

**Beverage & Food**  
**SPENDRUPS**  
**Grängesberg, Sweden****Company**

Spendrups Bryggeri AB is a family-owned Swedish brewery, established in 1897. Today, it is one of the leading breweries in Sweden. In addition to their own-branded beverages, the company is also authorized distributor for a large number of beverages from other brands, such as beers, cider, soft drinks, fruit juices, wine, liqueurs and coffee. Among these strong brands we can mention: Norrlands Guld, Mariestads, Heineken, Loka, Schweppes, El Coto, Gallo and Bergstrands Coffee. Spendrups is actually one of the leading suppliers to Systembolaget, the sole chain of stores authorized to sell alcoholic beverages in Sweden.

**The task**

The warehouse designed by System Logistics is located in Grängesberg, in the North of Sweden, in the largest of the 4 Spendrups' Swedish plants. Spendrups' need was to combine the storage, order preparation and product distribution phases so that they could be shared for processing both their own brand products and the subcontracted ones. Several challenges have been faced to develop a solution: coordinate and manage storage, order preparation and shipment of a high flow of goods featuring several different brands; satisfy the various specific requirements previously agreed with the different types of customers relating to order and shipment

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processing; ensure reduced processing and reaction timeframes of the logistic system; obtain economic benefits compared to the existing organization, at the same time balancing the investment costs with the operating costs; ensure working conditions comparable to the best Northern European standards; design and implement an effective link with the new area hosting the logistic site of Grängesberg, as a high traffic public road and a railway separate it from the production site in the existing factory; organize the start-up of the new site without affecting the normal logistic activity.

### The solution and the results achieved

The automated vertical warehouse designed for Spendrups features 45,000 pallet slots and is capable of simultaneously handling 300 pallets per hour coming from the factory production linked via the bridge, 50 pallets per hour from the external production warehouses and 400 pallets per hour to the shipment stations, which include 55% of mixed pallets prepared for picking.

The SKUs (loading units) handled by the system are 800x1200 wood and plastic Europallets and 800x600 half-size pallets. The storage section consists of a single-depth self-supporting shelving, where twelve 36 metre high, bi-pallet, two-column stacker cranes slide along a 130 metre long aisle. Each stacker crane carries two pallets at a time.

Next to the HBW, in a 7.800 sqm area, man-to-goods picking is performed. Class A references (very fast moving), are handled on gravity roller conveyors in fixed picking bays (each dedicated to a single reference code), and are fed by rectilinear shuttles with ARP system (Automatically Replenished Picking) from the HBW. Slow or very slow moving references (Class B and C) are deposited to a manual shelving warehouse, which follows the traditional concept of stock lowering.

In this second case, refilling is manually managed by the operator starting from the pallet sent by the HBW to replenish stocks. Each picking operator executes the order given by the management system using radio-frequency controlled terminals, following optimized routes through the manual picking area.

The completed mixed pallets are brought back by the operators via mechanically-operated bays., they are read by the system, then wrapped and labelled and finally delivered to the HBW. This is actually the meeting point for all the pallets belonging to the same shipment (full and mixed pallets).

The shipping system follows the just in time criterion: all the products are kept in the warehouse and are retrieved only when the truck is in position at the loading platform. The bay is used as a dynamic buffer which progressively retrieves the pallets from the HBW, so as not to occupy the shipment areas when not necessary, in the event that, for example, the truck is late. This way, the total surface of the loading platform is as small as necessary and truck loading efficiency is maximized.

### HBW TECHNICAL SPECIFICATIONS

**Height:** 36 m

**Length:** 130 m

**Stacking cranes:** 12

**SKUS:** Europallet 800x1200 and 800x600

**Pallet slots:** 45.000

**Maximum load capacity:** 1.000 kg/SKU

**SVL:** 11

**AGV:** 24

**Flows:** 450 incoming pallets/hour,  
450 outgoing pallets/hour