

PRESS RELEASE

More flexible and easier than Power&Free

Friction wheels transport large gearboxes for painting

The SEW-EURODRIVE drive automation system by Bruchsal relies on a simple, flexible material flow system by Vollert Anlagenbau for coating large gearbox units weighing up to 3.5 tons. It combines the advantages of Power&Free systems and requires significantly fewer system components. Nevertheless, comparably high cycle times are possible.

For almost 80 years, SEW-EURODRIVE has been making a difference with its electric drive systems to transport conveyor systems, filling systems, assembly lines and stacker cranes in the automotive, construction and packaging industries, to mention a few. With 13,000 employees, 12 production plants and 67 service and assembly plants in 47 countries, the company is one of the market leaders in the world in the field of electric drive technology. For constructing a new plant, including paint shop, for the production of large gear units in Bruchsal, Vollert Anlagenbau was commissioned to develop a flexible and robust solution to transport components weighing up to 3.5 tons. Vollert, also a SEW-EURODRIVE customer and partner, had already convinced the company to construct a 10-ton plant, and based on their track record, the planners decided on designing the 3.5-ton plant in Weinsberger. However, the high throughput and fast cycle times brought a new challenge: In Bruchsal, a large gearbox unit had to be completed and painted every 5 minutes.

Friction wheels instead of drag chains

Instead of the often used Power&Free system with a lower transport rail and chain drive above it, Vollert's intralogistics specialists rely on a monorail overhead conveyor with friction-wheel drive. In this system, originally designed for heavy load intralogistics with payloads of up to 50 tons, the goods carriers are not pulled by a circulating drag chain. Instead, stationary friction wheels ensure continuous feed at regular intervals. The solution operates with far fewer system components. It dispenses with a second rail and maintenance-intensive chain drives, and the transport units require no engagement and release mechanisms. Nevertheless, the new system offers all the advantages of a Power&Free system: The components can be controlled individually and precisely. Stopping, discharging, grabbing, reinserting or returning can be done at any time.

Fully automatic coating system

The new SEW-EURODRIVE coating line has two parallel paint lines of around 34 m in length, including loading and unloading manipulators, paint booth, evaporative booth and 2-chamber dryer. Depending on their size, the gearboxes are suspended on the transport trusses, one or several at a time, at track rail level and transferred to the central distribution manipulator at the front of the paint shop. The manipulator drives the components to one of the two paint booths at the start of the two painting lines. In the painting and drying booths, the components are automatically transported via friction wheel drive. Since the friction wheels can be controlled individually, as opposed to a coherent Power&Free system, the speed can be adjusted as desired in each system part and optimally adapted to painting and drying. The control with SAP connection was also made possible by Vollert.

After coating, a second structurally identical distribution manipulator moves the product carriers onto parallel buffer positions for cooling and drying. Four rail tracks with 24 buffer positions in the form of transit storage are available. The parallel arrangement allows for a great space-saving system layout, without switches or circular rails. The total plant area is about 20 x 55 m. The two distribution manipulators, spanning some 3.5 m, operate the system over the entire width of 20 m and are each equipped with two rails so that one full and one empty goods carrier can be collected for returning in one operation. When multiple coatings are required, the return transport of the large gear units pass the coating section to the first distribution manipulator, which handles the transfer into the painting lines. The track for returning the empty goods carriers from distribution to the start of the system is mounted under the ceiling above the buffer storage to save space.

Since the paint shop is positioned directly in front of distribution, the completed and tested large gear units can be lowered and delivered directly to two delivery points in transport crates or on pallets. The two lifts have weighing facilities that determine the exact transport weight and forward it to the logistics department.

Less maintenance, greater flexibility

With SEW-EURODRIVE's new system, the engineers at Vollert have shown that the friction wheel conveyor system proves its worth, not only with extremely heavy loads but also with lighter loads and high cycle times: The solution is compact, fulfills all requirements and offers more flexibility. The Power&Free system requires chain drives, tension stations, stoppers, electrical infeed and outfeed turnouts, and in the case of an electric monorail conveyor, the necessary contact rails for power transmission, which would severely restrict

application in a coating system. In contrast, the new circulating painting system by SEW-EURODRIVE runs without these components. This makes the system a great alternative for circular transportation of the components of between one and 50 tons.

About Vollert Anlagenbau GmbH

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

Whether it's for mega-high-bay warehouse systems for aluminum coils, intelligent material handling systems for the leading aluminum extrusion manufacturers, the most highly productive storage-retrieval systems in the world for sheet metal blanks, automatic crane systems for 50 tons and more or the most modern surface treatment plants - Vollert has more to offer all-round than you would expect.

Vollert plant and machine solutions are in use in more than 80 countries worldwide, and in Asia and South America, subsidiaries are increasing their sales activities. Vollert employs 250 people at its headquarters in Weinsberg. **www.vollert.de**

Press contact

Frank Brost

Senior Marketing Manager

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



Image 1

At SEW-EURODRIVE, three loading and unloading manipulators take over the transport of the trusses (red), in which the components weighing up to 3.5 t are suspended individually or in groups, and transfer them to the central distribution manipulator at the start of the two painting lines. Instead of drag chains, stationary friction wheels ensure that the components are transported - also to the painting and drying booths.



Image 2



Image 3
24 buffer spaces in the form of transit storage are used for cooling and drying. The parallel arrangement of the rail tracks saves space and, in contrast to Power&Free systems, does not require switches and circular rails.



Image 4



Image 5
After drying, the finished large gear units are lowered by two lifters with integrated weighing equipment on pallets or on transport crates and taken directly to the logistics department.



Image 6