

Daifuku supplies STV system to SuperGros A/S in Denmark

Automatic pallet sorter for manual warehouse



Daifuku Europe has delivered and installed an automated pallet sorting system for SuperGros A/S in Denmark. The system, delivered on time and within budget, makes use of Daifuku's exclusive STV system (Sortation Transfer Vehicle) to provide high-speed sorting of pallets arriving from suppliers.

SuperGros A/S is Denmark's largest wholesaler in the grocery retail market and the main supplier to 21 chain stores and supermarkets throughout the country. SuperGros A/S has a total turnover of approximately Euro 1.5 billion per annum and employs at present 623 skilled workers.

SuperGros A/S has the purchasing power to match and outbid its competitors, with an active purchasing strategy to offer the right goods at the right prices, from groceries, fresh food, fruit and vegetables, flowers, wine, non-food and private labels.

The Herning Terminal, situated close to the "distribution centre" of Jutland, was originally built in 1963 when the storage capacity of the terminal was 2,000m². Subsequently, the terminal has been expanded nine times, most recently in 2003 when it also got a brand new goods reception area, as well as a new warehouse for wine & spirits and nonfood items. At this time a new Warehouse Management System (SattStore) was



installed, along with the Daifuku STV system.

Today, the storage space has expanded to some 28,000 m², with over 3,000 Euro-pallets being handled every day at the warehouse. One hundred and forty employees based at the Herning Terminal distribute groceries, non-food, wine & spirits to the different chains in Jutland as well as on the island of Funen.

The Herning Terminal dispatches some 220,000 pallets per year, including 20,000 pallets for Greenland, The Faroe Islands, Iceland, and the border region in the north of Germany.

The Daifuku STV solution was selected over a traditional conveyor solution as it was able to handle the required pallet flow on a single level, whereas the competing conveyor solution required two levels to provide the

same flexibility. It was planned that the second level of conveyors be installed in a basement. As the basement was not required for the Daifuku solution this provided SuperGros A/S with a significant saving on building costs.

In addition, due to the high speed of the STV system, the size of the infeed area was reduced to one third of that originally proposed. This enabled additional racking to be installed in the same sized building, providing better storage utilization of the new build.

Euro pallets arrive on trucks from suppliers and are unloaded by the operators, before being placed on to one of the six infeed conveyor stations. Once on the infeed station, the pallet is identified to the WMS, the load profile is checked, the base boards of the pallet are checked and the pallet is assigned a storage location.

One of the seven Daifuku STV's collects the pallets after the infeed check and delivers them to one of five warehouse cells. The pallets are then collected by fork lift trucks before being manually stored in the rack system.

Immediately prior to the fork lift pick up point, there is an accumulating conveyor to ensure that the erratic arrival of fork lift trucks does not stop the operation of the infeed system.

During the design process a simulation model was used to confirm the system capacity. This considered data from SuperGros's host computer and ensured that the system could cope with the peak throughput requirement of trucks from several suppliers arriving simultaneously at the receiving area.

Daifuku's exclusive STV systems are able to sort up to 1,000 pallets per hour on a single level and are designed to operate 24 hours per day, 365 days per year. There are over 22,000 vehicles installed, in production and distribution systems worldwide.

To date, Daifuku has supplied and installed many integrated materials handling systems throughout Europe. However, this is the first time that an STV system has been used as a "HIGH SPEED PALLET SORTER".

This opportunity is a direct result of the increased sales activities of Daifuku's wholly-owned European subsidiary, Daifuku Europe Ltd., based in the United Kingdom.