



Modern central warehouse for Keller & Kalmbach GmbH, Hilpoltstein.

Increased storage and order-picking capacity with a high degree of automation.

**JUNGHEINRICH**

Project:

Keller & Kalmbach GmbH, Hilpoltstein, Germany

Industry:

Connecting elements and fastening technology

Task:

Construction and expansion of the central warehouse with a high degree of automation

Project duration:

Phase 1: 2008 – 2009

Phase 2: 2014 – 2016

Services:

Construction phase 1:

- Automated high-bay warehouse (HBW) for 35,000 pallet positions
- Automated small parts warehouse (ASW) for 160,000 cartons
- ASW for 8,000 trays
- 1,000 m conveyor technology
- Jungheinrich Warehouse Management System (WMS)

Construction phase 2:

- Expansion of the HBW by 37,000 pallet positions
- Expansion of the ASW by 137,000 cartons
- Expansion of the ASW by 15,000 trays
- Doubling of the conveyor technology capacity and order-picking capacity including palletising robots

Most important results:

- Increase in volume of goods as well as total capacity
- Maximised order-picking performance
- More flexibility for short-term orders
- More efficient processes and ergonomic design of the picking workstations

Leading service provider for C parts management

Keller & Kalmbach was founded in 1878 in Munich as a wholesaler for screws and blacksmithing supplies and is now one of the leading service providers for C parts management. With around 800 employees, the company generated EUR 270 million in sales in 2016. That is almost twice as much as in 2009, when the first construction phase of the new central warehouse in Hilpoltstein was finalised under Jungheinrich project management.

Expansion and rationalisation investment

The company's strong focus on C parts management for industrial customers demanded special requirements of the intralogistics processes in the warehouse for goods to be delivered to customers at the right time, to the right place and in the right quantity. This resulted in larger storage volumes and an increased diversity of items, which meant that storage space became increasingly scarce. Consequently, in 2008, the management decided to build a new central warehouse and, following continued growth, to extend it in 2014.

Jungheinrich – everything from a single source

When the contract was awarded, it was important that the service provider was able to supply everything from a single source and offered a special after sales service. During both the construction and extension of the warehouse, it was clear that Jungheinrich as a partner offered the required know-how. As an expert in intralogistics, Jungheinrich was responsible for the planning, development and implementation of the entire intralogistics system in both phases of construction.

The requirement

High degree of complexity in the planning and assembly

For some time, the former central warehouse in Unterschleißheim near Munich, with its 9,000 pallet locations and around 60,000 storage locations for small parts containers, had been unable to meet the needs of Keller & Kalmbach. An expansion at this location was not possible, but the growing demand for warehouse capacity could no longer be absorbed by the smaller branch warehouses in southern Germany. In order to cope with the growth, in terms of both quality and quantity, it was necessary to build a new, modern distribution centre.

In view of the continuing growth of the company's activities, the central warehouse had to be enlarged after five years, without affecting its operation. The extension of the conveyor technology during ongoing operation was very complex, in terms of both planning and assembly. New conveyor systems and two pallet lifts had to be installed in the confined space of the existing warehouse. The construction and test phase required very precise coordination. On the one hand, any negative impact on the three-shift operation had to be avoided at all times and, on the other hand, it was absolutely necessary to meet all deadlines. Despite all this, it was still possible to commission parts of the new warehouse while expansion work was still in progress.

The solution

New central warehouse for flexible use, even with changes to the business

In the first phase of construction, the central warehouse was divided into four areas. These were a high-bay warehouse (HBW), an automated small part warehouse (ASW) for cartons, an ASW for trays and a warehouse for bulky goods. The warehouse areas were configured in such a way that it would be possible to respond to future developments with an option to extend. The Jungheinrich WMS controls these areas as well as the complex order-picking processes. The order-picking system works according to the 'goods to operator' principle. Here, the corresponding conveyor system runs from the HBW and the two ASW on several levels. Thus, a high degree of flexibility is achieved by the manual removal and decentralised transfer with the goods and containers being supplied automatically. One special feature was the ergonomic design of the workstations.

In the second phase of construction, the HBW was extended by a total of five aisles. The expansion of the ASW for cartons

by an additional six aisles followed in early 2016. Consequently, the overall materials handling capacity and thus the order-picking output was doubled. This area's concept was especially adapted to business demands of industrial customers. Using eight ergonomic workstations, ordered items are still picked according to the 'goods to operator' principle. Software then calculates the layer formation for the palletising robots and transmits to the Jungheinrich WMS the sequence in which the containers are to be retrieved from a commissioner. The palletising robot ensures flexible order picking, which is able to handle even major orders with little notice and without any problems. In addition, thanks to the robot, employees no longer have to lift containers, some weighing up to 20 kg.

Customer statement

Smooth flow guaranteed by trustworthy cooperation

As early as 2009, Dr Ingomar Schubert, Head of Supply Chain Management at Keller & Kalmbach, pointed out that the new central warehouse ensured flexible use even in the event of changes to the business. "In 2014, we needed a relatively large increase in warehouse capacity relatively quickly," Schubert recalls. Regarding the resulting expansion of the central warehouse as well as its sheer scale, Schubert is also impressed by the complexity of the overall system backed by computing and database processes. "The step-by-step commissioning was not originally planned that way. But it enabled us to use the warehouse area even prior to complete commissioning. We were impressed by the trusting collaboration with Jungheinrich over the entire period. We remained on schedule and even below the originally proposed budget. We would be happy to work with Jungheinrich again on any future expansion," praises Schubert.



Dr Ingomar Schubert, Head of Supply Chain Management, Keller & Kalmbach GmbH, Hilpoltstein.

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