



# Westwood Metal Technology

474 Ben Green Industrial Park Rd Elizabethtown, NC 28337  
(910) 862 2688 [wwcnc.com](http://www.wwcnc.com)





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## ABOUT US

Our Mac Bending brand was created by Mac Bending Dış Ticaret A.Ş. which has been in the machine production business with 20 years of experience.

Mac Bending Dış Ticaret A.Ş., with it's 10.000 m<sup>2</sup> area, has been producing innovative metal processing machines with its expert staff and experience to sector.

Mac Bending Dış Ticaret A.Ş., which manufactures small and large-scale profile and sheet bending machines, offers with its long years of experience the advanced models that meet the industry needs under the Mac Bending brand.

Mac Bending is the representative of both technological and long-lasting models that will appeal to global markets with export priority. We follow the technology closely and offer all our products to your service with our updatable special software and control systems.

After a long R&D process, each part of our machines is carefully inspected by our professional engineers in the quality control process before the production. Then, the machine parts are prepared and assembled with the priority of quality and longevity in accordance with ISO and CE certification rules.

Before mass production, we test each of our models in bending facilities.

After successfully completing the tests of our portable or demo models, we start the mass production by taking the model into the production line.

We manufacture our machines to produce solutions for construction, maritime, aviation, petrochemical, natural gas, iron and steel, heating, and cooling sectors.

# What is Mac Plus?

Mac Plus offers innovative and operator-friendly improved technological features in all SBM and PBM machines as standard and optional to its users.



The pages where you see this icon have "MAC PLUS" feature.

# SBM



PROMOTIONAL VIDEO



## 4-ROLLS PLATE BENDING MACHINES

4-Rolls Plate Bending Machines produced by Mac Bending are equipped and developed with Mac Plus technology and can fulfill your requirements.

SBM series provide easy and perfect bending with NC Mode that enables precise and fast bending.



### STANDARD FEATURES

- Multi functional touch screen (the display are 7" up to SBM 310, SBM 310 and above machines are 10")
- PLC control with manual, semi-automatical and full automatic options
- Three speed feature
- Bearing guidance system
- St-52 quality steel frame and parts
- Bottom roll pressure adjustment
- Top roll hydraulic drop end and upward mobile top roll
- Automatic balance system with one button
- Conical bending system
- Conical bending auxiliary parts
- Top and bottom rolls driven with hydraulic motor and planetary gear box
- Linear guide system
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Continuous turning with one button
- Induction hardened and polished rolls (Ck45)
- Three stage mobile control panel seperated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Emergency stop wire around the machine
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- Transparent protection cover for control panel
- Ultrasonic sensor

### OPTIONAL FEATURES

- CNC unit
- Reer laser emergency stop barrier
- Variable speed feature
- Central support
- Hydraulic side supports (2 pieces)
- Material feeding table
- Material out put table
- Changeable top roll
- Automatic central oiling system
- Oil cooling system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting



## DURABLE MACHINE BODIES

All Mac Bending machine bodies are designed and strengthened to minimize deformation of the plate. The machine frame is constructed with St-52 quality steel. The production process of the whole body is machined with a CNC machining center. This process is the reason for precision surfaces and parallelism of all axes. Also, it allows for longevity and precision of important parts of the machine.

## BEARING GUIDANCE SYSTEM

The rolls are guided with spherical roller bearings. This guidance system requires less lubrication and assures long-term precision.





## HARDENED AND POLISHED ROLLS

Highly durable forged steel rolls are machined by CNC machines to achieve optimal quality. All rolls SAE 1050 (Ck45) are induction hardened and polished.



## AUTOMATIC BALANCE SYSTEM

In our machines, with the electronic balance system, the parallelism of the lower roll can be automatically adjusted with a single button through the control panel. This feature ensures that the lower roll is always aligned correctly for bending processes.

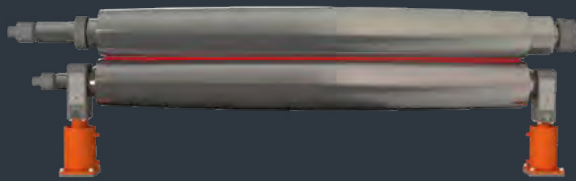


## ROLLS AND CROWNING

The most important elements of plate roll machines are the rolls themselves. Generally, machines in the market have smaller diameter, weak rolls that deform during the pre-bending process and causes a flat spot on the plate edge.

Mac Bending designed the rolls with larger diameter and uses high quality forged steel rolls which are machined by high precise CNC lathes. The working surface of the rolls are CNC induction hardened and polished to HRC 54-58 with hardness tests performed at many points on the rolls. The smallest bending diameter of 3 x top roll diameter is easily achieved.

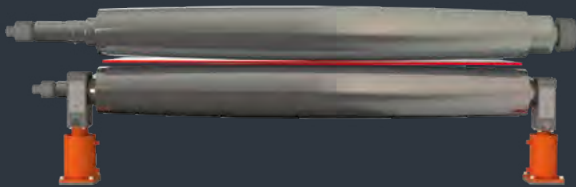
The rolls are machined with a crown to compensate for roll deflection during the pre-bending process. Custom design crown machined rolls for different materials or thicknesses are available during the order without any charge.



Bending thickness is compatible with roll crowning



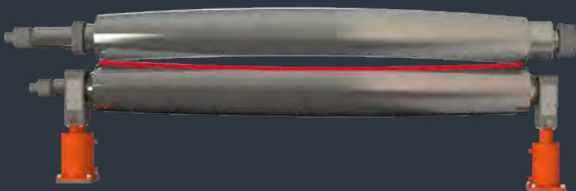
No crowning deformation



Bending thickness is thinner than roll crowning



Hourglass crowning deformation



Bending thickness is thicker than roll crowning



Barrel crowning deformation



## ADJUSTABLE BOTTOM ROLL PRESSURE

All SBM plate bending machines have adjustable bottom roll pressure. In that way, materials with different thickness and quality can be bent precisely.



## TOP ROLL HYDRAULIC DROP END AND UPWARD MOBILE TOP ROLL

Hydraulic drop end and mobile top roll is offered as a standard equipment in SBM plate bending machines. It allows operators to take out the bended material easily.



## CONICAL BENDING SYSTEM

The huge body, side rolls and angular bottom roll easily bend wide angle, various diameter conical parts. We have made conical bending easier with an independent bottom roll and side rolls that can move in two directions to execute the conical bending with the desired angle.

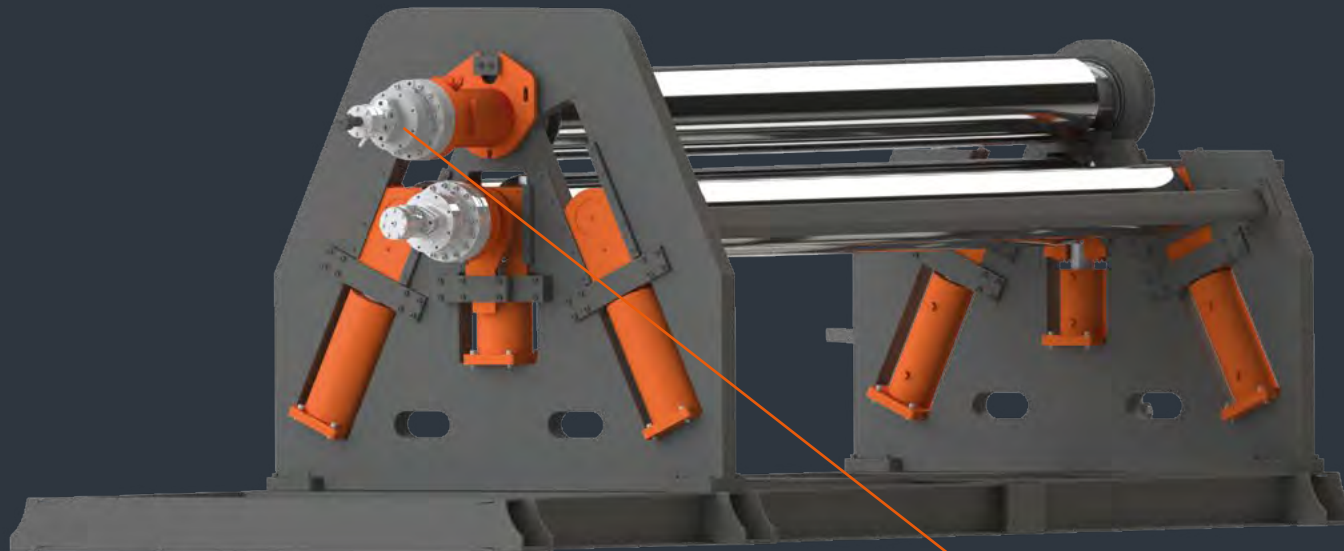
In the conical bending process, if the bending angle exceeds 3 degrees, bending performance will decrease due to an imbalanced load distribution on the machine's bearings. As the bending angle increases, there can be up to a 50% reduction in length and thickness.

## CONICAL BENDING AUXILIARY PARTS

In addition to the central conical support roller, our SBM series have adjustable auxiliary rollers on each side of the machine.

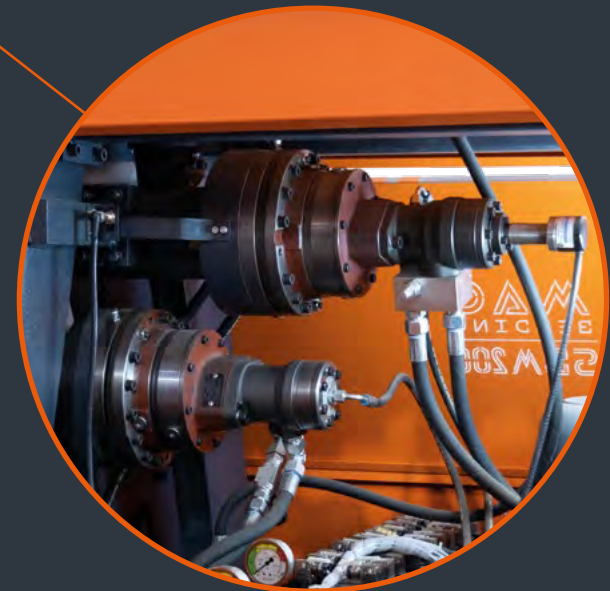
### CONICAL BENDING ANGLE

3°	0%
5°	90%
15°	75%
30°	60%
60°	50%
70°	40%



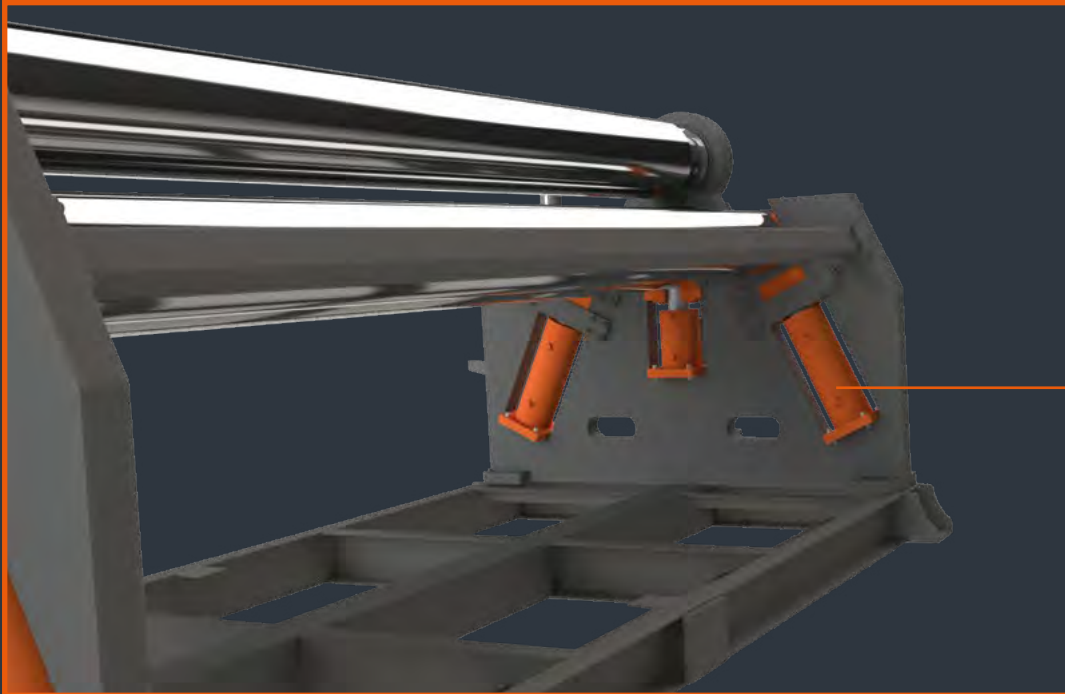
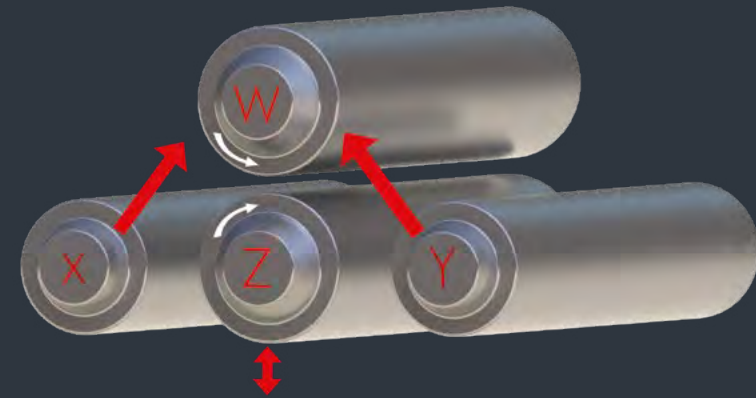
## HYDRAULIC MOTOR AND PLANETARY GEARBOXES

Four-roll SBM series bends the part of the material with fewer steps thanks to its high torque drive. Rolls are powered by independent hydraulic motors and planetary gearboxes. The system is positioned on the same axis as the roll, in that way all power is transferred to the sheet without any power loss. As an example to advantage of this that during the pre-bending, hydraulic break does not let the plate to slip back which may damage the material and create safety problems.



## LINEAR GUIDE SYSTEM

The side rolls are connected to body with hydraulic pistons which moves up and down in a straight line direction. Because of the linear guide system the distance between top and bottom roll is more than any other system which allows to bend different materials with difference thicknesses (strength to pre-bend and rolling heavy plates).





### ENCODER

Hidden encoder against  
crushes that records turning  
movement.



### MAINTENANCE LAMP

We have made maintenance  
easier with an interior lighting  
lamp that is mana-geable in the  
touch screen menu.



## WARNING AND CAUTION LIGHTS

Our machines minimize occupational accidents and hazards by attracting the operator's attention with the technological warning and caution lights that can light up in different colors, with accordance with occupational and worker safety standards. Warning and caution lights on the front body and side hood of our machines; It warns the operator by flashing "red" in case of emergency stop, "yellow" when energized and in standby position, "green" in operation and "blue" in continuous operation (automatic).

## INFRARED SAFETY SENSOR

Infrared sensors are a type of electronic sensor that measures infrared (IR) light emitted from objects in the field of view. Thanks to this system, which we use in all our SBM series, both the employee and the system are prevented from being damaged by increasing work and worker safety.



## EMERGENCY STOP WIRE

Emergency stop wire is an system that stops the machine in order to ensure human safety. As well as ensuring the safety of operator this system secures the system of machine. Our all SBM series have safety cable switch.



## CENTRAL SUPPORT

It is used for supporting materials with large diameters without the need for crane use during bending.

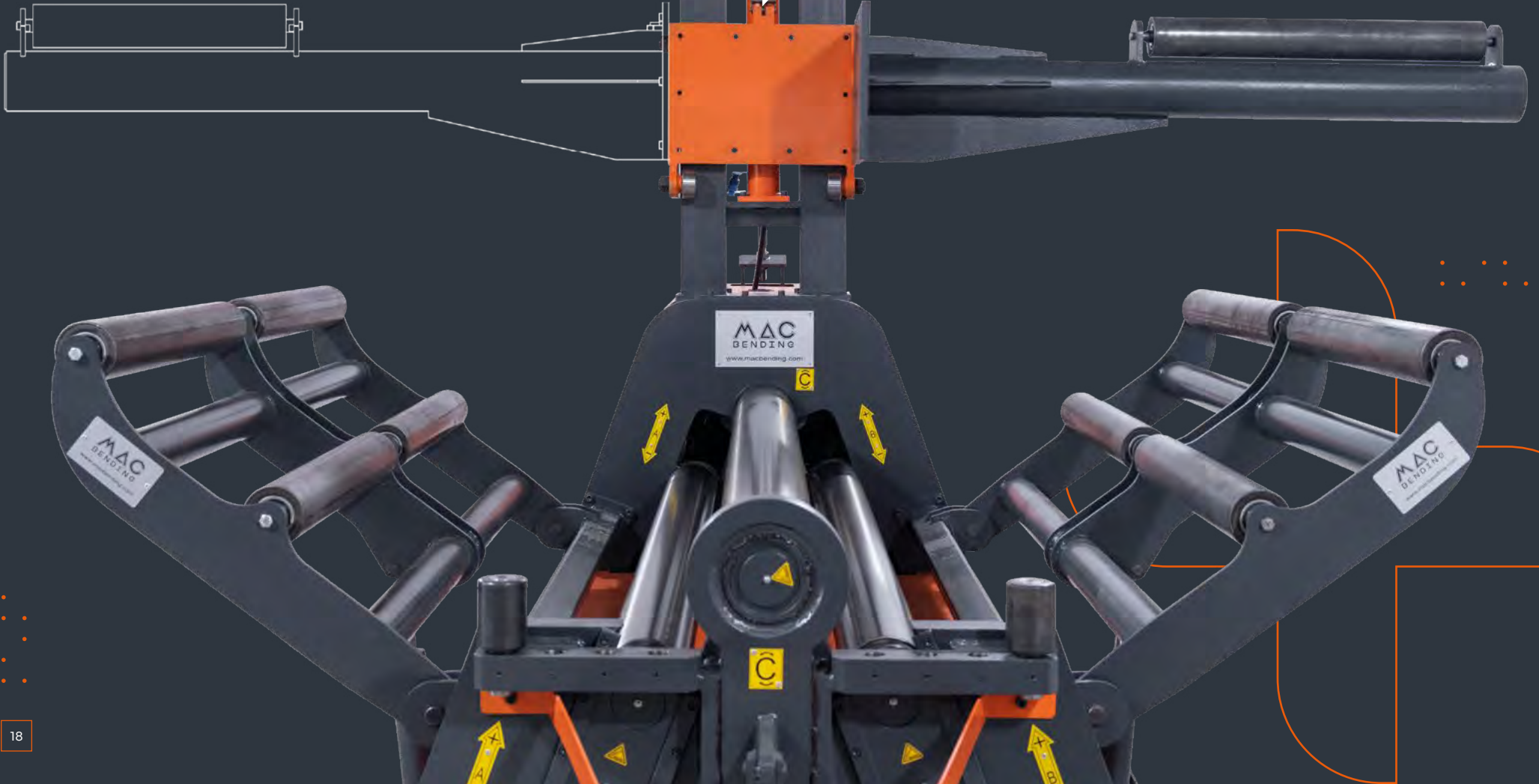
## HYDRAULIC SIDE SUPPORT (2 PCS)

It enables more precise bending by preventing the material from flexing when shaping the materials with large diameters.

## ROTARY CENTRAL SUPPORT / CRANE EQUIPMENT

Our SBM series with the 90° rotating lift system, makes materials easy to be carried or lifted by cranes or other equipment. With this equipment, the machine lift system is prevented from taking any damage.

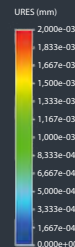
180°



## ENGINEERING AND PROJECT TEAM

All machines are designed by experienced engineers at our factory. These engineers design the machines focusing on the 3D engineering technology with the implementation of mechanical analysis. All mechanical and electronic systems are designed and tested by engineers who are expert in their field.

We prefer components that we could work with for many years without any problems and regard to develop the projects in this direction. We also take our steps with the awareness of improving our work every day by focusing on beyond expectations.



## WORKING LENGTH 2000

MODEL	Working Length	Max. Thickness	Pre-Bending	or/Inferior Top/Down Rolls	Side Rolls	Motor Motor Power	Width	Length	Height	Weight	Min. Bending Diameter
	feet	inch	inch	inch	inch	HP	feet	feet	feet	lbs	
SBM 160x2100	6.5	1/4	8 ga.	6.3	5.5	5.5	3.9	11.8	4.3	8818	
SBM 180x2100	6.5	5/16	1/4	7.1	5.9	7.5	4.8	13.4	5.2	11266	
SBM 200x2100	6.5	3/8	5/16	7.9	7.1	10	4.8	13.8	5.2	12478	
SBM 220x2100	6.5	1/2	3/8	8.7	7.9	10	4.8	13.8	5.2	13580	
SBM 255x2100	6.5	5/8	1/2	10	8.3	15	4.8	13.8	5.2	17361	
SBM 275x2100	6.5	13/16	5/8	10.8	8.7	20	6.0	14.1	5.3	18464	Min Ø: Superior Top Ø x 3
SBM 310x2100	6.5	1	13/16	12.2	9.4	25	6.0	14.1	5.3	23149	Min Ø: Top Roll Ø x 3
SBM 340x2100	6.5	1-3/16	1	13.4	9.8	30	6.4	15.3	6.7	25353	
SBM 385x2100	6.5	1-9/16	1-3/16	15.2	11.4	40	6.6	15.7	7.4	29321	
SBM 400x2100	6.5	1-3/4	1-3/8	15.8	11.8	50	7.4	16.1	7.7	42990	
SBM 460x2100	6.5	2	1-9/16	18.1/17.3	13.8	50	7.6	17.4	8.5	50265	
SBM 500x2100	6.5	2-3/16	1-3/4	19.7	15.7	60	9.2	18.2	9.5	77162	
SBM 540x2100	6.5	2-3/8	2	21.3	17.7	75	10	18.7	10	88185	

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. Gauge(ga.): dimensions for standards steel. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

## WORKING LENGTH 2500

MODEL	Working Length	Max. Thickness	Pre-Bending	Top/Down Rolls	Side Rolls	Motor Power	Width	Length	Height	Weight	Min. Bending Diameter
	feet	inch	inch	inch	inch	HP	feet	feet	feet	lbs	
SBM 180x2600	8	1/4	8 ga.	7.1	5.9	7.5	4.8	15.1	5.2	11839	
SBM 200x2600	8	5/16	1/4	7.9	7.1	10	4.8	15.4	5.2	13272	
SBM 220x2600	8	3/8	5/16	8.7	7.9	10	4.8	15.4	5.2	14595	
SBM 255x2600	8	1/2	3/8	10	8.3	15	4.8	15.4	5.2	18574	
SBM 275x2600	8	5/8	1/2	10.8	8.7	20	6	15.7	5.3	19897	
SBM 310x2600	8	13/16	5/8	12.2	9.4	25	6	15.7	5.3	26345	Min Ø: Superior Top Ø x 3
SBM 340x2600	8	1	13/16	13.4	9.8	30	6.4	16.7	6.7	28660	Min Ø: Top Roll Ø x 3
SBM 385x2600	8	1-3/16	1	15.2	11.4	40	6.6	17.4	7.4	33510	
SBM 400x2600	8	1-9/16	1-3/16	15.7	11.8	50	7.4	17.7	7.7	46518	
SBM 460x2600	8	1-3/4	1-3/8	18.1 / 17.3	13.8	50	7.6	19.2	8.5	54895	
SBM 500x2600	8	2	1-9/16	19.7	15.7	60	9.2	19.8	9.5	84878	
SBM 540x2600	8	2-3/16	1-3/4	21.3	17.7	75	10	20.3	10	95901	

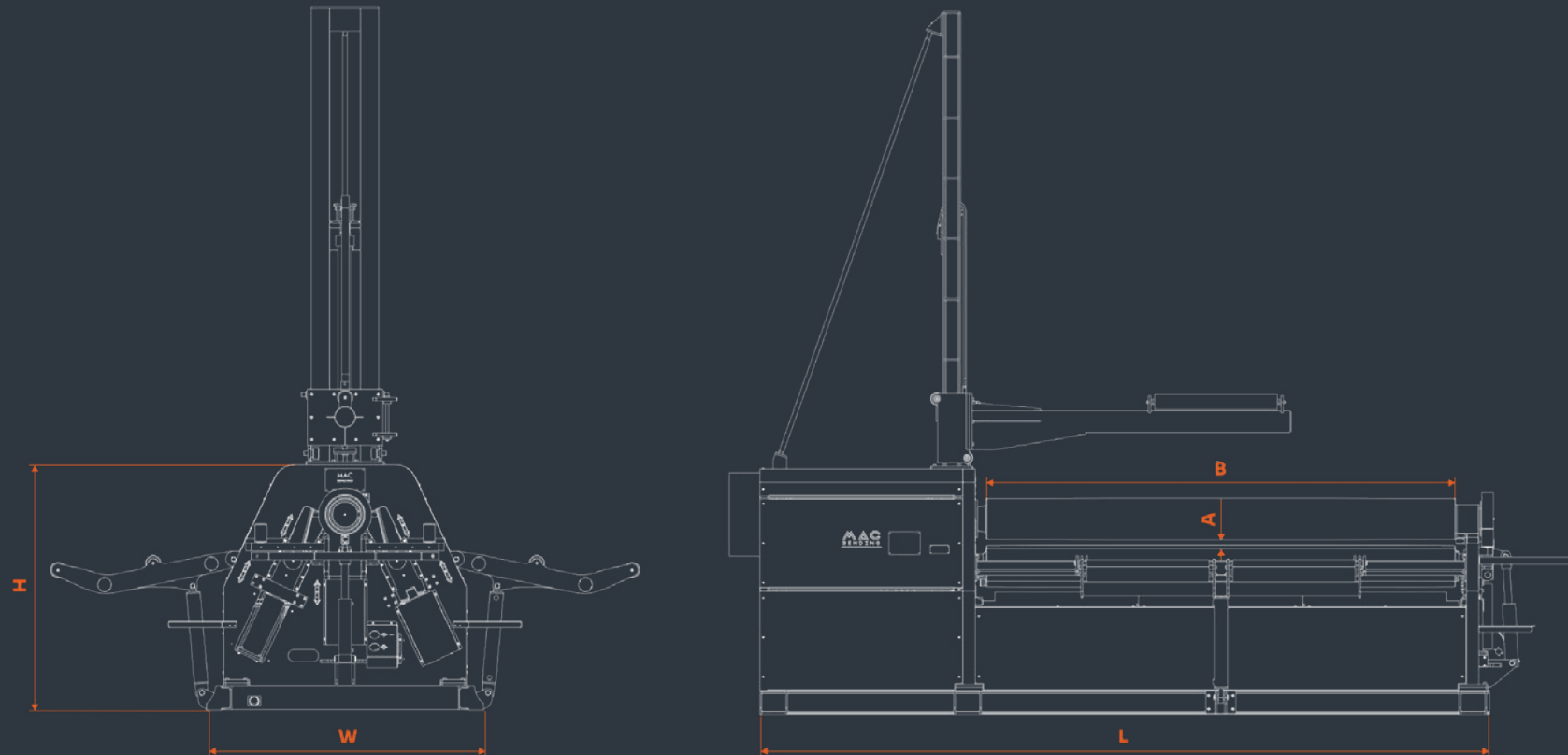
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## WORKING LENGTH 3000

MODEL	Working Length	Max. Thickness	Pre-Bending	Top/Down Rolls	Side Rolls	Motor Power	Width	Length	Height	Weight	Min. Bending Diameter
	feet	inch	inch	inch	inch	HP	feet	feet	feet	lbs	
SBM 200x3100	10	1/4	8 ga.	7.9	7.1	10	4.8	17.1	5.2	14991	
SBM 220x3100	10	5/16	1/4	8.7	7.9	10	4.8	17.4	5.2	16535	
SBM 255x3100	10	3/8	5/16	10	8.3	15	4.8	17.4	5.2	21385	
SBM 275x3100	10	1/2	3/8	10.8	8.7	20	6	17.4	5.3	22917	
SBM 310x3100	10	5/8	1/2	12.2	9.4	30	6	18	5.3	29762	Min Ø: Superior Top Ø x 3
SBM 340x3100	10	13/16	5/8	13.4	9.8	30	6.4	19	6.7	32408	Min Ø: Top Roll Ø x 3
SBM 385x3100	10	1	13/16	15.2	11.4	40	6.9	19.4	7.5	37919	
SBM 400x3100	10	1-3/8	1	15.7	11.8	50	7.4	19.7	7.7	51147	
SBM 460x3100	10	1-9/16	1-5/16	18.1 / 17.3	13.8	50	7.6	21.5	8.5	60627	
SBM 500x3100	10	1-3/4	1-3/8	19.7	15.7	60	9.2	21.5	9.5	93696	
SBM 540x3100	10	2	1-9/16	21.3	17.7	75	10	22.6	10	103617	

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## 4-ROLLS PLATE BENDING MACHINES



- The mentioned values on tables is only works for 240N/mm<sup>2</sup> yield point.
- All dimensions on tables calculated as millimeters.
- Different materials and widths can be calculated by Mac Bending capacity calculator.
- Custom machines available upon request.
- Mac Bending has rights to change mentioned values regardless.

**GET**

**FINEST**





# THE ONE



## ADVANTAGES OF 4-ROLLS PLATE BENDING MACHINES



Four roll plate bending machines have more advantages than three roll bending machines. For instance, four roll bending machines are more faster, precise, safer, productive and easier to use than three roll machines. They are less dependent to knowledge or experience of the operator and capable of bending sheets from 4 mm up to 100 mm thickness.



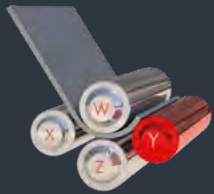
The most precise, proper and fastest plate bendings are made by four roll machines. The plate is held slowly and securely in space between the top and bottom rolls manually or by material feeding table while side rolls move up and down vertically to make the bend.



In order to make an accurate pre-bending, the bottom roll moves up to hold the sheet edge securely toward the top roll while side roll is moving up to perform pre-bend. As, plates are loaded horizontally and securely between the top and bottom roll that allows operator to make pre-bend either side of a four roll machine.



The independent axis of each roll helps to have a proper and perfect bend. The position of side rolls are on the right and left side of the bottom roll on their own axes. The opposite side roll which is the far side roll of the loaded side function as a back gauge to square the sheet for proper alignment. In that way, there is no need for someone to assist operator.



Thanks to consistent secure clamping of the top and bottom rolls during the pre-bending and rolling the plate is kept square without slipping.



Four roll bending machines makes the bending easier than three roll machines. In a way that operator does not need to square and reposition the plate a second time after the first pre-bending. So, the material kept in the machine which makes the four rolls fifty percent more efficient and safer than three rolls initial pinch machines. Also, allows plates to be rolled to the required diameter directly after the pre-bending.



After the rolling process back edge bending is done, for a one direction with a single pass operation. The working area is less in this process.



Four roll machines makes the cone rolling more easier. The side rolls can move to establish the cone angle and bottom roll also be tilted opposite side to clamp and drive end of plate. In our SBM series cone bending is standard feature with conical bending auxiliary parts which helps the cone rolling even more easier.



Four roll plate bending machines are the only type of plate rolls in which NC and CNC controls can be efficiently used. The reason for that is the constant clamping and driving of the plate during all process of rolling. All shapes even the most complex ones can be easily done with Mac Bending four roll plate bending machines. In all our machines, NC control is offered as standard feature.

PERFECT RESULTS  
with  
MAC BENDING



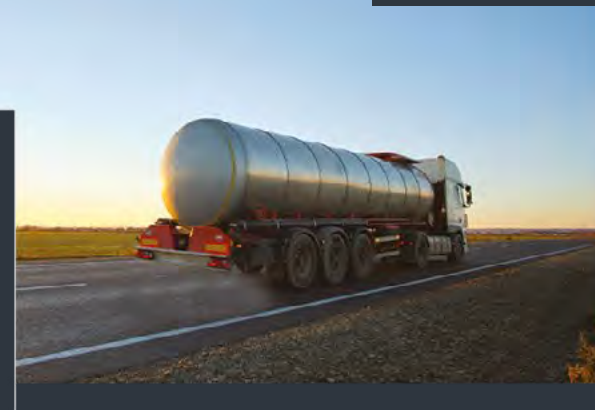
Aviation



Water Tower



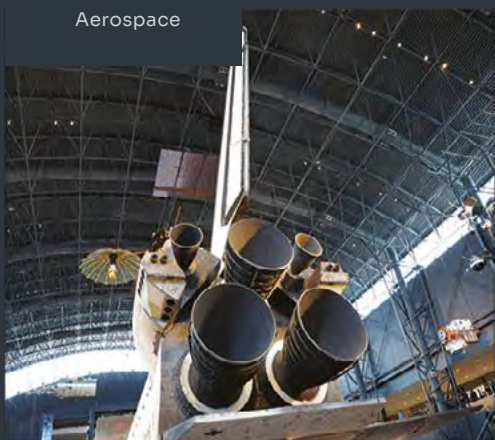
Fuel Tank



Wind Tower



Aerospace



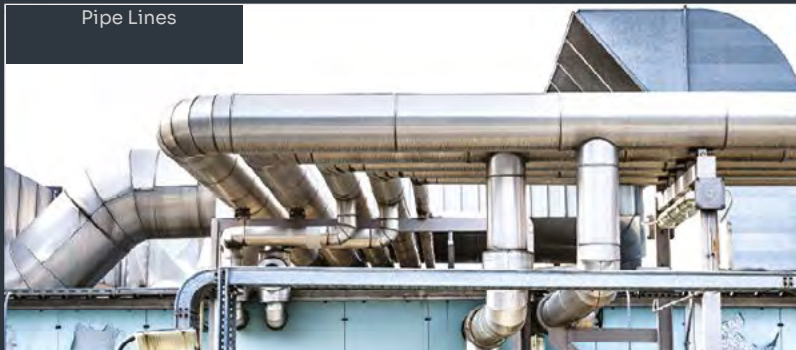
INDUSTRIAL  
APPLICATIONS



Silos



Pipe Lines



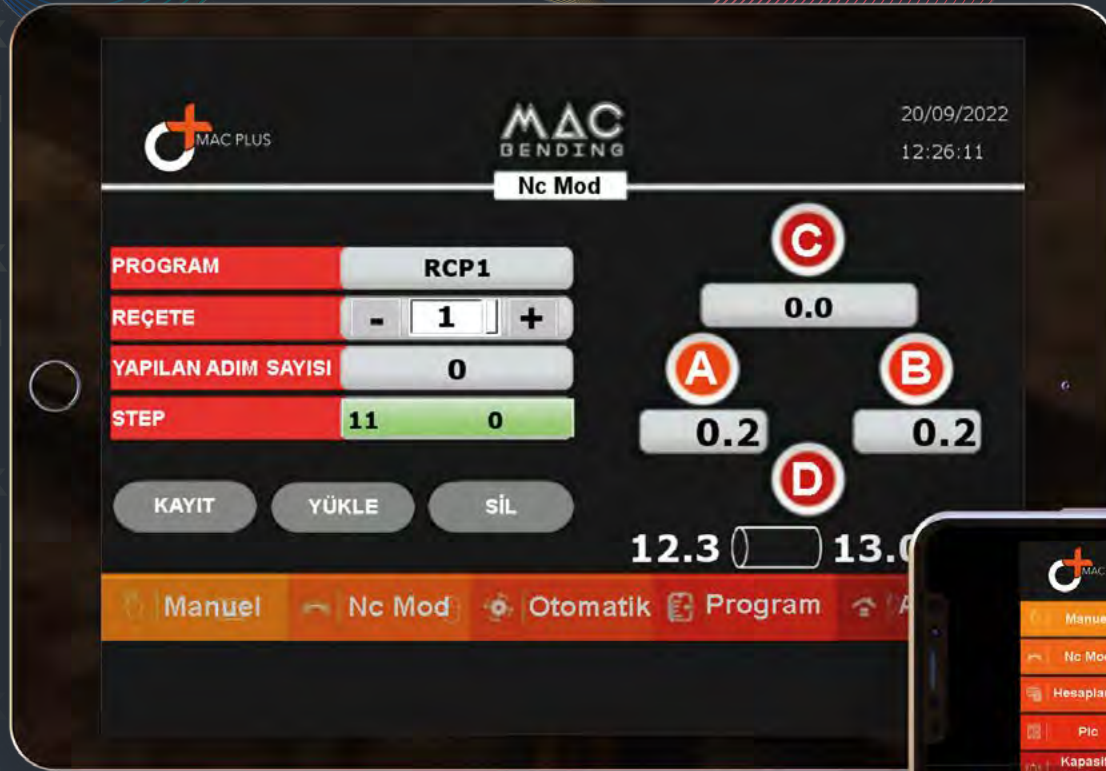
Industrial Vehicles



Aircraft Industry



WE PROVIDE EASE OF USE  
VIA SMART PHONES AND TABLETS





3 YEARS WARRANTY PERIOD

All Mac Bending machines have a 3 years of warranty period.

# INFRARED SAFETY SENSOR







# YOU CHOOSE THE COLOR!

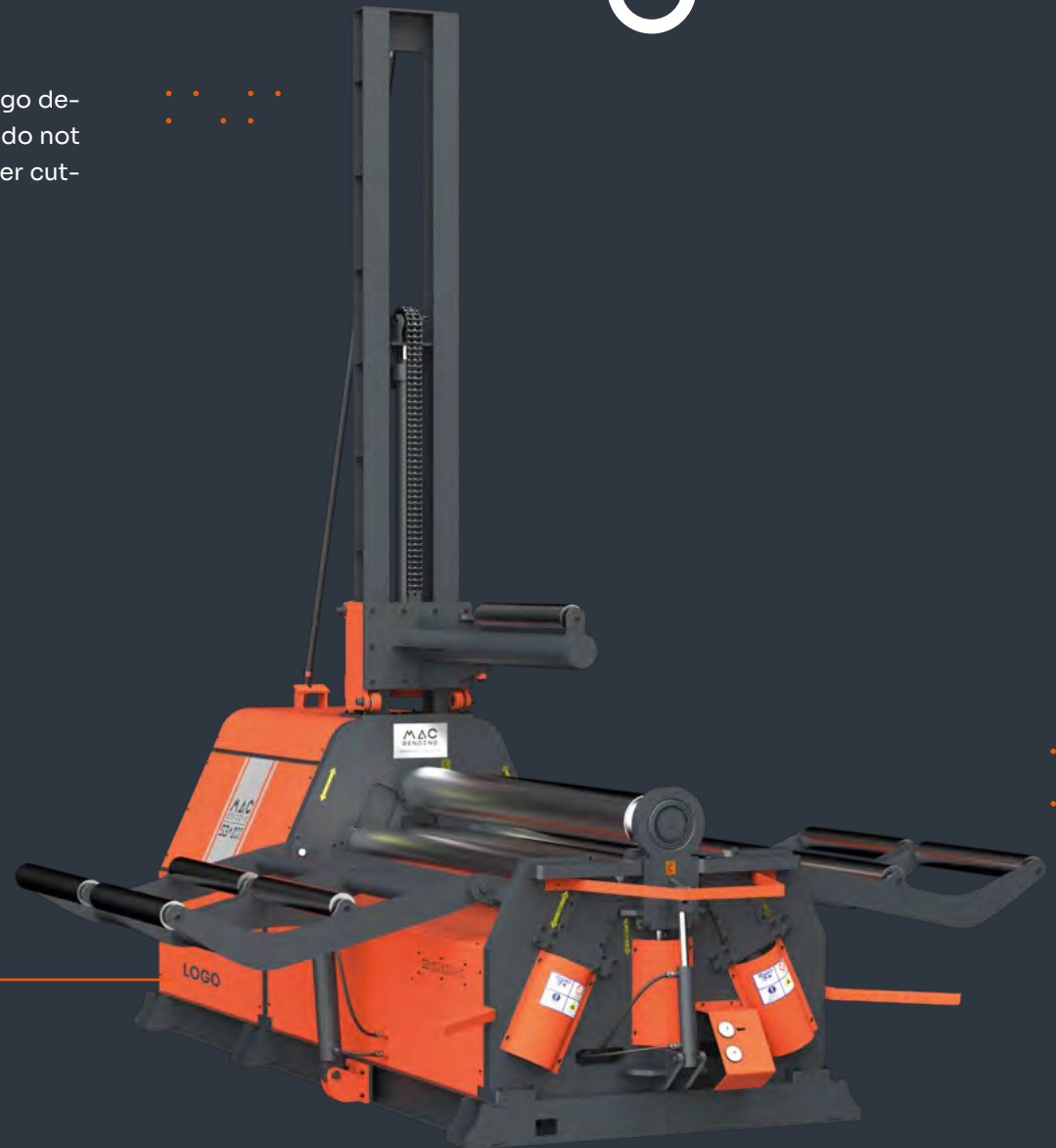


We are glad to offer our customers the machines with the 6 different color options that we offer optionally or with the corporate colors of their choice. Besides our main duties such as after-sales service, technical support and general service by giving importance to our customers, we work intensively with our R&D team to be their business partner.



## HAVE YOUR OWN LOGO ON THE MACHINE!

Along with the color options of Mac Bending, we offer to our customers logo design on the frame of machines. While offering service to our customers we do not forget to be a family under the same roof and keep our association with laser cutting logo design on the chosen area of the machines.



PBM



PROMOTIONAL VIDEO



## ANGLE ROLL BENDING MACHINES

Angle Roll Bending Machines manufactured by Mac Bending are equipped and developed with Mac Plus Technology in accordance with fulfilling your requirements. The models, which offer sensitive and fast bending, provide our customers the opportunity to make faultless bending with the NC Mode feature.



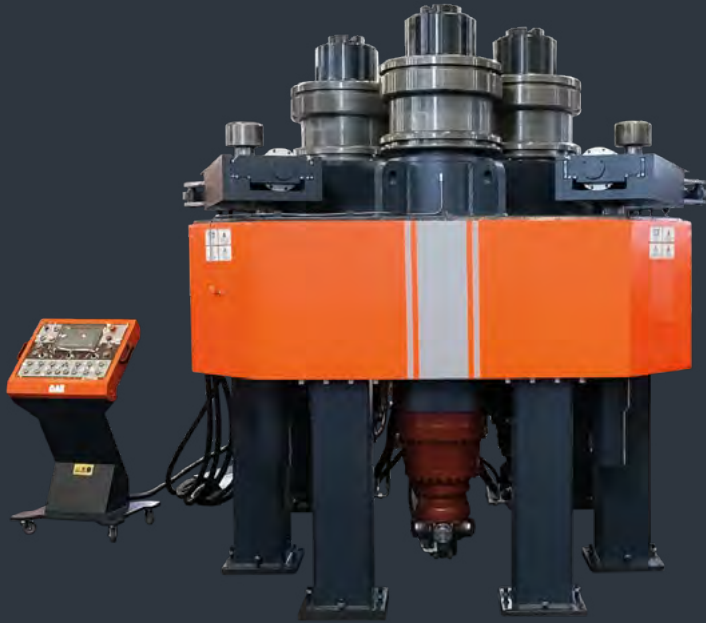
# PBM SERIES

PBM series machine frame is constructed with durable steel. In order to make precise bending, precision bearings and large shaft diameters minimize deflection. In addition to that thanks to strong frame and high quality hydraulic and electrical components long life of the machines ensured. If you need to bend metal profiles or tubes, then Mac Bending PBM series are the best machines for the job. Mac Bending offers three roll hydraulic machines capable of forming variety of profiles including NPU, INP, IPE, HEA, HEB, HEM, square or rectangular solids, as well as, square, rectangular and round tubing.



# PBM300

## ANGLE ROLL BENDING MACHINES



### TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	44
POWER (HP)	90
ROLLS (inch)	29.1
BENDING SPEED (feet/min.)	0-23
SHAFT DIAMETER (Øinch)	11.8/11
WEIGHT (lbs)	60186
SIZE W/L/H (feet)	11.8/11.3/10.5

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE		PBM 300		
		Material Size(inch)	Min. Diameter(Øinch)	Rolls
	SQUARE TUBE	10 x 10 x 0.375	1181	STANDARD+P
	RECTANGLE TUBE	-	-	STANDARD+P
	PLATE HARD WAY	10 x 2-1/2	91	STANDARD
	PLATE EASY WAY	20 x 3	47	STANDARD
	FULL SQUARE	6	55	STANDARD
	TUBE	12-3/4 x 0.406	157	SPECIAL
	PIPE	-	-	SPECIAL
	ROUND	6	59	SPECIAL
	ANGLE LEG IN	L8 x L8 x 1	91	STANDARD
	ANGLE LEG OUT	L8 x L8 x 1	91	STANDARD
	T SECTION LEG IN	WT 8	118	STANDARD
	T SECTION LEG OUT	WT 8	118	STANDARD
	T SECTION	WT 8	67	STANDARD
	UNP EASY WAY LEGS OUT	MC 18 x 58	79	STANDARD
	UNP EASY WAY LEGS IN	MC 18 x 58	79	STANDARD
	UNP HARD WAY	C10 x 30	394	STANDARD+C
	INP PROFILE HARD WAY	W8 x 40	276	STANDARD+C
	INP PROFILE EASY WAY	W12 x 87	71	STANDARD
	HEA PROFILE EASY WAY	W10 x 88	79	STANDARD
	HEB PROFILE HARD WAY HEA PROFILE HARD WAY	W8 x 48	394	STANDARD+C

## STANDARD FEATURES

- 10" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatic and full automatic options
- Variable speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Top roll and bottom rolls driven with electrical motor and variable pump capacity
- Three separated rolls driven with hydraulic motor and planetary gear box
- Oil cooling system
- Three axes hydraulic guide rolls (up and down, forward-backward and circular)
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Telescopic front protection sheets
- Multi-purpose bending rolls (One set)
- Horizontal working
- Serpentine bending feature
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel separated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Automatical central lubrication
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

## OPTIONAL FEATURES

- CNC unit
- H, U and I profiles pulling device
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBM 240

ANGLE ROLL BENDING MACHINES



## TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	20.14
POWER (HP)	2 + 20 + 30
ROLLS (inch)	21.5
BENDING SPEED (feet/min.)	0-26
SHAFT DIAMETER (Øinch)	9.4/8.7
WEIGHT (lbs)	39690
SIZE W/L/H (feet)	8.7/8/8.3

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE		PBM 240		
		Material Size(inch)	Min. Diameter(Øinch)	Rolls
	SQUARE TUBE	6 x 6 x 0.375	551	STANDARD+P
	RECTANGLE TUBE	8 x 6 x 0.375	551	STANDARD+P
	PLATE HARD WAY	6-1/2 x 2	51	STANDARD
	PLATE EASY WAY	10 x 2-1/2	35	STANDARD
	FULL SQUARE	5	47	STANDARD
	TUBE	8-5/8 x 0.375	98	SPECIAL
	PIPE	5 x SCH120	59	SPECIAL
	ROUND	5	59	SPECIAL
	ANGLE LEG IN	L8 x L8 x 5/8	63	STANDARD
	ANGLE LEG OUT	L8 x L8 x 5/8	63	STANDARD
	T SECTION LEG IN	WT6	75	STANDARD
	T SECTION LEG OUT	WT6	51	STANDARD
	T SECTION	WT6	59	STANDARD
	UNP EASY WAY LEGS OUT	C15 x 50	51	STANDARD
	UNP EASY WAY LEGS IN	C15 x 50	51	STANDARD
	UNP HARD WAY	C8 x 18.75	394	STANDARD+C
	INP PROFILE HARD WAY	W8 x 21	394	STANDARD+C
	INP PROFILE EASY WAY	W10 x 49	51	STANDARD
	HEA PROFILE EASY WAY	W8 x 48	55	STANDARD
	HEB PROFILE HARD WAY HEA PROFILE HARD WAY	W8 x 31	157	STANDARD+C



## STANDARD FEATURES

- 10" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatical and full automatic options
- Variable speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Top roll and bottom rolls driven with electrical motor and variable pump capacity
- Three seperated rolls driven with hydraulic motor and planetary gear box
- Oil cooling system
- Three axes hydraulic guide rolls (up and down, forward-backward and circular)
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Telescopic front protection sheets
- Multi-purpose bending rolls (One set)
- Horizontal working
- Serpantine bending feature
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel seperated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Automatical central lubrication
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

## OPTIONAL FEATURES

- CNC unit
- H, U and I profiles pulling device
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBM180

ANGLE ROLL BENDING MACHINES



## TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	14
POWER (HP)	2 + 30
ROLLS (inch)	18.1
BENDING SPEED (feet/min.)	0-23
SHAFT DIAMETER (Øinch)	7.1/6.3
WEIGHT (lbs)	22050
SIZE W/L/H (feet)	7.5/8.7/7.9

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE	PBM 180		
	Material Size(inch)	Min. Diameter(Øinch)	Rolls
 SQUARE TUBE	5 x 5 x 0.375	787	STANDARD+P
 RECTANGLE TUBE	8 x 4 x 0.25	-	STANDARD+P
 PLATE HARD WAY	6 x 1-1/4	79	STANDARD
 PLATE EASY WAY	8 x 2-1/2	39	STANDARD
 FULL SQUARE	4	53	STANDARD
 TUBE	6-5/8 x 0.25	79	SPECIAL
 PIPE	6 x SCH80	394	SPECIAL
 ROUND	4	39	SPECIAL
 ANGLE LEG IN	L6 x 6 x 7/8	51	STANDARD
 ANGLE LEG OUT	L6 x 6 x 7/8	51	STANDARD
 T SECTION LEG IN	WT5	63	STANDARD
 T SECTION LEG OUT	WT5	43	STANDARD
 T SECTION	WT5	47	STANDARD
 UNP EASY WAY LEGS OUT	C12 x 30	79	STANDARD
 UNP EASY WAY LEGS IN	C12 x 30	118	STANDARD
 UNP HARD WAY	C7 x 14.75	394	STANDARD+C
 INP PROFILE HARD WAY	W6 x 25	394	STANDARD+C
 INP PROFILE EASY WAY	W8 x 40	79	STANDARD
 HEA PROFILE EASY WAY	W8 x 35	79	STANDARD
 HEB PROFILE HARD WAY HEA PROFILE HARD WAY	W6 x 25	394	STANDARD+C

## STANDARD FEATURES

- 10" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatical and full automatic options
- Variable speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Top roll and bottom rolls driven with electrical motor and variable pump capacity
- Three seperated rolls driven with hydraulic motor and planetary gear box
- Oil cooling system
- Three axes hydraulic guide rolls (up and down, forward-backward and circular)
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Telescopic front protection sheets
- Multi-purpose bending rolls (One set)
- Horizontal working
- Serpantine bending feature
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel seperated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Automatical central lubrication
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

## OPTIONAL FEATURES

- CNC unit
- H, U and I profiles pulling device
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBM150

## ANGLE ROLL BENDING MACHINES



### TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	12.2
POWER (HP)	20 + 2 + 2
ROLLS (inch)	17.3
BENDING SPEED (feet/min.)	0-32.8
SHAFT DIAMETER (Øinch)	5.9/5.9
WEIGHT (lbs)	15435
SIZE W/L/H (feet)	7.21/7.5/7.9

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE	PBM 150		
	Material Size(inch)	Min. Diameter(Øinch)	Rolls
 SQUARE TUBE	4-1/2 x 4-1/2 x 0.313	197	STANDARD+P
 RECTANGLE TUBE	6 x 3 x 0.188	197	STANDARD+P
 PLATE HARD WAY	6 x 1-1/2	91	STANDARD
 PLATE EASY WAY	10 x 2	55	STANDARD
 FULL SQUARE	4	75	STANDARD
 TUBE	6-5/8 x 0.188	98	SPECIAL
 PIPE	5 x SCH120	118	SPECIAL
 ROUND	4	51	SPECIAL
 ANGLE LEG IN	L6 x 6 x 3/4	94	STANDARD
 ANGLE LEG OUT	L6 x 6 x 3/4	83	STANDARD
 T SECTION LEG IN	WT 5	60	STANDARD
 T SECTION LEG OUT	WT 5	60	STANDARD
 T SECTION	WT 5	60	STANDARD
 UNP EASY WAY LEGS OUT	C10 x 30	75	STANDARD
 UNP EASY WAY LEGS IN	C10 x 30	114	STANDARD
 UNP HARD WAY	C6 x 13	276	STANDARD+C
 INP PROFILE HARD WAY	S6 x 12.5	394	STANDARD+C
 INP PROFILE EASY WAY	S12 x 31.8	98	STANDARD
 HEA PROFILE EASY WAY	W8 x 40	118	STANDARD
 HEB PROFILE HARD WAY HEA PROFILE HARD WAY	W5 x 19	138	STANDARD+C

## STANDARD FEATURES

- 10" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatic and full automatic options
- Variable speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Three separated rolls driven with hydraulic motor and planetary gear box
- Two axes hydraulic guide rolls
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Upper shaft support
- Telescopic front protection sheets
- Engine with brake
- Multi-purpose bending rolls (One set)
- Serpentine bending feature
- Horizontal working
- Adjustable buttons according to horizontal and vertical position with one button
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel separated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Automatical central lubrication
- Oil cooling system
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

## OPTIONAL FEATURES

- CNC unit
- H, U and I profiles pulling device
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Joystick controller system
- Automation system for different voltage and frequency
- Multi color option
- Custom logo application with laser cutting

# PBM120

ANGLE ROLL BENDING MACHINES



## TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	7.63
POWER (HP)	20
ROLLS (inch)	15.4
BENDING SPEED (feet/min.)	5-16-23
SHAFT DIAMETER (Øinch)	4.72/4.72
WEIGHT (lbs)	8907
SIZE W/L/H (feet)	5.08/6.23/7.05

=The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE	PBM 120		
	Material Size(inch)	Min. Diameter(Øinch)	Rolls
 SQUARE TUBE	2 x 2 x 0.12 4 x 4 x 0.196	18 79	STANDARD+P
 RECTANGLE TUBE	2 x 1-1/2 x 0.12 5 x 2 x 0.188	18 47	STANDARD+P
 PLATE HARD WAY	6 x 1-1/4 2 x 3/8	47 18	STANDARD
 PLATE EASY WAY	6 x 2 5 x 3/4	24 20	STANDARD
 FULL SQUARE	3 1-3/8	47 18	STANDARD
 TUBE	1-7/8 x 0.1 4-1/2 x 0.12 6-5/8 x 0.134	20 35 79	SPECIAL
 PIPE	4 x SCH120 5 x SCH40	79 59	SPECIAL
 ROUND	1-1/4 3-1/2	20 47	SPECIAL
 ANGLE LEG IN	L2.5 x 2.5 x 1/4 L4 x L4 x 3/8 L5 x L5 x 7/16	26 39 43	STANDARD
 ANGLE LEG OUT	L2.5 x 2.5 x 1/4 L4 x L4 x 3/8 L5 x L5 x 7/16	26 39 43	STANDARD
 T SECTION LEG IN	WT5	40	STANDARD
 T SECTION LEG OUT	WT5	40	STANDARD
 UNP EASY WAY LEGS OUT	C6 x 13 C8 x 18.75	28 35	STANDARD
 UNP EASY WAY LEGS IN	C6 x 13 C8 x 18.75	28 35	STANDARD
 INP PROFILE EASY WAY	S5 x 14.75 S8 x 23	20 43	STANDARD
 INP PROFILE HARD WAY	S5 x 14.57	217	STANDARD+C
 HEA PROFILE EASY WAY	W5 x 16 W6 x 25	47 47	STANDARD
 HEB PROFILE HARD WAY	W4 x 13 W4 x 13	394 394	STANDARD

## STANDARD FEATURES

- 7" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatical and full automatic options
- Three speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Three separated rolls driven with hydraulic motor and planetary gear box
- Two axes hydraulic guide rolls
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Upper shaft support
- Telescopic front protection sheets
- Engine with brake
- Multi-purpose bending rolls (One set)
- Serpentine bending feature
- Vertical and horizontal working feature
- Adjustable buttons according to horizontal and vertical position with one button
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel separated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

## OPTIONAL FEATURES

- CNC unit
- H, U and I profiles pulling device
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Variable speed feature
- Oil cooling system
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBM100

## ANGLE ROLL BENDING MACHINES



### TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	5.2
POWER (HP)	15
ROLLS (inch)	12.4
BENDING SPEED (feet/min.)	5-16-23
SHAFT DIAMETER (Øinch)	3.94/3.94
WEIGHT (lbs)	5512
SIZE W/L/H (feet)	4.6/4.9/5.74

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE		PBM 100		
		Material Size(inch)	Min. Diameter(Øinch)	Rolls
	SQUARE TUBE	2 x 2 x 0.12 3-1/2 x 3-1/2 x 0.1875 4 x 4 x 0.25	22 91 106	STANDARD+P
	RECTANGLE TUBE	2 x 1-1/4 x 0.12 3 x 1-1/2 x 0.25 4 x 2 x 0.1875	18 31 79	STANDARD+P
	PLATE HARD WAY	2 x 3/8 3 x 1 5 x 1-1/4	16 20 79	STANDARD
	PLATE EASY WAY	2-3/4 x 3/8 5 x 1 6 x 1-3/4	16 22 35	STANDARD
	FULL SQUARE	1-1/4 2-3/8	18 35	STANDARD
	TUBE	1-7/8 x 0.1 3 x 0.120 4-1/2 x 0.120	24 31 79	SPECIAL
	PIPE	1 x SCH 40 2 x SCH 80 4 x SCH 80	18 39 47	SPECIAL
	ROUND	1-1/2 2-3/8 2-3/4	16 24 31	SPECIAL
	ANGLE LEG IN	L2 x 2 x 3/16 L3 x L3 x 1/4 L4 x L4 x 3/8	28 43 59	
	ANGLE LEG OUT	L2 x 2 x 3/16 L3 x L3 x 1/4 L4 x L4 x 3/8	28 43 59	STANDARD
	T SECTION LEG IN	WT 4	35	STANDARD
	T SECTION LEG OUT	WT 4	35	STANDARD
	UNP EASY WAY LEGS OUT	C4 x 7.25 C8 x 18.75	24 43	STANDARD
	UNP EASY WAY LEGS IN	C4 x 7.25 C8 x 18.75	28 47	STANDARD
	INP PROFILE EASY WAY	S7 x 20	43	STANDARD
	INP PROFILE HARD WAY	S4 x 7.7	236	STANDARD
	HEA PROFILE EASY WAY	-	-	-
	HEB PROFILE HARD WAY HEA PROFILE HARD WAY	-	-	-



### STANDARD FEATURES

- 7" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatic and full automatic options
- Three speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Three separated rolls driven with hydraulic motor and planetary gear box
- Two axes hydraulic guide rolls
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Upper shaft support
- Telescopic front protection sheets
- Engine with brake
- Multi-purpose bending rolls (One set)
- Serpentine bending feature
- Vertical and horizontal working feature
- Adjustable buttons according to horizontal and vertical position with one button
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel separated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

### OPTIONAL FEATURES

- CNC unit
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Variable speed feature
- Oil cooling system
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBM80

## ANGLE ROLL BENDING MACHINES



### TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	-
POWER (HP)	1.5 + 7.5 / 10
ROLLS (inch)	9.6
BENDING SPEED (feet/min.)	20-33
SHAFT DIAMETER (Øinch)	3.1/3.1
WEIGHT (lbs)	3715
SIZE W/L/H (feet)	3.9/5.1/5.2

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE		PBM 80		
		Material Size(inch)	Min. Diameter(Øinch)	Rolls
	SQUARE TUBE	2 x 2 x 0.083 3 x 3 x 0.12	20 63	STANDARD P
	RECTANGLE TUBE	2 x 1-1/4 x 0.12 3 x 1-1/2 x 0.19 4 x 2 x 0.083	24 63 118	STANDARD+P
	PLATE HARD WAY	2 x 3/8 3 x 3/4 4 x 1	14 24 75	STANDARD
	PLATE EASY WAY	2-1/2 x 3/8 3 x 3/4 4-1/2 x 1-3/4	12 14 30	STANDARD
	FULL SQUARE	1-3/8 2	16 59	STANDARD
	TUBE	3-1/2 x 0.120 4 x 0.120	35 98	SPECIAL
	PIPE	2 x SCH40 3 x SCH40	22 55	SPECIAL
	ROUND	3/8 1-1/2 2-3/8	15 18 37	SPECIAL
	ANGLE LEG IN	L1-1/8 x 1-1/8 x 1/8 L2 x 2 x 3/16 L3 x 3 x 5/16	16 26 39	STANDARD
	ANGLE LEG OUT	L1 x 1 x 1/8 L2.5 x 2.5 x 1/4 L3 x 3 x 5/16	16 28 39	STANDARD
	T SECTION LEG IN	WT 3	39	STANDARD
	T SECTION LEG OUT	WT 3	31	STANDARD
	UNP EASY WAY LEGS OUT	C5 x 9 C6 x 10.5	29 39	STANDARD
	UNP EASY WAY LEGS IN	C5 x 9 C6 x 10.5	31 39	STANDARD
	INP PROFILE EASY WAY	S4 x 7.7 S5 x 14.75	18 20	STANDARD
	INP PROFILE HARD WAY	-	-	-
	HEA PROFILE EASY WAY	-	-	-
	HEB PROFILE HARD WAY HEA PROFILE HARD WAY	-	-	-

## STANDARD FEATURES

- 7" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatical and full automatic options
- Double speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Three seperated rolls driven with hydraulic motor and planetary gear box
- Two axes hydraulic guide rolls
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Upper shaft support
- Telescopic front protection sheets
- Engine with brake
- Multi-purpose bending rolls (One set)
- Serpantine bending feature
- Vertical and horizontal working feature
- Adjustable buttons according to horizontal and vertical position with one button
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel seperated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

## OPTIONAL FEATURES

- CNC unit
- Special rolls for different diameters
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Variable speed feature
- Oil cooling system
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBMEGO

## ANGLE ROLL BENDING MACHINES



### TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	-
POWER (HP)	1 + 5 / 7.5
ROLLS (inch)	7
BENDING SPEED (feet/min.)	20-33
SHAFT DIAMETER (Øinch)	2.36/2.36
WEIGHT (lbs)	2315
SIZE W/L/H (feet)	3.6/4.6/4.6

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE		PBM 60		
		Material Size(inch)	Min. Diameter(Øinch)	Rolls
	SQUARE TUBE	5/8 x 5/8 x 0.065	9	STANDARD+P
		1-1/2 x 1-1/2 x 0.12	13	
		2-1/2 x 2-1/2 x 0.12	118	
	RECTANGLE TUBE	1-1/2 x 3/4 x 0.12	16	STANDARD+P
		2-1/2 x 1-1/2 x 0.12	98	
		3 x 1-1/2 x 0.083	197	
	PLATE HARD WAY	3/4 x 3/8	9	STANDARD
		2 x 3/8	16	
		3-1/4 x 3/8	55	
	PLATE EASY WAY	2 x 3/8	9	STANDARD
		3-1/4 x 3/8	18	
	FULL SQUARE	3/4	9	STANDARD
		1	16	
		1-3/8	39	
	TUBE	1-5/16 x 0.083	12	SPECIAL
		1-7/8 x 0.109	16	
		2-3/8 x 0.109	31	
	PIPE	3/8 x SCH80	9	SPECIAL
		2 x SCH40	40	
	ROUND	1	12	SPECIAL
		1-1/2	29	
	ANGLE LEG IN	L1 x 1 x 1/8	12	STANDARD
		L2 x 2 x 3/16	35	
	ANGLE LEG OUT	L1 x 1 x 1/8	12	STANDARD
		L1.5 x 1.5 x 3/16	18	
	T SECTION LEG IN	L2.5 x 2.5 x 1/4	24	STANDARD
		WT 2	43	
	T SECTION LEG OUT	WT 2	39	STANDARD
		C3 x 5	20	
	UNP EASY WAY LEGS OUT	C3 x 5	20	STANDARD
		C3 x 5	20	
	UNP EASY WAY LEGS IN	S3 x 7.5	22	STANDARD
		-	-	
	INP PROFILE EASY WAY	-	-	-
		-	-	
	INP PROFILE HARD WAY	-	-	-
		-	-	
	HEA PROFILE EASY WAY	-	-	-
		-	-	
	HEB PROFILE HARD WAY HEA PROFILE HARD WAY	-	-	-
		-	-	

### STANDARD FEATURES

- 7" multi functional touch screen
- Rectangular profile, plate hardway-easyway, square, pipe, tube, angle leg, T-section, NPU, INP, IPE, HEA, HEB, HEM bending
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatical and full automatic options
- Double speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Three separated rolls driven with hydraulic motor and planetary gear box
- Two axes mechanic guide rolls
- Linear movement of bottom roll shafts with hydraulic system connected to body
- Upper shaft support
- Telescopic front protection sheets
- Engine with brake
- Multi-purpose bending rolls (One set)
- Serpentine bending feature
- Vertical and horizontal working feature
- Adjustable buttons according to horizontal and vertical position with one button
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three stage mobile control panel separated from machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Warning page that shows maintenance time
- Alarm page that shows the warnings in machine
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for control panel

### OPTIONAL FEATURES

- CNC unit
- Special rolls for different diameters
- Hydraulic guide rolls
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Variable speed feature
- Oil cooling system
- Joystick controller system
- Automation system for different voltage and frequency
- Multi colour option
- Custom logo application with laser cutting

# PBM SM-42D

ANGLE ROLL BENDING MACHINES



## CAPACITY TABLE

Material Size (inch)	1.66 x 0.083 1-5/16 x 0.125 1 x 0.12
Min. Diameter (Øinch)	14 12 12

The specifications in table based on steel with yield point 240N/mm<sup>2</sup> Mac Bend-ing reserves the right to change all above specifications without prior notice. All measurements in the capacity table are in millimeters, for more information, you can visit our website. [www.macbending.de](http://www.macbending.de)

## TECHNICAL SPECIFICATIONS

SECTION MOMENTUM (in <sup>3</sup> )	-
POWER (HP)	2 + 7.5
ROLLS (inch)	7
BENDING SPEED (feet/min.)	0-20
D SHAFT DIAMETER (Øinch)	2.36/2.36
WEIGHT (lbs)	2866
SIZE W/L/H (feet)	4.5/4.4/4

## STANDARD FEATURES

- 10" multi-functional touchscreen
- Circular, elliptical, oval shapes and different diameters bendings
- PLC control with manual, semi-automatic, and fully automatic options
- Variable speed feature
- St-52 quality steel frame and parts
- Hardened and grounded rolls and shafts
- Bearing guidance system
- Three separated rolls driven with hydraulic motor and planetary gearbox
- 8-axis NC control system
- Special apparatus for 90° bending process
- Upward and downward movement of the bottom roll shafts with a hydraulic system connected to the body
- Telescopic front protection sheets
- Engine with brake
- One set of pipe rolls according to the desired diameter
- Serpentine bending feature
- Continuous turning of rolls with one button
- Hidden encoder against crushes that records turning movement
- Protection system against overloads
- Three-stage mobile control panel separated from the machine
- Online remote connection
- Formula page that calculates radius and deepness
- Sound-light buzzer warning system
- Warning page that shows maintenance time
- Alarm page that shows the warnings on the machine
- Digital display for hydraulic guide rolls
- Hydraulic circular pitch device
- Joystick controller system
- CE norms
- 400 volt / 50 Hz / 3 Ph
- Transparent protection cover for the control panel

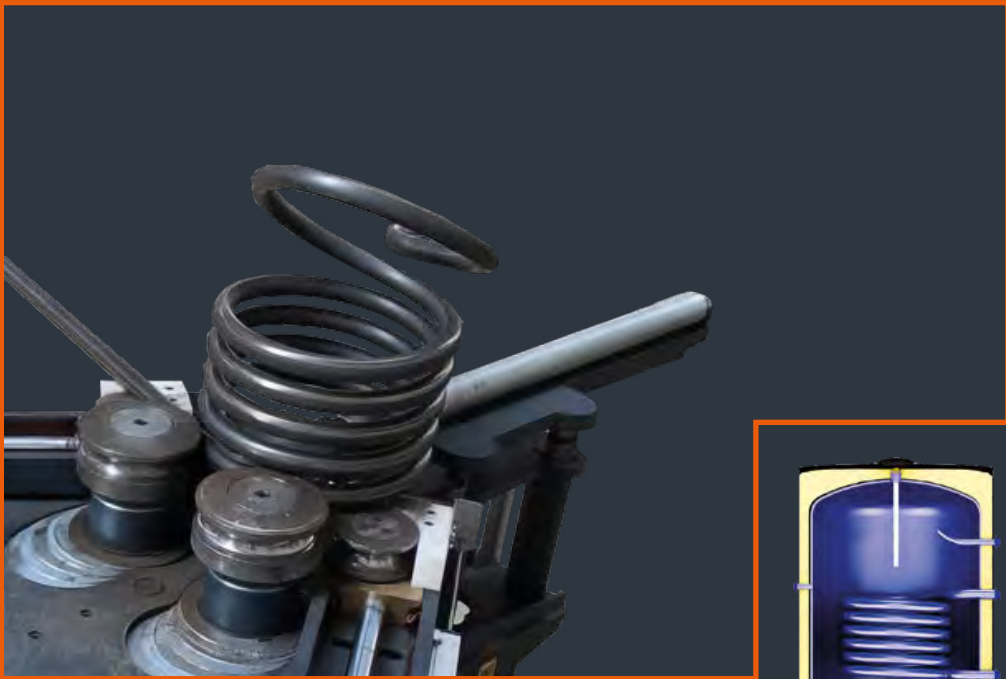
## OPTIONAL FEATURES

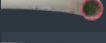

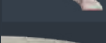
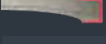
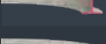
- 21" PC-based arm control panel (warning system, panel system, adjustable support arm system, 21" touchscreen, PC-based software)
- Automation system for different voltage and frequency
- Multi color option
- Custom logo application with laser cutting



"PBM SM-42D" is a serpentine bending machine designed to bend serpentine for accumulation tanks and single or double serpentine boilers. This machine is used in hot water supply systems in places such as villas, factories, and restaurants where there is a need for heat transfer systems.













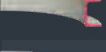
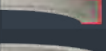
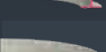
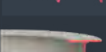
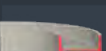
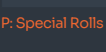




CAPACITY TABLE	PBM 300		PBM 240		PBM 180		PBM 150		Rolls
	Material Size (inch)	Min. Diameter (Øinch)	Material Size (inch)	r (Øinch)	Material Size (inch)	Min. Diameter (Øinch)	Material Size (inch)	Min. Diameter (Øinch)	
 SQUARE TUBE	10 x 10 x 0.375	1181	6 x 6 x 0.375	551	5 x 5 x 0.375	787	4.5 x 4.5 x 0.313	197	STANDARD+P
 RECTANGLE TUBE	-	-	8 x 6 x 0.375	551	8 x 4 x 0.25	-	6 x 3 x 0.188	197	STANDARD+P
 PLATE HARD WAY	10 x 2 - 1/2	91	6 - 1/2 x 2	51	6 x 1 - 1/4	79	6 x 1 - 1/2	91	STANDARD
 PLATE EASY WAY	20 x 3	47	10 x 2 - 1/2	35	8 x 2 - 1/2	39	10 x 2	55	STANDARD
 FULL SQUARE	6	55	5	47	4	53	4	75	STANDARD
 TUBE	12.75 x 0.406	157	8 - 5/8 x 0.375	98	6 - 5/8 x 0.25	79	6 - 5/8 x 0.188	98	SPECIAL
 PIPE	-	-	5 x SCH120	59	6 x SCH80	394	5 x SCH120	118	SPECIAL
 ROUND	6	59	5	59	4	39	4	51	SPECIAL
 ANGLE LEG IN	L8 x L8 x 1	91	L8 x L8 x 5/8	63	L6 x 6 x 7/8	51	L6 x 6 x 3/4	94	STANDARD
 ANGLE LEG OUT	L8 x L8 x 1	91	L8 x L8 x 5/8	63	L6 x 6 x 7/8	51	L6 x 6 x 3/4	83	STANDARD
 T SECTION LEG IN	WT 8	118	WT6	75	WT5	63	WT 5	60	STANDARD
 T SECTION LEG OUT	WT 8	118	WT6	51	WT5	43	WT 5	60	STANDARD
 T SECTION	WT 8	67	WT6	59	WT5	47	WT 5	60	STANDARD
 UNP EASY WAY LEGS OUT	MC 18 x 58	79	C15 x 50	51	C12 x 30	79	C10 x 30	75	STANDARD
 UNP EASY WAY LEGS IN	MC 18 x 58	79	C15 x 50	51	C12 x 30	118	C10 x 30	114	STANDARD
 UNP HARD WAY	C10 x 30	394	C8 x 18.75	394	C7 x 14.75	394	C6 x 13	276	STANDARD+C
 INP PROFILE HARD WAY	W8 x 40	276	W8 x 21	394	W6 x 25	394	S6 x 12.5	394	STANDARD+C
 INP PROFILE EASY WAY	W12 x 87	71	W10 x 49	51	W8 x 40	79	S12 x 31.8	98	STANDARD
 HEA PROFILE EASY WAY	W10 x 88	79	W8 x 48	55	W8 x 35	79	W8 x 40	118	STANDARD
 HEB PROFILE HARD WAY HEA PROFILE HARD WAY	W8 x 48	394	W8 x 31	157	W6 x 25	394	W5 x 19	138	STANDARD+C

P: Special Rolls (for more precise bendings) C: Pulling Device

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)

CAPACITY TABLE	PBM 120		PBM 100		PBM 80		PBM 60		Rolls
	Material Size (inch)	Min. Diameter (Øinch)	Material Size (inch)	Min. Diameter (Øinch)	Material Size (inch)	Min. Diameter (Øinch)	Material Size (inch)	Min. Diameter (Øinch)	
 SQUARE TUBE	2 x 2 x 0.12 4 x 4 x 0.196	18 79	2 x 2 x 0.12 3.5 x 3.5 x 0.1875 4 x 4 x 0.25	22 91 106	2 x 2 x 0.083 3 x 3 x 0.12	20 63	5/8 x 5/8 x 0.065 1 - 1/2 x 1 - 1/2 x 0.12 2 - 1/2 x 2 - 1/2 x 0.12	9 13 118	STANDARD+P
 RECTANGLE TUBE	2 x 1 - 1/2 x 0.12 5 x 2 x 0.188	18 47	2 x 1 - 1/4 x 0.12 3 x 1 - 1/2 x 0.25 4 x 2 x 0.1875	18 31 79	2 x 1 - 1/4 x 0.12 3 x 1 - 1/2 x 0.19 4 x 2 x 0.083	24 63 118	1 - 1/2 x 3/4 x 0.12 2 - 1/2 x 1 - 1/2 x 0.12 3 x 1 - 1/2 x 0.083	16 98 197	STANDARD+P
 PLATE HARD WAY	6 x 1 - 1/4 2 x 3/8	47 18	2 x 3/8 3 x 1 5 x 1 - 1/4	16 20 79	2 x 3/8 3 x 3/4 4 x 1	14 24 75	3/4 x 3/8 2 x 3/8 3 - 1/4 x 3/8	9 16 55	STANDARD
 PLATE EASY WAY	6 x 2 5 x 3/4	24 20	2 - 3/4 x 3/8 5 x 1 6 x 1 - 3/4	16 22 35	2 - 1/2 x 3/8 3 x 3/4 4 - 1/2 x 1 - 3/4	12 14 30	2 x 3/8 3 - 1/4 x 3/8	9 18	STANDARD
 CUADRADO COMPLETO FULL SQUARE	3 1 - 3/8	47 18	1 - 1/4 2 - 3/8	18 35	1 - 3/8 2	12 16 59	3/4 1 1 - 3/8	9 16 39	STANDARD
 TUBE	1 - 7/8 x 0.1 4 - 1/2 x 0.12 6 - 5/8 x 0.134	20 35 79	1 - 7/8 x 0.1 3 x 0.120 4 - 1/2 x 0.120	24 31 79	3 - 1/2 x 0.120 4 x 0.120	35 98	1 - 5/16 x 0.083 1 - 7/8 x 0.109 2 - 3/8 x 0.109	12 16 31	SPECIAL
 PIPE	4 x SCH120 5 x SCH40	79 59	1 x SCH 40 2 x SCH 80 4 x SCH 80	18 39 47	2 x SCH40 3 x SCH40	22 55	3/8 x SCH80 2 x SCH40	9 40	SPECIAL
 ROUND	1 - 1/4 3 - 1/2	20 47	1 - 1/2 2 - 3/8 2 - 3/4	16 24 31	3/8 1 - 1/2 2 - 3/8	15 18 37	1 1 - 1/2	12 29	SPECIAL
 ANGLE LEG IN	L2.5 x 2.5 x 1/4 L4 x L4 x 3/8 L5 x L5 x 7/16	26 39 43	L2 x 2 x 3/16 L3 x L3 x 1/4 L4 x L4 x 3/8	28 43 59	L1 - 1/8 x 1 - 1/8 x 1/8 L2 x 2 x 3/16 L3 x 3 x 5/18	16 26 39	L1 x 1 x 1/8 L2 x 2 x 3/16	12 35	STANDARD
 ANGLE LEG OUT	L2.5 x 2.5 x 1/4 L4 x L4 x 3/8 L5 x L5 x 7/16	26 39 43	L2 x 2 x 3/16 L3 x L3 x 1/4 L4 x L4 x 3/8	28 43 59	L1 x 1 x 1/8 L2.5 x 2.5 x 1/4 L3 x 3 x 5/18	16 28 39	L1 x 1 x 1/8 L1.5 x 1.5 x 3/16 L2.5 x 2.5 x 1/4	12 18 24	STANDARD
 T SECTION LEG IN	WT5	40	WT 4	35	WT 3	39	WT 2	43	STANDARD
 T SECTION LEG OUT	WT5	40	WT 4	35	WT 3	31	WT 2	39	STANDARD
 UNP EASY WAY LEGS OUT	C6 x 13 C8 x 18.75	28 35	C4 x 7.25 C8 x 18.75	24 43	C5 x 9 C6 x 10.5	29 39	C3 x 5	20	STANDARD
 UNP EASY WAY LEGS IN	C6 x 13 C8 x 18.75	28 35	C4 x 7.25 C8 x 18.75	28 47	C5 x 9 C6 x 10.5	31 39	C3 x 5	20	STANDARD
 INP PROFILE EASY WAY	S5 x 14.75 S8 x 23	20 43	S7 x 20	43	S4 x 7.7 S5 x 14.75	18 20	S3 x 7.5	22	STANDARD
 INP PROFILE HARD WAY	S5 x 14.57	217	S4 x 7.7	236	-	-	-	-	STANDARD+C
 HEA PROFILE EASY WAY	W5 x 16 W6 x 25	47 47	-	-	-	-	-	-	STANDARD
 HEB PROFILE HARD WAY HEA PROFILE HARD WAY	W4 x 13 W4 x 13	394 394	-	-	-	-	-	-	STANDARD

P: Special Rolls (for more precise bendings)

C: Pulling Device

The specifications above based on steel with yield point 34800 PSI. Mac Bending reserves the right to change all above specifications without prior notice. For more information, you can visit our website. [www.macbending.com](http://www.macbending.com)



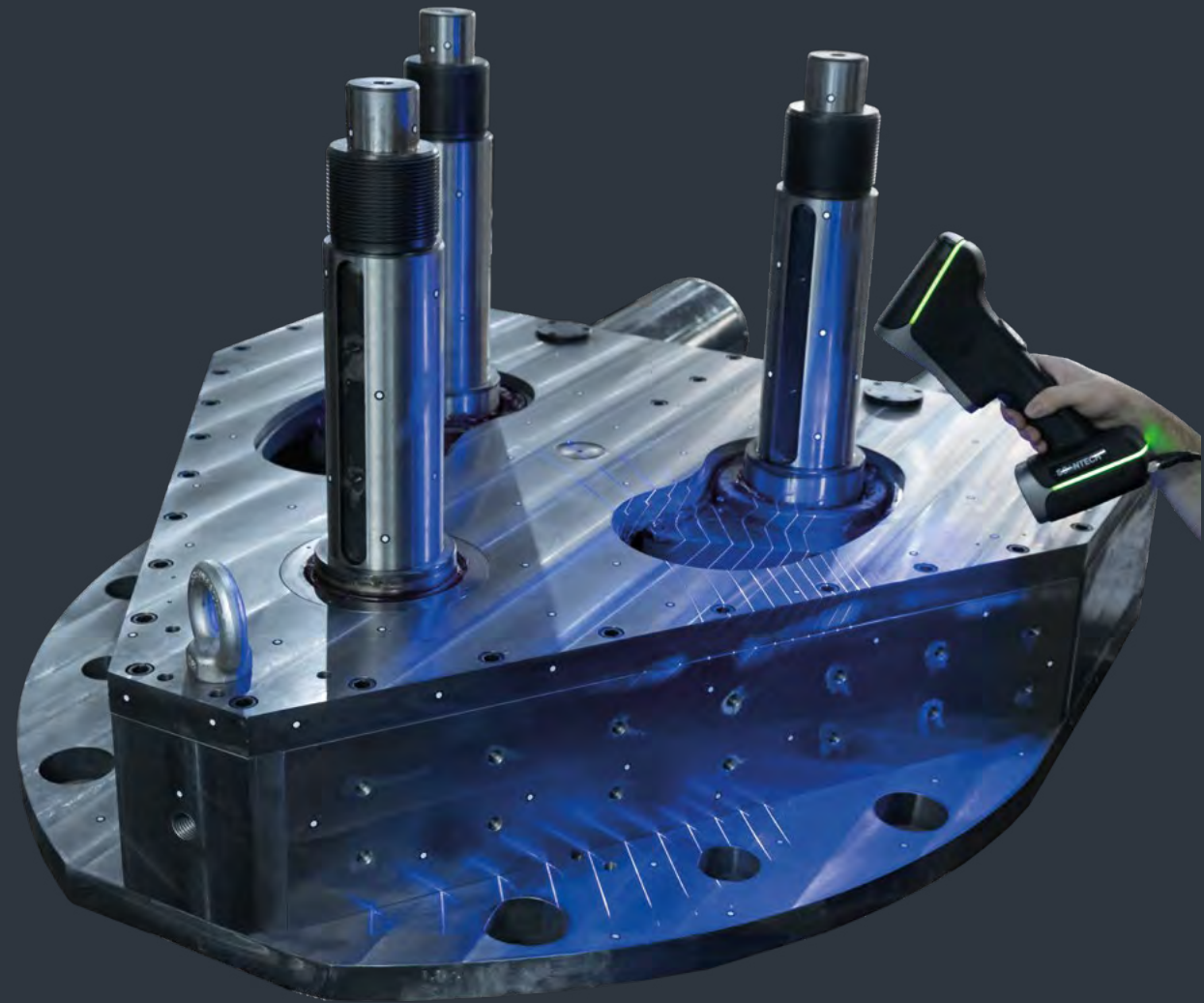
VERTICAL



HORIZONTAL

## 3D SCANNING TECHNOLOGY

As a Mac Bending, we use 3D scanning technology in the production of our machines to achieve the best quality in the fastest way.



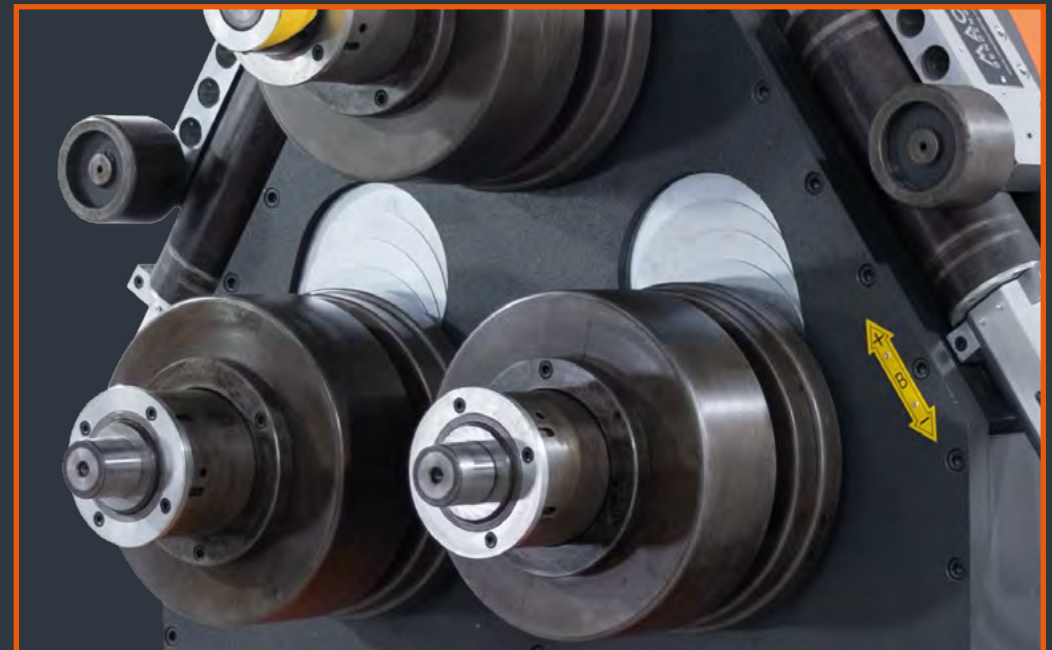


## TELESCOPIC FRONT PROTECTION SHEETS

During the bending stage, they prevent the slag accumulated on the surface from entering the machine and damaging the bearings due to the structure of the material with the density difference of the light metal. The machine developed by our expert designers in their fields ensures to operate longer and more effectively by being protected with layered sealed sheets.

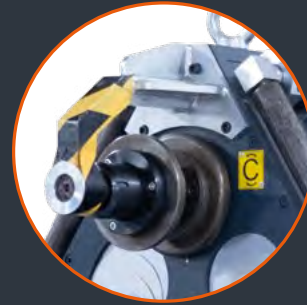
## DURABLE MACHINE BODIES

All Mac Bending machine bodies designed and strengthened to minimize deformation of the plate. The machine frame is constructed with St-52 quality steel. The production process of whole body is machined with CNC machining center. This process is the reason for precision surfaces and parallelism of all axis. Also, allows for longevity and precision of important parts of the machine.





For smaller diameters



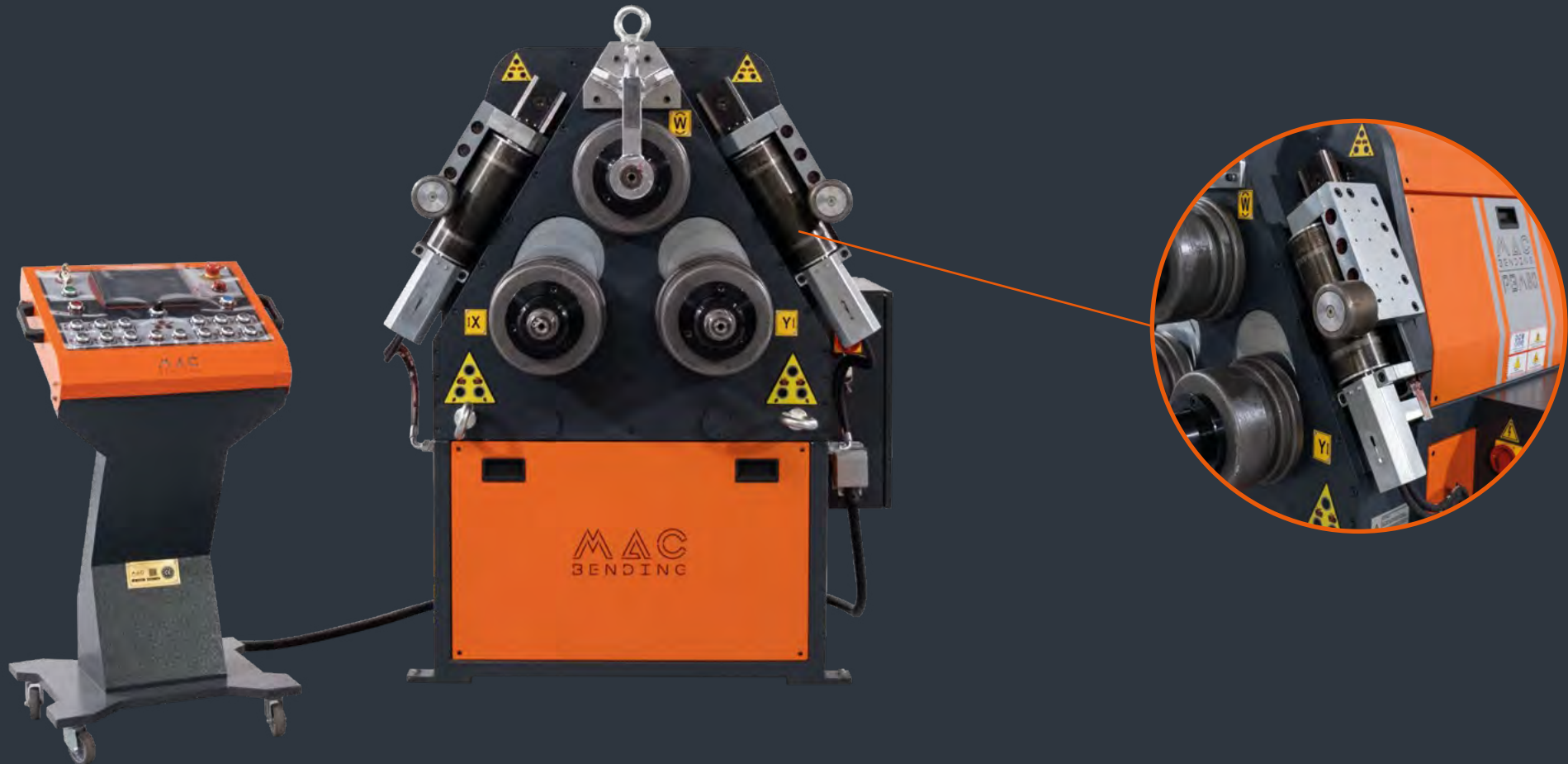
For bigger diameters

### UPPER SHAFT SUPPORT APPARATUS

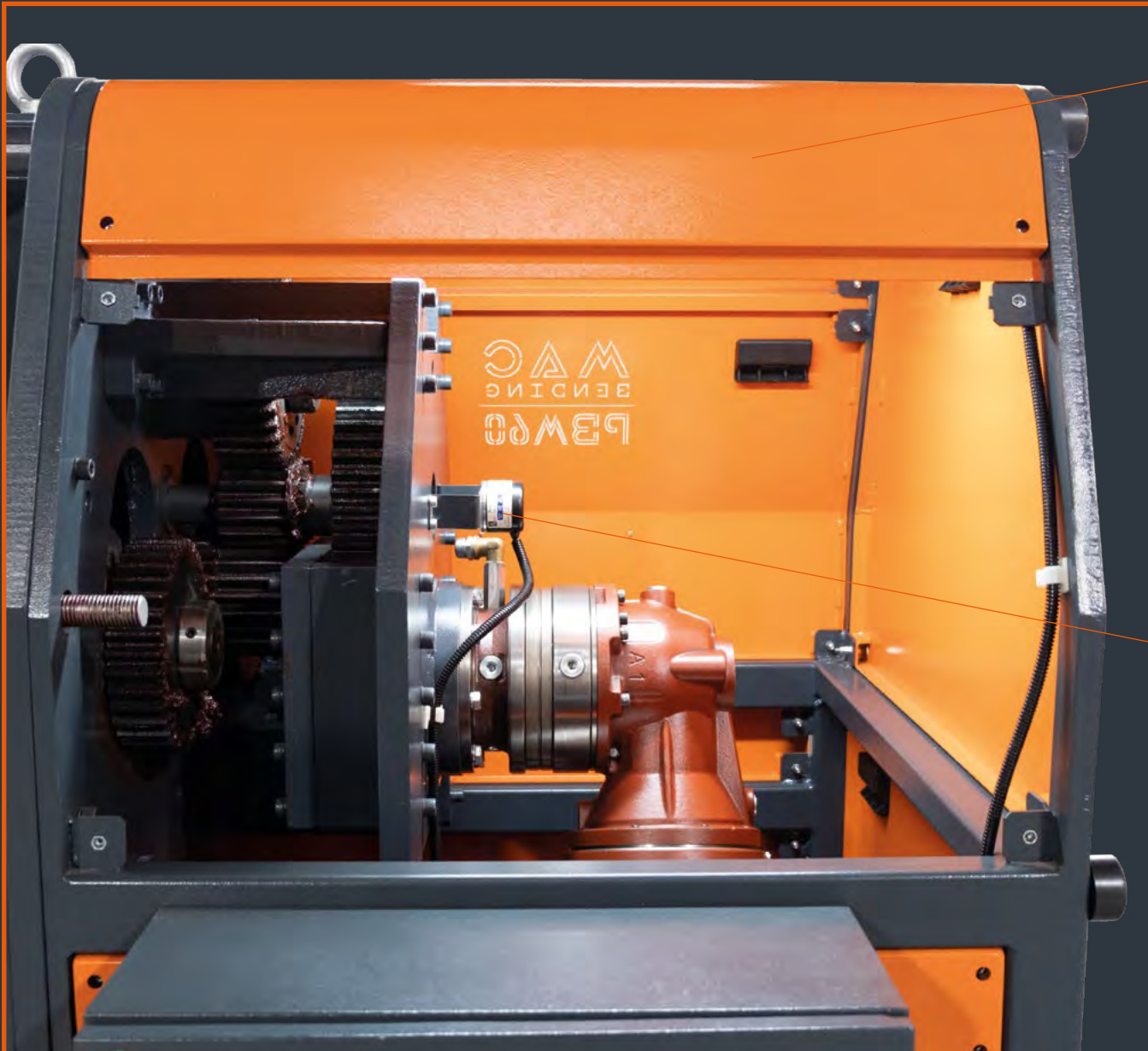
The upper shaft support apparatus prevents the upper shaft from flexing. Thus, it prevents the material from buckling and enables ideal and desired precision production. In this way, the upper shaft is protected and ensures a longer life span for the machine.

## HYDRAULIC GUIDE ROLLS

In our angle roll bending machines, while PBM 60 has mechanical guide rolls, PBM 80 and bigger models have hydraulic guide rolls as a standard equipment. In that way, we offer to users more precise and more comfortable bending opportunity.







**MAINTENANCE LAMP**

We have made maintenance easier with an interior lighting lamp that is manageable in the touch screen menu.



**ENCODER**

Hidden encoder against crushes that records turning movement.



SERPENTINE VIDEO



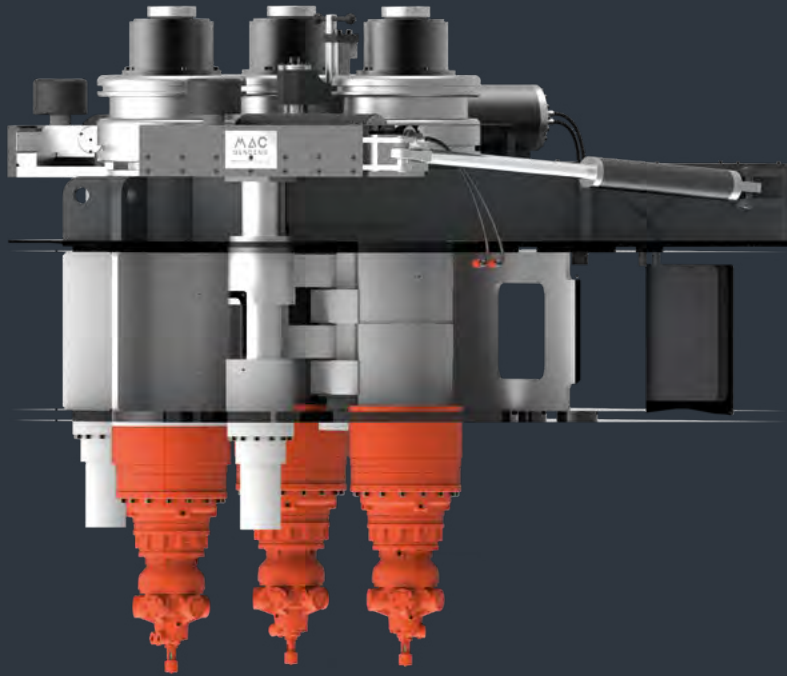
### **SERPENTINE (SPIRAL) BENDING FEATURE**

Nowadays, the serpentine system, which is indispensable for the heat transfer concept, is the most important formula utilized in the industrial sectors. The serpentine system is defined as the efficient fulfillment of all kinds of substances in gas and liquid states, which circulate in pipes, the surface of which is expanded by bending. We provide a solution for our valuable customers with the serpentine bending feature in our PBM series that we produce in our factory.



### **HYDRAULIC CIRCULAR PITCH DEVICE**

As Mac Bending, we offer hydraulic circular pitch device that we produce as an optional equipment to our valuable customers together with the serpentine bending feature in our PBM series.



### THREE SHAFTS SEPARATE HYDRAULIC MOTOR & PLANETARY GEAR BOX DRIVE SYSTEM

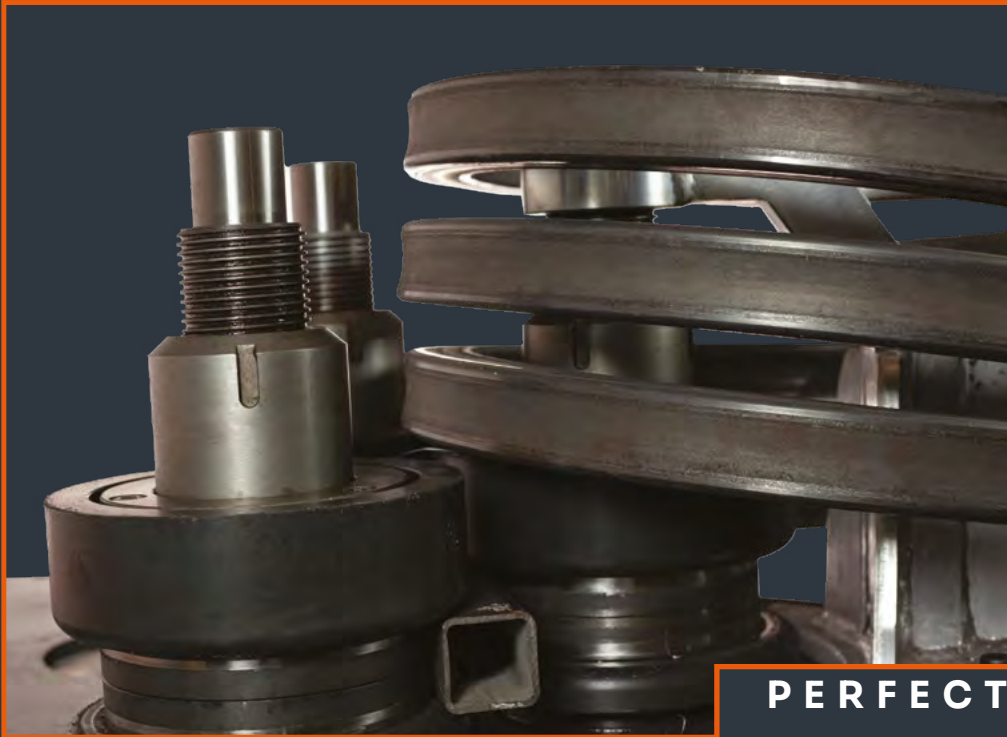
Our R&D engineers designed and developed a working system with 3 different gear boxes in order to shape the materials in a smooth and rigid way without deformation in large series angle roll bending machines.

The planetary gearbox, hydraulic motor, and pump selections have been made after taking into account every small detail including environmental factors that may occur due to the materials' height during the bending process.

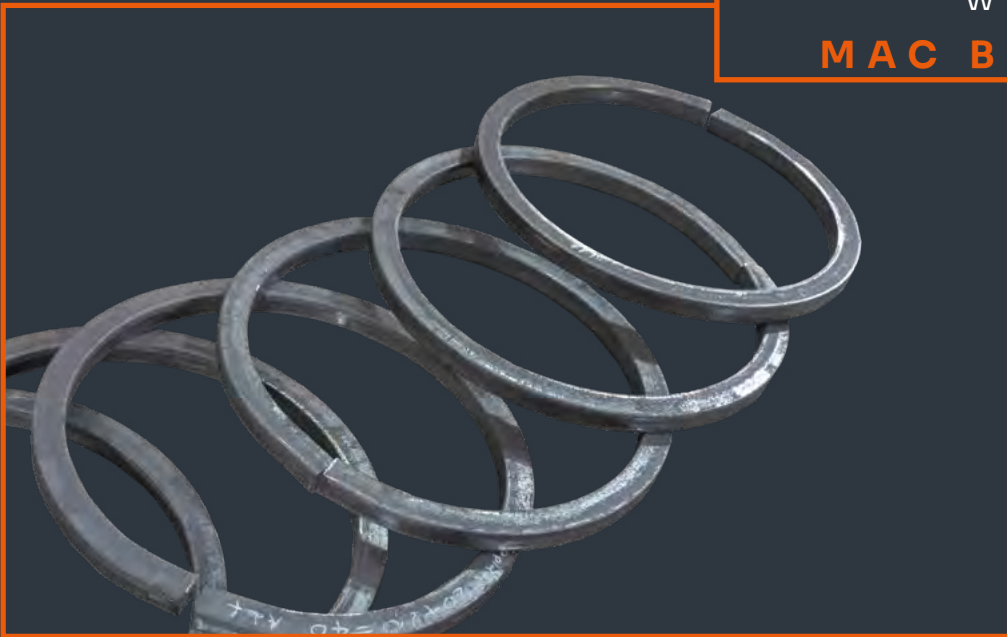
The rotation process of the three main shafts is separately carried out by planetary gear boxes and reciprocating hydraulic motors.

The advantages of three-shaft separate hydraulic motor and planetary gear drive system compared to other operating systems are as the following:

- Thicker materials can be bent more easily during the bending process,
- Minimize the deformations that may occur in the materials,
- Unlike other systems, no gears and chains are used. In this way, disadvantages such as breakage, deterioration or malfunction are eliminated,
- It is very easy to be assembled and disassembled during the maintenance process and it can be accomplished in a short time.



**PERFECT RESULTS**  
with  
**MAC BENDING**



GET

FINEST



THE

ONE



## CONTROL PANEL

We have the honor of being the first company that makes automation a standard feature in machines. We are increasing the mass production and precise productivity with the Numerical Control (NC) System feature designed with Mac Bending experience for angle rolls and plate rolls bending machines.



### TOUCH SCREEN GRAPHIC INTERFACE DISPLAY

It is now very easy to direct the machine for more precise bendings with user friendly graphic interface and high technology 7" and 10" touch screen display where you can perform many fundamental processes.

It is delivered by adding the customer logo into the control panel login screen.



## CONTROL PANEL

- 3-stage angularly adjustable control panel that provides ease of use to the operator Mobile
- control panel with wheels
- Keypad that can be adjusted according to the horizontal and vertical use of the machine
- Sound-light buzzer warning system
- Calculation page that computes the arc and depth required for bending control during the bending process
- Digital display which displays the machine working hours
- Multi-lingual feature (English, German, Spanish, Russian, Arabic and Turkish)
- Capacity tables accessible from control panel
- Transparent protection cover for control panel





## PLAYBACK (FULL AUTOMATIC BENDING FEATURE)

It is now easier to bend the parts with the same features with the same precision and in the same position without the need of an experienced operator at your required quantity by uploading the shapes of the parts to be bent in the desired diameters to the system once. In this way, you will both save time and make more precise bending.



## SEMI AUTOMATIC BENDING

You can send the rolls directly to the position by programming the shapes in the diameters needed according to the characteristics of the material you bend. Consequently, more precise and higher-quality bends can be made.



## MANUAL BENDING

Mac Bending, with its manual bending feature, enables the bending of non continuous bendings by expert operators.



## MAINTENANCE PERIOD

It has the feature of informing the operator about the maintenance procedure to be done when the maintenance period comes.



## PLC FEATURES

We can diagnose possible failures faster and easier, reach a solution in a shorter time, and provide easy maintenance with the control page displaying the inputs and outputs between the PLC and the control panel.



## REMOTE CONNECTION

We are aware that time is one of the most important added values today. With this awareness, we are always with our valuable customers, by using the speed of technology in the best way. We support the problem by establishing an online connection in case of a possible malfunction in our machines. We provide quick solutions by intervening in our machines with the remote access feature.



## STAND-BY FEATURE

We have brought the machine a different feature with the Stand-By. While the material is being bent on the machine, we can stop the operation and change the program steps. Then we can continue the auto-matic bending from where we left off with the modified program. In this way, more precise and quality results can be acquired in the bending.



## CONTINUOUS MOVEMENT BUTTON

All machines have a continuous movement button on control panel. In that way, the continuous movement of rolls can be obtained during the bending.



## CAPACITY TABLE

All our angle roll bending machines and 4-rolls plate bending machines have accessible capacity tables in control panels. Each machine has their own capacity table added to control panel and we are proud to serve it to our business partners.





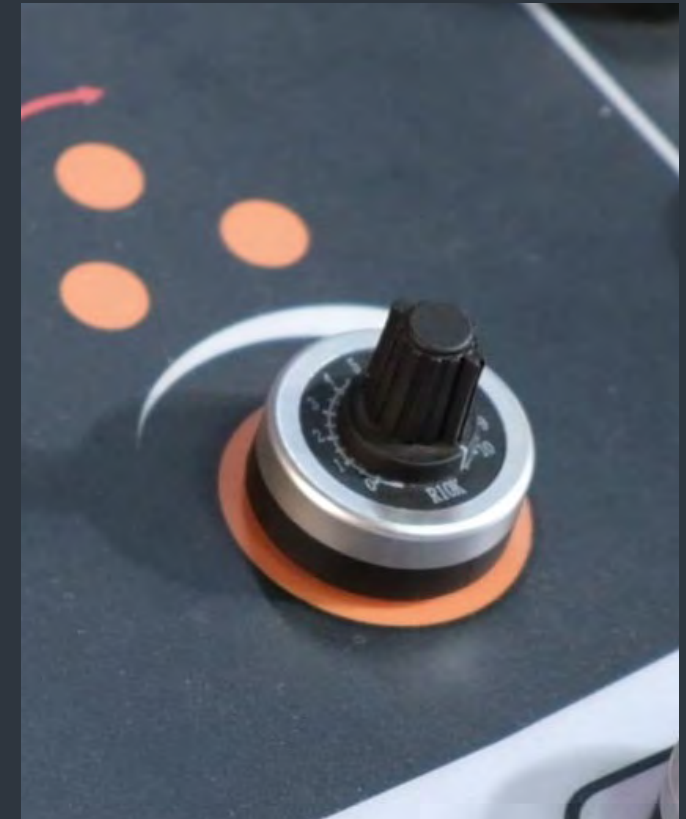
### **DOUBLE SPEED**

Our PBM 60 and PBM 80 models have double speed feature.



### **THREE SPEED**

Our PBM 100, PBM 120 and SBM (plate bending machines) series have three speed feature.



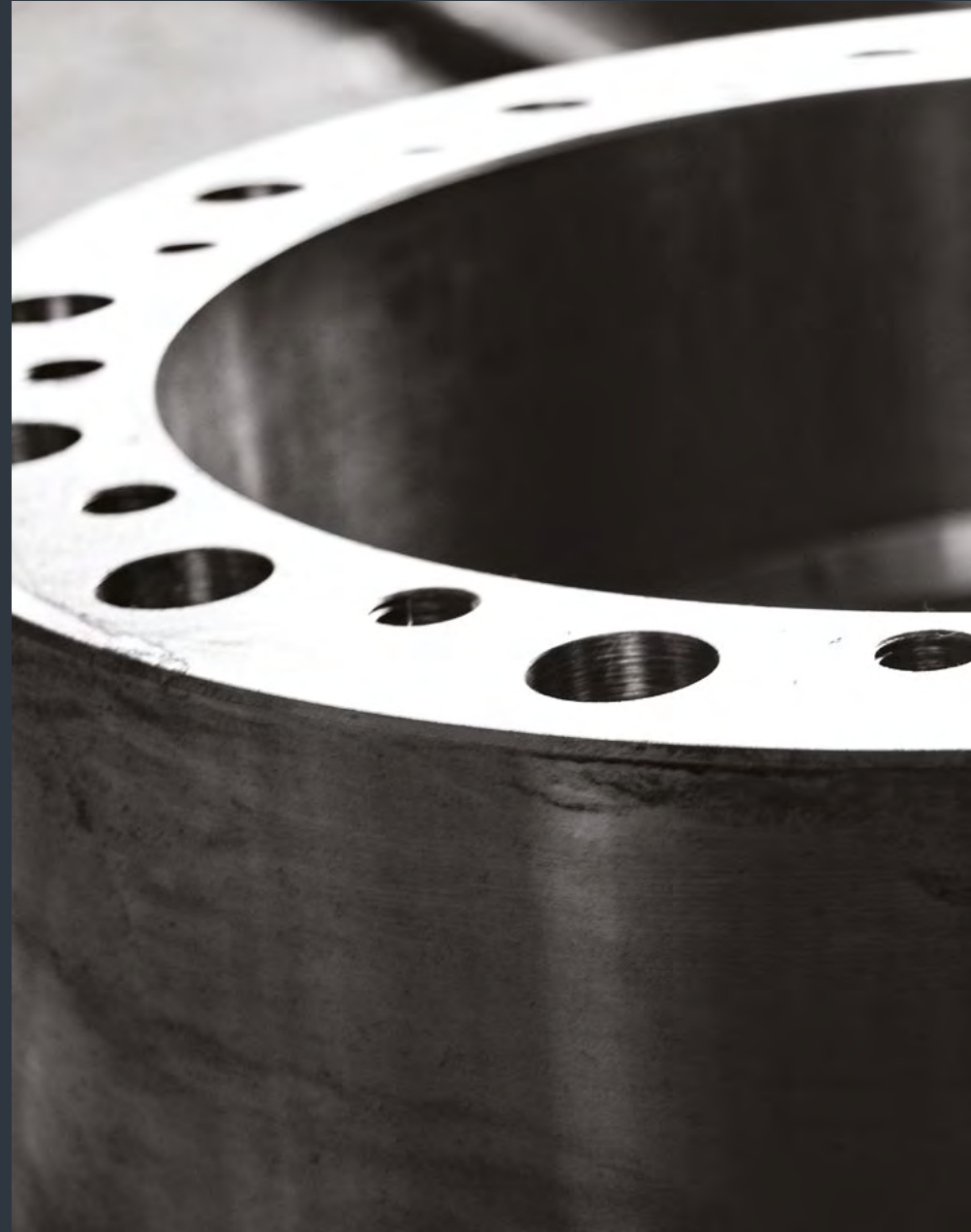
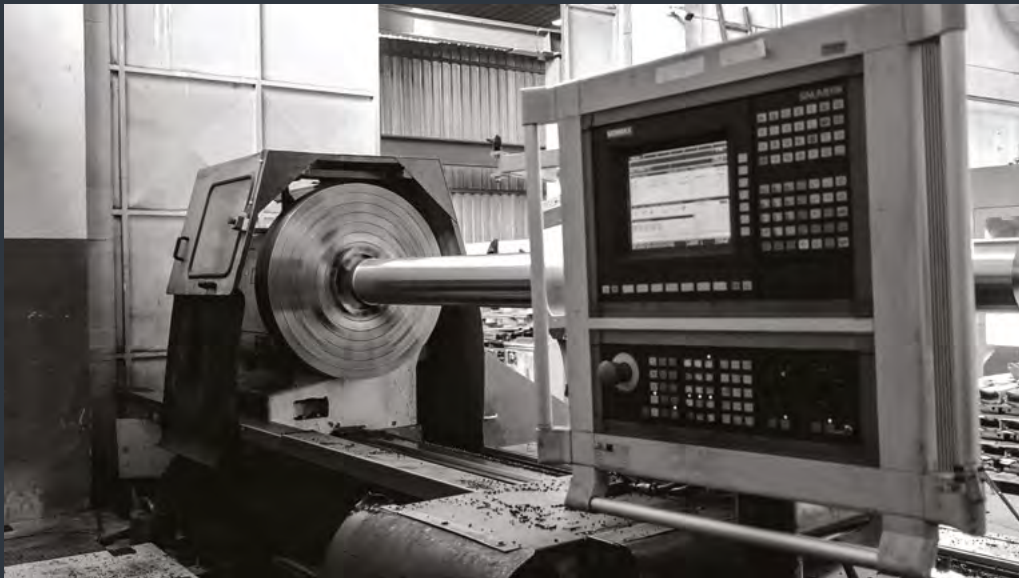
### **VARIABLE ROTATION SPEED**

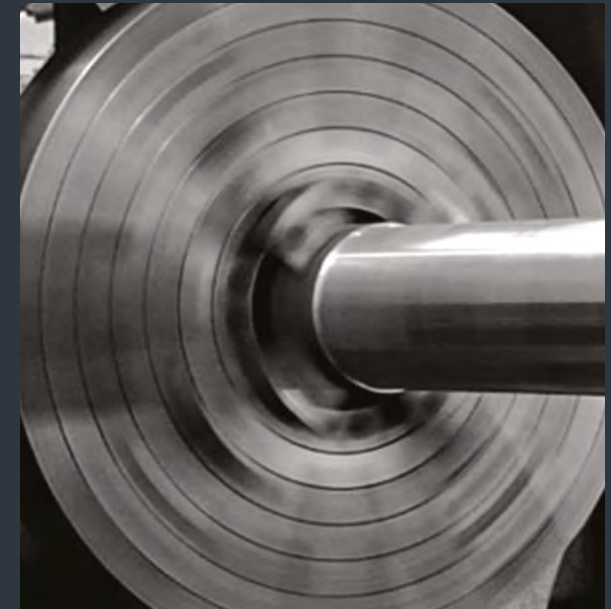
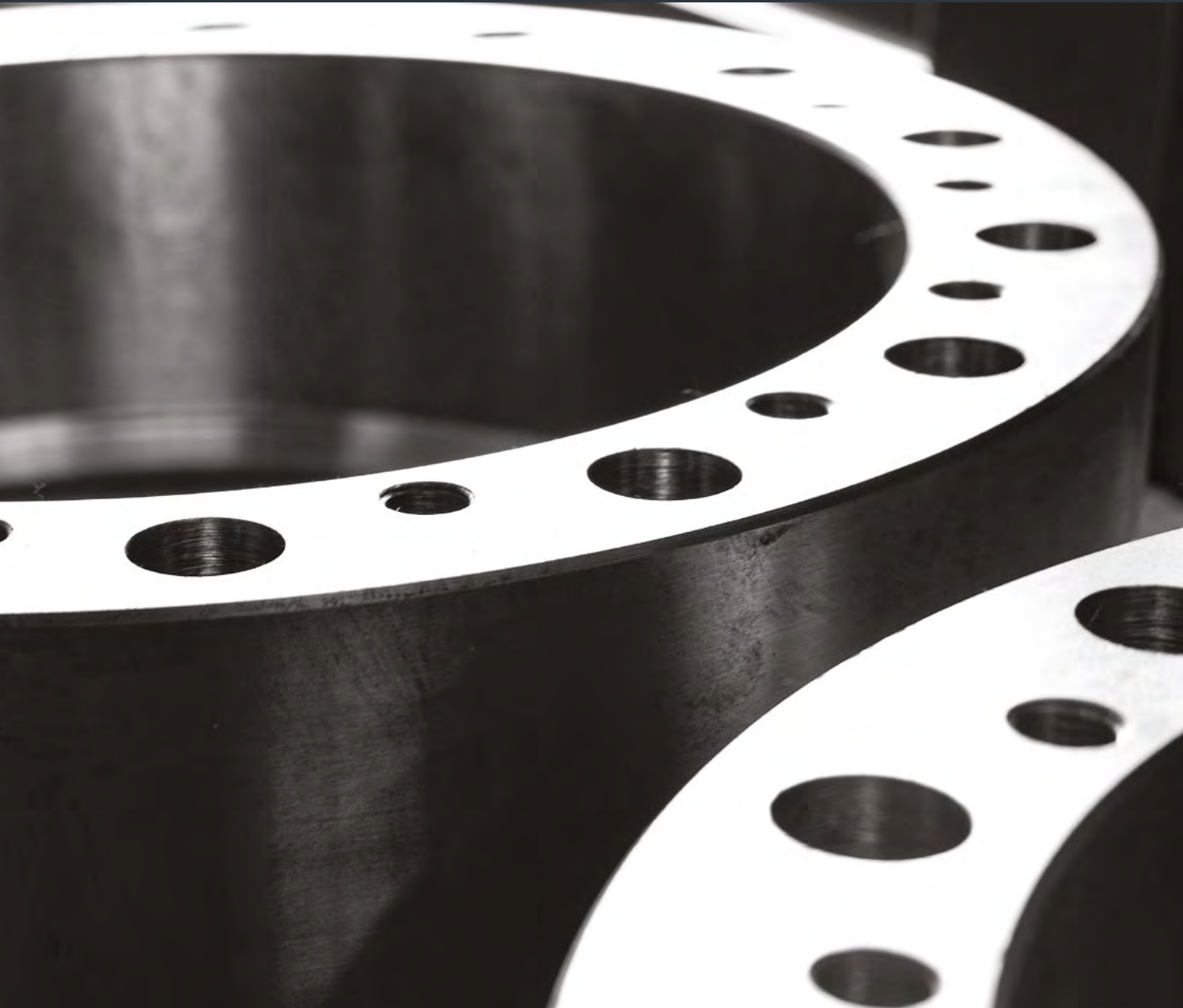
Our PBM 150 and bigger models have variable rotation speed feature.



## MACHINING

Our plate bending machines and angle roll bending machines are produced using precision CNC machines during the machining process.



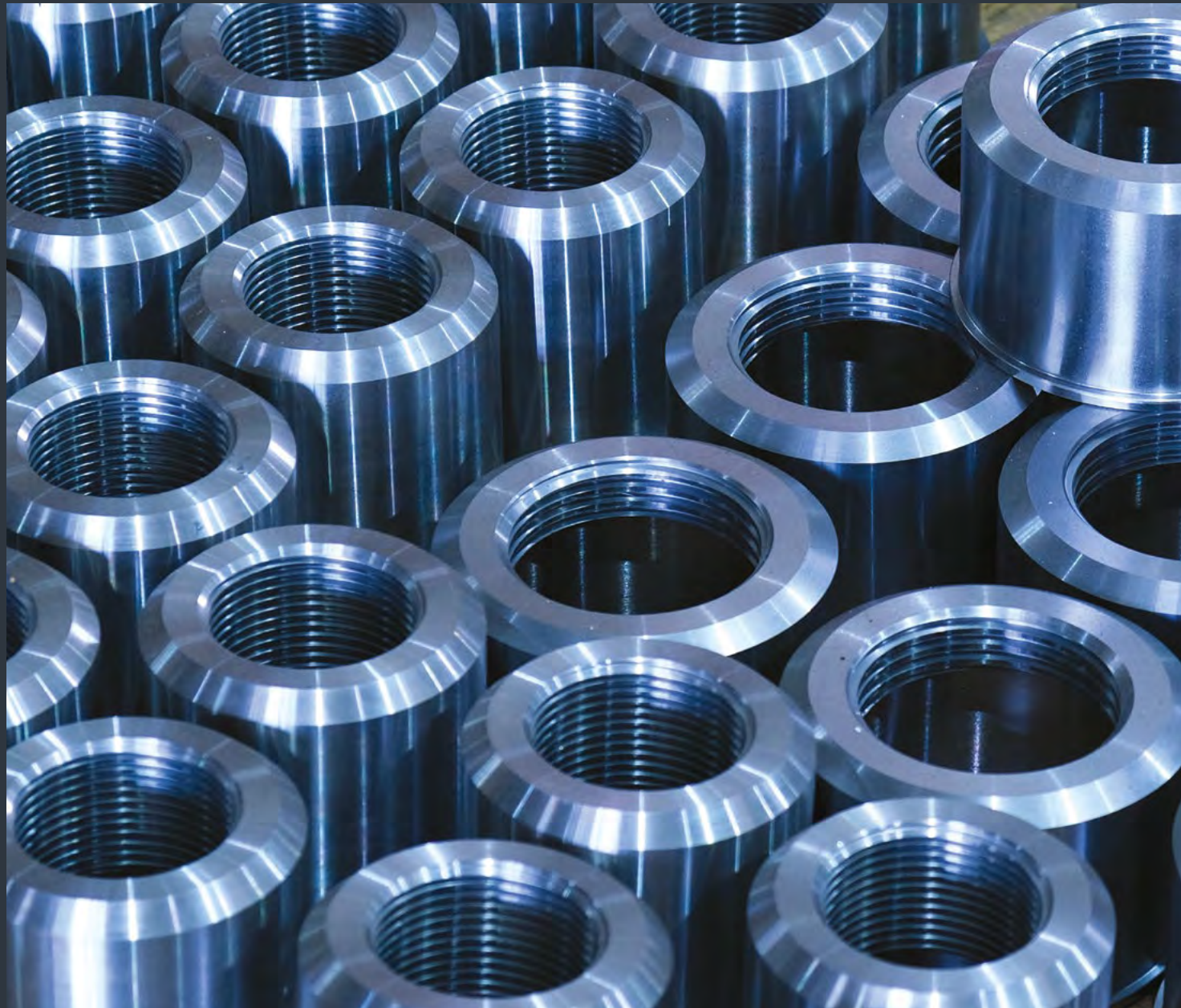


## PRODUCTION QUALITY

Mac Bending is working efficiently to present its products to the market with our experienced employees working with expert engineers and our technology that we renew every year.

SHAPE  
THE FUTURE

We follow the technology closely and produce the most modern and future shaping machines with our engineers and staff who are experts in their fields.







PRODUCTION  
OF PBM 300 -  
240 - 180

Mac Bending  
Parts made a  
surface hardening  
by heat treatment  
and induction  
process.





## PAINTING

We use electrostatic oven painting to protect the body from corrosion, rust, and general external factors.



HIGH

QUALITY





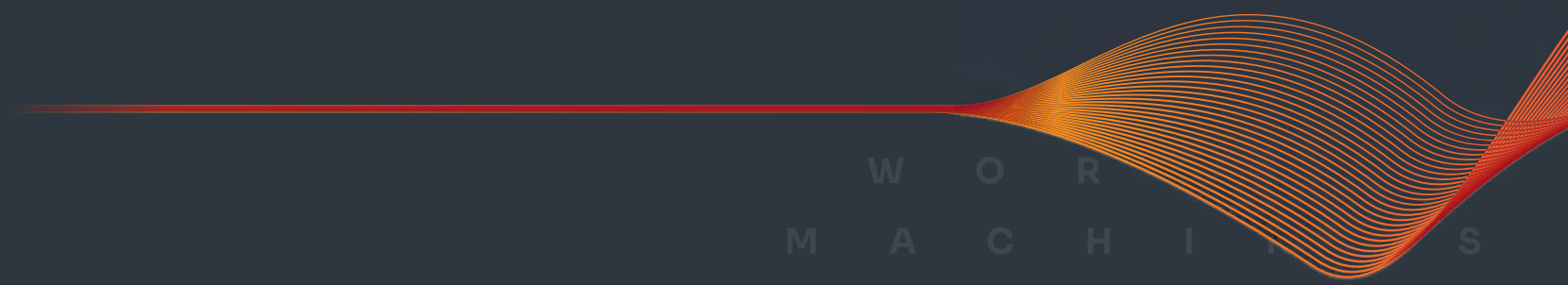
The materials and parts used in the machines that we produce have proven quality and are accessible worldwide. All kinds of spare parts and consumables are always in stock. Our after-sales service staff provides 24/7 service.

For any questions, feedback, and support, you can reach our team at [service@macbending.com](mailto:service@macbending.com)

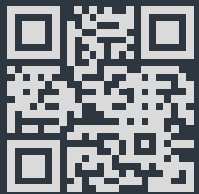
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W O R K I N G  
M A C H I N E S  
M E T A L  
W O R K I N G  
M A C H I N E S  
M E T A L  
W O R K I N G  
M A C H I N E S  
M E T A L  
W O R K I N G





# MAC<sup>®</sup> BENDING METAL WORKING MACHINES



English



WHO WE ARE

