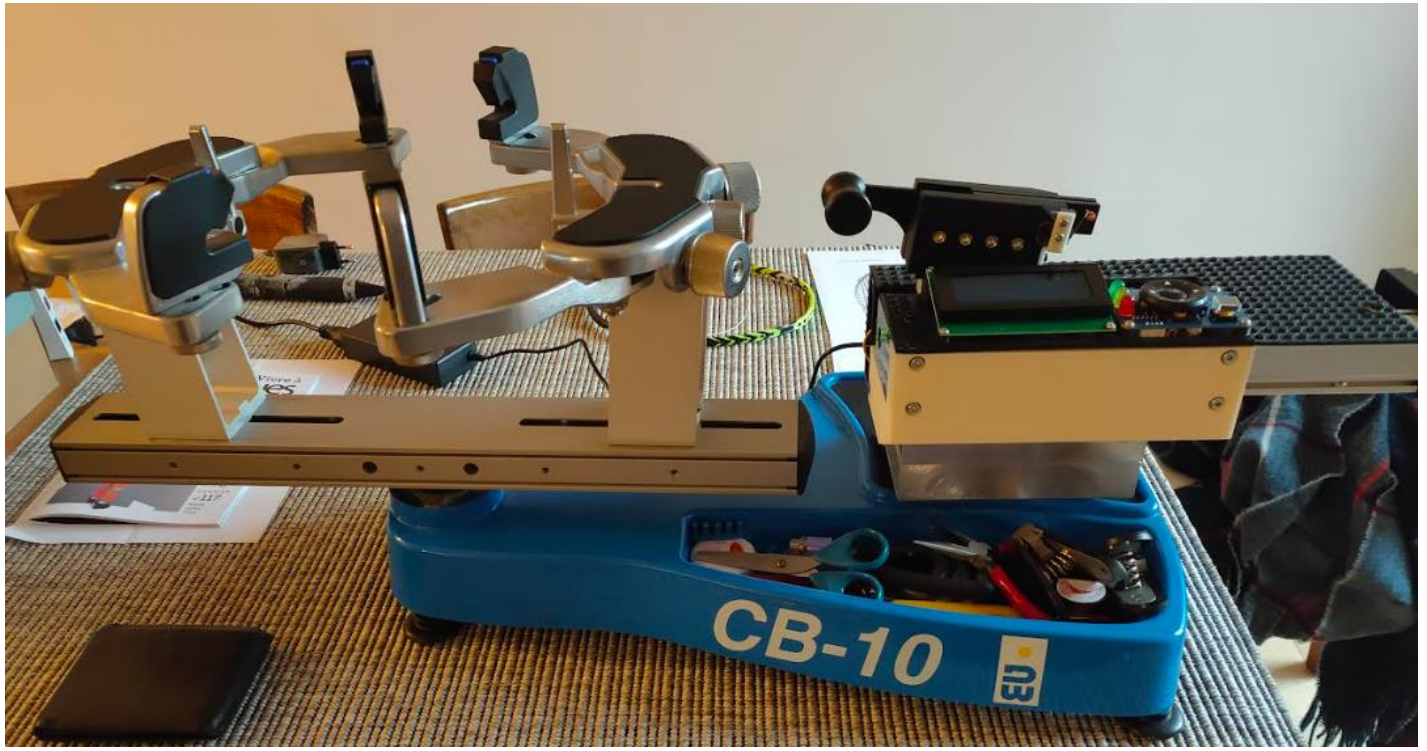
PICOBETH Project

CB10 stringing machine Interface

Mario GUILLO

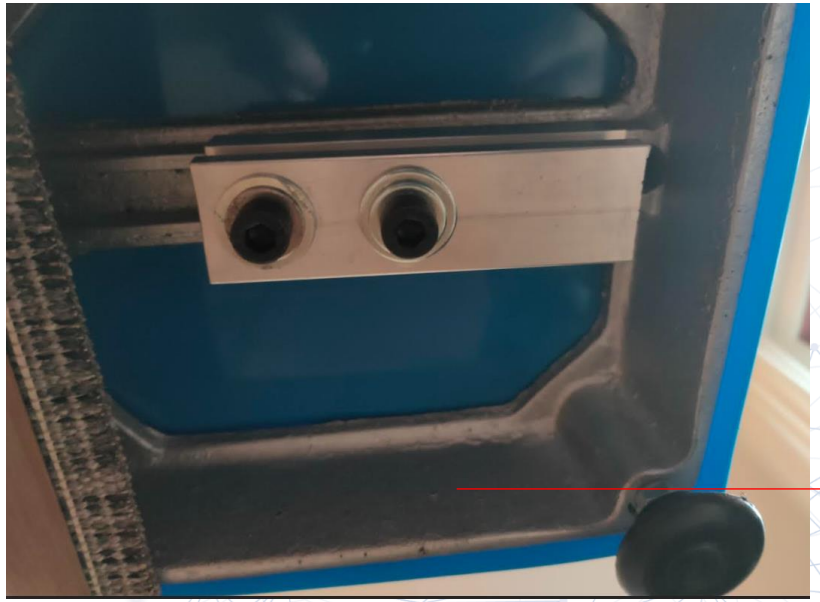
March 2025

Document for Kuo



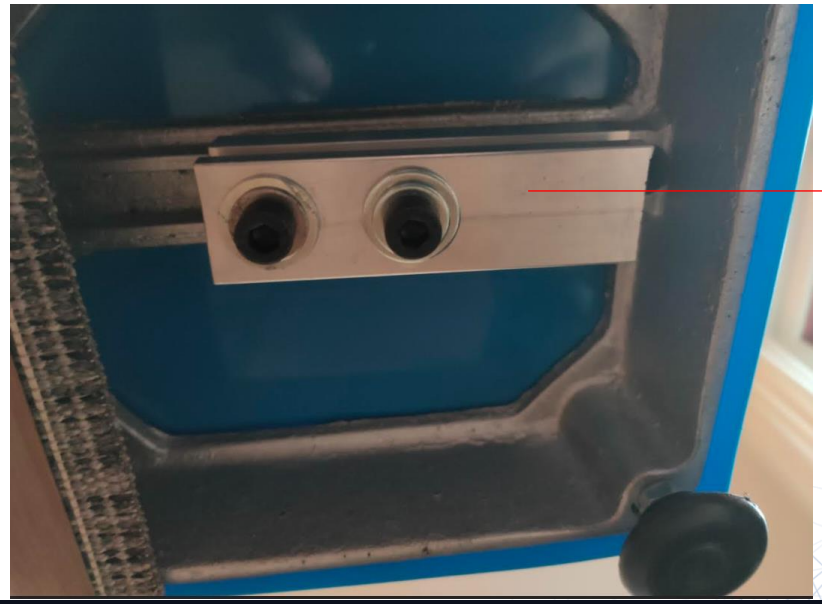
First step
Stringing machine analysis

- CB10/Gamma stringing machine are designed with **a plastic cover put on an aluminium frame.**
- The manual tension mechanism **only used x2 M8x35 screws.**
- The 2 holes for the screw passage are **located on an aluminium part of the frame.**



Second step
Stringing machine strengthening

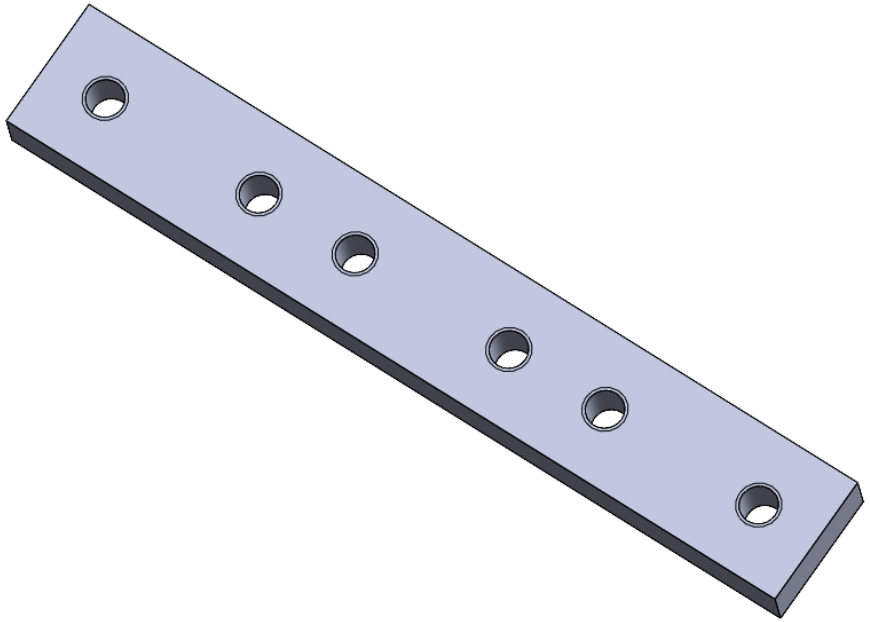
- The user can only use the same part of the frame for the fixation of the PICOBETH system. There are only **2 screws + washers**.
- In order to increase the resistance (because the 2 holes are not far away from each other), an **aluminium square of 30x30 could be used**. With that the global inertia is more important during the tensioning (better stiffness properties at the rear side of the machine for less deformation because the initial thickness of the frame is not very important on the CB10 machine)

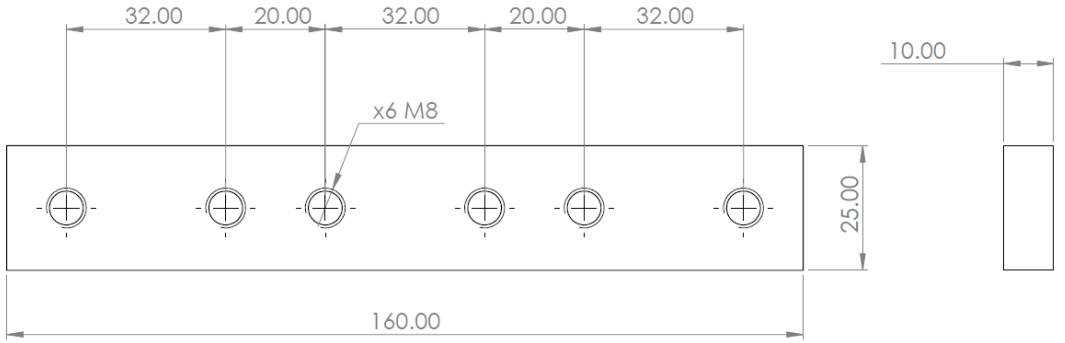


Aluminium square
30x30 length of 65 mm

Second step (1/3)
Steel part

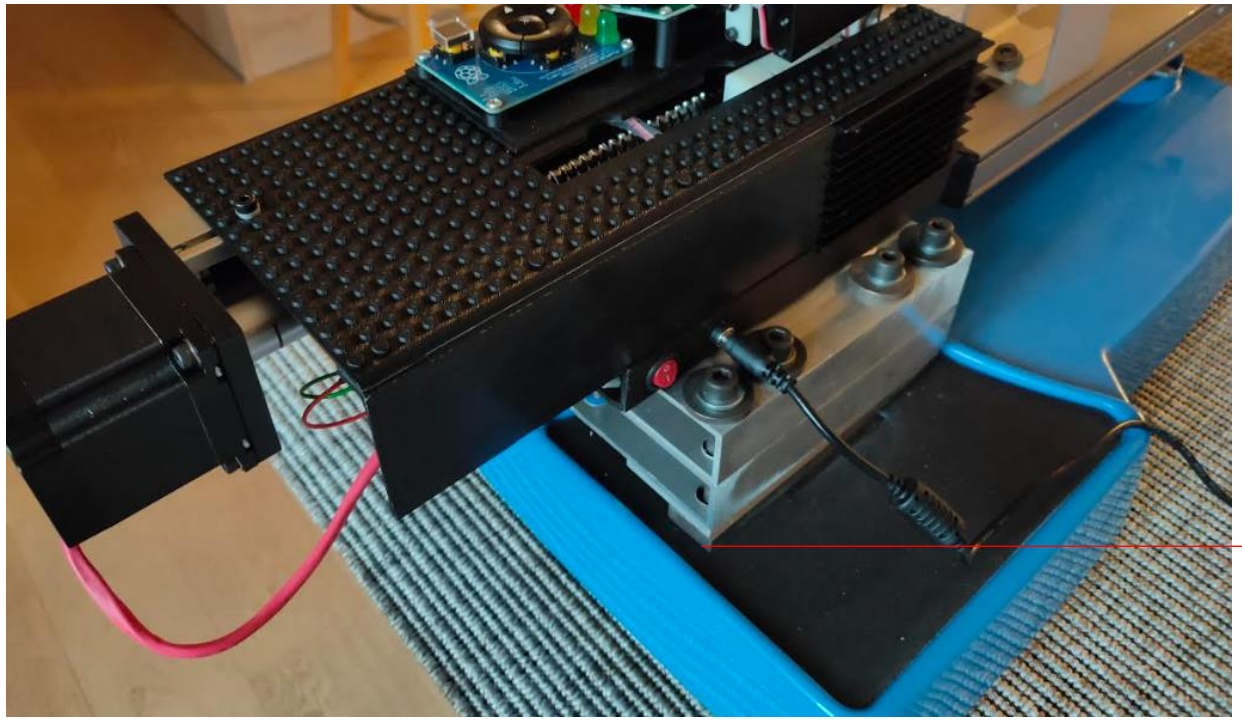
- For a more practical mounting, a steel part with M8 tapping is designed.



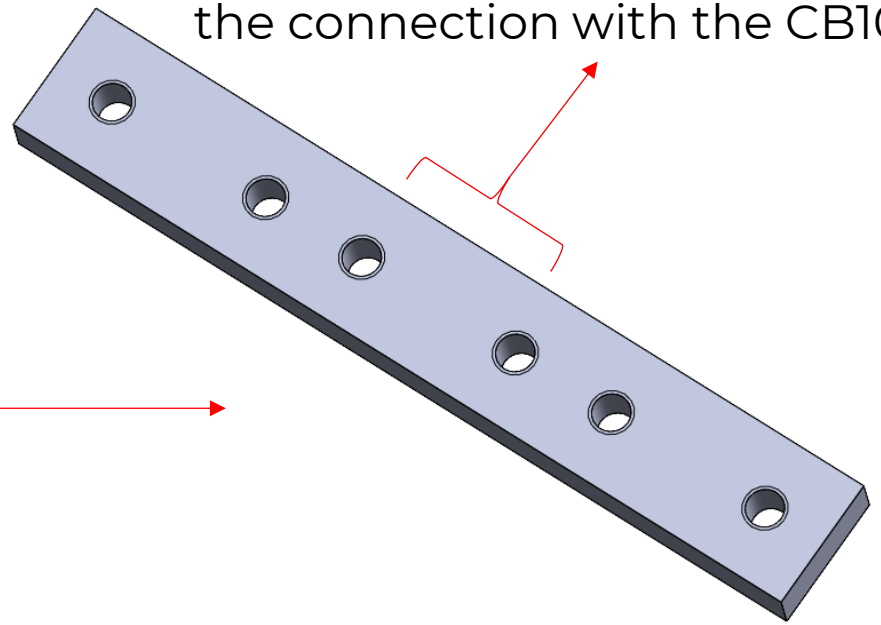


Second step (2/3)
Steel part

- After **removing the manual tension mechanism:**
  - If a square of 30x30 is not used ➔ Use the same original screw (M8x35)
  - If a square of 30x30 is installed ➔ Use M8x65 or M8x70 (depends on the washers thickness)
- The fixation **is done from below** (see the previous slide with the aluminium square)

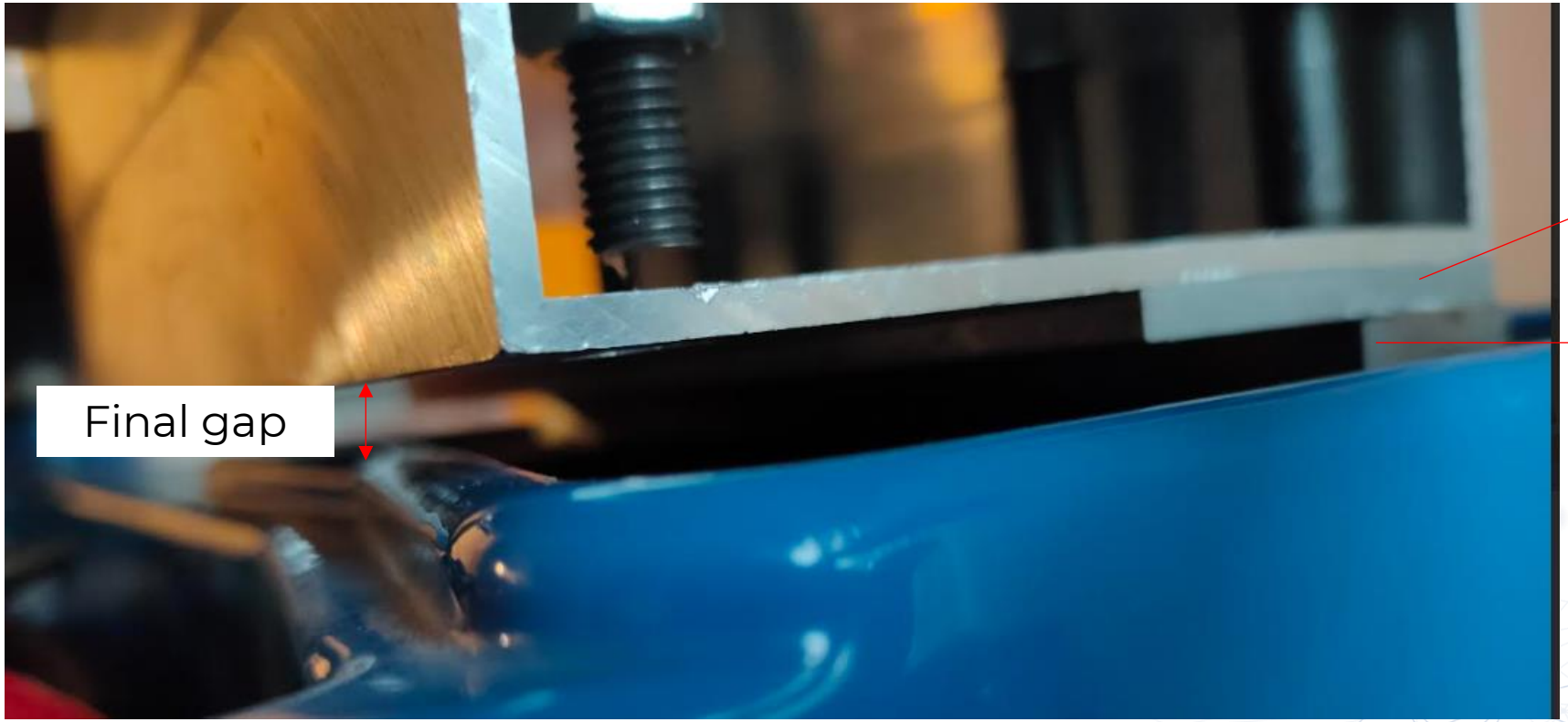


The 2 central taping are used for the connection with the CB10



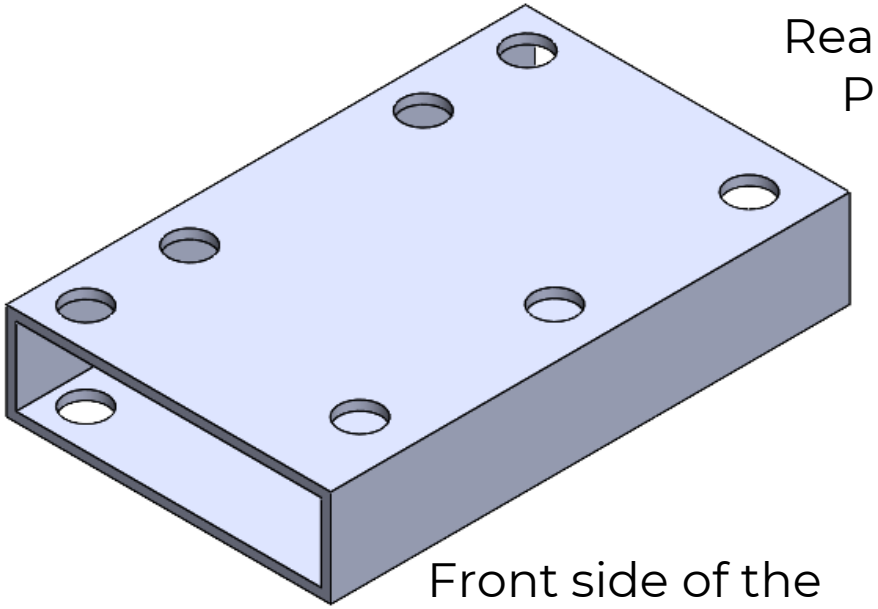
Second step (3/3)
Steel part

- On the CB10 machine **the surface is not totally flat**.
- The steel part alloys to **be above of the small wall** on the CB10 machine.



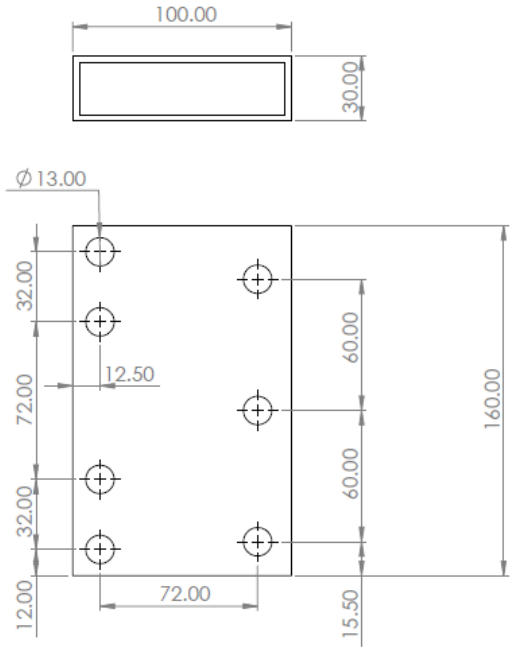
Thrid step (1/2)
4 mm part + Hollow profile

- To reach an appropriate location of the PICOBETH system
  - A **4 mm height part is used (after test probably a 6 mm part could be better)**
  - **2 hollow profiles of 30 mm of height**
- **Drill holes of 13 mm diameter for M8 screws** (for an easiest assembly between parts)
- For the 4 mm part the design **is the same than the steel interface. Just replace M8 tapping with drill holes of 13 mm diameter.**



Rear side of the PICOBETH

Front side of the PICOBETH

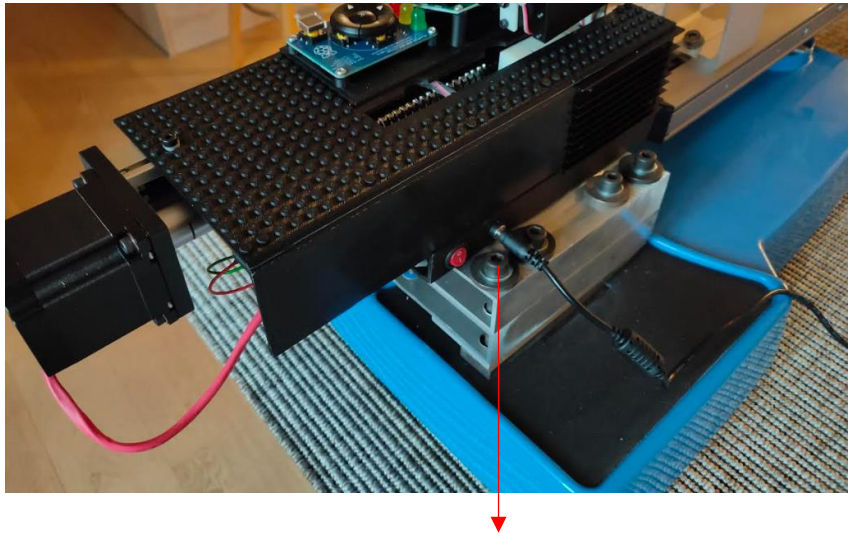


Front side of the PICOBETH

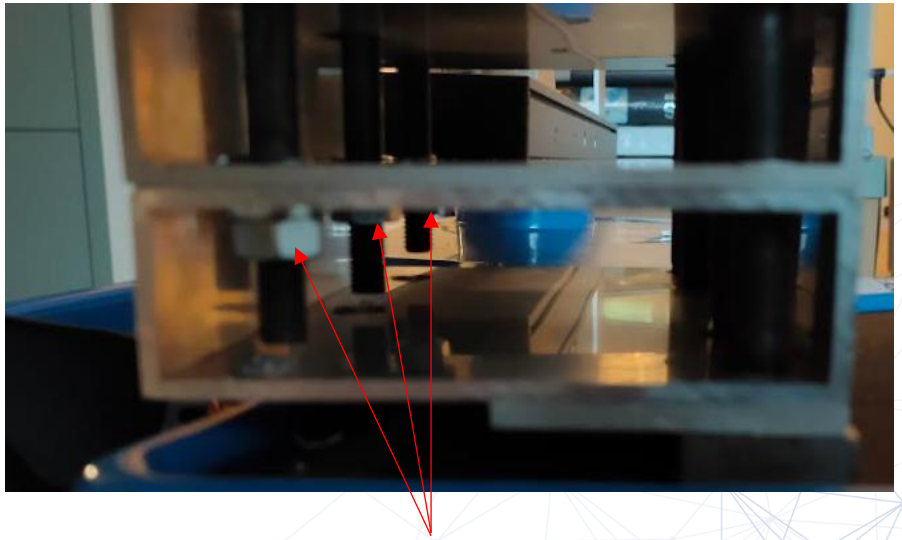
Rear side of the PICOBETH

Thrid step (2/2)
4 mm part + Hollow profile

- Do the assembly of the 3 parts by using **x4 M8x70 or M8x75 screws + washers** to reach the 4 M8 tappings on the steel interface part. The location allows the power jack easy to connect.
- Put the PICOBETH system (respect the orientation, see the previous slide) by using **x3 M8x75 or M8x80 + x3 M8 nuts + washers**.
- The aim is to take into account **the inertia of the 2 hollow parts**.



x4 M8x70 or M8x75
(depends on the washers thickness)



X3 M8x75 or M8x80
(depends on the washers thickness)

Final pictures
4 mm part + Hollow profile

- The location is ok :
  - Good alignment between the **frame rotational center and the wise head**
  - A maximum distance range between 30 and 45 mm
  - In fact, when the CB10 frame turns, the **4 nuts of the 4 movable arms are more important** (see the picture)
  - **The height is also good** (to be better the 4 mm part could be changed with a 6 mm part).