pib

How to build your robot

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assembly instructions for:

MOTOR CALIBRATION

v2024

Step 1a

1
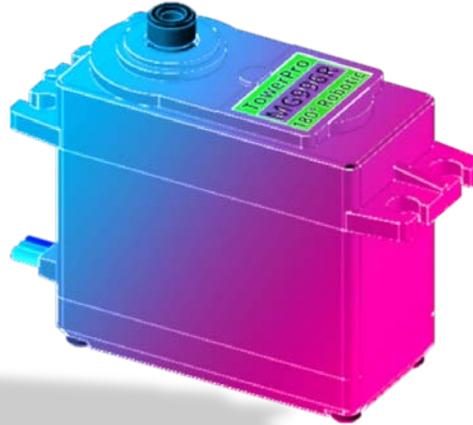
Cut the output barrel of the **power supply E14** as shown in the pictures.

Strip the ends of powersupply output wire to ensure the inside copper windings can be seen.

Step 1b

Pull the red and blue switches in E13 (T-Connector), insert wires and then close them.

Make sure to place the wires in the correct switches:

- ✓ **Red** wire to **red** switch
- ✓ **Black** wire to **blue** switch
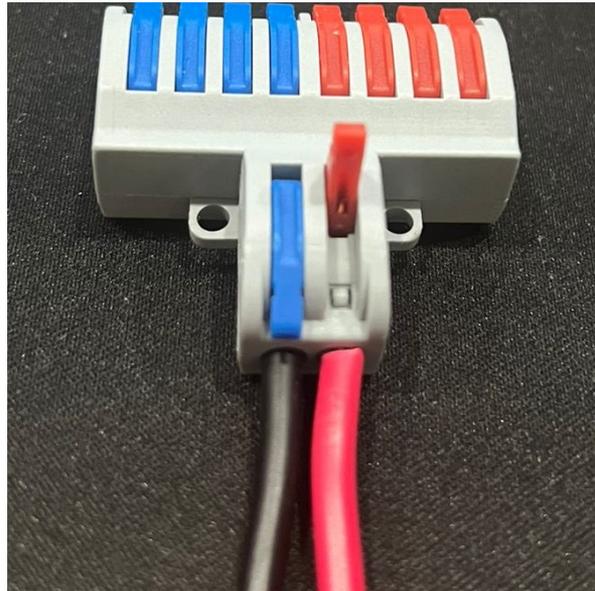
Step 2

Connect the black-red output cable from the head (coming out of the TinkerForge HAT) and connect it to E13 (T-Connector).
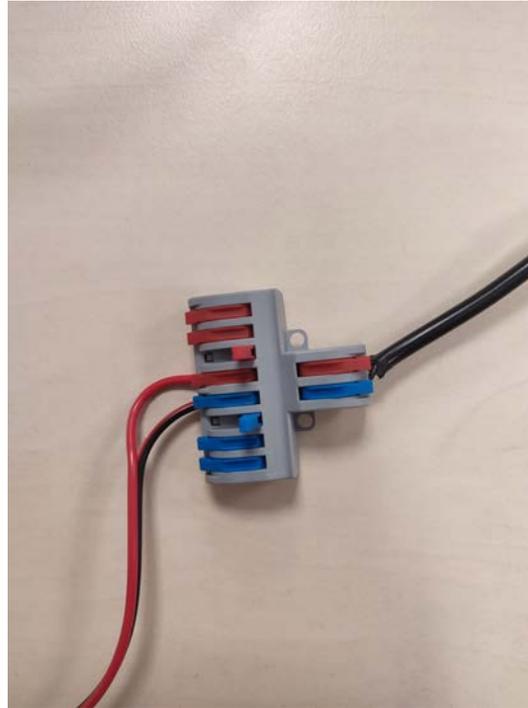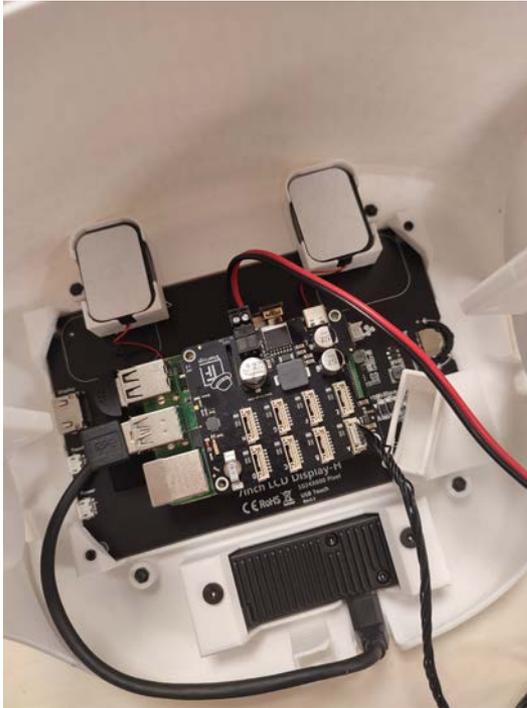
Make sure to place the wires in the correct switches:

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

Step 3a

Cut **10 cm** of the red-black **power cable** and insert them to the E03 TinkerForge **ServoBricklet.**

Make sure to place the wires in the correct switches:

- ✓ **Red** wire to **+ Symbol** (left spot)
- ✓ **Black** wire to **– Symbol** (right spot)
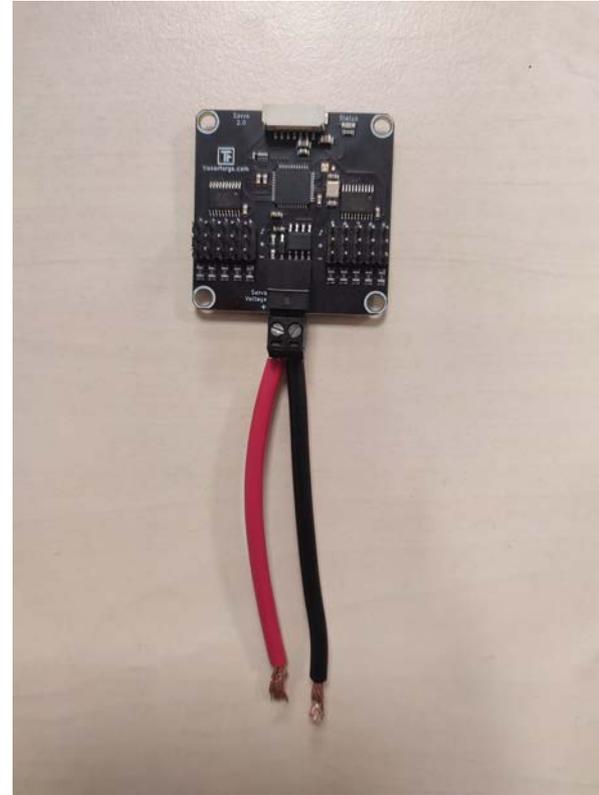
Step 3b

Now you can insert the cables to the T-Connector.

Make sure to place the wires in the correct switches:

✓ **Red** wire to **red** switch

✓ **Black** wire to **blue** switch
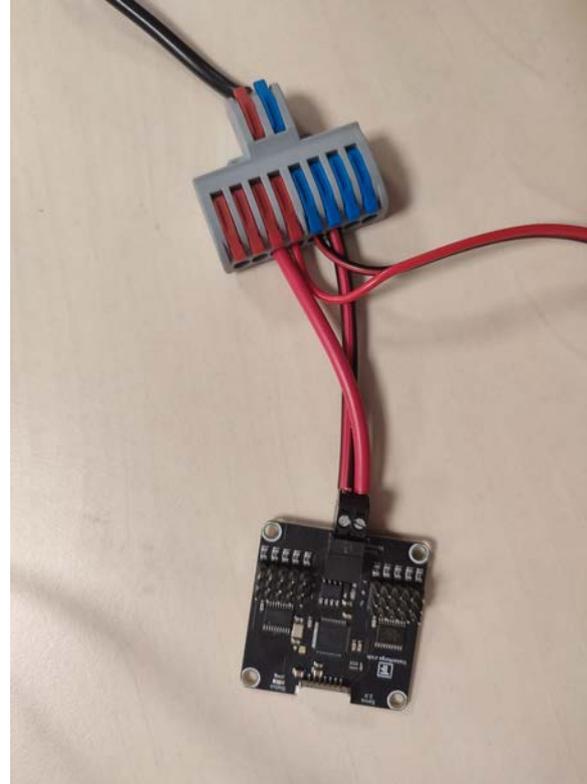
Step 4

Now, we can connect the motors to the ServoBricklet.

You can add 10 motors at the same time – there are 10 slots for motors on the ServoBricklet.

It is also important to have the correct orientation here:

✓ **Yellow** cable to **S Symbol**
✓ **Orange** cable to **+ Symbol**
✓ **Brown** cable to **- Symbol**
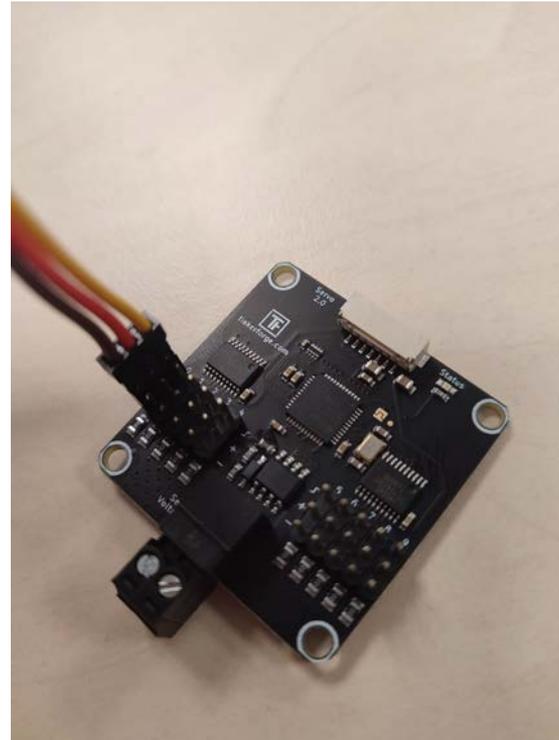
Step 4 – additional picture
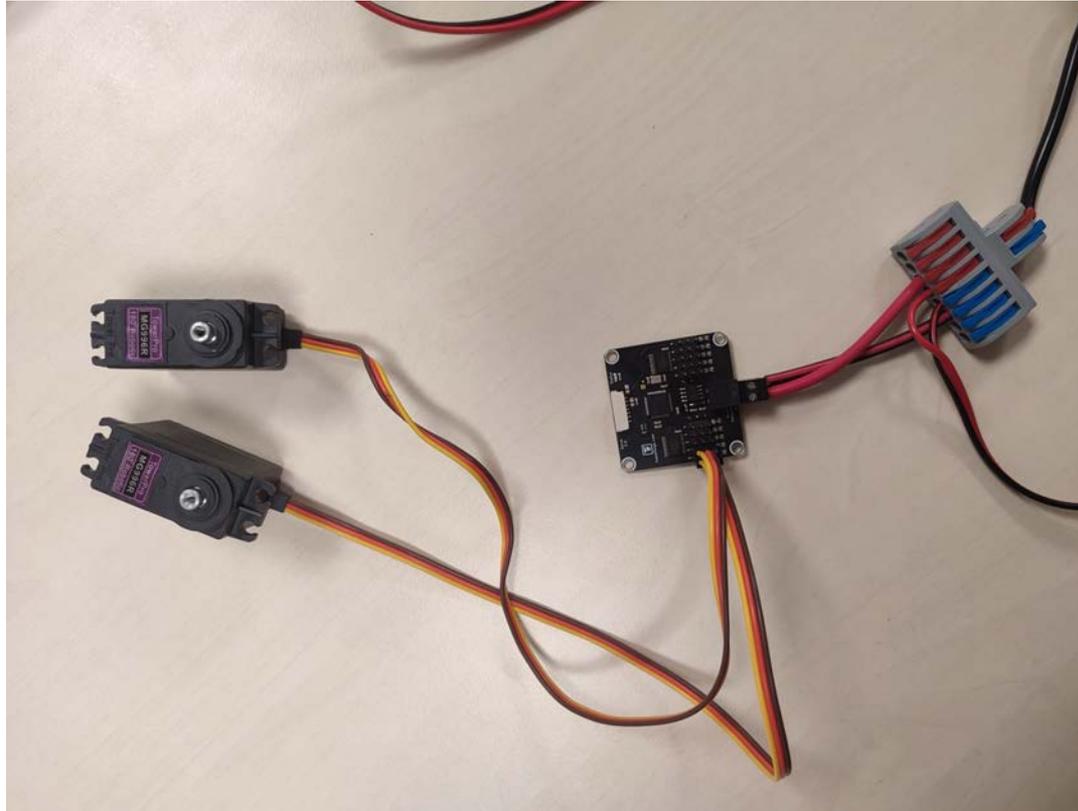
Step 5

Connect the **bricklet cable** to the **TinkerForge HAT** in the head and then to the **TinkerForge ServoBricklet**.
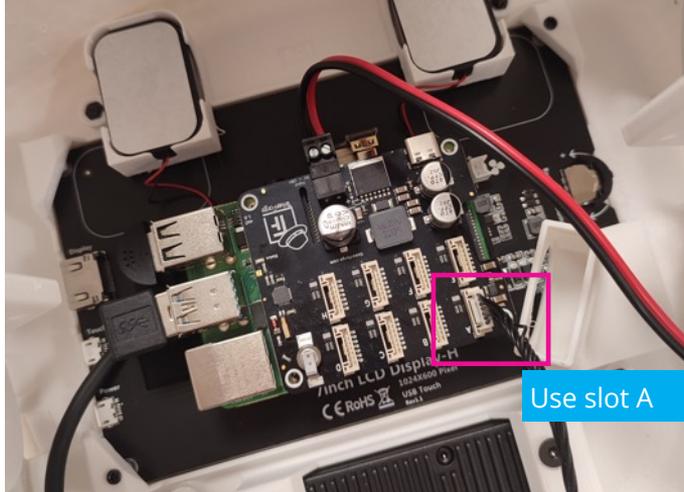
Use slot A
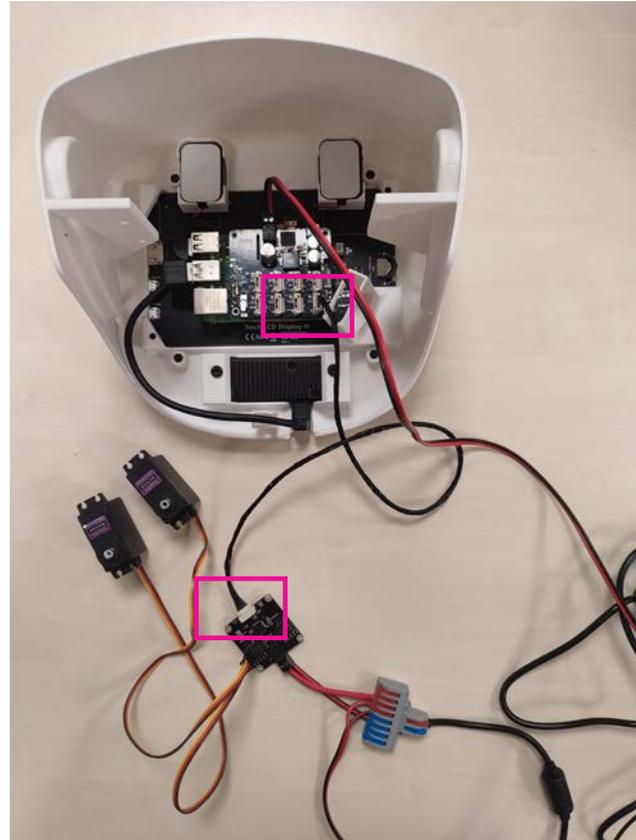
Step 6

Plug the power cable into the power supply and start Raspberry Pi OS.

Open the **Brick viewer** application.

Step 7

1
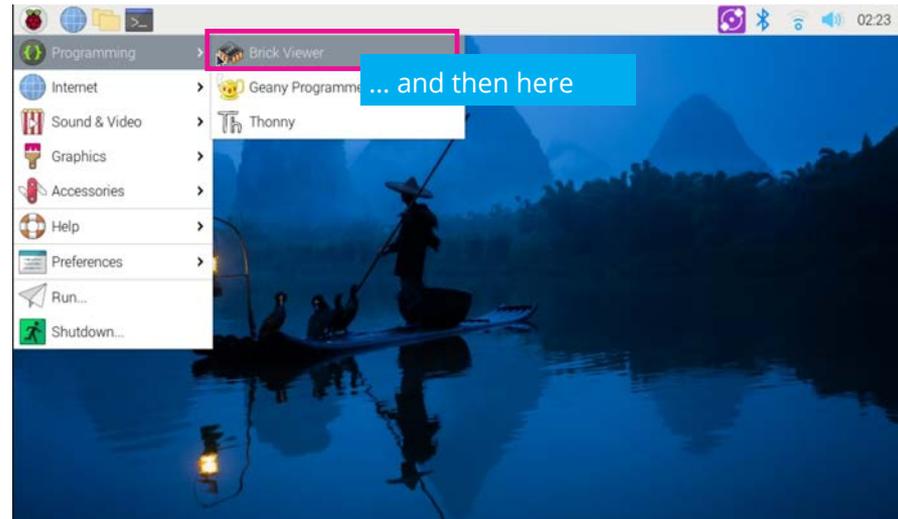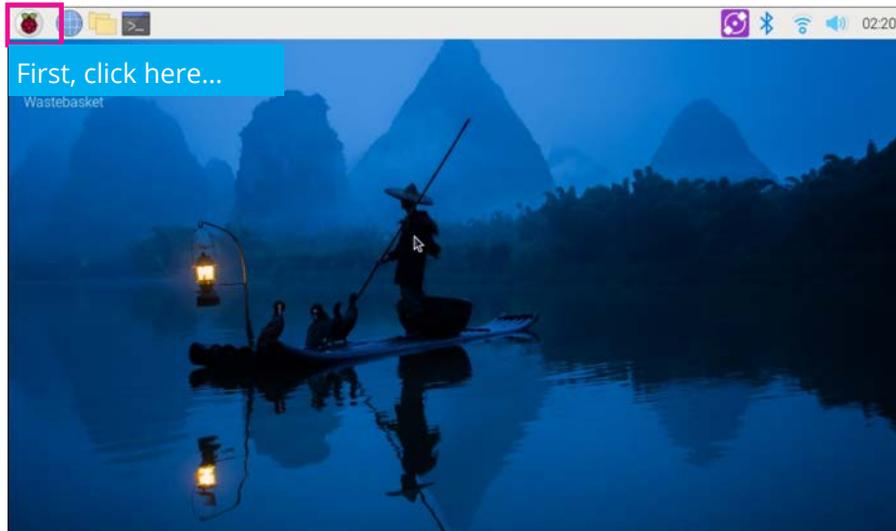
Click „**Connect**" and navigate to the tab „**Servo Bricklet 2.0**"

... and then here

First, click here...
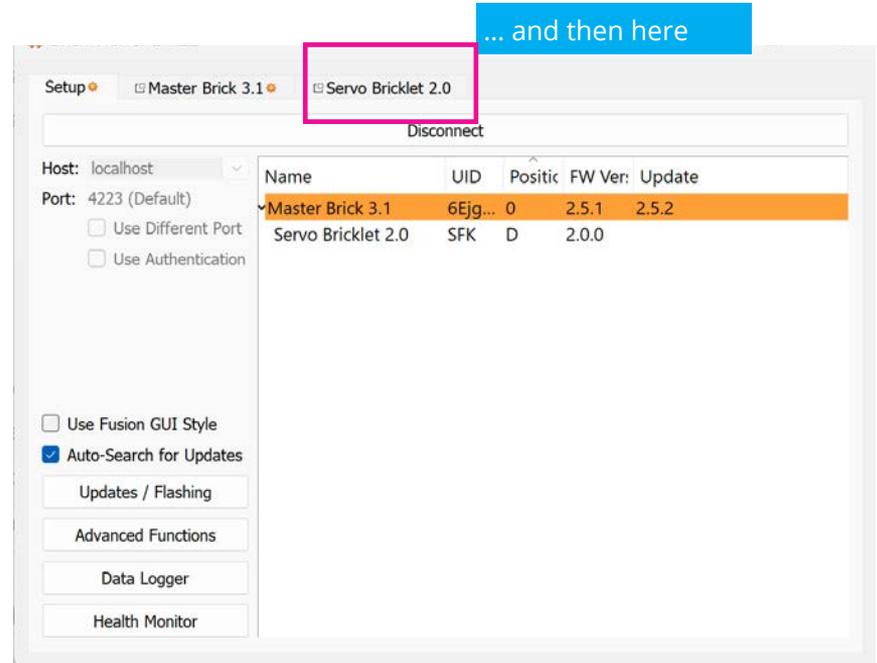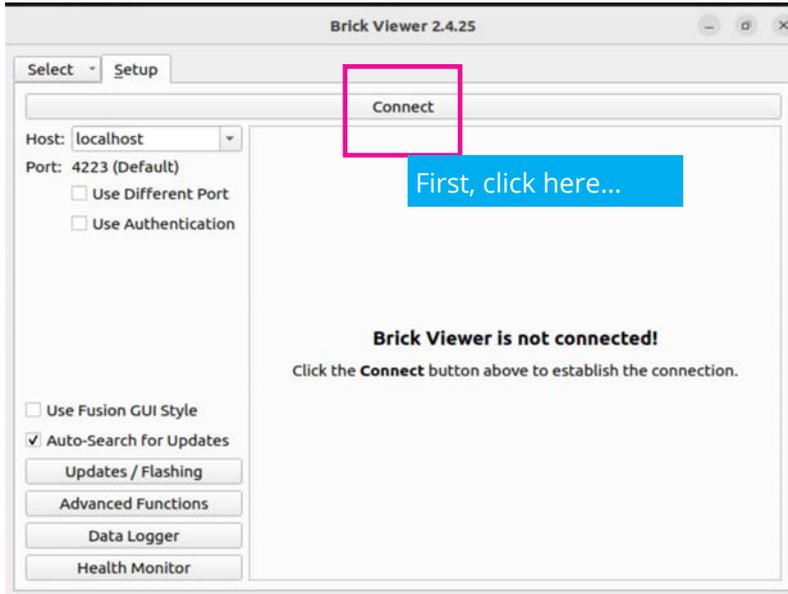
Step 8

Select „All Servos" and change the values as shown.

Other values are not important and do not need to be changed.

You will hear a sound from the motors once you changed the values – that is the calibration! The motors have switched to a 0-Position!

Select „All Servos"

For 1 **E15-DS5180SSG** to be connected to elbow joint, set position to **5500** instead of **0**

Congratulations

You did a great job, the motors are calibrated.

Remove the calibrated motors, connect the remaining motors and repeat step 6-8.

Once finished, you can disassemble everything as you will need the T-Connector, bricklet cable, motors and so on in the other tutorials.

Well done!
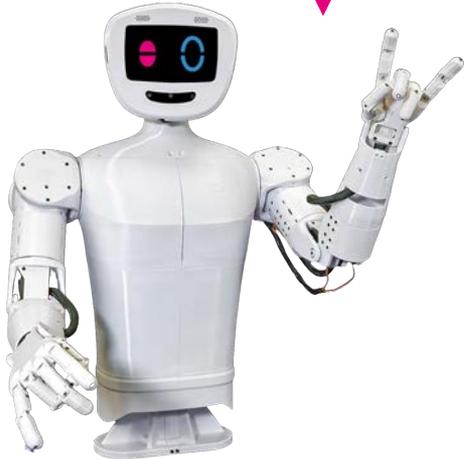
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