



MODULAR AUTOMATION SYSTEMS  
**Bending Center**

# Increased efficiency for your serial production

A Schröder bending center is your industrial solution to achieve large volume as well as flexible serial production with utmost repeatable accuracy.



Front view Power-Bend-Center

## Individual solutions

- 24/7 hours operation
- Large-volume series production
- Improved manufacturing process
- Utmost repeatable accuracy

Do you have special requirements? Do you want to produce around the clock or synchronise your sheet metal folding with other processing steps? You do not only need a folding machine, but also wish to have an optimized manufacturing process?

High performance folding machines from Hans Schröder Maschinenbau form the basis for semi- and fully automated bending centers. The industrial sheet metal working with a Schröder bending center enables large volume- as well as flexible serial production with utmost repeatable accuracy.

Building on our technology, our hardware and our software, we develop individual sheet metal working solutions that range from customized machines, through various steps of automation and extend right up to complete production lines that run fully automated in 24 hours operation.

Let us show you the possibilities you have with the automation of sheet metal working.

# Basis of our bending center: Evolution-Series

Schröder bending centers are based on our modern folding machines of the Evolution-Series. These machines are already fast and extremely efficient in normal operation conditions with manual product placing.

Bending centre	Overview
Machine in operation	Evolution-Series
Working length	up to 4,000 mm
Sheet thickness 400 N/mm <sup>2</sup>	up to 4.0 mm steel
Load and unload	Industrial roboters of leading manufacturers
Software control	POS 3000
Others	<ul style="list-style-type: none"> <li>▪ Automatic tool changer</li> <li>▪ Handling systems</li> <li>▪ Tables</li> <li>▪ Gauging systems</li> <li>▪ Highly flexible manipulators for reliable work piece positioning</li> </ul>



Just one click on our software control, and the fully automatic tool changer converts the clamping and folding beam for the next order in just a few seconds.

## High performance machines in the bending center

Machines of the Evolution-Series are already fast and extremely efficient in normal operation conditions with manual product placing. In the center of an automated solution their strength can be even more extended. Extremely robust and with very low maintenance needs these machines are perfect for continuous use.

## Flexibility by automated tool changing

Thanks to an intelligent set-up handling, a bending center with a robust and also surface-protecting folding machine of the Evolution-Series can be

used efficiently not only for serial production but also for the order-related manufacturing with rapid changing of small lots and single pieces.

The fully-automated tool changer used on machines of the Evolution-Series equips the clamping- and the folding beam fast and error-free with tools. Two tool grippers running on linear drives move asynchronously, take tools from the magazine, position them in the clamping beam and reposition the currently used tools respectively.

# Special machines for special tasks

On request, our specialists in sheet metal working, design special machines that will improve the efficiency for your individual production processes.



Power-Bend-Center with industrial robot.



Customized solutions  
Above: Roller table for unloading the final product  
Below: Gripper arm of manipulator positions the sheet precisely, controlled via high-precision camera systems. .

## Special machines for special tasks

Challenge us. Do not only order one machine but also optimize your production process with our solutions. Additionally Schröder Group offers special machine constructions that could be realized for every machine. And also for these special solutions automation steps may be possible.

## Customized solutions may include:

- adjustments on clamping-, bottom-, or folding beam
- special gauge solutions including software
- special dimensions
- special tools
- robotic solutions for feed-in and feed-out

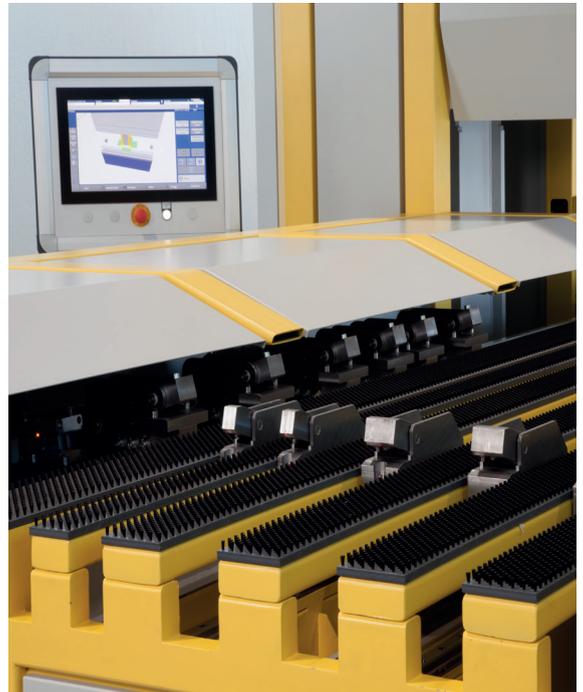
Your individual sheet metal solutions will be completely developed and produced in-house. Everything out of one hand.

# Automation, robotics and sensor technology

In order to automate production processes we rely on established suppliers of reliable components.



Kuka-Roboter in operation: The sheet gets picked up via suction units



Sheet feeding axes

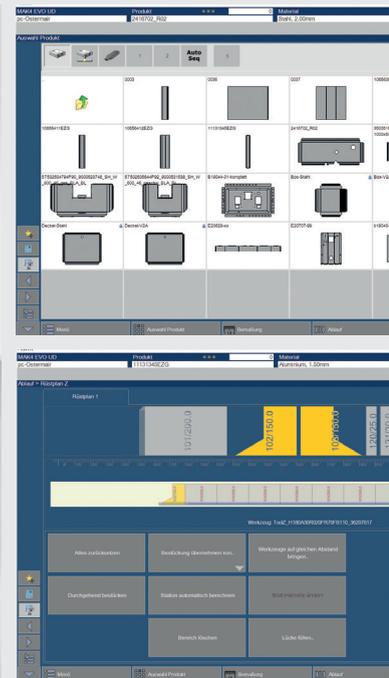
Fully-automated feed-in and feed-out in Schröder bending centers are based on industrial roboters of leading manufacturers, e.g. KUKA..

Tables, delivery systems, gauge techniques and highly flexible manipulators bring the work pieces in the right position. Here, the work pieces are measured exactly by new camera systems - this guarantees top values for precision and repeatability for each bend.

Lightbarriers, movement- and touch sensors ensure safe operations of the bending center.



Panel with POS 3000 3-D software control



A human-machine interface the way it should be: Folding machines from Schröder receive their instructions via touch display panels.

Above: The control software becomes a convenient product catalog. Below: Not only the work piece is displayed, the tools are also shown – in this case, in the mounting plan.

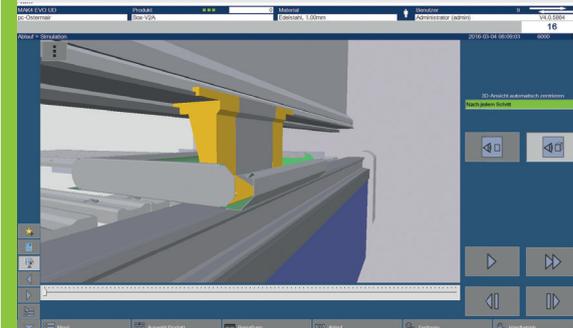
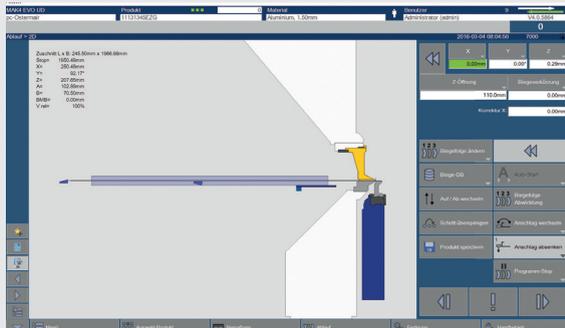
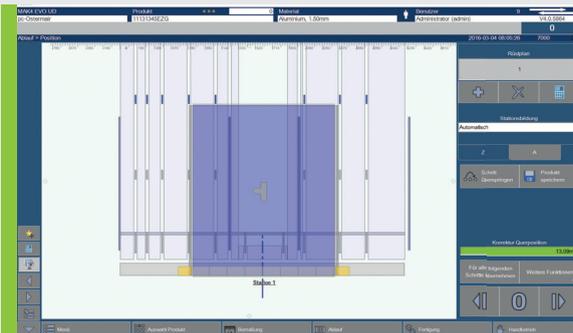
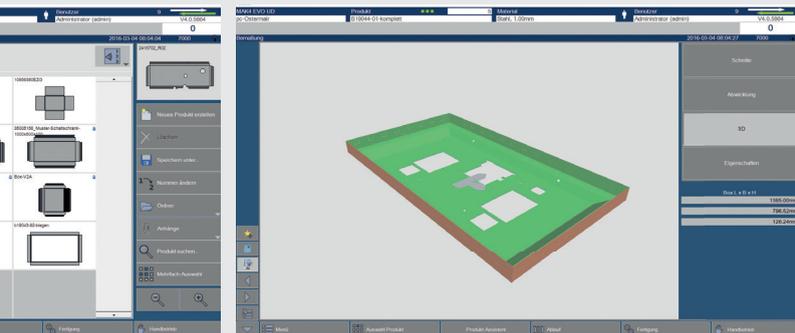
# POS 3000 3D graphic control: Interactive sheet design

With the POS 3000 3D graphic control, our sheet metal working specialists are setting new standards in the control of industrial sheet metal processing.

The new, high-end POS 3000 control and the folding machines in the Evolution series from Schröder are a perfect match, including control over complex machine options like automatic tool changers and handling robots.

Special feature: Program graphically with the POS 3000. Since ultimately, we know that: Your operating staff and preparation employees have a better eye for products than they do for IT programming lines. The machine, tool, work piece, and type of

bend are all clearly displayed. That's why your employees bend visually on the screen beforehand and check the result in the software's 3D bending simulator, making sure that the sheet metal will be processed perfectly from the first bend. Bending programs that have already been created can be called up again quickly, checked visually, and corrected according to material requirements.



Above: the 3D display simplifies dimensioning.  
Below: a 2D display of the bending position.

Above: the position of the sheet on the back stop is displayed in the programming plan.  
Below: POS 3000 simulates production in 3D.

Working with POS 3000 is extremely comfortable:

Clearly laid-out product selection including a search function and navigation in submenus enables the operator to select work steps and connect them in the production plan menu to create sequences.

Individual product profiles can be designed very quickly via the intuitive finger-activated drawing feature. The exact dimensions may be entered and changed in the dimensioning menu. In order to check and coordinate together with the customer, the drawing may be output on paper using a printer.

Using the program that is created, the software generates the optimal sequence of bends, including automatic collision and threshold value monitoring. The folding angle and cut are corrected automatically using interpolation from the database.



## Highlights

- 3D graphic control including a schematic depiction of the machine, tool, and work pieces
- Intuitive, visual touchscreen programming
- 3D bending simulator for visual program inspection
- Mount programming and control of the automatic tool changer
- Cycle time calculator
- Highspeed data transmission to frequency inverters (Ethernet Power Link)
- CAM connection, ERP/PPS interfaces, and DXF converter available
- Remote maintenance from Schröder software service



## Schröder Group

The Schröder Group consists of Hans Schröder Maschinenbau GmbH, which is located in Wessobrunn, Germany, and SCHRÖDER-FASTI Technologie GmbH, which is located in Wermelskirchen, Germany.

Founded in 1949, Hans Schröder Maschinenbau GmbH unifies traditional and modern approaches in machine building: Successfully managed as a quality and customer-oriented, family-owned company, Hans Schröder Maschinenbau is specialized in the development of modern machine concepts for bending and cutting sheet metal.

The successful integration of the Fasti Company in 2006 and its worldwide presence make the Schröder Group one of today's leading providers of machines for bending, cutting, beading, flanging, and circular bending all types of sheet metal. The company's precision machines range from proven solutions for craftsmen to innovative, high-performance machines for automatic industrial production processes. Overall, the Schröder Group currently employs more than 240 people at various locations at home and abroad.

All information provided as a guide only  
and may be subject to change at any time.  
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