



On the fast lane with automated intralogistics

Fast reaction times due to shorter product life cycles as well as a variety of small-batch sizes are permanently changing the demands on the manufacturing industry. To meet the market's high demands for flexibility, efficiency and speed you need modular systems and intelligent automation processes. At the chassis manufacturer KW automotive in Fichtenberg (Germany), we implemented a complete intralogistics solution including automated warehouses, modern conveyor technology, as well as a so-called pick-to-light system (PTL) in the "built-to-order" production. All this had to be integrated into a flexible production structure and be networked with each other. Together with the GEBHARDT Intralogistics Group, KW automotive has successfully implemented this.

KW automotive is a suspension manufacturer with a focus on the development and production of coilovers and motorsport dampers. In over 25 years, the family-owned company has developed from a three-person operation into a global player with a total of six foreign subsidiaries. As a development partner for sophisticated controlled suspension systems, the company has a broad product portfolio of hydraulics, electronics, sensor technology, control units and damper controls as well as the necessary know-how for the application and tuning of complex driving dynamics controls from a single source. In addition, the business of original equipment for special models, super and customer sports programmes of the automotive industry is developing extremely positively.

The suspension manufacturer founded by Klaus Wohlfarth is an important partner for the aftermarket and the automotive industry. At their German headquarters, KW automotive employs 350 people and the total production and floor space have grown to approximately 45,000 square metres in the years 2017 to 2020.





OBJECTIVE

- Automated processes from goods receipt to shipping
- Efficient warehouse management
- Optimal material flow between production, assembly and dispatch



SOLUTION

- Three-aisle One-Level-Shuttle warehouse as Roaming+ concept with a total of 15 StoreBiter® OLS
- Single-aisle automatic pallet high-bay warehouse with one GEBHARDT Cheetah® heavy and one StoreBiter® OPS
- Single-aisle automatic small parts warehouse with one GEBHARDT StoreBiter® Multi-Level-Shuttle
- Three-aisle automatic small parts warehouse with a total of three storage and retrieval machines type 716
- GEBHARDT StoreWare
- 1,156 m of installed conveyor technology (60 m of which pallet conveyor technology)



RESULT

- High-performance storage systems
- High operational reliability, high throughput times, standardised processes
- Intralogistics 4.0 with Predictive Maintenance and Condition Monitoring



BRIEF PORTRAIT

- Suspension manufacturer
- Focus on development & production of coilovers and motorsport dampers
- 350 employees throughout Germany
- Six international subsidiaries

This growth and the desire for faster response and delivery times as well as functioning logistics chains required a state-of-the-art, flexible and scalable intralogistics solution. In addition, the goal was to best coordinate the entire warehouse management with its various warehouses, orders and picking systems to realise an optimal, cost-efficient and transparent process. "KW stands for quality and innovation. As racing enthusiasts, we always set ourselves ambitious goals, and this project was no exception," explains Klaus Wohlfarth, founder, managing director and partner of KW automotive. "In the end, GEBHARDT was the only supplier willing to tackle these demanding and ambitious goals."

Details of the solution

The entire logistics process and warehousing in the plant is divided into the automatic small parts warehouse, for production supply this is achieved by using StoreBiter® One-Level-Shuttles (OLS), the automatic pallet high-bay warehouse, the StoreBiter® Multi-Level-Shuttle Warehouse (MLS) as an order buffer warehouse and an automatic small parts warehouse with a storage and retrieval machine for dispatch including connecting conveyor technology and corresponding workstations. The GEBHARDT StoreWare takes over the warehouse management and the control of all material flows.

The path through the storage system

Goods receiving is still a manual process. After the goods have been accepted and the items have been prioritised, they are made available to the various automatic storage systems for storage.



1 | The StoreWare provides information quickly and is user-friendly and intuitive at the same time. An aspect that is increasingly demanded in times of Industry 4.0.



2 | The three-aisle GEBHARDT StoreBiter® One-Level-Shuttle (OLS) warehouse, realised as a Roaming+ concept with a total of 15 OLS, achieves 630 double cycles per hour.

The automatic small parts warehouse is primarily used to supply the assembly department. It is designed as a shuttle warehouse and has a total capacity of 19,760 storage containers. It consists of three aisles with 23 storage levels each. Five GEBHARDT StoreBiter® One-Level-Shuttles (OLS) are used per aisle. Via the Roaming+ system, the shuttles are moved between the individual levels with the help of separate storage and retrieval lifters per aisle. The system can be used to convey and store goods weighing between two and a maximum of 30 kilograms. 630 storage and retrieval operations can be carried out per hour. Goods arriving at the automatic small parts warehouse for production supply are manually transported to one of the four infeed stations. There, the goods are separated, married with the storage container, transported via the conveyor system in the direction of the "loop" and stored in the automatic small parts warehouse via the container lifters. The goods are retrieved accordingly and delivered to the three picking workstations via the retrieval lanes.

KW automotive stores goods in mesh boxes and on pallets in the automatic pallet high-bay warehouse. On the one hand, the warehouse supplies the paint shop with raw springs and on the other hand,





3 | The GEBHARDT StoreBiter® Multi-Level-Shuttle warehouse serves as intermediate storage and packaging of the suspension.

goods are transferred in large quantities to the containers, which are then stored in the automatic small parts warehouse. The automatic pallet high-bay warehouse consists of an aisle and a GEBHARDT Cheetah® heavy storage and retrieval machine as well as a GEBHARDT StoreBiter® One-Pallet-Shuttle (OPS) which can transport goods weighing up to 1,000 kilograms. Each side of the aisle has 35 racking columns, five racking levels are for low pallets and two racking levels for high pallets. The racking can be stored 9 deep. The total number of storage locations is 4,266. 28 storage and retrieval operations are possible per hour. The GEBHARDT StoreWare pre-sorts the mesh boxes and pallets, which are reorganised and transferred overnight. The sequence of the orders is defined via the software, which is served pre-sorted at the picking location.

The implemented GEBHARDT StoreBiter® Multi-Level-Shuttle warehouse serves as interim storage for production containers. After a container has passed through the assembly line, it is stored in the MLS warehouse until a production order is completed. The goods are then packed and transported via the conveyor system to the shipping warehouse and the automatic small parts warehouse, there the empty containers are returned to the storage systems via the conveyor system. The single-aisle MLS warehouse offers 589 storage spaces and operates with one GEBHARDT StoreBiter® Multi-Level-Shuttle. Small containers are stored double-deep, large containers single-deep. The system transports goods weighing from two kilograms to a maximum of 30 kilograms and achieves 146 storage and retrieval operations per hour.

The shipping warehouse has been realised as a three-aisled automatic small parts warehouse with a total of three storage and retrieval machines type 716 and offers 13,848 storage locations. High and low cartons can be stored single or double-deep. The automatic small parts warehouse serves to consolidate the orders. The cartons are conveyed to one of the four shipping workstations where they are checked, labelled and strapped. Finished cartons are packed onto pallets and loaded onto trucks.

The result is a completely automated production process from goods receipt to shipping.

Conclusion

"The cooperation with GEBHARDT was very good. They reacted professionally and quickly to every request. Thanks to the GEBHARDT solution, our processes are much more reliable and faster and we can already see a very good return on investment today", Klaus Wohlfarth draws a positive conclusion.

