KONECRANES®
Lifting Businesses™

STAMPING PLANT CRANE

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The Challenge

VOLVO TRUCKS CORPORATION in northern Sweden, Umeå planned to increase its production capacity and invested in a completely new stamping plant.

Besides increasing its production, by having shorter crane cycle times for changing the dies in the stamping machine, Volvo needed to secure a safe working environment. As in many places, die change had previously been done by using chains to lift the dies in combination with the crane, which had meant slow cycle times and which may involve the risk of crushing.

The Solution

To meet the challenge Konecranes offered a semi-auto crane that can pick the dies up and increase overall safety, minimize cycle times and be suitable for the use of the special lifting device that the Umeå factory procured.

Konecranes was able to offer a good overall solution that took into account the available support from the local service organization.

The Volvo Process team developed and designed the unique lifting device by themselves. It can grip and release both small and heavy stamping tools in a fully automatic sequence. Volvo chose Konecranes due to their outstanding competence and knowledge in crane technology.

To achieve the best results a collaborative project team containing Volvo and Konecranes personnel was formed after the contract was signed. The team's target was to ensure that the functions of the crane are defined and suitable for production needs and to work on the details of the crane and the interface between the crane and the lifting device.

As Konecranes had earlier attained good results with a lifting device hanging from two trolleys for basic stability, the crane was designed the same way. The crane design includes also a Siemens S7 PLC and Profibus absolute encoders for positioning in order to achieve the best accuracy for semi-automatic functions. Konecranes anti-sway system helps to avoid damage to dies or other equipment. The crane can also be controlled with a Profibus radio controller, which makes the manual and semi-automatic operations easier to use. As a safety feature, some operating areas were restricted to ensure operator and equipment protection.

The Results

Safe operating methods have been achieved and the semi-automatic functions have eased the workload. The sway control has made the manual operations easier and secured the semi-automatic functions; no load sway is caused by the crane. The crane cycle times have been cut when PLC controlling, correct sensoring, the helpful semi-automatic functions and the safety increasing sway control system have been used.

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