



Weil Engineering

With advanced laser-welding technology Eberspaecher produces modern catalytic converter cans

an advanced technology laser-welding short-tube production cell to gain improved product quality and increased production. At the heart of this system is a “Twinmaster” roll-forming and laser-welding production system supplied by Weil Engineering, headquartered in Mülheim, Germany.

The “Twinmaster” combines two major functions in one machine: roll-forming and welding. Secondary processes such as blank feeding and post-welding expansion of tubes for perfect roundness are directly linked to the “Twinmaster”, creating one complete production center. Sinumerik 840D provides all CNC controls and a Simatic OP170 operator panel handles dialog functions. The HMI is configured by Weil Engineering in “ProTool” with additional protocols being added by Eberspaecher engineers directly on the operator panel.

Automatic production

The sequence of operation is as follows. Two sheet-metal destackers provide a non-stop supply of material which is rolled into tubes, up to four in one machine cycle. The rolled tube blanks are transferred from the roller to the seam welder, where they are clamped and butt-welded using a laser beam. Roll-formed tubes are extracted from the tooling and transferred onto an inline weld annealing system to relieve the stress in the welded seam. After cooling, the tubes are fed into a hydraulically-operated tube expander, where they are expanded to the required inside dimension.

All processes are completely automatic with the timing of each process and control of all movements monitored and operated by Sinumerik 840D. The CNC also monitors the position and power of the laser beam, as well as all the transfer mechanisms and tooling.

On the Twinmaster, the Sinumerik 840D technology controls eight rotary axes, with the Simodrive 611U drive package on the destacker and chamfering device. Another 611U operates four axes on the expander and handling system. All CNC, PLC, HMI and drive systems communicate via the Siemens developed Profibus field bus system.

Anthony Mussarelli, Eberspaecher’s engineering manager comments, “The tooling sequences, the implementation of customer-driven design changes and the overall continuous production of our various end product shapes and sizes have made a significant improvement in our responsiveness to customer delivery requirements.” ■

■ **Eberspaecher North America Inc.,
Brighton, Michigan**

Silencer Production Lights Up

Catalytic converter maker increases quality and production with laser-welding production cell and Sinumerik CNC.

Catalytic converters in automobiles play a key role in optimizing engine performance and fuel efficiency while minimizing pollution. Eberspaecher N.A., based in Brighton, Michigan, is a Tier-One supplier of stainless steel catalytic converter cans and complete exhaust systems for major auto manufacturers. For a new catalytic converter production line, Eberspaecher N.A. chose to install

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