



Student Assistant Engineer
PORTFOLIO

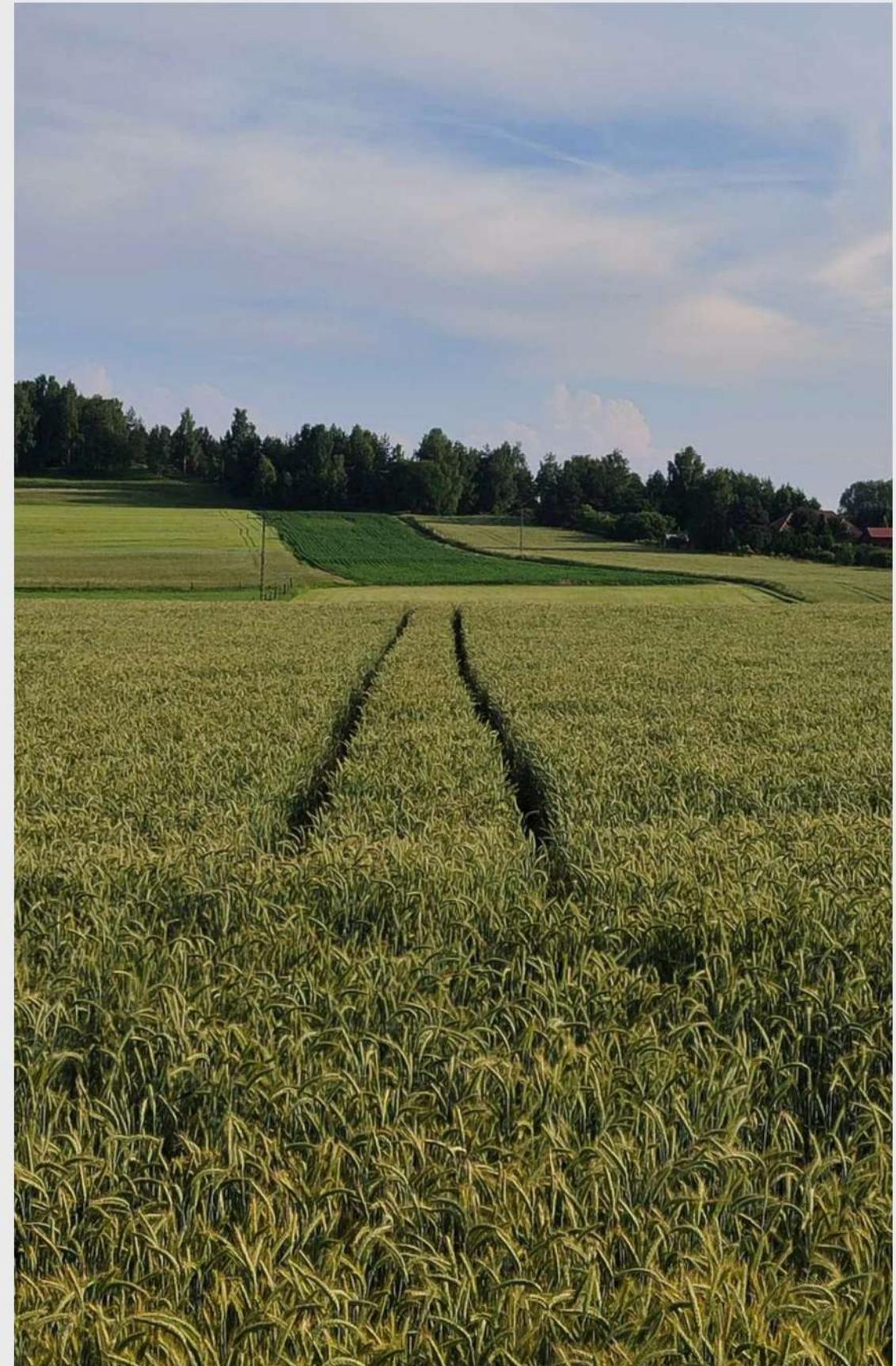
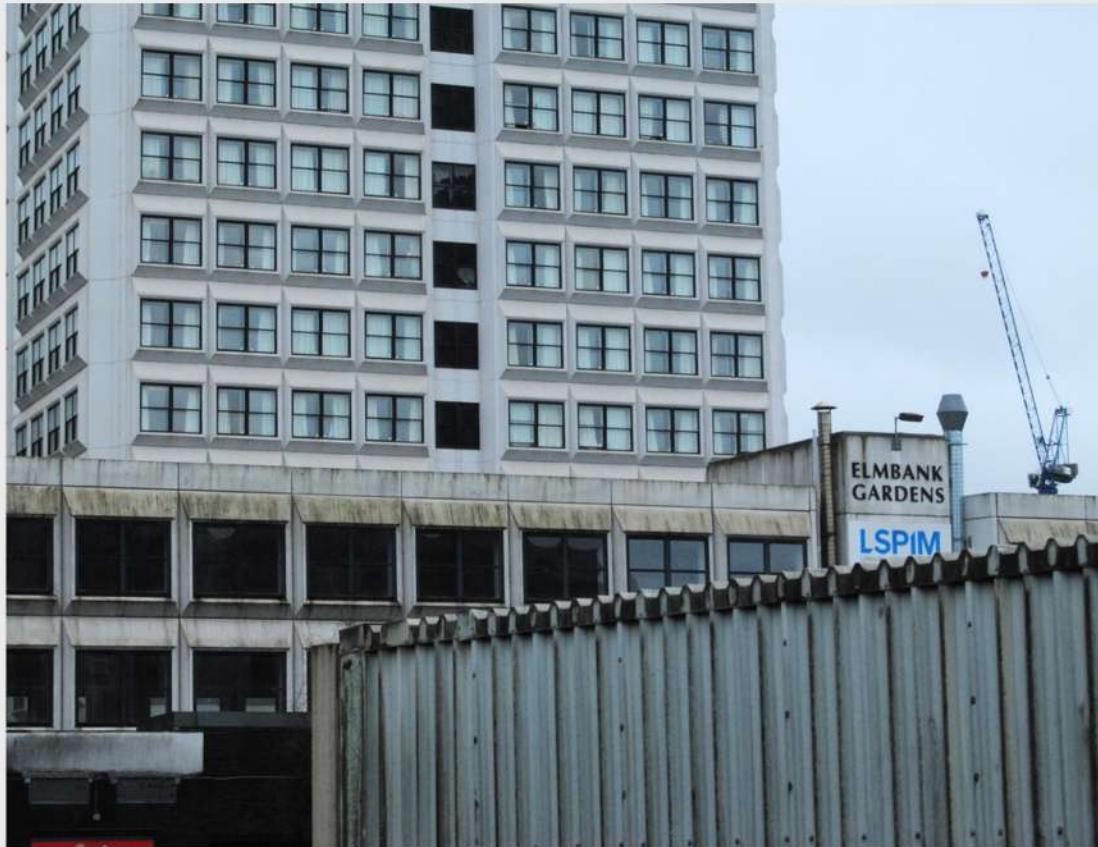
Bartosz Cieplik

ABOUT ME

Hi, my name is Bartosz, I come from Poland and I currently work as a medical robot designer.

I am fluent in CAD design, 3D printing and love photography, jazz and movies.

Home-sick for my small village, I often find myself inspired by nature, at the same time astonished by socialist architecture of polish cities.



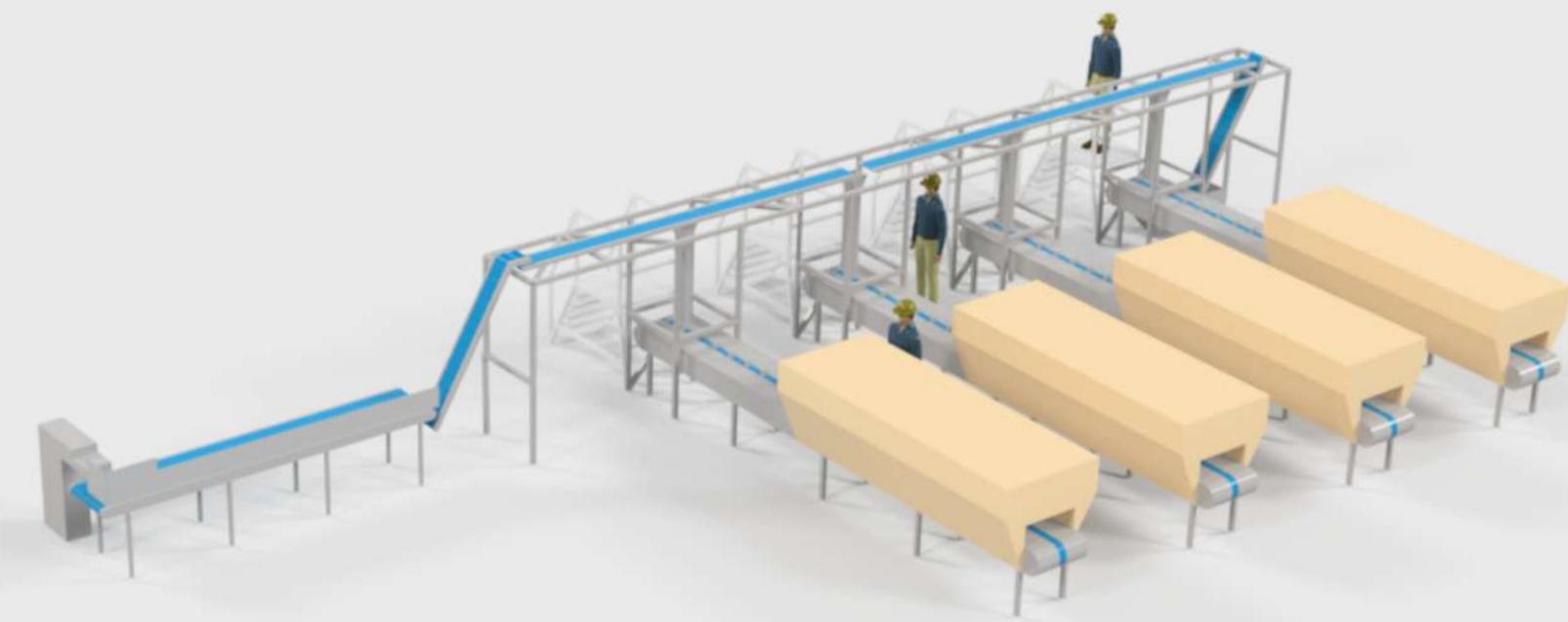
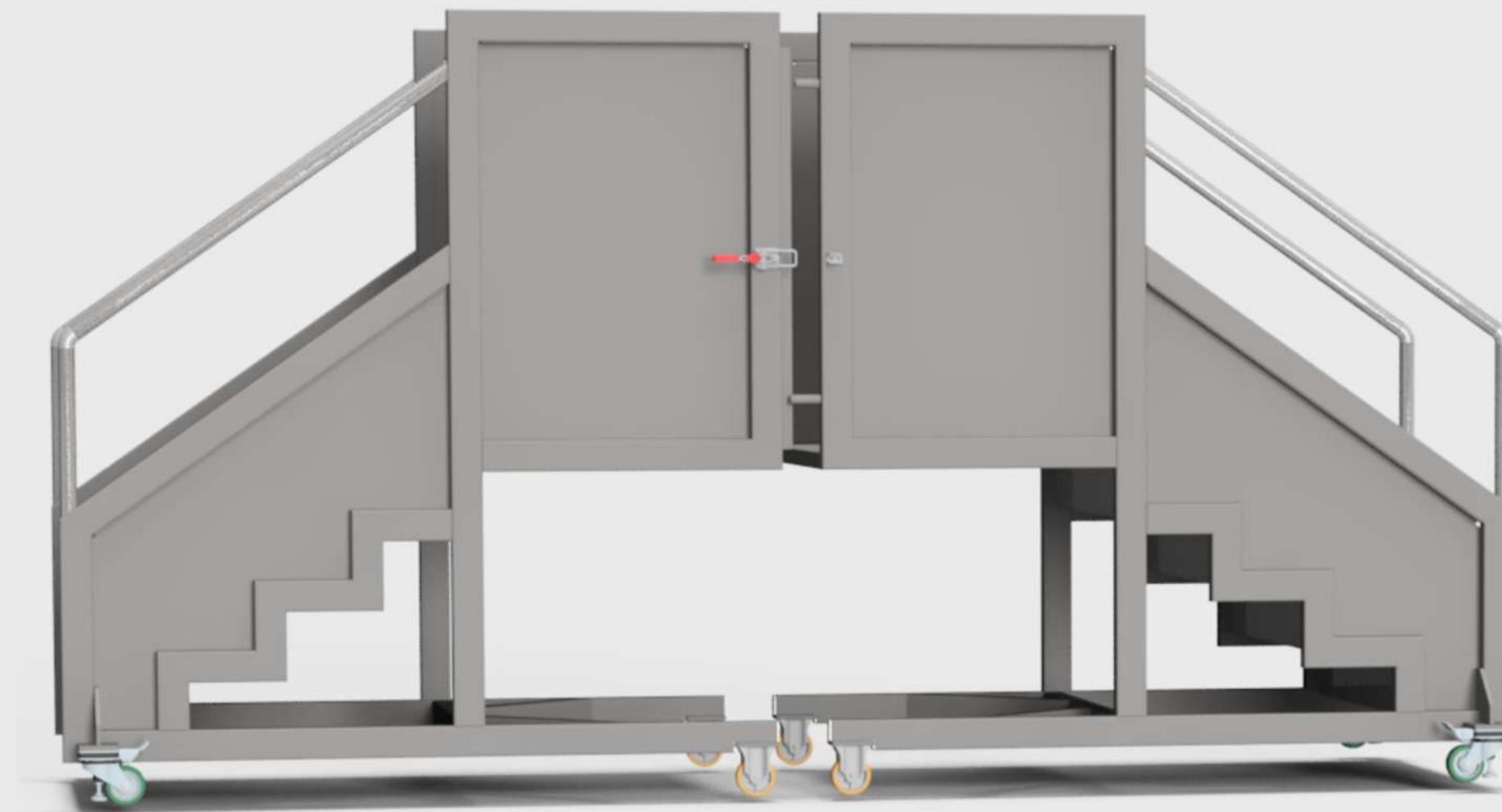
METAL PROJECTS

food industry oriented

An extensive part of my career experience was designing for food production.

It was a chance to design for manufacturing with metal sheet forming and cutting, milling, turning and welding with materials such as stainless steel, aluminum, polymers and more.

The process involved conceptualising, prototyping, designing and workshop work.



METAL PROJECTS



tools used to realise:

Autodesk Inventor - metal sheet, assembly, and 2d drawing environments

technologies used:

bending, laser cutting and spot-welding of metal sheets, milling plastic

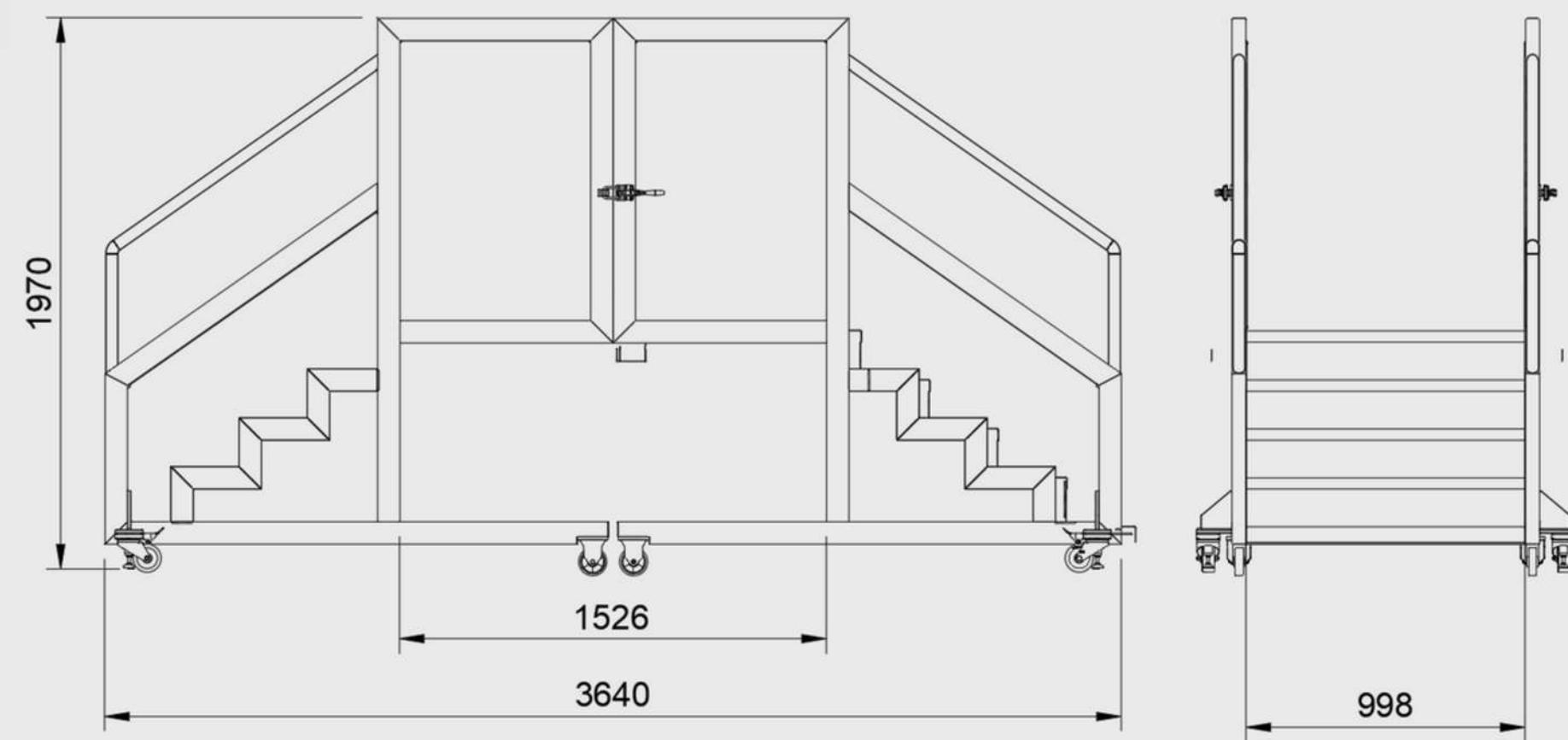
materials:

metal sheets, polyamide, standardized components (handles, wheels, screws)

Over-conveyor stairs



METAL PROJECTS



Over-conveyor stairs



METAL PROJECTS



Over-conveyor stairs



METAL PROJECTS



tools used to realise:

Autodesk Inventor - metal sheet, assembly, and 2d drawing environments

technologies used:

bending, laser cutting and spot-welding of metal sheets, milling plastic

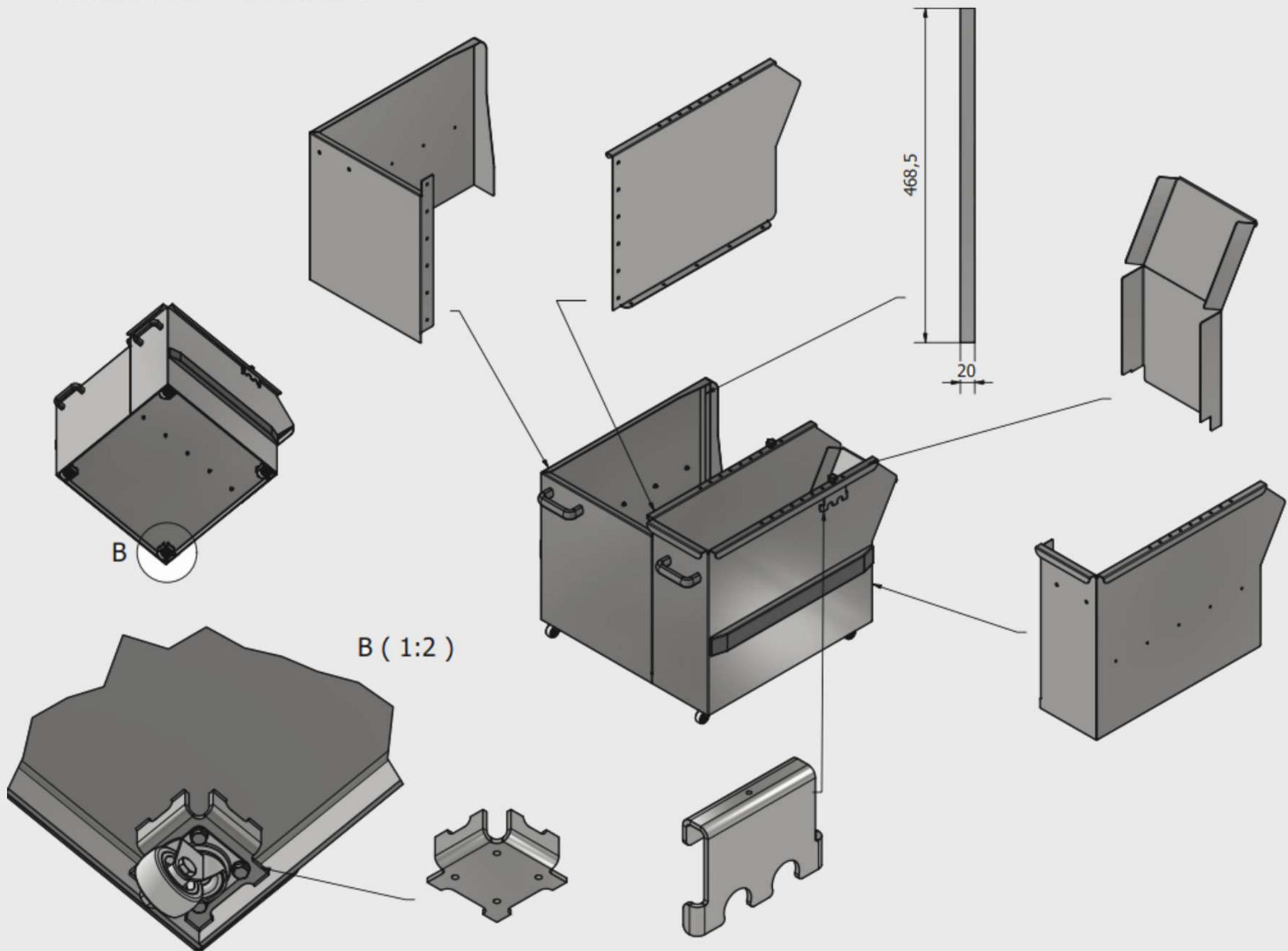
materials:

metal sheets, polyamide, standardized components (handles, wheels, screws)

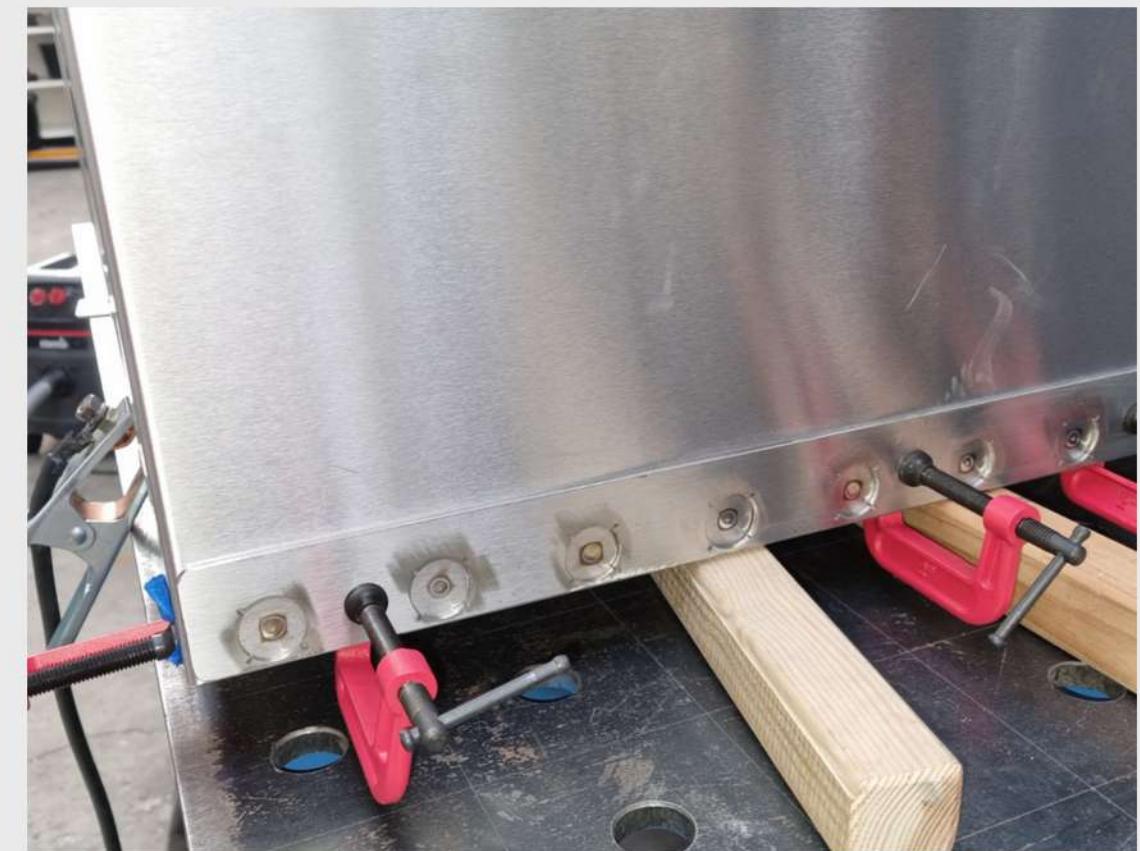
wheeled bin



METAL PROJECTS



wheeled bin



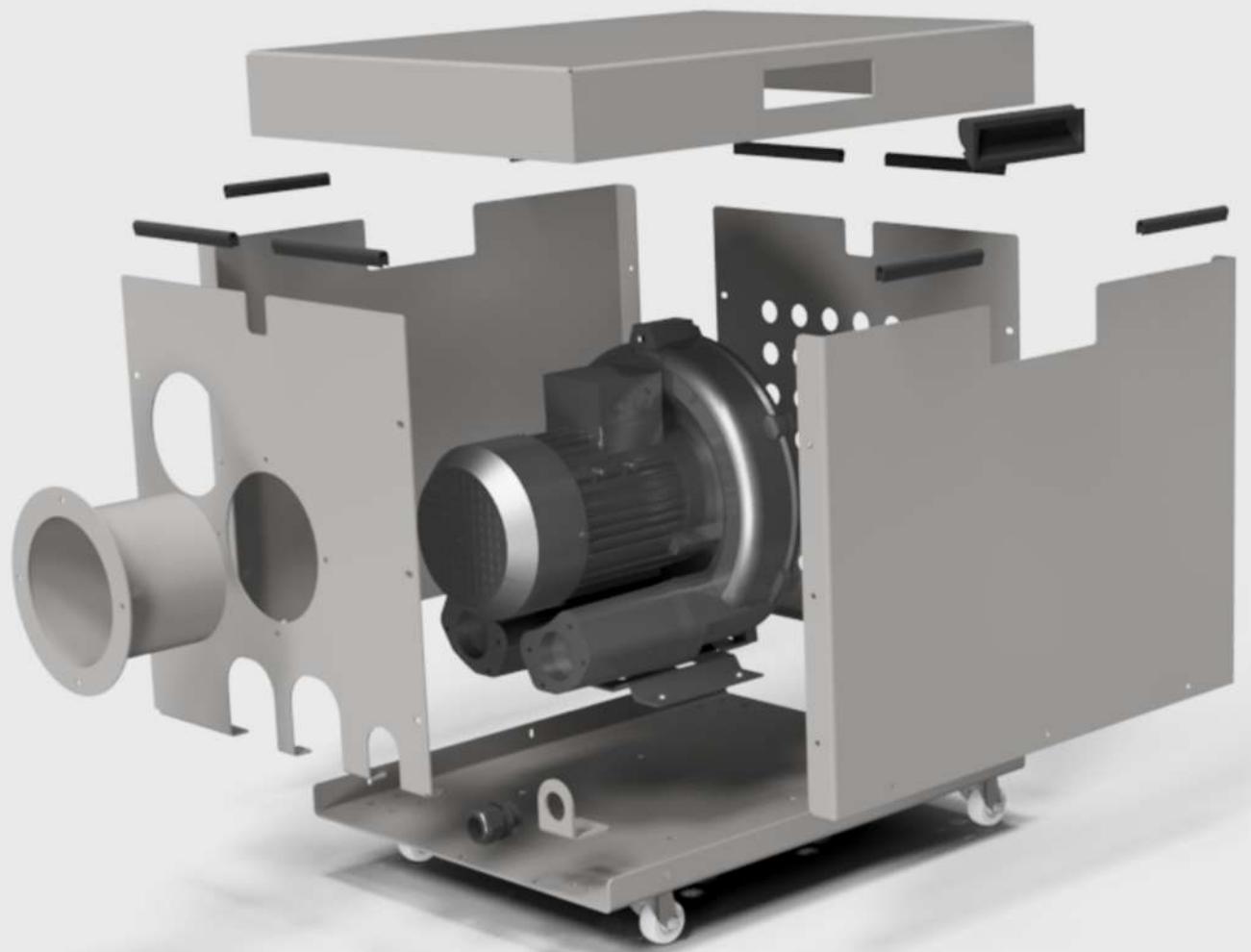
METAL PROJECTS



wheeled bin



METAL PROJECTS



tools used to realise:

Autodesk Inventor - metal sheet, assembly, and 2d drawing environments

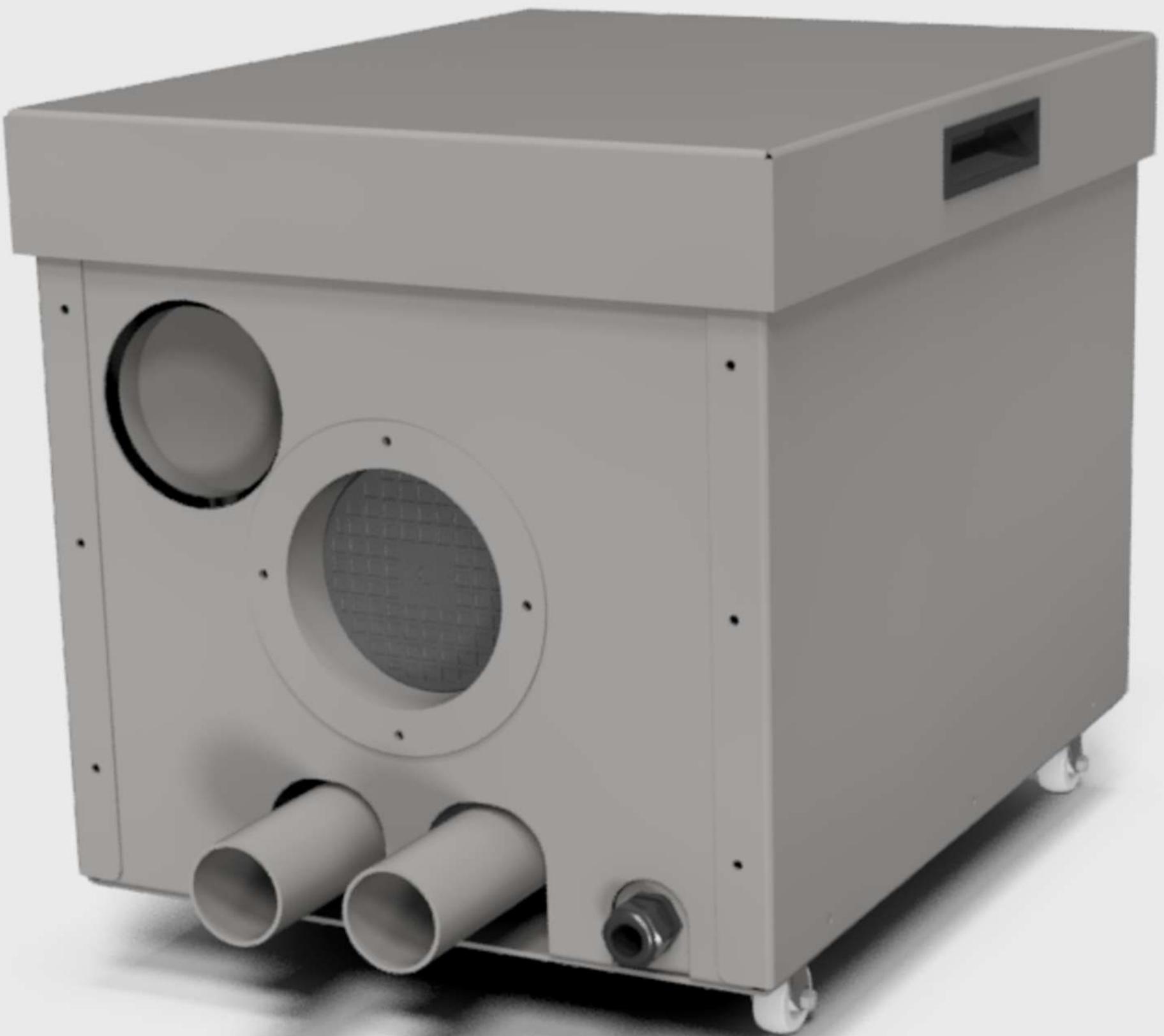
technologies used:

bending, laser cutting and spot-welding of metal sheets, milling plastic

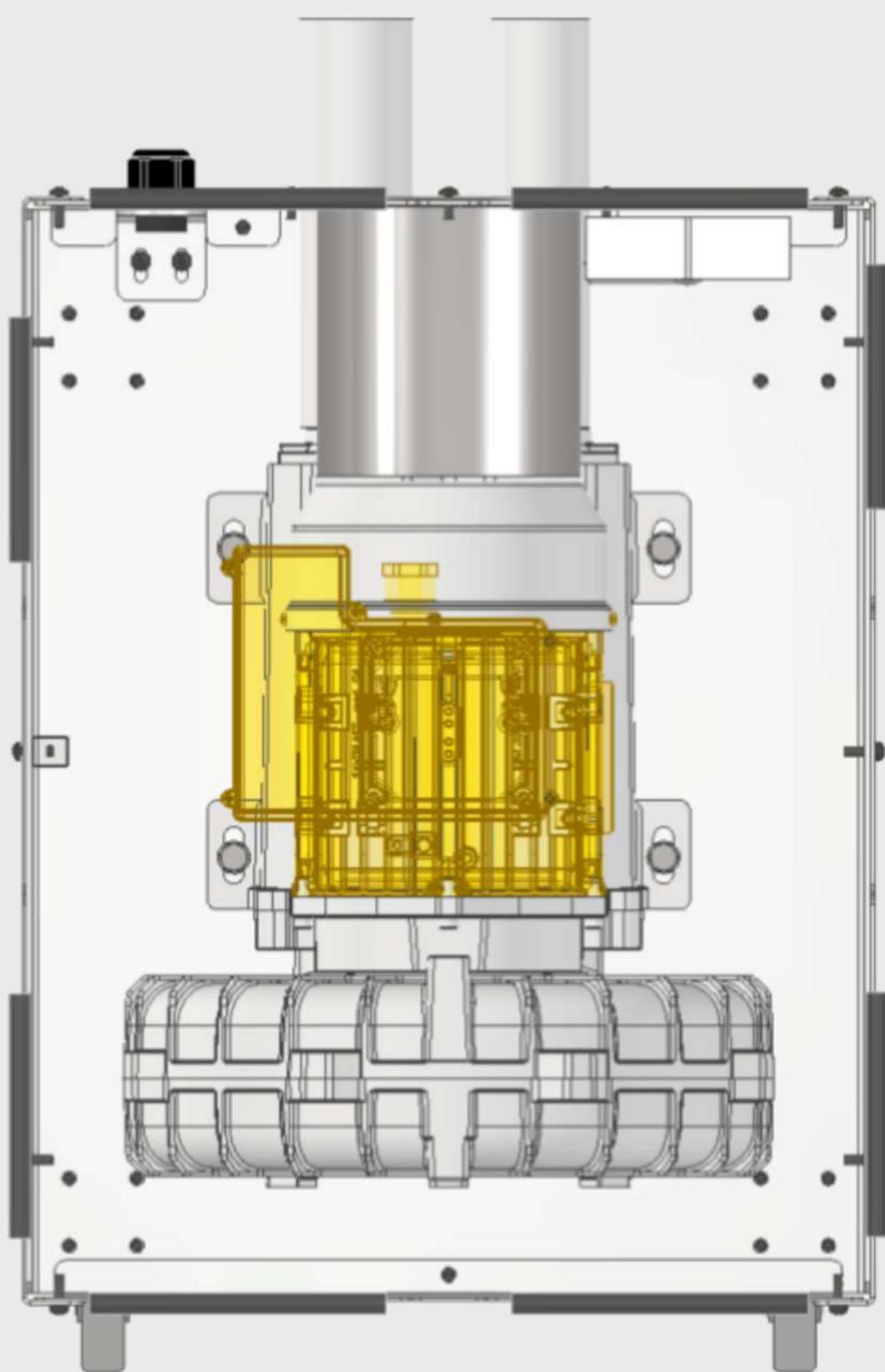
materials:

metal sheets, polyamide, standardized components (handles, wheels, screws)

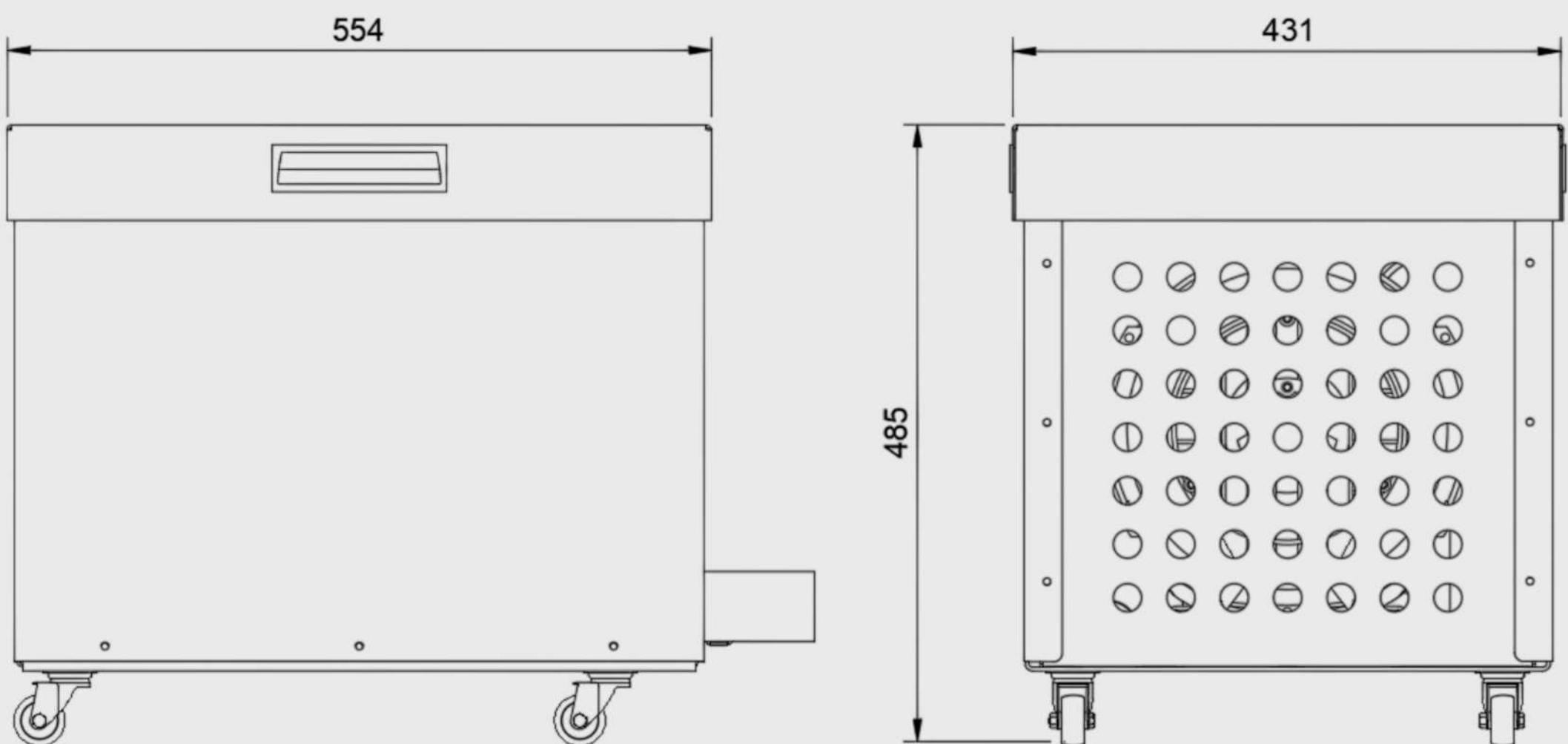
Pump enclosure



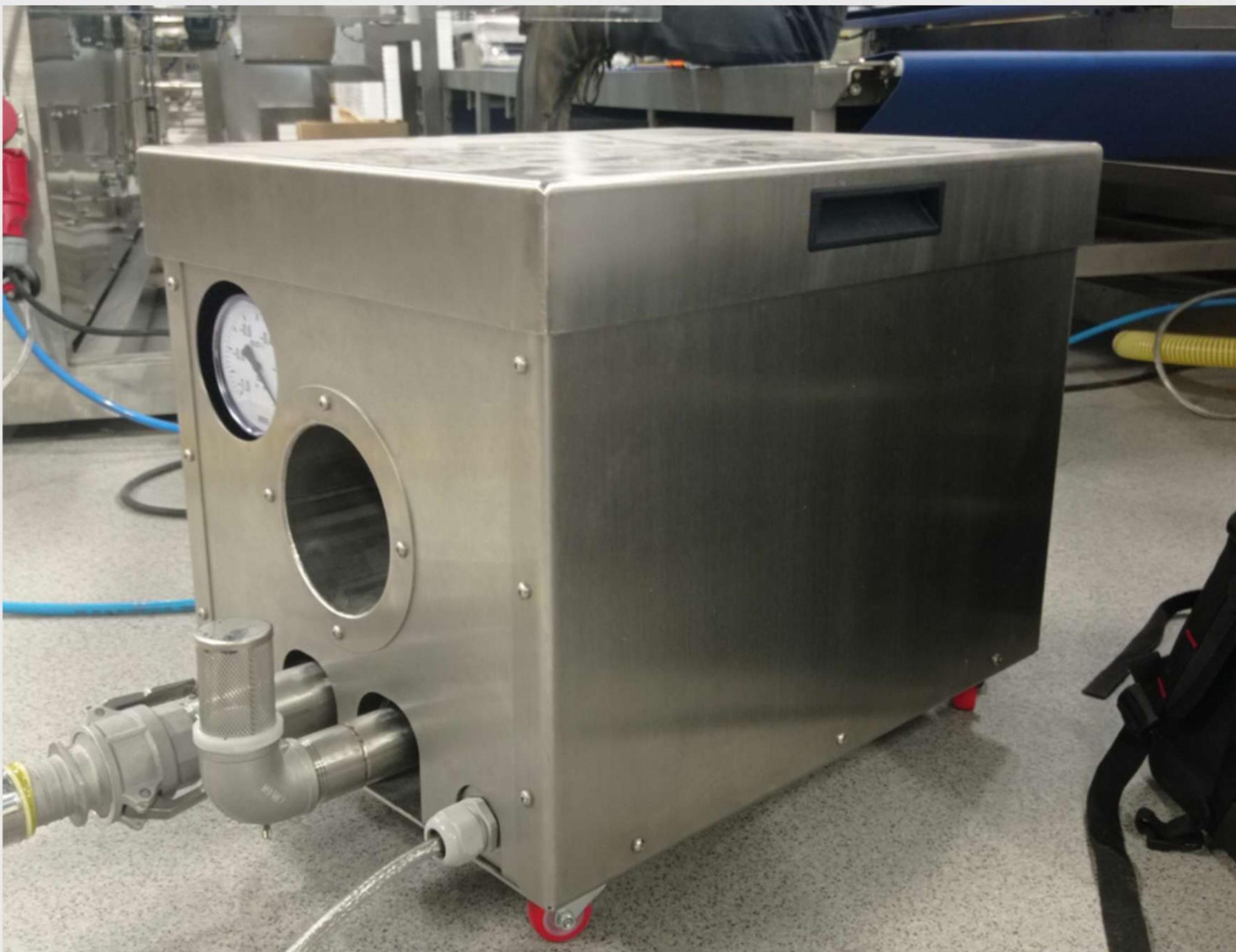
METAL PROJECTS



Pump enclosure



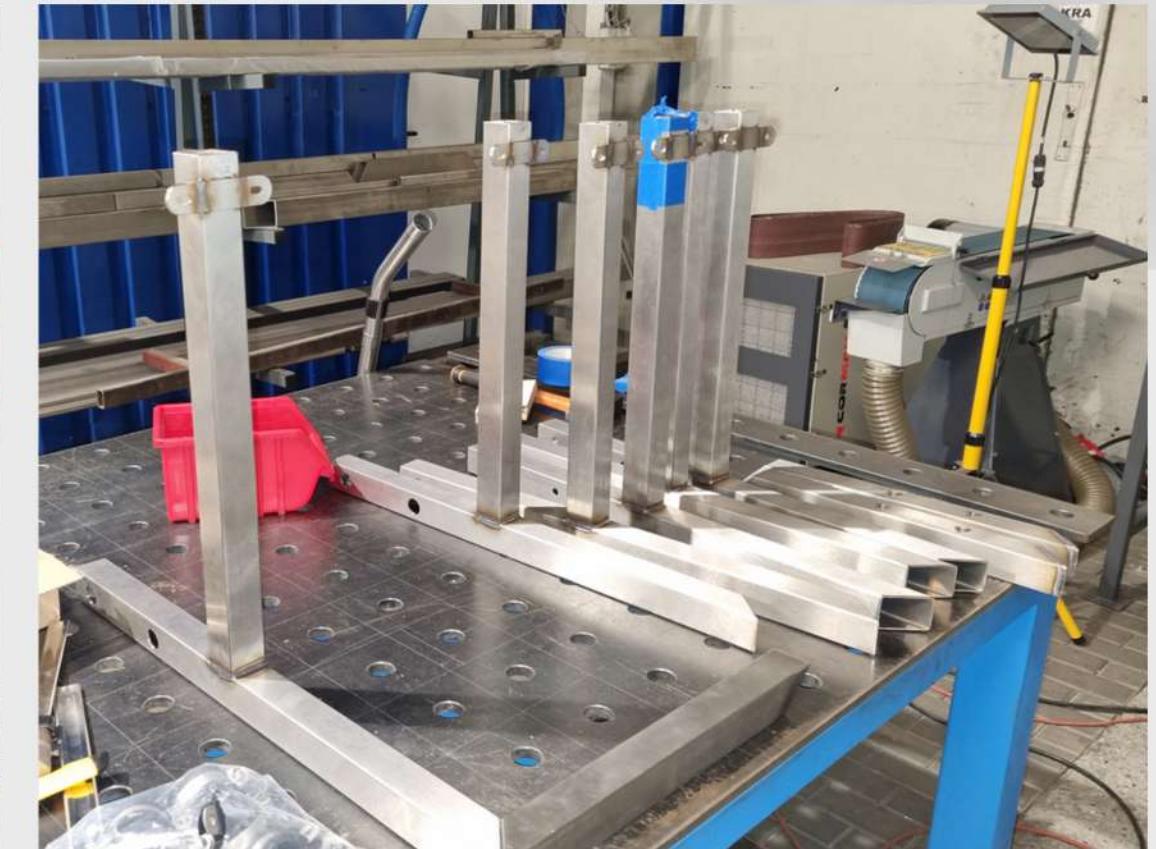
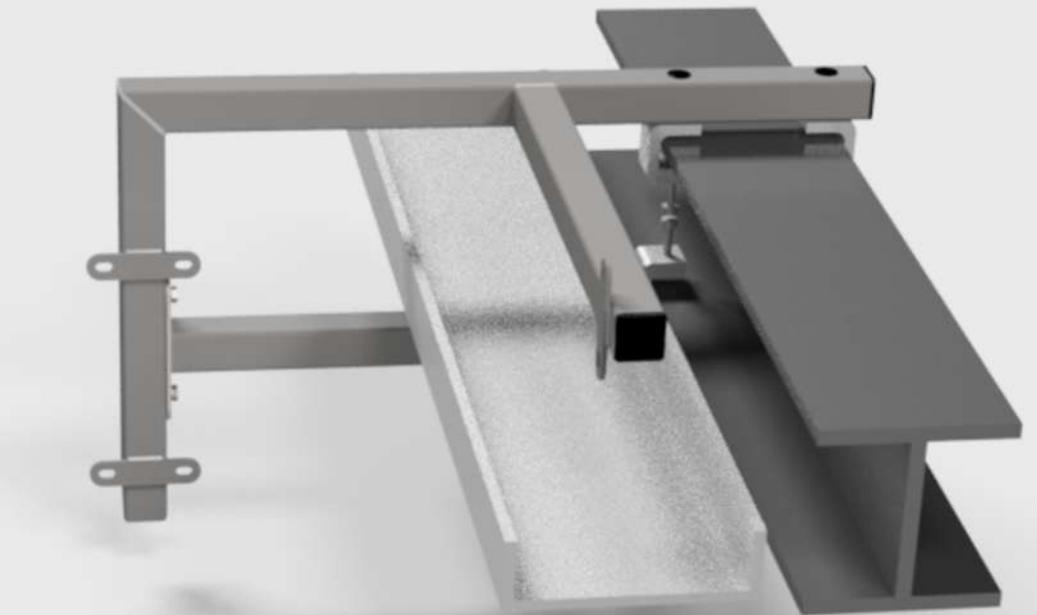
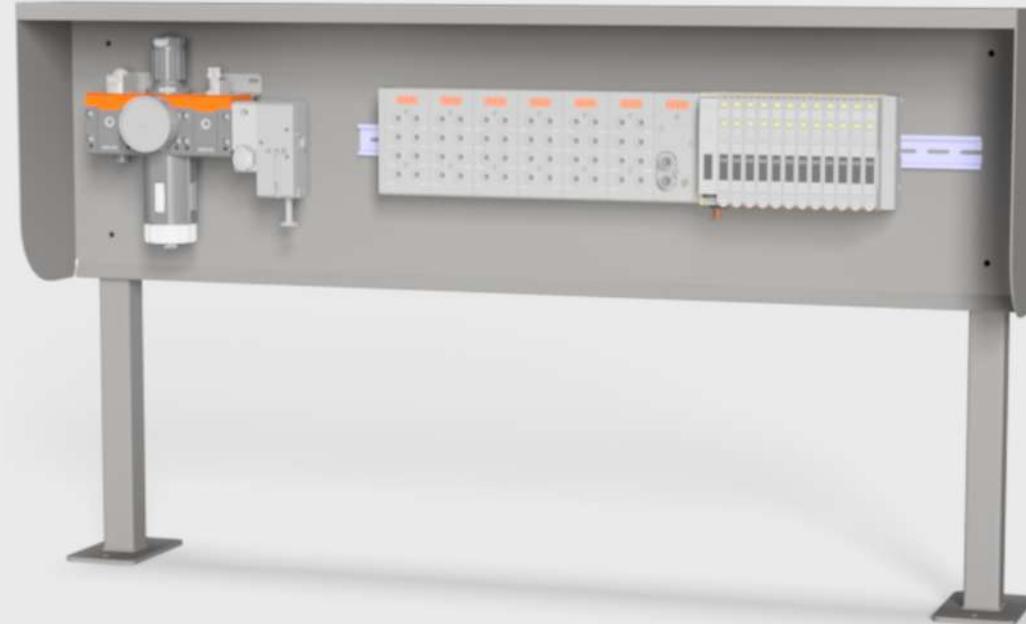
METAL PROJECTS



Pump enclosure



METAL PROJECTS

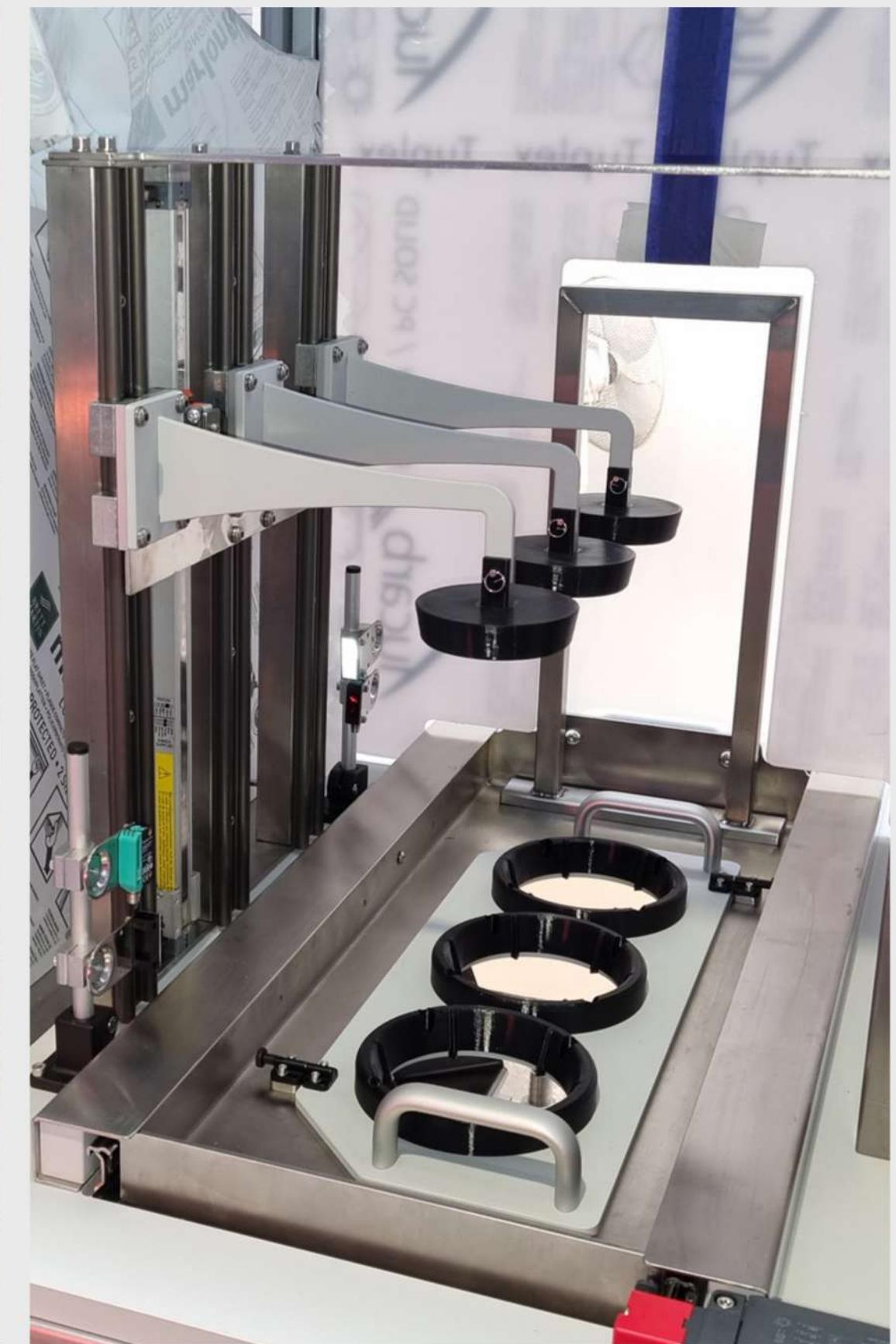


Selection of smaller projects

METAL PROJECTS



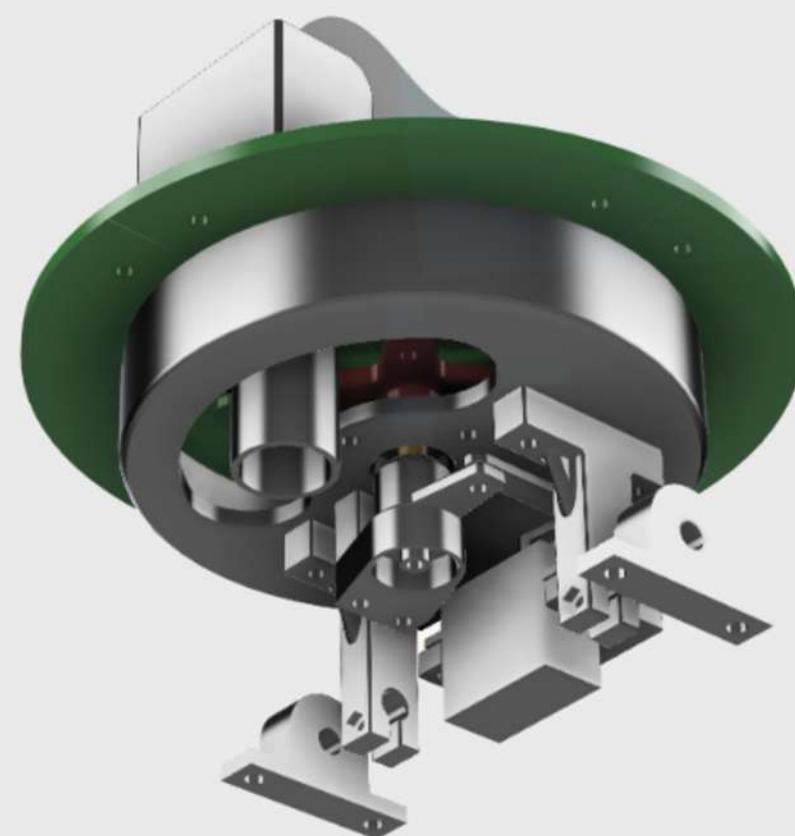
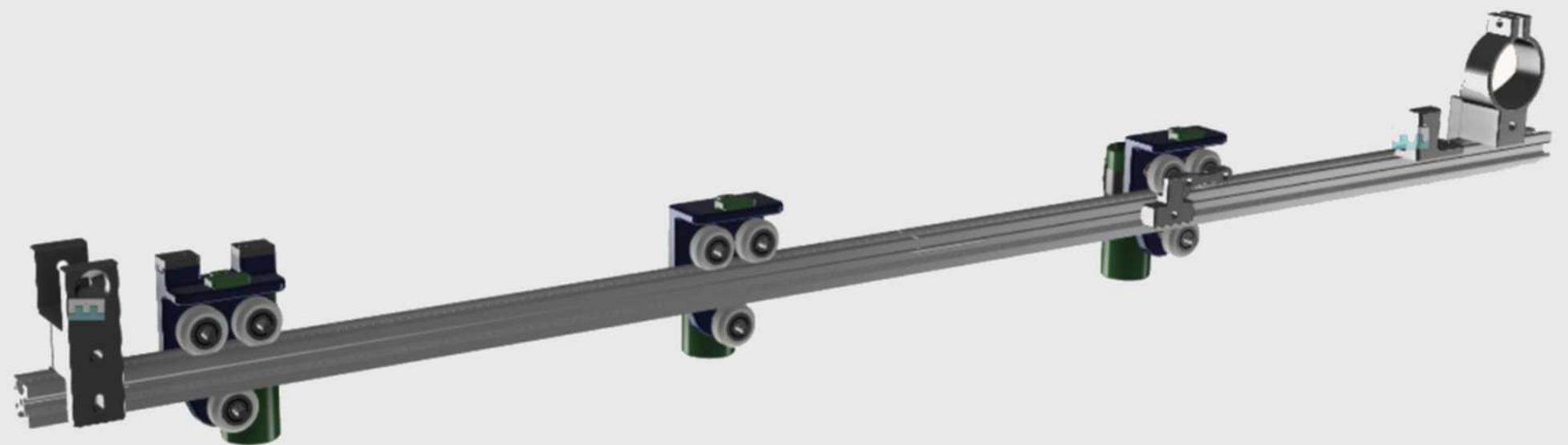
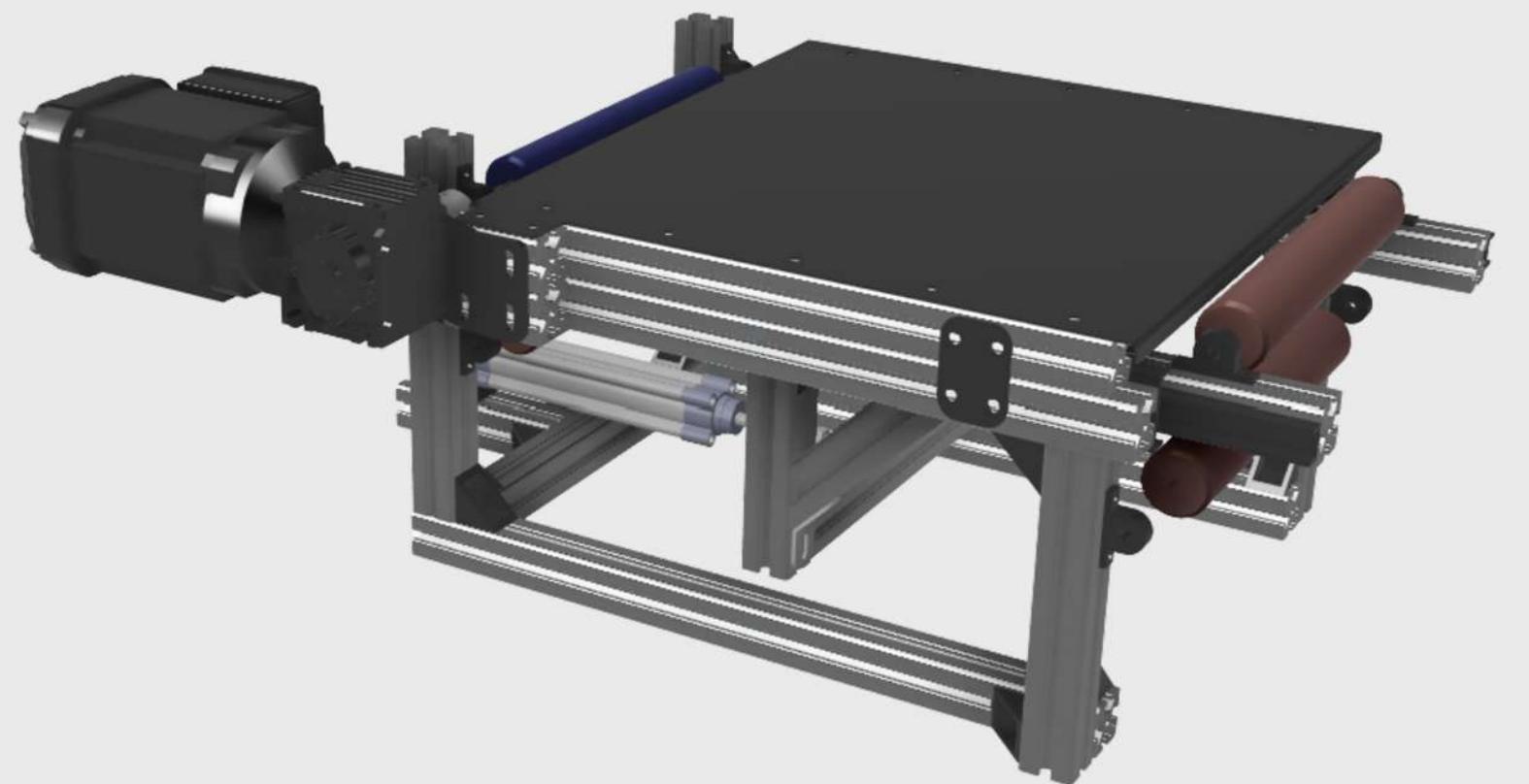
Distribution machine



PROTOTYPING

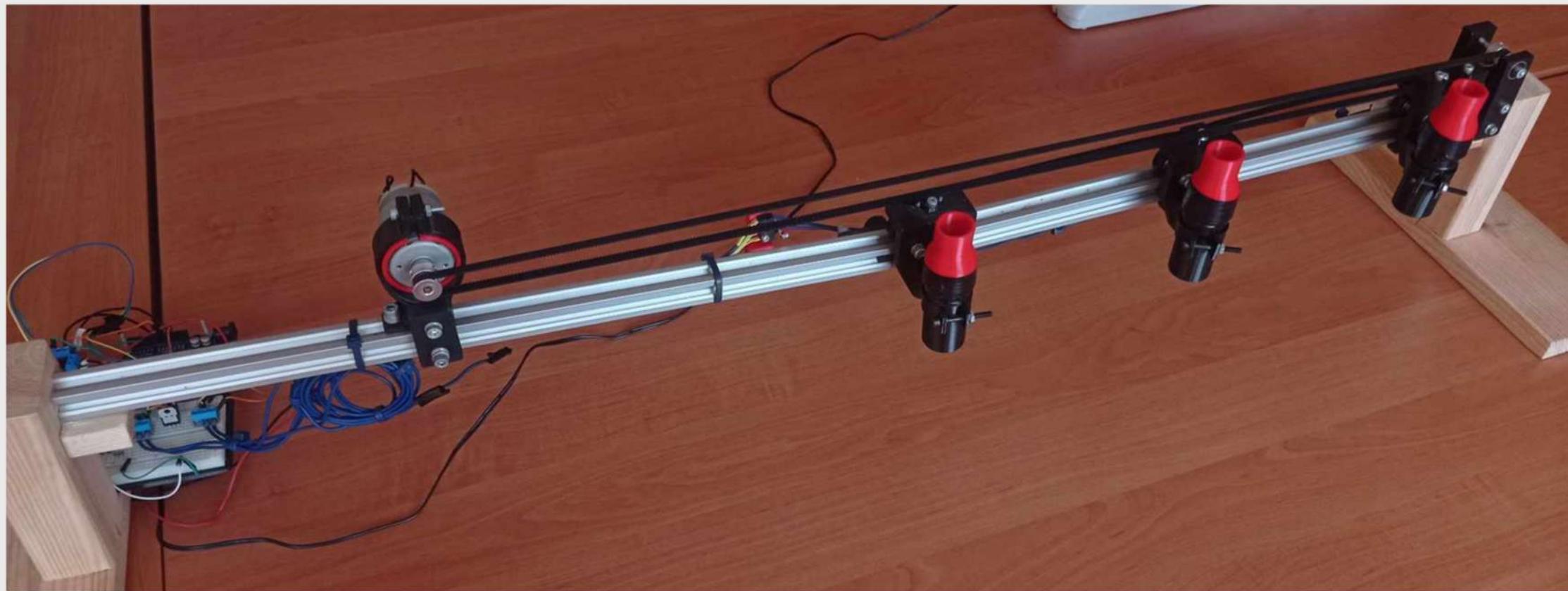
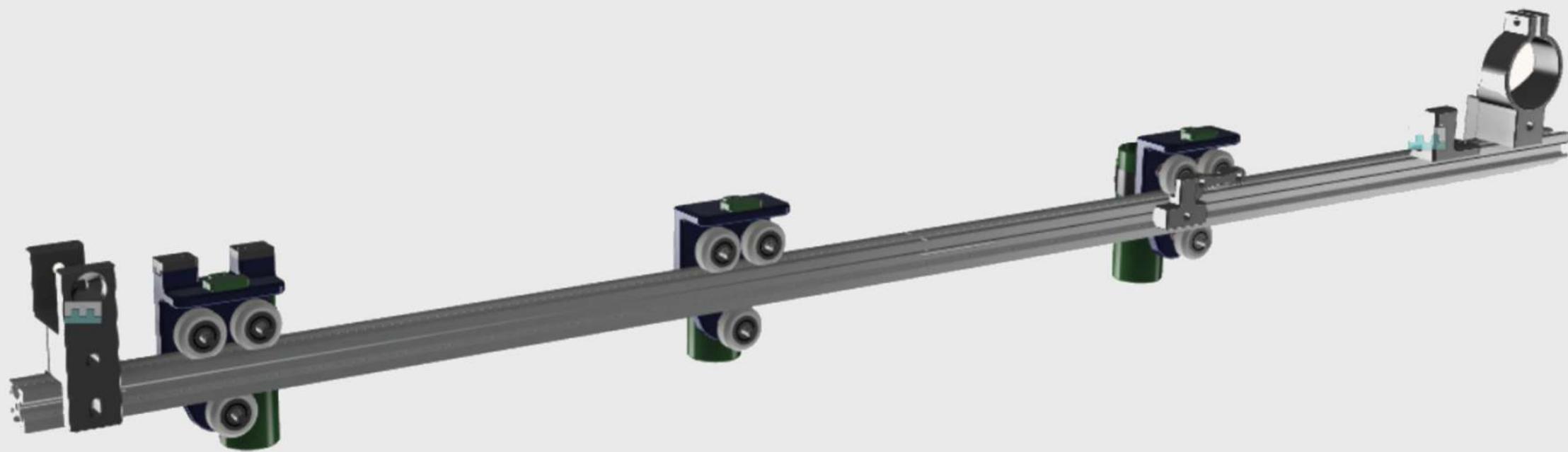
concept testing

Developing concepts and ideas requires validation. I had a great chance to do that extensively with 3D printing and hands-on work. It was a great opportunity to learn the iterative nature of the design process.

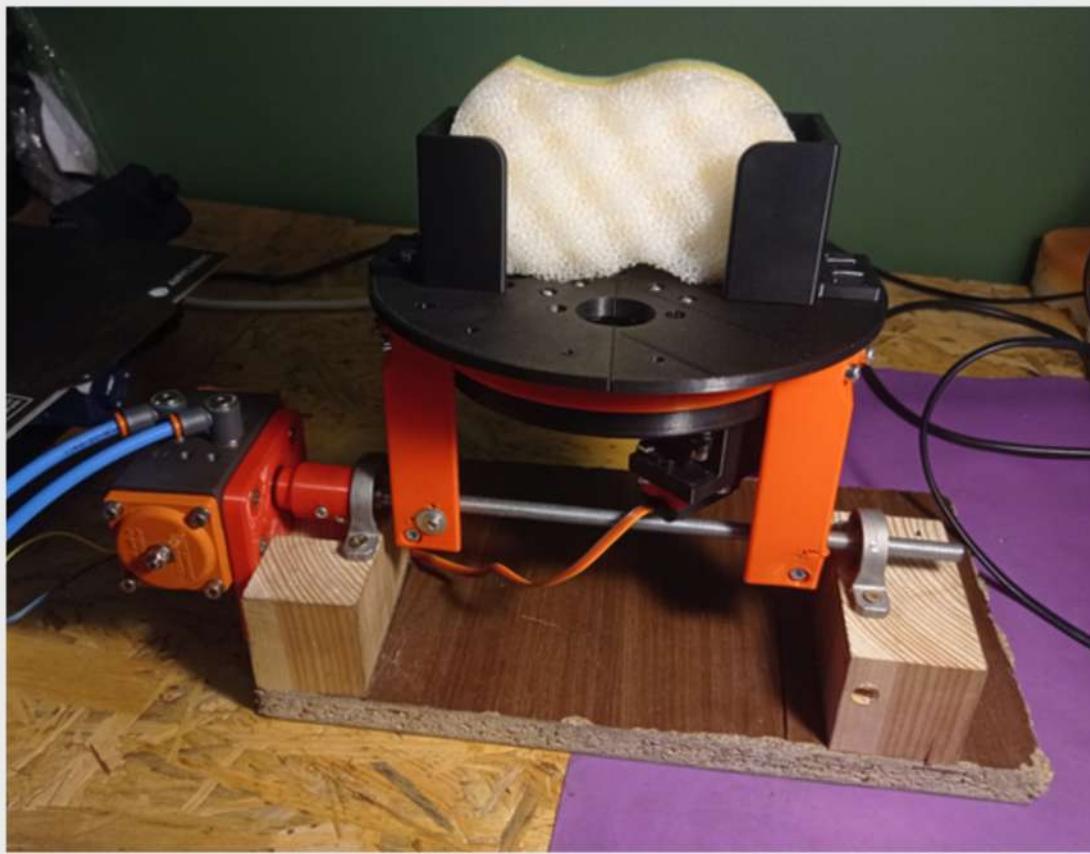
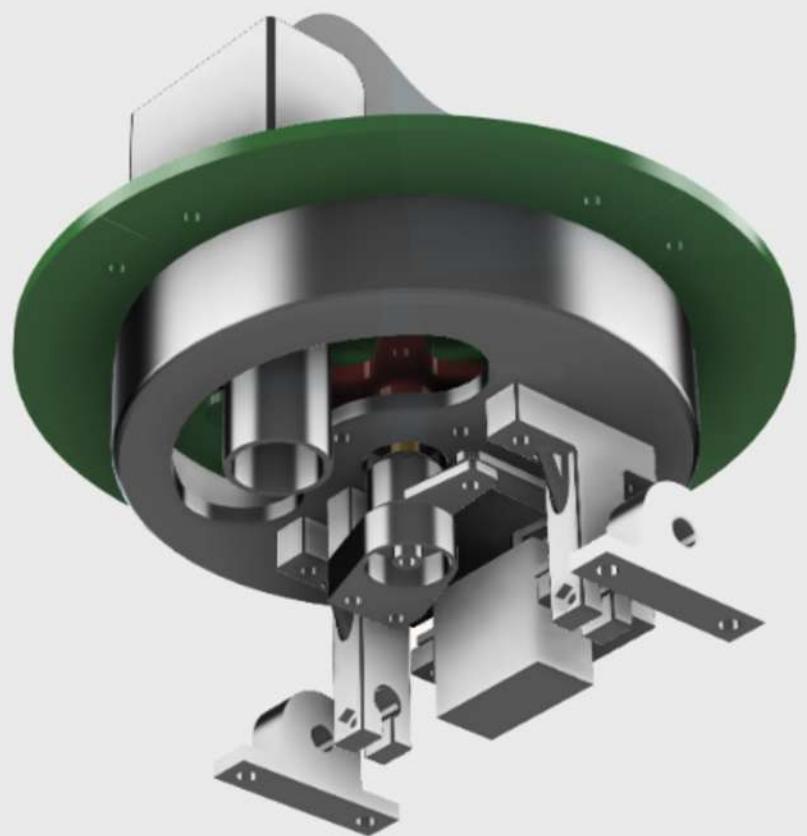
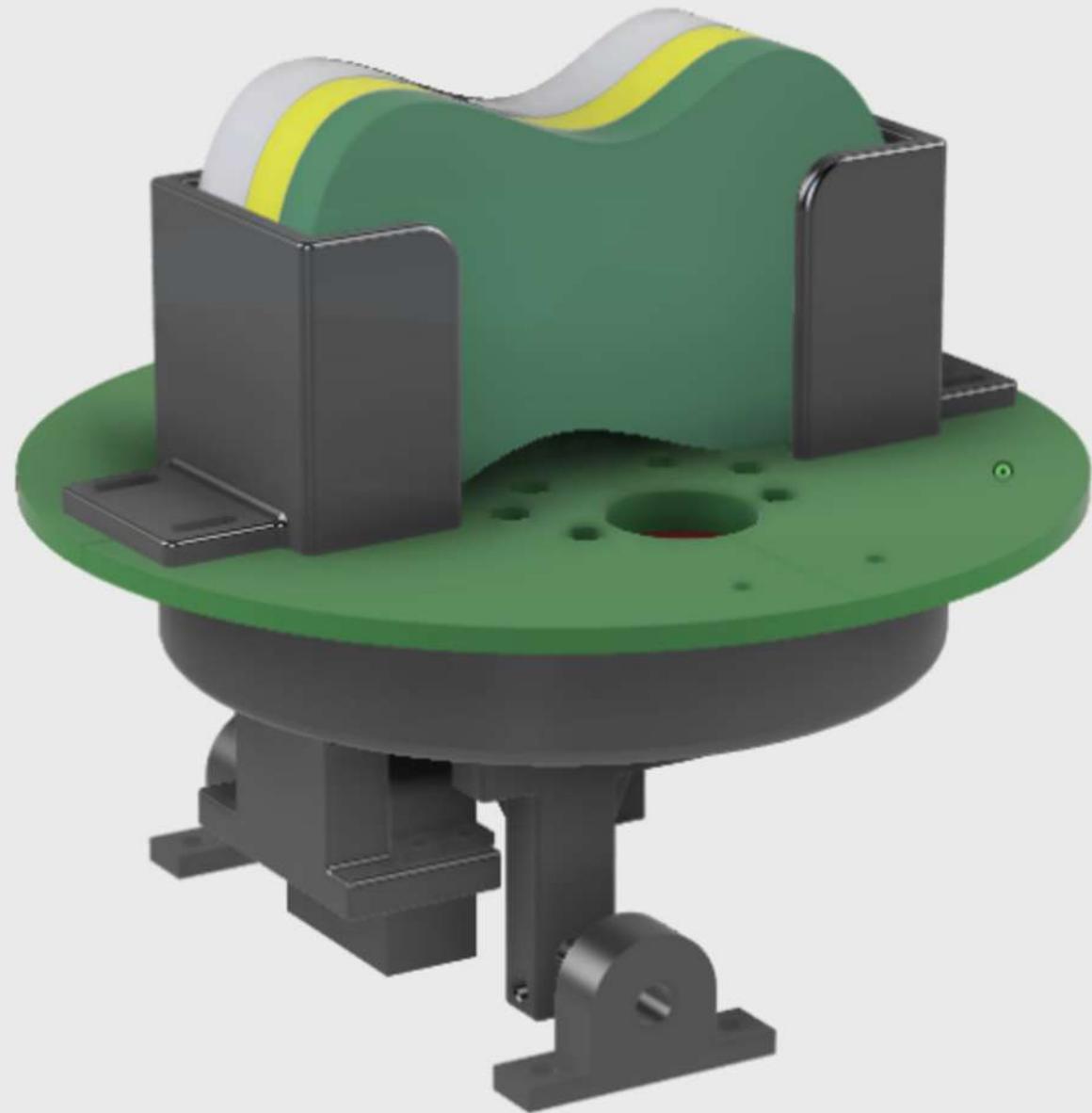


PROTOTYPES

gripper with suction cups spreading apart



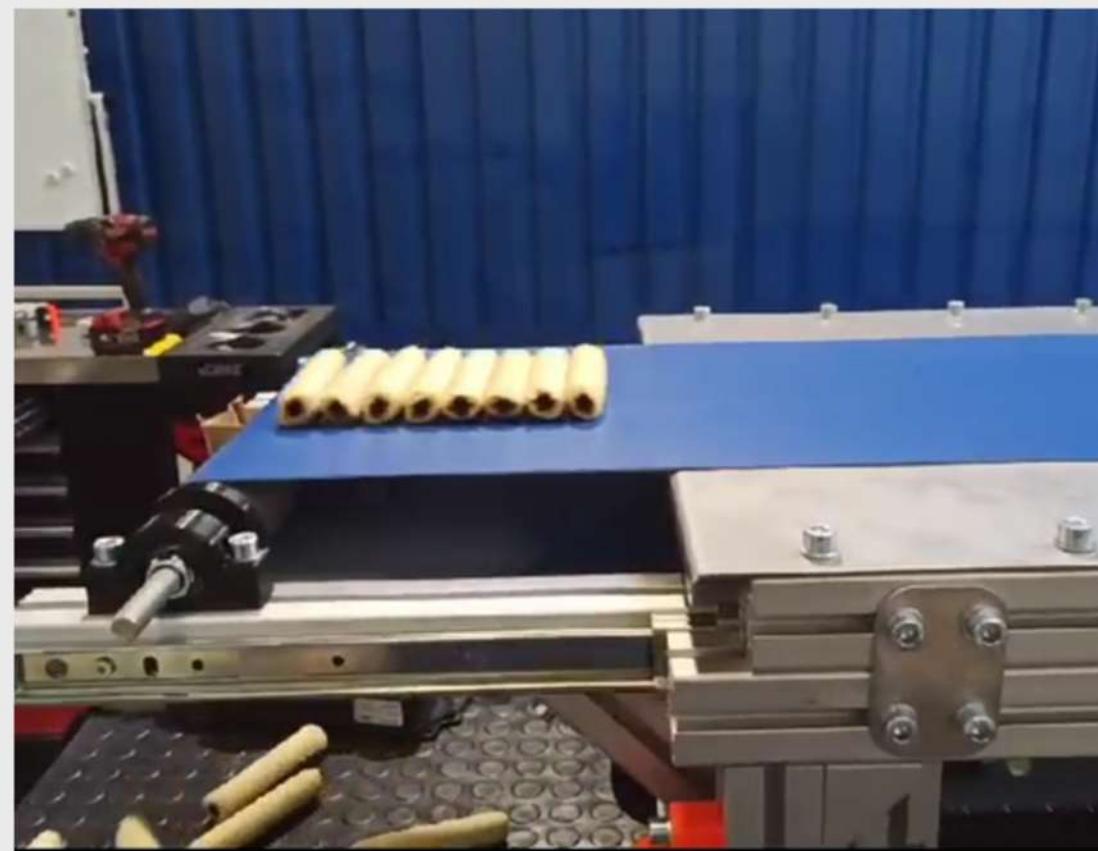
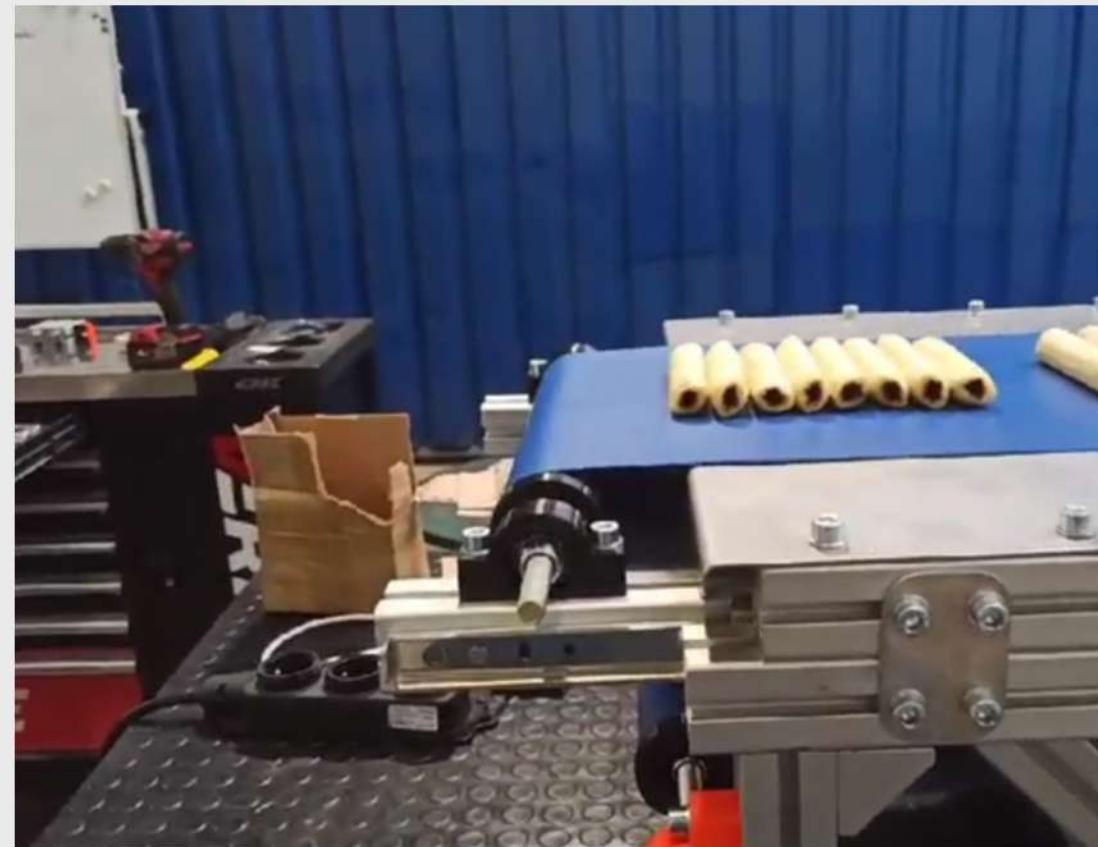
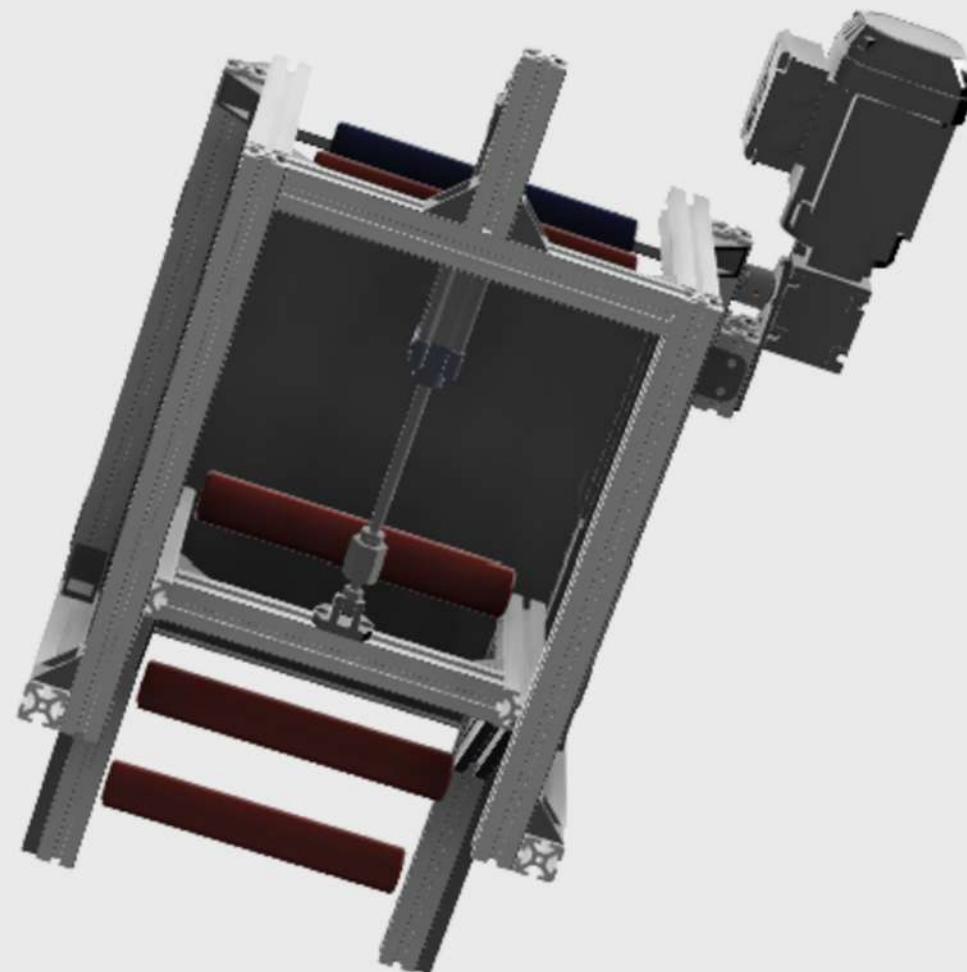
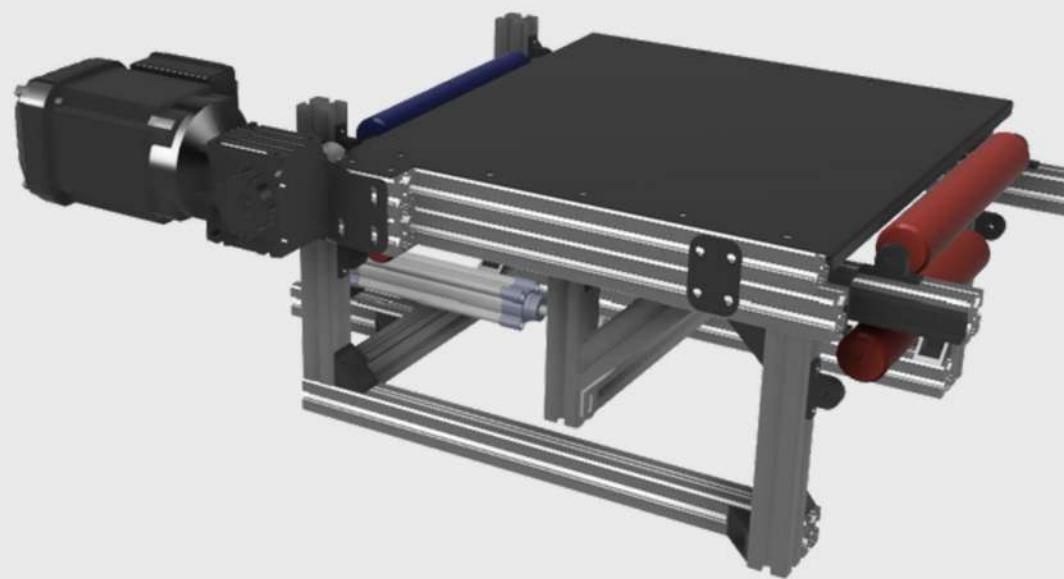
PROTOTYPES



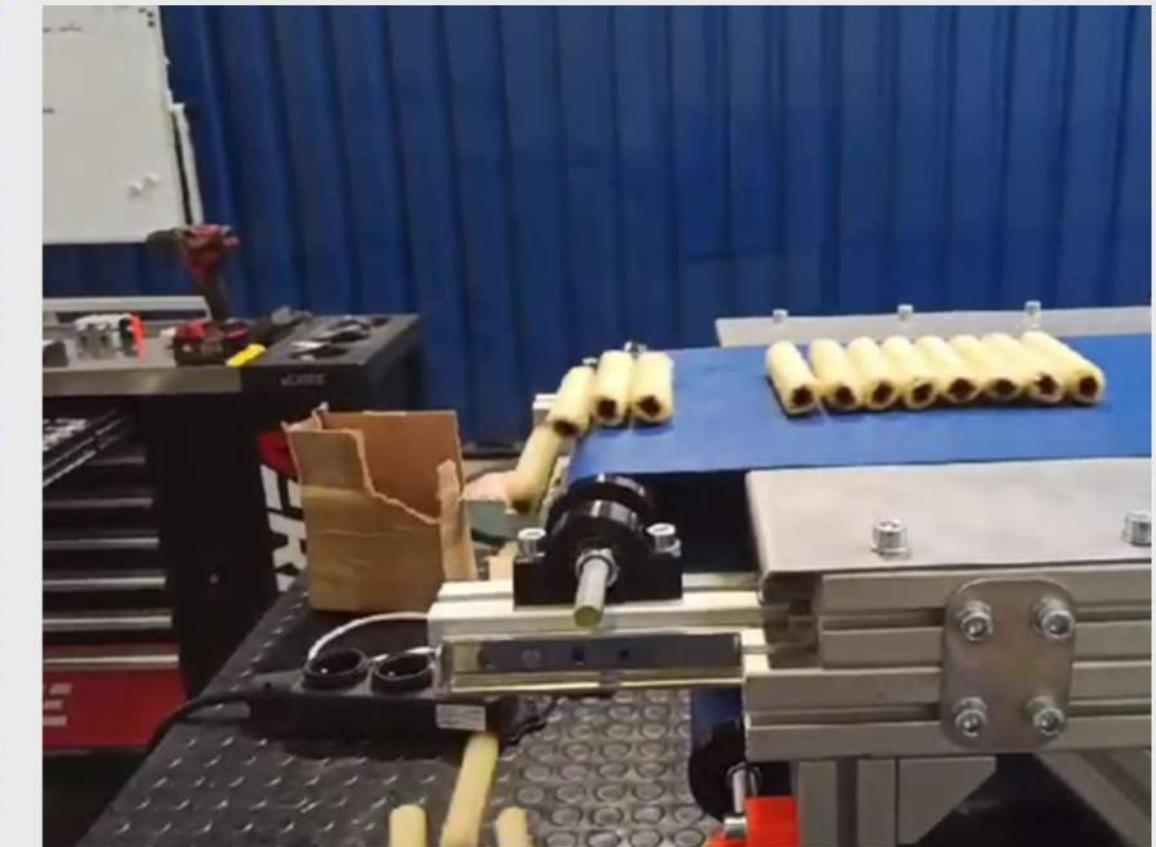
2-axis reorientation table



PROTOTYPES



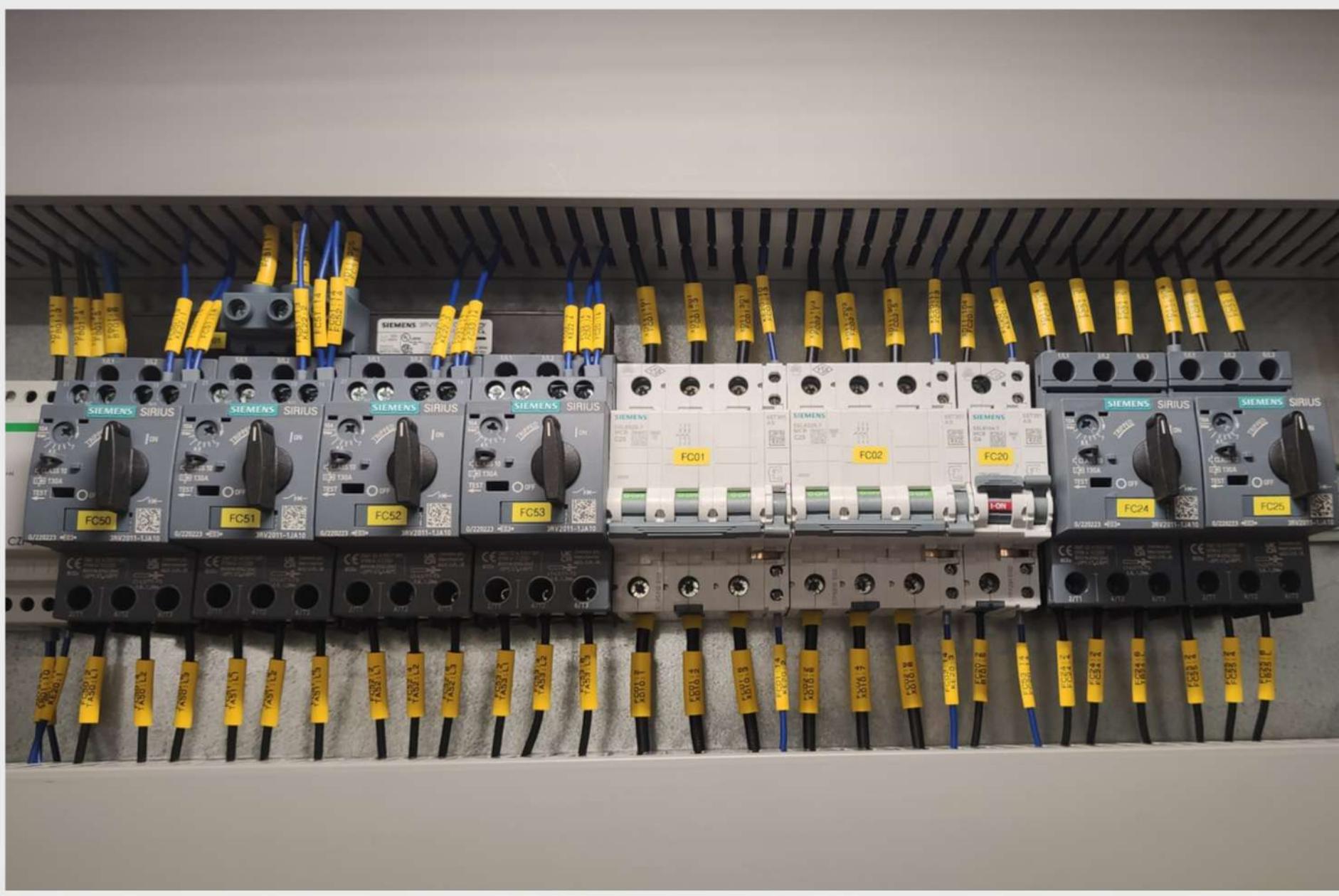
retractable conveyor



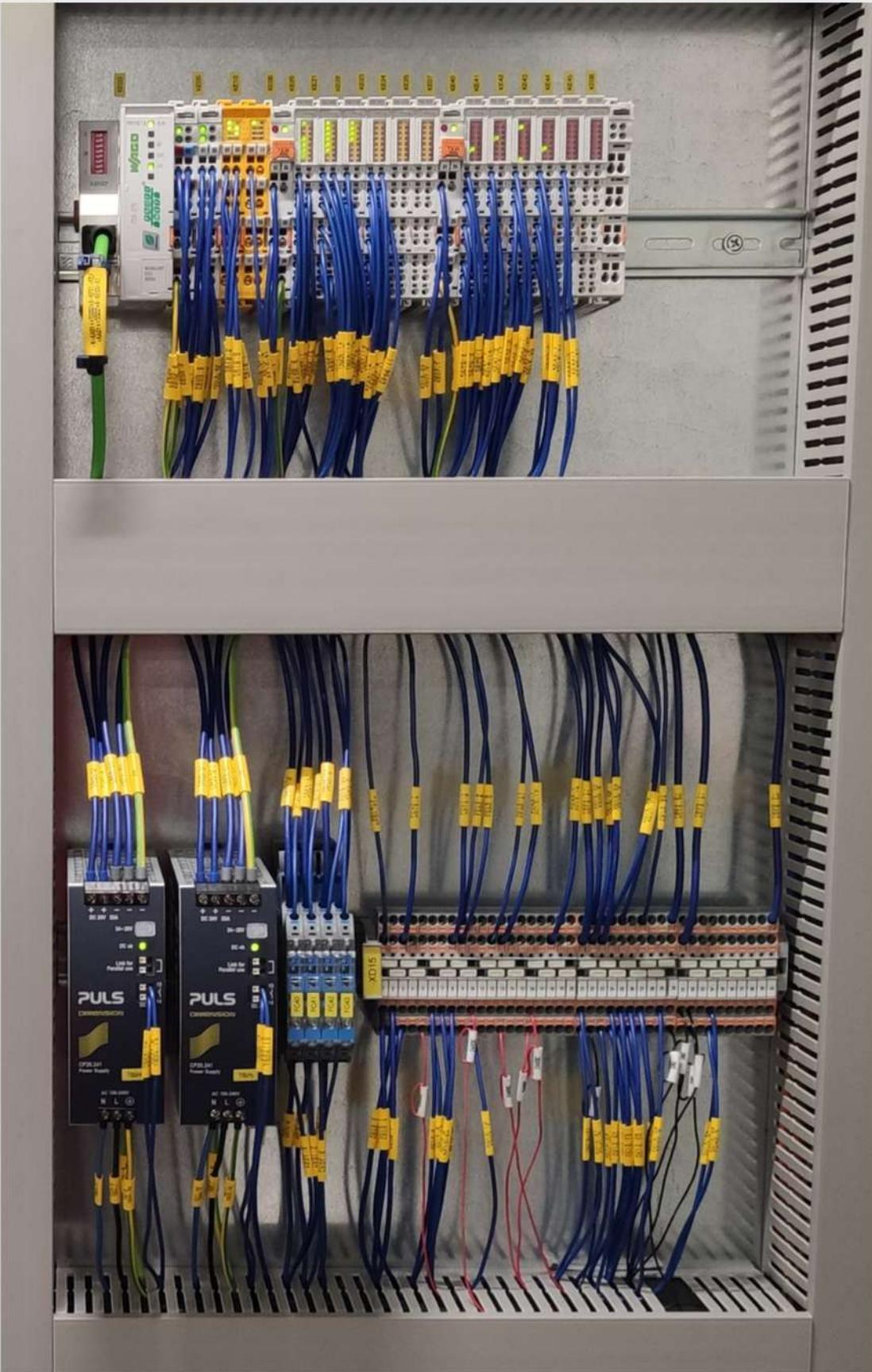
ELECTRICAL

FABRICATION AND DESIGN

I got to fabricate many control cabinets, machines and installations based on electrical documentation as well as design Swab Bot' electrical system



ELECTRICAL

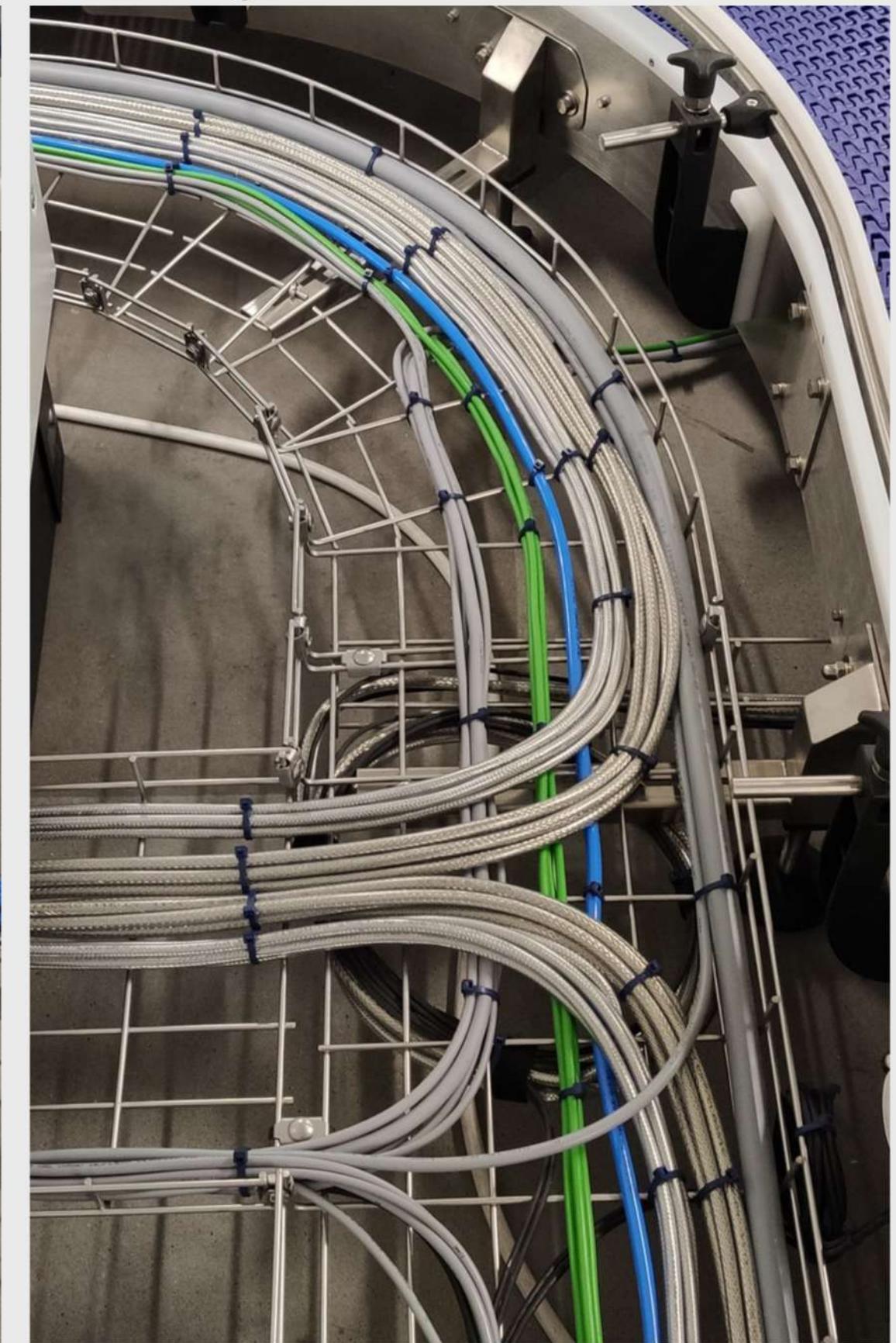


Control cabinets

ELECTRICAL

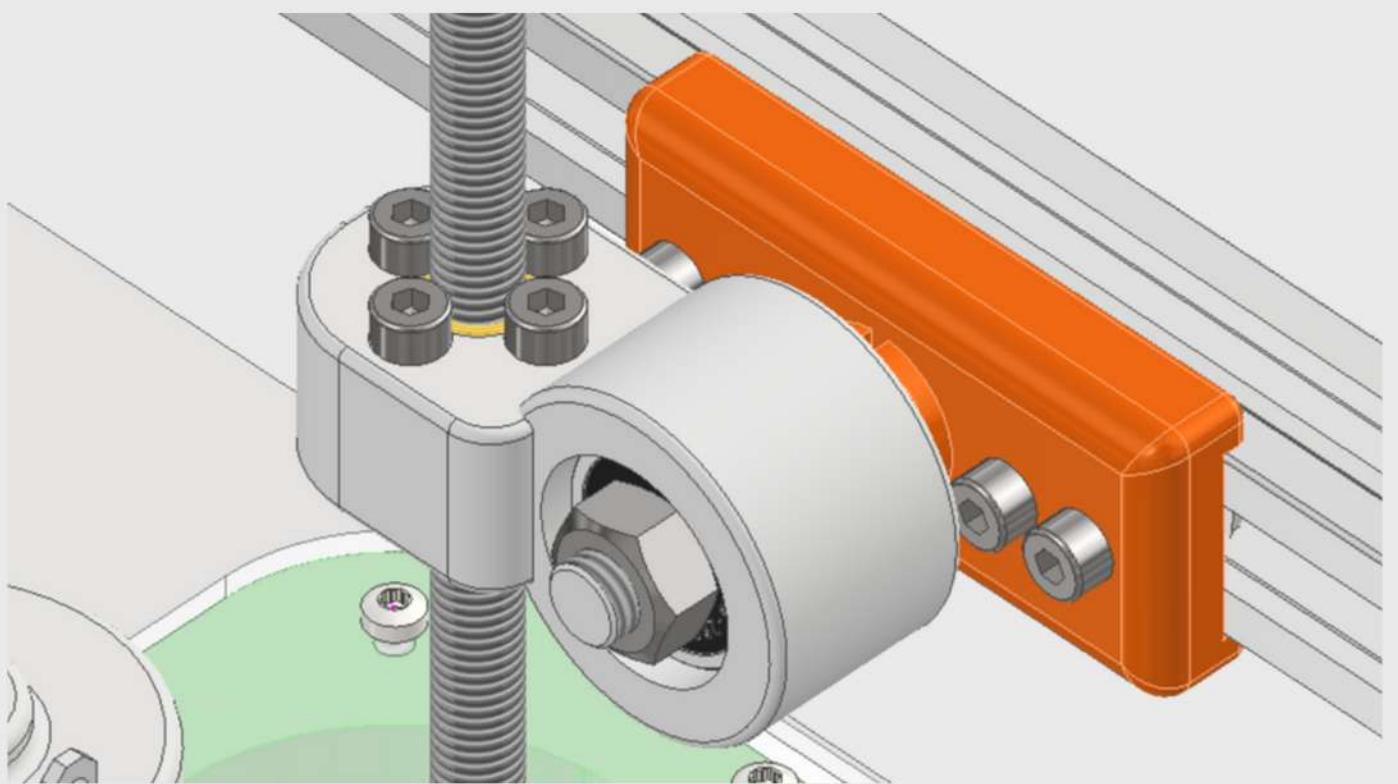
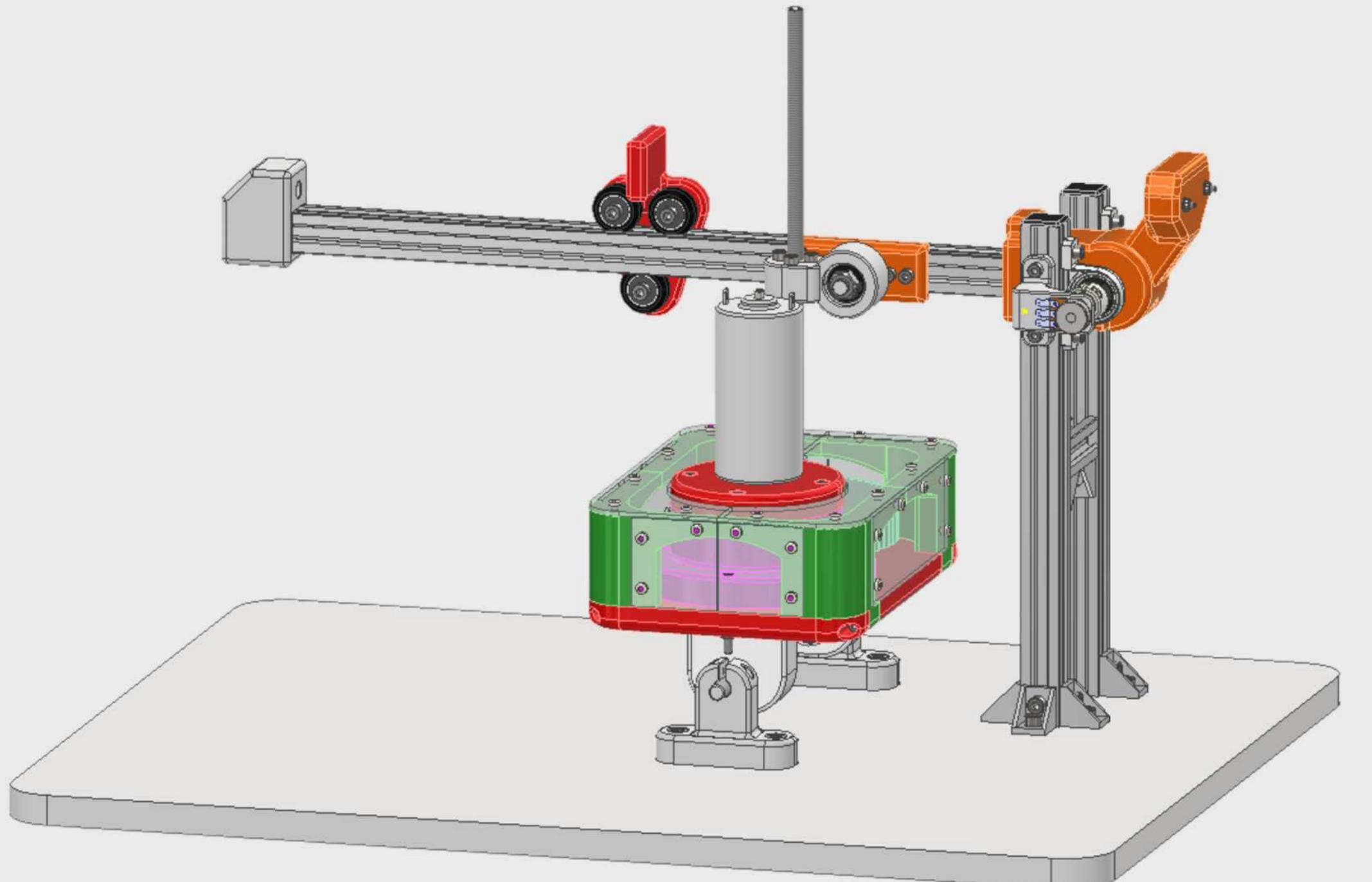


Systems and machines

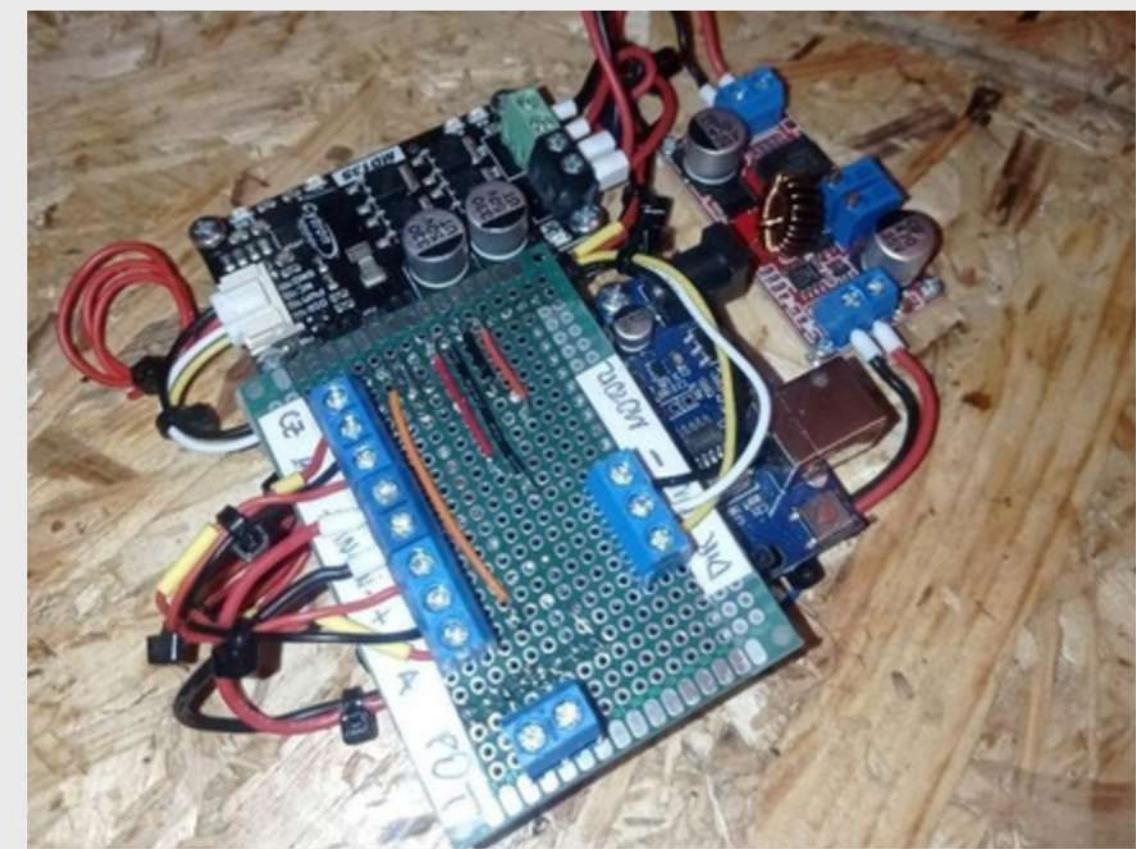
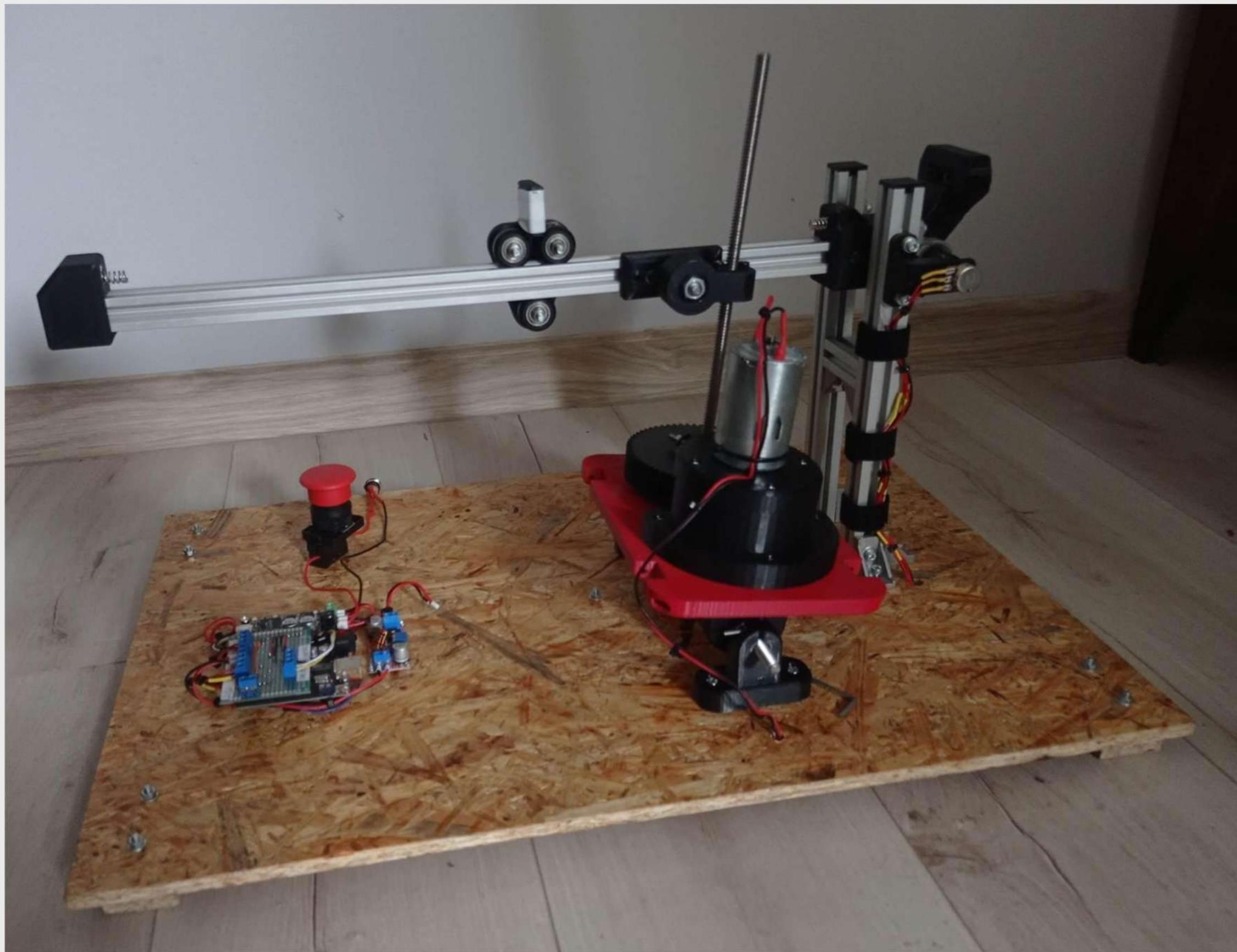


PID POSITION CONTROL

Master's thesis



The concept of the project is to control the position of the gantry sliding on the horizontal beam based on the distance sensor's reading using PID regulator. The system has been built based on Arduino microcontroller.



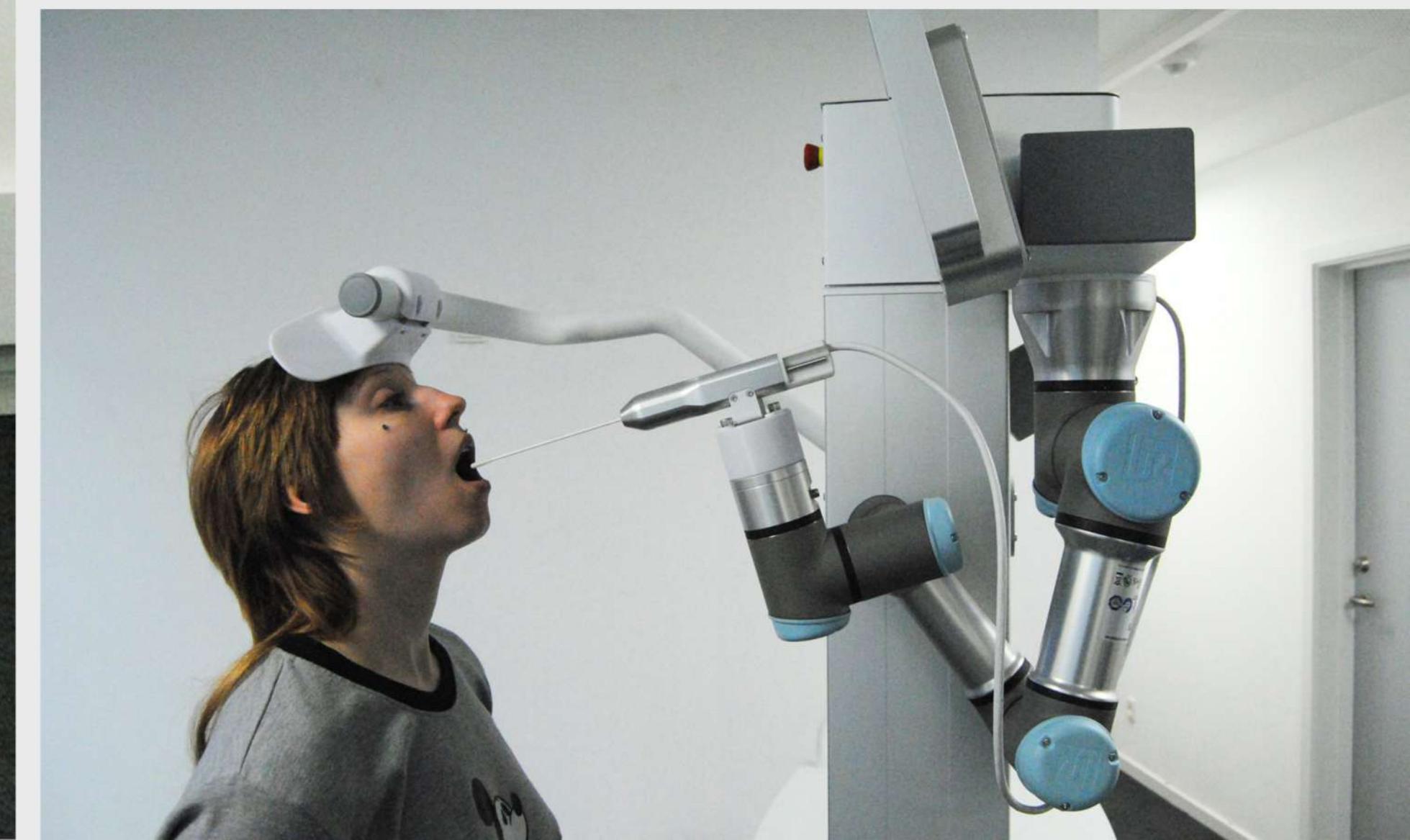
[youtube video of the model in action](#)



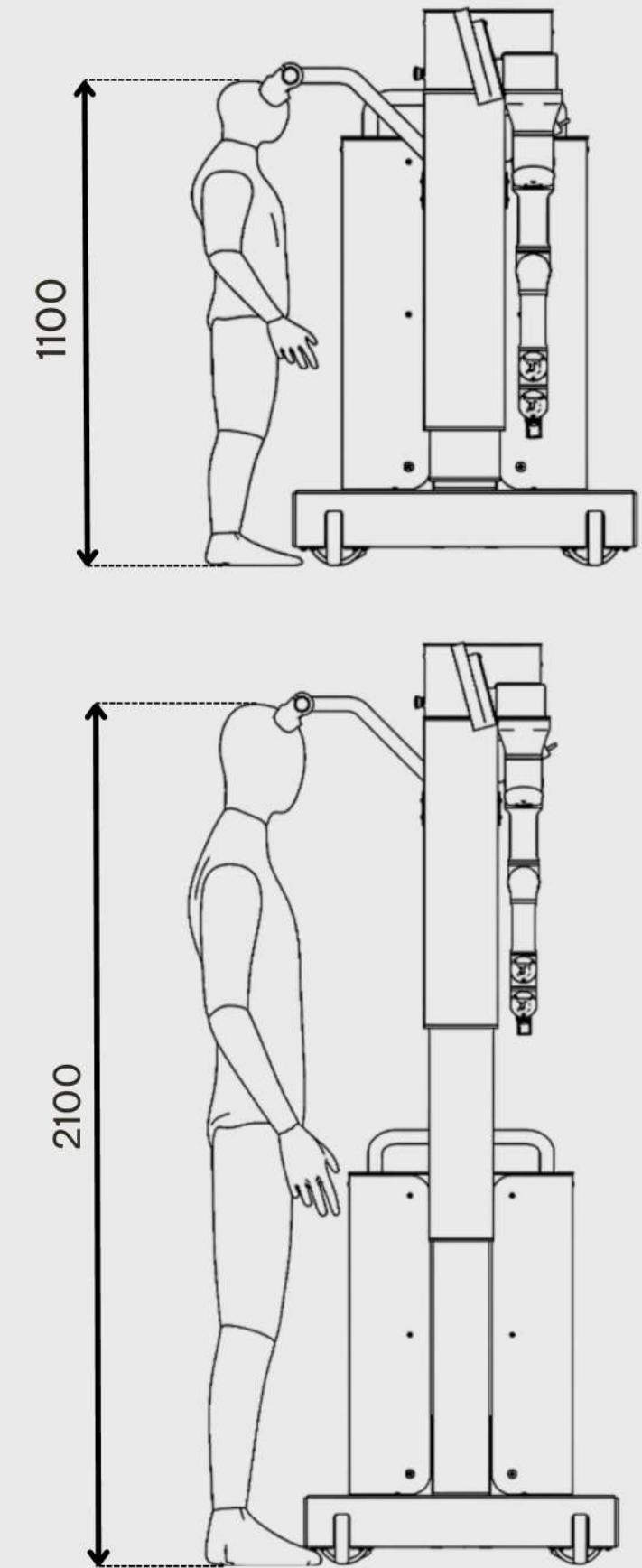
SWABBY

The first automatic throat swabbing robot

I had a chance to join Lifeline Robotics in a role of R&D engineer designing hardware. I got to develop the presented prototype both mechanically and electrically.



SWABBY

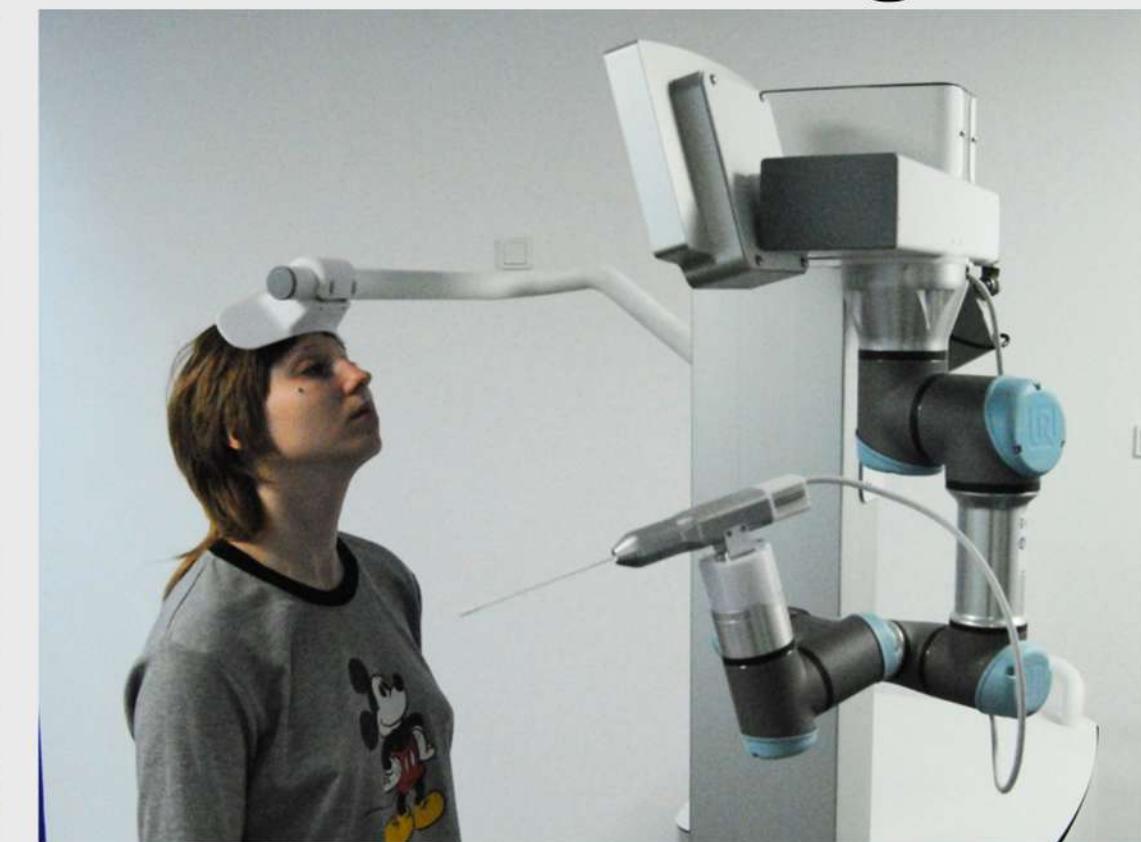


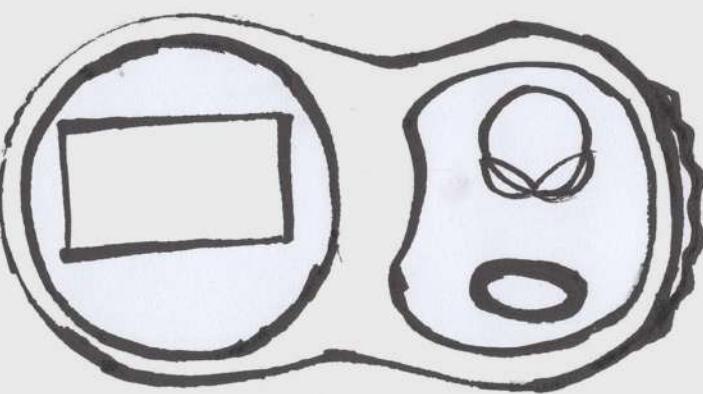
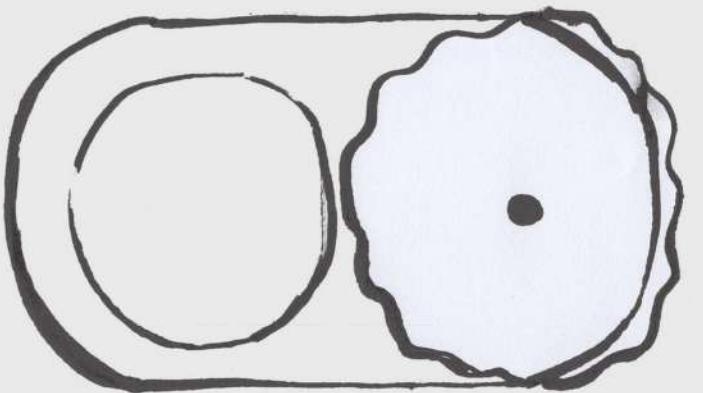
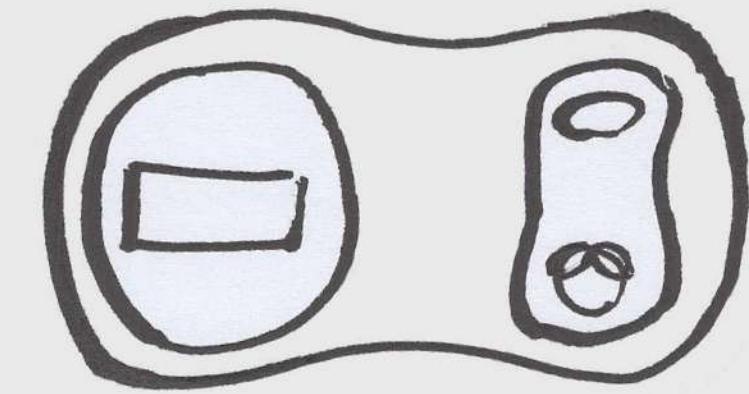
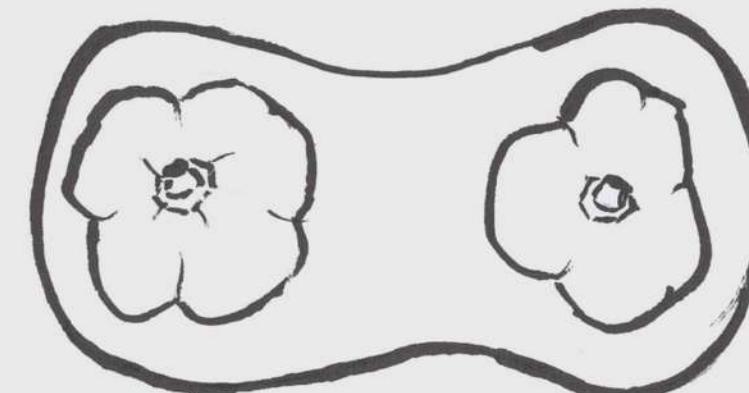
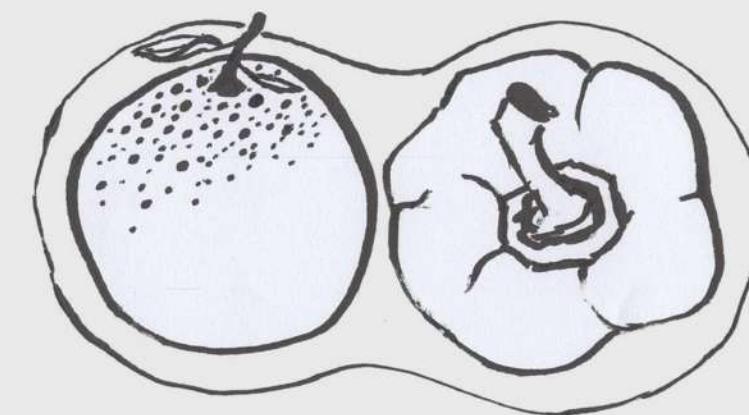
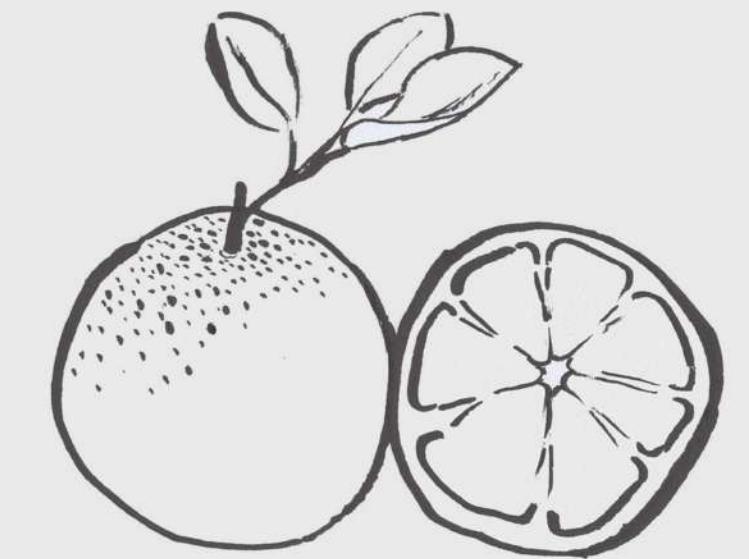
**AUTOMATIC
HEIGHT
ADJUSTMENT**

SWABBY



Robot arm integration





HIPSY

Home Intelligent Plant Station

Either it being a constant rush, or a lot of travelling, HIPSY rushes to help with your plants. It is designed with scalability in mind to be potentially used in a small pot but also in a greenhouse to enable reliable and easy home food growing.

HIPSY



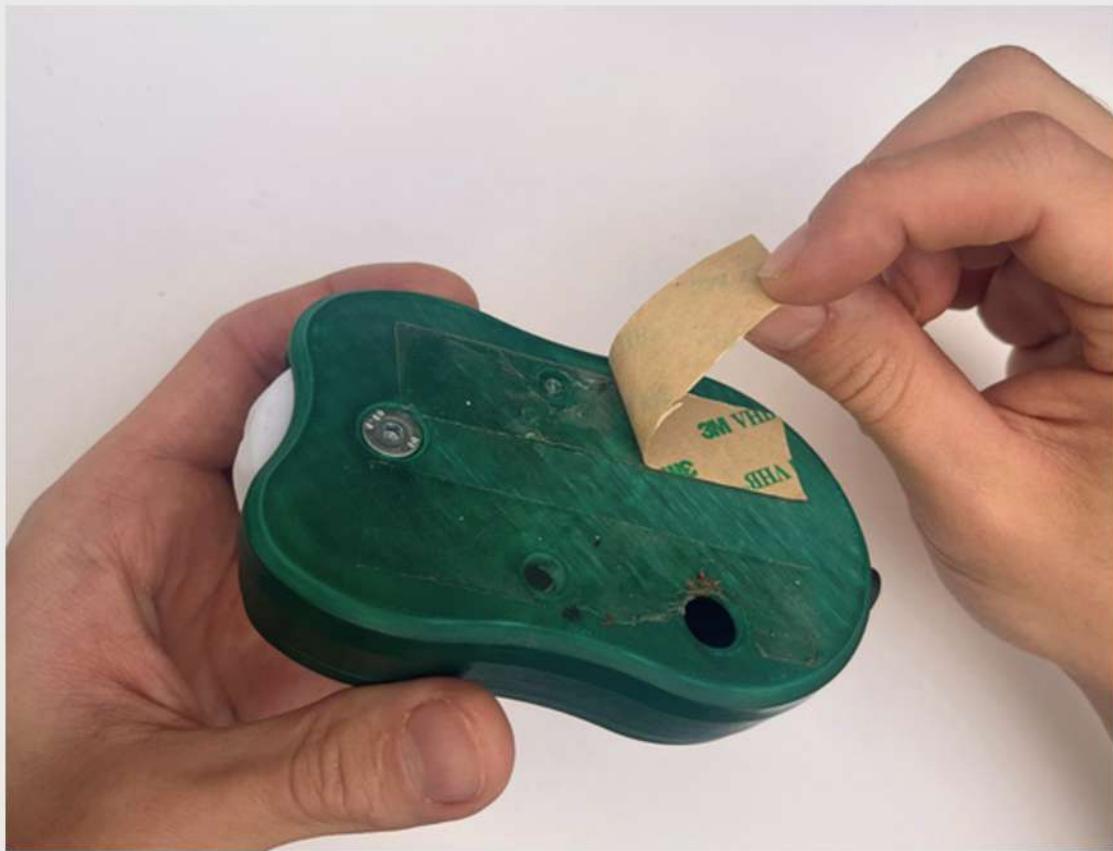
any size of a box



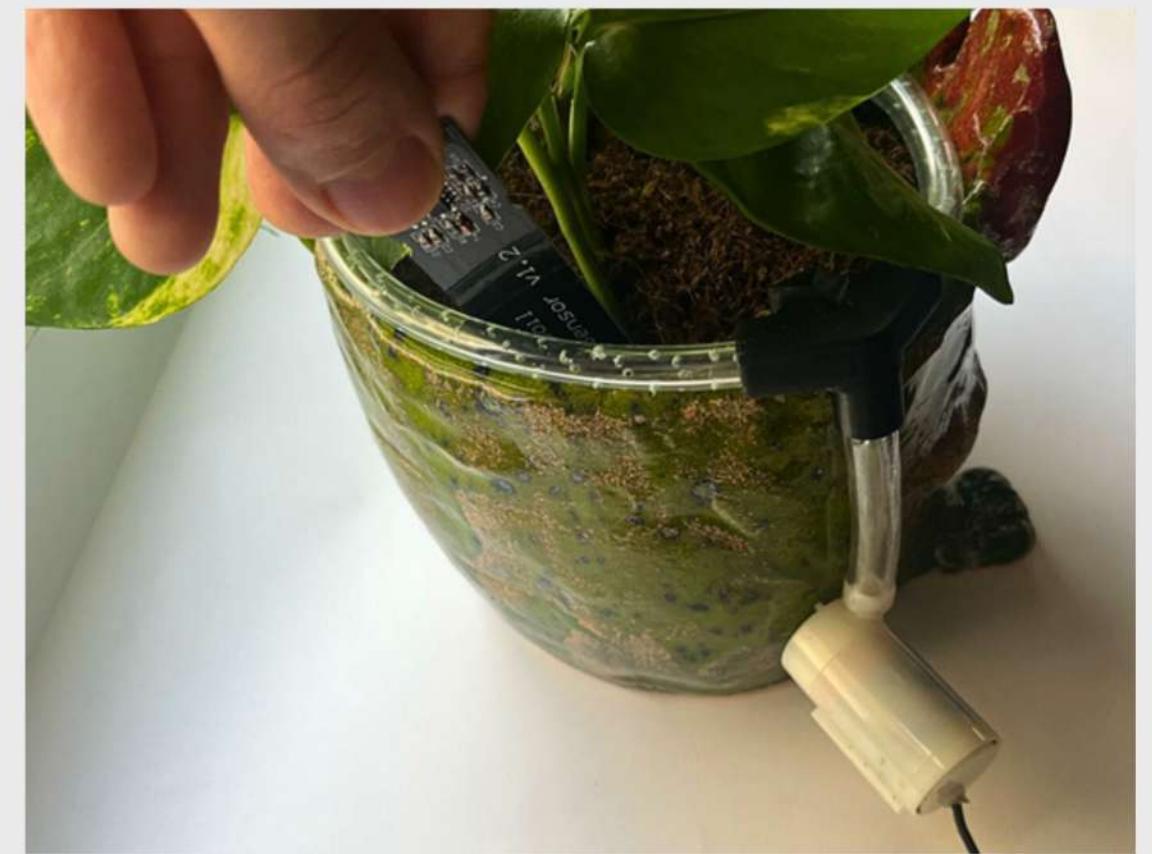
water pump



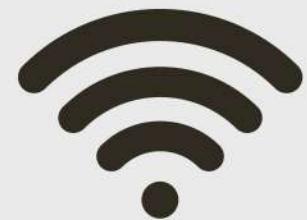
moisture sensor



plug and play



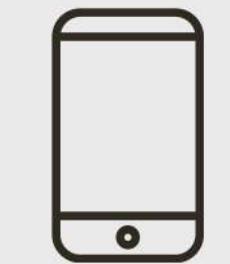
HIPSY



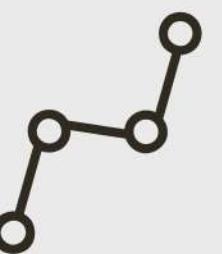
WIFI
CAPABILITIES



WEATHER
STATION



MOBILE
ACCESS



DATA
ANALYSING



LCD screen
with custom menu to
display time and
weather

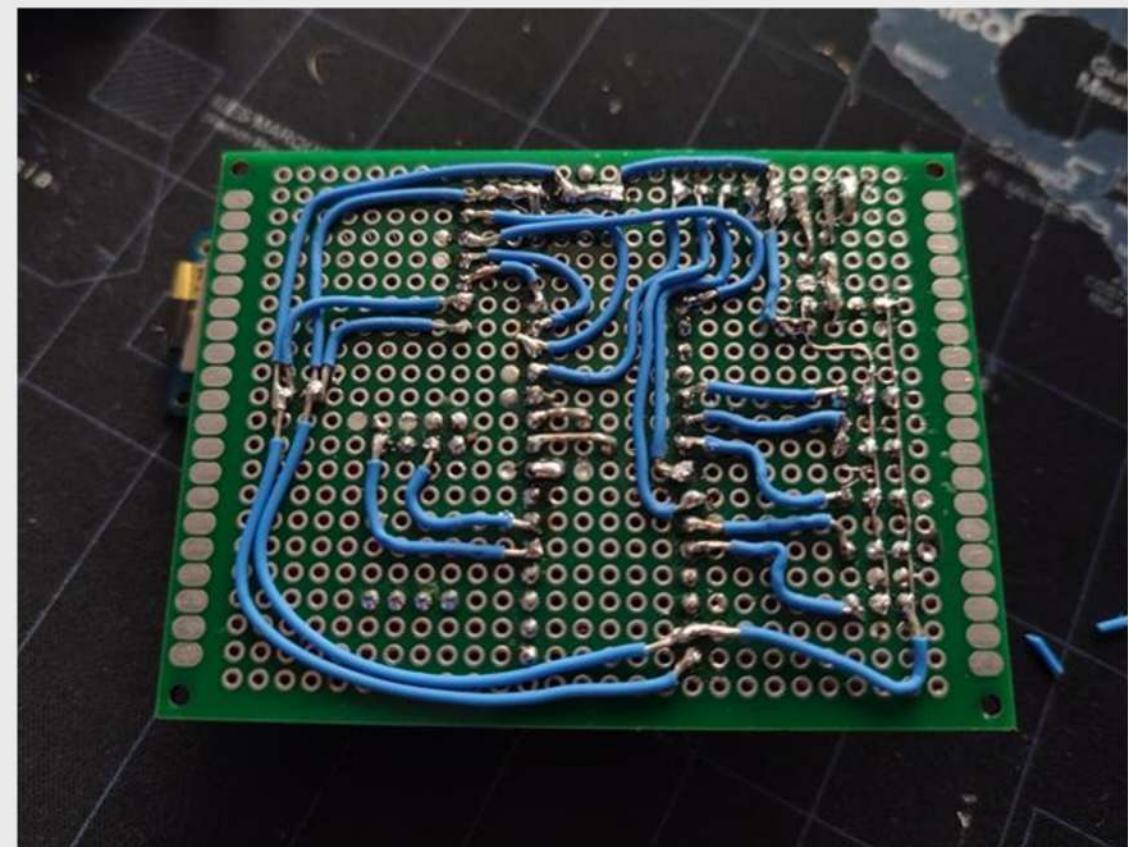
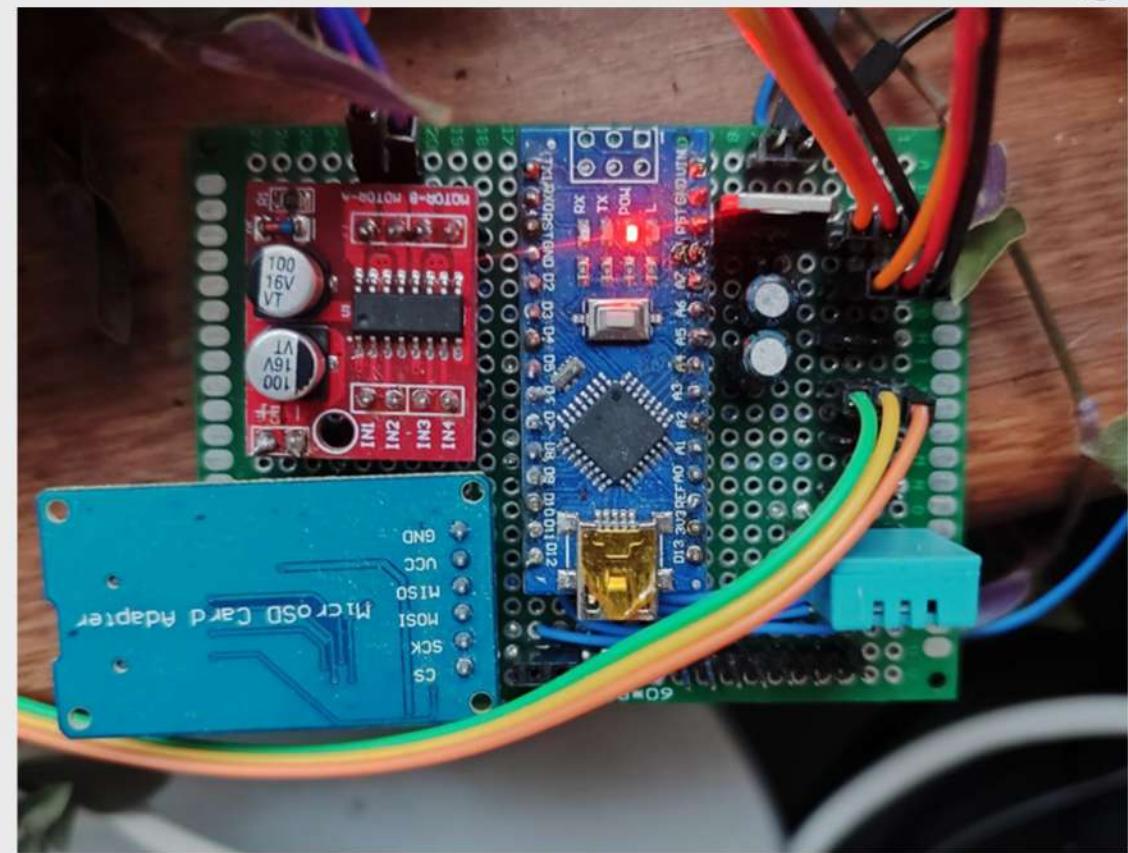
Power plug

indication
light

to notify about low
water level and
other status

knob

button
to navigate
through menu

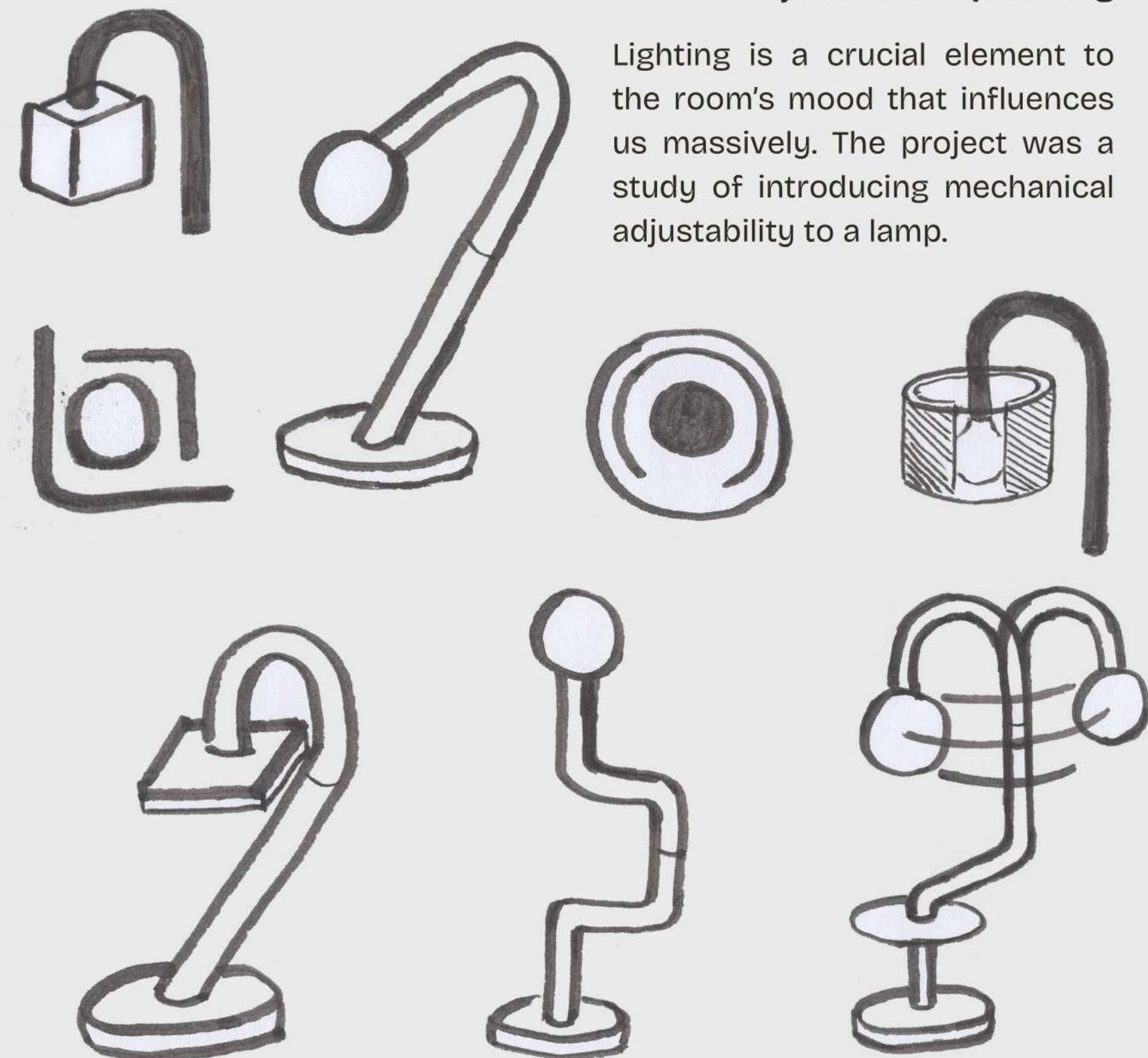


functionality



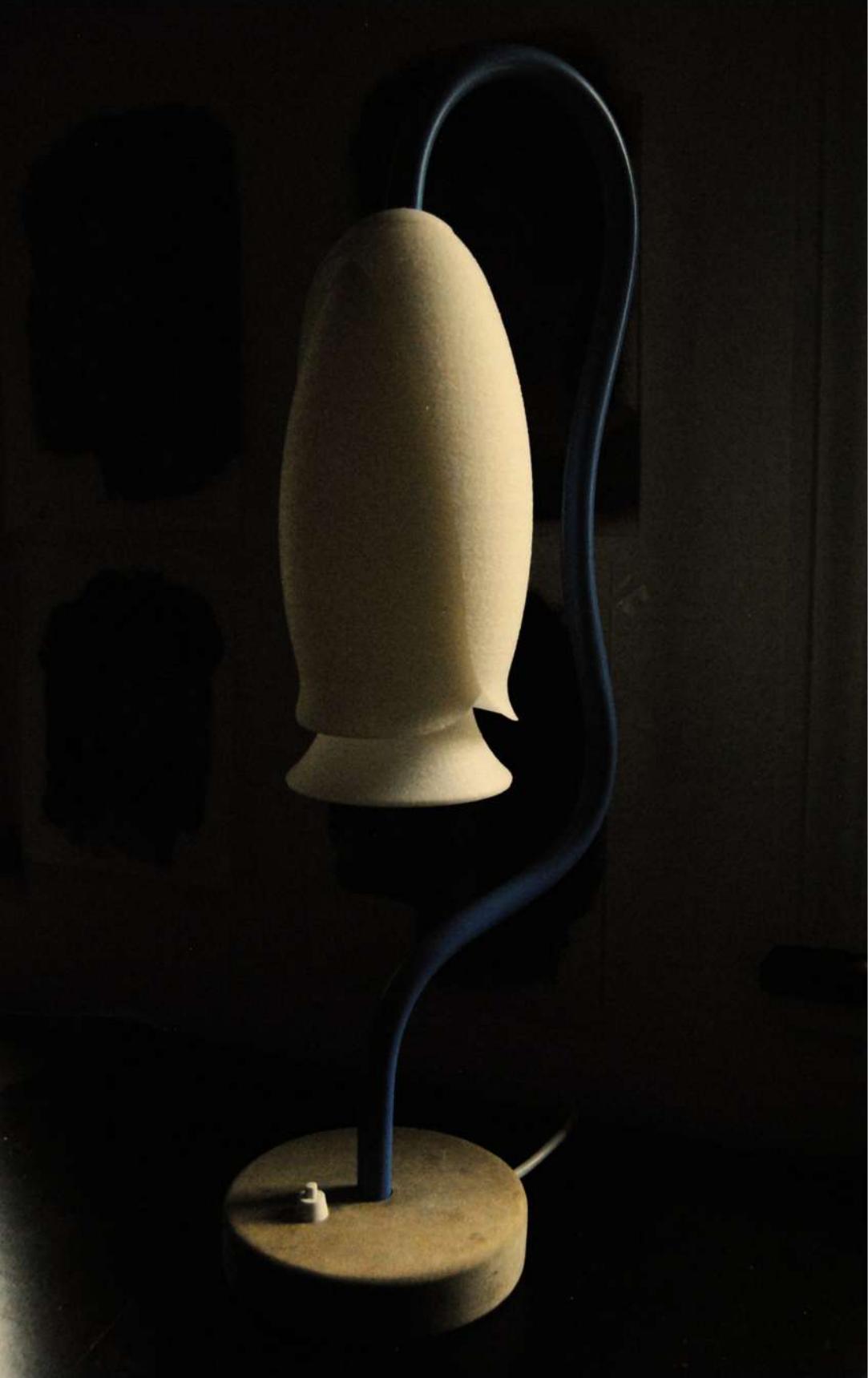
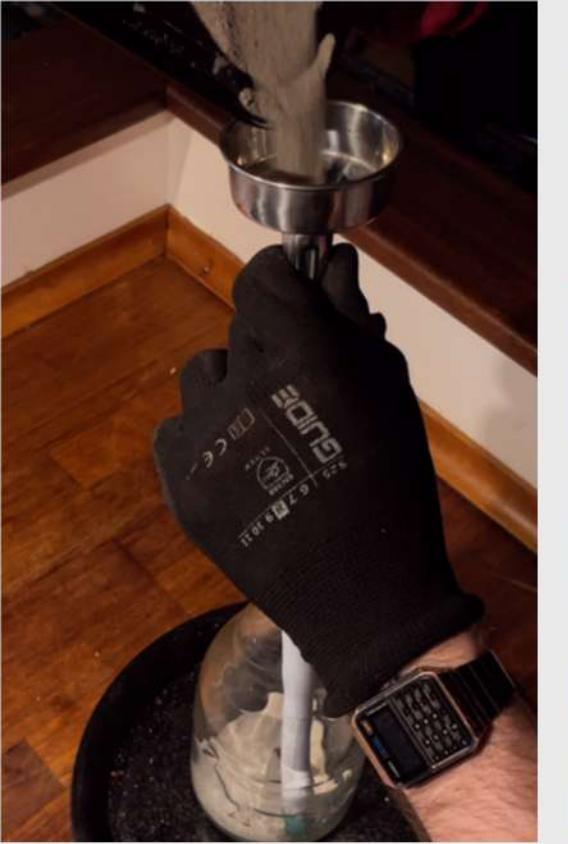
LIGHT EXPLORATION

adjustable lamp making



Lighting is a crucial element to the room's mood that influences us massively. The project was a study of introducing mechanical adjustability to a lamp.

LIGHT EXPLORATION



rotatable shades





Contact me



[Bartosz Cieplik](#)



+45 71 81 18 95



bartosz.cieplik@proton.me



Odense, Denmark