



MOTORIZED FOLDING MACHINE  
**MAKV/MAKV S**

# MAKV and MAKV S – motorized series production

The MAKV is a motorized folding machine with a reinforced drive which has been perfected over the years and offers you an easy entry into motorized sheet metal processing.



MAKV can optionally be acquired with the software control POS 2000 Professional



MAKVS with segmented tools on clamping-, bottom-, and folding beam and nano-touch software – this machine is already extremely versatile in its standard version.

Many fast growing plumber workshops, smaller sheet-metal businesses and roofing companies come to a point when folding sheets is not anymore efficient by hand. As a specialized partner Hans Schröder Maschinenbau GmbH offers a perfect entry into motorized sheet metal processing for sheets up to 3 mm thickness and working length up to 4,000 mm (for MAKV). The MAKV S with working length of 1,000 x 2.5 mm, 1,500 x 2.0 mm and 2,000 x 1.5 is an extremely versatile segment folding machine.

The MAKV is an easy to operate, robust folding machine with low tool costs and a wide range of options and equipment. The well-developed machine is a safe investment into motorized sheet metal working – and in the future of your company. For companies that rely on highest flexibility we recommend the MAKV S with segmented tools on all beams. This machine can handle complex folding tasks with ease. Thanks to its adaptability the MAKV S is also often applied in industrial thin sheet metal processing.

## Standard equipment

MAKV	MAKV S
Positioning control „nano Touch“ to control folding and clamping beam, 5.7“-monitor turnable on switch cabinet	
45° clamping beam with 50 mm free space	45° clamping beam
Tin smith blade 30°, sharp, foot width 27 mm, clearance 8 mm for hems, directly screwed to clamping beam	Goat's foot blade, 30°, sharp, 130 mm high, segmented incl. corner parts, foot width 40 mm, 700 N/mm <sup>2</sup>
Manual folding beam adjustment 30 mm	Manual folding beam adjustment 15 mm
Folding blades, 10 mm and 25 mm from MAKV 3,200: 15 mm and 25 mm, 700 N/mm <sup>2</sup>	Folding blade 20 mm, clearance 68 mm segmented incl. corner parts
Bottom beam blade, one-piece	Segmented bottom beam blade, segments guided on a T-slot rail, clearance 55 mm, incl. corner parts
-	Patented quick clamping device with eccentric for quick changing of clamping and folding beam tools
-	Segmented tools for 1,000 mm: 30/40/50/55/60/65/70/100/2 x 200/2 x 75 mm corner parts, plus 500 mm segments for larger length
-	Convertible to sharp-nose blade and radius blade
-	Sheet support table 750 mm
Piece counter	
Foot switch	
Anchor plates incl. dowels	

## Special equipment

MAKV	MAKV S
Manual back gauge 10 - 750 mm	-
Sheet support table incl. manual back gauge 10 - 750 mm with movable table support arms	-
„nano Touch“ control with simple back gauge system motorized, 10 - 1,000 mm incl. sheet support table	„nano Touch“ control with simple back gauge system motorized, 45 - 1,000 mm incl. sheet support table
POS 2000 Professional software control with motorized back gauge 10 - 1,000 mm or 10 - 1,500 mm incl. sheet support table and gauge finger	POS 2000 Professional software control with motorized back gauge 45 - 1,000 mm or 45 - 1,500 mm incl. sheet support table and gauge finger
Folding beam crowning device	-
Cutting device incl. linear guide for max. sheet thickness 0.8 mm St37	-
Profiling- and flattening device	-
Additional equipment for 2-man-operation control in accordance with accident prevention rules required	
Footswitch on rail for lateral movement	
Tool cart for blades, and segmented tools	
For tool options please see p. 7	

# MAKV – solid basis – well-developed equipment

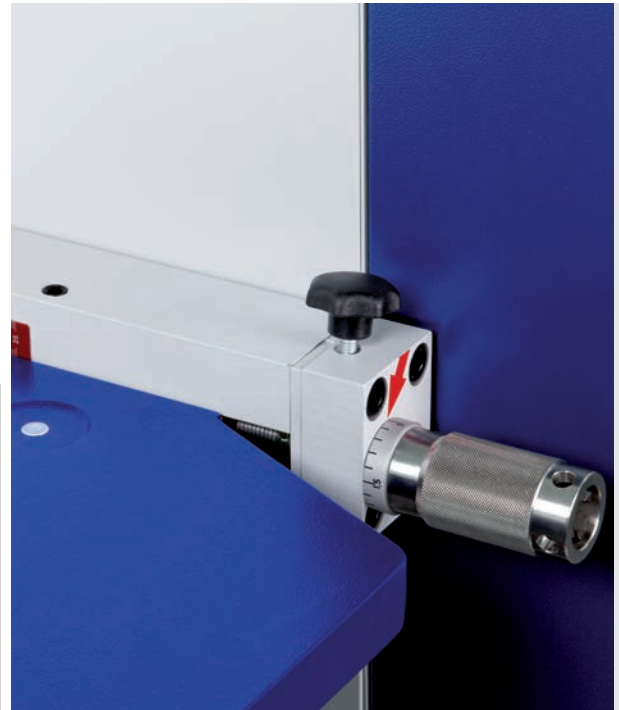
Our concept for this machine class: every standard folding task can be fulfilled with the standard version MAKV. For specific folding requirements, we offer suitable options for you.



MAKV with „nano Touch“- control and simple motorized back gauge incl. sheet support table



MAKV with POS 2000 Professional control and motorized back gauge incl. sheet support table



Manual folding beam adjustment

The MAKV is a typical Schröder machine: compact and clearly designed, a torsion-free, rigid welded construction, strong main assemblies such as clamping-, bottom-, and folding beam. The folding beam drive with two drives assures torsion-free bending over the whole working length. The clamping beam with eccentric drive clamps the sheet quickly and exactly. The adjustment of the folding beam can be done quickly by hand without any problems.

## Industrialise your workshop

If you choose the MAKV for your workshop, you'll get the know-how of industrial engineering. Schröder folding systems are extremely durable and with low maintenance, and are geared to continuous operation with consistent high quality. You produce faster and reduce your unit costs. Thus you are able to increase your competitiveness not only by quick small series production, but also fulfill short-term sophisticated individual orders with utmost precision. The quick clamping beam clamping device enables short set up times and increases you efficiency in addition.

# MAKV S – incomparably versatile

For special requirements, flexibility is necessary. The motorized folding machine MAKV S offers a lot of possibilities for complex work pieces.



Motorized back gauge, converter-controlled



Ingenious patent: with the fast eccentric clamping device tool changes can be done with ease.

## The powerful folding machine for the industry and crafts

Motorized folding machine, reinforced, segmented – this is what characterizes the name of MAKV S. With its easy to operate nano Touch software control the machine is the ideal tool for crafts and small industrial businesses. The MAKV S is robust and powerful enough for series production and offers all possibilities to produce also complicated single parts.

Operating the MAKV S the sheet metal working specialist can show everything he wants – supported by powerful drives and intelligent machine control. The machine equipped with segmented clamping-, bottom- and folding beam blades reveals many possibilities and tackles also complex tasks. Suitable for series production, but also equally prepared for unique productions because with the patented quick eccentric clamping device from Schröder you can easily change tools on the clamping- and bottom beam manually.



# Tools

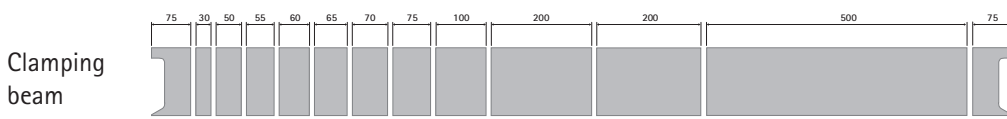
For every job the suitable tool – with the high quality segmented Schröder-tools you are able to fold exactly and to bend radii with utmost precision.



In the standard version, the MAKV is available with a tinsmith blade directly screwed to the clamping beam and a folding blade 25 mm – with a goat's foot blade a fast eccentric clamping device is included

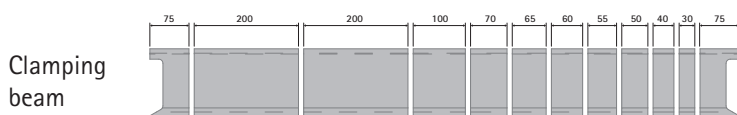
The MAKV S with its patented quick eccentric clamping device enables an easy and fast change of clamping beam tools.

## MAKV – Example: Segmentation of tools

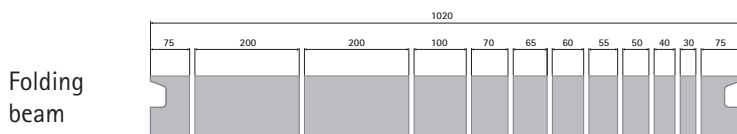
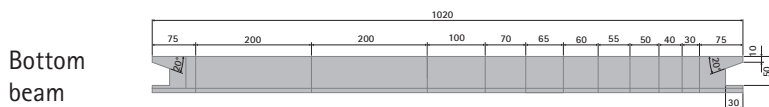


Segmentation of tools for 1,500 mm, with greater lengths the set is filled up by using 200 mm and 500 mm tool segments

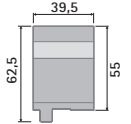
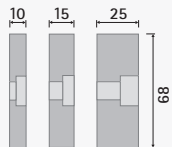
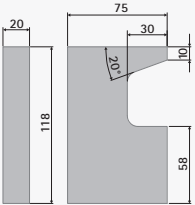
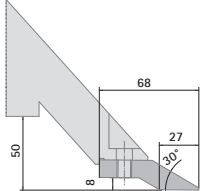
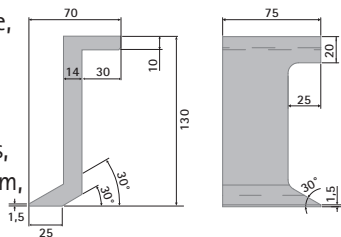
## MAKV S – Segmentation of tools



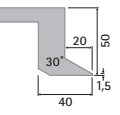
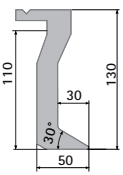
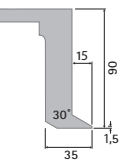
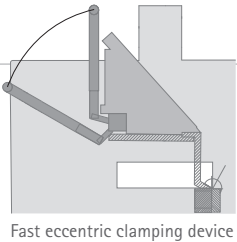
Segmentation of tools for 1,000 mm – with greater lengths the set is filled up by using 500 mm tool segments



## Standard equipment

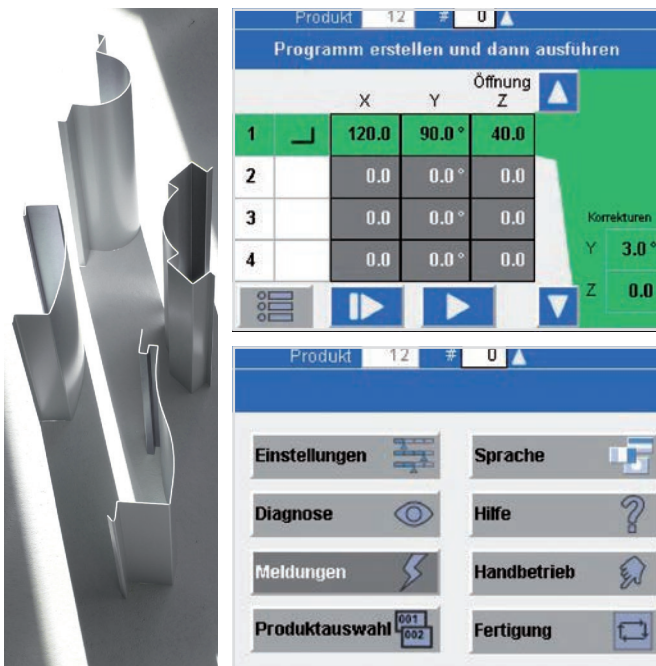
	MAKV	MAKV S
Bottom beam tools	Bottom beam blade, one-piece	Bottom beam blade, segmented clearance 55 mm, incl. corner parts 
Folding beam tools	Folding blade 10 and 25 mm, with MAKV 3,200: 15 and 25 mm 	Folding blade 20 mm, clearance 68 mm, segmented incl. corner parts 
Clamping beam tools	Tinsmith blade 30°, sharp, foot width 27 mm, clearance 8 mm for hems, directly screwed to clamping beam 	Goat's foot blade, 30°, sharp, 130 mm high, segmented, incl. corner parts, foot width 39 mm, 700 N/mm² 

## Special equipment

	MAKV	MAKV S
Clamping beam tools	Goat's foot blade, 30°, sharp, 50 mm high, foot width 40 mm, clearance 20 mm, segmented incl. corner parts, 1100 N/mm² With ordering ex. works: fast eccentric clamping device incl. (With subsequent order only adaptor rail applicable) 	Goat's foot blade, 30°, sharp, R 1,5, 130 mm high, segmented incl. corner parts, foot width 50 mm, surface-hardened 1100 N/mm² 
	Goat's foot blade, 30° sharp, 90 mm high, foot width 35 mm, clearance 15 mm, segmented incl. corner parts 1100 N/mm² With ordering ex. works: fast eccentric clamping device incl. (With subsequent order only adaptor rail applicable) 	 Fast eccentric clamping device

# 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. Control of the machine axes is through a path measurement system, 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 simpler is better. 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.

And for those companies needing that extra level of sophistication, the MAKV or MAKV S can optionally be configured with the finest graphical control ever developed for precision metal folders.



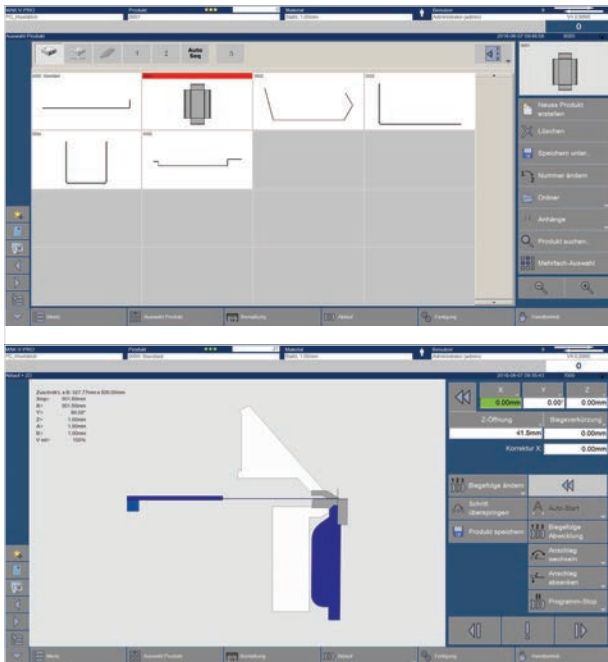
## nano Touch

- Store up to 9,999 programs, each program up to 99 bends
- Icon based programming
- Part corrections per bend, or per program
- Current processing step in the list of bends is highlighted
- Piece counter for series production
- Monitor turnable on switch cabinet



# POS 2000 Professional

Intelligent graphic control for efficient processing



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

With the graphic control POS 2000 Professional you extend the possibilities of MAKV and MAKV S in terms of industrial sheet metal processing. For complex 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 tool storage and materials library
- Accurately scaled virtual bending simulation
- Zoom function
- Infinitely variable machine speed

## Options

- Radius function (crowning device recommended)
- Pneumatically lowerable gauge fingers
- External programming (POS 2000 Professional PC-Version)
- Remote maintenance

# Dimensions and technical data



Ingenious patent: with the fast eccentric clamping device tool changes can be done with ease.

MAKV	1,000 x 3.0	1,500 x 2.5	2,000 x 2.0	2,500 x 1.5	3,200 x 1.5	4,000 x 1.0
Working length (a)	1,020 mm	1,520 mm	2,020 mm	2,520 mm	3,220 mm	4,020 mm
Sheet thickness (400 N/mm <sup>2</sup> )	3.0 mm	2.5 mm	2.0 mm	1.5 mm	1.5 mm	1.0 mm
Machine length (b)	2,030 mm	2,530 mm	3,030 mm	3,530 mm	4,230 mm	5,030 mm
Length working area (c)	1,354 mm	1,854 mm	2,354 mm	2,854 mm	3,554 mm	4,354 mm
Machine height (d)	1,193.5 mm					
Working height (e)	869 mm					
Weight	1,170 kg	1,220 kg	1,410 kg	1,950 kg	2,230 kg	2,580 kg
<b>Machine width</b>						
Without gauge (f)	705 mm					
Back gauge, manual 750 mm (f)	1,430 mm					
Back gauge, motor. 1,000 mm (f)	1,800 mm					
Back gauge, motor. 1,500 mm (f)	2,300 mm					
<b>Clamping beam</b>						
Stroke	120 mm					
Drive power	0.55 kW					
Speed	25 mm/sec (65 mm/sec)					
<b>Folding beam</b>						
Adjustment	30 mm					
Drive power	1.1 kW					
Speed	1.7 sec/90° (0.9 sec/90°)					

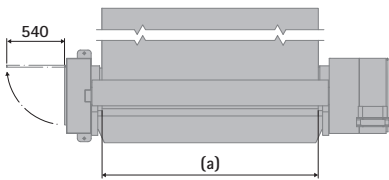
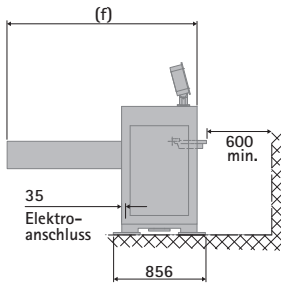
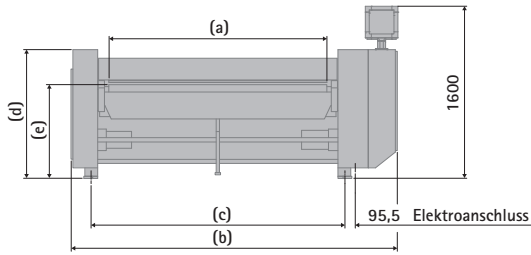
MAKV S	1,000 x 2.5	1,500 x 2.0	2,000 x 1.5
Working length (a)	1,020 mm	1,520 mm	2,020 mm
Sheet thickness 400 N/mm <sup>2</sup>	2.5 mm	2.0 mm	1.5 mm
Machine length (b)	2,030 mm	2,530 mm	3,030 mm
Length working area (c)	1,354 mm	1,854 mm	2,354 mm
Machine height (d)	1,193.5 mm		
Working height (e)	869 mm		
Weight	1,445 kg	1,645 kg	1,850 kg
<b>Machine width</b>			
with sheet support table 750 mm (f)	1,535 mm		
Back gauge, motor. 750 mm (f)	1,535 mm		
Back gauge, motor. 1,000 mm (f)	1,800 mm		
<b>Clamping beam</b>			
Stroke	120 mm		
Drive power	0.55 kW		
Speed	25 mm/sec (65 mm/sec)		
<b>Folding beam</b>			
Adjustment	15 mm		
Drive power	1.1 kW		
Speed	1.7sec/90° (0.9 sec/90°)		

\* Technical data with POS 2000 Professional control are specified in brackets.

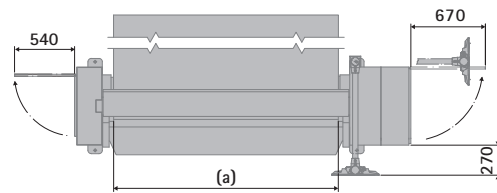
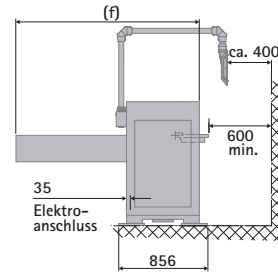
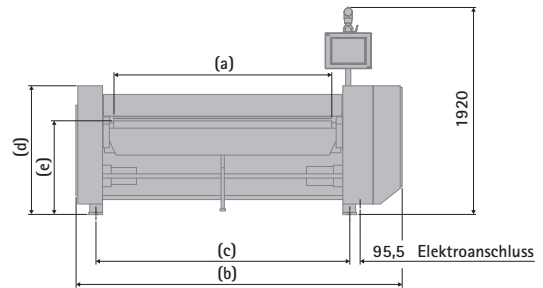
All specifications are considered as guidelines and may be subject to change at any time.

# Dimensions MAKV / MAKV S

nano Touch-control



POS 2000 Professional control



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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HSM 160616EN

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