



Albert Heijn

Automation by the layer





The Univeyor LayerPicker can handle a huge variety of products due to its unique vacuum-chamber technology. Descrambling takes place directly after picking.



By choosing LayerPicker, Albert Heijn has enhanced its reputation as a leading, forward-thinking company - the initiator of a landmark in warehouse innovation.

Pioneering logistics technology from Univeyor has entered the food chain at Albert Heijn

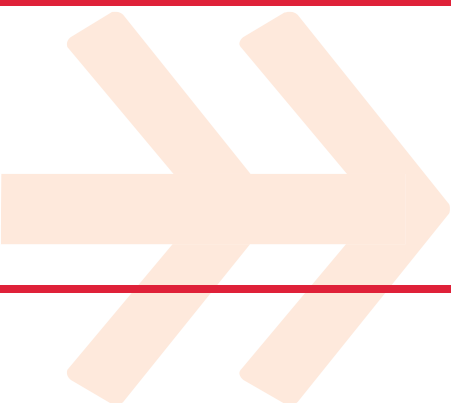
Leading supermarket chain in the Netherlands Albert Heijn has built up a reputation around sales of quality goods from its 700 outlets. What most people never think about is the logistics systems behind the scenes that keep the stores well stocked and the customers happy. But, for the group's six distribution centres, the logistical challenges involved in supplying each store with the right goods at the right time are very much top of mind.



Patented technology from Univeyor has enabled the regional Albert Heijn distribution centre based at Pijnacker to make a major breakthrough in rising to these challenges. By investing in the Univeyor LayerPicker®, the centre has increased its order-handling capacity, reduced its need for manual labour and improved efficiency considerably - particularly in relation to many of the ambient goods known as "fast-movers" due to their rapid throughput in the stores.

The LayerPicker is a key element in the centre's order size independent, order picking module. This means all orders are picked at the same speed regardless of size. Installed in two phases, today LayerPicker technology is responsible for product depalletising and descrambling and automatically replenishing a total of 1,000 distribution lanes, from where individual store orders are made up and prepared for dispatch.

At Pijnacker, Univeyor has provided a long-sought key to automating heavy manual tasks. And the LayerPicker promises to be only the beginning of the automation story. Now the system is in successful operation, the distribution centre's management team is already investigating further improvements and new functionalities. The age of automated warehouse logistics has finally arrived.



After descrambling the layers, the system transfers one line of products at a time for separation into single items.



Univeyor's intelligent turntable aligns items of almost any shape as required.

The design challenge

The Pijnacker distribution centre dispatches some 130,000 product units a day to 175 of the 700 Albert Heijn stores spread throughout the Netherlands. Until a few years ago, the opportunities for automating a large part of the order handling operation were regularly discussed - but, despite thorough market investigation, no profitable means of doing so seemed to exist.

"We started out with a dynamic logistics module which stores each product in the order-picking module in its own lane," explains mechanisation manager Hans Eil. "But it was difficult to find a profitable solution that could send products at high speed and in the right order to the distribution lanes."



It was not until Hans Eil and his team came into contact with Univeyor that they found the commercially viable solution they were looking for.

"We chose Univeyor's LayerPicker because it was the only solution that could handle a wide range of products. There is no similar system available on the market," says Hans Eil.

The LayerPicker has since proven successful in handling 97% of the products in the order-picking module - around 43% of the products that go through the distribution centre as a whole.

Working in close cooperation, teams from Univeyor and Albert Heijn shared their mutual knowledge and experience to design the optimum depalletising and descrambling system to meet Pijnacker's needs for high capacity, automated order handling.

Patented LayerPicker technology

Handling whole layers of any product with a flat bottom surface, LayerPicker is a model of efficiency, leading edge ergonomics and intelligent control.

The working principle is based on a centrifugal fan that creates a vacuum chamber inside the machine head. Height adjustable and inflatable side skirts are then gently pressed against the layer, effectively sealing the vacuum chamber. In this way, atmospheric pressure from underneath pushes the products against the suction plate, enabling lifting to take place - safely and reliably. Even layers with gaps can be raised efficiently due to valves that automatically close when the air stream exceeds specified limits.

A touch-screen panel makes it easy to supervise LayerPicker functions, check alarms and verify new products and layer patterns. Optimum execution of customer orders is ensured by the PC control system, which has a direct link to the warehouse management system.



A manual working station is integrated in the system to process products unsuitable for automated machine handling and provide backup during peak operating hours.



Load-securing straps and wrapping can be removed before pallets are hoisted into the LayerPicker.

Functional system design

Each of the two LayerPicker® systems integrated in the order-picking system has an in-feed capacity of 2,400 items an hour and replenishes 500 distribution lanes, which are compactly constructed on seven levels. As product pallets are delivered to the systems by shuttle car from high-bay storage, automatic layer-by-layer depalletising begins. The layers are then gently separated into single items and aligned by a Univeyor vision-controlled turning device for optimal downstream handling.



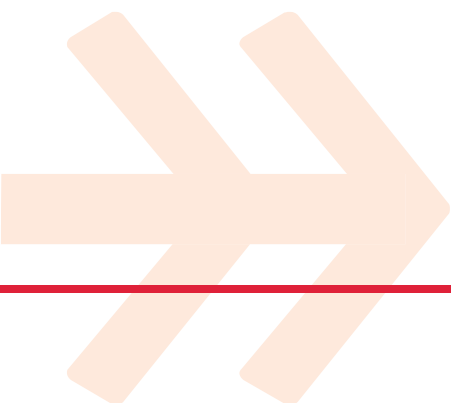
A Univeyor conveyor transports individual items to the pre-specified distribution lane in the seven-level system. From here, the required quantities are dispatched to fulfil each batch of store orders. The out-feed capacity of the entire 1,000-lane system is up to 6,000 items an hour.

Profitable performance

"The system has more than doubled the man-hour capacity of our dynamic logistics module and can be easily operated by seven to eight people. We are very happy with the functionality we have gained."

Hans Eil reports a dramatic improvement in distribution centre efficiency since Univeyor technology was installed. The intensive manual labour previously involved in order-picking has all but been eliminated. Only when pallets enter the system and when completed orders are labelled and dispatched is manual labour now required. Ergonomic work stations at the packing area ensure the best possible conditions for the workers on the shop floor.

"Our productivity has been considerably increased by the Univeyor system and we have reduced our costs," says Hans Eil. "Now we are looking for more ways to mechanise and increase the level of automation in the years ahead,"





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