



**WHITE PAPER**

# BEVERAGES

How to neatly automate large batches,  
wide product ranges and complex  
material flows







# BEVERAGES: THE EVOLVING MARKET

A drinks crate's journey from the manufacturer to the consumer is becoming more and more complex. Customers enjoy variety, and they like mixing. In a restaurant, they want a long drinks menu offering plenty of choice. Mixed crates instead of single-product, variety for small households instead of brand loyalty: a summer beer, an on-trend mixed or soft drink, a fine wine or a healthy selection of juices. People with varying tastes all want new flavors, even from their favorite brands.

All this presents tough challenges for automated logistics systems. They still have to handle large batches, but now also produce and store an immense product variety; slot new production lines into space-saving compact stores intelligently; and put manufacturers' own long-selling thirst quenchers and third-party articles together on the same pallet. And deliver on time, of course.

Stephan Bruns, Sales Director with Westfalia Technologies, explains how the intra-logistics specialist relies on time-tested values, viable concepts and cutting-edge components for normal temperature, cold and cold storage warehouse systems with a tried-and-tested key technology to position food manufacturers for future growth and success.

Every year, consumers in Germany spend around 22 billion euros on non-alcoholic beverages – such as mineral water, fruit juices and other soft drinks. And they spend around 25 billion euros on alcohol (source: Statista.com). But while Germany's per-capita spend on non-alcoholic drinks is stable and sales of alcohol are showing a slight downward turn, consumer expectations are rising. Over the past few decades, the number of different products has expanded considerably, bringing with it a great variety of product lines, bottle shapes and packaging.

Consumers now enjoy an ever-changing market scene that includes flavored beers and exotic beverages, and they would like to have them all at their local retail outlet. So at B2B level, retailers, bar owners and drinks manufacturers have similarly tough requirements. Nowadays beverage producers sell their own products custom-palletized with widely diverse third-party products and ranges. This greatly increases the pressure on warehouse logistics, and their complexity.

# INTRALOGISTICS FOR BOTTLING LINES



## ARE YOUR PRODUCTION LINES READY TO FACE THESE CHALLENGES?

Empty bottles have to be fed in to new bottling lines, the filled bottles need storing ready for speedy distribution. In manual warehouses, numerous industrial trucks battle to cope with this high-frequency, complex materials flow. This traffic takes up a lot of space, and goods have to cover long distances. There is a heightened risk of human error, negative incidents, logjams and delays. If a company grows, its requirements with regard to staff, warehousing area, industrial trucks and sufficient transport routes grow with it. And the risk of accidents can also grow.



## AUTOMATED TRANSPORT OF EMPTY AND FILLED BOTTLES

- > The great complexity of warehouse operation can be automated either partially or entirely. The system is future-proof – it can be expanded step by step, and adjusted to meet changing conditions.
- > Multiple bottling lines can be integrated seamlessly, including on multiple floors.
- > Multiple load units and high loads can be bundled for transport.



- > Consistently high performance for maximum throughput: Precisely timed feeds to multiple bottling lines (disposable bottles, reusable bottles, kegs, and so on). Filled bottles synchronously transported to the warehouse and the shipment zone along central conveyor lines.
- > Efficient, economic and energy-saving through optimal utilization of conveyor technology such as a transfer car which intelligently combines supply and storage to accelerate intralogistics and avoid empty runs.
- > Compact: The small amount of routes and the narrow layout provide additional capacities for intermediate storage on a minimum of space. Free space is used for buffer storage, e.g., for quick delivery of empty containers to bottling lines.
- > Automated processes accelerate intralogistics, minimize the risk of errors and reduce forklift traffic. Even if bottling and warehousing frequencies increase, no extra staff are needed.
- > Reducing bottling throughput times and increasing weekly bottling capacities around the clock, without extra staff.
- > Minimized risk of accidents for staff due to reduced industrial truck traffic.



# INCOMING GOODS



## THE INFEEED STATIONS OF THE AUTOMATED WAREHOUSE SYSTEM

- > Fast, multi-lane infeeding: Feed in a great variety of load units along several incoming goods lines, log them, inspect them, and send them, directly via a conveyor loop, to their correct destination: bottling line, order picking, shipment zone, buffer zone, empty pallet store, or high-bay warehouse.



## IS YOUR INCOMING GOODS ZONE FACING THESE CHALLENGES?

The incoming goods zone is a major hub. They all arrive here: not only empty bottles, third-party products and filled bottles for order picking, but also returned goods. Cans, disposable and reusable bottles, kegs, packaging materials, commercial goods and breweries' promotional items also have to be brought in, as do empty pallets. Euro bottles, long-necked bottles, stoneware bottles, Vichy bottles, clip-top bottles and non-standard designs in batches of all different sizes have to pass through the "bottleneck" of the incoming goods department and correctly logged.

- > Dedicated storage lanes: The allocation and number of these is tailored to company requirements in terms of the storage capacity needed, the amount of empty bottle pallets, third-party goods, packaging materials, promotional articles, filled bottles for order picking, and so on.
- > Customized process-optimized infeed station: Adapted to customer-specific requirements and infeed processes as a seamless interface for manual or automated industrial trucks.
- > Stable, error-free system: Scanners, plus weight and shape checks, ensure that the load units are facing the right way and are suitable for each particular destination. Incorrectly presented or faulty load units are removed, ensuring there are no negative effects on the stable system.
- > Intuitive logging via local manual panel: The identification point provides all the information needed on each load unit. It can be operated manually, so every container and every barcodeless empty pallet can be assigned.

# WAREHOUSE



## IS YOUR WAREHOUSE READY TO FACE THESE CHALLENGES?

Is your entire range of empty and filled containers, full pallets, picked pallets, kegs, bottles, cans, third-party goods readily accessible for the next truck shipments? The wider the range of products demanded by the market, and the hotter the summer, the higher too are warehouse throughput and the requirements for smooth, speedy distribution. With industrial trucks, the vertical space available for storage and the depth of access are limited. So warehousing expands across more ground, but that is expensive, and often constrained by the size of the site.



## THE AUTOMATED HIGH-BAY WAREHOUSE

- > Designed for varying load unit formats, varying load carriers, and palletless storage of high loads.
- > Handling that's particularly gentle to materials: Mechanically guided load handling devices carry the goods along rails into multi-deep channels.
- > High storage density and capacity: As a rule, the FIFO storage





principle (first in first out) is not applicable to large beverage batches. So they are ideal for deep storage channels, which provide high storage density for maximum capacity on minimum floorspace.

- > Storage heights of over 40 meters are possible.
- > Bundled, synchronous and automated intralogistics: automated storage, intermediate storage and retrieval, order picking and dispatch of in-house and third-party products in one warehouse. Synchronized storage and preparation of trucks for transport – including overnight. The system can also be supplemented with automated truck loading and unloading systems on request.
- > Strengthening the supply chain and bundling logistics: Automated high-bay warehouses bundle the logistics in centralized locations. They create synergies for supply chains and stabilize them as raw materials warehouses, intermediate storage facilities or product warehouses.
- > Reducing the risk of accidents and susceptibility to errors: The material flow on factory premises and shipping logistics become more efficient, and the risk of accidents and susceptibility to errors of intralogistics processes is significantly reduced.
- > Relieve staff, increase customer satisfaction: Safer, more intuitive processes reduce stress for employees. The number of complaints and returns goes down and customer satisfaction increases. This also benefits your sustainability goals.
- > Save space and energy, increase capacities: Storing enormous quantities in a compact and thus sustainable way means saving space and energy in existing buildings or a self-supporting silo design without the need for additional halls. The system makes the optimum use of sites and existing warehouse buildings of all types and sizes.
- > Bundle warehouse management and material flow control in an all-in-one logistics software solution: A powerful warehouse execution system such as Westfalia's Savanna.NET® controls and analyzes all processes. It can be integrated flexibly, operated intuitively and scaled according to the scope of requirements.

# ORDER PICKING



## IS YOUR ORDER PICKING READY TO FACE THESE CHALLENGES?

Complete pallets are the backbone of any well-stocked drinks retailer. But B2B customers and consumers alike want a large selection. The result: parallel, variable batches and storage of a wide variety of products, from a six-pack of spritzer for a single household to a stock of kegs for a summer festival. Since B2B relies on direct sourcing and central supplies, drinks manufacturers are offering an ever-growing diversity of products plus ready-to-sell pallets that combine their own and third-party products, both at short notice and on provision. This makes smooth order picking the focus of warehouse logistics.





## DYNAMIC SEMI-AUTOMATED ORDER PICKING

- > Provide bestsellers automatically: Frequently ordered full pallets are set apart for the shipping zone by the warehouse management software while still in the warehouse.
- > Automated replenishment for order picking: If required, available full pallets are automatically transported from the picking area using conveyor technology.
- > Automated replenishment of picking lanes: High amount of picking lanes for “person-to-goods” picking. Empty lanes are automatically replenished and picked goods are transported to the warehouse or shipping zone.
- > Relieve staff and avoid errors: Process automation and “person-to-goods” order picking relieve staff and reduce picking, storage and distribution errors through software-controlled automated checks.
- > More effective processes thanks to lane efficiency: Conveyor technology combines replenishment for order picking with transport to the warehouse and shipping zone. This saves time and energy.



## **TAILORED TO THE EVOLVING BEVERAGES INDUSTRY**

When the first fully automated warehouse system went into operation at the Herford Brewery in 1979, the challenges were clearly defined: A small number of articles, very large batches and loads. Those were the starting conditions under which compact, multi-deep warehousing proved what it can do, and became an established system. The conditions were what drove the innovations behind a technology patented in 1983, the Satellite® load handling device.

It is still proving what it can do today. Because behind all the market developments that have happened in between – like high bottling frequency, product diversity, order picking and the handling of widely varying empty containers and third-party products – the old challenges remain: how to warehouse drinks crates weighing tonnes in a bundled, compact form that saves space and energy, and do it efficiently to ensure fast, error-free distribution. An example: the satellite® technology meets the needs of high bottling performance by means of long buffer lines, plus double and triple transport of load units on the load handling device.

Complex warehouse system layouts, modern conveyor and storage technology, PLC control and up-to-date logistics software complement the established, high-performing satellite® technology, producing fully automated storage and logistics systems that are ready for new challenges.

# Conclusion

## WAREHOUSE LOGISTICS FROM A SINGLE SOURCE

We design and build independent storage systems that can be integrated into existing systems and are easy to expand. This way, the storage systems can be adapted to the market developments. None of our warehouses is off-the-shelf; we analyze the actual situation individually for each customer. We are committed to providing transparent quotations without any hidden costs. In addition, we strive to provide our customers with on-time delivery and turnkey storage systems with long-term benefits.

We can replicate every materials flow using our warehouse management software. Thanks to our in-house manufacturing of storage and retrieval machines and PLC control systems as well as a strong network of suppliers, we offer on-time delivery of the most modern technologies for the entire scope of intralogistics. For the required IT infrastructure, we leverage TERRA products supplied by WORTMANN AG corporate group of which we are a member. As a general contractor, we manage your project from initial consultation to acceptance and sustainable customer service.

We were the first manufacturer to develop the key technology for the multi-deep, high-density storage of large sizes and loads for different load carriers – the Satellite® storage system. Use these advantages to raise the capacity and flexibility of your beverage production to a new level.

Would you like to learn more? I look forward to your enquiries and will be happy to advise you.

Stephan Bruns



### STEPHAN BRUNS

The graduate mechanical engineer joined Westfalia in 2017 and has been at home in the intralogistics industry for more than 30 years. As Sales Director Technologies & Systems he is responsible for new systems in the area of supply chain automation.

## OUR VALUES

### **ALL FROM A SINGLE SOURCE**

Logistics planning, mechanical engineering, control systems, software development, installation, and project funding

### **QUALITY MADE IN GERMANY**

All manufactured centrally at the corporate headquarters in Borgholzhausen with our own test center for key units

### **EXPERTISE & FLEXIBILITY**

Consulting, conceptualization, customer solutions made to measure

### **HONESTY & FAIRNESS**

Transparent pricing, fair price-performance ratio

### **CUSTOMER PROXIMITY & AUTHENTICITY**

Flat hierarchies; experts available at every project stage

### **SPEED & COMMITMENT**

Local service centers; customers always supported by the same personal contacts

### **SECURITY & RELIABILITY**

Dedicated and experienced employees ensure investment security and product functionality

### **RESPONSIBILITY**

Job security in Germany, environmental awareness, and social commitment

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