

End customer benefits from mechanical engineering cooperation:

Reliable clinching of galvanized sheets

The cooperation between the mechanical engineering company TOX PRESSOTECHNIK and MiniTec has paid off: By using powerful machine tongs including press module from TOX, combined with a special XY table from MiniTec, a customer from the electronics sector can process-reliably clinch galvanized sheets. Huge bonus for users: The operator does not need to change any tools – he chooses his product, inserts it and starts the process.

“In order to join galvanized sheets, we recommend clinching”, says Marco Unger, Sales Representative at TOX PRESSOTECHNIK in the Swabian town of Weingarten. “Here, the zinc layer can run with the joining process, post galvanizing as in spot welding is not required, and there is no area of corrosion,” says Marco Unger. The end customer wanted to optimize his processes, and specified the processing sequences in detail: The operator places the component on an XY table, moves away from the monitored danger zone, and presses the start button. The PLC now runs through the joining program. For this, first of all, the table is moved to the desired position. The compensating slide then moves the tongs upwards, so that the die is aligned positive-locking below the sheet. The punch of the TOX-Machine Tongs is aligned from the top and joins the sheets. The tongs are then moved down, and the table is positioned for the next joint.

“Two experts developed a complete solution from one source here in their respective area,” says Frank Stattaus, Account Manager at MiniTec in Schönenberg-Kübelberg of Rhineland Palatinate. For clinching, TOX PRESSOTECHNIK supplied machine tongs of type TZ 05 with compensation carriages and internal control. The TOX-Powerpackage RZK is used as drive. MiniTec acted as general contractor for this project, and developed an XY table with flexible base frame. A protective fence with light curtain provides safety. A higher control unit monitors the approach of the different components and joints.

The combined solution has paid off for the end customer. The sheets can be clinched process-reliably and permanently, without creating any issues with corrosion later. Currently, 14 components of different sizes are joined on the system with a varying number of clinching points. Furthermore, the end customer has become more flexible: The system can be programmed quickly and smoothly for new components.

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Keywords: TOX PRESSOTECHNIK; MiniTec; clinching; galvanized sheets; machine tongs; compensation carriage; XY table; protective fence with light curtain; simple programming

Captions:

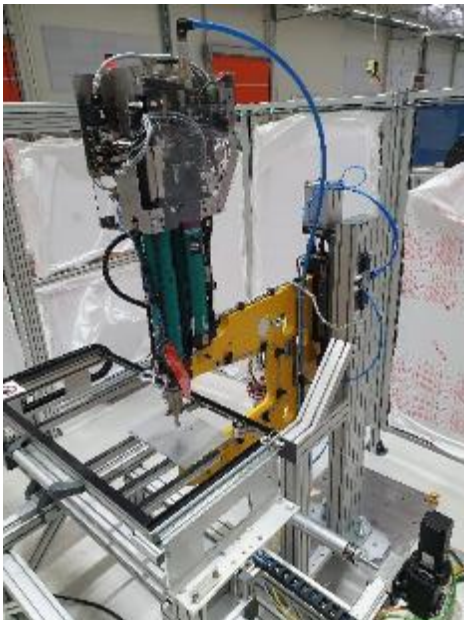


Image 01: The TOX machine tongs of type TZ (yellow) and a 50 kN strong press module (green) from TOX PRESSOTECHNIK, in combination with an XY table incl. base frame and protective fence from MiniTec, ensure process-reliable clinching of galvanized sheets for an end customer.



Image 02: In use here is the TOX-Powerpackage of type RZK, equipped with the proven power bypass and hydraulic end position damping.

Images: TOX PRESSOTECHNIK GmbH & Co. KG

The high-resolution images can be downloaded [here](#).

About the company:

TOX® PRESSOTECHNIK is a supplier of presses, systems as well as components for sheet metal joining and assembly technology. Since its foundation in 1978, the family business has become a global player with more than 1400 employees worldwide, 550 of which are based at the headquarters in Weingarten near Ravensburg, Germany. The success story started with one pneumohydraulic drive – the TOX®-Powerpackage. The “Components” division now includes pneumohydraulic and electromechanical drives as well as controls, sensors and software for process monitoring and quality assurance. In addition to a large range of presses, the system range comprises manual, machine and robot tongs. Another mainstay are modern sheet metal joining procedures, also incorporating the TOX®-Clinching Technology, which makes the company today’s market leader.

Drives, processes and systems from TOX® PRESSOTECHNIK can be found at automotive manufacturers and their suppliers as well as at industrial businesses for household appliances, electronic components, furniture and much more. Special versions of the TOX®-Drives are also approved for the food industry.

TOX® PRESSOTECHNIK is represented worldwide: 18 subsidiaries, amongst others in the USA and South America, Europe and South Africa, India, China and the entire Pacific Region. 20 representatives in many other markets support and advise local customers.

In case of questions, contact:

TOX® PRESSOTECHNIK GmbH & Co. KG

presse@tox-de.com

88250 Weingarten, Germany

www.tox-pressotechnik.com