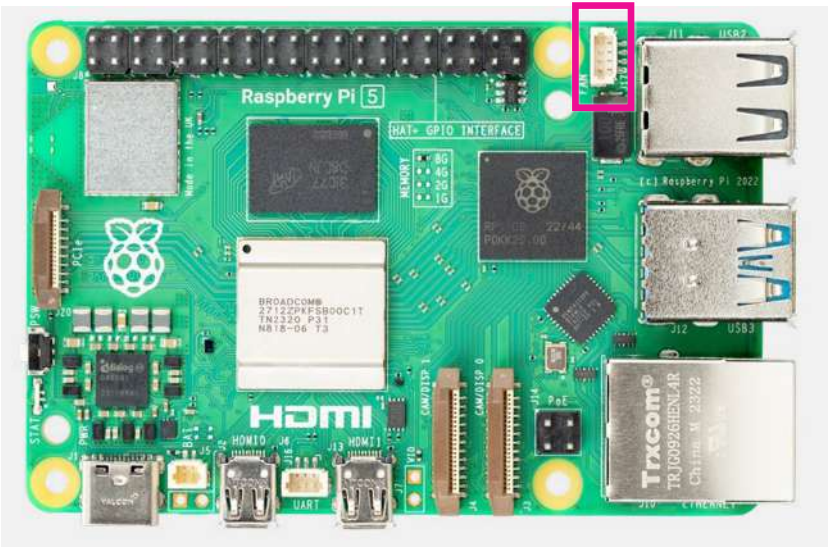
Attach **E18 active cooler** to **Raspberry Pi**.

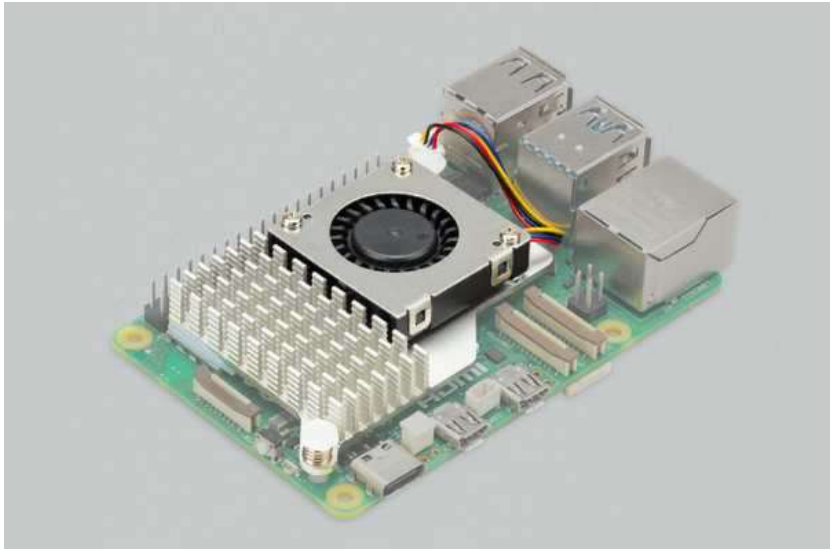


Note

1 1x

Make sure that **E18 active cooler's** fan wire is connected to **"fan"** slot in **Raspberry Pi**.





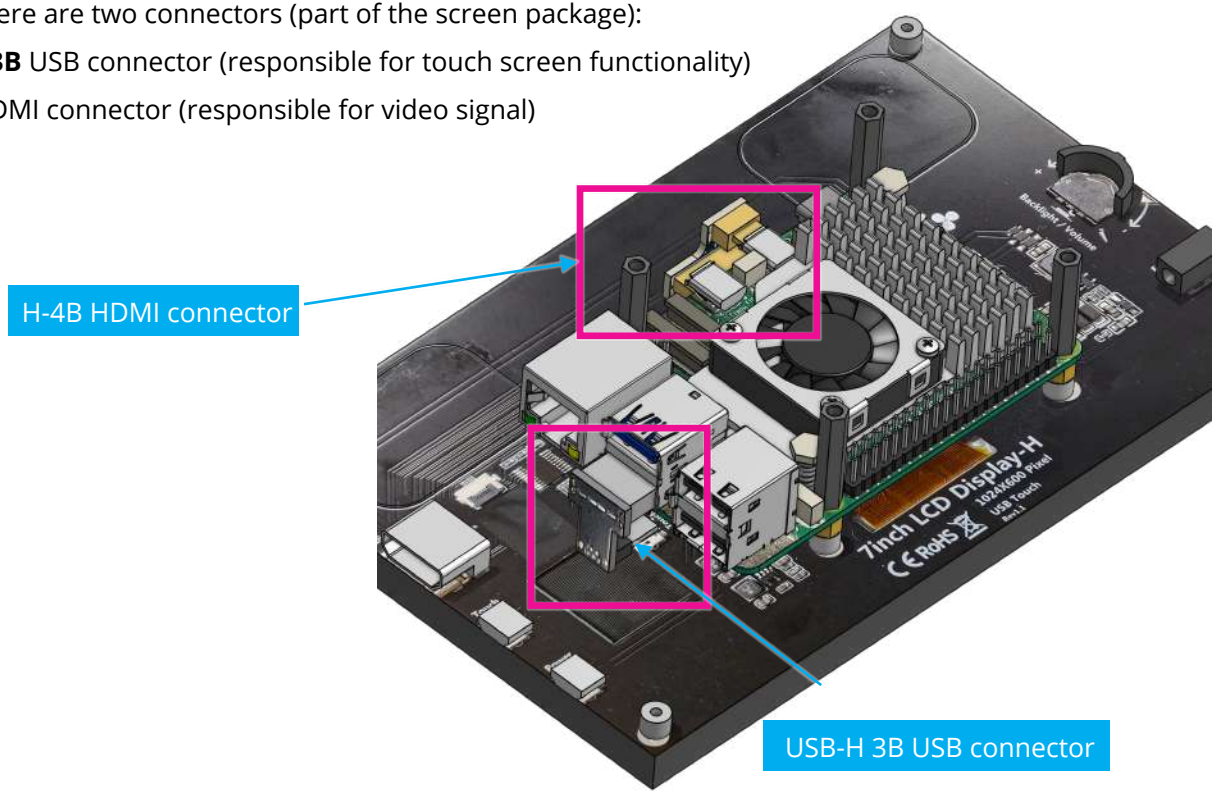
Step 3

1 1x 1x

Now, we have to connect the **Raspberry Pi** and the **LCD screen** electronically.

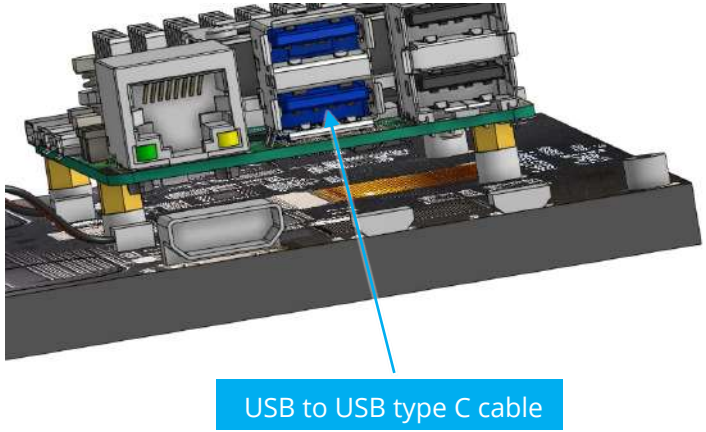
For this, there are two connectors (part of the screen package):

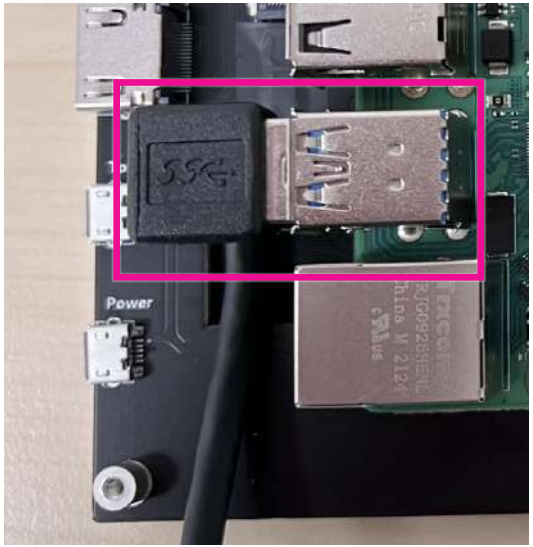
- **USB-H 3B** USB connector (responsible for touch screen functionality)
- **H-4B** HDMI connector (responsible for video signal)



Step 4

Connect **“USB to USB type-c”-cable** in the shown spot for usage of the camera.

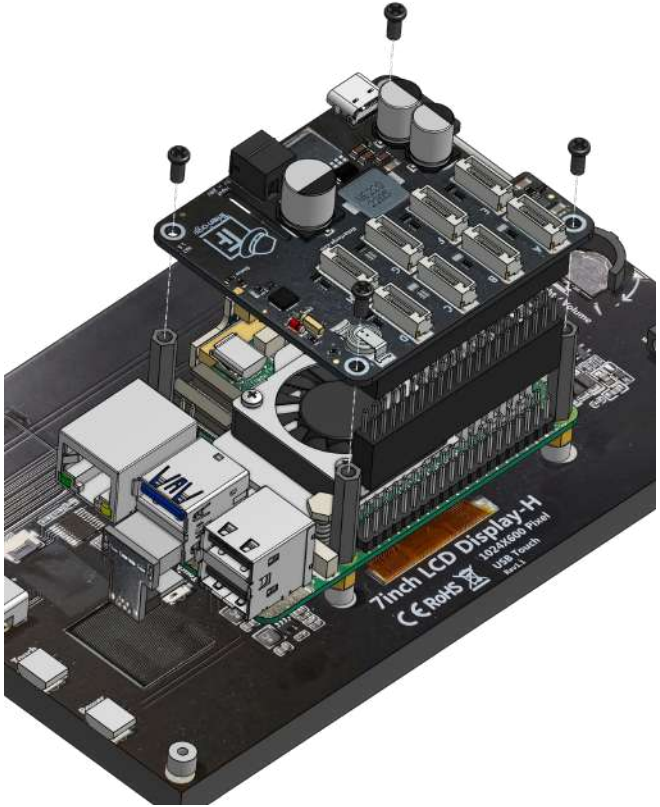




Step 5

1 4x 1x

Attach the **E02 TinkerForge HAT** to **Raspberry Pi** using the **E17 GPIO extender** and fix it using **4 x M2.5 6mm screws**.

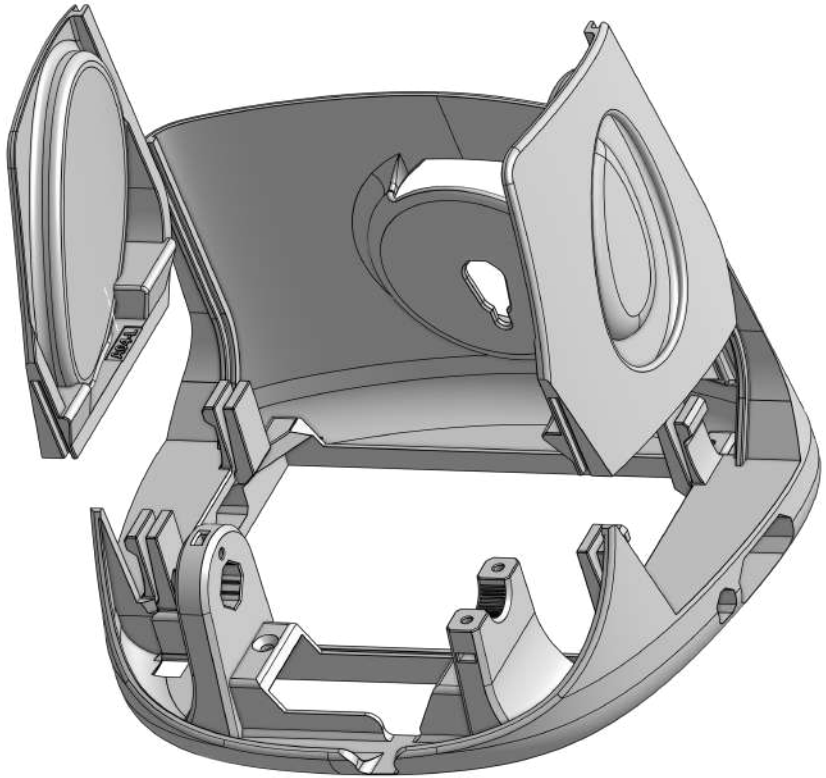


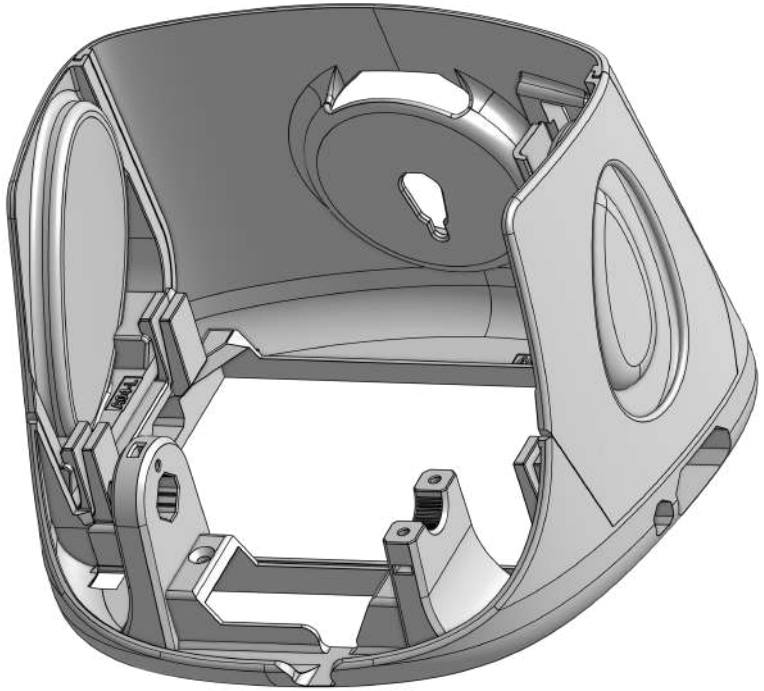
Make sure, the TinkerForge HAT is placed in the shown orientation.

Step 6

1

Connect **A04-L and A04-R to A01-Face** with the snap fits

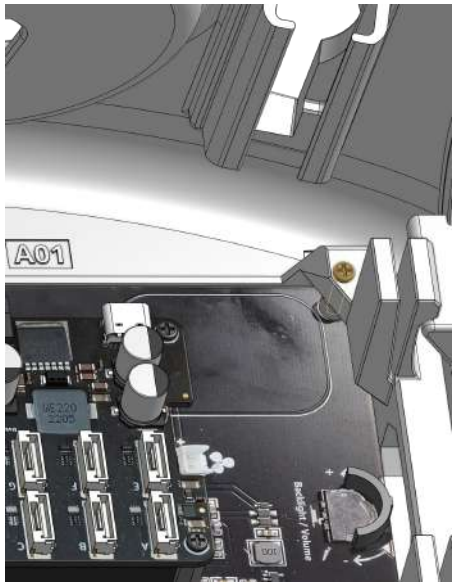




Step 7

2 2x

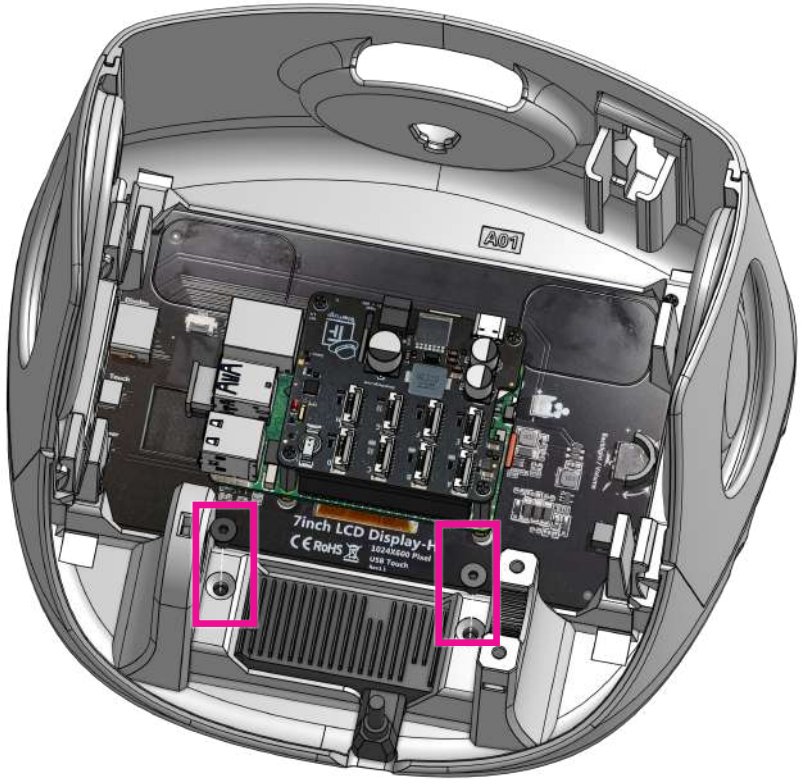
Insert the assembly from previous steps to **A01** and fix it using **2 x M2.5 12mm screws** (part of the screen package). Place the speakers in the shown spots of **A01**.



Step 8

2 2x 1x

Insert the **Oak-D-lite camera** into **A01** and tighten it using **2 x M4 10mm screws**.



Step 9

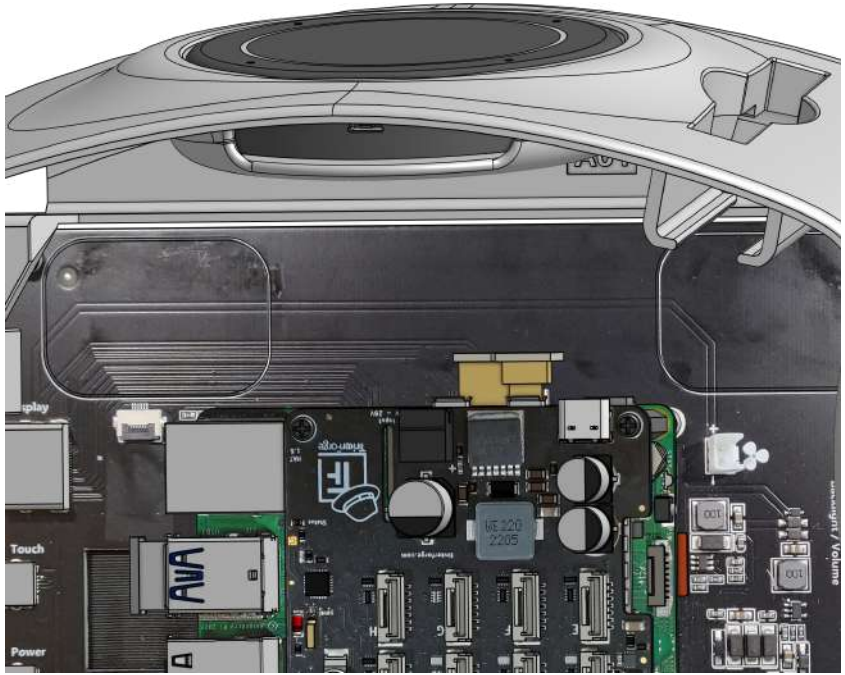
Connect the **“USB to USB-type-C”-cable** from **step 6** into the shown spot of the camera.

USB to USB-type-C cable

Step 10a

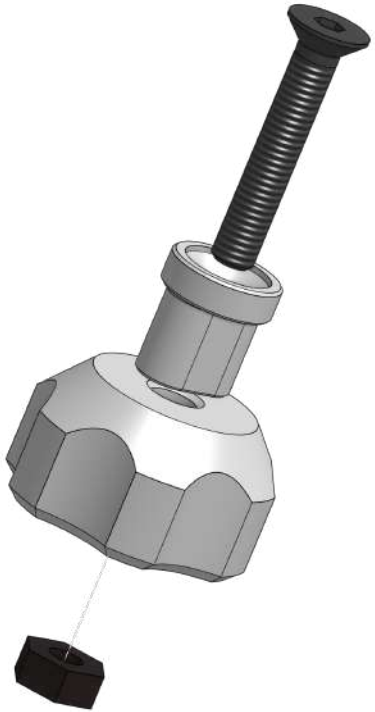
1

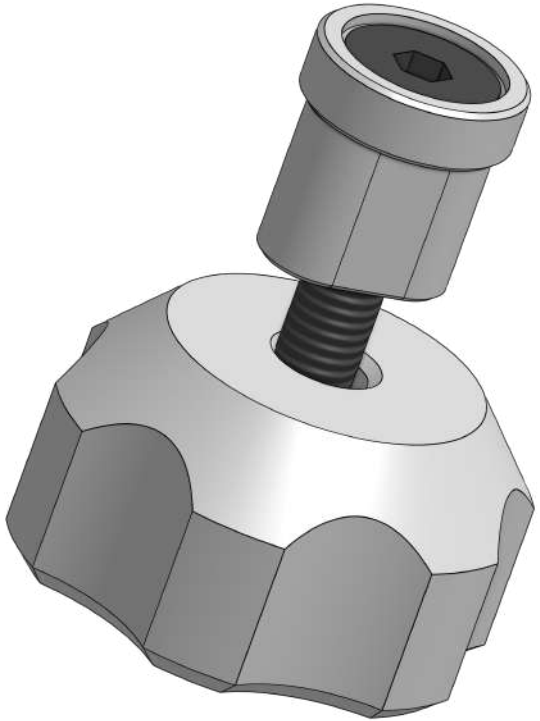
Insert **E12** into the shown spot in **A01** and connect its cable to 1 of Raspberry pi USB ports



Step 10b

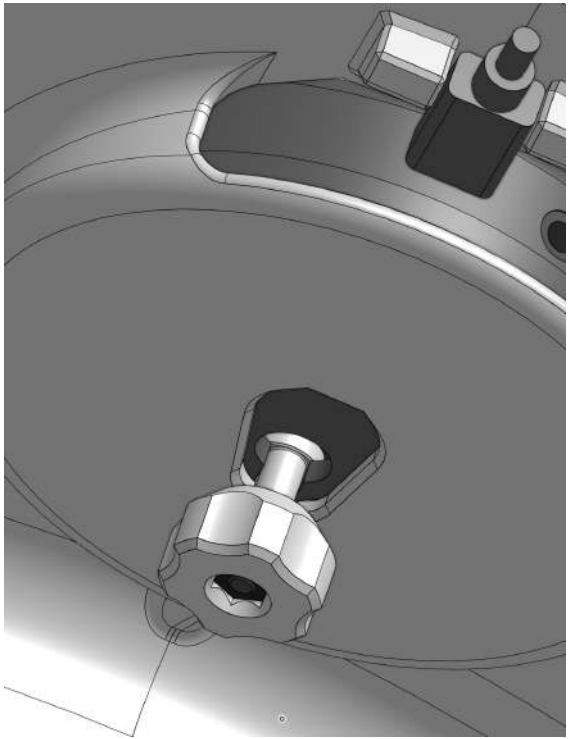
Connect **A05** to **A06** using **1 x M3** nut and **1 x M3 18mm** screw. *Do not tighten it strongly at all, leave it relatively loose*

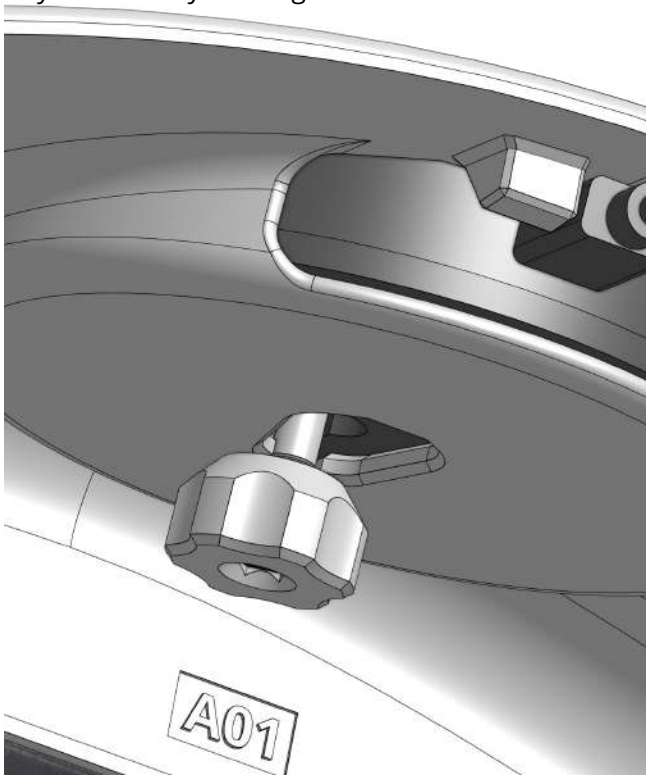




Step 10c

Slide the previous assembly in the shown spot and tighten it strongly with your hand by rotating **A06**

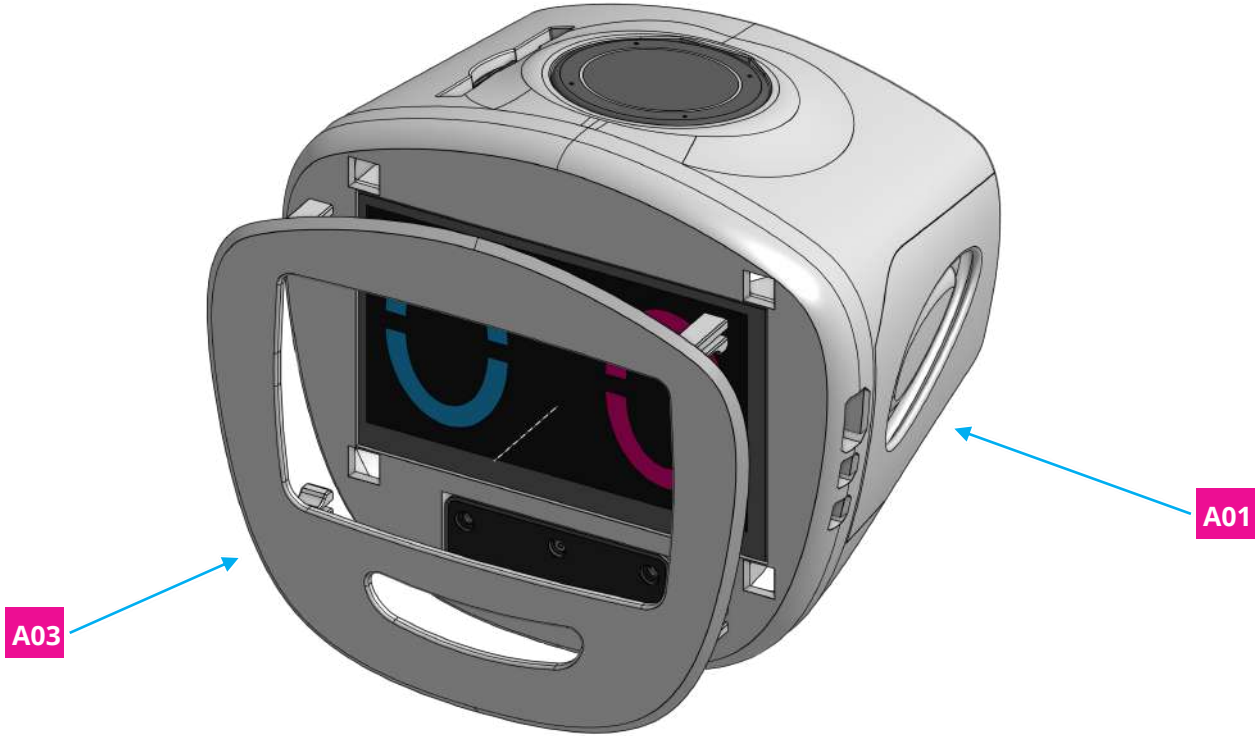




Step 11

1

Finally, connect **A03** to **A01**



Congratulations

You did a great job, pib´s head is assembled!

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.

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