

# IST International Surface Technology

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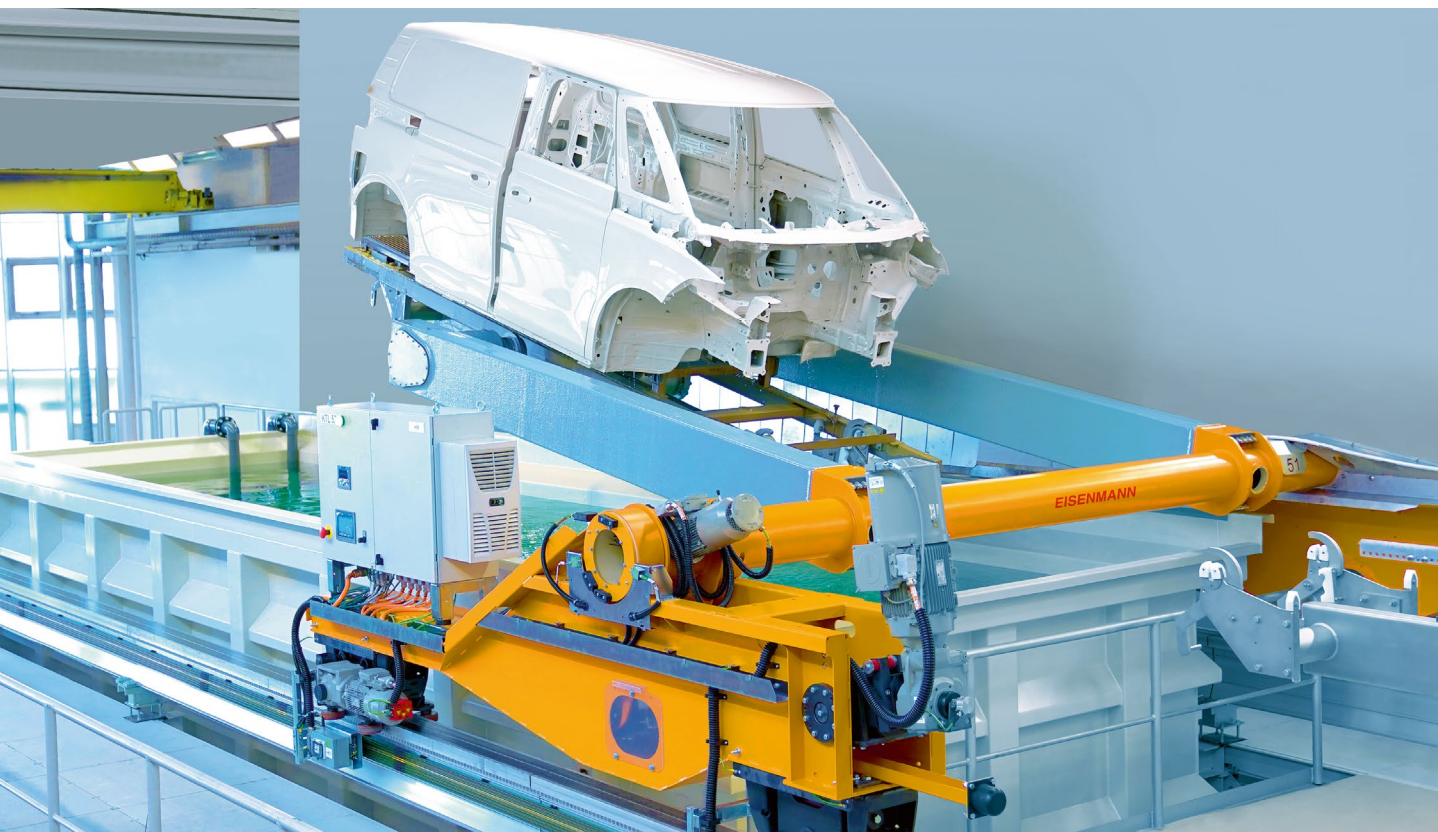
# Rotating Dip System for Commercial Vehicles

A conveyor system for dip coating that has been further developed for higher payloads is to provide a premium manufacturer of commercial vehicles with greater flexibility in pre-treatment and cathaphoretic dip coating.

Pre-treatment (PT) and cathaphoretic dip coating (E-Coat) form the cornerstone of the complex painting process in automotive painting. Even here, nuances are decisive for a smooth production process and a high-quality coating. This requires special and sophisticated conveyor technology that is designed to meet the

particular requirements of the car bodies and the production process. The Böblingen-based company Eisenmann GmbH has a broad portfolio of conveyor systems for PT/E-Coat processes in vehicle production as well as for the entire metalworking sector. As each customer requires a solution that is indi-

vidually tailored to their needs in terms of system throughput and workpiece geometry, the painting facility specialist offers its customers a total of six possible conveyor systems for pre-treatment and cathaphoretic dip coating. These include Power & Free systems, simple pendulum conveyors and electric monorail systems,



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For the dip coating of commercial vehicles, a conveyor system has been extended with an XL version for higher loads.



but above all the three flexible rotary dip coating systems E-Shuttle 200, E-Shuttle 300 and Vario-Shuttle.

### Programmable dip curves for different body types

Volkswagen Nutzfahrzeuge (VWN) is using an enhanced version of the Vario Shuttle series developed by the Böblingen-based company. While these systems were previously intended for bodies weighing up to 1000kg, the new XL version is designed for payloads of up to 2000kg. The conveyor system for dip coating is designed to allow the vehicles to rotate during the immersion process and transport them through the process tanks at any angle. In addition, it has its own on-board control unit, with which immersion curves can be individually programmed in the best possible way for each body type and each process tank. This feature is important in order to be able to transport large vehicles such as light commercial vehicles or large vans through the VBH and CDP process without any problems.

### Resource-saving coating

As a premium manufacturer of light commercial vehicles, the Hanover-based company aims to focus on clean and sustainable transportation of goods, people and services. VWN is also the parent company's leading brand for autonomous driving, among other things. The versatility of the models requires production equip-

ment that consistently meets high standards. This also applies to the paint shop, where the car manufacturer has launched an extensive project. After 28 years, the time had come to renew the technology from the ground up, as the plant planner at Volkswagen Nutzfahrzeuge explains: "To ensure future viability, we decided around two years ago to bring the paint shop up to date. In addition to pre-treatment with eleven pre-treatment tanks and cathoretic dip coating, the project also includes dryers and ancillary equipment, such as for wastewater management." According to the project manager, the new paint shop will work in a particularly resource-efficient manner and ensure that process times are adhered to.

### New painting facility bundles technologies

To ensure the desired productivity and painting quality requirements were met, the strengths of various system manufacturers were concentrated and integrated into a customized concept for the car manufacturer's new painting facility. Conveyor technology from Böblingen, for example, will ensure that the car bodies run safely and efficiently through the surface treatment process.

Jörg Robbin, Head of Development at Eisenmann, points out that the basic technology of the conveyor system series for dip coating used to date has been tried and tested in many applications. "Existing systems can be retrofitted with the

XL version at any time. Parallel operation of different shuttle versions is possible," says Robbin. The e-coat cables are located inside the shuttle housing – this should enable a current transmission of up to 1000 amps. The Böblingen-based company relies on a tried-and-tested sealing system and a humidity sensor in the pendulum, which means that no compressed air is required.

The VWN project manager emphasizes that a high degree of flexibility is required, especially for commercial vehicles. "Previously, our car bodies went through the PT/E-Coat in a pendulum curve. Now we can also run model-optimized, individual rotation curves. This process guarantees the highest coating quality for all body variants." Among other things, this should make it possible to adjust the dip curve as required at any time, with simulation and process control playing a key role. To this end, the developers from Böblingen are operating a test setup for the XL version at their headquarters, in which the system is being tested, and are also providing software support. //

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