

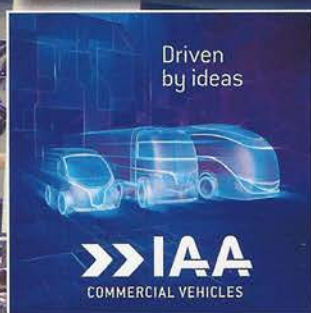
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**DOOSAN - A Work of Art at IMHX 2016**

## Fully automated milk facility delivers freshness faster



**The Kroger Co. in the United States is one of the world's largest grocery retailers with fiscal sales over \$100 billion, operating hundreds of retail stores, distribution centres and 37 manufacturing plants.**

When it needed to invest in its first new fluid milk plant in more than 20 years, Kroger decided to embrace a fully automated system in order to increase shelf life by providing fresher product faster.

Cimcorp developed an end-to-end automated warehouse solution for Kroger's Mountain View Foods facility in Denver, centred around Cimcorp MultiPick, a fully automated, robotic production, storage, handling and order processing system. The system can store up to 36,000 crates, and is able to pick 32,000 crates per day.



The system uses case stackers, manual in-feed stations, and inbound and outbound conveyor systems, a warehouse management system (WMS), robotic gantries, software modules and

an inter-platform communications system.

Instead of installing a traditional in-floor mounted 'drag-chain' style conveyor, Cimcorp MultiPick handles both single and stacks of plastic dairy cases on non-traditional, knee-high, plastic belt conveyors.

Jugs of milk are added into the cases from three separate filling lines, then stacked six layers high. A conveyor line will hold back a 'slug' of nine stacks before releasing them onto the main infeed conveyor line.

The cases or stacks are picked by the gantry robots according to Kroger's specified sequence at one end of the facility. The robots then move the inventory to storage positions on the floor until order fulfilment, allowing storage buffering.

As soon as orders are released for picking, the robots start to build stacks for each customer order and place them on the out-feed

conveyors. As each stack is placed, data associated with the stack including the target pallet is passed to the out-feed conveyor system. Order pallets are robotically picked, palletised and banded before being loaded onto a delivery truck.

The automatic operation allows collection of vast amounts of data as each case is logged and tracked throughout the facility. This allows detailed analysis of both dispatch operations and production planning. This data provides Kroger with 100 percent traceability, an important factor for perishable dairy products and consumer safety.

Mountain View Foods is one of the first dairies in the United States to deploy robotic technology that enables packing, picking and palletising of crates in the cold storage areas entirely by automation. Kroger is seeing a dramatic difference between its traditional manual facility and the automated system through increased efficiencies and rapid handling, reduced labour costs and errors, and product traceability.

Kroger's orders are now picked with 100 percent accuracy and at faster speeds, which results in shorter lead times, maximised product shelf life and fresher products.

In addition to the benefits and streamlined operations that have



already made a positive impact to Kroger's bottom line, the company has also received recognition for its innovative facility design and was named 'Dairy Foods 2015 Plant of the Year'. Kroger plans to continue to expand its use of automation and has already begun assessing other facilities for consideration in 2016.

Larry Noe, Manufacturing & Engineering Manager of Kroger Mountain View Foods said: "The system developed by Cimcorp achieves our objectives of faster picking, accuracy and reliability enabling us to give our customers excellent standards of service."

*Text: Johanna Parsons*