

Automizing the disassembly process of a vacuum cleaner

Aims and objectives

Disassembly time optimization:

Classic systems

- ▶ Operator: >15 minutes

Semi-automatic system

- ▶ Transport: 1 minute
- ▶ Robot: 3 minutes
- ▶ Operator: 2 minutes
 - 6 minutes (1 disassembly)
 - 3,5 minutes (Multiple disassemblies)

Disassembly price reduction:

(Period 10 years)

Classic systems

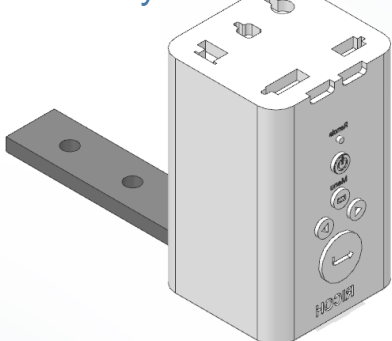
- ▶ Operator: 35 €/hour
 - 8,75 €/disassembly

Semi-automatic system

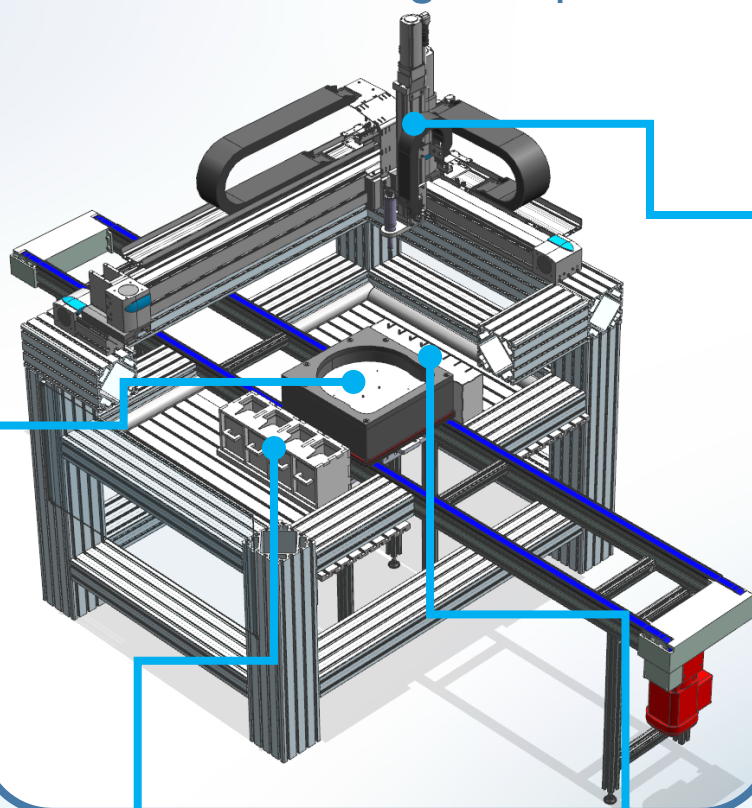
- ▶ Machine: 2,18 €/hour
- ▶ Operator: 35 €/hour
- ▶ Operations: 17,14 Disassemblies/hour
 - 2,17 €/disassembly

Construction

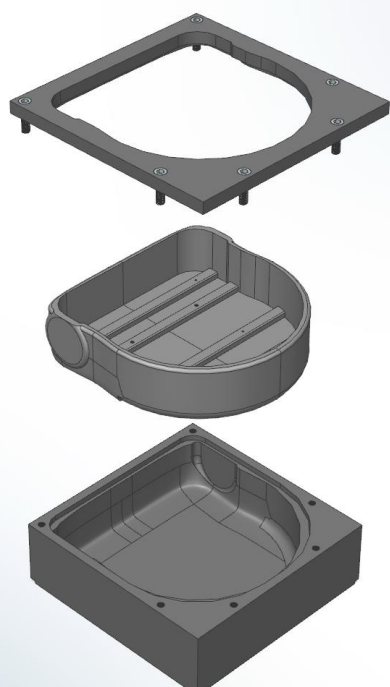
Vision system



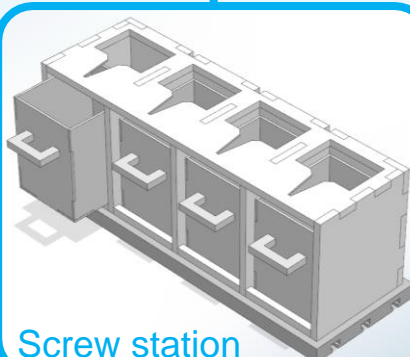
Unscrewing setup



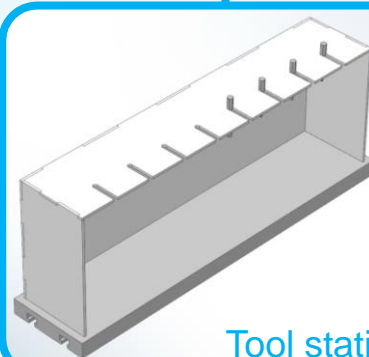
Vertical movement



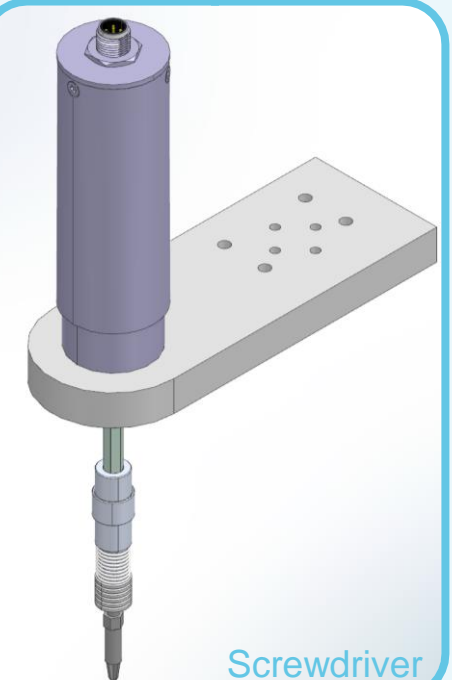
Clamping system



Screw station



Tool station



Screwdriver