Bachelor's Thesis Engineering Technology

2018-2019

AUTOMATISATION OF BENDING MACHINE

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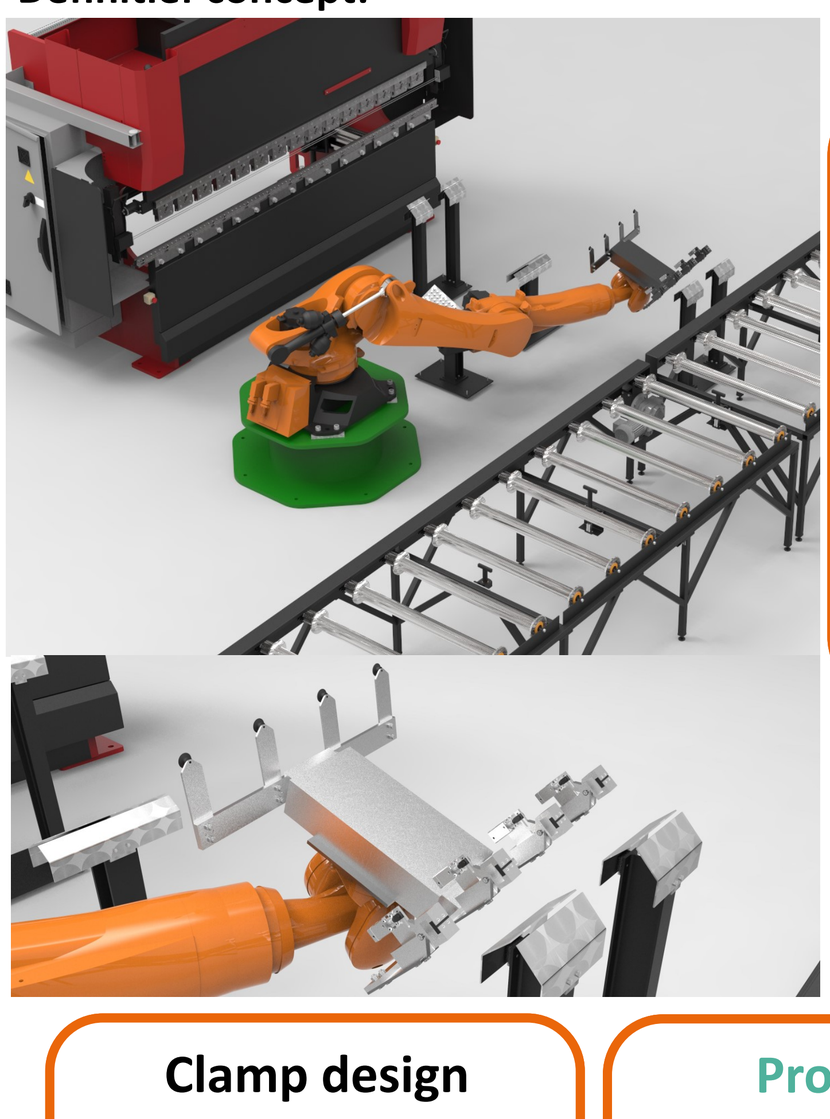
Specialization Electromechanical Engineering Technology

Rofix

Rofix is a company founded in 1978 at Dilsen-Stokkem, Belgium. At the moment they have subsidiaries in China and Poland.
It's a company which produces attachment accessories.

Definitief concept:



At the moment

Present way of working

At the moment they manually position the workpiece in the hydraulic press. End-stops detect when the piece is in the right position. When the operator presses a pedal the workpiece is bended.

Pro's and Con's

+ Fast
+ Low investment
- Lack of precision
- Dangerous
- Not continuous
- Continuous human interaction needed

Goals: Automating the proces

Decision making

Clamping options:
- Suction cup
- Clamp
- Magnetic

Buffering options:
- Conveyor belt
- Roller conveyor
- Cart on rails

Benifits of implementing

- ✓ More finished products during 1 shift
- ✓ Very precise
- ✓ No risk of injury for operator
- ✓ Continuous
- ✓ No frequent human interaction needed

Concept

Clamp design

We choose for a clamp-suction cup combination. At one side of our manipulation tool there are 4 clamps and on the other side 4 suction cups. A render of the clamp design can be seen in the small picture above.

Pro's and Con's

+ Precise
+ Simple
+ Easy to service
- Big
- Not ideal for every production item.

Buffering

In our opinion a roller conveyor would be the ideal buffering system. In this way the machine will be able to reach for more raw materials and will be able to deliver the finished product out of the safety cage.

Pro's and Con's

+ Precise
+ Common parts
- Not much capacity
- Big
- Operator has to place a pallet on top of the roller table.

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ROFIX

UHASSELT

KU LEUVEN