



MULTI-FUNCTION SORTING ADDS FLEXIBILITY FOR FASHION DC

When fashion retailer, Varner, invested in a new Distribution Centre (DC) the decision to multi-purpose the sorter provided the flexibility to ensure prompt stock replacement for 1550 shops throughout Scandinavia, Germany and Poland.

During the development process the main contractor, Swisslog, and BEUMER Group worked closely with Varner to analyse every logistical process before considering how their combined technologies could be used to achieve the highest efficiency. This also included helping to increase efficiency in areas which are not usually directly linked to the sorter.

One of the main advantages of the sorter-based system is its ability to respond to rapid changes in item profiles as well as to vary system capacity to reflect seasonal changes in demand. This also means that Varner will be prepared for any future expansion in capacity required to support the increased growth and sophistication of the e-commerce sector.

HIGHLIGHTS

- › Sorter configured to handle all inbound flow and distribution between the processes as well as outbound flow.
- › Using the sorter as backbone enables flexible and seamless distribution to and from all processes inside the overall system.
- › Process connections enable usage of the sorter several times per circulation with flexible and seamless distribution to and from all processes.

ONE SINGLE SYSTEM HANDLES EVERY LOGISTIC PROCESS



Taking a system-wide approach to warehousing and distribution has provided the Varner DC with the ability to link all of its logistical process with a single system.

The size and complexity of the Swedish-based DC meant that flexibility was the key to streamlining material flow. Using a BEUMER Group LS-4000CB high-speed, cross-belt sorter as the backbone, the sortation system was used to link all of Varner's core operational processes and to simultaneously sort multiple flow routes from in-feed through to despatch.

AUTOMATING THE PROCESS

The flexibility starts with the sorter's ability to accept loose-loaded cartons in containers, or palletised cartons. It is at this point in the material flow that a Warehouse Management System (WMS) label is automatically applied to each carton before it is inducted onto the sorter.

After induction, any carton can be routed to any area within the DC, allowing a single system to quickly and accurately handle different flow patterns simultaneously.

By using the sorter as backbone, Varner also has the option to re-circulate items to increase the overall system-elasticity. In addition the special discharges, with moveable side guards at the Order Release Module (ORM), enables extremely narrow lanes to minimise footprint.

INBOUND MATERIAL FLOWS

- › Inbound to palletising
- › Loose-loaded cartons arrive in containers to be sorted for batch-building via the Order Release Module (ORM) system. The Stock-Keeping Units (SKUs) are buffered "SKU-clean" in individual lanes. The ORM empties a single lane of cartons for packing onto pallets which are then taken to the high-bay pallet storage
- › Inbound to mini-load AS/RS
- › Excess cartons from any of the processes are routed to the mini-load Automated Storage and Retrieval System (AS/RS) to be used as replenishment stock.



OUTBOUND MATERIAL FLOWS

- › De-palletised cartons to shipping
- › Cartons which arrive on pallets from the AS/RS pallet storage are de-palletised and inducted onto the sorter for routing to the shipping chutes according to their destination
- › AutoStore to shipping
- › Cartons which are scheduled for next-day batch building go directly to the AutoStore®
- › Mini-load AS/RS to shipping
- › Mini-load cranes deliver to assembly lines that feed directly onto the sortation system
- › The seamless integration of the BEUMER Group sorter and the Swisslog SCADA provides precise control of individual machines in addition to system-wide visibility of work flows. This allows for continual optimisation of each process via a colour-coded graphical overview of the system.

OPTIMISED CONTROL

Optimised system availability, combined with low power consumption, low carbon dioxide emissions and low maintenance costs, all contribute to the overall efficiency of the sortation system.

For such a large and complex DC, system availability is crucial. The LS-4000CB sorter in the Varner DC is designed to deliver system availability of at 98% or more. It's built-in redundancy allows the distribution centre to continue to operate at almost full speed even in the event of a disabled cart, belt or induction unit.

In addition to ensuring high-speed, high-availability sorting, the LS-4000CB contributes to reducing Varner's overall costs by achieving the industry's lowest power consumption and ultra-low maintenance costs. This not only minimises Varner's carbon dioxide emissions but also reduces energy costs.



The automatic generation of maintenance reports, with full integration into the spares inventory system, further contributes to lowering the cost of ownership.

VARNER DISTRIBUTION CENTRE

The LS-4000CB sorter links different storage areas within Varner's 47,000 m² floor-space 50,000 m² site in Vänersborg, Sweden.

- › 30 m high bay warehouse with 7 Vectura stacker cranes for 48,000 pallet locations
- › Automatic palletisers and depalletisers in front of HBW
- › ProMove pallet conveyors
- › Miniload buffer storage with 22 Tornado miniload cranes for 330,000 dynamic carton locations
- › AutoStore with 80 robots and 60,000 bin locations
- › QuickMove light goods conveyors
- › BEUMER Group LS-4000CB cross-belt sorter
- › 18 telescopic conveyors for unloading/loading
- › Equipment for hanging garments.

