HACO GROUP

SANDFELD AS
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SYNCHROMASTER

Hydraulic Press Brakes

SynchroMaster

SynchroMaster is a press brake suitable for the production of small and medium series. You can choose its equipment by selecting the options that are essential for your production. The thicknesses and materials used ensure that the frame with gap in the side sections is designed to be extremely rigid. The machine is entirely manufactured in the HACO group's factories in Europe.

Intuitive Multi-touch control

The EASYBEND control sets a new standard in the market for flexible, reliable and high precision sheet metal bending. Driven by state-of-the-art PC-based hardware, the system allows for very fast data processing and highly accurate calculation of the optimal bending programs for SynchroMaster hydraulic CNC press brakes.

Backgauge

The motorized backgauge minimizes adjustment times to the bare minimum. The fingers have 3 contact/ support surfaces to adapt to different shapes of parts and to ensure stable positioning.

Safety

The machine has various components to ensure the user's safety.

Top tooling

The ES clamping system allows you to have the widest selection of tools on the European market. The various systems offered will allow you to optimize tool changeover times to the maximum.

Table

The table allows you to accommodate a wide variety of bottom tools.
The alignment system allows you to change the bottom tools without adjustment for time savings and optimal precision.

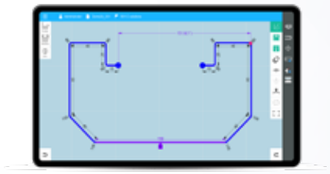
Advantages:

- Frame made of rigid, high-thickness welded steel.
- Large opening and stroke for optimized user comfort.
- Very wide variety of choices: More than thirty models of different lengths and capacities.
- Modern and aesthetic design.

EASYBEND control

The EASYBEND control of 18.5" is perfect for programming 2D workpieces. The application of Multi Touch technology reduces the number of keyboard- and button actions to an absolute minimum. The innovative Smart Draft, Design/Bending Sequence Multitasking, Step Previewer and Combined Icons features allow the operator a straightforward, intuitive control of the entire production cycle.

After drawing your workpiece, the software automatically generates a bending sequence and the position of the various axes, making programming your machine simple and quick. EASYBEND has a USB port and can be connected to the network, which allows for remote access as well as compatibility with our offline programming software HACOBEND Pro 2D.



Point-to-Point drawing method, real-time bending solution calculation during building-up workpiece design

Smart Draft: innovative drawing method for 2D workpieces

Step Previewer: ability to visualize bending steps

Combined Icons: multiple functions on a single icon

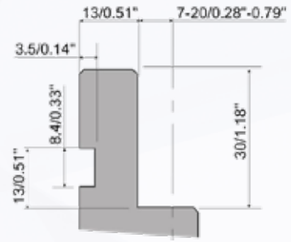
Intuitive Interface combining numerical and graphical elements

Intuitive Interface with an overview of the program and the possibility of messages for the operator

Advantages:

- User-friendly and visual programming making the control accessible to everyone.
- Fast programming thanks to automatic program generation for time savings on both single parts and series.
- High precision, flexibility & reliability for optimal performance.

Top tool clamping



SynchroMaster can accommodate standard European-type top tools known as 'ES'. This clamping system gives you access to a very wide selection of top tools. Thanks to its groove, the top tool is held in the clamp even after being loosened, ensuring the operator's safety. The system allows for the attachment of standard length tools of 835mm, 415mm, or sectionalized lengths.

Standard equipment

THE QUICK CLAMPING SYSTEM

Thanks to its built-in lever, the system allows for quick tightening and loosening of the top tool. The evacuation of top tools occurs on the side of the machine. The intermediate holders can have a height of 100mm, 120mm, or 150mm.

Advantages:

- Wide variety of top tools
- Quick top tool clamping without Allen key

Optional equipment

RUBBER STRIP

A rubber strip is added in the clamping plate, increasing the grip of short tool selections.

ROL1 CLAMP3

Thanks to its ergonomic lever, the system allows for quick tightening and loosening of the top tool. The complete loosening of the system allows for the full removal of the clamp in record time, enabling the evacuation of tools to the center of the machine on unoccupied intermediates.

ROL200 - MANUAL, PNEUMATIC OR HYDRAULIC

The ROL200 allows for frontal evacuation of the top tools. It is available in 3 different models. The manual features a quarter-turn loosening mechanism as well as automatic tightening and loosening through pneumatic or hydraulic means. The pneumatic and hydraulic systems are directly controlled by the EASYBEND control unit.

ROLGRIP

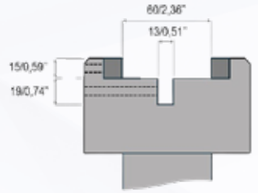
Thanks to its ergonomic handle, the system allows for quick tightening and loosening of the top tool without the use of an Allen key. The system allows for easy frontal evacuation of the tool.

Table

Standard equipment

SynchroMaster has a 60mm groove to accommodate European Standard type bottom tools referred to as 'ES', with two 15x15mm blocks on either side. These two blocks facilitate clamping and allow, if removed, to extend the groove to 90mm for larger bottom tools.

A 13mm groove is also incorporated for clamping New Standard type bottom tools, referred to as 'NS'. The bottom tools are secured using an Allen key. When the bottom tool is tightened, it is aligned against the rear face and is directly centered.



The drawing shows the 60mm base width and 13mm tang width of ES and NS bottom tools, respectively.

Advantages:

- No alignment time required thanks to the self-centering table.
- Compatible with 60mm, 90mm and 13mm tang width bottom tools.

Optional equipment

MANUAL CROWNING

The manual Anti-Deflection table allows for crowning the center of the table to compensate for the deformations of the beam. It consists of a system made up of sloped wedges that are drawn or pushed using a crank. This results in a part with a constant angle along the entire length of the machine.

Additional advantages:

- Gain in precision and quality.

MOTORIZED CROWNING

The motorized Anti-Deflection table operates in the same way as the manual device, with the only difference being that the crank is replaced by a motor. The crowning device is directly linked to the EASYBEND control unit, and the choice of material, thickness, and length will automatically adjust the device.

Additional advantages:

- Gain in precision and quality with no setup time.
- Fully automatic.

ADDITIONAL CLAMPING HOLES

Additional clamping holes can be added to increase the clamping possibilities of the 'NS' tooling.

Backgauge

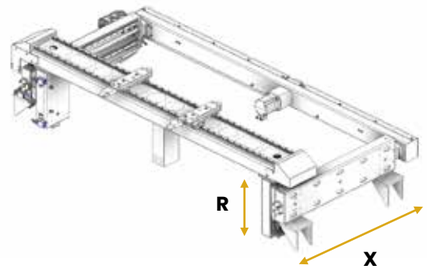
Standard equipment

BACKGAUGE X-R (2 AXES)

The XR backgauge of SynchroMaster is made up of a rigid beam and two fingers. The depth (X) and height (R) are motorized and controlled by the CNC.

Stroke X: 1000mm, speed 400mm/s
Stroke R: 250mm, speed 63mm/s

The fingers are manually adjustable along the length of the machine from the front. The fingers are equipped with 3 contact/support surfaces and are tiltable.



Advantages:

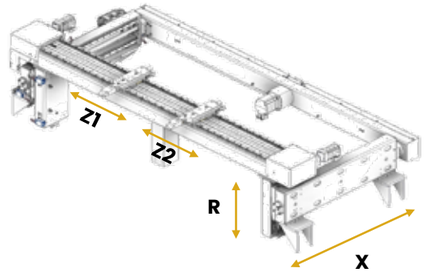
- Finger adjustment time is significantly reduced.
- Possibility of setting finger positions easily, so you can bend an entire workpiece without having to shift the fingers.

Optional equipment

BACKGAUGE X-R-Z1-Z2 (4 AXES)

The backgauge X-R-Z1-Z2 has 4 motorized axes. In addition to depth (X) and height (R), the two fingers move independently along the length axis (Z). They are named Z1 and Z2.

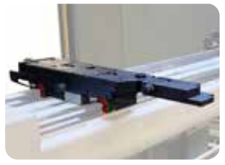
Stroke X: 1000mm, speed 400mm/s
Stroke R: 250mm, speed 63mm/s
Stroke Z1-Z2 axes: according to the machine length, speed 1000 mm/s (max 4m 200t)



Additional advantages:

- There is no longer any setup time for the backgauge.
- It is now possible to bend on tool sections of different lengths distributed along the length of the machine.

ADDITIONAL FINGERS



Additional non-controlled fingers can be added to the machine to increase the contact/support surfaces for bending long sheets.

If the machine is configured with a 2-axis backgauge and 4 fingers (2 additional fingers), it is also possible to bend using two tool stations of different lengths.

Safety

Standard equipment

DSP SAFETY LASER

Multiple lasers observe the tip of the tool. If an obstacle stands between the laser emitter and receiver, the descent of the beam is interrupted. For CE-compliant machines, the laser is essential for operating at high speed. Its mutation point is located between 14 and 23 mm.

Advantages:

- Increased operator safety
- Increases bending speed

3-POSITION SAFETY PEDAL

The safety pedal has 3 positions as well as an emergency stop. If the lowering pedal is fully pressed, the descent of the beam is interrupted.

Standard on CE machine / Optional on Non-CE machine

SIDE DOOR

Two doors are located on either side of the machine. They ensure that no one is behind the machine during the bending phase. The doors open to facilitate the extraction of top tools. An electromagnetic switch ensures that the door is properly closed during operation.

SAFETY LIGHT CURTAIN AT THE BACK

Light curtains facilitate access to the backgauge while ensuring safety during the bending phase. A simple push button allows the light curtain to be reset to resume bending.

Other options

Optional equipment

FRONT SUPPORT ARMS

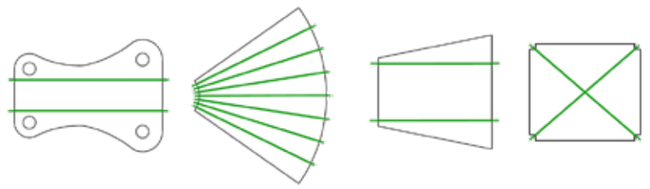
It is possible to add front support arms of 750mm in length to the machine to facilitate the handling of workpieces. The support arms are movable along the entire length of the machine and can be easily adjusted in height. A T-slot allows for positioning a tilting stop.

Advantages:

- Facilitates the handling of sheets and workpieces.
- Easy to move thanks to its locking screws and handles.

LASER TRACKER B-LIGHT

A laser can be installed on the bending line to indicate the line where the top tool will perform the bending. This laser is very useful for contour bending, such as for cones, rounded surfaces, or diamond points.



DEVICE FOR TROPICAL CLIMATES

Several options are offered to enable the machine to operate in specific environments.
Tropical insulation: Larger wire sections, high-intensity electronic circuit.

- **Air-conditioned electrical cabinet:** For high temperature & humidity.
- **Oil cooler:** Increases the longevity of the oil during intensive use or in high-temperature conditions.

Offline software

Optional equipment

HACOBEND Pro 2D

The HACOBEND Pro 2D software allows you to create 2D bending programs for your machine remotely on a computer.

WORKPIECE DESIGN

You choose the material, thickness, and bending length.
You simply draw the workpiece to be made point to point, indicating the various dimensions and angles.
Assists in programming specific bends: stepped bends for radius, hemming, etc.

PROGRAM CREATION

Tools are offered based on your usage habits. You can modify them. The software automatically calculates a bending sequence based on your workpiece. The sequence is calculated to avoid collisions and minimize workpiece reorientations. For each step of the bending sequence, the software programs the descent and the position of the backgauge axes. Easily change the bending sequence and the position of the fingers.

PRODUCTION

You can open the program directly from your machine to start production.

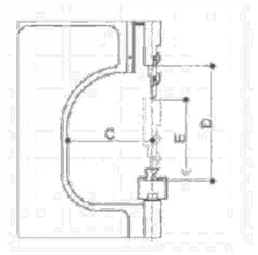
OTHER FEATURES

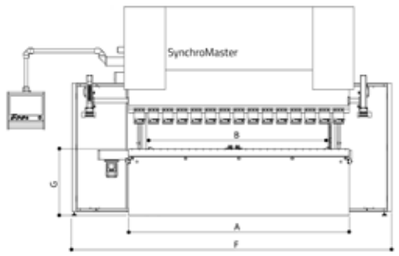
Automatic calculation of unfolding and DXF export feature
Ability to print a manufacturing range in PDF or paper.

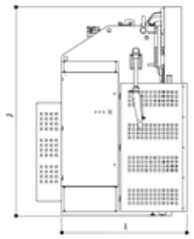
Advantages:

- Masked time programming.
- Significantly reduced programming time.
- Make the machine accessible to an unskilled operator by programming in the design office.
- No need to calculate the unfolded sheet dimensions.
- Test the feasibility of bending before the production phase.

European Standard







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Technical specifications

	Bending length [mm]	Capacity [kN]	Distance between housings [mm]	Gap [mm]	Daylight opening [mm]	Stroke [mm]	Table height [mm]	Fast approach speed [mm/s]	Max bending speed [mm/s]	Fast return speed[mm/s]	Motor power [kW]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
20075	2100	750	1600	400	520	270	920	150	10	100	11	2910	1735	2735	5600
25075	2600	750	2100	400	520	270	920	150	10	100	11	3840	1735	2735	6800
30075	3100	750	2600	400	520	270	920	150	10	100	11	4340	1735	2735	7700
25100	2600	1000	2100	400	520	270	920	200	10	125	11	3450	1760	2930	7200
30100	3100	1000	2600	400	520	270	920	200	10	125	11	4340	1760	2930	8400
36100	3650	1000	3150	400	520	270	920	200	10	125	11	4900	1760	2930	10400
40100	4100	1000	3150	400	520	270	920	200	10	125	11	5340	1760	2930	10600
43100	4300	1000	3750	400	520	270	920	200	10	125	11	5540	1760	2930	11800
25150	2600	1500	2100	400	520	270	920	200	10	125	15	3840	1760	2930	7800
30150	3100	1500	2600	400	520	270	920	200	10	125	15	4410	1760	2930	9200
36150	3660	1500	3150	400	520	270	970	200	10	125	15	4900	1760	2930	11000
40150	4100	1500	3150	400	520	270	970	200	10	125	15	5350	1760	2930	11200
43150	4300	1500	3750	400	520	270	970	200	10	125	15	5540	1760	2930	13200
46150	4600	1500	4100	400	520	270	950	200	10	125	15	5650	1760	2925	15500
25200	2600	2000	2100	400	520	270	920	160	8	120	18.7	3840	1870	2920	9600
30200	3100	2000	2600	400	520	270	920	160	8	120	18.7	4340	1870	2920	10700
36200	3660	2000	3150	400	520	270	920	160	8	120	18.7	4900	1870	2920	12200
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43200	4300	2000	3750	400	520	270	920	160	8	120	18.7	5540	1870	2920	16400
46200	4600	2000	4100	400	520	270	945	200	8	120	18.7	5650	1870	3070	17500
30250	3100	2500	2600	400	520	270	895	130	8	90	18.7	4340	2250	3020	13000
36250	3660	2500	3150	400	520	270	895	130	8	90	18.7	4900	2250	3020	13900
40250	4100	2500	3150	400	520	270	895	130	8	90	18.7	5400	2250	3020	15300
43250	4300	2500	3750	400	520	270	895	130	8	90	18.7	5540	2250	3030	16700
50250	5000	2500	4050	400	520	270	945	100	8	90	18.7	6240	2250	3170	23800
60250	6000	2500	5050	400	520	270	1090	100	8	90	18.7	7240	2250	3360	30500
30320	3100	3200	2600	400	620	420	895	100	8	95	22.5	4340	2210	3560	17000
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30400	3100	4000	2600	400	620	420	1045	90	7	60	37.5	4080	2570	4170	26000
36400	3660	4000	3150	400	620	420	1045	90	7	60	37.5	4640	2570	4170	29000
40400	4100	4000	3150	400	620	420	1045	90	7	60	37.5	5080	2570	4170	31000
43400	4300	4000	3150	400	620	420	1045	90	7	60	37.5	5280	2570	4170	32000
	A		**B**	**C**	**D**	**E**	**G**					**F**	**I**	**J**	

HACO reserves the right to change any specifications without prior notice.

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