



**Automatic pallet high-bay  
warehouse including  
MIAS stacker cranes,  
Sauer GmbH & Co. KG, Föritz.  
Speed and a low error rate.**



**Project:**

Sauer GmbH & Co. KG, Föritz, Germany

**Industry:**

Manufacturer of plastic parts

**Task:**

Construction of an automatic pallet high-bay warehouse with stacker cranes, conveyor technology peripherals and a connection to the Jungheinrich WMS

**Project duration:**

08.2014 – 05.2015

**Services:**

- Fully automatic pallet high-bay warehouse in silo design with three double-deep racking aisles
- Three MIA5 stacker cranes
- Conveyor technology including a centring station
- Jungheinrich Warehouse Management System (WMS) and material flow computer

**Most important results:**

- High handling performance
- Fast access options
- Low error rate
- High degree of space utilisation

**Decades of success**

Sauer has been processing plastic parts since 1957, originally for the domestic toy industry. Today's core business includes the development and production of bottles and containers for the cosmetics, chemical, pharmaceutical and food industries as well as technical parts, such as infant car seats, or large blow-moulded parts like sleds. As a service provider, Sauer offers its customers the entire process of development, production and logistics.

**State-of-the-art, double-deep pallet high-bay warehouse**

Jungheinrich supplied a wide range of products, including a 130 m long, 23.5 m wide and 38 m high double-deep silo storage system, conveyor technology with a centring station, a pallet doubler and labeller, fire protection gates, a ramp as well as three stacker cranes with telescopic forks from the Jungheinrich subsidiary MIA5.

**IT connection**

In addition, the entire software and IT for the high-bay warehouse were supplied by Jungheinrich, consisting of the control technology and the WMS with an integrated material flow computer. The WMS controls the entire logistics processes of the plant and enables Sauer to manage different production batches.

## The requirement

### Smooth process flow

Sauer's investment into the intralogistics system resulted from a growing production output due to the positive business development and the corresponding expansion of the operator's truck fleet. This intralogistics system by Jungheinrich was designed for the automatic storage of finished parts and the delivery of full pallets. For Jungheinrich as the system integrator, the goal was to create an economical solution with fast access options, a low error rate and a high degree of space utilisation.

## The solution

### New storage concept with automatic stacker cranes

Prior to storing the palletised plastic parts, the conveyor system of the automatic intralogistics system transports them to a centring station. This is followed by a hood stretcher, which places a film on top and around each loading unit, and a contour check. Subsequently, the pallets are transferred on the conveyor system to the three-aisle automatic high-bay warehouse, which has more than 25,500 pallet locations split across eleven storage levels. At the end of the high-bay warehouse, the stacker cranes take over the loading units from the storage lines and place them on the front or rear pallet location specified by the Jungheinrich WMS. Designed for double-deep load handling, each of the telescopic forks of the stacker cranes can pick up a loading unit. This version of the stacker crane works much more economically than one that can simultaneously pick up two load carriers but is equipped with a stronger mast or a double mast. The stacker cranes place loading units that are transported out of the warehouse on retrieval lines. From there they run on the previously installed conveyor system, where they can be labelled partly on the front and on the long side. This is followed by a pallet doubler, which enables the stacking of two load carriers with a maximum

length of 1,500 mm on top of each other. Subsequently, a transverse shuttle transports the loading units in a time-saving manner to the gravity tracks, which supply the outgoing goods department.

## Customer statement

### Short construction time and high system availability

"The advantage of the solution primarily lies in the high throughput. This is based on the concept of the stacker cranes and their telescopic forks as well as on the use of the transverse shuttle, which allows the load carriers to be available at the outgoing goods department more quickly. For the operator, an additional plus is that the customer service for the automatic warehouse comes directly from Jungheinrich," says Norbert Manger, who has been responsible for the realisation of the system as a project manager from Jungheinrich. Apart from this, Sauer points out the short construction period, the favourable price-performance ratio and the high system availability. In addition, the system's operation is user-friendly, even for new employees. The customer also appreciates the possibility of extending the high-bay warehouse, which is already designed for three-shift operations, by yet another aisle.



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