

PRESS RELEASE

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Fast cantilever warehouse for sensitive foils

For a new transformer core production plant in northern China, intralogistics specialist Vollert is developing and supplying a complete, fully automated high-bay warehouse with 1,500 cantilever arms for coils weighing up to 5 tons. Despite the load weighing tons, the entire intralogistics system must handle the sensitive foil material extremely gently.

The transformer core cutting center in Tianjin will become one of the largest machining centers in China when completed. As a specialist for heavy loads with many years of experience in intralogistics concepts, Vollert Anlagenbau was awarded the international tender and, as general contractor, is developing, supplying and installing a complete storage and material flow system. The central core is a fully automated 150 m long and 11 m high high-bay warehouse with 7 levels, 1,500 coil storage locations and 90 production buffer locations. Two stacker cranes and five upstream transfer cars ensure the rapid sequential infeed and outfeed of the production lines. "The challenge of the project is, on the one hand, the particularly delicate handling of the sensitive raw materials and, on the other hand, the extremely short time from award to commissioning. "One of the decisive factors for the award of the contract was our steel construction concept and the assembly by us in cooperation with long-standing local partners on site. In close coordination with Stefan Seekatz, our person responsible for the structural design, we developed a relatively very lightweight steel structure and were thus able to reduce the overall investment for our customer," explains Bastian Binnig, Vollert's project manager for sales. Vollert is also responsible for the safety technology such as fences, sliding doors or light barriers on the processing lines.

Particularly gentle treatment

The foil used for winding the transformer cores is specially alloyed and made of very thin silicon steel, which is stored on coils without a spool. Setting the foil on the sheath would therefore produce both deformations on the coil and damage to the surface. Vollert engineers solved this by storing the coils in the eye on cantilevers with gentle contact surfaces. Special attention is also paid to the transfer management within the logistics concept. "The systems are very closely interlocked, so careful calculation and design of the transfer positions was necessary," explains Bastian Binnig. The two stacker cranes therefore have a specially developed coil pickup. A turn-and-push fork also allows storage on both

sides of the high-bay warehouse and - in combination with the stacker crane's lifting cage - gentle depositing of the coil on the cantilever arms.

Slim and fast

"It was important for us to achieve the best throughput times with as little equipment as possible. The project team achieved this by combining the stacker cranes with transfer cars," reports Bastian Binnig. The single-aisle high-bay warehouse is designed for redundancy. This means that both stacker cranes can approach all input and output locations and perform 18 double cycles per hour at travel speeds of up to 2.5 m/s each. In front of the warehouse, five transfer tables with extending lift trucks form the connection to the production lines. Here, the coils are cut to different dimensions and rewound. A coil with a length of 1.4 m and a diameter of 1.1 m is processed into up to 14 smaller coils. Sorting is then again a complex task for the warehouse management and control system in the high-bay warehouse. The intelligent Level 2 system places the coils freely in the high rack, optimized according to short travel distances. Which coil is intended for which next work step is determined by the higher-level Level 3 system. To ensure smooth delivery to the processing lines, the transfer cars can also access 90 buffer locations outside the warehouse.

Just in Time

The transformer core manufacturer and Vollert are moving ahead with the construction of the new plant: just eight months after the contract was awarded, Vollert will start delivering the systems and equipment in August 2021. Regular operation is already planned from April 2022. The short project time was made possible by the direct communication and coordination of the Vollert subsidiary on site in China - a great advantage, not only in times of pandemic.

About Vollert Anlagenbau GmbH

As specialists for heavy loads and large parts, Vollert Anlagenbau GmbH develops turnkey intralogistics concepts for the aluminum and metal industry. As a general contractor and full-service provider, the service range encompasses state-of-the-art material flow, storage and packaging technology as a stand-alone solution or integrated into a larger logistics environment.

Whether fully automated mega-high bay systems for aluminum coils, intelligent material flow systems for the leading aluminum extrusion press manufacturers, the world's most efficient stacker cranes for the storage of sheet metal plates, automatic crane systems for 50 tons and more or the most modern surface coating systems – Vollert is everywhere.

Vollert's plant and machine solutions are deployed in more than 80 countries around the world and in Asia and South America the company's own subsidiaries strengthen in addition the sales activities. Vollert employs more than 250 people at its company headquarters in Weinsberg. **www.vollert.de**

Press contact

Frank Brost

Senior Marketing Manager

Vollert Anlagenbau GmbH
Stadtseestr. 12
74189 Weinsberg/Germany
Phone: +49 7134 52 355
Fax: +49 7134 52 203
E-mail: frank.brost@vollert.de

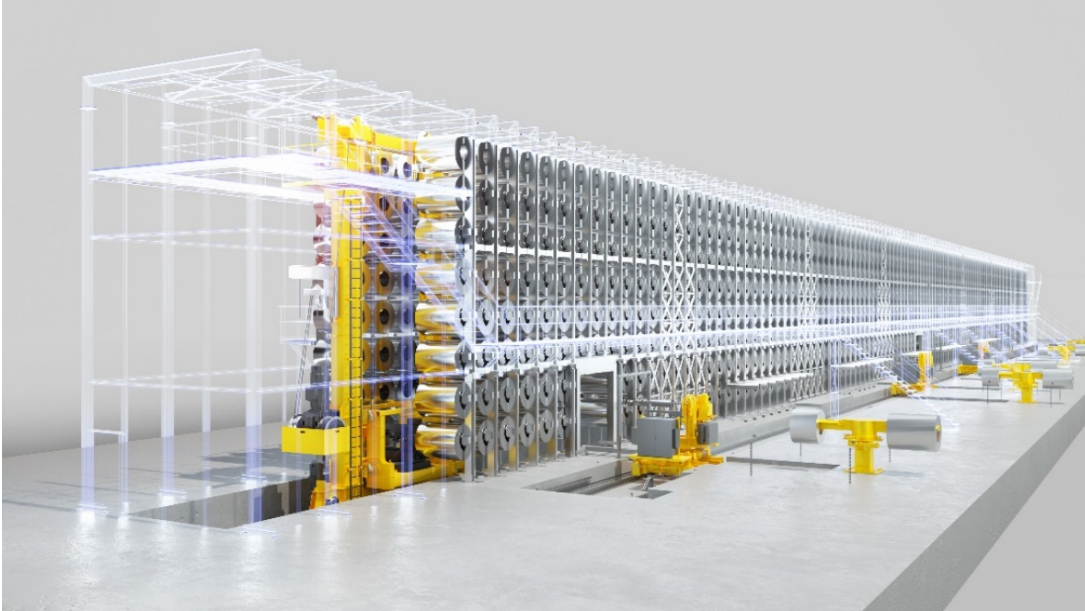


Image 1 (Source: Vollert)

At the moment, the coils of the Chinese transformer core manufacturer are stored in flat storage, but a fully automatic high-bay warehouse with space for 1,500 coils will soon be built in Tianjin. As general contractor, Vollert will develop, supply and install the complete storage and material flow system within a very short time.