

SCHRÖDER
GROUP



MOTORIZED FOLDING MACHINE
EVO-CENTER

The new generation EVO-CENTER

The best solution to achieve maximum performance

A Schröder EVO-CENTER is your industrial solution to achieve large-volume as well as flexible series production with utmos repeat accuracy.



Rear view EVO-CENTER

Based on our technology, our hardware and our software we have developed a new folding machine that is able to process sheet metal in almost fully-automatic operation. The central core of the Schröder EVO-CENTER is based on our long-term experience we have gained with our modern folding machines of the Evolution series.

Thanks to an intelligent set-up technique and our Advanced Handling System the Schröder EVO-CENTER can be used efficiently for serial production as well as for order-related production with fast changing small batches. A fully automatic tool changer equips the clamping beam quickly and accurately with tools. The tool changer and the handling system are driven by our intelligent software control POS 3000.

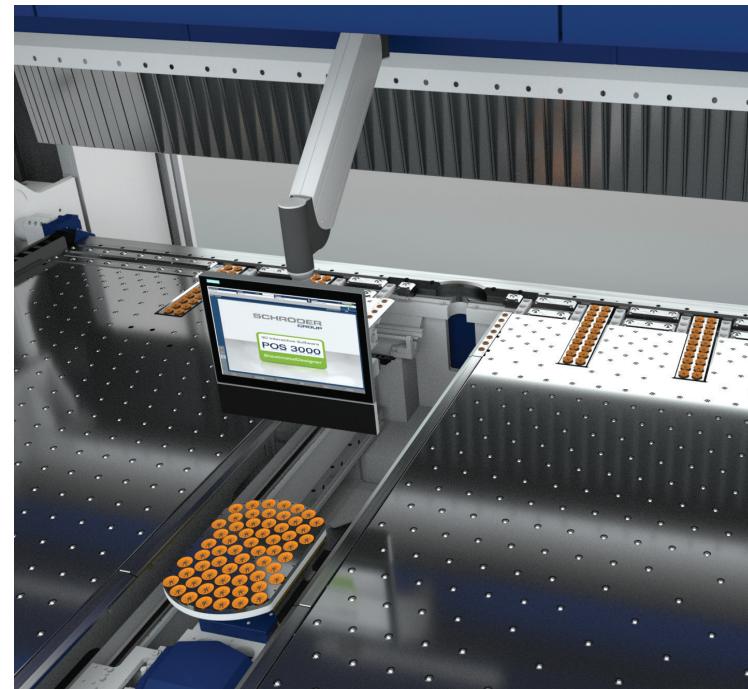
- 1** ▪ Optimized for Industry 4.0
- 2** ▪ Intelligent design
- 3** ▪ Efficient production processes
- 4** ▪ Utmost repeatability
- 5** ▪ Large volume series production

Standard equipment	
Control	<ul style="list-style-type: none"> - POS 3000 3-D graphic control with 22" TFT touch-screen colour display movable via guide rail - Radius function - Remote maintenance via internet - External programming (PC-Version 1st licence)
Clamping beam	<ul style="list-style-type: none"> - Z-axis drive max. axis speed: 120 mm/sec - Geometry clamping beam: 180° - Clamping beam stroke: 850 mm - Tool clamping, hydraulic (WZS 6000) - Fully automatic tool changer for clamping beam tools for max. tool height 400 mm, 2 asynchronously movable tool changers with one gripper unit each
Folding beam	<ul style="list-style-type: none"> - Up'n Down folding beam, program-controlled - Tool clamping, pneumatic (WZS 7000) - Adjustment, motorized: 200 mm - Central crowning device, motorized - Motorized center point adjustment, converter-controlled drive
Gauge system	<ul style="list-style-type: none"> - Gauge table 1700 mm as U-shape, segmented support plates with steel balls - Lateral angle gauge right and left side 1500 mm (outside) - Suction plates in gauge table, controlled via POS 3000 - 2 pneumatic pop-up square arms assembled aisle side, program-controlled - Gauge axis in front
Drives	<ul style="list-style-type: none"> - Servoconverter-controlled drives for clamping beam, folding beam, B-Axis, D-Axis and gauge
Work safety	<ul style="list-style-type: none"> - Protection via light curtain controlled by safety-PLC for operation from the rear - Safety at the front via double-leaf sliding door with polycarbonate panels
Others	<ul style="list-style-type: none"> - Air conditioner on both switch cabinets - Foot switch with two pedals incl. protection cover - Anchor plates incl. dowels - Standard machine without tools

Special equipment	
Back gauge system	<ul style="list-style-type: none"> - The back gauge option rotating plate „AHS“ is automatically controlled via the POS 3000 3D graphic control and offers the possibility to operate the machine automatically as well as manually. Technical data, please see page 10
Others	<ul style="list-style-type: none"> - Voltage transformer 18 kVA - Tools see page 6-7 - Options to control see page 8-9

Special options for special tasks

The EVO-CENTER is optionally available with the innovative Schröder Advanced Handling System (AHS) and offers customers the highest degree of automation that can be achieved without the use of any robotic systems.



Fully automatic Advanced Handling System with camera system for an exact measurement of the sheet and 22" Touch-Screen color display movable via guide rail



Additional operator terminal on the rear - free-standing column turnable and height-adjustable.

With the sheet metal handling system AHS the EVO-CENTER from Hans Schröder Maschinenbau turns into a universal folding center. The AHS is a further development of the well-known suction gauge and offers customers the highest level of automation that can be achieved on a folding machine without the use of a robot. Through the combination of the Up-and-Down folding beam, the suction gauge and the rotating plate with suction cups in the center of the machine the software control is able program the whole bending program without any manual intervention.

This happens as the sheet gets gauged once against the referencing axis. The most innovative feature: The Advanced Handling System is able to rotate - this means that the sheet gets turned in order to process the next bending side. Two camera systems control the process - pictures from the workpiece are compared with the CAD-data. Light barriers around the machine provide safety on the rear side of the machine.

Automation, robotics and sensor technology

The EVO-CENTER can be extended at any time to a fully automatic bending center. In order to achieve efficient production processes, we count on intelligent automation solutions.



Customized solution:
Roller table for unloading the final product

Safety at the front via double-leaf sliding door

Customized solution:
Possibility to use robotic systems: the sheet gets picked up via suction cups

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.

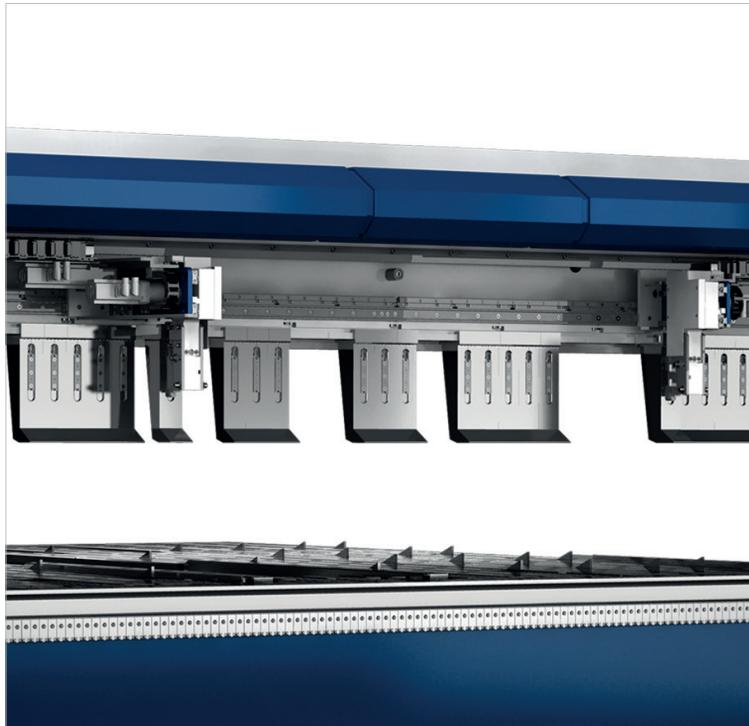
Upon request we offer you fully-automatic feed-in and feed-out solutions in our EVO-CENTER: In order to automate production processes we count on proven suppliers of reliable components. Customized solutions may be:

- Adjustment on clamping-, bottom-, or folding beam
- Special gauge solutions incl. software
- Special dimension
- Special tools
- Robotic solutions for feed-in and feed-out

Your individual sheet metal solutions will be developed and produced completely in-house. Feel free to contact us and we will work out together a customized solution for your requirements.

Tools

With the EVO-CENTER we offer you the right tools for your special requirements. Thanks to the fully automatic tool changer and a great choice of highly precise and long-lasting tools you will achieve accurate results from the first bending product.



Fully automatic tool changer
for maximum clamping beam tool height 400 mm



Variable tools for all requirements

As a flexible platform the EVO-CENTER is able to adapt to production-specific requirements using specific tools. When it comes to the bending process the right tool is essential – with the SPB Evolution UD we can push all limits. For every product we can offer you the suitable tool for the clamping-, bottom- and the folding beam. Should you require a particular geometry, just let us know. We will work out a customized solution for you.

Flexibility thanks to automatic tool changing

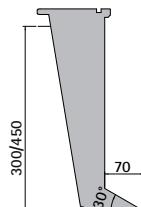
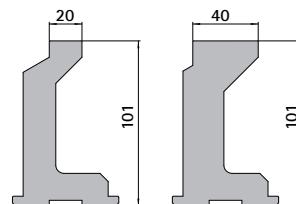
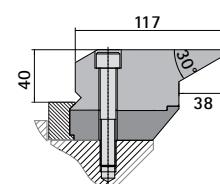
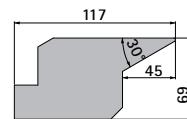
Thanks to intelligent set-up techniques the EVO-CENTER can be used efficiently not only for serial production but also for order-related manufacturing with fast changing small batches and single pieces.

The fully automatic tool changer of the EVO-CENTER equips the clamping beam quickly and precisely with tools for a maximum clamping beam tool height of 400 mm. The automatic tool changer consists of two tool grippers that move asynchronously, take tools from the magazine, position them in the clamping beam and reposition the currently used tools respectively.

Special tools

Tool options	
Bottom beam tools WZS* 10000 surface-hardened ca. 1100 N/mm ² (nitrated)	Bottom beam blade Up and Down one-piece, directly screwed without finger grooves Minimal gauge 130 mm
Bottom beam tools WZS 10100 surface-hardened ca. 1100 N/mm ² (nitrated)	Bottom beam blade Up and Down - AHS one-piece, directly screwed without finger grooves Minimal gauge 130 mm with free milling for turntable ø330 mm
Bottom beam tools WZS 4100 surface-hardened ca. 1100 N/mm ² (nitrated)	Bottom beam blade Up and Down divided incl. tool adapter directly screwed without finger grooves Minimal gauge 130 mm
Bottom beam tools WZS 4300 surface-hardened ca. 1100 N/mm ² (nitrated)	Bottom beam blade Up and Down - AHS incl. tool adapter directly screwed without finger grooves, minimal gauge 130 mm Center piece 710 mm with free milling for rotating plate, divided
Folding beam tools WZS 7000 surface-hardened ca. 1100 N/mm ² (nitrated)	Folding blade segmented (101/81 x 65 mm) No. 1 - L = 2x (25/30/35/40/45/50) = 450 mm No. 2 - L = 200 mm (number according to working length) Folding blade width: 10/15/20/25/30/35/40/50 mm
Clamping beam tools WZS 6000 surface-hardened ca. 1100 N/mm ² (nitrated)	Goat's foot segment „C“, 30°, (from radius 1,0 mm) clearance 70 mm, clamping range 104 mm Nr. 1 - L = 2x (30/35/40/45/50/55/60) = 630 mm Nr. 2 - L = 80 mm (number according to working length) H = 330 mm or H = 400 mm
Corner parts PASSIVE	- 1 pair fixed corner parts - passive; L= 2x 158 mm = 316 mm - additional pair passive driven corner parts
Corner parts ACTIVE	- Clamping beam drive for active driven corner parts (free space of total clamping beam tooling is reduced by 31 mm) - 1 pair fixed corner parts - active; L = 2x 110 mm = 220 mm - additional pair active driven corner parts

* WZS = Tool system





A human-machine interface the way it should be:
The EVO-CENTER from Schröder receives its instructions via a 22" touch display.

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.

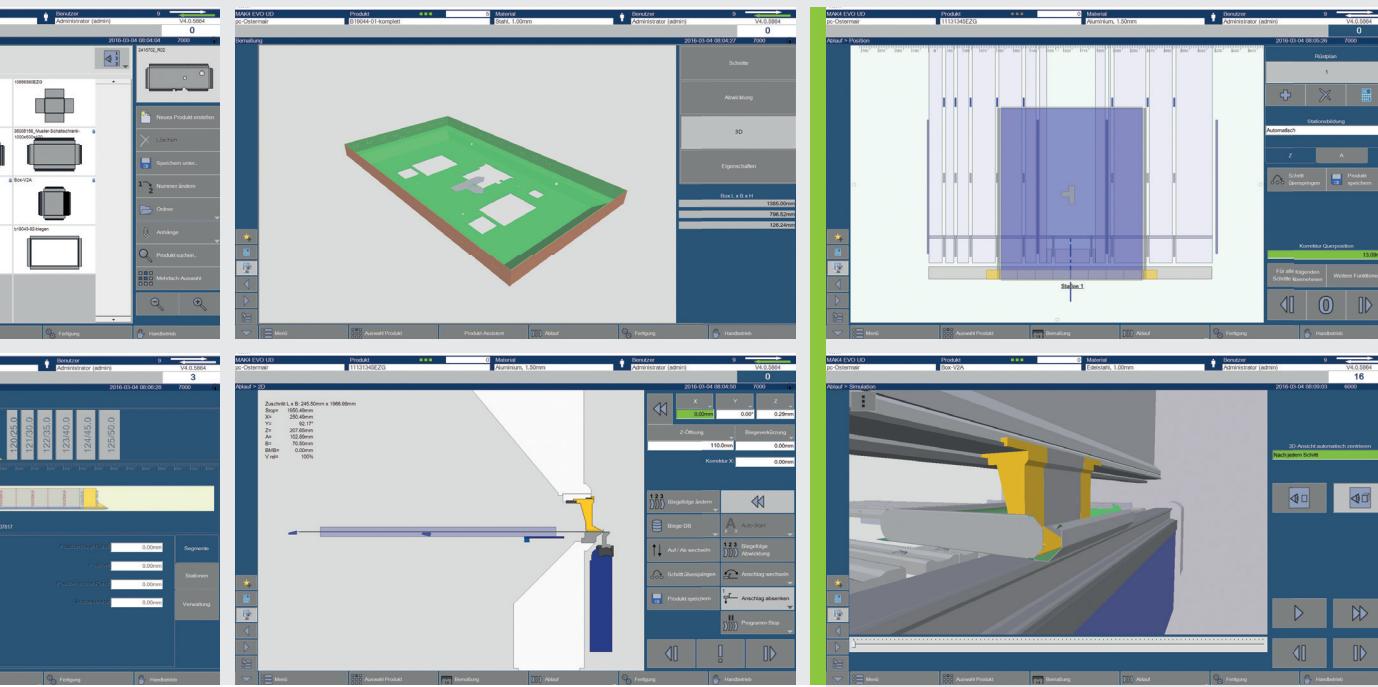
POS 3000 3D graphic control: Interactive sheet design

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 machine EVO-CENTER 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.



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

Option:

- Unfold software „SCHRÖDER Unfold“

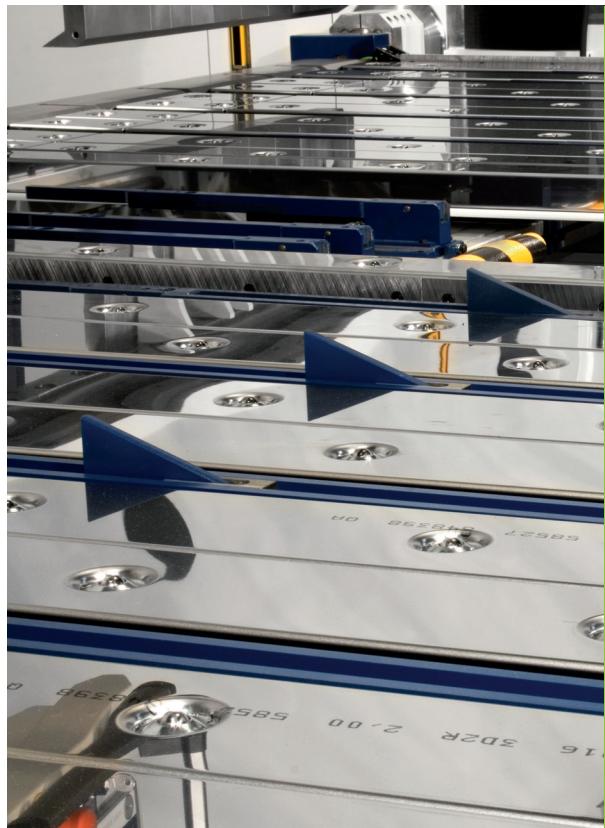
Working with POS 3000 is extremely comfortable:

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.

Dimensions and technical data



EVO-CENTER	3200 x 4,0	4000 x 3,0
Working length	3,240 mm	4,040 mm
Sheet thickness (400 N/mm ²)	4,0 mm	3,0 mm
Machine length (a)	9,406 mm	10,206 mm
Weight incl. AHS	18,100 kg	21,280 kg
Clamping beam		
Geometry	180°	
Stroke	850 mm	
Drive power	2 x 6,69 kW	
Speed	120 mm/s	
Folding beam		
Adjustment	200 mm	
Drive power	2 x 7,0 kW	
Speed	150°/s	
Bending center adjustment	80 mm	
Advanced Handling System „AHS“		
Table depth / Travel distance	2,775 mm (extended condition 3,425 mm)	3,400 mm (extended condition 4,050 mm)
Min. sheet metal size	250 x 300 mm	250 x 300 mm
Max. sheet metal size	3,000 x 1,000 mm	3,700 x 1,500 mm
Max. weight of product to be handled on the table (S235)	300 kg (large size sheet metal plate) 6 x 1,500 x 3,000 mm	300 kg (large size sheet metal plate) 6 x 1,500 x 4,000 mm
Max. weight of product to be handled on rotating plate	80 kg	
Stroke of rotating plate	100 mm	

Further technical data of the „AHS“

Basic data of the rotating plate

The Advanced Handling System „AHS“ consists of a rotary unit with suction cups located in the center of the machine (aisle side) and offer four changeable plates incl. table sheets aisle side fitting to the respective plate dimensions:

1. Nominal size = ø150mm
2. Nominal size = ø330mm
3. Nominal size = ø220mm
4. Nominal size = ø330mm x 460mm incl. transfer station

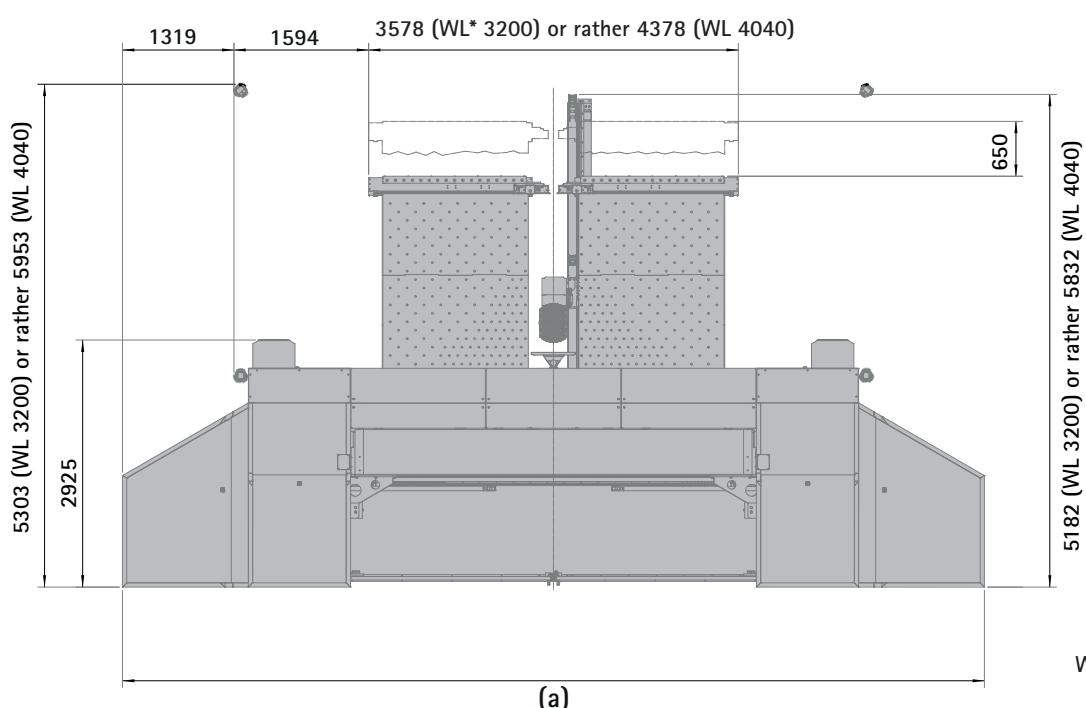
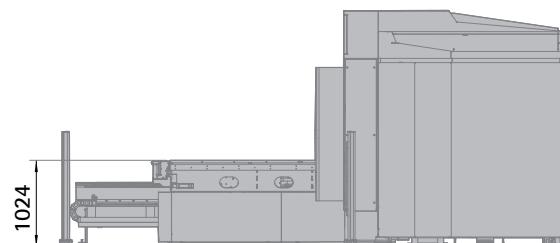
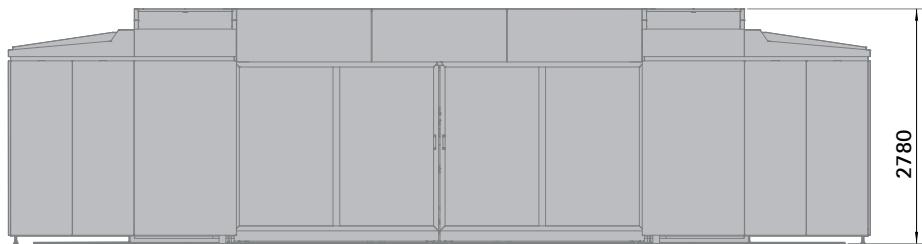
Basic data of the back gauge table

- Two independent controlled and movable tables
- Sheet support table closed with steel balls
- Gauge table with suction cups

Accessories

- Camera system for measuring of the sheet contours
- Motorized gauge axis to gauge
- Add. operator terminal on the back side, free-standing column turnable and height-adjustable
- Rear safety via circulating light barriers

Dimension: EVO-CENTER



All dimensions in mm

Standard colour: RAL 7035 light grey, RAL 5003 sapphire blue. Special painting at an extra charge



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 270 people at various locations at home and abroad.

All information provided as a guide only
and is subject to change at all times.
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