palletising

Case Story

Automatic palletising of chocolate confectionery products

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One of the largest confectionery sites in the world, located in Hamburg, has just introduced a new, sustainable type of packaging. For this, CSi successfully realised a new central palletising system on a very compact footprint with a low ceiling, despite many restrictions due to Covid.

The palletising system incorporates some innovative technologies. For example, the gripper tool is designed to be able to pick a wide range of products from very small to very large. Flexibility allows each robot to be assigned to any of the products. Other major innovations can be found in the MOre supervisory control system. All the relevant information can be viewed on large TV screens, filtered per screen location.

KEY DATA

- √ Category: Confectionery industry
- √ Country: Germany
- √ Robot palletising system for handling four SKUs simultaneously
- √ Automatic pallet transport system for empty pallets, layer sheets and full pallets
- √ Finished goods handling, including pallet wrapping and automatic labelling
- √ Integrated control system, with our MOre supervisory control software, data acquisition and reporting system
- √ Capacity: Up to 67 cases per minute, 50 pallets per hour
- √ Product type: Cartons

For example: reason for rejection, pallet details (SKU, number of boxes on the pallet and destination), progress of a specific production order, etc. All the reports can also be checked via a web application. In addition, for the packaging lines, you can see the progress and trends of a specific production order, compared with the production targets.

BENEFITS

- √ Very compact solution suitable for restricted floor space
- √ Easy and flexible with regard to batch changes and line assignment
- √ Line performance visible at a glance, both on the shop floor and via a web application
- √ Connected to an existing pallet transport and pallet elevator system for automatic transport of packaging materials and waste bins
- √ CSi's MOre software platform for supervisory control, line monitoring, management reporting and OMAC trending
- √ Large overhead TV screens for operator guidance on rejects and QA checks.
- √ Fast installation on site thanks to extended in-house testing
- √ High level of system availability (over 99.6%)

OPPORTUNITIES

Modern technology makes it possible to easily monitor the line performance and to provide direct feedback and recommendations to operators and managers to improve the output.

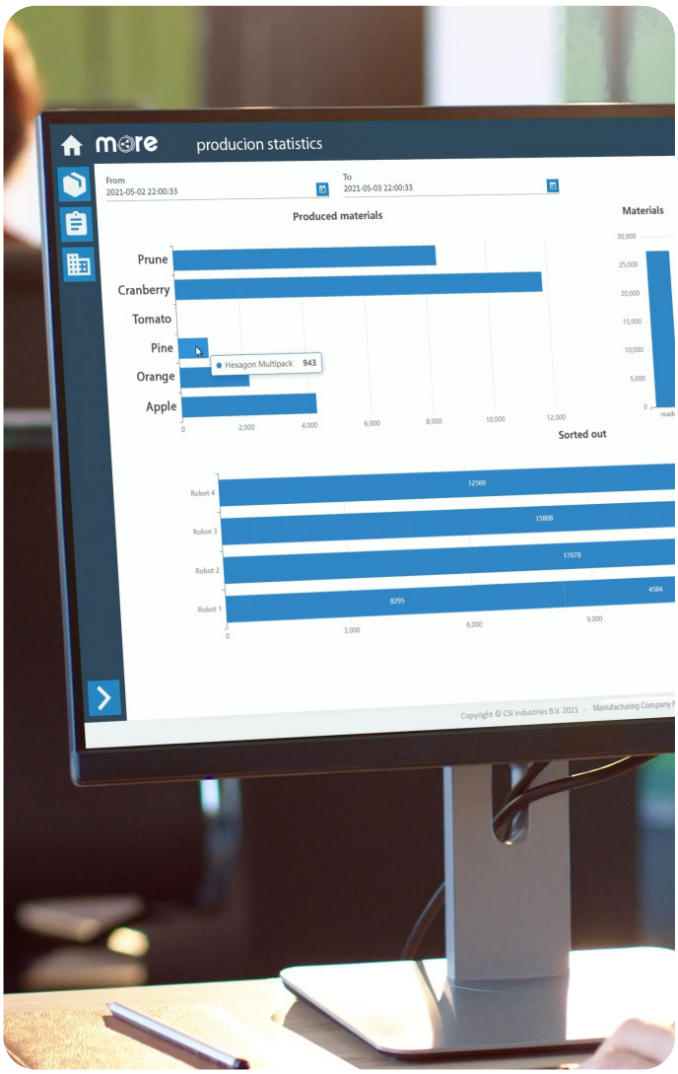
INNOVATIONS & TECHNICAL HIGHLIGHTS

- √ Tipping device on pick point for 'upright' palletising of cases
- √ Robot gripper tool suited to a wide range of products
- √ MOre software platform for monitoring, management reporting and OEE trending
- √ Suitable for future connection to AMR technology (Autonomous Mobile Robots)
- √ Automatic infeed and outfeed of intermediate and top sheets
- √ Full in-house build and testing in order to limit on-site visits (in view of COVID-19 restrictions)
- √ Each robot cell can handle different pallet sizes

CSi and the customer had to work closely to align on phasing-in the installation while allowing for production to continue. An extra hurdle to overcome involved the restrictions because of the COVID-19 pandemic. This strongly affected the risks involved in working on site. To mitigate risks, the full installation was built and tested at our premises before shipping it to the customer. By doing this, the installation period on site was reduced from 13 weeks to 6. Because of the commitments made to the market, the pressure on the project teams of both the customer and CSi was high. Nevertheless, we jointly succeeded in realising an innovative project.



The next phase of automation within this area is on the way. The system will be extended with an AMR system. This means that waste bins and pallets with packaging material will be picked and transported automatically using Autonomous Mobile Robots. Via this next phase, the fully automated factory shop floor is again coming one step closer.



EXPERIENCE

You can plan everything upfront in the smallest detail. However, something unexpected will turn up in every project. In this case it was COVID-19. Therefore, flexibility, communication and cooperation are key drivers for the success of a project.