

Overhead Conveyor for Heavy Components in the Paint Shop

An agricultural machinery manufacturer has expanded its painting processes with a new system. A power-and-free overhead conveyor handles the transport of heavy components. In addition to the mechanical design, the project focused primarily on coordinating internal logistics and digital connectivity.

Nearly 7m above the ground, with an installed conveyor system weighing nearly 35t and spanning nearly 800m: The new Power & Free overhead conveyor is the centerpiece of Väderstad's new paint shop. It transports up to 2,000kg of products at a cycle time of 6min. The Swedish agricultural machinery manufacturer uses the conveyor in its surface treatment center to transport heavy components through the paint shop before the machines are assembled.

The project began when Väderstad approached Caldan Sales to discuss a surface conveyor system for transport within the new, fully automated paint shop. "We had previously worked with Anna Frostemark, who is responsible for coating processes, at a former employer. In our industry, personal con-

nections are important because there are only a few suppliers," explains Marcus Hennigsson, Sales Manager at Caldan Sweden, describing the background of the collaboration.

Selection and design of the conveyor system

Väderstad, a third-generation family-run business, had outgrown its existing paint line, which operated around the clock. A new system was essential. For Anna Frostemark, Caldan's conveyor systems offered the right combination of data-driven automation and technical quality. For her, the key factor was finding a supplier who understood the project's requirements and could collaborate reliably with all stakeholders. The goal was to find a solution

that met the technical requirements and supported the cost-effective operation of the new paint shop.

During the bidding phase, Caldan invited Väderstad to visit similar reference sites at other Caldan customers. These site visits were important for demonstrating performance and quality. In addition, Caldan organized a visit for maintenance teams, process engineers, and operators to its Academy in Galten, Denmark. These visits provided an opportunity to discuss the conveyor system and the technology behind it with all relevant Väderstad personnel and to build trust.

Involving all project stakeholders early on facilitated coordination and laid the groundwork for the subsequent signing of the contract. "The site visits to Caldan were very important," says Anna Frostemark. "They gave our employees a clear understanding of the system architecture – including the new type of Caldan lifting stations that we are now using in our paint shop." The Caldan lifts are all built in accordance with the new EN standards and thus the new safety regulations.

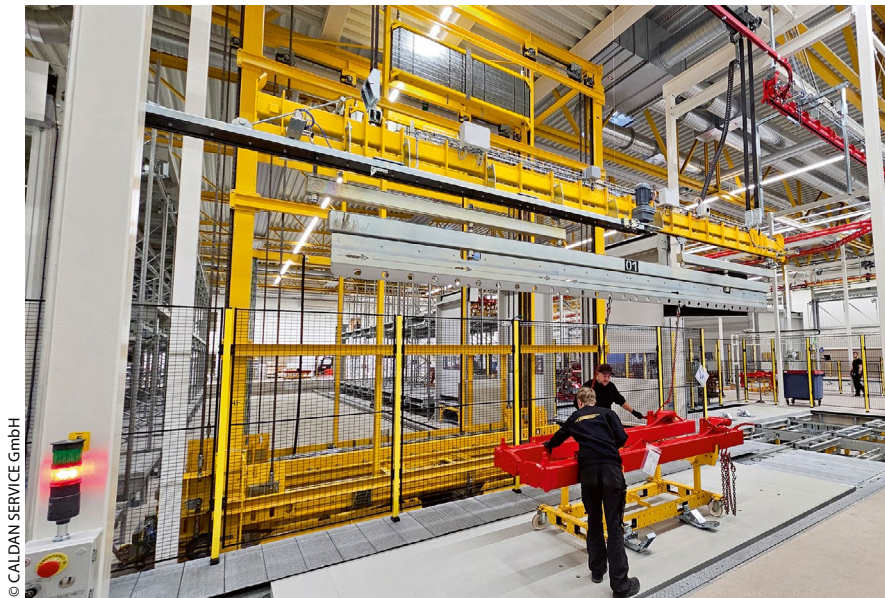
Decentralized structure

The project followed an unusually decentralized structure: Caldan and the participating contractors jointly managed the overall process, even though the contracts had been awarded separately. In doing so, Väderstad deviated from the model commonly used in Europe, in which a general



Cross-stacking in a cooling zone.

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Hoisting equipment compliant with the latest standards.



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Søren Thygesen, R&D Manager, at the Caldan Academy, where pre-installed systems are set up.

contractor or system integrator handles coordination. For Anna Frostemark, this approach made sense because the internal project team was small and could not oversee every detail itself. Therefore, from her perspective, it was important that the involved suppliers clarify technical details directly with one another. Her experience from previous projects sup-

ported this approach. Marcus Hennigsson adds: “Väderstad required close coordination among all suppliers from the very beginning.” Open communication and collaborative problem-solving were essential for the implementation.

Project organization for turnkey systems

“The project has provided us with important insights for future endeavors,” says Søren Thygesen, R&D Manager at Caldan. The project organization for turnkey projects is structured so that both a mechanical and an electrical project manager share responsibility for their respective scopes of work. This structure improves internal coordination and makes it easier to handle complex systems and demanding customer requirements. Experience has shown that projects of this magnitude, in which teams work directly with the end customer, are demanding. At the same time, they continuously expand the company’s expertise and strengthen its organizational capabilities. The experience gained during the project is intended to be leveraged, in particular, to support the company’s continued growth.

Technical integration and automation

Technically, the project was complex. A deep understanding of the internal logistics was necessary to avoid bottlenecks

and meet capacity requirements. A comprehensive overview of the facility’s internal logistics was required to manage how the carts move through the system and how they are synchronized with the parts feeds and other process steps.

To achieve this, the Caldan control system was integrated with Väderstad’s business management system. This ensures that every product receives the correct treatment through an automated recipe, a workflow link, and minimal manual intervention. “The entire unloading process from the conveyor is automated,” explains Marcus Hennigsson. Recently, Caldan has also become capable of fully simulating systems and preparing and testing them in-house as digital twins. This reduces on-site commissioning time.

Looking ahead, Caldan plans to further develop its data-driven capabilities and expand its offerings in this area. These data-driven functionalities are intended to broaden the range of applications for the conveyor systems in the future. To this end, the company has its own electrical engineering department. Solutions similar to the one at Väderstad have already been implemented at several facilities, processing up to 18,000 data points. The Väderstad project, along with other initiatives from 2026, serve as a reference for this development. The paint shop at Väderstad, now operational, doubles the company’s capacity. This lays the groundwork for the planned expansion in Europe as well as in markets such as Australia and Latin America, and enables the company to respond to the growing demand for seed drills. //

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