Product Range

TOX®-Powerpackage

TOX®-ElectricDrive

TOX®-PowerKurver

TOX®-FinePress

TOX®-Presses

TOX®-Tongs

TOX®-Controls, TOX®-Monitoring

TOX®-Joining-Systems

TOX®-Punching, TOX®-Coining

TOX®-Press-Fitting

TOX®-Production Systems
Ideas –
Impulse to Innovation
Interconnection of the markets is a central subject of our times. We have met the requirements associated with this subject by implementing our own manufacturing and sales locations in Europe, America and Asia. We have created a dynamic, future-oriented structure within TOX® PRESSOTECHNIK, where all requirements have been fulfilled in compliance with each country’s Standards for Environmental, Working Safety and Working Conditions, and in strict conformance with the Worker Unions and our self responsibility as enterprise.

People –
Basis for Visions
The basis for high performance have always been and remain the people, along with their capability and readiness to be visionary. The people at TOX® PRESSOTECHNIK have developed the company into a technology leader in its segment.

Competence –
Cornerstone of World-wide Presence
More than 1000 qualified employees at 19 TOX® PRESSOTECHNIK locations and colleagues in more than 20 representative companies offer customers worldwide a comprehensive engineering-know-how and service. Modern production and communication technologies increase our efficiency and pleasure in providing solutions to our customers.

Visions
References –
Symbol of Trust

As expected, the entire global manufacturing industry is our customer.

Some of our customers:
Entire automotive industry
Entire tier one suppliers
AEG Home Appliances, Germany
BLUM, Austria
BOSCH-SIEMENS, Germany
BRASTEMP, Brazil
CANON, Japan
CATNIC-GROUP, Great Britain
DELL, Malaysia
DYSON, Great Britain

EBM-PAPST, Germany
ELSTER, Germany
FRIGIDAIRE, USA
GDA Hotpoint, Great Britain
GENERAL ELECTRIC, USA
HELLA, Germany
HEWLETT-PACKARD, Singapore
ILLIG Maschinenbau, Germany
KONICA, Japan
KYOCERA, Japan
LG, Korea
LIEBHERR-Hausgeraete, Bulgaria
MATSUSHITA-PANASONIC, Japan
MAYTAG, USA
MINOLTA, Japan
MITSUBISHI, Japan
NIENSTEDT, Germany
POLAROID, Great Britain
RICOH, Japan
SAMSUNG, Korea
SANKO, Japan
SCHAEFER-WERKE, Germany
SCHULTHESS, Switzerland
SIEGENIA-AUBI, Germany
SIEMENS, Germany
TETRA PAK, Switzerland
THYSSEN KRUPP, Germany
TOSHIBA, Japan
USK Karl Utz Sondermaschinen, Germany
VAILLANT, Germany
VOITH TURBO, Germany
WHIRLPOOL Home Appliances
Worldwide

Argentina
Austria
Belgium
Brazil
Canada
China*
Colombia
Czechia
Finland
France
Germany*
Great Britain
Hongkong
Hungary
India*
Italy
Japan
Lithuania
Malaysia
Mexico
The Netherlands
Poland
Portugal
Romania
Russia
Slovenia
Slovakia
Sweden
Switzerland
South Africa
South Korea
Spain
Taiwan
Thailand
Turkey
USA*

* Manufacturing locations
TOX®-Powerpackage
Optimal press force from 2 – 2000 kN

TOX®-PowerKurver
Power that follows the curve. From 0.5 – 90 kN

Functioning of the TOX®-Powerpackage

TOX®-Powerpackage – the energy saving pneumatic intensifier with integrated oil system and automatic activated power stroke. The technology combines pneumatics and hydraulics, providing you with the following advantages:

• Total stroke up to 400 mm
  Power stroke up to 200 mm
• Innovative design with patented technology
  - Bypass system
  - Hydraulic end position damping
  - Absolute air/oil separation
• Few moving parts
• Overfill protection
• Low energy consumption
• High wear resistance
• High stroke frequency
• Easy on tooling
• Comprehensive range of accessories
• Also available with air spring

TOX®-PowerKurver
The robust, purely pneumatic drive

Type KK 90
TOX®-ElectricDrive
Modular Servo-Systems up to 700 kN, from standalone to volume production assembly lines to complex speciality machinery: The solution for all applications....

The proven drives
The slim standard drive
TOX®-Electric Power Module EPMS
5 – 200 kN

The compact drive
TOX®-Electric Power Module EPMK
5 – 700 kN

The tongs drive
TOX®-Electric Power Module EPMR
55, 100 kN

Advantages in detail:
+ High life expectancy and robustness
+ Maximum energy efficiency reduced operating costs
+ High mechanic precision
+ Individual special versions available
+ Simple and comprehensive parameter setting, control, service
+ High-dynamic performance by force and distance regulation
+ The system is pre-configured and calibrated, thus, ready for service (⇒ plug and play)
+ Stand-alone operation without PC/PLC is possible
+ Utmost safety up to and including category 4 as per EN 954-1, performance level e as per DIN EN ISO 13849-1 and SIL3 as per EN/IEC 62061 is possible

The new drives
TOX®-ElectricDrive Type EQ-K and Type EX-K
• Press force EQ: 2 – 100 kN
• Press force EX: 5 – 200 kN

The robot tongs drive
TOX®-Electric Power Module EPMR
(Version 500 and 700)
• Special mounting flange
• 55 – 80 kN
• For clinching applications (V 500) and riveting applications (V 700)

When work processes require high flexibility and precision, then the use of electromechanical servo drives is the ideal choice.

The TOX®-ElectricDrive family with press forces from 2 – 700 kN provides the best drive solution for all applications. By using ball screws and planetary roller screws, the drives are extremely versatile.

System solutions
Complete press with safety control according safety level 4

Robot guided clinching tongs

www.tox-en.com
TOX®-FinePress
Small press program from 2 – 57 kN
Available in three frame sizes for each force range.

The assignment:
• increase productivity
• assure quality
• save on investment

The solution: TOX®-FinePress

• Flexibility
  + extensive program
  + ample accessories
  + quick tool change
  + pull handle 360° adjustable

• Quality
  + precise linear ram guide
  + smooth operation
  + robust design
  + rigid cast steel frames
  + pressing monitor available

• Values
  + best price/performance ratio
  + all accessories retrofittable
  + worldwide service
  + 12 months warranty
  + TOX®-Presses are safe:
    They meet all European standards and guidelines. Turnkey machines are CE conforming.

Guide quality – the heart of our system and your guarantee for best results.

Same guidance as found in machine tools

• Minimum friction design guarantees process repeatability
• Requires no adjustment of guide rail preload

Additional Accessories:
• Tool fixture
• Fine stroke adjustment
• Side grip
• Machine bases
• Slide tables
• Electric/pneumatic controls
• Pressing monitoring with sensors

TOX®-FinePress:
The expandable, economical program

www.tox-en.com
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TOX®-Presses
Press frames for presses from 2 – 2000 kN

- The press frames are the basis of the TOX®-System Solutions – the flexible modular kit system.
- All press frames can be combined either with pneumohydraulic drive TOX®-Powerpackage, electromechanical drive TOX®-ElectricDrive or hydraulic cylinder HZ.
- TOX®-Controls and TOX®-Monitoring for controlling and monitoring the machine.
- Safety devices and further extensive accessories allow integration of the press frames in all types of plants.
- In combination with the tool sets TOX®-Tools, ideal tools for your operation can be provided.
**TOX®-Controls**

**TOX®-Controls – a modular system**

Only a machine or press well matched to the job can provide you with the required efficiency and desired cost effectiveness.

This is accomplished by:
- a well thought-out controls concept
- a modular system

TOX®-Controls are:
- simple and operator friendly
- safe to the maximal level

TOX®-Controls offer:
- maximum of functions
- optimal price-performance ratio

From simple, pneumatic basic controls, or electro-pneumatic controls, all the way to complex, custom programmable controls with nearly unlimited possibilities, all control needs can be fulfilled.

All TOX®-Controls meet the latest technical safety norms and guidelines.

With TOX®-Controls, you are always “on the safe side”.

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**Network**

- TOX®softWare

**Protocol**

- Ethernet
- Interbus/ProfiNet/Profibus
- PLC


00.201506.en
Control units for monitoring of clinching and pressing processes

The evaluation device can be selected according to each requirement. From 1- to 12-channel clinching monitoring all the way to continuous measuring in force-travel-pressing monitoring.

Various evaluation methods allow for different analysis of your processes. Diverse communication-interfaces allow for simple and quick data transfer to the data storage.

We provide:
- customer optimized total solutions
- single components
- high quality sensors
- shielded cables
- user defined evaluation software
- everything from one source, one system

TOX®-Clinching Monitor CEP

- Force monitoring of clinching processes
- Trend monitoring
- Process sequencing
- Network capability over Ethernet TCP/IP
- Expandable up to user defined processes
- With and without display

TOX®-Pressing Monitor EPW

The TOX®-Pressing Monitor EPW checks continuously the pressing operation providing quality control during production:
- monitors pressing- and forming processes, as force-travel function
- controls windows: threading, progression, block measure/ block force
- 64 different component part types in 64 measuring programs
- provides most important data about process status

Interfaces:
- CAN-Interface
- Integrated Ethernet-Interface
- USB

Optional:
- Profibus
- Analog output 1 – 10 V

TOX®softWare

This specially developed software from TOX® PRESSOTECHNIK integrates all appropriately equipped TOX® Products. Programming, visualization, networking and archiving, all this can be done using a common platform.

TOX®-Force Sensor

Measuring range from 0...1 kN to 0...1000 kN
The TOX®-Round Joint for a good connection:
The patented TOX®-Round Joint is the core of our sheet metal joining technology. A simple round punch presses the materials to be joined into the die cavity. As the force continues to increase, the punch side material is forced to spread outwards within the die side material. The result: An aesthetically pleasing round button, which joins clearly without any burrs or sharp edges on which corrosion could set in.

- TOX®-Round Joint: 30 to 60 % cost savings as compared to spot welding.
- The TOX®-Joint achieves up to 70 % and as a TOX®-TWINpoint practically 100 %, of the static strength of a spot weld.
- The dynamic strength of TOX®-Joint is higher than in spot welding.
- The materials are sealed at the joint and therefore stronger. There are no mechanical notch effects.
- Excellent corrosion resistance.
- Outstanding conductivity for electric components.
- The process can automatically be monitored and documented by using TOX®-Process Monitoring Systems CEP / EPW.

Parts joined with the TOX®-Joint

TOX®-Tools

TOX®-SKB

TOX®-ClinchRivet

TOX®-Multipoint Tool

TOX®-Tools

www.tox-en.com
TOX®-Systems and Applications
Spectrum for application specific solutions

**TOX®-Punching**
TOX®-Punching Tongs, TOX®-Punching Bow, TOX®-Punching Presses, TOX®-Fixtures

- Turnkey solutions for your punching applications
- Selection of the punching system according to your requirements
- “Breakaway” damping integrated in the drive

**TOX®-Coining Systems**
TOX®-Coining Tongs, TOX®-Coining Presses, TOX®-Coining PowerKurver

- Coining of symbols, numbers or letters, etc. on sheet metal parts
- Handheld stamp holder, manual or automatic marking heads with custom symbols
- Flexible modular system

**TOX®-Assembly Systems**
Assembling, Press-fitting, Mounting

- Press-fitting with force and travel monitoring
- Best repeatability
- Own software module for the drives
- Matched process monitoring

**TOX®-Fastener-Insertion**
for function elements like nuts, studs, rivets, screws

- Handling technology
- Feeding technology
- Piercing technology
- Planning
- Development
- Design in 3D

**TOX®-Solid Punch Riveting**
Insertion systems for solid punch rivets

- Tooling
- Placement heads
- Rivet feeding systems
- Flexible robot station thanks to the proven docking system
- Process monitoring

Our spectrum for application specific solutions

- Modular system, matched individually
- Conception, planning, development together with our customers

Everything from one source
Suitable press frames, standard controls and special drives. Our own know-how for tooling.
**TOX®-Mini Tongs**

**TOX®-Handheld Tongs**


**TOX®-Handheld Tongs**

Type CHH 03.45

Type CHH 03.75

These tongs are ideal for piece parts with intricate shapes due to the versatile C-frame design. The hydraulic lines have been integrated into the various hanging and rotary fixtures.

**TOX®-Handheld Tongs**

Type CMH 04.45

This X-version tongs allows for easy access into hard to reach places. Operator safety is provided by a tool opening of 6 mm.

**TOX®-Handheld Tongs**

Type CHH 04.45

X-version tongs with the joining axis perpendicular to the drive axis. Tool opening is 6 mm for 1-hand controls, and tool opening of 30 mm is available for 2-hand controls.

**TOX®-Handheld Tongs**

Type CMH 01.45

These versatile tongs with a retractable lower jaw were originally designed for joining of ventilation sheet metal ductwork. They feature robust and flexible handling with the integrated energy lines and a body which can rotate 360°. In addition, they provide high repeatability of the defined, adjustable stroke (adjustment of control dimension X) and long tool life.

**TOX®-Flange Tongs**

Type CMH 02.30

Narrow flanges can be joined using these super compact tongs with a solid punch and die. Extremely long tool life. Integrated energy lines provide a clean design with many degrees of motion.
Modular kit system

The modular kit system of the TOX®-Tongs is based on various drive types, bow variants and tool sets for all kinds of supported joining technologies. Standard interfaces allow any combination of these components and thus a high quality standard for all applications. Additionally to the weight-optimised basic versions, customer-specific designs can be realised.

**Drives**
- Optimised versions for clinching and riveting procedures
- Electromechanical drives TOX®-ElectricDrive
- Pneumohydraulic drives TOX®-Powerpackage
- Hydraulic cylinder HZ

**Tool sets for**
- all clinching applications
- TOX®-ClinchRivet
- all popular riveting operations

TOX®-Robot Tongs
TOX®-Machine Tongs

TOX®-Robot- and TOX®-Machine Mount Tongs type TZ

The modular kit system shown below provides the freedom to select the right tongs for your application. The tongs are delivered complete and ready to plug in and start working.

TOX®-Robot-Machine Mount Tongs with compensating slides

Applicable to tongs with the die on the drive side. It prevents any undesirable loads on the workpiece.
Modular design
Even in the selection of a standard press, you have numerous possibilities to individualize your press. The modular design principle provides an uncomplicated realization.

Your individual specifications will be provided. Due to our extraordinary high inhouse production and the use of up to 90% standard parts, we are independent, quick and low-priced. This is the only way to always guarantee our known TOX®-Quality, and to incorporate each improvement immediately into production and offer optimal flexibility in delivery.

Standards and guidelines
TOX®-Presses are safe: They meet all European standards and guidelines. Complete machines are CE conforming.

Press frames
- C-frames
- 2-column
- 4-column
- Welded frames

Safety guard enclosures
- Steel or aluminum framing
- Perforated sheet
- Polycarbonate panels

Additional components
- Oiling systems
- Greasing systems and more

Base frames
- Welded construction
- Sheet metal construction
- Aluminum framing
- Any size
- With optional damping elements
- Height adjustment
- Standing or seating workplace
- Foot rests and much more

Drive modules
- Pneumohydraulic cylinder
  TOX®-Powerpackage S/K/KT
- Electromechanical drives
  TOX®-ElectricDrive EPMS/EPMK
- TOX®-Hydraulic Cylinder

Safety equipment
- 2-hand consoles
- Light curtains
- Sliding doors
- Safety modules CLX
- Enclosures
- Restraint device

TOX®-Monitoring
- Force-Travel-Monitoring EPW
- Force-Monitoring CEP

TOX®-Controls
From simple safety controls to complex S7 or Allen Bradley controls with many options. Integration into subordinate control systems and quality management concepts is possible.

Tooling
- Bending
- Marking
- Piercing
- Joining
- Fastener Insertion
- Mounting
- Clinching
- ...

Part loading
- By hand
- Slide table
- Index table
- Shuttle

Options
We design according to your specifications: e.g. outlets for scrap, good and bad pieceparts, e.g. mounting tools and much more.

This data can be downloaded from: www.tox-cad.com
Applications

- Clinching
- Assembling
- Self-Piercing
- Riveting
- Punching
- Coining
- Clamping
- Pressing
- Bending