More axes, improved material flow

Automotive suppliers need to be flexible to meet the increasing demand for rapid model changes, complex parts, and minimized material requirements. Metal forming is often a bottleneck. This is where motion control technology comes in: servo-transfers extend the presses’ field of application, shorten changeover times, and increase productivity and cost efficiency.

For maximum process safety, Norda maintains a high degree of vertical integration, installs its systems itself all over the world, and consistently uses automation technology from Siemens.
de-stackers, and manipulator systems are frequently used by multinational automotive suppliers with tier-two or tier-three status, which are mostly companies with 500 to 10,000 employees, usually with multiple sites, often spanning several continents.

Norda’s product and support strategy is shaped by the worldwide distribution of its installed systems and the high requirements of the automotive industry. The focus is on processes that are stable in every respect, and in which users themselves can simply and cost-effectively perform maintenance and typical service tasks.

Flexible, customized solutions based on robust modules

The company therefore relies on safe, secure, and easy-to-handle high-speed solutions. These solutions are based on high-performance machine modules with open and consistent control and drive technology. Using these predesigned and thus cost-effective and tried-and-tested modules, it is possible to create a press automation system that is individually tailored to the user’s needs. “First we find out what the customer needs in order to guarantee that the company can achieve its productivity targets, as well as the required flexibility and availability. Then we put together an appropriate solution based on that,” explains Davide Tozzo, head of development. “We place great emphasis on safety, as pressing is a dangerous process. That’s why the system needs to be extremely easy to use. After all, employees in the forming industry often have only the minimum necessary qualifications, and they work a lot of night shifts.”

Since 2005, the Brescia-based company has relied on Simotion for the motion control of transfers, feeders, de-stackers, and other components. During this time, the well-established motion control system has proven to be an important key to improved performance and functionality – and it is now also enabling the move from the typical 10-axis transfer to higher multiples. Twelve axes are considered to be the new standard, and the company has even put 14-axis transfers into operation.

One of the reasons for the increasing number of axes is that it is now much easier to use motors and electronic axes for motion control than it is to build complex mechanics. But even more importantly, electronically balanced axes make it possible to adapt the transfer movements to the current job. And more axes increase flexibility.

Precise and high-performance parts handling

Additional transfer axes allow for more precise material and parts handling. They offer more possibilities for minimizing mass movements in the press and using the space between the stands. “With the additional axes,” says Tozzo, “we can design the transfer movement so as to guarantee reliable material transport, even at fast servo-press cycle times – without causing an excessive increase in the tooling requirements. If required in retrofit projects, the additional axes expand the scope for bringing the productivity of existing systems back up to a competitive level.”

To consistently and reliably meet the requirements of the industry, Norda has always made sure that innovation is a continuous, never erratic, process. “For example, we purchase all our control and drive technology from Siemens. This is largely due to the demand for simple and sound systems. With a full Siemens package, we can offer our customers solutions that are both technologically integrated and technologically consistent,” explains Tozzo.

Simple integration of the transfer

As an open automation system, Simotion allows for both the integration of Norda’s very popular in-house operator interface and the simple incorporation of the press automation system into the user’s line control and IT environment. The system programs of the Norda transfers, manipulators, and de-stackers are designed in such a way that they can communicate with Siemens’ Simopress control system, which is widely used in non-US markets, while at the same time being open to other press control systems. “We need a solution that suits many press manufacturers; after all, we probably manufacture more transfers than all our direct competitors put together,” explains Tozzo. “Using the Simotion basic functions to quickly and easily develop our own customized software solutions has certainly turned out to be a cornerstone of our competitiveness. Now, we can effectively support users exploiting new trends such as more efficient use of materials or utilization of new materials.”

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