DANIEL KURR

2+1 = Machine trio for automated tube processing

Automated tube processing? This is possible at TecPro! By combining an automated TruLaser Tube 7000 fiber and TruLaser Cell 8030 from TRUMPF with a tube bending machine from TRUMPF partner transfluid®, the company has an ace up its sleeve. Even complex tube processing tasks can be automated and implemented efficiently, accurately, and cost effectively.

Anyone who asks the CEO of TecPro Metall GmbH, Holger Malzkorn, which characteristics make the company stand out, will get a clear answer: "Flexibility, efficiency, thinking in terms of solutions, and our specialist knowledge enable us to optimize products in collaboration with our customers." The fact that he is not exaggerating was demonstrated just a few months ago. A customer from the automotive supplier sector requested a cross tube for a trailer coupling. To achieve this, TecPro had to cut the tube, add contours, and bend it. Additional contours had to be added to the area of the bend. Of course, this all had to meet the high part accuracy requirements and offer good value for money. 50,000 parts shall initially be supplied, although further orders could follow. This could not be achieved by the tube processing expert TecPro with the existing machines, although the Sales Manager of TecPro GmbH, Dominik Jordan, and his team were open to taking a new approach. "We had to develop an automated solution to be able to manufacture the component cost effectively with a minimal amount of manual work," explains the Sales Manager adding that this is the only way to reduce cycle times with the existing team."

<p>Teamwork within the machine network used for the tube process chain is not the only thing that contributes to perfect processing results. The open and collaborative partnership of everyone involved in the project was

<p>The combination of an automated TruLaser Tube 7000 fiber and TruLaser Cell 8030 from TRUMPF with a tube bending machine from TRUMPF partner transfluid® masters complex tube processing tasks as part

the key to success.

of an automated, efficient, accurate, and cost effective process.

Holger Malzkorn (right), CEO of TecPro Metall GmbH, is thrilled about the smooth progress of the project: "TRUMPF and transfluid® worked in close collaboration. As a result, we felt like we received advice, the machines, and start-up from a single source."

Better together

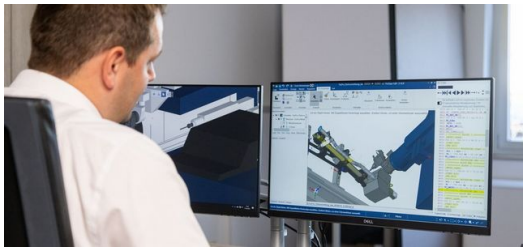
TecPro Metall GmbH with its headquarters in Neuss, North Rhine-Westphalia, Germany, is part of the Neuenhauser Group – a group that includes metal processing companies amongst others. The advantage is that customers benefit from the specialized expertise of the individual companies and from the synergies created by the company network. TecPro supplies components, complete assemblies, and systems to the automotive and commercial vehicle industry as well as the machine and systems engineering sector. The company specializes in tube processing. "Just like the rest of the Neuenhauser Group, we only rely on machines from TRUMPF. This is why our contacts from Ditzingen, Germany, were our first points of contact when it came to the tube process chain project.

Everything from a single source

For Raphael Heinzelmann, the Product Manager of TruLaser Tube at TRUMPF, this request from TecPro is nothing new: "Automated processes are increasingly being requested in the tube processing sector. Our systems offer our customers optimum requirements to achieve this. To be able to achieve a continuous, automated tube process chain at TecPro, we were missing a tube bending machine that is not part of the TRUMPF portfolio." The TRUMPF experts have closed this gap by establishing a strategic partnership with the specialists for tube bending and processing machines at transfluid® Maschinenbau GmbH. "By working together, we are able to provide an automated tube process chain that meets our quality requirements," explains Heinzelmann.

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

Dominik Jordan, the Sales Manager of TecPro GmbH, is very happy with the tube process chain: "When combined, the machines and automation are the perfect solution to produce the requested component."



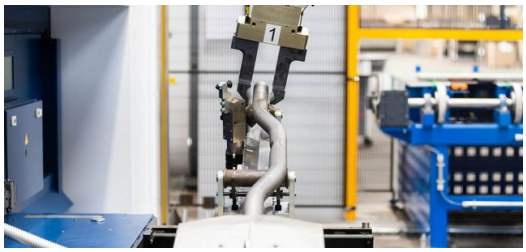
The automated tube process chain and simple programming create a competitive advantage for TecPro. Even complex tube processing tasks can be implemented as part of an automated, efficient, accurate, and cost effective process.

Cutting, bending, laser cutting

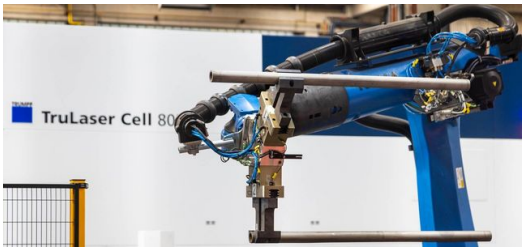
TecPro has had positive experiences working with laser tube-cutting machines from TRUMPF for many years. In addition to a TruLaser Tube 5000 fiber, the TruLaser Tube 7000 fiber is already part of the equipment at TecPro. "However, we also required a machine that would be able to add contours into the bending areas of the requested components," explains Dominik Jordan. Once TRUMPF had manufactured some samples of the TecPro components on a TruLaser Cell 8030, it was clear that this 3D laser system would become part of the automated network. "The TruLaser Cell 8030 is already designed for automated manufacturing and impressed us with its accurate processing quality and process reliability," explains Jordan. Heinzelmann continues to explain that TecPro opted for the CNC mandrel bending machine from transfluid® to bend the tubes.

During the production of the cross tube for the trailer coupling, the tube process chain now guarantees a smooth process: The TruLaser Tube 7000 fiber cuts the tubes and inserts the contours. The tubes are then transported to the transfluid® tube bending machine and automatically loaded by the robot. After being bent, the robot transfers the components to the TruLaser Cell 8030. This is where the final processing takes place. The 3D laser system cuts out contours that cannot be inserted before bending because they would otherwise be deformed.

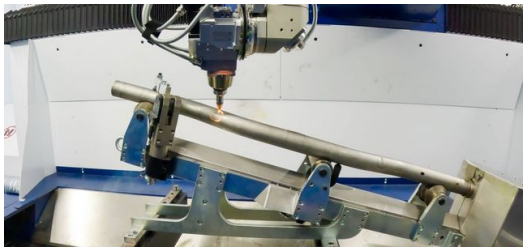
After cutting the tubes on the TruLaser Tube 7000, the tubes are transported to the production network where the robot places them in a bundle space and then distributes them on a table.



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



The final processing of the component is completed on the TruLaser Cell 8030. In addition to the accurate processing, the system also convinces with its self-explanatory and time-saving programming.



The 3D laser system TruLaser Cell 8030 from TRUMPF can be used to cut out accurate contours, that cannot be inserted before bending because they would otherwise be deformed.

Individually excellent, unbeatable as a team

"Each individual machine has its own benefits that will also provide us with quality and cost advantages for future projects," states Dominik Jordan happily. TecPro is particularly impressed with the process reliability of the TruLaser Tube 7000 fiber. The TecPro staff really like the self-explanatory and time-saving programming of the TruLaser Cell 8030. "Once the fixtures, including the component, have been uploaded, programming is practically a matter of course," emphasizes Dominik Jordan. The bending machine from transfluid® not only reliably complies with the required tolerances, but can also be set up quickly and easily using the tool changer. "It is also very good at processing heavy components," explains Jordan.

TecPro and the automotive supplier both confirm that, when combined, the machines and automation are the perfect solution to produce the requested component. Everyone involved is very pleased with the project and successful cooperation. "Our contacts at TRUMPF and transfluid® worked closely together on this project. This was a good fit for us, as we felt that we received advice, the machines, and start-up from a single source," summarizes Holger Malzkorn.

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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