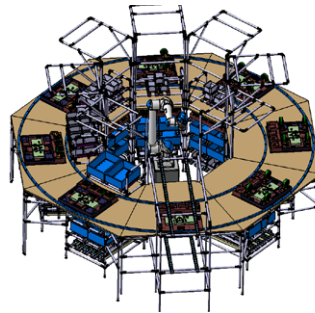


Logistics: Smart production system for production Islands

Reference No: B80022



CHALLENGE

An economical production system requires highly efficient and cost-optimized logistics. This also includes transport and material supplychain to the workplace. An important parameter to control is the enormous space consumption of replenishment storage levels with direct withdrawal access (supermarket).

The Landshut University of Applied Sciences has set itself the task of providing a sustainable solution to these challenges with a new combination of assembly and storage system. The result was a production island that meets all the requirements for the complete automation of logistics while maintaining the basic principles of lean production. In addition, the arrangement offers potential for extensions that go beyond the storage and provision of materials: for example, for collaborating robots.

INNOVATION

The newly developed assembly concept, in contrast to the currently common principle of „U-arrangement“, does not place the person, but the material in the physical center. The central area includes an automated supply of raw materials to the workstations as well as a warehouse for replenishment. The people work on the external side.

The fundamentally new arrangement reduces the manual logistic effort between workstation and previous replenishment warehouse by up to 100%. The costly upgrade of all workstations for automated loading and unloading is no longer necessary because one central point serves several workstations. This reduces effort and costs for automation and peripherals.

Analyses in the university's own model factory of the TZ PULS proved a considerably lower space consumption of supermarket and assembly stations: In the first step, the arrangement reduces and avoids transport routes. In the second step the automation of the remaining part follows. The integration of the replenishment storage stage (supermarket) into the assembly system reduced the space requirement by 60 percent.

COMMERCIAL OPPORTUNITIES

The patent-pending system supplies the surrounding work stations with material from a central position. It is a consistent further development of the existing „U-cell layout“.

- Automated material supply from the supermarket to the workstation
- No walking distances for feeding the individual workstations
- Autonomous material delivery over a central point
- Complete automation of the material supply
- Up to 60% space saving

DEVELOPMENT STATUS

A patent application has been filed for the process and the proof of concept has been successfully performed in a model factory. The process is ready for use in production. The reduction of costly processes provides enormous potential for savings. You can obtain a user license from BayPAT.



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IP rights:
EP application in 2019,
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