TOX® Multi Technology Platform

One platform. Many possibilities.



A variety of technologies for maximum process reliability

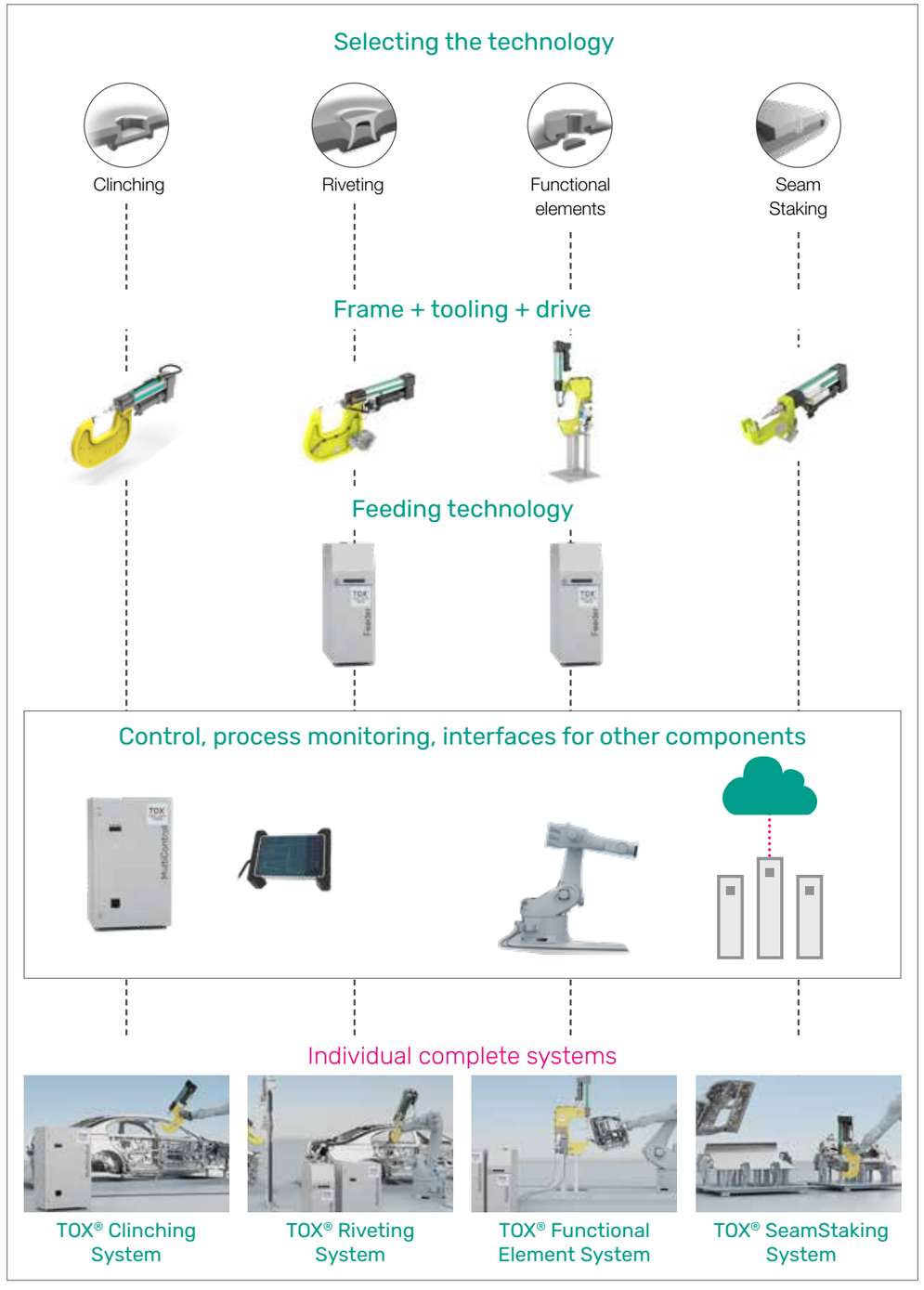


In a world where manufacturing processes must become increasingly customized, faster, and more efficient, flexibility is the key to success. This is exactly where the TOX® Multi Technology Platform (MTP) comes in: a modular system that combines a wide variety of mechanical joining processes—intelligent, scalable, and future-proof.

TOX® Multi Technology Platform offers a universal platform that integrates seamlessly into a wide variety of production environments. Whether clinching, riveting, press-fitting, or other joining technologies—you choose the process, and we provide the right system. Standardized interfaces, reusable components, and a unified control system ensure maximum efficiency and minimal integration effort.

Advantages

- Fast integration into existing production plants
- Future-proof technology thanks to numerous interfaces
- Expandable with modules
- High availability because of proven components
- Reduced time-to-market
- Unified, cross-technology operating software



The perfect match of all components for each technology

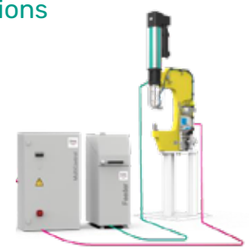
TOX® offers the comprehensive system solution for automated tongs and frames for clinching, riveting, inserting functional elements and SeamStaking. The Multi Technology Platform (MTP) forms the common basis on which the TOX® tong systems and their application programs are executed.

The components are standardized and the focus is especially on the software with uniform operation and control as well as the included mechanical components.

Different configurations of the TOX® Multi Technology Platform are possible for some technologies.

TOX® MultiTechnology Platform system configurations

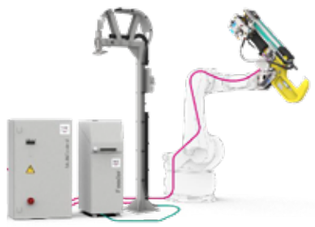
Stationary Blow Feed System
The rivet or element is transported directly to the setting head via a hose. A person or a robot positions the workpiece on the processing machine, and the element is set.



Robot controlled Blow Feed System
The rivets or elements are fed directly to the setting head on the tong via a hose. A robot moves the tong to the workpiece, where the rivet is set.



Robot controlled Dock Feed System
The rivets or elements are transported via a hose to a loading (docking) station. A robot moves the tong to this station, where it fills the magazine with the elements.The robot moves the tong to the workpiece, and the rivets or elements are set until the magazine is empty.



TOX® MultiControl

All technology systems can be controlled with the cross-technology control TOX® MultiControl. This control also offers the option of alternately operate different technology systems, such as clinching and riveting systems, docked on one robot.
The control system features a very high level of IT security. Due to the complete separation of the real-time control (applications) and the software (configuration, visualization, data exports), the system is protected against attacks from outside.



TOX® Feeder

The TOX® Feeder is a completely in-house developed, designed, endurance tested and manufactured conveying system. It achieves outstanding conveying quality in order to sort self-piercing rivets or functional elements and to transport them to the tong in the desired position. The focus of the TOX® Feeder is on highest availability.





TOX® Frame

The standardized TOX® Frame becomes an intelligent tong in the overall system. All data, such as calibration factors, drive data, maintenance counters, or maximum values, are stored on a remanent memory.

The tongs are driven by the precise servo presses of the TOX® ElectricDrive series. In order to ensure the widest possible accessibility of a joining tong to car bodies, parts and components, a selection can be made from a wide catalog.

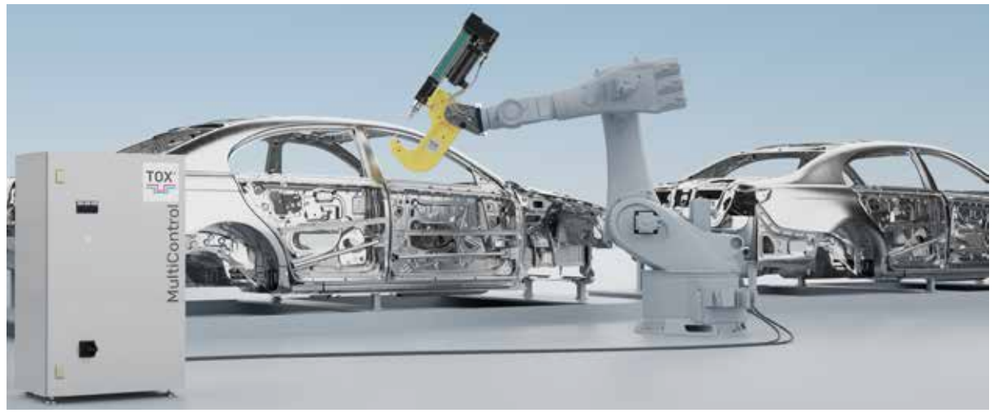


TOX® LoadingStation

A DockFeed configuration uses a loading station. The rivets or elements are fed from the feeder, are stacked and transferred to the tong.
This is an option for saving space or when dealing with irregular contours on workpieces.



Clinching System
Fully automated sheet metal joining



Clinching, also called toxing, has become indispensable in automated manufacturing. The ever-changing companies of the automotive industry in particular rely on the cold joining process because a wide range of joining tasks can be carried out extremely quickly and without additional materials.

The reason for this is (energy) efficiency, on the one hand. On the other hand, it is electrical conductivity, which, due to the continuous development towards electric mobility, is more in demand than ever.

With the TOX® Multi Technology Platform clinching truly comes into its own.

Advantages

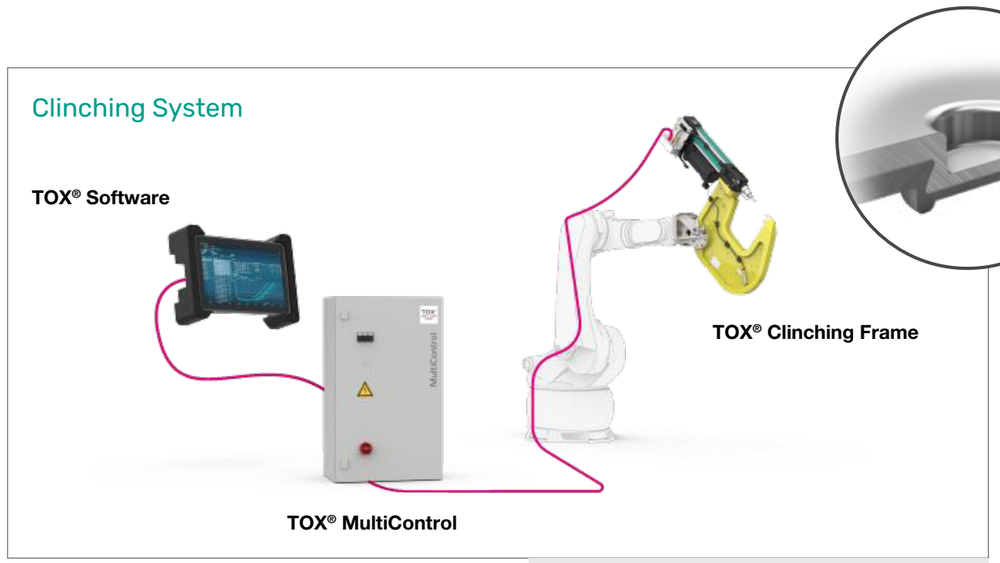
Process times
Extremely short cycle times are required in many automated production lines and processes. These can be achieved quickly and reliably with the TOX® Clinching System. Through minimal process times, we increase your productivity - from day one.

Intelligent tongs: TOX® Clinching Frame
Tong-specific data such as calibration factors, maintenance counters and maximum values are not stored on the controller, but on a retentive memory on the tong. This means that you never lose track of the data, even when changing a frame.
The pneumatic TOX® ToolCheck provides additional intelligence on the tongs. This checks the tools and detects possible defects.

Standardized module
The clinching system consists of standardized modules. This way, we provide you with cost-optimized systems and can optimally respond to time-critical requirements

User friendliness
One control for all systems. One software for all systems. Reduce the complexity for your employees: The systems of the multi-technology platform can be comprehensively operated and maintained with just one training session.

Clinching System



TOX® Clinching System as robot guided system. Also possible as stationary system.

Options

TOX® Spraying System
For better joining results workpieces and tools can be sprayed with an emulsion e.g. parts made of stainless steel.



TOX® Die Driven - Systems
Instead of the punch, the die side moves toward the piece-part. Smart on workpieces with difficult accessibility.



Riveting System
Automated sheet metal joining with rivets



In case of high technological demands on a component connection, the rivet technologies from TOX® are the right choice. Semi-hollow punch rivets cut through the first layer of material and mold into the following sheet layers. This results in an inseparable joint.

The TOX® Riveting System is predominantly used in automobile manufacturing. TOX® is system supplier for some of the players. With extremely high availabilities, a large number of connections on bodies around the world are created by systems and technology know-how from TOX®.

Advantages

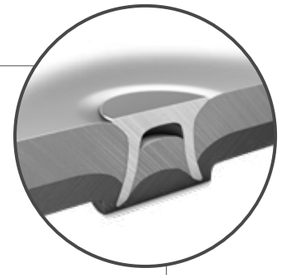
Your rivet, our solution
For many semi-hollow punch rivets we provide the suitable system technology. Starting with storing the rivet in the bunker, the conveyor pot in which the rivets are sorted up to the joining tongs, we provide standardized system solutions. Benefit from efficient project management, maximum process reliability and minimized stocking of spare parts.

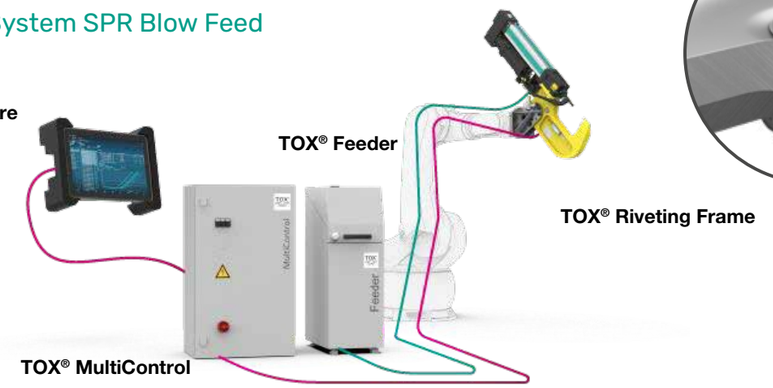
Progressive feeding technique
Our system is independent of rivet lengths. This means: only one conveying hose, one conveyor pot and one loading station - irrespective of rivet length.
The spiral conveyor in the TOX® Feeder is equipped with a sensory incorrect filling control, which detects incorrectly filled rivets. Dirt particles are collected by a separator. This helps to reduce contamination, and higher availabilities can be achieved.

Intelligent tongs: TOX® Riveting Frame
Our system technology, and particularly the joining tongs can implement all technological requirements. With the TOX® Riveting Frame a rivet can be set to force, position and distance as well as rivet head protrusion and recess.
Due to a remanent memory, settings, such as calibration factors, maintenance counters and maximum values, are always stored where needed - directly on the tongs.

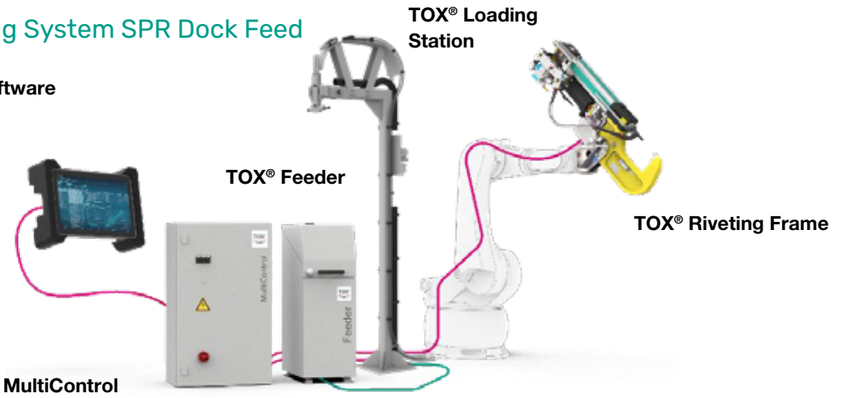
User friendliness
One control for all systems. One software for all systems. Reduce the complexity for your employees: The systems of the multi-technology platform can be comprehensively operated and maintained with just one training session thanks to plug-and-play properties and a standardized look.

Riveting System SPR Blow Feed





Riveting System SPR Dock Feed



TOX® Riveting System can also be configured as stationary system.

Options

TOX® Die Changer
changes dies automatically on SPR-systems.



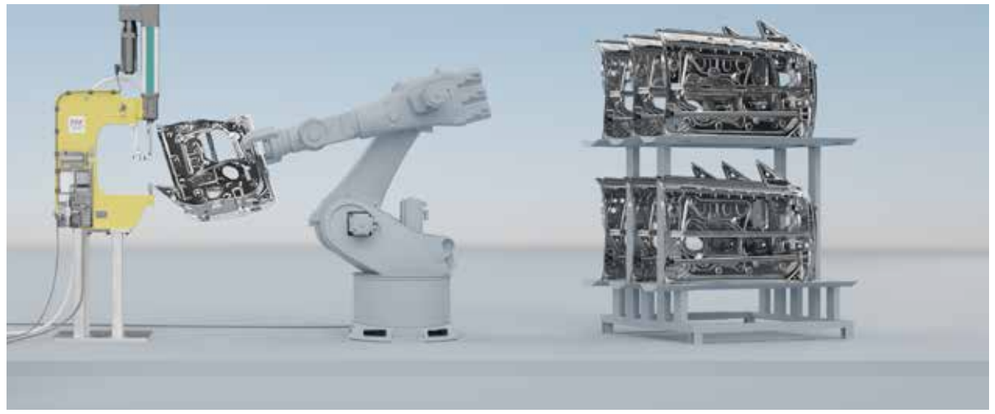
TOX® Die Driven - Systems
Instead of the punch, the die side moves toward the piece-part. Smart on workpieces with difficult accessibility.



TOX® Poke Yoke System
Element bags are scanned and, depending on the test result, the feeder lid is unlocked.



Functional Element System
Automatically press elements into sheet metal



Functional elements can be pressed into almost any material. The elements are processed with the fully automated TOX® Functional Element System. Here, any technological requirement, which involves a pairing of functional element and component, can be realized.

With the TOX® Functional Element System you will receive a standardized complete system with progressive setting and feeding technology.

Advantages

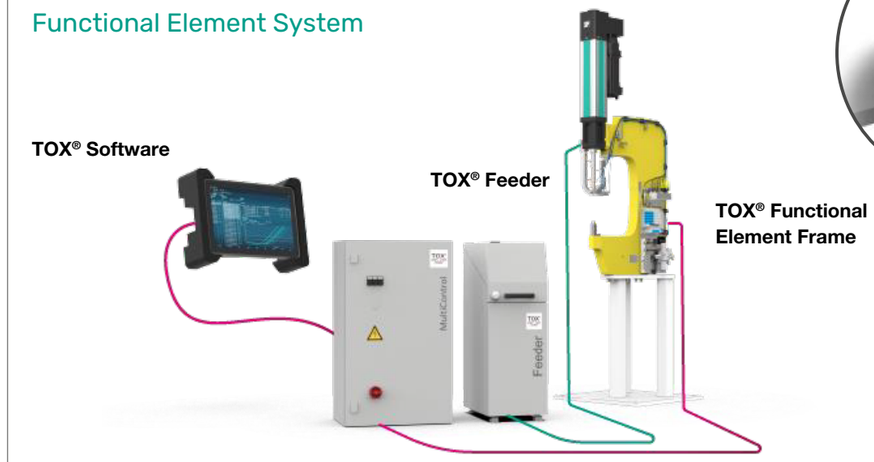
Element specific feeding technology
The feeding technology for a element is designed, manufactured and set up in our company. Customer-specific solutions where it matters, standard solutions where possible - with this credo, we achieve highest availabilities for our systems.

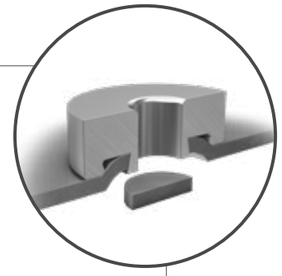
User friendliness
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All from one source
The entire system is provided by TOX®. From the sorting and conveyor technology, the frames with drives from TOX® and the setting technology, as well as the tools and control unit and software.
Components, which were developed and validated in-house, ensure smooth processing of all functional elements.

Intelligent tongs: TOX® Functional Element Frame
Our systems provide everything to be able to process all elements safely. However, element-specific processing also means meeting specific technological requirements. Here, different processes with respectively required parameters can be implemented, and additional components can be integrated. This can be lubricating systems, center cutoff ejectors or process release pins.

Functional Element System





The **TOX® Functional Element System** can also be configured as stationary system.

Options

TOX® Spraying System
For better joining results workpieces and tools can be sprayed with an emulsion e.g. parts made of stainless steel.



TOX® Poke Yoke System
Element bags are scanned and, depending on the test result, the feeder lid is unlocked.

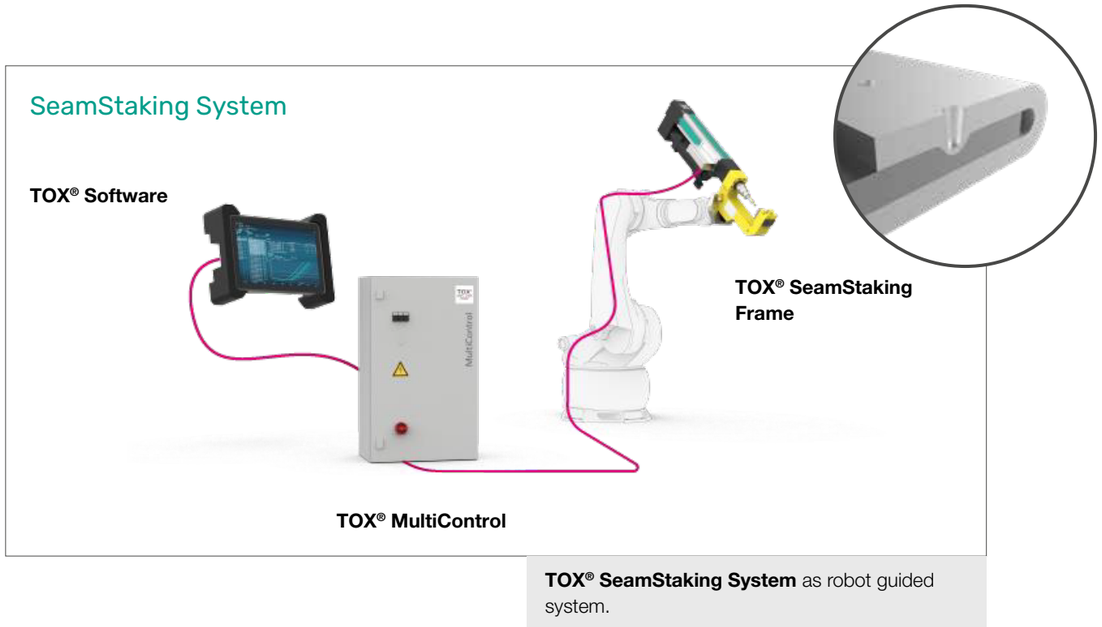


SeamStaking System
Automatically fixing sheet metal workpieces



The innovative TOX® SeamStake technology reliably secures sheet metal components, effectively prevents displacement in the plane direction and is typically used in folded component areas. A secure fixation is achieved through precisely formed positive locks.

The special feature of this advanced technology is that it does not affect the surface of the component opposite the stamping tool thanks to its filigree tool geometry. By integrating this innovative joining technology into production, energy-intensive thermal processes that were previously used can be partially eliminated.



TOX® SeamStaking System as robot guided system.

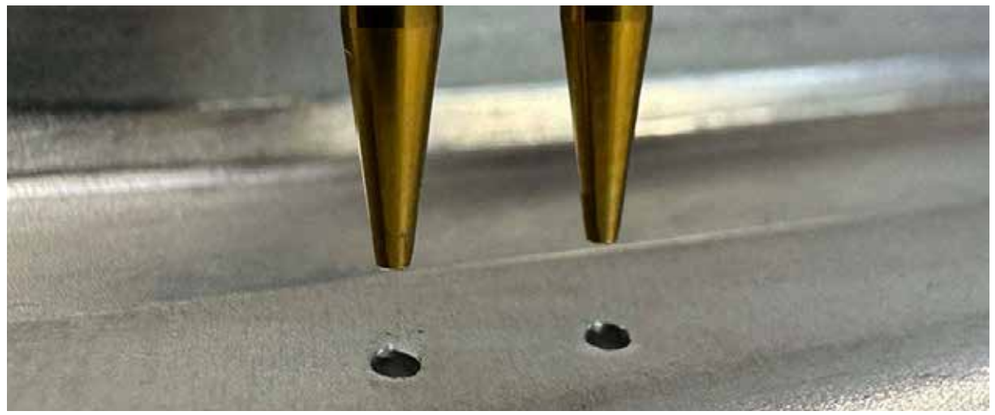
Advantages

Highest technological quality
Precise system technology and coordinated, controlled processes ensure that the necessary technological quality is achieved. With the system and the cold joining technology, the processes are cost-effective, energy- and resource-saving and no reworking is required at the joint.

Production safety
Like all TOX® Technology systems, our system offers you integrated process monitoring with a wide range of evaluation options. This guarantees maximum production reliability. In combination with the highest technical availability of the system technology, you are ideally equipped with this system.

User friendliness
One control for all systems. One software for all systems. Reduce the complexity for your employees: The systems of the multi-technology platform can be comprehensively operated and maintained with just one training session thanks to plug-and-play properties and a standardized look.

Standardized modules
The TOX® SeamStaking System consists of standardized modules. This enables us to offer you cost-optimized systems and to respond optimally to time-critical requirements.



Operation, control and process monitoring for more transparency

In modern production, not only precise joining processes are crucial - but also the ability to control them transparently, comprehensibly and intelligently. With our powerful software solutions and process monitoring systems you will get the most out of application.

Advantages

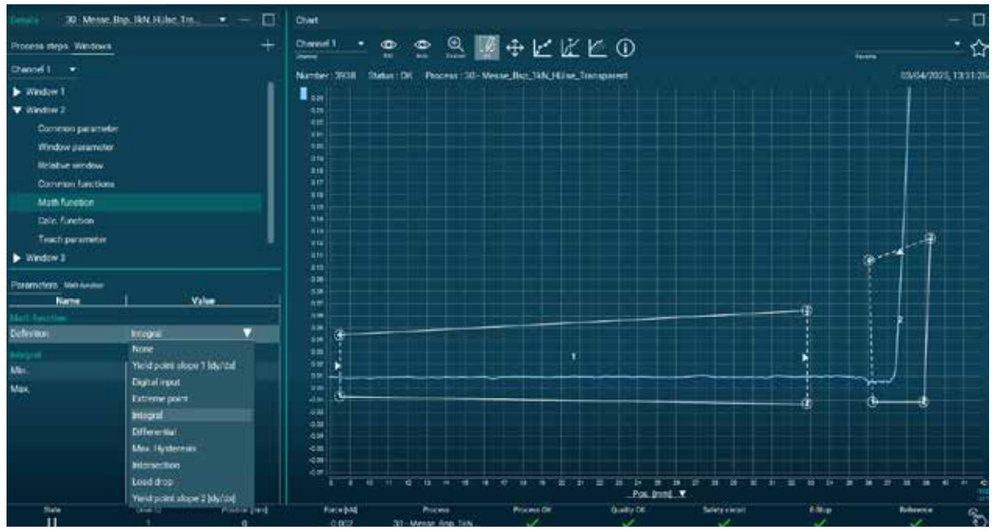
- Modern user interface „look and feel“
- Widget based for customizable dashboards
- Intuitive handling
- Easy installation and parametrization
- Integrated window technique for many applications

TOX® Software

The TOX® Software offers a intuitive user interface, powerful data-interfaces and a fast integration of the TOX® systems in higher level control systems (SPS, MES, ERP). It enables complete control, parameterization and monitoring of all TOX® components – from the drive system up to the position of the tool.

The communication takes place in real time and guarantees high repetition accuracy and maximum process control performance.





TOX® Process monitoring PMO

The TOX® Process Monitoring provides you with real-time insights into the system data. The robust, milled aluminium housing of the TOX® UDI Panel conceals a powerful PC that ensures maximum reliability and efficiency. Use our process monitoring to optimise the monitoring and control of your production.

A key advantage of the solution is the extended monitoring option for systems. By integrating process monitoring (PMO) and additional sensors, further processes in the system can be recorded and monitored. The collected data is then merged on a common interface, enabling seamless transmission all the way to the cloud. The result is consistent, comprehensive control and data utilisation across the entire system

Advantages

- Real time detection and evaluation of force-travel curves
- Integration of the sensorics (e.g. force-, travel- or temperature sensors)
- Intuitive operation
- Seamless traceability of all process data
- Export functions for quality management and documentation

Applications in real life
Individual and flexible



TOX® Clinching System
Robot guided bionic-frames in a robotic cell join car body parts.



TOX® Multi Technology Platform
Stationary system, where the robot moves the workpieces.



TOX® Riveting System SPR
in dock-feed configuration.



TOX® Riveting System SPR
Robot-guided frames in a robotic cell that join car body parts with rivets.



TOX® Clinching System
Robot-guided frames in a robotic cell join car body parts.

Your Partner for future-proof solutions. Globally networked. Regionally based.

Joining is tradition

For over 45 years, TOX® has been a leader in providing innovative solutions for sheet metal joining and drive technology. As an international family-owned business with its headquarters in Weingarten (Baden-Württemberg) we develop intelligent systems for joining, press-fitting, and clinching — from individual components to complex production systems.

TOX® stands for the highest quality, durability and depth of integration.







Technologies are our DNA

TOX® determines the ideal technology for the respective application in advance in its in-house test laboratory. Preliminary tests are carried out and analyzed using samples and test parts.

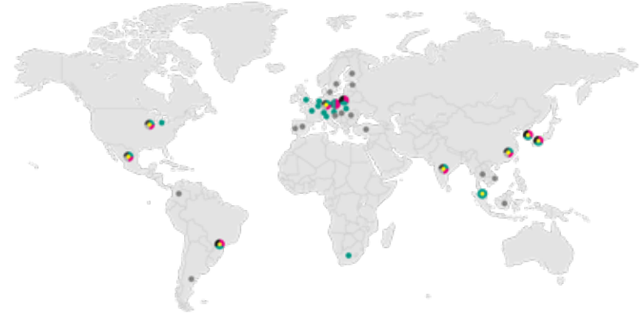
The results provide important parameters, such as the required pressing force or tool geometry, which are incorporated into the system configuration and processing technology. Final test reports verifiably ensure the quality of the joint.







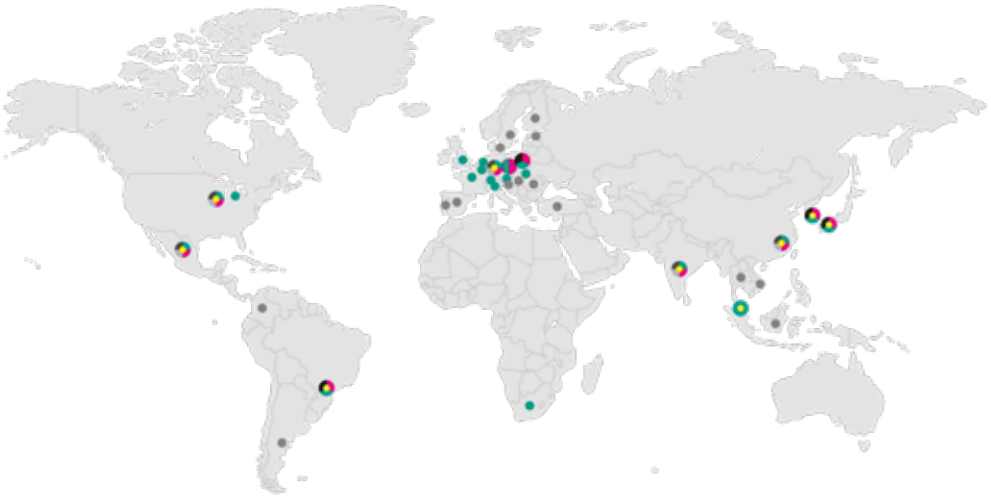




German Engineering meets global Innovation

Our headquarters and technology center are located in Weingarten (Baden-Württemberg). With 17 branches worldwide and a broad network of sales partners, we offer global proximity and comprehensive service.

Five production sites – in Germany, the USA, China, India and Mexico – ensure highest quality wherever our customers are.



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Find your local contact partner at:
www.tox.com

792843 / 93.202604.en Subject to technical modifications.