palletising

Case Story

Chaotic/mixed palletising in a skincare warehouse

© 2023 CSi palletising



Most palletising solutions are found at the end of a production line but more and more warehouses are beginning to understand that automatic palletising can also create benefits in the distribution environment. In many cases, it is not just a question of stacking one product as high as possible; in warehouses, it is frequently more about stacking different products on one pallet. This mixed, or chaotic palletising as it is called, requires a thorough understanding of product handling, gripper technology and robot software - expertise readily available at CSi.

As the larger Warehousing & Distribution suppliers do not have their own palletising solution, they will often turn to CSi, as was the case with a leading manufacturer of skin and hair care products in France. The W&D supplier automated the warehouse and CSi supplied the complete palletising function. In the warehouse, people are order picking at 8 stations (in two shifts) and packing different case sizes. All these cases are transported on a central case conveyor to the palletising unit and arrive at the palletiser in random order. By scanning the barcode and height of the case, the system knows exactly which product to handle and on which pallet to put the case.



KEY DATA

- ✓ Sector: Care
- ✓ Country: France
- ✓ Six-axis robot cell in warehouse for chaotic palletising
- ✓ 3 types of cases; 5,4 cases per minute on 6 pallets

BENEFITS

- ✓ Ergonomics: eliminating repetitive product handling
- ✓ Mistakes (wrong product on pallet) eliminated
- ✓ 100% data logging so certainty regarding which products on the pallet
- ✓ Efficiency improvement: 6 of 8 lines have palletising automated

TECHNICAL HIGHLIGHTS

- ✓ Very compact robotic cell: 6 pallets with one robot
- ✓ SCADA visualisation of pallets, cases and errors
- ✓ Very user friendly HMI

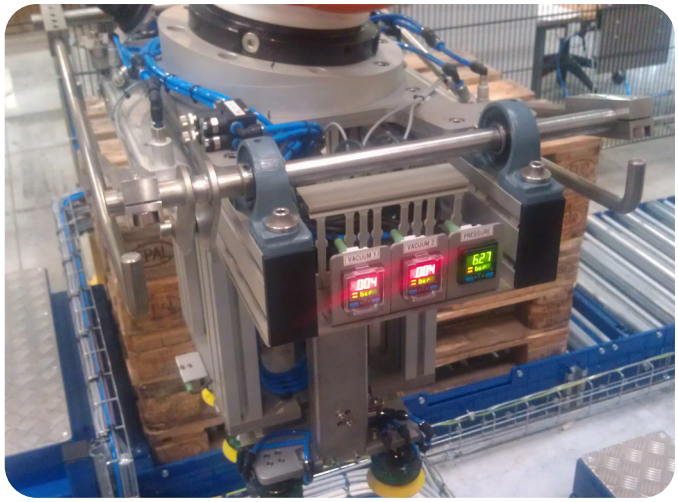
The challenge for CSi was to make sure that one robot could place cases at 6 different pallet positions. The entire unit had to be extremely compact, especially as the capacity had to achieve 5,4 cases per minute - a challenge indeed when you have to move randomly to and from 6 different pallet positions and palletise different case sizes onto 1 pallet. However, with CSi's vast experience and creativity, a reliable solution was found and implemented. A vacuum gripper tool was constructed with a telescope so that it could place cases on a deeper spot than without such a device. The tool also places the empty pallets in the right position.

The W&D supplier who helped CSi to win the order is a close partner of CSi and has its head office in Belgium. The two companies have worked together on several projects in numerous countries. With such a close working relationship, mutual support is readily available to help solve specific requests.



The delivery time had to be very short and the robot project had to fit into the overall warehouse automation project. All communication and manuals had to be presented in the French language. As approximately 85% of CSi's business is conducted outside of the Benelux, there is absolutely no problem adjusting to local circumstances, customs and language.

On a warehouse project, special consideration must be given to the fact that the operators may have little experience with automated systems and robots, unlike the operators in a manufacturing environment.



This is another area where CSi can provide assistance; the systems are designed with optimal user friendliness in mind. Another benefit to the CSi setup is the reduced need for training. Moreover, CSi's systems are very reliable and so the maintenance department requires only nominal training on how to run the system full time. Needless to say, maintenance costs are kept to a minimum.

In this particular instance, the greatest advantage for the customer was not improved efficiency, but improved ergonomics. The repetitive handling of all the cases and the need to place them on the right pallet in as short a time as possible created an unacceptable working environment. The customer did not want this to continue. Another leading motivator for this project was to be able to guarantee that every case is placed on the right pallet, and to provide a complete administrative list of all cases that are on the pallet at any given time. Manually this is almost impossible, but by utilising a robot and automated administration, such operations are easy. Moreover, the robot remembers every movement exactly and can report precisely what has been placed on which pallet and when.

INNOVATIONS

- ✓ Detecting case by means of barcode and height measurement
- ✓ Chaotic/mixed palletising algorithm
- ✓ Vacuum gripper tool with empty pallet handling and telescope