palletising

Case Story

Integration of C5000 high-speed palletiser into an existing packaging line

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A world famous producer of confectionery asked CSi to replace a robot in one of their existing packaging lines by a high-speed palletiser. At 1 of in total 10 production sites in France, which was built in the late 70s, various types of chocolate bars and other confectionery are being produced. The majority of these products are packed in shelf-ready packaging boxes.

Due to the fact that one of the robots in the existing line could not handle the high capacity, the company wanted to replace it by a much faster machine. Since the display boxes are often relatively small, the only suitable solution could be found by using a high-speed machine from CSi. The C5000 multi-load palletiser was the ideal solution for this task, also because of the specific footprint and dimensions, allowing it to be fitted exactly into the available space.



It was also important to install the palletiser extremely quickly, so that production had to be interrupted only for a very short time.

KEY DATA

- ✓ Industry: Confectionery Industry
- ✓ Country: France
- ✓ C5000 high-speed palletiser for small boxes
- ✓ 4 buffer tables
- ✓ 2 magazines for interlayer sheets in two different sizes
- ✓ 18 different display boxes with perforated edges
- ✓ Capacity: 70 to 100 boxes per minute
- ✓ Product: small closed boxes

BENEFITS

- ✓ Optimal solution, due to the specific footprint and dimensions of the machine
- ✓ The C5000 palletiser was seamlessly integrated into the existing production line
- ✓ The complete line was installed and tested at CSi before delivery
- ✓ Minimal downtime of the production line by extremely rapid integration and commissioning
- ✓ CSi could deliver a complete line, in close cooperation with the customer

TECHNICAL HIGHLIGHTS

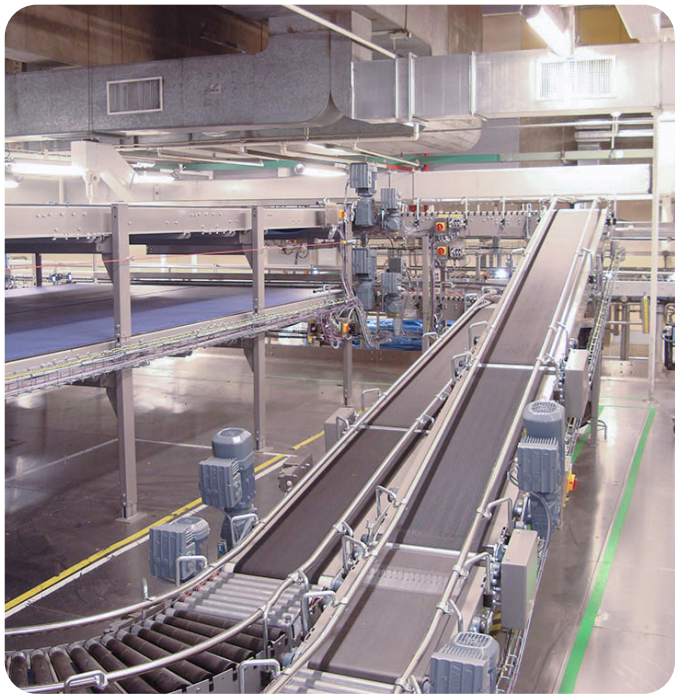
- ✓ C5000 palletiser with high capacity, especially suitable for small boxes
- ✓ Double-product infeed conveyor with turning station for box orientation
- ✓ Forming table with four-sided centering device for various layer patterns
- ✓ Integration into the existing production line

Originally, the existing packaging line consisted of 5 robots with pallet conveyors. Because the existing machines could no longer handle the capacity, the company decided to replace 1 robot by a new high-speed machine. At the site of one robot the CSi C5000 was integrated, which was easily able to handle the high capacity of small boxes.

The C5000 appeared to be the most appropriate solution due to its specific footprint. The C5000 palletiser including all new pallet conveyors and interlayer magazines was pre-installed at CSi in in Raamsdonksveer. The aim was to be able to fully test the machine, so that afterwards it could be installed and taken into operation in only very short time, without having to interrupt the production process. Because of the proper planning of this project, it was possible to realize a quick exchange of the machines within a very short period of time.

The robot with its conveyor system was disassembled and the pre-installed multi-load palletiser C5000 was immediately integrated, exactly fitting in the existing line. After CSi had replaced the robot, it was immediately possible to increase the production capacity. Because the high-speed machine previously had been fully tested and calibrated, the new C5000 could locally be put into operation within only five days.

CSi had to make several adjustments to the existing conveyor system in order to connect the C5000. By means of a shuttle car, the 2 pallet magazines supplied by CSi will automatically be filled with 2 different sizes of empty pallets. The two pallet magazines are positioned right next to the pallet elevator underneath the forming table.





Depending on the product which, at a certain time, is coming from one of the buffer tables, the palletiser selects the appropriate size of pallet and transfers it to the pallet elevator beneath the forming table. The palletiser will now call one complete pallet load from one of the four buffer tables, so it can palletise 1 full pallet load at the time. In this way, four different products can be palletised at high speed at the same time.

The two infeed conveyors for boxes which lead to the forming table, are each equipped with their own turning station to selectively rotate the boxes by 180 degrees if needed. This is a special construction for shelf-ready boxes which have a perforated edge on one side. The perforated side of the boxes has to be turned with the perforated edge inward, when they are stacked on the pallet on the outside of a layer. The palletiser is also equipped with two magazines for interlayer sheets. The vacuum grippers will insert the appropriate size of sheet on any desired layer, depending on the pallet size.

In order to be able to handle the high infeed capacity of different products, CSi also installed four fully automatic buffer tables. Especially for this location, the buffer tables were designed modularly, so that they could easily be transported into the building and be installed on the first floor. The separate modules were equipped with special joints which link the modules easily back together. In this way all buffer tables could be installed quickly. The buffer tables were installed two side by side and two on top, so that they use less floor space. Each buffer table is provided with special driven transfers to properly and smoothly transport the small boxes. Together, the 4 buffer tables are capable to buffer at least 4 complete pallet loads of 4 different products at the same time. Once a complete pallet load has accumulated on one of the buffer tables, it will be called by the palletiser and 1 full pallet load can be stacked in one go. In this way, the maximum capacity of boxes can be palletised with the C5000.



INNOVATIONS

- ✓ Specially designed modular buffer tables that were installed on the 1st floor
- ✓ Double-product infeed conveyor with turning stations for box orientation



In close cooperation with the customer, CSi was able to supply a total package which in fact was decisive for the customer to order the machine from CSi.
CSi supplied the machine and integrated it seamlessly into the existing line, with high-level controls. Not only because of the specific footprint of the high-speed C5000 but also due to customer specifications, for example materials and clean design, CSi was able to offer the best solution. CSi has several different palletisers in its program and for this customer the C5000 was chosen, because it was the best solution for their logistic problem.

The customer was extremely positive about the professionalism of CSi's project team as also about the ability to quickly achieve its business objectives.
The customer's feedback:

"Excellent partnership & relations during the whole project. The implementation on site was well supervised for a perfect start-up. Well done!"