



Technology at the highest levels for a perfectly organised warehouse: Benetton chooses System Logistics

The company

Established in 1965 at Ponzano Veneto (province of Treviso), Benetton has a history imbued with excellent analytical capacities, revolutionary thinking, and technological updating, starting from the ingenious idea of bringing the customer close to the merchandise. This far-sighted vision led to the need to deliver products extremely rapidly to the retail outlets, which do not have stockrooms for the merchandise and therefore products must be reassorted according to the sales levels. In 1984 Benetton created a highly competitive logistic system able to store large quantities of orders and distribute them directly, in extremely short times, to some 6000 retail outlets in more than 120 countries worldwide.

After ten years, production increases underscored the critical nature of the existing systems and a constructive collaboration began between Benlog (the logistics company of Benetton Group) and System Logistics with the aim to increase handling capacity, reduce vehicle loading times, and subdivide the merchandise by the single retail outlets at the moment of shipping.

The task

The purpose of the redesign of the automated warehouse in Castrette (Treviso) was to optimise the existing volumes, increasing the storage capacity and handling flexibility, and managing large and small LUs in a continuous cycle. System Logistics provided new shelving units and new high performance stacker cranes, with drives and motorisations with integrated energy recovery, positioning and control systems, optical encoders and closed loop axis management, radio-frequency and infrared communication systems, handling of four or two packs simultaneously.

To eliminate downtime, the number of loading bays was reduced to six, a fast conveyor system (sorter) was designed to connect all the existing warehouses to each bay (5000 packs/hour speed). New conveyor systems between the order preparation departments and the new warehouses were designed and connected to the LUs coming from abroad, crowned by hardware and software to manage all communication in real time. Personalised programmes at the control level exclude the possibility of any type of shipping error.

The solution and the result

The storage of the LUs is carried out in areas historically distinguished A-B-C-D-E. Stacker cranes operating in each of these sectors are able to pick up and deposit boxes in their shelves with dimensions of 160 m long and 20 m high. The width of the aisles is reduced to enable excellent space saving along with a considerable specific capacity. The storage is personalised according to the size of the LU and this makes it possible to maximise the volumes used. The big boxes are stored vertically to preserve the quality of the hanging garments. Each pack is a customer order personalised by a barcode identification label, and its handling data are continuously stored by a sophisticated control system that guarantee its traceability. The storage incoming and outgoing areas are on various levels of height and guarantee an hourly handling capacity of 5000 packs.

The warehouse has a total capacity of 750,000 LUs including small and big boxes; each pack can be picked in less than one minute. Each loading bay can work on two different vehi-



cles in order to maximise operator efficiency, eliminating the downtime for single vehicles loading and departing, opening the tailboards and preparing the loading area. Loading is carried out taking into consideration all the trips to be made and their composition, thus guaranteeing the possibility of LIFO loading (last-in / first-out) to facilitate the subsequent distribution of the orders during the unloading operations at the premises of the final customer. The automation of the logistic processes achieved the objective of complete integration of the production cycle, from the customer order to packing and shipping, providing a notable improvement of distribution efficiency, with the capacity to ship over two million garments a day.

TECHNICAL DATA

Incoming Area

Capacity 4500 LU/hour

- 2 Automatic conveyor systems for small and big boxes, length 1400 m in tunnel.
- 3 Entrances to the lines from the yards

Box warehouse

- LU: Cardboard boxes from 0.5 to 40 kg. dimensions: 600x400 x h from 100 to 500 mm
- 32 Stacker cranes with 4 box capacity h=20m
- 32 Incoming bays
- 32 Outgoing bays
- Handling capacity:
4500 LU incoming/hour
4500 LU outgoing/hour

Big box warehouse

- LU: Cardboard boxes from 0.5 to 40 kg. dimensions: 600x400xh from 500 to 1650 mm
- 14 Stacker cranes with 2 box capacity h=20m
- 14 Incoming bays
- 14 Outgoing bays
- Handling capacity:
1200 LU incoming/hour
1200 LU outgoing/hour

Shipping Area

- Capacity: 5400 LU/hour
- 20 Automatic printing and labelling systems
- 10 Infeeds to the sorter
- 1 Plate sorting system
- Capacity 5400 LU/hour
- 6 Vehicle loading bays with capacity
900 packs/hour each