

Engraving machine for an automated process of fibre optic cables

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Specialization Electromechanical Engineering Technology

Situation

Company

Werkhuizen Hengelhof industrial contracting located in Genk is an engineering company that is active in a lot of different sectors.

Problems

1. A customer of Hengelhof produces fibre optic cables and wants to engrave them, they currently don't have a machine that does this automatically.
2. They want to implement a machine in an automated production line

The customer wants to stay anonymous so we have little information about the current process of the making and engraving of the fibre optic cables.

Objective

The objective is:

1. The automatization and the engraving of fibre optic cables
2. Provide a buffer before and after the engraving machine
3. Implementing the carriers (holders of the cables) into our machine

Result

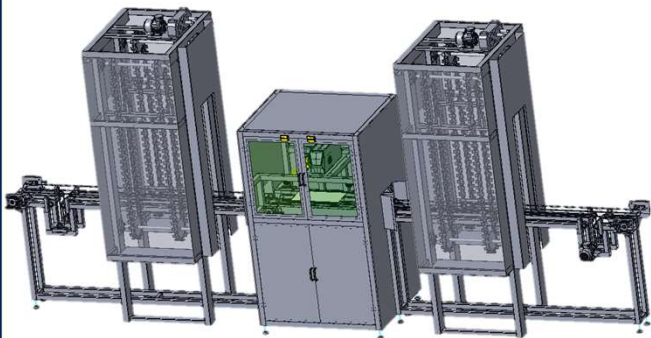


Figure 5 : Complete engraving machine with buffers

Functions

Conveyor belt

This conveyor (figure 1) is used to connect our engraving machine to the production line used by the customer. The height of the conveyor belt can be adjusted to match the height of other machines

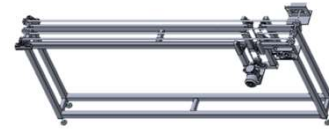


Figure 1 : Conveyor belt



Buffer

This is a stacking device that can hold up to twenty carriers.

The buffer (figure 2) before and after the engraving machine is used to compensate the possible speed difference between the other machines in the production line and the engraver.



Figure 2 : Buffer



Lifting device

This device (figure 3) is used to lift up the carrier inside of the engraving machine so that we have a stable platform.

Thanks to the lifting device we always lift the carrier to a base height.

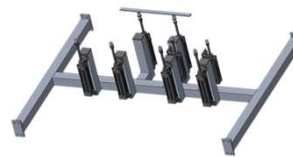


Figure 3 : Lifting device



Detection and engraving

The use of two cameras is to detect and trace the exact position of the carrier.

The laser (figure 4) engraves the fibre optic cable on the lifted carrier.

The barcode scanner defines the laser inscription.

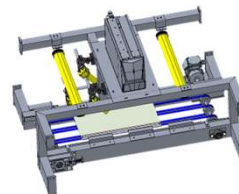


Figure 4 : Detection and engraving



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