

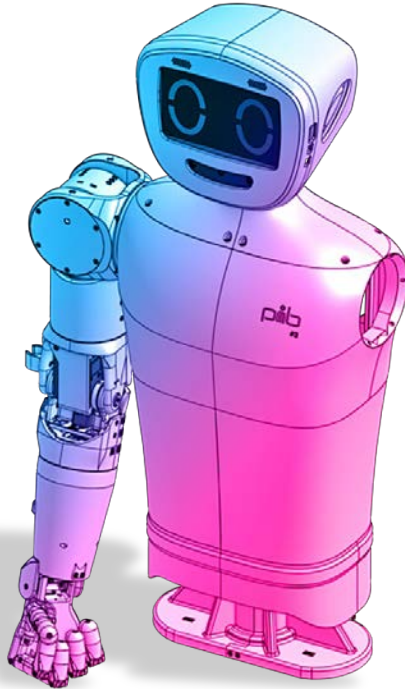


How to build your robot

www.pib.rocks/build

instructions for:
ASSEMBLY

v2024



PRINT

BUILD

DEVELOP

YOUR OWN ROBOT

Non-printable parts

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

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

Non-printable parts

2 x **S10** M3 25 mm screws

Servo extension cables

E23 – Cable_sheath

E20 power jack

Non-printable parts - Electronics

1 x **E13**-SPL-82

1 x **E14**-Power_Supply-cable

USB C extension cable

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)

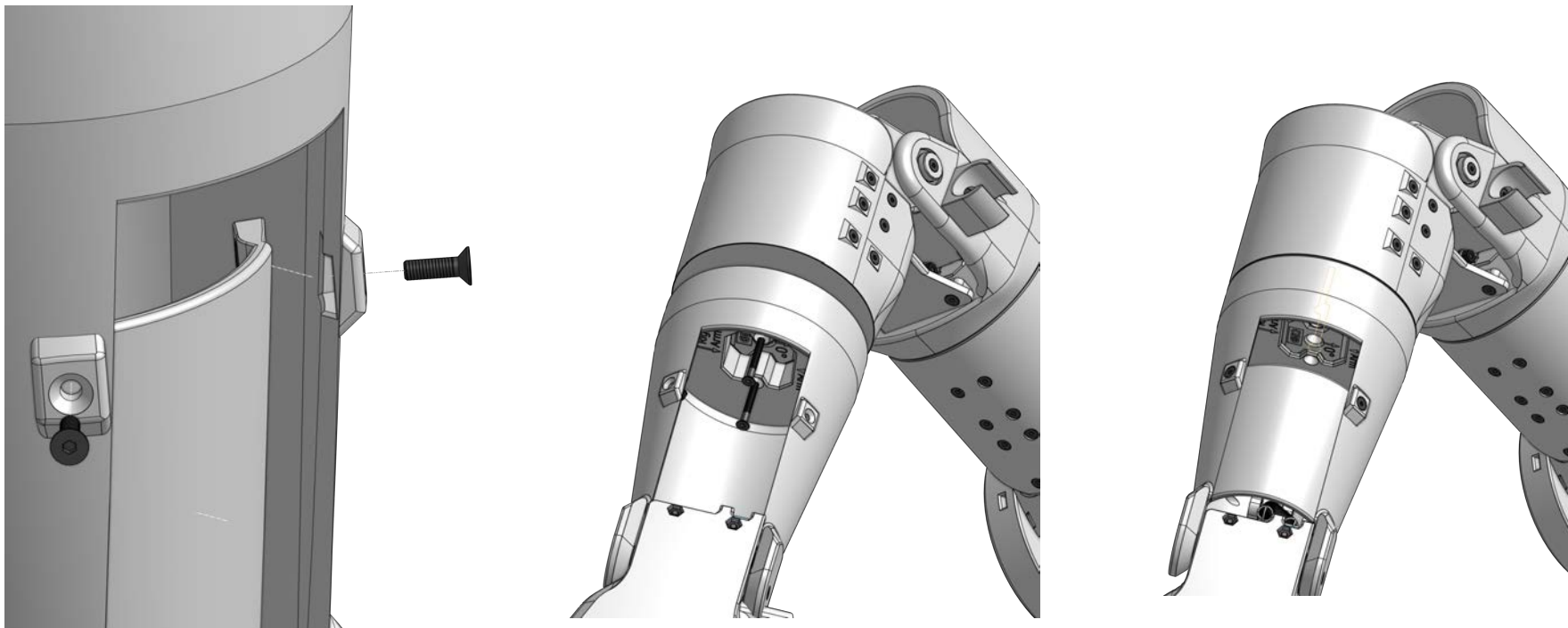


We also show you which **non-printable parts** you need for each step

Step 1



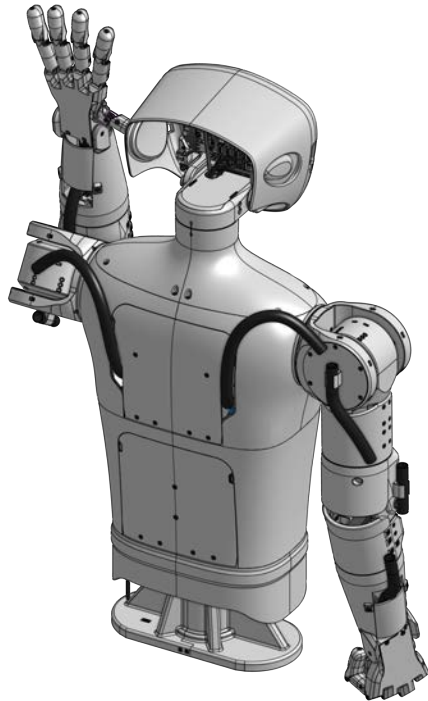
Disassemble **C20** to easily reach the top screws. Assemble forearm to elbow using **2 x M3 25mm** screws and then reassemble **C20**.



Step 2



Guide all the wires through the black **E23-Cable_sheath** and place it in the **2 C74** in elbow and shoulder. Make sure to extend servo cables that are short with **servo extension cables**.



Step 3

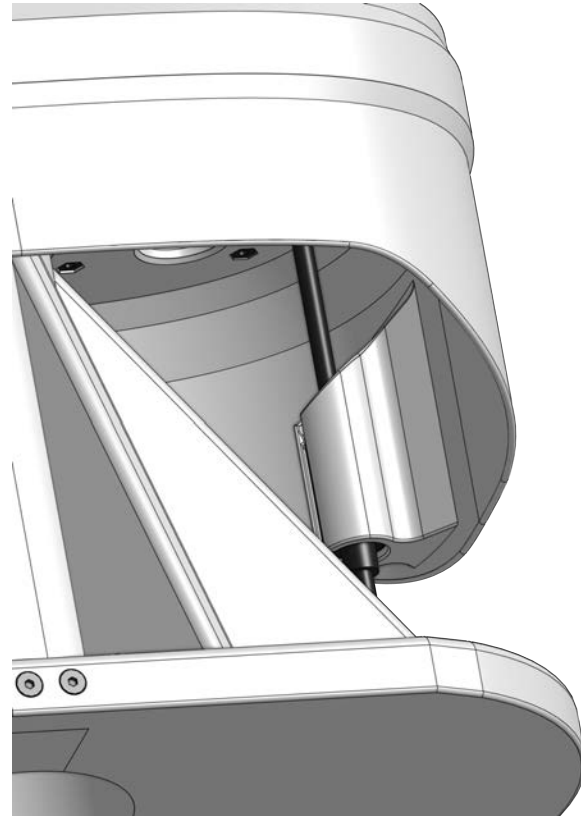


Connect output jack of **E14 power supply** into **E20 power jack**, strip both ends and insert **2 wires** on the other side of the jack (the wires should be ~ 10cm)



Step 4a

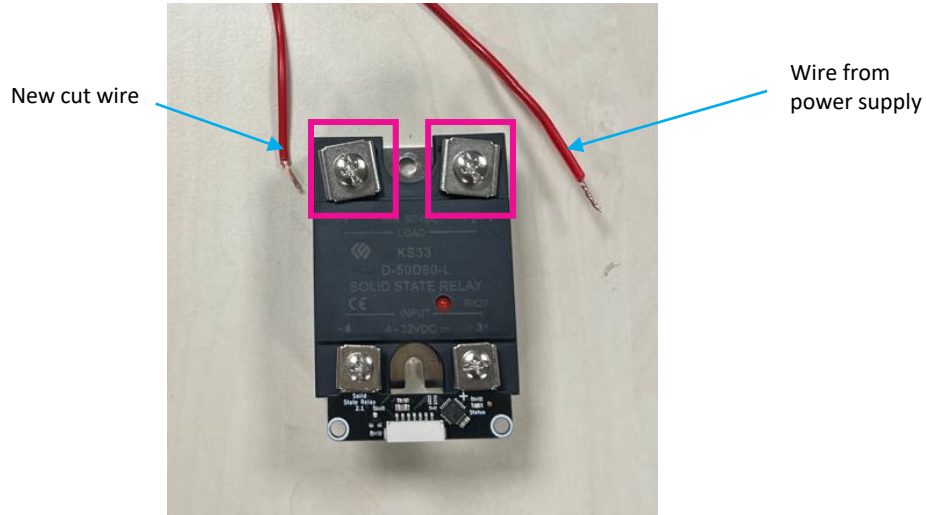
Place **E14's output wire** in the shown orientation and spot in **B43-L**.



Step 4b



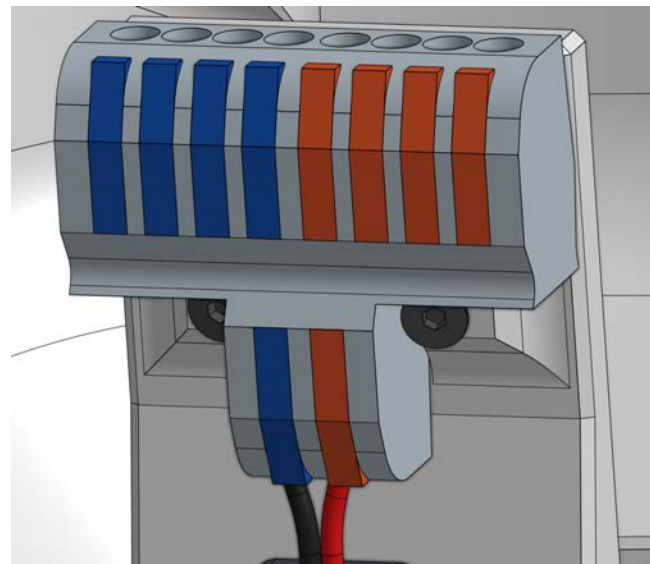
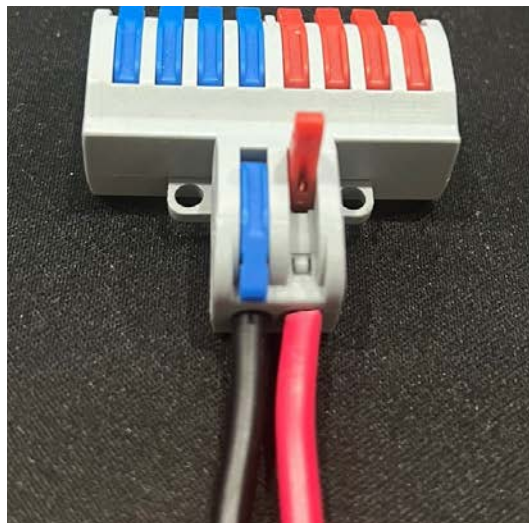
Connect the **red wire** coming out of the **power supply** to the + side of the **relay** and cut a small piece of the **red cables** you have and connect it to the other side. Unscrew terminals, insert **wires** and then screw them back.



Step 4c



Pull the red and blue switches in **E13**, insert the **red wire** coming out of the relay and the **black wire** coming out of the power supply.

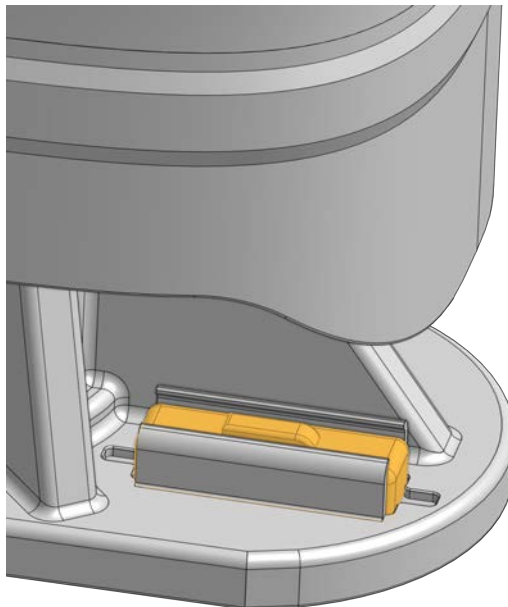
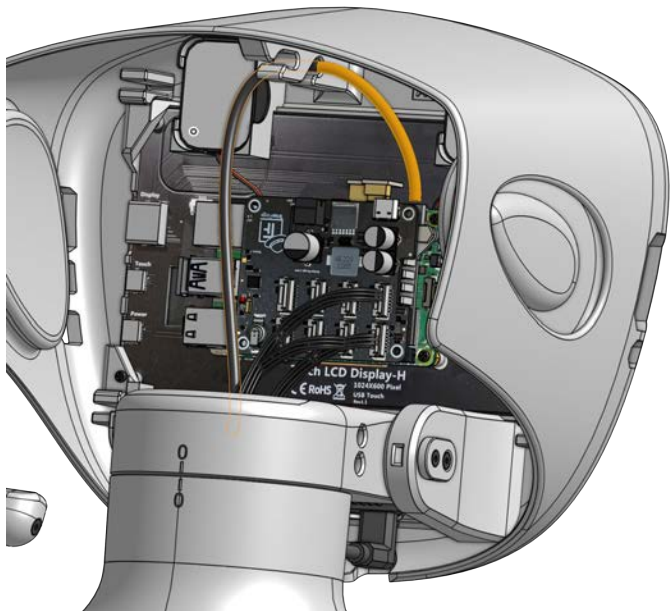


Make sure to place the wires in the correct switches:

- ✓ **Red** wire to **red** switch
- ✓ **Black** wire to **blue** switch

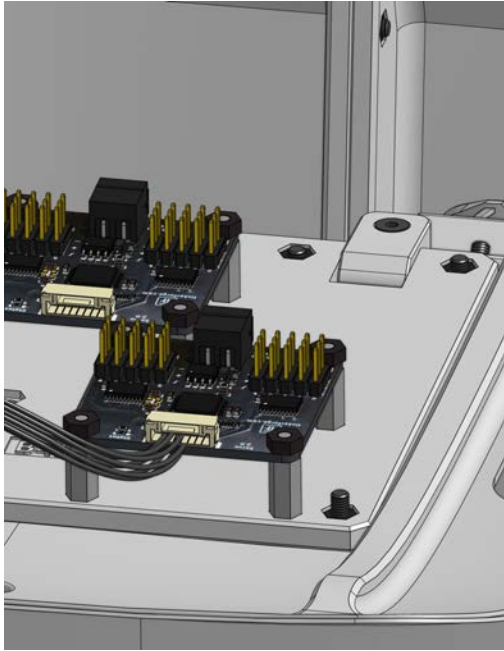
Step 4d

Use **Type-C extension cable** to connect **E16 RPi power supply** to **Raspberry Pi**.



Step 4e

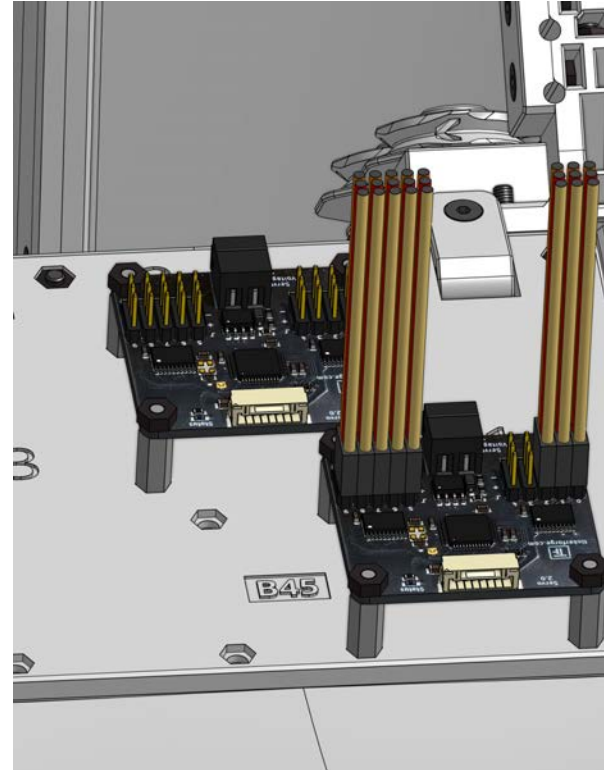
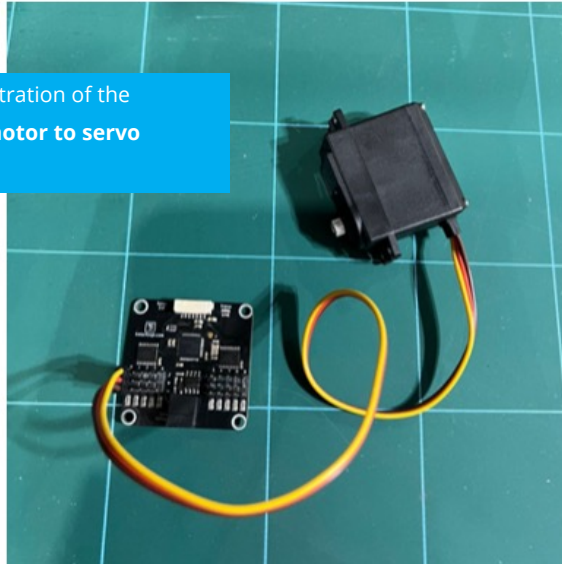
Connect all **E19 bricklet cables** coming out of electronics to **E02 brick hat**.



Step 5

Connect the **motors** in fingers, arm and head to both **E03 servo bricklets** in the upper body according to the table in the next slide.

Image for illustration of the connection „motor to servo bricklets“



Step 5 – Table (1)

Ignore any joint name with "left" in it or „connected to bricklet 3“ if you are assembling pib with just one arm (right arm).

Motor name (joint connected to motor like thumb rotator)	Bricklet number (when assembled, bricklet 1 will be the right and 2 is the middle. Bricklet 3 is the extra one for 2 arms pib)	Bricklet pin (pin on bricklet that servo will be connected to, 0 to 9)
thumb_right_opposition	1	0
thumb_right_stretch	1	1
index_right_stretch	1	2
middle_right_stretch	1	3
ring_right_stretch	1	4
pinky_right_stretch	1	5
wrist_right	1	6
lower_arm_right_rotation	1	7
elbow_right	1	8
upper_arm_right_rotation	1	9
shoulder_horizontal_right	2	0
shoulder_vertical_right	2	1
Free replacement for burned pins	2	2
Free replacement for burned pins	2	3
turn_head_motor	2	4
tilt_forward_motor	2	5

Step 5 – Table (2)

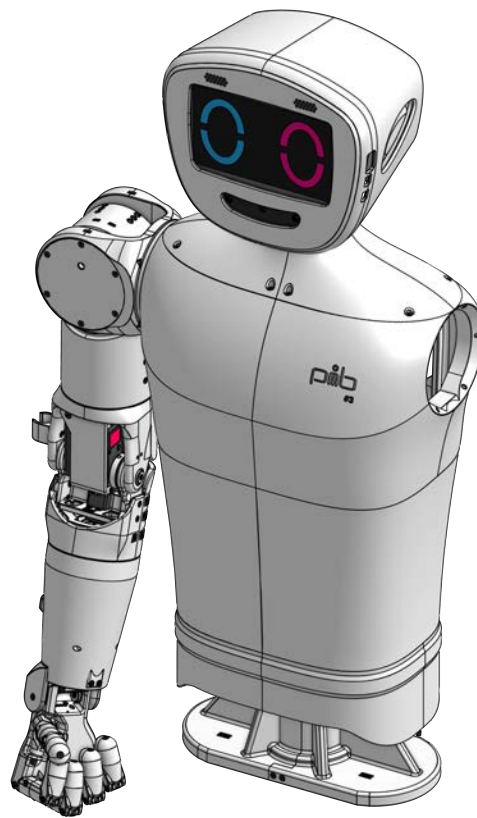
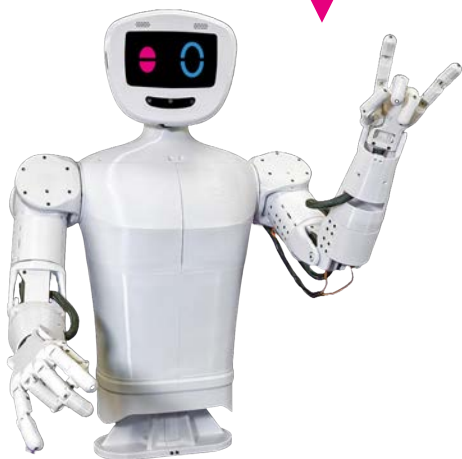
Ignore any joint name with "left" in it or „connected to bricklet 3“ if you are assembling pib with just one arm (right arm).

Motor name (joint connected to motor like thumb rotator)	Bricklet number(When assembled bricklet 1 will be the right and 2 is the middle, bricklet 3 is the extra one for 2 arms pib)	Bricklet pin (pin on bricklet that servo will be connected to, 0 to 9)
Free replacement for burned pins	2	6
Free replacement for burned pins	2	7
shoulder_horizontal_left	2	8
shoulder_vertical_left	2	9
thumb_left_opposition	3	0
thumb_left_stretch	3	1
index_left_stretch	3	2
middle_left_stretch	3	3
ring_left_stretch	3	4
pinky_left_stretch	3	5
wrist_left	3	6
lower_arm_left_rotation	3	7
elbow_left	3	8
upper_arm_left_rotation	3	9

Congratulations

You did a great job, pib 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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Order non-printable parts for pib.