

Wilhelm Brandenburg, Frankfurt (Germany)

Retrofit in cold storage



With a multi-stage retrofit project, Körber is bringing Wilhelm Brandenburg's intralogistics up to the current state of the art. An efficient modernization solution was implemented, under the restrictive conditions of hygiene and cooling regulations for temperature-controlled fresh produce logistics, as well as tight time frames for implementation during ongoing production

Customer requirements

When it came to modernizing the system in the largest production and distribution warehouse of the company Wilhelm Brandenburg, one of Germany's leading meat processing companies, the aims were improving storage availability, reducing personnel costs and significant increases in throughput. As the main contractor, Körber modernized the entire conveyor system and the control technology, in an extensive retrofit project under difficult circumstances and in accordance with the regulations concerning fresh food logistics. Divided into four sub-projects

over a period of one year, initially a six-aisle, automatic buffer store with 7,500 tote storing positions was integrated into the existing conveyor system to the production department, working only at weekends.

Subsequently, automation of the incoming goods at the meat plant, and delivery and installation of a storage and retrieval machine (SRM) for an existing, single-aisle flow rack was carried out. To finish, in the fourth sub-project, Körber brought the control technology of the existing storage and handling equipment up to the current state of the art.



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Special features / benefits

The basic warehouse requirements for food refrigeration at approximately +2°C, and the special conditions of hygiene standards for transporting and unpacking of meat, had to be observed.

The automatic layer depalletizer improves performance in incoming goods to a throughput of up to 1,000 containers per hour, and is thus already well prepared for future growth forecasts. With the new plant control system, the availability of equipment and spare parts is guaranteed in the long term.

Solution

All stages in the modernization in the Frankfurt plant had to be carried out in compliance with the hygiene and refrigeration regulations, as well as with appropriate materials. So the equipment – from the materials handling system to the SRM – was made of easy-to-clean, low-maintenance stainless steel components, or coated accordingly. With the subsequent conversion of the obsolete control system to modern S7 PLC technology, the efficiency and effectiveness of the system components could be significantly increased for the entire materials handling system, including about two kilometers of

conveyor, 23 storage and retrieval machines in the various storage areas of the meat plant, the entire picking area and four automatic roll container loaders.

Integrated components

By integrating robot depalletizing in the incoming goods area, a working process was automated which had previously been a very strenuous task for the employees. Now, at the unloading station, a robot arm transfers the goods to the conveyor connection installed by Körber. Empty pallets are removed to a separate pallet warehouse and stacked there. In line with the strict hygiene requirements, the storage and retrieval machine was manufactured entirely in a stainless steel version. With up to 380 individual cycles per hour it provides optimized replenishment of the roughly 1,400 warehouse storing positions.

The use of a toothed-belt drive for the lifting unit ensures low-maintenance, quiet operation. The same applies to the servo drives of the carriage, which ensure a smooth start, high speed and precise positioning. A modular plastic chain belt is used as load handling device for the totes weighing up to 30 kg.





Facts and figures

Industry

Food

General contractor scope of delivery

- Planning
- Tote conveyor
- Depalletizing
- Empty pallet storing
- SRMs
- Warehouse management system
- Visualization
- Hotline-service contract

Modernization

24,350 tote storing positions

Control system of 4 existing storage areas

23 SRMs

Storage and retrieval machine (new)

1 unit made of stainless steel

Flow rack (new)

1,400 tote storing positions

Storage and retrieval machine (new)

1 unit made of stainless steel

Load handling equipment

Plastic chain belt

Control system

- New S7 controllers for a total of 23 SRMs,
- Four roll container loaders
- Picking area and conveyor technology
- Setting up an interface to the host computer

Tote conveyor system

Just under two kilometers of conveyor system

Incoming goods automation

layer depalletizer with robot technology

Körber Supply Chain Automation

Our impartial consultants will advise on, and help you select, the right automation solution for your organization. We have our own range of competitive products, but we are equally willing to procure and implement other products if they are better suited to your needs.

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