Project:
Keller & Kalmbach GmbH, Hilpoltstein, Germany

Industry:
Connecting elements and fastening technology

Task:
Construction and expansion of the central warehouse with high degree of automation

Project duration:
Phase 1: 2008–2009

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 palletizing robots

Most important results:
- Increase in volume of goods as well as total capacity
- Maximized 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 finalized under Jungheinrich project management.

Expansion and rationalization 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 Unter-
schleißheim 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
center.

In view of the continuing growth of the company’s activities,
the central warehouse had to be enlarged after five years, with-
out affecting its operation. The extension of the conveyor tech-
nology 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 exist-
ing 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 any time and, on
the other hand, it was absolutely necessary to meet all dead-
lines. 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 chang-
es 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 car-
tons, 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 decentralized
transfer with the goods and containers being supplied auto-
matically. 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-pick-
ing 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 palletizing robots and
transmits to the Jungheinrich WMS the sequence in which
the containers are to be retrieved from a commissioner. The
palletizing 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 relatively
increased warehouse capacity relatively quickly,” Schubert
recalls. Regarding the resulting expansion of the central ware-
house 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.

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