

Success Story

Awareness-raising in the field of light-weight-robots and company digitalization for the Hasborner Mühle e. K.

Filling process and shopfloor layout optimization for flour sacks handling



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Company description

Hasborn Mill started as a family business in 1702. The products are purely mechanically produced natural products: Flours, grist and bran. The grain is sourced locally within a radius of 50 km. Small to medium quantities are produced for direct sale as well as for bakeries, which are also supplied.



Motivation/Starting Point

The goal of the collaboration is to identify and analyze the challenges to the company in order to develop recommendations for action and a solution concept. The focus of the improvement process in the company is a more efficient use of the existing personnel, ergonomic improvements, as well as a higher economic efficiency through semi-automation. Two processes were considered as the main focus of the project:

1. the transfer of know-how throughout the entire production process

2. the packing of the flour into 25 kg bags, as well as the further transport under ergonomic and economical aspects

Analysis

1. Focus: provide a quick overview of the production tasks and equipment to enable new employees a short familiarization period. In addition, the process recording serves as quality assurance. Recommendation for action: digital documentation via tablet for on-site documentation; challenge/boundary conditions: Dusty environment, simple implementation through app support; to add images; transfer and storage of results also on PC.
2. Focus: mainly manual work with high physical load. Procedure: Process analysis of the filling into flour sacks, storage and further transport to trucks as well as the further transport chain were considered. Implicit and explicit restrictions were worked out, e.g. is it possible to change storage to pallets, space requirements, transport guidelines. Taking these points into account, a concept was developed.



Technical realization

1. Exchange of experiences: industrial tablets, different possibilities for documentation e.g. management apps were presented.
2. Awareness raising in the field of robotics but also automation, what are the advantages and disadvantages of new technologies. Concepts were worked out to step by step go forward with (semi-) automation. Improvements

1. in ergonomics can be realized, for example, with a changeover from completely manual to partially automated handling of the 25 kg flour bags by using a vacuum gripper. In a next step, this can also be completely automated with the help of a robot.



What is COTEMACO?

The project, which is an initiative of Interreg North-West Europe, aims to support around 60 SMEs in the automotive and food manufacturing industries with so-called „test environments“ and to encourage them to integrate collaborative robotic systems and digital technologies into their business. Accordingly, in addition to increasing production flexibility, the relocation of production abroad will be curbed and the number of jobs in manufacturing increased, which will generally lead to an improvement in the competitiveness of the companies involved.

In the project new technologies are implemented in application examples - the aim is to move from the prototype in the laboratory environment to the transfer to production, taking into account the legal situation and certifications.

Result

Through the intensive engagement with the production process and challenges, some potential improvement points were identified, and internal processes were initiated and mapped out. Cotemaco was able to successfully set impulses and educate about new techniques in the areas of robotics and digitalization.

1. Process documentation is introduced step by step. Knowledge management is being set up and documented. By using a tablet, it is possible to train new employees faster and to plan capacities better. In this way, a changeover to other product segments can be planned in a better and more holistic way. This results in an improved competitive situation through gaining new target groups - the company is planning a small sale to local markets.
2. The company is currently not ready for the implementation of the semi-automated filling process. A detailed cost calculation and concept has been developed and is available. Because a new sales strategy is probably being pursued, it remains to be determined whether the concept fits the new product range.

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