

PRESS RELEASE

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Tractors every minute

Finnish manufacturer Valtra relies on a clever intralogistics solution for coating tractors. It not only allows chassis weighing up to eight tons to be coated overhead, but also to be buffered in a closed circuit and guided around corners. Two chain pushers in combination with friction wheel drives are used for this purpose. The lean solution guarantees continuous production in automotive eight-minute cycles.

The workpieces are completely pre-assembled chassis from the Finnish tractor manufacturer Valtra. The large parts weighing up to 8.5 tons are coated in a new paint shop and follow the continuous cycle of overall production: a chassis can be completed every eight minutes. "Production sets the pace for the system, which is why transportation and coating must function absolutely reliably within the closed circulation system. Other special features include an over-night service for the workpieces and the space-saving system layout," explains Lukas Gänslar, the responsible Project Manager at Vollert. The intralogistics specialists were able to convince Valtra with a lean single-track system that meets all requirements.

Thinking around the corner

Despite its size, with 25 work stations and around 150 meters of track, the new paint shop at Valtra only requires an area of 50 x 20 meters. This is made possible by the parallel arrangement of the stations on two counter-rotating tracks, each of which is equipped with chain sliders and rotating rail elements at the head ends. This enables the goods carriers to be transported crosswise at a 90-degree angle, allowing them to circulate in the tightest of spaces. When the product carriers reach the end of a travel section, two rail elements together with the product carrier holders rotate through 90 degrees. A chain pusher then pushes the workpieces in cross transport to the next turning station, where the changeover to the single-track system takes place in the opposite direction.

Over-night service

Within the entire system, the product carriers are fed by friction wheel drives - an important aspect, as they allow the workpieces to be moved forwards and backwards, even in closed circulation. At the end of the work cycle, the parts can be processed in the four pre-treatment and drying stations. The workpieces are then temporarily parked in buffer areas. The experts

at Vollert use the two transverse travel paths of the chain conveyors for this purpose, because unlike automatic cranes or Power&Free systems, chain conveyors in combination with the friction wheel concept can buffer several product carriers and parts if required. Furthermore, no additional buffer space is required due to the use of the existing travel path. At the start of the next shift, the already prepared tractor chassis are returned to the pre-treatment drying station for preheating and then the paint shop is started up in line with production.

Balanced heavyweights

The workpieces are loaded and unloaded by a Vollert lifting station, which also marks the start and end of the paint shop. The chassis are loaded and unloaded automatically by automated guided vehicles (AGV). In order to be able to use a cost-effective single-track system despite the different sizes of the vehicle chassis and their uneven load distribution, Vollert developed special product carriers that allow the workpieces to be easily balanced. Small trolleys on the product carriers allow variable adjustment of the suspension points depending on length and model. Meanwhile, scanners protect the employees in the work area before the product carrier begins its journey through the system.

In addition to planning, steel construction and conveyor technology, Vollert was also responsible for the complete control technology and automation of the system. The process and painting technology comes from the Swedish supplier Greiff Industrimiljö AB. At Valtra, wet painting with primer and top coat is carried out in two stations by four painting robots. Other work stations include drying, the oven and evaporation and cooling stations.

Vollert's design engineers also paid particular attention to a safe and simple maintenance concept: no ladders are required for maintenance in the entire system area. This is made possible by maintenance platforms integrated into the dryer, which can be reached via the dryer roof, a generally well thought-out accessibility of the friction wheel drives and easy access to the pre-treatment area with fall protection.

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, North and South America the company's own subsidiaries strengthen in addition the sales activities. **www.vollert.de**

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Image 1 (Source: Vollert)

Perfectly balanced: With special product carriers, Vollert enables a simple single-track system for painting complete vehicle frames for tractors at Valtra.



Image 2 (Source: Vollert)

Tightly timed: a chassis can be coated every eight minutes. The painting system follows the cycle of the production line.



Image 3 (Source: Vollert)

Moving around corners: Rotating rails and product carriers supports enable cross transport at a 90-degree angle and therefore a particularly space-saving system layout.



Image 4 (Source: Vollert)

Back and forth: Friction wheel drives and chain sliders also allow workpieces to be buffered and returned in closed circulation systems.



Image 5 (Source: Vollert)

Mastered together: Vollert supplied the planning and steel construction as well as the complete conveyor and control technology. The painting and process technology was supplied by Greiff from Sweden.



Image 6 (Source: Vollert)

Safe: For easy maintenance, all system parts and the conveyor technology are easily accessible and can be reached without ladders.