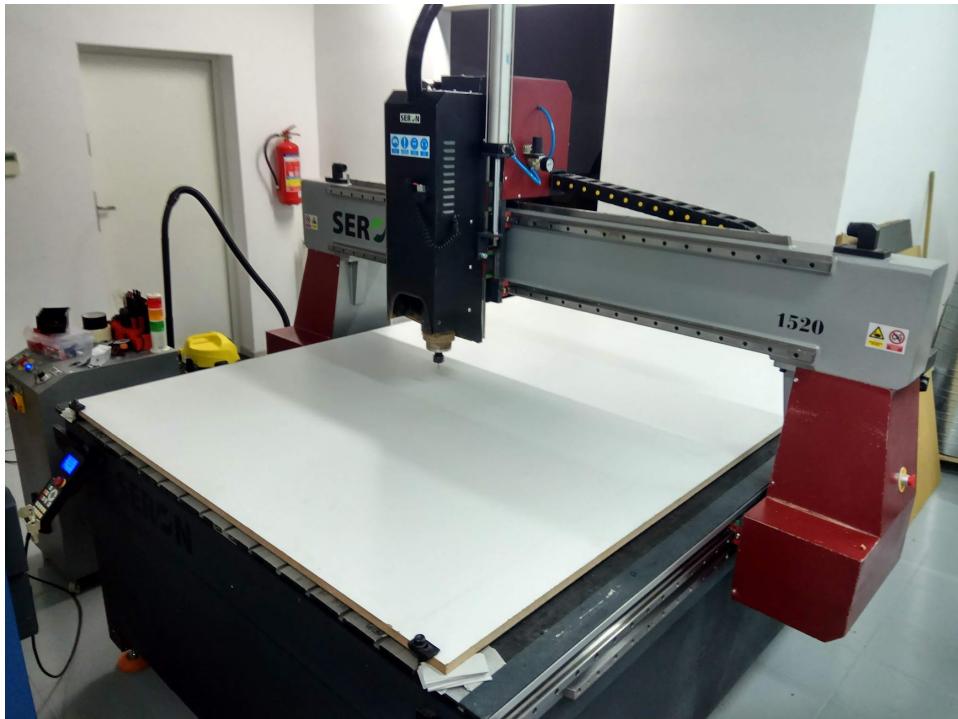


Portfolio CNC

Arkadiusz Wasilewski

CNC Router what I was working with



CNC Router Seron 1520 Expert

- Control system: DSP Shanlong S100
- Working area: 1500x2000 mm
- Z Axis: 300 mm (with pneumatic support)
- Spindle: 3 kW 6000-24000 rpm (water cooling)
- Sealing collets ER20



CAD/CAM which I was working with



I've started to learn 3D design on Autodesk Inventor (on student access license). I've switched to Autodesk Fusion 360 due to changing their license policy and I'm working in it till now.

In the work environment most of my jobs was done in Fusion 360 (due to his free access).

I've used embedded function of "Manufacture" module for setting any of machining strategy parameters.

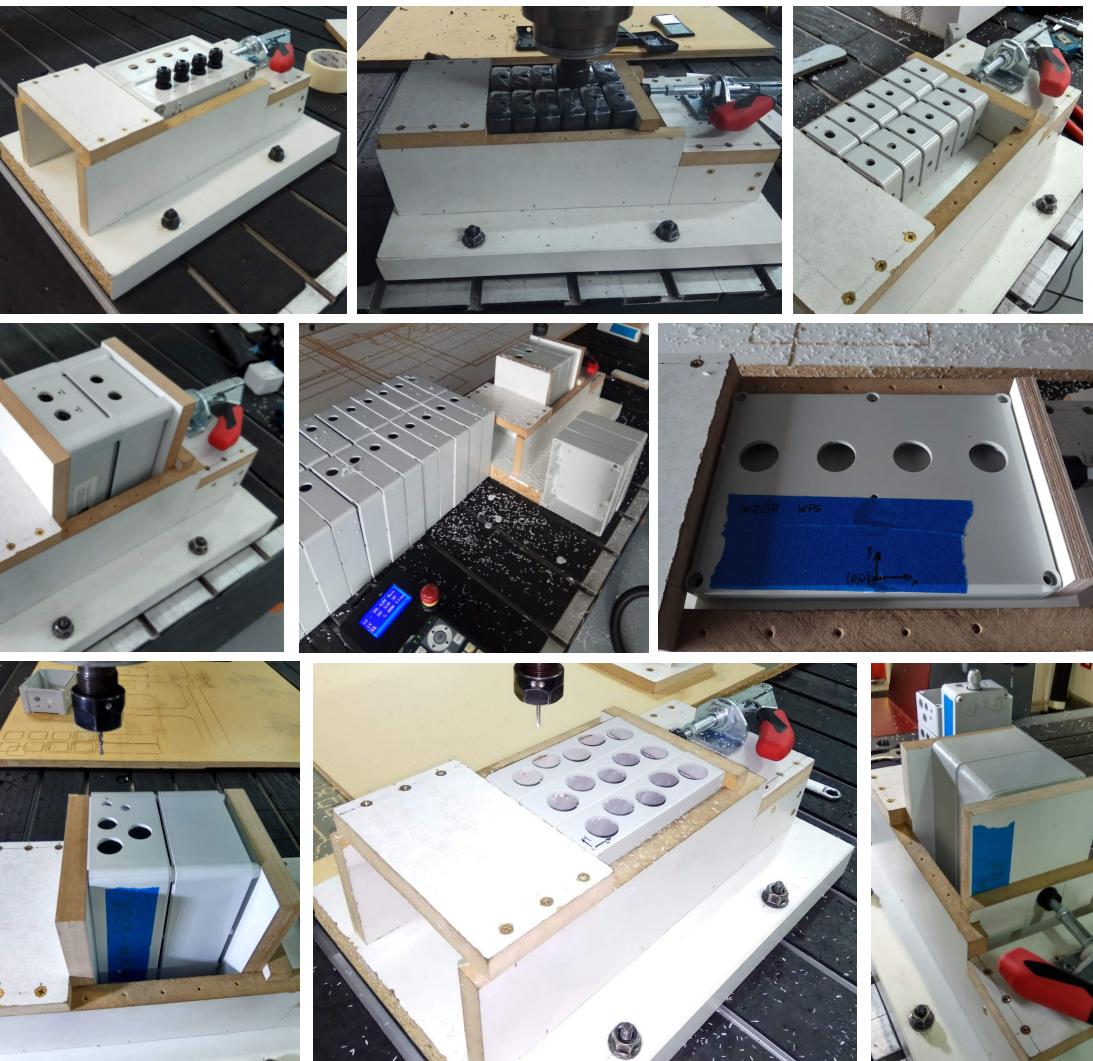


Program Artcam was delivered with the machine and I've used this only for engraving and making trivial shapes.

Job I was doing

Working with ABS electronic enclosure

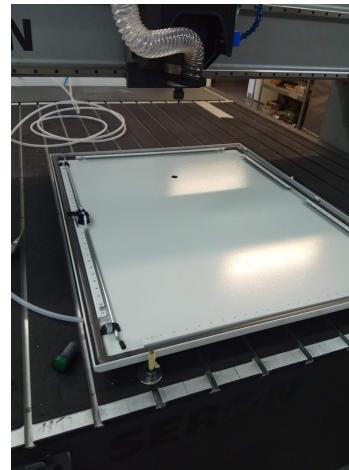
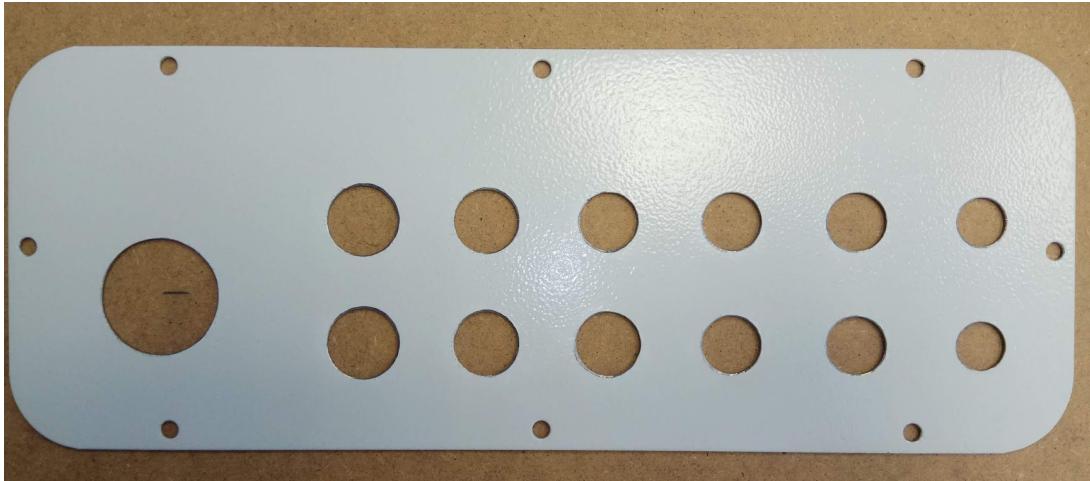
- making programs, mounting methods and documentation for the operator
- one-time production ~100-300 pieces
- holes mostly for cable glands or pneumatic connectors (pressure take-off point)
- in the pictures you can see the home-points, on the basis of which the operator can easily reset the machine for a specific program



Job I was doing

Preparation of the program, machine settings for boring in metal sheets:

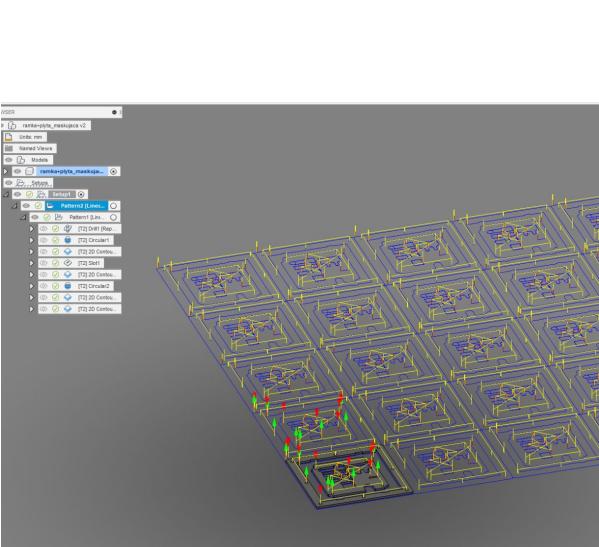
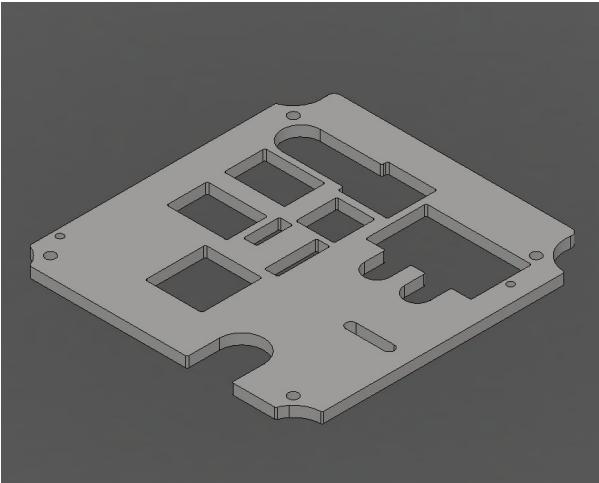
- holes for cable glands in the flaps of control cabinets
- holes for buttons/signalling LED diodes in fronts of control cabinets



Job I was doing

Nesting of acrylic PMMA 3 mm sheet:

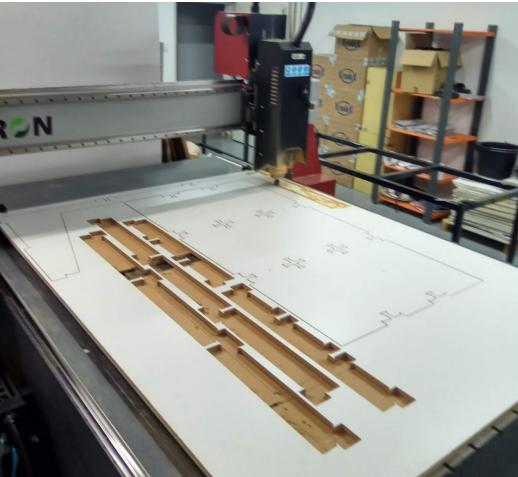
- optimizing space of cutting to save material (in the picture you can see that during nesting masking plate I've cutted square frames for other project too)
- masking panel made of PMMA (with subsequent thermal bending in post-process)



Job I was doing

Nesting of MDF/HDF boards

- making or adapting a 3D project for the needs of nesting
- prototyping (in particular, the prototype of an interior parcel locker "Wrzutka")



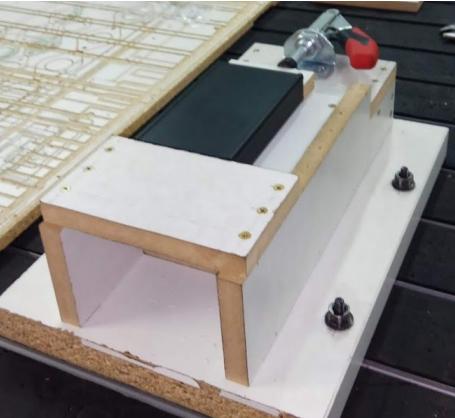
Job I was doing

Engraving and cutting panel for user
interfaces in machines (3 mm dibond)



Job I was doing

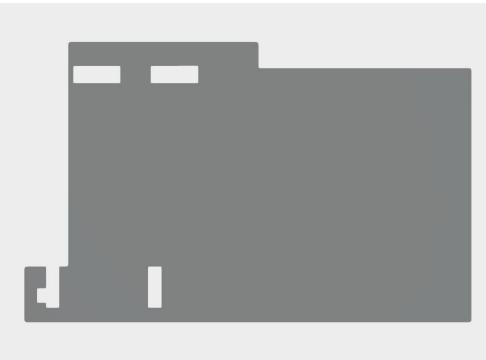
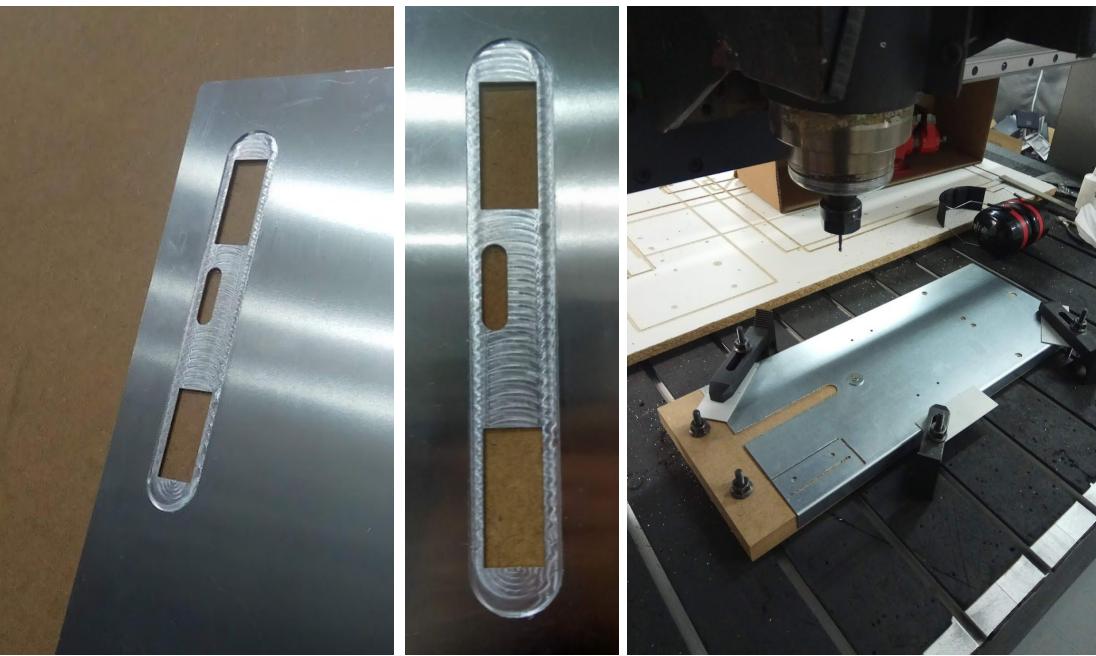
Milling holes and pocketing in
aluminium enclosures



Job I was doing

One-time orders:

- pocket milling in aluminium sheet (th. 2,5 - 3 mm)
- cutting out metal-rubber gaskets (for the jet ski exhaust)
- cutting out rubber (to cover the top of the machine)
- making holes and cuts in a metal sheet

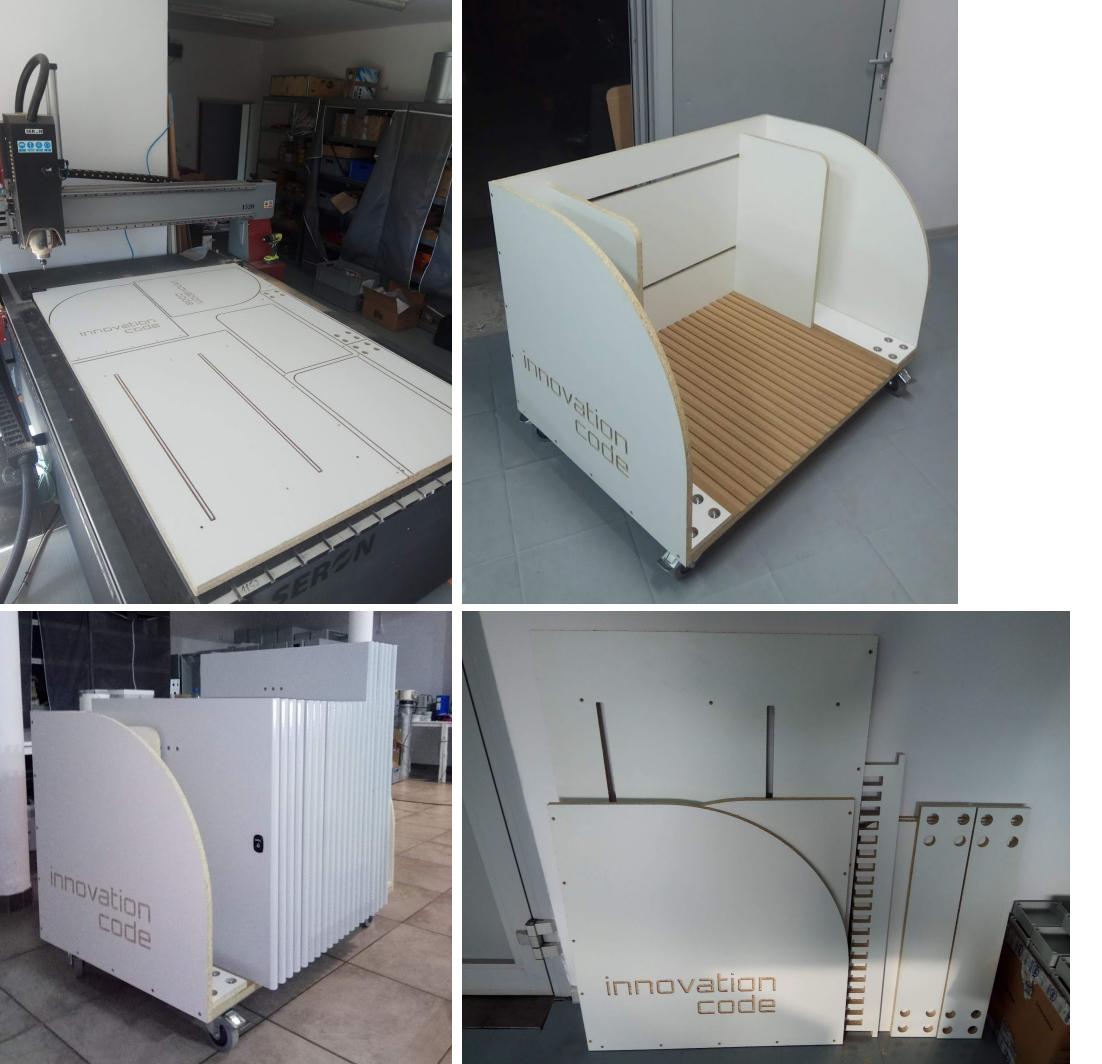


In a break from "serial" production...

Below are the creations I made when the production wasn't flooded with orders and I had to find something to do.

My creations that improve production process

I designed and made a trolley that allows for a convenient way to store the fronts of control cabinets (and thus streamline the entire machining process).

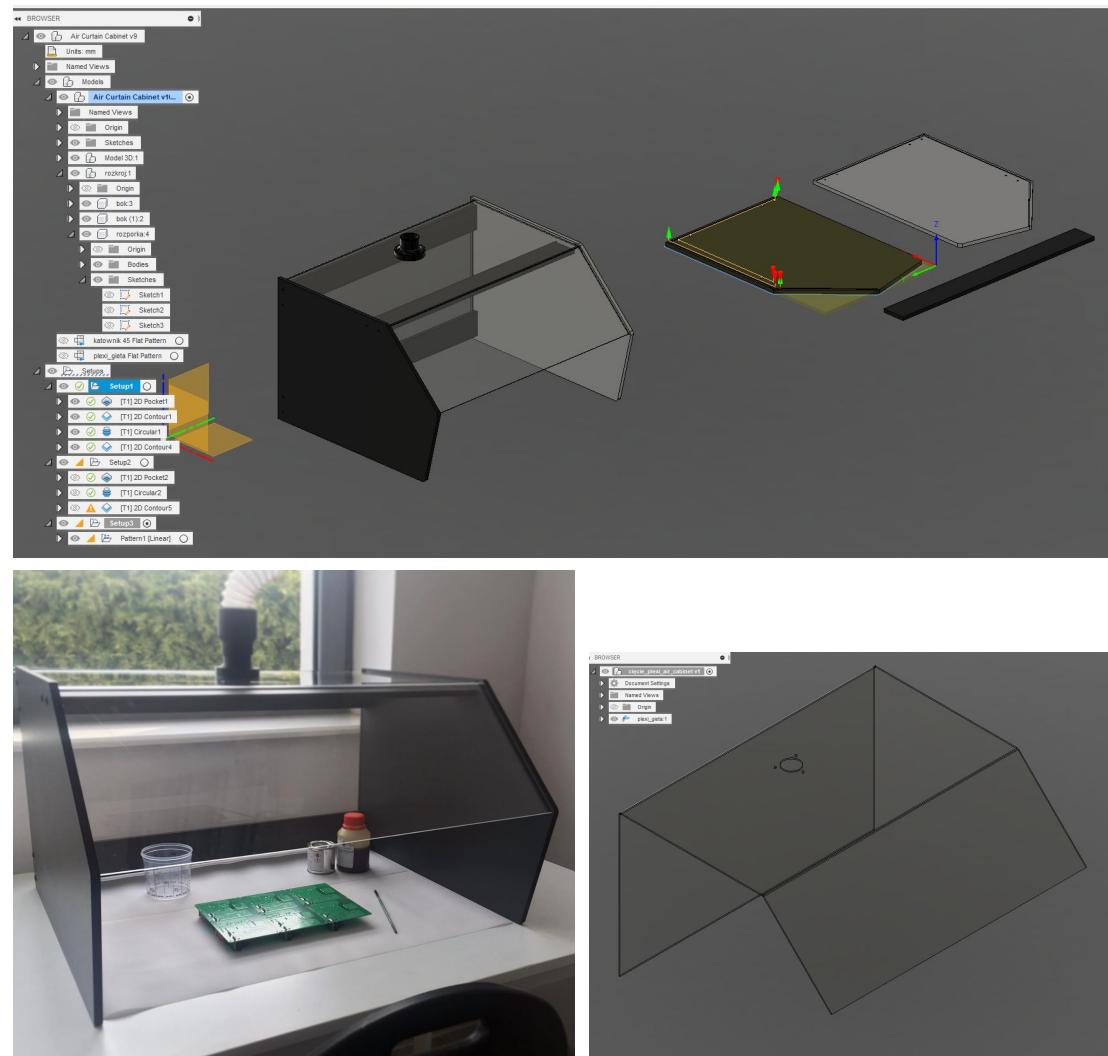


My creations that improve production process

I designed and made the "Air Curtain Cabinet" device for extracting volatile toxic compounds (during varnishing electronic boards)

Material used: HDF board, PMMA acrylic

Vacuum connection: 3D printing, PLA



My creations that improve production process

I designed and made a method of storing screen printing frames. I introduced a system of cataloging screen printing frames and pad printing matrices.



My creations that improve production process

I adapted the metal cabinets to function as workshop cabinets containing standardized containers.



My creations that improve production process

A budget pneumatic system distributing air to three 4-channel manifolds and outlets for connecting a pneumatic device with a quick coupler.



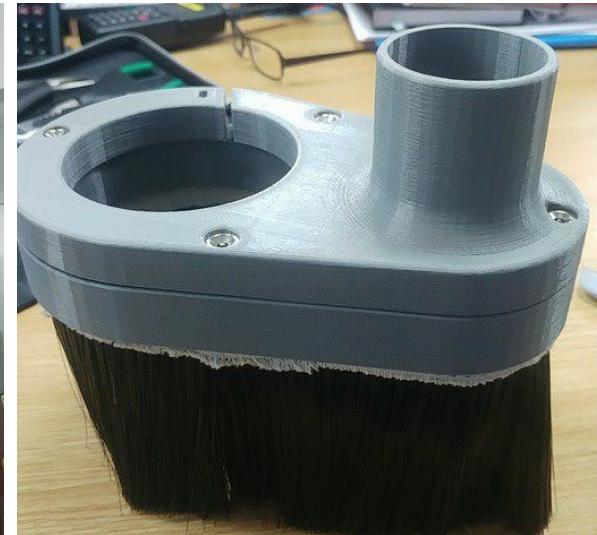
My creations that improve production process

Implementation of a vacuum installation for use in the vacuum suction cup system for through-feed milling of boards.



My creations that improve production process

Implementation of an installation that extracts chips and dust generated during milling (together with a cyclone separator).



I was responsible for:

- purchase of a pad printing machine and implementation of the pad printing technique on the company's products (printing was previously outsourced to external companies)
- purchase of a printer, UV imagesetter for making polymer matrices for pad printing
- purchase of a Bernardo segment bender to streamline the process of prototyping devices made of bent sheet metal



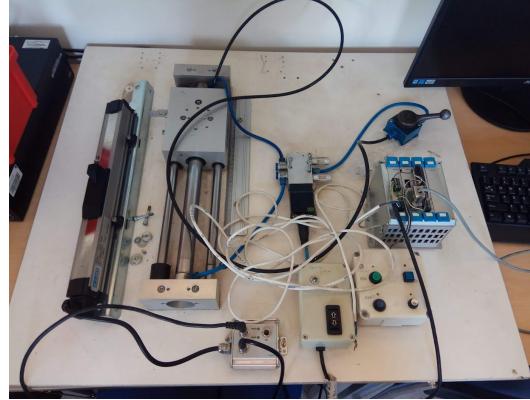
Project completed
outside of work

Project as part of the Master's studies "Mechatronics"

Renovation of a laboratory stand at the GUT Faculty of Mechanical Engineering.

Stand: "Positioning of a rodless cylinder using a PLC"

Before:



After:

