

## Box Order System

# Successful logistics concept for the fresh food and beverage area

- ▶ Cost-effective
- ▶ Flexible
- ▶ Efficient
- ▶ Shortest throughput times
- ▶ Ergonomic



# Successful Logistics Concept BOS



## Development Motivation

The expectations towards a working fresh food supply chain can be very different when looking at it from either an end customer's or an operator's perspective. It is important for the consumer that fruits, vegetables, dairy products, meat, and sausage products in the supermarket shelves are of the highest quality, requiring an extremely product-gentle logistics from the distribution centers. Moreover, food retailers demand logistics systems that are able to handle a wide range of different tote heights or carton sizes more flexibly with faster order cycle times, while stacking these totes in a store-friendly manner, and at the same time ensuring a high degree of ergonomics based on the requirements of temperature-controlled areas.

## What is BOS?

The Box Order System (BOS) is a WITRON development, which not only fulfills the high expectations in terms of product handling, but also sets new standards in the fresh food environment with regards to efficiency, throughput, and ergonomics. Based on its high flexibility, the solution can also be used for the handling of beverage crates. Many processes within the store-friendly picking of crate stacks and single crates correspond to those of the full tote handling in the fresh food environment. In addition, for this industry sector there are very few fully automated solutions with high cost-efficiency available on the market.

## Design and figures

The solution has a modular design. Every module consists of one replenishment crane and four picking cranes – the so-called Box Picking Machines (BPM). After the receiving process, the single-item tote box stacks are separated from the receiving pallet and then directly stored into the pick front through the replenishment cranes. The special feature: The store-friendly tote picking is done highly dynamically by means of the newly developed BPM crane ensuring a single tote handling. The BPM was designed in a way that its light-weight telescopic fork doesn't lift, but embraces the totes or stacks. The advantage: Not only single crates, but also a number of load carriers adapted to the customer order – that means full tote stacks, partial stacks, or single crates – can be removed in a fully flexible manner from the rack. During the transportation to the next pick position, they are directly consolidated to store-friendly units without errors using the stacker crane. Finally, the built dispatch units are automatically palletized, stretch-wrapped, and provided for dispatch as double-decker pallets just before shipment.

## Customer Benefits System Benefits

### Cost-Effective:

- ▶ fully-automated storage and picking in one system – without the use of personnel
- ▶ footprint savings by utilizing the height
- ▶ product-gentle goods handling and maximum pick quality
- ▶ error-free, store-friendly order picking
- ▶ significant savings with regards to steel construction based on an innovative crane technology developed by WITRON's subsidiary FAS

### Flexible:

- ▶ as the system can be used in different industry sectors such as fresh food and beverage crate logistics
- ▶ handling of different totes/tote stacks and cardboard boxes, beverage crates/ beverage crate stacks of different sizes and heights within **one** integrated system (600 x 400 or 300 x 400 mm)
- ▶ optimized order consolidation through the handling of fresh products and non-stock items in one system – especially for a joint shipping of both dispatch units on one trailer

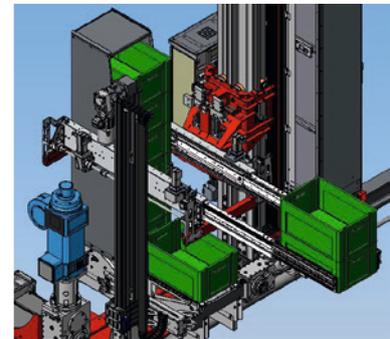
### Efficient:

- ▶ shortest throughput times based on a single picking process
- ▶ store-friendly order picking of 1 to N totes per order line at the same time
- ▶ 2 dispatch tote stacks are completed per pick tour
- ▶ separation of storage, order picking, and palletizing
- ▶ high storage capacity through the use of pallet cranes with four/eight stacks at the same time
- ▶ use of multi-functional cranes, able to pick and stack
- ▶ high pick efficiency through stacking during transportation to the next pick position
- ▶ use of standard components and practically proven technology after the storage process. The replenishment cranes can be fully used for relocating goods between the picking areas (optimization of the daily output for non-stock systems)

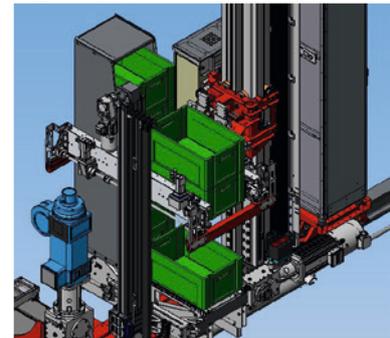
### Ergonomic:

- ▶ no lifting and carrying of heavy fresh food totes or beverage crates
- ▶ no need to stay permanently in temperature-controlled areas (+2 degrees / +4 degrees)
- ▶ independent of tote weights

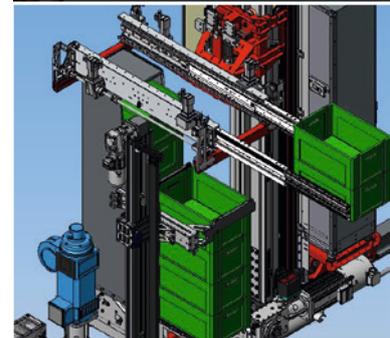
### Box Picking Machine (BPM)



WITRON's new development:  
Box Picking Machine (BPM).



Several totes will be consolidated  
in a store-friendly manner during  
transportation already.



Efficient order picking output with low  
level of mechanization.



Same use for beverage crate  
picking.



**WITRON Logistik-Hof**

WITRON Logistik + Informatik GmbH designs and implements innovative logistics and material flow systems with leading-edge ergonomic workstations and processes that generate sustainable competitive advantages for their customers.

WITRON has the decisive key elements of a project under one roof: logistics design, information and control technology, mechanics design and production, as well as functional responsibility as general contractor for logistics.

Numerous market-leading enterprises from trade and industry throughout Europe and North America have been using WITRON's solutions in their distribution centers for many years.

The company currently employs 5,100 staff members (2021). Please do not hesitate to contact us in case of any questions.

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**BOS Material Flow**

