

# Product Range

TOX®-Powerpackage



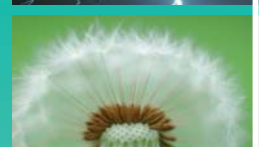
TOX®-PowerKurver



TOX®-ElectricDrive



TOX®-FinePress



TOX®-Presses



TOX®-Controls, TOX®-Monitoring



TOX®-Joining-Systems



TOX®-Tongs



TOX®-Punching, TOX®-Coining



TOX®-Press-Fitting



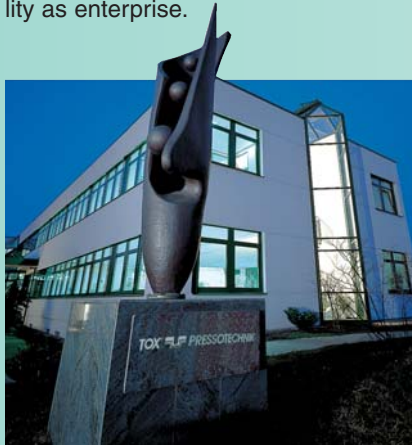
TOX®-Production Systems





## 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.



Germany

## 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.



USA



India



China



Japan



South-Korea

## Competence – Cornerstone of Worldwide Presence

More than 600 qualified employees at 18 TOX® PRESSOTECHNIK locations and colleagues in 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  
BRAAS, Germany  
BRASTEMP, Brazil  
CANON, Japan  
CATNIC-GROUP, Great Britain  
DELL, Malaysia

DYSON, Great Britain  
FRIGIDAIRE, USA  
GDA Hotpoint, Great Britain  
GENERAL ELECTRIC, USA  
HANSA, Germany  
HELLA, Germany  
HEWLETT-PACKARD, Singapore  
KONICA, Japan  
KYOCERA, Japan  
LG, Korea  
MATSUSHITA-PANASONIC, Japan  
MAYTAG, USA  
MINOLTA, Japan  
MITSUBISHI, Japan  
MTU, Germany  
NEFF, Germany  
OTIS, Germany

POLAROID, Great Britain  
RICOH, Japan  
ROWENTA, Germany  
SAMSUNG, Korea  
SANKO, Japan  
SCHULTHESS, Switzerland  
SIEMENS, Germany  
TEHALIT, Germany  
TETRA PAK, Switzerland  
THYSSEN KRUPP, Germany  
TOSHIBA, Japan  
VAILLANT, Germany  
WHIRLPOOL Home Appliances  
Worldwide

# worldwide presence



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

\* Manufacturing locations

# TOX®-Powerpackage

Optimal press force from 2 – 2000 kN (0.2 – 200 tons)

# TOX®-PowerKurver

Power that follows the curve. From 0.5 – 80 kN (0.05 – 8 tons)

**Series Q-S**  
Standard  
Series S and X-S



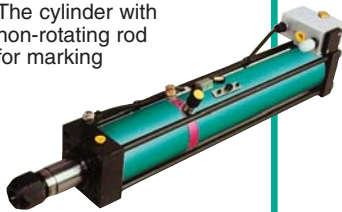
**Series S .50**  
Powerstroke Limiter



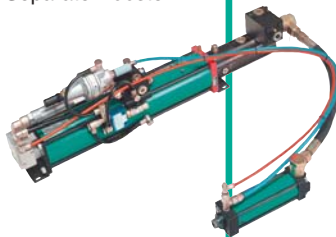
**Series T**  
The Turbo Cylinder for up to 550 strokes / min.



**Series RP**  
The cylinder with non-rotating rod for marking



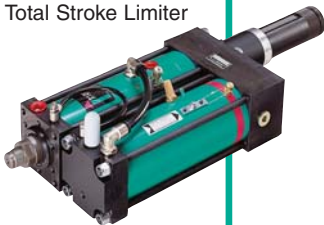
**Series KT**  
Separate Booster



**Series Q-K**  
Compact K  
Short Design



**Series K .51**  
Total Stroke Limiter



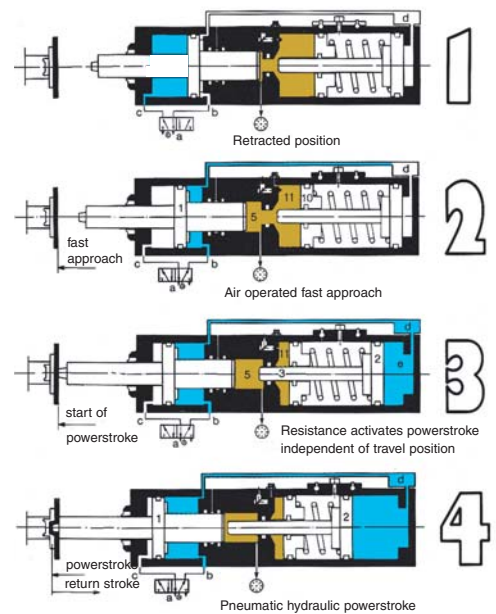
**TOX®-PowerKurver**



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

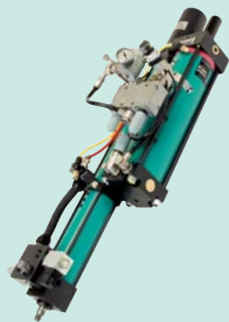
- Total stroke up to 400 mm, Power stroke up to 200 mm
- Innovative design with patented technology
  - Bypass system
  - Hydraulic end position damping
  - Absolute air/oil separation
- Few moving parts
- Overfill protection
- Low energy consumption
- High wear resistance
- High stroke frequency
- Easy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

## Functioning of the TOX®-Powerpackage



### Options / Accessories

**Damping ZED**  
Ideal for pressing and punching procedures



**Holding brake ZSL**



**Tool holding fixture ZWK**





# TOX®-ElectricDrive

Modular Servo Press Spindles from 0.5 – 400 kN (0.05 – 40 tons), from Standalone to volume production assembly lines to complex Speciality machinery: The solution for all applications...

## High flexibility and modularity of mechanics, electrics and software for all TOX® ElectricDrive Systems

Monitoring of joining, assembling and other production processes, which have to be repeatable and retractable, requires a considerable effort, if common presses and drives are applied.

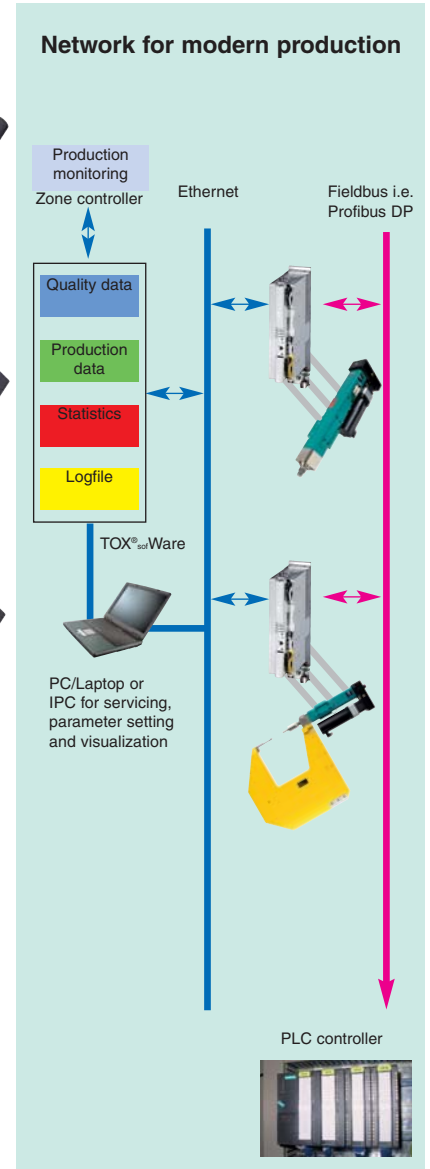
The application of electromechanical servo presses with their integrated control and positioning features obviously is a good alternative solution. Connections to existing controls or data networks are imperative for this task. To quickly install and run these systems, the usage and visualisation programs have to be purposely designed for these requirements. With our powerful software package TOX<sup>soft</sup>Ware, the system will be easily set up and integrated into your application without any special software or programming knowledge.

## Servo Drive Units:

**The slim standard drive TOX®-Electric Power Module EPMS**  
10, 25, 55, 100, 200 kN

**The compact drive TOX®-Electric Power Module EPMK**  
10, 25, 55, 100, 200, 400 kN

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



## The line-Q and line-X idea

Between the servo drive and the servicing, parameter setting and visualization, there is always an axis-controller. The functions and interfaces available depend on the type of the axis-controller.

For the TOX®-ElectricDrive, one may select between two single axis controllers, line-Q or line-X. Both lines are **identical in their mechanical design** and differ only with regards to the number of features.

### Complete program line-Q

- Short lead time
- Limited in the number of functions and customer interfaces

**The first choice if the extensive list of functions is sufficient.**

### Standard

- Data bus • RS 232 / RS 485
- Ethernet TCP / IP
- Fieldbus • Profibus-DP

### Optional

Interbus instead of Profibus  
Other Fieldbus available over Gateway, e.g. DeviceNet, ControlNet, Ethernet IP

### Analog

0-10 V, alternative to Profibus

### Digital

8 inputs / 8 outputs expandable to 32

### Complete program line-X

- Nearly unlimited number of functions with custom interfaces possible.

**The best choice if the extensive list of functions is already sufficient or can be expanded by the TOX® service experts.**

### Standard

- Data bus • Ethernet TCP/IP
- Fieldbus • Profibus-DP
- CanOPEN

### Optional

Other Fieldbus available over Gateway, e.g. Interbus, DeviceNet, ControlNet, Ethernet IP

### Analog

0-10 V; two available with one free

### Digital

8 inputs / 4 outputs expandable to 255



# TOX®-FinePress

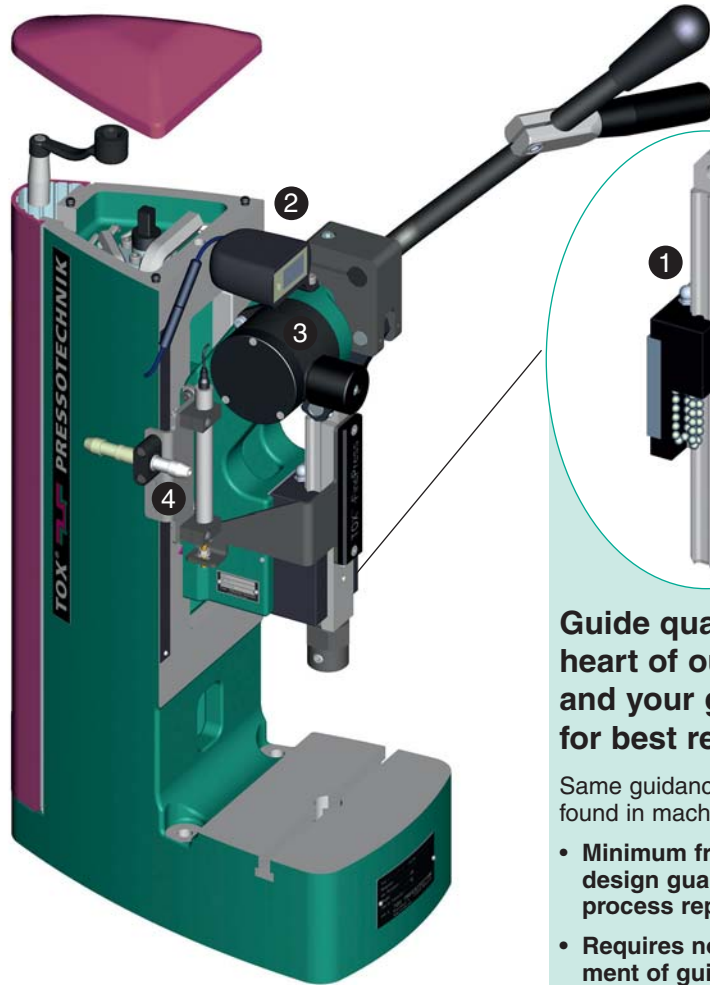
Small press program from 2 – 57.5 kN (0.2 – 6 tons)  
Available in three frame sizes for each force range

## The Assignment:

- increase productivity
- assure quality
- save on investment

## The Solution: TOX®-FinePress

- **Flexibility**
  - extensive program
  - ample accessories
  - quick tool change
  - 360° adjustable pull handle
- **Quality**
  - precise linear ram guide
  - smooth operation
  - robust design
  - rigid cast steel frames
  - Pressing Monitoring
- **Value**
  - best price / performance ratio
  - Accessories can be retrofitted anytime
  - worldwide TOX® service
  - 12 months warranty



**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**

- ① Ball rail guide for ram
- ② Electric counter
- ③ Return stroke lock
- ④ Travel sensor

## Additional Accessories:

- + Tool fixture
- + Fine stroke adjustment
- + Bolt-on handle
- + Machine bases
- + Slide tables
- + Electric/pneumatic controls
- + Pressing monitoring with sensors



Toggle Presses



Rack-and Pinion Presses



Pneumatic-Presses



Pneumatic Presses with manual approach

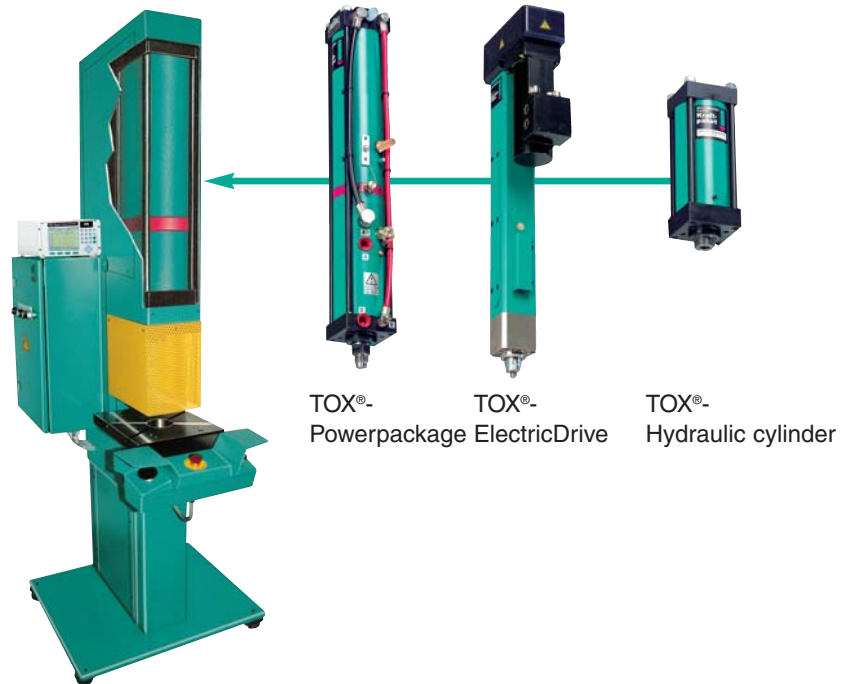
**TOX®-FinePress:  
The expandable,  
economical program**



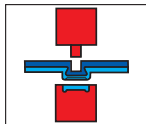
# TOX®-Presses

Power progression from 2 – 2000 kN (0.2 – 200 tons)

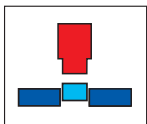
- With TOX®-Powerpackage pneumohydraulic drive: Ideal press drive with linear force output throughout the stroke. On request, also available with electromechanical drive TOX®-ElectricDrive or with hydraulic cylinder HZ
- High efficiency for multiple operations
- TOX®-Controls and TOX®-Monitoring



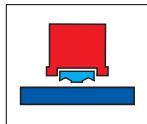
TOX®- Powerpackage      TOX®- ElectricDrive      TOX®- Hydraulic cylinder



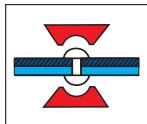
Clinching,  
TOX® sheet metal joining



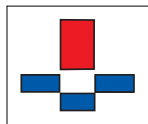
Assembling  
Press-Fitting  
Mounting



Inserting,  
Fastener-Insertion



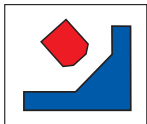
Riveting,  
Crimping,  
Flaring



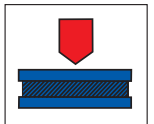
Punching,  
Piercing



Coining,  
Marking  
Stamping



Clamping  
Tensioning,  
Peening



Pressing,  
Compressing  
Bending



C-frame press  
PC



C-frame bed press  
MCC



C-frame bed press  
MC



C-frame bed press  
CEB, CMB



2-column press  
MB/MBG



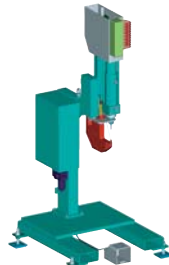
4-column press  
MA/MAG



C-frame press  
CEU



C-frame press  
CEC



C-frame press  
CEJ



## TOX®-Controls – A Modular System



**Pneumatic 2-hand controls console**



**Safety valve pneumatic or electric**



**2-hand safety controls console**



**A pneumatic air servicing unit is included with each TOX® controls.**

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:

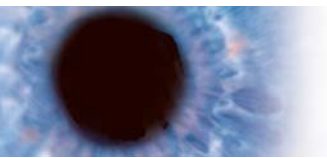
- maximum of functions
- optimal price-performance ratio

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

All TOX®-Controls meet the latest technical safety Norms and Guidelines from the German Occupational Safety and Health Administration as well as European Directive EN 13736 for pneumatic presses.

With TOX®-Controls, you are always "on the safe side". We only use high-quality, tried and tested safety components and valves.





# TOX®-Monitoring

The process at a Glance

## Control Units for Monitoring of Clinching and Pressing Processes

The evaluation device can be selected according to each requirement. From 1- to 4-channel clinch 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.

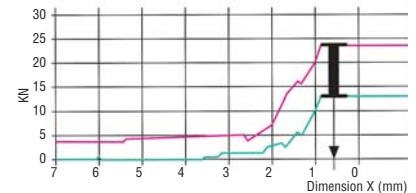
We provide:

- 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 400



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



### TOX®-Pressing Monitor EPW 400

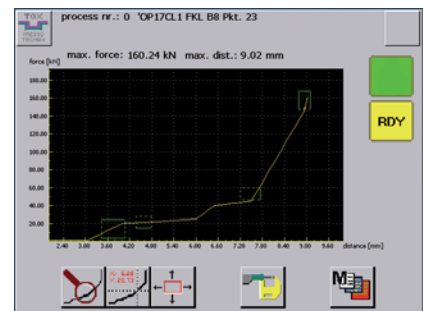


The **TOX®-Pressing Monitor EPW** checks continuously your pressing operation providing quality control during production:

- it 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
  - RS 232/485
  - USB

- Optional:
- Profibus
  - Analog 1 - 10 V



### TOX®\_softWare

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



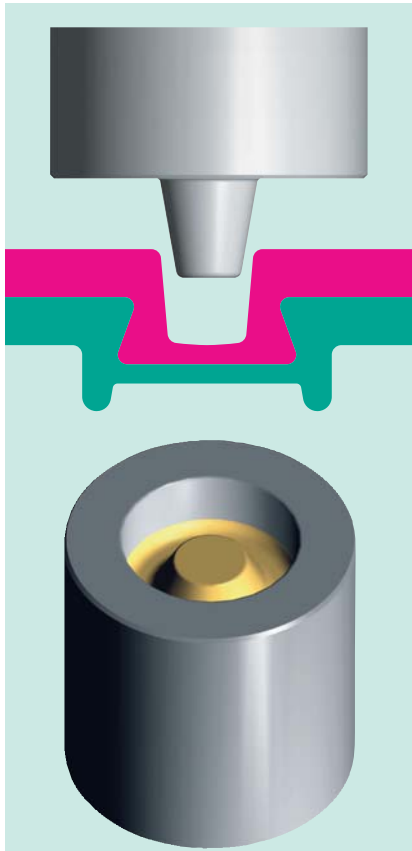
**TOX®-Force sensor**  
Measuring range from 0...1 kN to 0...1000 kN



# TOX®-Round Joint

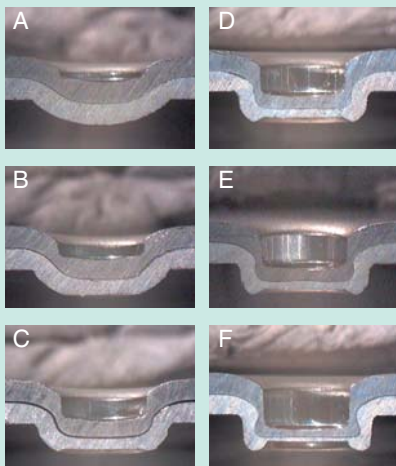
Simplicity is our strength

**New**  
The die with insert



### Forming the TOX®-Round Joint

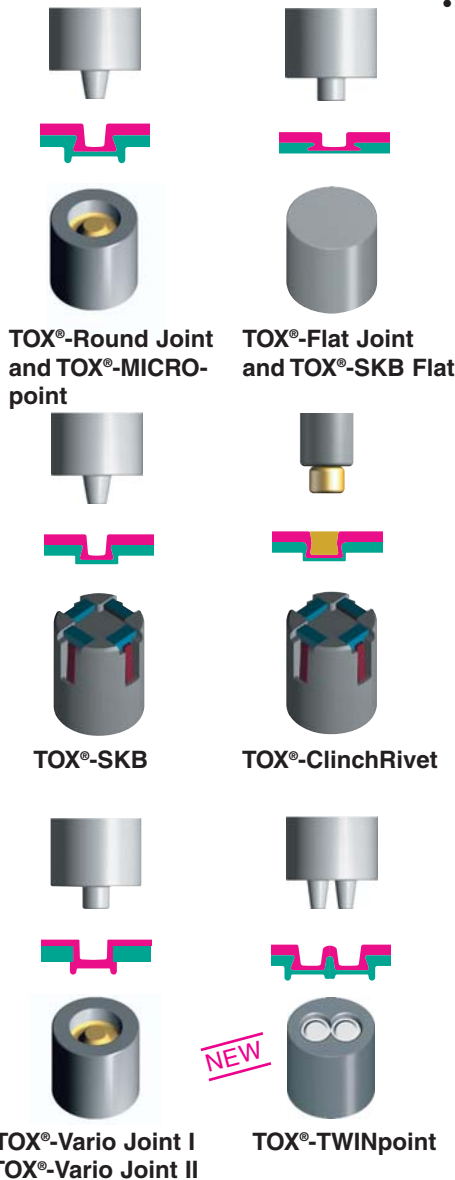
- A Penetration
- B Upsetting
- C Emergence of upper contour
- D Filling of ring groove
- E Lateral spreading of punch side material
- F Finished TOX®-Round Joint



### 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 50 to 70%, and as a twin joint practically 100%, of the static strength of a spot weld.
- The dynamic strength of a TOX®-Joint is higher than for a spot weld.
- The materials are sealed at the joint and therefore stronger. There are no mechanical notch effects.
- Excellent corrosion resistance.
- The process can automatically be monitored and documented by using TOX®-Process Monitoring Systems CEP/EPW.



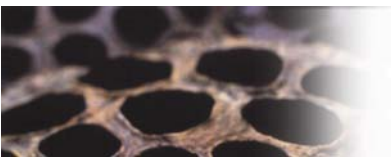
Parts joined with the TOX®-Joint



TOX®-Multipoint-Tool



TOX®-Tools

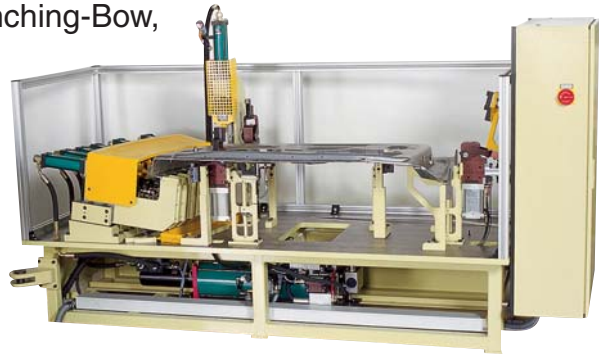


## TOX®-Punching systems

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

**Our spectrum for application specific solutions:**

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



## TOX®-Coining systems

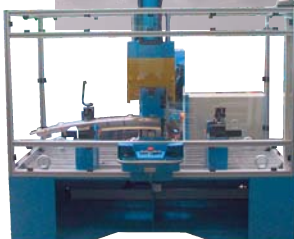
TOX®-Coining-Tongs,  
TOX®-Coining-Presses,  
TOX®-Coining-PowerKurver

- 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



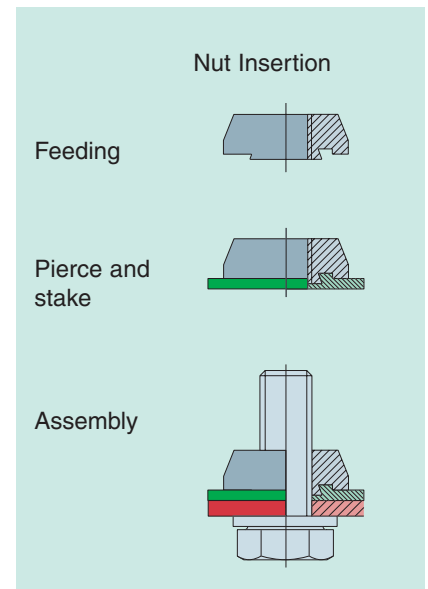
## TOX®-Press-Fitting

for function elements like nuts, studs, rivets, screws



**Everything from one source:**

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





# TOX®-Mini Tongs TOX®-Handheld Tongs



**TOX®-Mini-Handheld Tongs  
TOX®-Machine Tongs  
Type CMH 03.45**

These C-frame tongs are driven hydraulically. Standard versions include TOX®-Handheld, TOX®-Machine or TOX®-Robot tongs. Available with various throat depths.



**TOX®-Handheld Tongs  
Type CHH 03.45  
Type CHH 03.75**

The C-frame construction makes it easy to reach into tight spaces. The various hanging and rotary joints have been designed with integrated hydraulic feed lines.



**TOX®-Mini-Handheld Tongs  
Type CMH 04.45**

The X-version allows easy access to hard to reach spaces in the workpiece. Operator safety is provided by a 6 mm tool opening.



**TOX®-Handheld Tongs  
Type CHH 04.45**

These rugged X-(scissor)-Tongs, also known as "pinch" tongs with the joining axis perpendicular to the drive axis, feature 1-hand control with a 6 mm tool opening. The 2-hand models can be supplied with a 30 mm tool opening.



**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 X dimension) and long tool life.

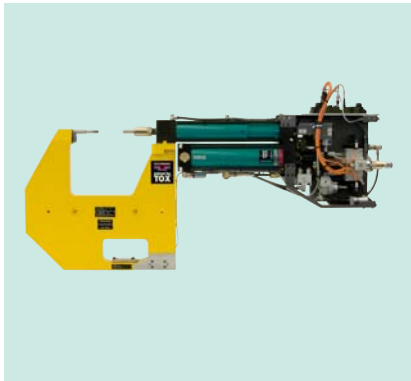


**TOX®-Flange Tongs  
Type CMH 02.30**

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.



# 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 anvil side. It prevents any undesirable loads on the workpiece.



## Modular kit system

The **modular kit system** allows to adapt these TOX®-tongs to any component and handling equipment.

**Special models** are possible. In this way, all applications and quality assurance tasks will be fulfilled with a clear interface.

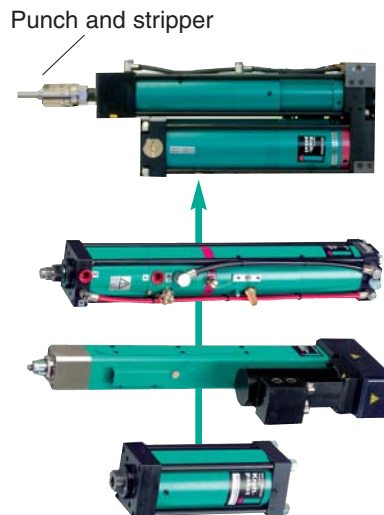
### Frame and tools



The tools and frame shapes are designed according to the type of application and to the shape of the workpiece. The TOX® punch stripper is always included with the unit.

Punch and die can be switched in special models (see above for tongs with compensating slide).

### Drive and tools



Whether equipped with a pneumohydraulic, electric or hydraulic cylinder, all the tongs drives feature high quality guidance and positive mounting flange.

### Measure and control



Bus module  
Sensors  
+  
Power feeds

The tongs installation plate ZIP contains the necessary valves, sensors and electrical and pneumatic interfaces.





# TOX®-Production Systems

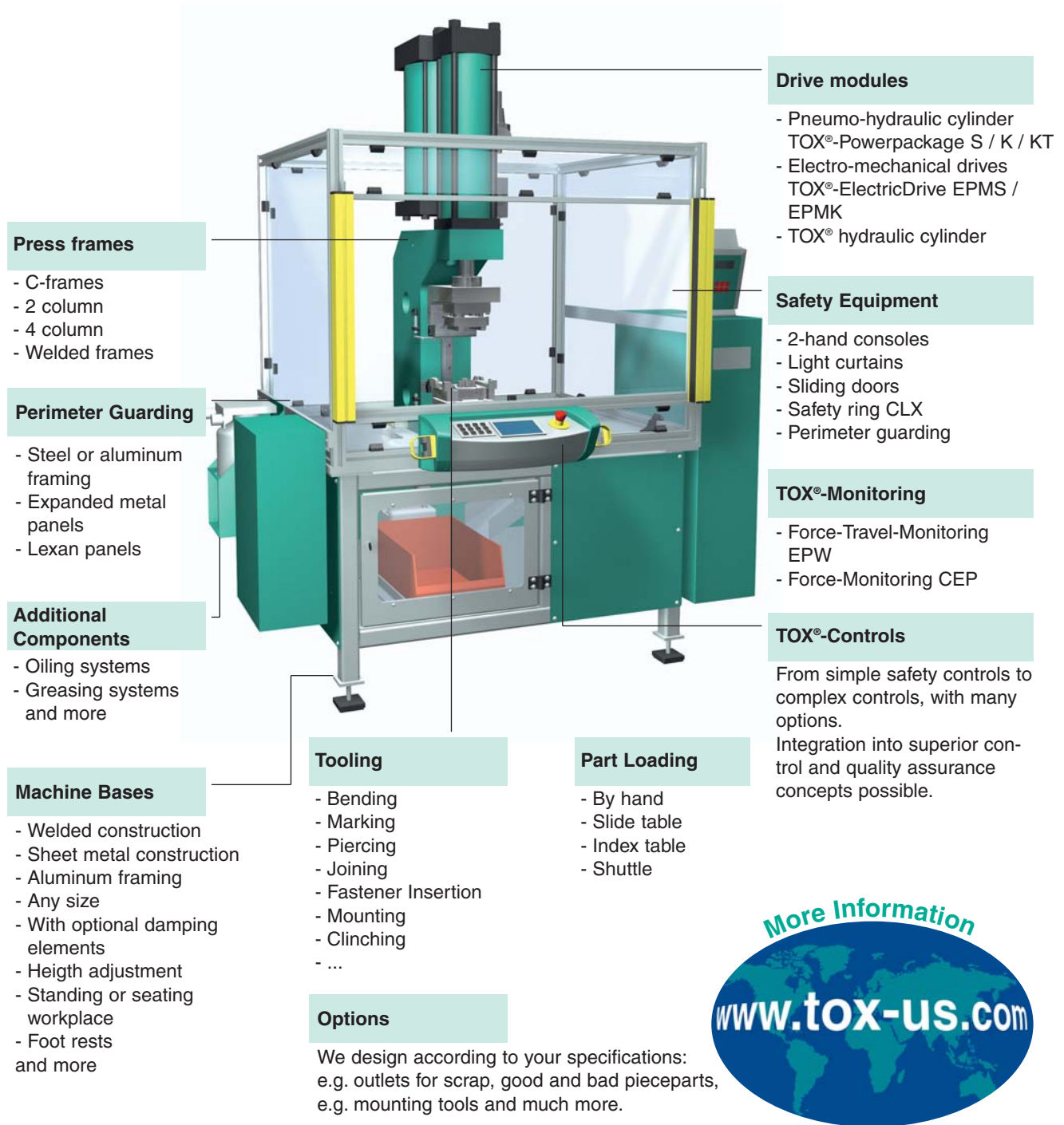
## Special Machines for your Production Lines

### Modular Design

Even in the selection of a standard press, you have vast possibilities to individualize your press. Our modular principle provides for 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.





# TOX®-Production Systems

Applications all over the world



TOX®-Press type MB



TOX®-Press type CEJ



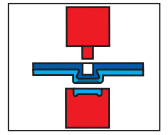
TOX®-Press type CMM

## TOX®-Production Systems in Action

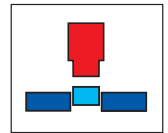


## Applications

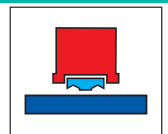
Clinching



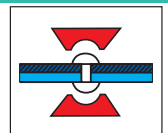
Assembling



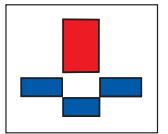
Self-Piercing



Riveting



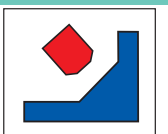
Punching



Coining



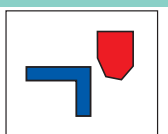
Clamping



Pressing



Bending



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