SCHRÖDER
GROUP

FOLDING SYSTEM

PowerBend Professional

PowerBend Professional

The PowerBend Professional folding machine is the industrial solution to your lean metal forming needs. This robust yet precise folder is ideal for short or long runs, and is designed for continuous operation.

The rotating clamping beam offers a second set of tools and an alternative machine geometry.

The PowerBend platform is based on decades of experience in industrial folding machines. It was engineered using state of the art tools, and finite element analysis. The resulting rigid frame provides a base from which the PowerBend achieves unmatched speed, precision, and operational efficieny.

Thanks to the optionally available segmented tools on all beams, superior drive technology and advanced electronic control, the PowerBend Professional can handle complex geometries and difficult bending requirements with ease.

Long or short runs, production or prototypes

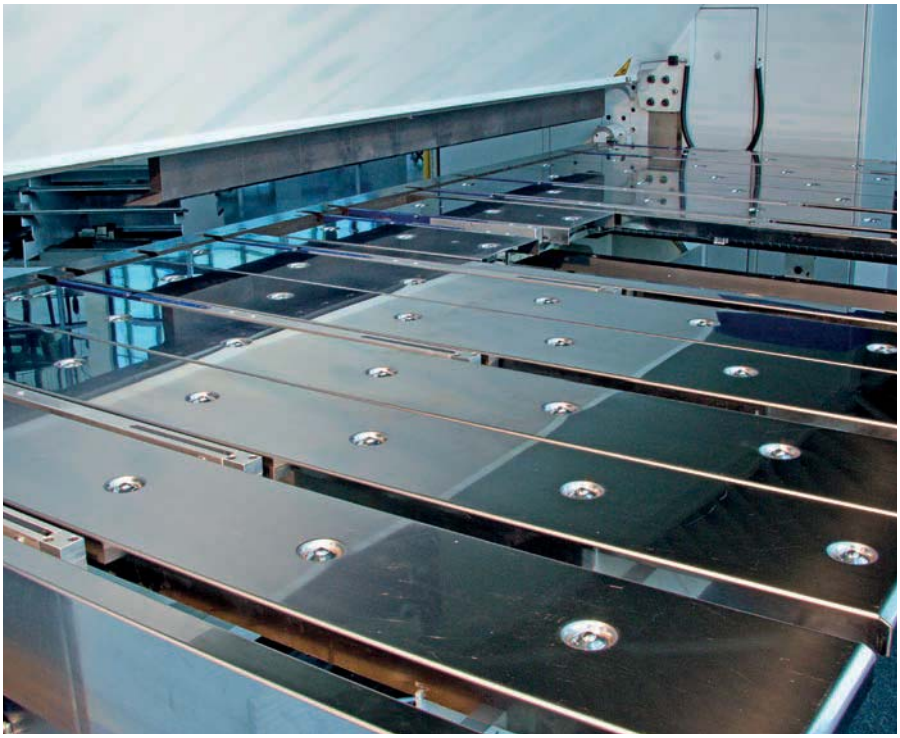
Challenging requirements in your forming department? The PowerBend Professional possesses the necessary robustness, reliability and accuracy. At the same time the machine offers the flexibility your company needs for the production of short runs and prototypes. With the hydraulic tool clamping device and the optional rotating clamping beam, set up times can be drastically reduced. The result is a considerable increase in productivity.

Standard equipment	
Control software	– POS 2000 Professional PC based graphic control, swivel arm mount
Clamping beam	– Drive: 3.0 kW, center drive (converter controlled, 20 mm/sec) – Trapezoidal spindle – Stroke: 350 mm – Clamping beam orientation: 48°/180° – Tool clamping device, hydraulic
Folding beam	– Drive: 2 x 2.2 kW (converter controlled, 85°/sec) – Tool clamping device, pneumatic – Adjustment, motorized: 80 mm – Folding centre adjustment, motorized: ± 20 mm – Crowning device, manual
Bottom beam	– Bottom beam blade 700 N/mm² one piece with finger grooves – Minimal gauge dimension 10 mm (varies according to options)
Back gauge system	– Motorized gauge, 10 mm - 1600 mm, 2 sectors with pneumatic lowering device, sheet support gauge table with ball transfers, ball screw drive with ± 0.1 mm accuracy
Others	– Bump-forming radius function – Foot switch – Anchor plates incl. dowels

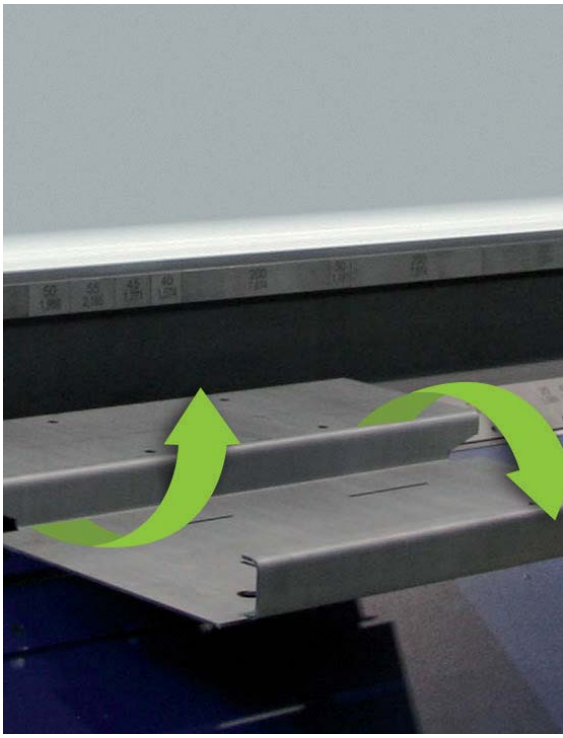
Special equipment	
Clamping beam	– Drive: 5.5 kW, center drive (converter controlled, 50 mm/sec), recirculated ball screws (± 0.1 mm) – Drive: 2 x 2.2 kW, center drive (65 mm/sec), axis with recirculated ball screws – Tilting of the clamping beam for improved performance – Rotating clamping beam for two tool stations incl. hydraulic tool clamping device on both sides (requires 2 x 2.2 kW clamping beam drive)
Folding beam	– Central crowning device, motorized – High speed folding beam: 2 x 3.0 kW, 105°/sec
Up and Down	– Up and Down bi-directional bending (operation only from the rear) – Folding beam adjustment 160 mm – Sheet support gauge table with ball transfers, U-shape gauge, 100 mm - 1,600 mm, ball screw drive with ± 0.1 mm accuracy – Optional: operation from the front and **the rear** (note: with operation from the front, only up bends are possible)
Machine operation	– 2-man-operation – Operation from the rear including safety light barrier for front, and 2nd foot switch) – Foot switch on rail for lateral movement
Others	– Safety light barrier

Options for increasing ergonomic efficiencies

The PowerBend Professional comes extensively equipped to handle most jobs with ease. And for specific requirements, additional options are available, adding even more production efficiencies.



U-gauge with balls in the table for easy handling of the sheet



Up and Down function: counter folds without turning around the sheet

Changing from a short run or prototype to a long production run or to a series of complex geometries is all in a days' work for the PowerBend. An optional rotational clamping beam allows for two distinctly different sets of clamping beam tools to be used within the same job. This creates an extremely productive environment when more than one tool is needed to complete part geometry.

Up and Down bi-directional folding beam

You will love this option: Bi-directional folding bends in both directions, up and down, for the forming of Z-bends, offsets, and other reverse forms. Never perform the wasteful and dangerous task of flipping a part again. And because bending down is no more difficult than bending up, your products can be designed for best purpose, not for the purpose of eliminating part-flip. Parts will form faster, more accurately, with fewer labor hours, and provide a safer environment for your operators. And if you don't think you need it now, you can always add it later!

Gauge options for optimal handling

The PowerBend Professional is able to tackle the most diverse sheet metal formats without any difficulties.

Display of crowning system

Pneumatic pop-up gauge fingers position the sheet with highest precision.

Schröder offers a wide range of back gauge and integrated sheet support systems. The material rests on the support table while the gauge feeds the part through the bending sequence.

Ball transfers placed throughout the sheet support system provide a frictionless surface on which the part is easily manipulated. The standard 1,600 mm gauge can be extended up to 4,000 mm in a J or U shape. Adding pneumatic squaring arms at the operator lane provides an ergonomically convenient method of aligning parts to tooling stations, or for squaring long thin rectangular profiles.

Exact positioning of the sheet

The back gauge is accurately positioned using high precision ball screws to an accuracy of ± 0.1 mm. The pneumatic pop-up gauge fingers are always ready to gauge the part against.

Part profiles that cannot be positioned using standard gauging can often be formed with a front gauge. Using the folding beam as a gauge stop to position parts against, further increases the flexibility and capabilities of the PowerBend.

Tools

Use the right tool for the job – Schröder understands this better than anyone. With dozens of standard geometries, and engineered customs, your parts will always hit the mark.

Segmented tools

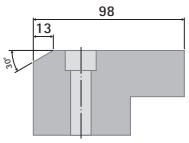
The hydraulic tool clamping device on the clamping beam reduces set-up times

Tool flexibility is key to minimizing set up times and maximizing capabilities. Tooling must be material and thickness independent, high capacity, and with generous free space. A compromise on any of the above is a compromise on the machine itself.

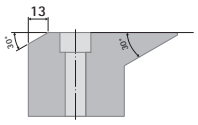
Always tidy: Use our practical tool cart for blades, rails, and segmented tools as optional equipment.

Tool options

Bottom beam tools (WZS* 16000)



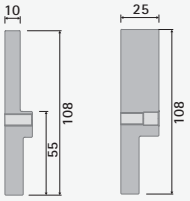
Segmented rail
minimum gauge dimension 10 mm with finger grooves, precision ground 700 N/mm² or hardened ca. 1,100 N/mm²



One piece rail
minimum gauge dimension 10 mm, with finger grooves, hardened ca. 1,100 N/mm²

Up and Down
One piece rail, 45 mm high, 30°, R 1/1.5/3, minimum gauge dimension 100 mm (without finger grooves)/minimum gauge dimension 10 mm (with finger grooves) hardened ca. 1,100 N/mm²

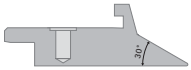
Folding beam tools, pneumatic clamping device (WZS 15000)



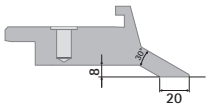
Segmented rail
10/15/20/25 mm, 108 mm high, per detail precision ground ca. 700 N/mm² or hardened
ca. 1,100 N/mm²

With the Up and Down bi-directional bending for every folding blade width, one set of locking plates is required.

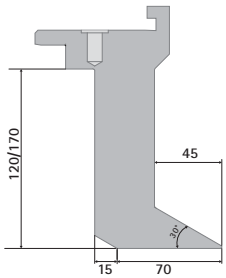
Clamping beam tools, hydraulic clamping device, ca. 1,100 N/mm², hardened (WZS 2000)



Sharp nose tool
30°, R 1/1.5/3, segmented

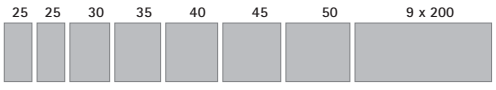


Tinsmith tool
30°, R 1/1.5/3, foot width 20 mm, clearance on the rear 8 mm, segmented

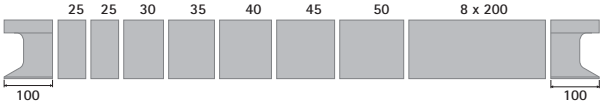


"C" style tool
120 or 170 mm high, 30°, R 1/1.5/3, foot width 85 mm, clearance 45 mm

"C" style tool with heel
120 or 170 mm high, 30°, R 1/1.5/3, foot width 80 mm, clearance 45 mm



Example: segmentation of folding blades at a working length of 2,040 mm (segmentation varies according to working length)

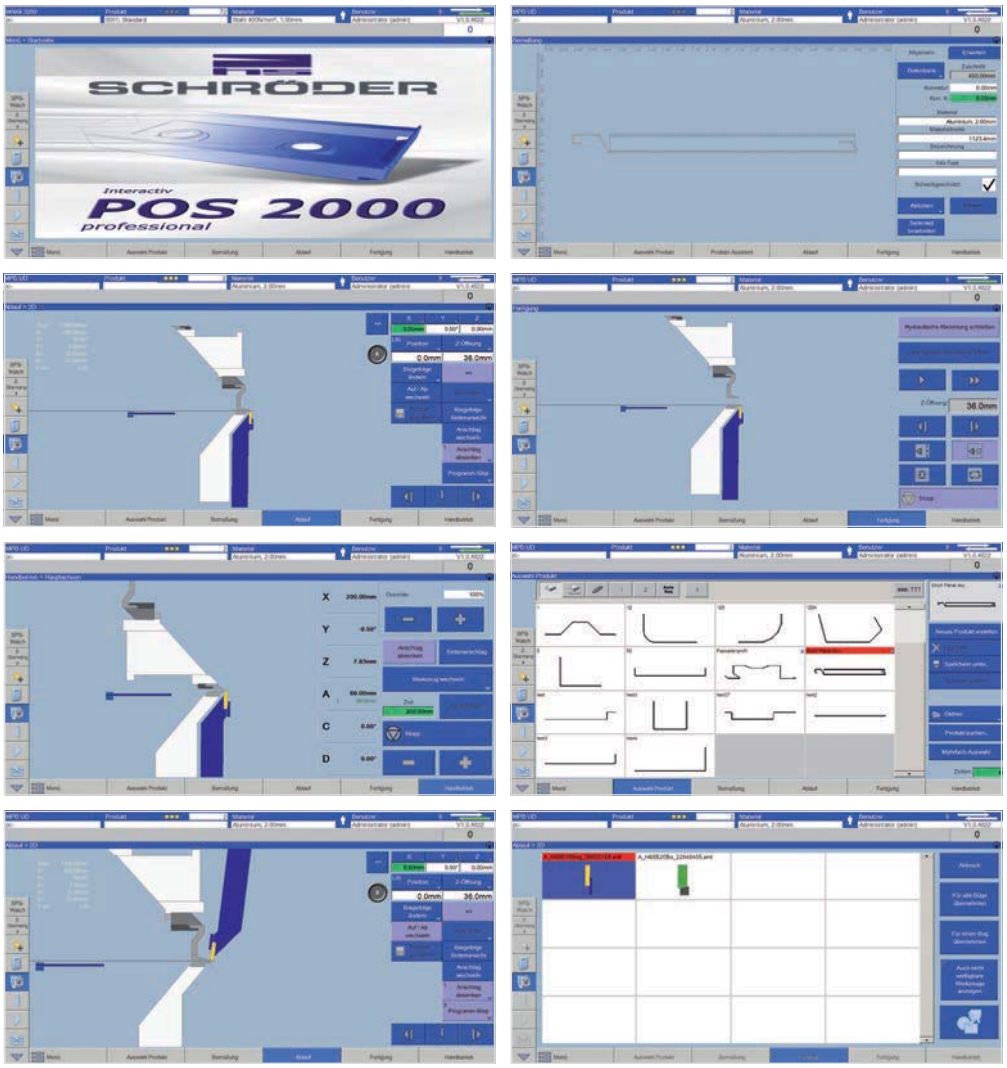


Example: segmentation of a "C"-style tool at a working length of 2,040 mm (segmentation varies according to working lengths)

* WZS = Tool system

POS 2000 Professional

Intelligent graphic control for efficient processing



Graphic control POS 2000 Professional: The result is always in front of your eyes – from the first steps to simulation.

The lowerable folding beam is necessary to bend bigger radii with high precision. In the standard version, a motorized folding beam adjustment is available, controlled by the graphic control POS 2000 Professional.

The PowerBend Professional owes its processing speed and efficiency to the powerful POS 2000 Professional control. The graphical user interface makes even the most complex of jobs simple to program and run.

The POS 2000 Professional provides a visual interface for the operator and programmer. Through it, every step of the bending process is clearly shown. The graphics show the part as it is formed around the tooling and machine. The product is confirmed in a virtual mode prior to putting the sheet on the back

The easy to understand graphics present a clear visual interaction between the part, the machine, and the tools. Sophisticated parts are easily understood.

gauge table, so the operator can form the part with 100% confidence.

Part processing is as simple as following the on screen visual and written queues. From loading the sheet in the proper orientation, through each and every bend, the POS 2000 shows how to progress through each and every step of the part.

In short: Whether programming, running a simulation for a feasibility check or time study, or manipulating a part on the machine, the POS 2000 Professional supports your operation like no other can.

POS 2000 Professional

- Windows 7 operating system
- Unlimited profile storage
- Automatic cut length calculation
- Unlimited tool storage and materials library
- Accurately scaled virtual bending simulation
- Zoom function
- Optimization of all machine axes
- Infinitly variable machine speed

Options

- Bump-forming radius function
- PC version for offline programming
- Remote connect for maintenance and training

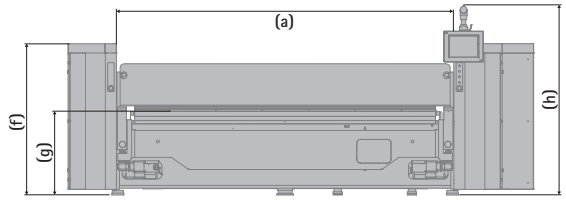
Dimensions and technical data

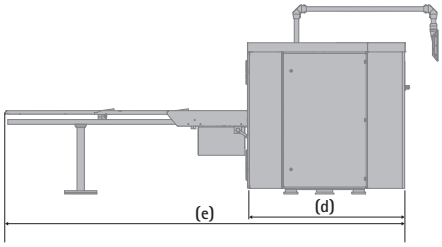
PowerBend Professional	2,000 × 4.0	2,500 × 4.0	3,200 × 3.0	4,000 × 2.5
Working length (a)	2,040 mm	2,540 mm	3,240 mm	4,040 mm
Sheet thickness 400 N/mm²	4.0 mm	4.0 mm	3.0 mm	2.5 mm
Machine length (b)	3,814 mm	4,314 mm	5,014 mm	5,814 mm
Length of working area (c)	2,434 mm	2,934 mm	3,634 mm	4,434 mm
Machine width (d)	1,699 mm			
Machine width with manual gauge 1,000 mm (e)	2,501 mm			
Machine width with sheet support table and gauge up to 1,600 mm (e)	2,563 mm			
Machine width with table in U shape (e)	3,438 mm	3,438 mm	4,313 mm	5,113 mm
Machine height (f)	1,630 mm			
Working height (g)	900 mm			
Machine height with swivel arm mount (h)	2,105 mm			
Total height with rotating clamping beam	1,960 mm			
Total height with rotating clamping beam and max. travel distance	2,310 mm			
Machine width with sheet support table, closed (i)	2,134 mm	2,634 mm	3,334 mm	4,134 mm
Weight of basic machine (ca.)	5,100 kg	5,700 kg	6,500 kg	7,400 kg
Clamping beam				
Geometry	48° (180°)	48° (180°)	48° (180°)	48° (180°)
Stroke	350 mm	350 mm	350 mm	350 mm
Drive power	3 kW/5.5 kW/2 x 2.2 kW	3 kW/5.5 kW/2 x 2.2 kW	3 kW/5.5 kW/2 x 2.2 kW	3 kW/5.5 kW/2 x 2.2 kW
Speed	20/50/65 mm/sec	20/50/65 mm/sec	20/50/65 mm/sec	20/50/65 mm/sec
Folding beam				
Drive power	2 x 2.2 kW/2 x 3.0 kW	2 x 2.2 kW/2 x 3.0 kW	2 x 2.2 kW/2 x 3.0 kW	2 x 2.2 kW/2 x 3.0 kW
Speed	85/105 °/sec	85/105 °/sec	85/105 °/sec	85/105 °/sec
Adjustment, motorized	80 (160) mm	80 (160) mm	80 (160) mm	80 (160) mm
Folding centre adjustment	± 20 mm	± 20 mm	± 20 mm	± 20 mm

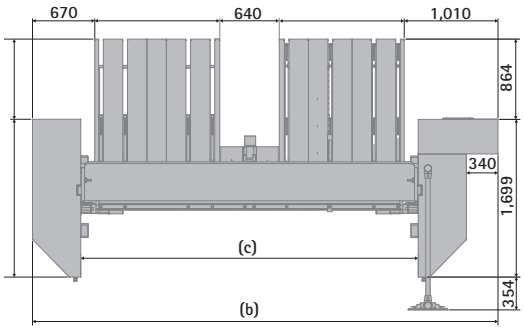
"C" style clamping beam tool

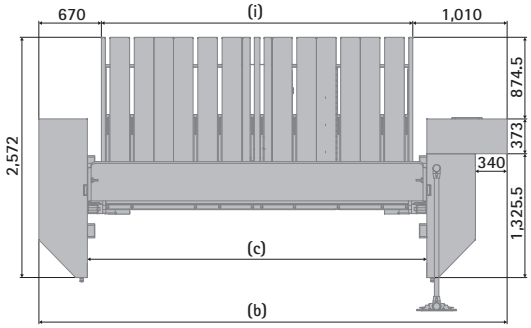
All specifications are considered as guidelines and may be subject to changes at any time.
* Differing specifications for the Up-and-Down function are in brackets.

Dimensions: PowerBend Professional

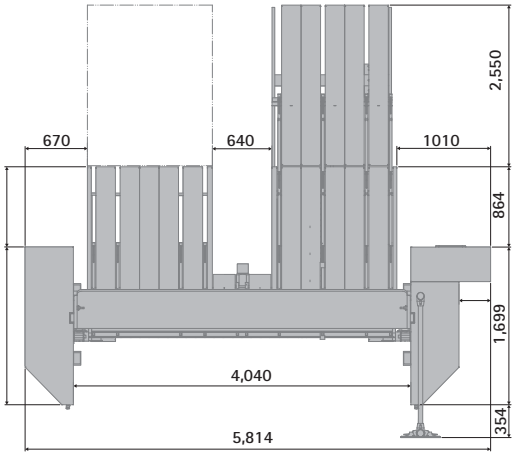




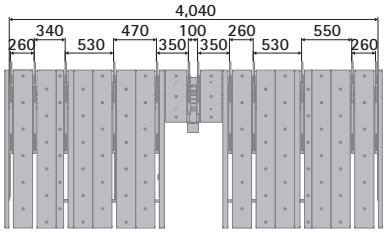




Special accessory extensions



J shape 3,200/1,600, 4 x 800 mm
J shape 4,000/1,600, 5 x 800 mm



U shape 1,600, 2 x 800 mm
U shape 2,400, 3 x 800 mm
U shape 3,200, 4 x 800 mm
U shape 4,000, 5 x 800 mm

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 240 people at various locations at home and abroad.

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