

## POWER+FREE CONVEYOR SYSTEM FOR AXLE MANUFACTURERS

# Continuous conveying of heavy loads

A manufacturer of axle and brake systems has invested in a new conveying system to increase its production capacity. Since a truck's axle can weigh up to a ton, the Power+Free conveyor must be specially designed to cope with heavy loads. The new conveying technology must also be seamlessly integrated into the existing paint system.

Meritor is a world-leading supplier of axle and brake systems for OEMs in the vehicle industry. The company employs over 11,000 people in 19 different countries.

As part of the expansion of capacity and increased loads, a Power+Free conveyor became necessary for the paint shop of the axle manufacturer in Lindesberg, Sweden.

The difficulty of the project lay not necessarily in the logistics of the conveyor but in the narrow time frame in which to complete the project. Caldan Conveyor A/S had four weeks to dismantle the old plant and



Truck axles arriving in the pre-treatment plant



Loading station with hoist to take the axles from the floor to the Power+Free conveyor

build the new, 430 m long, Power+Free system. This could be carried out during Meritor's work holiday. The following requirements had to be considered by the user when developing the new system:

- integration of the conveyor system into an existing paint shop
- choosing the right conveyor system with regard to cycle time and load
- execution of the project within the given time frame

Meritor chose, in agreement with Caldan, a Caldan P+F 420 conveyor system. The conveyor system picks up the axles from a floor conveyor, via a hoist and lowering station, and brings them to the washing plant. In the logistics and buffer area, in front of the washing plant, the transport units are lifted at 8 m/min.

After they arrive at the washing system, the axles travel through the plant at fixed intervals of 3.3 m/min. This corresponds to a cycle time of 60 seconds. After going through the water dryer and the subsequent cooling zone, the components are brought to the painting area. Here, the components are painted by robots at minute intervals.

Since Meritor must always deliver punctually, each automatic painting area is also connected to a manual paint cabin. This strategy minimises the danger of interrupting the process chain, in case the automatic system fails. The dryer is located on the upper level and is equipped with a separate chain circuit and an incline zone. Once in the dryer area, the components are not conti-

nuously transported, but are controlled at intervals with a stopper and stacking zone. After going through an open cooling zone, the axles are once again transferred to the floor conveyor and taken from there directly to dispatch.

The axles are transported automatically throughout the entire plant using a newly installed controller. A Scada system monitors all the data relevant to production, process and quality control. These systems were also implemented and made operational by Caldan during the construction phase, so that the client was able to supply the first axles immediately after the four-week-long interruption to production.

Due to the project's positive outcome, Meritor is now considering another construction project, which would further expand their production capacity. —

**TECHNICAL DATA OF THE CONVEYOR SYSTEM**

Weight:	1000 kg
Dimensions:	2500 x 1200 x 1200 mm
Chain lengths:	3 chain circuits, 430m
Carriage:	in System 80
Hoisting and lowering stations:	2
Loading station with hoist	

Contact:  
Caldan Conveyor A/S, Denmark, fb@caldan.dk,  
www.caldan.dk