

SCHRÖDER
GROUP



FOLDING MACHINE
MAKU

MAKU – motorized series production

The new, versatile motorized folding machine of the MAK-series is perfect for sheet metal processing in small- and medium-sized workshops.



In the standard version the MAKU is equipped with the nano Touch-control - this makes it an extremely versatile machine.



The new, motorized folding machine MAKU of the MAK-series convinces with its robust and stable construction. The „U” in its name was intentionally made and stands for „Universal”: this folding machine is designed to meet the demands of sophisticated handicraft businesses. Its flexibility through applications up to 1.5 mm steel is the result of Hans Schröder Maschinenbau's decades of experience in industrial sheet metal folding.

The MAKU offers optimum precision, longevity and stability. It was engineered using extremely rigid machine bodies according to state-of-the-art technology.

This versatile machine is a safe investment into motorized sheet metal processing - and in the future of your company. For companies that rely on highest flexibility: Tools can be retrofitted easily at any time. Thanks to its adaptability the MAKU can be applied for thin sheet metal processing.

The path-breaking electronic software control, that already masters radius bending in its standard, can be programmed quickly with no computer skills. Anyone can program with the nano Touch, making it the perfect machine for a wide array of production requirements. The MAKU is the motorized folding machine for increased efficiency in your production.

Standard equipment	
Software control	<ul style="list-style-type: none"> - nanoTouch-control with touchscreen turnable on switch cabinet - Radius function
Clamping beam	<ul style="list-style-type: none"> - 45° clamping beam with clearance 65 mm at the rear - Drive: middle motor 0.75 kW (converter-controlled, eccentric drive) - Clamping beam stroke: 150 mm - Clamping pressure adjustment via handwheel (without tools) - Clamping beam tools WZS 080: tinsmith blade or optionally sharp nose blade 20°, ca. 700 N/mm², directly screwed to clamping beam
Folding beam	<ul style="list-style-type: none"> - Drive: 1.5 kW (controlled through contactors) - Manual adjustment: 30 mm - Folding blades 10 mm and 25 mm WZS 100 (from MAKU 3200: 15 mm and 25 mm); 700 N/mm²
Bottom beam	<ul style="list-style-type: none"> - Bottom beam with clearance 54 mm at the rear - Bottom beam blade WZS 270, one-piece, ca. 700 N/mm², at 30 mm step 8 mm, depending on chosen back gauge <ul style="list-style-type: none"> - without finger grooves - with finger grooves 6 mm or optionally 10 mm
Others	<ul style="list-style-type: none"> - Foot switch - Anchor plates incl. dowels

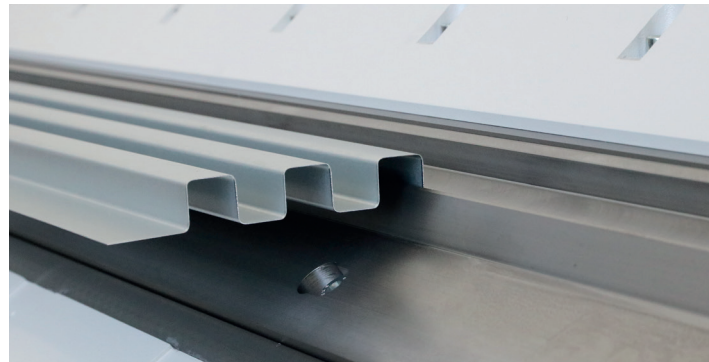
Special equipment	
Software control	<ul style="list-style-type: none"> - POS 2000 Professional graphic control on swivelling arm
Clamping beam	<ul style="list-style-type: none"> - Multi-stage drive for two different tool heights incl. clamping rail WZS 010, clamping beam rail from standard configuration dropped (only in combination with POS 2000 Professional control) - Clamping beam tools: sharp nose blade 20°, tinsmith blade 20°, goat's foot blade 90 mm and 130 mm, radius blades R2 - R5
Folding beam	<ul style="list-style-type: none"> - Shifted back incl. cranked folding blades WZS 130 - Manual crowning device, central (not in combination with cranked folding blade)
Bottom beam	<ul style="list-style-type: none"> - Bottom beam blade WZS 270 without gradation with or without finger grooves
Table and back gauge	<ul style="list-style-type: none"> - Sheet support table 1,000 mm (without gauge), optionally with steel balls in table - Back gauge package: nanoTouch or POS 2000 Professional or POS 2000 Professional with conical bending <ul style="list-style-type: none"> ▪ Back gauge motorized 6 - 1,000 mm or 1,500 mm with 2 gauge sectors (not in combination with gauge fingers for conical bending) ▪ removable sheet support plates, retractable to 265 mm or rather 300 mm ▪ All drives converter controlled - Back gauge with spring fingers (bottom beam blade without finger grooves) - Pneumatic lowerable gauge fingers - Gauge fingers for conical bending, adjustment range 5 mm optionally pneumatically lowerable (only in combination with pneumatically lowerable gauge fingers)
Safety and Others	<ul style="list-style-type: none"> - Additional equipment for 2-man-operation - Foot switch on rail for lateral movement - Guide rail - Cutting device for max. sheet thickness 0.8 mm St37

Machine with unprecedented clearances

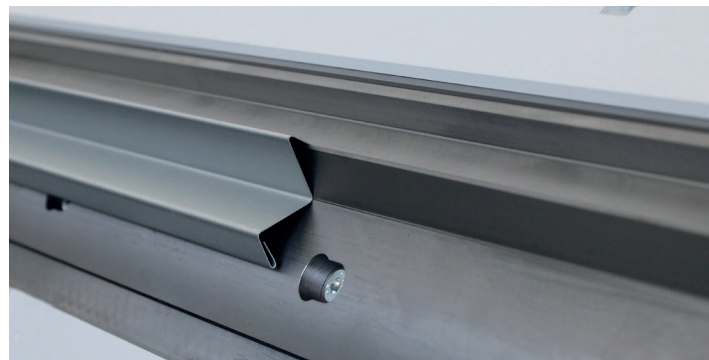
We offer you maximum clearances in the standard version of the MAKU so that you can bend your daily sheet metal profiles without any problem.



Clearance on the clamping beam



Picture above: trapezoidal sheet



Picture below: standing seam

Industrialisation of your workshop

With the MAKU you get the know-how from our industrial machines for your workshop. Folding machines from Schröder are extremely long-lasting, low-maintenance and aimed at continuous operation with same high quality. You are able to produce faster and to reduce unit costs. You can not only increase your competitiveness through quick small series production but also thanks to sophisticated single orders in the short-term and with utmost precision.

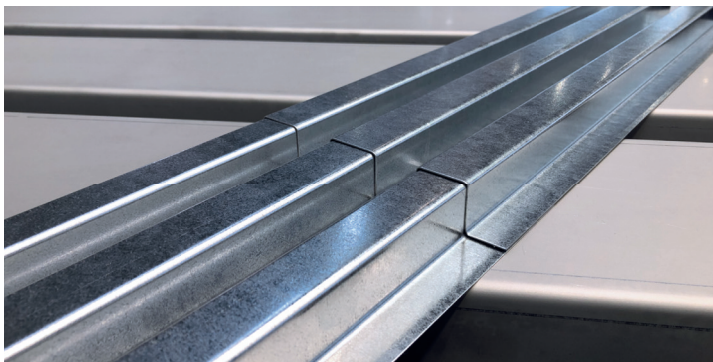
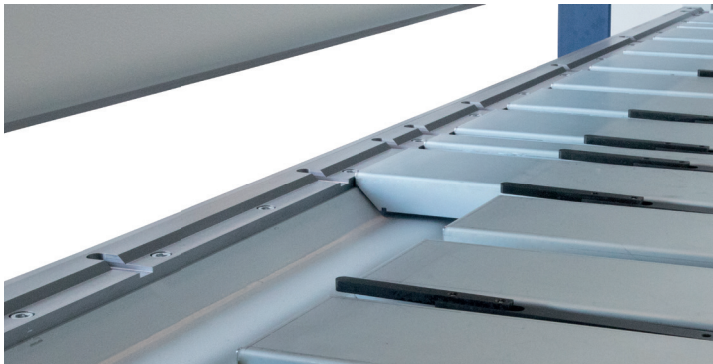
The MAKU is already very flexible with its standard tools, but there are also more interesting options available: e.g. clamping beam tools such as tinsmith blade, sharp-nose blade, radius blade and different goat's foot blades.

Option: shifted back folding beam

The shifted back folding beam with a cranked folding blade offers you a lot of new possibilities. Trapezoidal sheets and profiles with standing seams are herewith very easy to bend.

Conical bending and more back gauge options

The MAKU proves to be extremely variable and flexible already in its standard version. If you want to work even more efficiently, we offer you different back gauge packages. Just let us know and we will find the perfect solution for you requirements.



Picture above: Standard back gauge with retractable support plates.
Picture below: Thanks to the new option for conical bending profiles can be connected to each other very easily.

Picture above: Sheet support table with steel balls
Picture below: adjustable back gauge fingers for conical bending

We offer you back gauges and different sheet support table options that are perfect for your requirements. The support plates of the back gauge table can be retracted easily by hand. Thus you create more space. Optionally the back gauge table can be equipped with steel balls in order to position the sheet more smoothly.

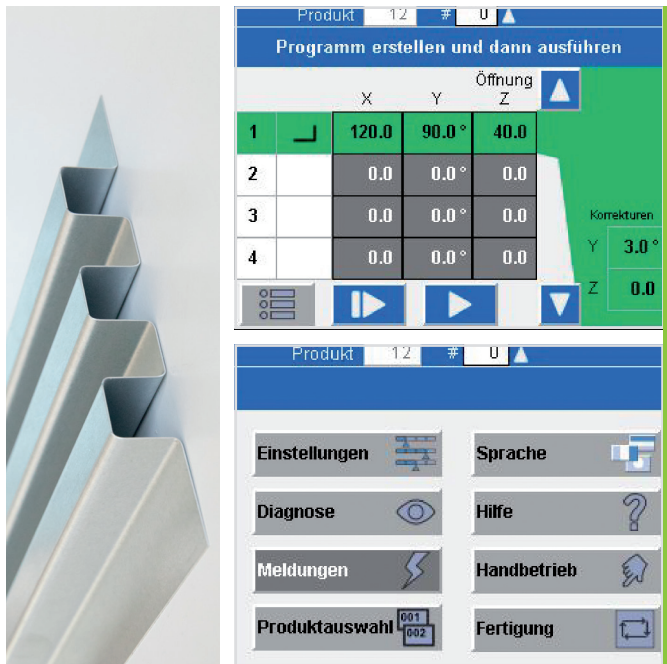
Furthermore, you are able to extend the back gauge with spring fingers. In order to turn the sheet on the table more comfortably we offer you the possibility to lower the back gauge fingers pneumatically.

Option: conical bending

The MAKU is also available with a 2 axis back gauge. No matter whether you want to bend parallel or conical! We develop solutions to facilitate your work. So get your MAKU and break new grounds.

nano Touch

The most clearly laid-out alphanumeric control



Simple symbols and alphanumeric data describes the bending program.

The nano Touch is a modern alphanumeric touch screen control. Self-explanatory and very easy to operate. A path measurement system controls the machine axes, programming from flange to flange. A clearly laid out user interface with easy to understand icons with text and numeric displays eases the operator through his day of running jobs.

Corrections for angle and flange length are entered per part or per bend for even more accuracy control.

The nano Touch is proof positive that sometimes simple is better. Hans Schröder Maschinenbau is setting new control standards for companies needing the advantages of folding as a process, but does not need the sophistication of a high end control system.

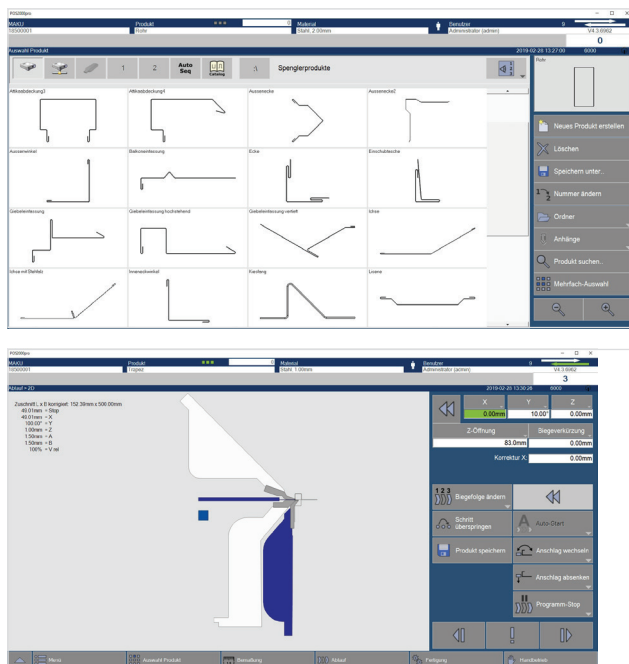


nano Touch

- Store up to 9,999 programs, each program up to 99 bends
- Icon based programming
- Part corrections per bend, or per program
- Bend list with current bend highlighted
- Piece counter
- Positioning control with monitor turnable on switch cabinet

POS 2000 Professional

The graphical solution to your complex forming needs.



Graphic control POS 2000 Professional:
the result always visible – from the first bending steps up to simulation

With the graphic control POS 2000 Professional you extend your possibilities of the MAKU for industrial sheet metal processing. For parts requiring graphical assistance to program and manipulate through the bending sequence, 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 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.



POS 2000 Professional

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

Options

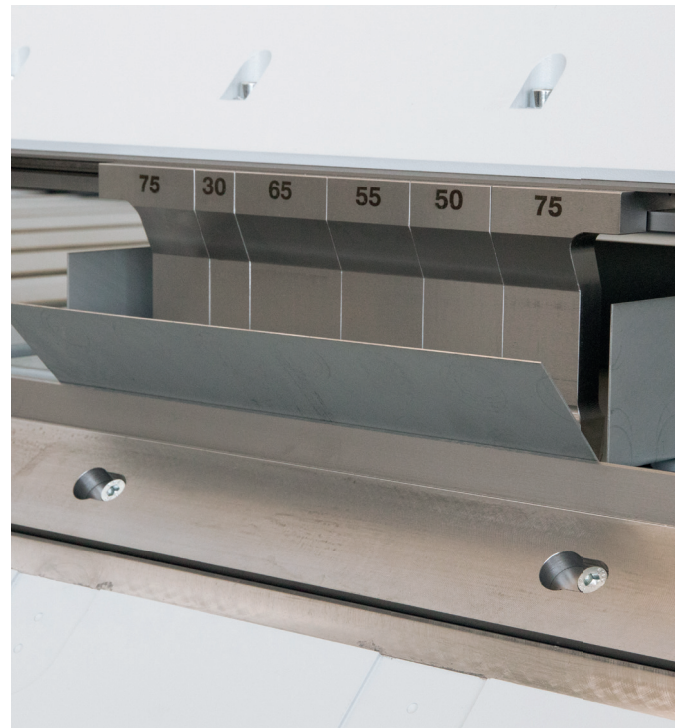
- External programming
(POS 2000 Professional PC-Version)
- Remote maintenance

Tools

For every job the right tool - with high-quality tools from Schröder you have lots of possibilities.



Crowning device for folding beam: manual central crowning device (not in combination with cranked folding blades)

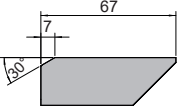
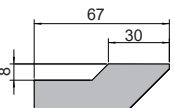
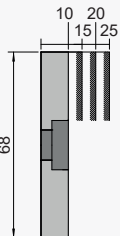
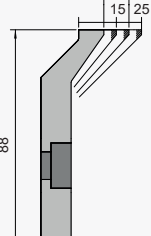
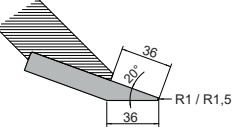
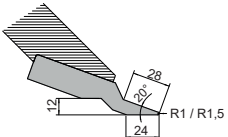
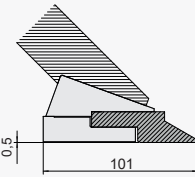
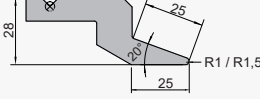
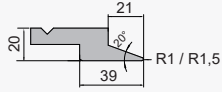
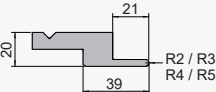
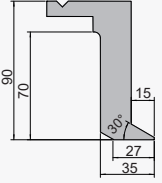
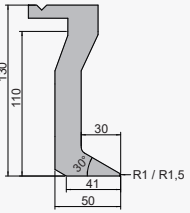


Bending up to 110 mm high boxes with the MAKU is simple and easy.

The tool system WZS 010 for the MAKU is well established and has already been used for many Schröder machines for a long time. The segmented goat's foot tools enable to bend up to 110 mm high boxes.

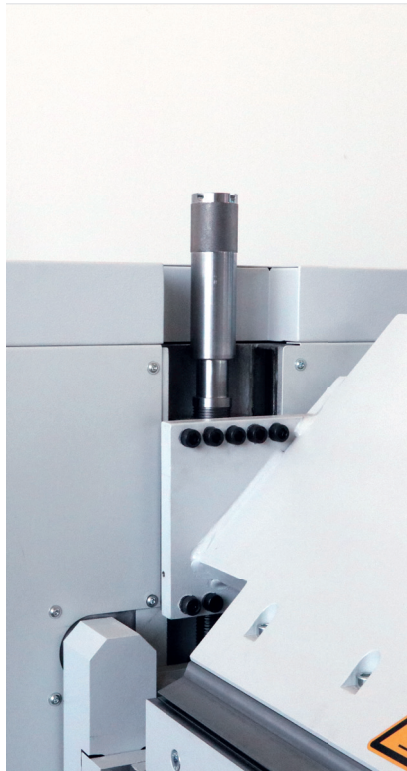
Thanks to the quick clamping device from Schröder you can change tools very quickly.

In order to achieve an accurate and constant folding result on the whole working length, it is useful being able to adjust the folding beam. This can be achieved with the central crowning device that you can acquire optionally as manual function.

Tool options				
Bottom beam tools WZS* 270		Blade one-piece with or without finger grooves, ca. 700 N/mm ²		Blade one-piece 8 mm step with or without finger grooves, ca. 700 N/mm ²
Folding beam tools WZS 100/130		Folding blade (WZS 100) one-piece, directly screwed, 10/15/20/25 mm, 68 mm high, ca. 700 N/mm ²		Folding blade cranked (WZS 130) one-piece, directly screwed 10/15/20/25 mm, 88 mm high, ca. 700 N/mm ²
Clamping beam tools WZS 080		Sharp -nose blade one-piece, directly screwed 20°, R1/R1,5/R3 foot width 36 mm, ca. 700 N/mm ²		Tinsmith blade one-piece, directly screwed, 20°, R1 or R1,5, foot width 24 mm, clearance 12 mm, ca. 700 N/mm ²
Clamping beam tools for clamping rail WZS 010		Tool holder for WZS 010		Tinsmith blade one-piece, 20°, R1 or R1,5, foot width 25 mm, clearance 8 mm
		Sharp-nose blade one-piece, 20°, R1/R1,5/R3; foot width 39 mm, ca. 700 N/mm ²		Radius blade R2/3/4/5 ca. 700 N/mm ²
		Goat's foot blade 30° sharp, 90 mm high, foot width 35 mm, clearance 15 mm, segmented incl. corner parts, ca. 1100 N/mm ²		Goat's foot blade 30°, R1 or R1,5, 130 mm high, foot width 50 mm, clearance 30 mm, segmented incl. corner parts, ca. 1100 N/mm ²

* WZS = Tool system

Dimensions and technical data

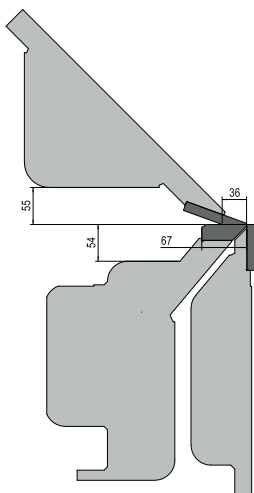


MAKU	2,000 x 2.5	2,500 x 2.0	3,200 x 1.5
Working length (a)	2,020 mm	2,520 mm	3,220 mm
Sheet thickness (400 N/mm ²)	2.5 mm	2.0 mm	1.5 mm
Machine length (b)	3,275 mm	3,775 mm	4,475 mm
Length of working area (c)	2,420 mm	2,920 mm	3,620 mm
Machine height (d)	1,255 mm		
Working height (e)	870 mm		
Weight	2,150 kg	2,400 kg	2,700 kg
Machine width			
Without gauge	995 mm		
Sheet support table 1,000 mm	1,970 mm		
Back gauge, motorized 1,000 mm (f)	1,970 mm		
Clamping beam			
Stroke	150 mm		
Drive power	0.75 kW		
Speed	65 mm/sec (85 mm/sec)		
Folding beam			
Adjustment	30 mm		
Drive power	1.5 kW		
Speed	65°/sec (90°/sec)		
Back gauge			
Speed	300 mm/sec		

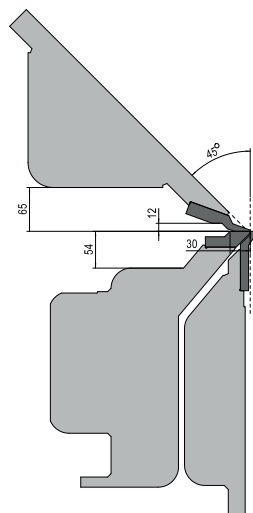
Clamping pressure adjustment of the clamping beam

*Data specified in brackets relate to the optional equipment.

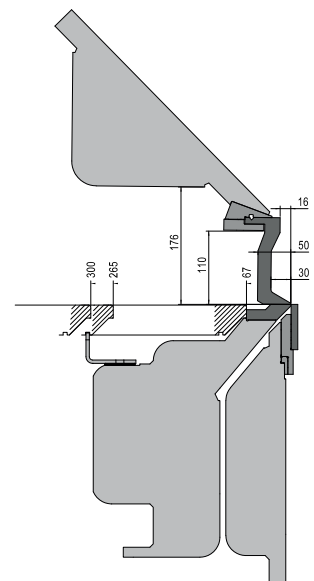
All specifications are considered as a guide only and may be subject to change at any time.



Cross section tool:
Sharp nose blade, Radius 1.0
directly screwed
standard folding blade

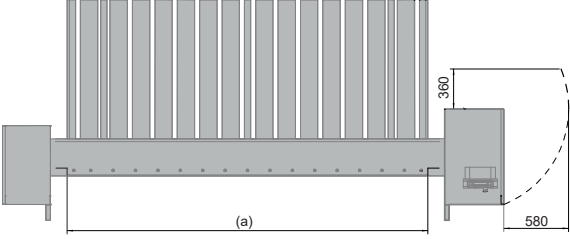
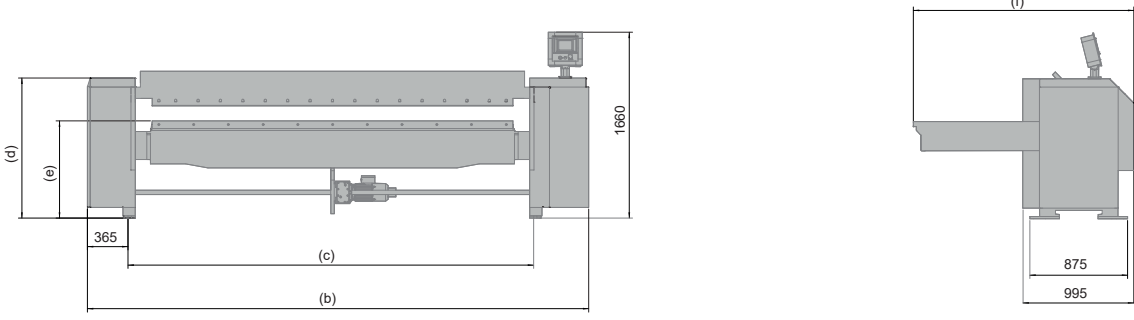


Cross section tool:
Tinsmith blade, Radius 1.0
directly screwed,
cranked folding blade

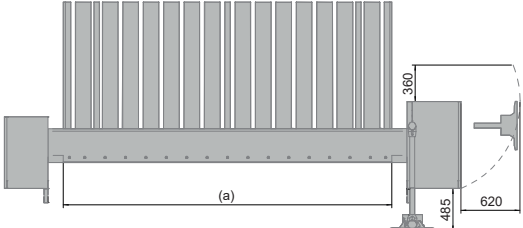
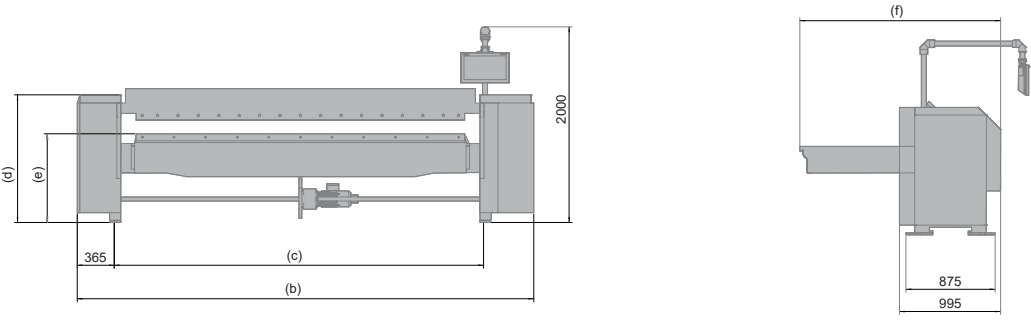


Cross section tool:
Goat's foot blade: 130 mm
and crowning device

Dimensions: MAKU with nanoTouch control



Dimensions: MAKU with POS 2000 Professional control



All dimensions in mm

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



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 may be subject to change at all times.
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