DANIEL KURR

2+1= trio of machines for automated tube processing

Automated tube processing? No problem at TecPro! The company has a real ace up its sleeve due to the interaction of an automated TruLaser Tube 7000 fiber and a TruLaser Cell 8030 from TRUMPF, as well as a tube bending machine from TRUMPF partner transfluid®. Even complex tube processing tasks can be realized automatically, efficiently, accurately and cost-effectively.

Holger Malzkorn, CEO of TecPro Metall GmbH, succinctly defines the company's qualities as "flexibility, efficiency, solution-oriented thinking and expertise, enabling collaborative product optimization with our customers." A few months ago, it became clear that he was not exaggerating. A customer from the automotive supply industry enquired about a cross tube for a trailer coupling. To create it, TecPro would have to cut, contour and bend the pipe. Further contours had to be added in the curved section. Naturally, all of this is accomplished with stringent demands on component accuracy, and of course, at a competitive price point. 50,000 parts per year are planned initially, and further orders could follow. The existing machines at tube processing specialist TecPro may not suffice for this task, but Dominik Jordan, Sales Manager at TecPro GmbH, along with his team, remain open to exploring innovative approaches. "We needed an automated solution to be able to manufacture the component cost-effectively and with minimal manual effort," he explains, adding: "This is the only way to reduce cycle times, even with existing staff."

Teamwork not only ensures flawless processing results within the tube process chain machine network. The open and cooperative partnership between all project participants was also a crucial factor in its success.

The interaction of an automated TruLaser Tube 7000 fiber and a TruLaser Cell 8030 from TRUMPF, as well as a tube bending machine from TRUMPF partner transfluid® realizes even complex tube processing tasks automatically, efficiently, accurately and cost-effectively.

Holger Malzkorn (right), CEO of TecPro Metall GmbH, is delighted with how smoothly the project has gone: "TRUMPF and transfluid® worked closely together. As a result, we have been able to access consultancy services, machinery and commissioning assistance from a single source."

Better together

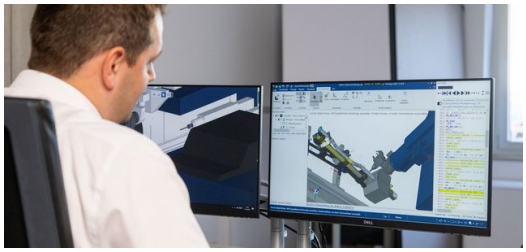
TecPro Metall GmbH, based in Neuss, North Rhine-Westphalia, is part of the Neuenhauser Group, a conglomerate that includes metalworking firms. The main advantage is that customers benefit from the specialist expertise of the individual companies and from the synergies fostered by the company network. TecPro Metall GmbH supplies the automotive and commercial vehicle industry and the mechanical and plant engineering sectors with components, complete assemblies and systems. The primary focus is on tube processing. "Like the entire Neuenhauser Group, we also rely exclusively on machines supplied by TRUMPF. So our contacts in Ditzingen were our first port of call for the tube process chain project," explains Malzkorn.

Everything from a single source

For Raphael Heinzelmann, TruLaser Tube Product Manager at TRUMPF, TecPro's requirements are nothing new: "There is an increasing demand for automated processes in tube processing. Our systems offer our customers optimum conditions for this. "At TecPro, what was lacking for a seamless, automated tube process chain was a tube bending machine, a component not present in TRUMPF's portfolio." TRUMPF's expert team addressed this gap by establishing a strategic partnership with transfluid® Maschinenbau GmbH, a specialist in tube bending and processing machines. "Together, we can now provide an automated tube processing chain that aligns with our rigorous quality standards," Heinzelmann explains.

The solution at TecPro consists of the precisely coordinated interaction between the automated TruLaser Tube 7000 fiber laser tube-cutting machine and a TruLaser Cell 8030 3D laser system from TRUMPF. "The third machine in the group is an all-electric CNC mandrel bending machine from our partner transfluid®," says Heinzelmann. The process chain is automated by a robot.

Dominik Jordan, Sales Manager at TecPro GmbH, is very satisfied with the tube process chain, saying, "As a team, the machines and automation provide the perfect solution for manufacturing the requested component."



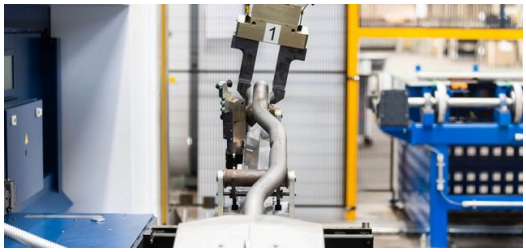
TecPro gains a competitive advantage through the automated tube process chain and its straightforward programming. Even complex tube processing tasks can be accomplished automatically, efficiently, precisely and cost-effectively.

Cutting, bending, lasering

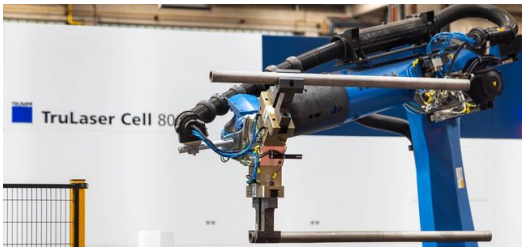
TecPro has had many years of positive experience with laser tube cutting machines from TRUMPF. In addition to a TruLaser Tube 5000 fiber, the TruLaser Tube 7000 fiber is already part of TecPro's machine park. "However, the requested component also required a machine that is capable of inserting contours into bending areas," explains Dominik Jordan. Now that TRUMPF has trial-manufactured some of the TecPro components on a TruLaser Cell 8030, i its evident that this 3D laser system will be integrated into the automated network. "The TruLaser Cell 8030 is designed specifically for automated production and impressed us with its precise processing quality and process reliability," says Jordan. "TecPro opted for the CNC mandrel bending machine from transfluid® to bend the pipes," explains Heinzelmann.

The tube process chain has been optimized to facilitate seamless production of the cross tube for the trailer coupling. The TruLaser Tube 7000 fiber accurately cuts the tubes to size and applies necessary contours. The tubes are then transported to the transfluid® tube bending machine, where the robot loads them automatically. After bending, the robot takes the components to the TruLaser Cell 8030. This is where final processing takes place. The 3D laser system cuts out contours that cannot be added prior to bending because they would otherwise be warped.

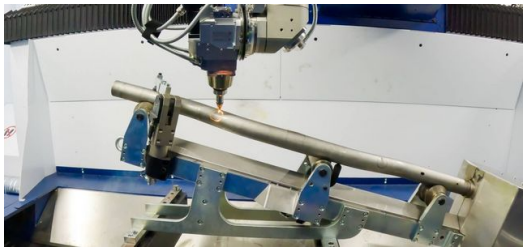
Following the pre-cutting process on the TruLaser Tube 7000, the tubes are transferred to the system network. Here, a robot arranges them in a bundle space before individually separating them on a table.



The systems in the machine network are operated automatically by a robot system that transports the parts automatically from one processing step to the next.



The TruLaser Cell 8030 is used for final processing of the component. Apart from its precise processing capabilities, the system also stands out for its intuitive programming interface, which saves time.



The TruLaser Cell 8030 3D laser system from TRUMPF enables the cutting of precise contours that cannot be introduced prior to bending, as they would otherwise risk deformation.

Exceptional individually, but truly unbeatable as a team

A delighted Dominik Jordan explains, "Each machine in itself presents advantages that will ultimately translate into quality and cost advantages for us in future projects." TecPro is particularly impressed by the process reliability of the TruLaser Tube 7000 fiber. TecPro employees commend the TruLaser Cell 8030 for its intuitive programming interface, which saves time and enhances efficiency. "After uploading the fixtures, including the component, programming virtually takes care of itself", says Dominik Jordan. The bending machine from transfluid® not only consistently meets the specified tolerances, but also offers the advantage of quick and easy setup through its tool changer. "It also copes well with heavy components," adds Jordan.

Both TecPro and the automotive supplier confirm that as a team, the machines and automation provide the perfect solution for manufacturing the requested component. All parties involved in the project are extremely satisfied with the collaborative partnership. "Our contacts at TRUMPF and transfluid® worked very closely on this project. This proved convenient for us, as we felt that we received advice, machines and start-up services from a single source," Malzkorn concludes.

You can find out more about tube processing and the tube process chain at the following two events: <ul> TRUMPF in-house exhibition INTECH at the headquarters in Ditzingen: April 09 - 12, 2024 Tube trade fair in Düsseldorf: April 15 - 19, 2024

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