

MARCOVIL STÖLTING

Innovation and tradition since 1905
In Roll Bending Technology



TOGETHER | The widest range in High Tech
Roll Bending Machines

MARCOVIL STÖLTING

About us

MARCOVILSTÖLTING is a pioneer technological joint-venture established in the beginning of the XXI century between two leading mechanical engineering companies; MARCOVIL from Portugal and STÖLTING from Germany; both specialized and with a long tradition in the design and manufacturing of HIGH PRECISION Roll Bending Machines for plates and profiles.

The innovative technological joint-venture, under the name MARCOVILSTÖLTING, is formed by two companies:



STÖLTING, a German mechanical engineering company founded in 1905, is the oldest Roll Bending Manufacturer in activity in the World.

Defining the correct Roll Bending Machine accordingly the demanding Technical Specifications of multiple Industrial Customers, each one with different technical particularities, is not only a question of Science, but is also a question of PRACTICAL EXPERIENCE, because the mechanical behavior of materials changes a lot in function of type (from aluminum, to mild steel, to manganese), but also in the same material the behavior is not constant.

With an experience with more than 100 years reflected in an enormous project database, based on practical knowledge, and with machines working in the most demanding Industrial Sectors, STÖLTING guarantees a unique combination between SCIENCE and PRACTICAL EXPERIENCE allowing to design and manufacturing to the Customers THE RIGHT HIGH PRECISION Roll Bending Machines.



MARCOVIL, a Portuguese mechanical engineering company founded in 1987, reached a remarkable market position near the Industrial Customers as a result of a strong technological capacity; based on a philosophy of continuous innovation; to develop, design and manufacturing, with a huge success, Customized Roll Bending Machines accordingly to the demanding TECHNICAL CHALLENGES of multiple Industrial Sectors spread around the World.

This innovative spirit is also expressed in MARCOVIL strategy since the beginning of the 90's decade of the last century in the design and manufacturing of their own TOTAL IN-HOUSE CNC System or NC System, that guarantees a perfect integration and communication between Machine (Hydraulics) and Control (Electric | Electronic) and as a consequence an outstanding Roll Bending Precision.



TOGETHER
The widest range of High Tech Roll Bending Machines

Our market position

Know-How and Technological Capacity

In a dynamic Industrial World where new and traditional roll bending necessities need to be satisfied as a result of the constant creation of new materials and new applications for new and traditional materials, MARCOVILSTÖLTING is the technological answer, offering the widest and most technologically advanced range of Roll Bending Solutions, supported in an extensive Know-How with more than 100 years and in the most advanced technologies to manufacturer HIGH TECH Roll Bending Machines.

TOGETHER the highest quality standards: Total IN-HOUSE capacity and autonomy from the innovation, to design and manufacturing, to assembly and customer care.



Research & Development (R&D)

In straight collaboration with MARCOVIL, the first Worldwide Roll Bending Technological Center (RBTC) located on STÖLTING facilities in Stukenbrok-Germany, is responsible for the continuous development and improvements in the Roll Bending Machines and also in the support (Consulting Service) in the right mechanical definition of the machines according with the technical specifications of the Customers.



Technological Capacity

All the enormous Know-How and Expertise from MARCOVILSTÖLTING, is transformed in reality in MARCOVIL factory, located in Viseu-Portugal, with a total cover area with 10.000 m2, equipped with the most advanced technologies and most important with a Technical Team with more than 25 years of experience in manufacturing outstanding High Tech Roll Bending Machines.

CONSTRUCTION



MACHINING



HYDRAULIC AND ELECTRONIC



MARCOVIL STÖLTING Machines



Hydraulic PLATE Roll Bending Machines

4 Rolls

- Model: MCH-4R
- Model: VB

3 Rolls "Pyramidal"

- Model: MCH-3RP
- Model: SRAH

2 Rolls "Quick Bending"

- Model: BU-U | For Cylindrical Geometries
- Model: BU-U | For Conical Geometries
- Model: BU-UA | Full Automatic Roll Bending System

Hydraulic PROFILE Roll Bending Machines

- Model: RP | Small and Medium Profiles
- Model: PMBS | Medium and High Profiles

Customized Solutions

- Consult pages 26 to 29 for our customized solutions

Control Systems

- CNC System
- NC System
- Digital Readouts



TOGETHER
Different materials and geometries the same High Precision.



Our solutions Customer care



Consulting

We provide all the support to our Customers in the stage of machine definition accordingly their technical specifications. For each situation we are able to develop bending charts for the machine defined showing the machine performance / capacity in function of material type, plate or profile dimensions and final geometry desired.

Assembly and Training

Most of the machines can be easily assembled by the Customer's operator, using our instructions available in the technical handbook with the machines. But for more complex machines or if the Customer feel more confidence with our presence in the commissioning stage, we have a Technician Team well trained and with a large experience to assume the assembly and give practical training in roll bending operation, in machine control and maintenance.

We can also provide at any time training sessions for the Customer operators with the following purposes:

- Improve the operator skills
- Introduce new upgrades in the machine
- Introduce new operators to the machine

After Sales

Our success in after sales starts in the design and manufacturing of High Reliable Roll Bending Machines that guarantees that our Customers use the machines without interruptions. However, if some problem appears during or after the mechanical guarantee, we have an extreme dedicated Support Team to help our Customers. Using software develop by MARCOVILSTÖLTING specifically for our After Sales Service, where all the technical information of each machine and its historical is available, our Support Team can in the first stage, through phone call, try to resolve with efficiency the problem. If the problem persists we have a Technical Team available to visit our Customers and fix the problem.

OnLine Service is also available if the Customer order the machine with modem connection. This optional can be very useful for both parties, because it is a middle stage between the phone call and the visit, increasing the possibility to resolve the problem within a minimum time.

Retrofit

We are a Long-Term Partnership for our Customers. Whenever it is technologically possible and economically rational to the Customer, we can introduce upgrades or retrofit the machines.

Applying a CNC System, changing the hydraulic and electrical circuit or modifying a mechanical component, are some examples of our upgrades and retrofit interventions.

General
Manufactures



Precision



Heavy
Industry



Food Industry

Energy



Facades



Shipyard



Steel
Structures

Road and Rail Tanks



Tubes and Pipelines



Hydraulic Plate Roll Bending Machine

BENDING CAPACITY



BENDING PERFORMANCE

TECHNOLOGICAL DESIGN
FOR 4 & 3 ROLLS PLATE
MACHINES

⁽¹⁾ Standard Minimum Bending $\varnothing = 1,2 \times \varnothing$ Top Roll.

- ✓ Minimum bending $\varnothing^{(1)}$
- ✓ Plate thickness and length
- ✓ Plate mechanical properties



High Precision

MARCOVIL STÖLTING

- ✓ Roundness
- ✓ Alignment
- ✓ Small and consistent Flat End

NOTE: The above values are presented in a range, since the molecular structure of a plate and between plates may not be uniform. We also inform that for an elevated bending performance is important that all plates are certified and properly cutted.

High Precision



ROUNDNESS

- ✓ Maximum Deviation = Up to $(1\% - 2\%) \times \text{Nominal } \varnothing$.



ALIGNMENT

- ✓ Uniform Longitudinal distance, along the bended piece.
- ✓ Vertical Alignment between extremities.



FLAT END

- ✓ Flat End = $(1,5 \text{ to } 2) \times \text{Plate Thickness}$.

Hydraulic Plate Roll Bending Machine

Quality is not result of chance, but result of our dedication and technological expertise.

TECHNOLOGICAL BENDING CONCEPT: LINEAR GUIDE SYSTEM

In the Linear Guide System concept the Anti-Wear Pillow Blocks supporting the side rolls, as well as the bottom roll, through the action of the respective hydraulic cylinders support, perform a linear movement of rolls up & down along the guides rigorously constructed and machined on the surface of the two frames of the Bending Machine.



ADVANTAGES OF MARCOVILSTÖLTING LINEAR GUIDE SYSTEM:



1) The strength of the Side Rolls is transmitted directly to the hydraulic cylinder and therefore to the Frame and to the foundation of the Bending Machine. This way, the direct charges over the Anti-Wear Pillow Blocks are annulled and also is annulled the torsion effect that affects the parallelism of the rolls. The precision of the side rolls «parallelism» is ensured and greater longevity of the components and low mechanical maintenance.



2) Reduced distance between the center of the side roll and the center of the top roll ensures that the Flat-end associated to Prebending becomes small and consistent.



3) The axis of each side roll are controlled independently, allowing small adjustments in the position of the roll, thus making also the Cone bending extremely easy to perform.

ROLLS PARALLELISM

For the bended piece to become correctly aligned it's extremely important that the side rolls and bottom roll, in their linear movements, always stay parallel, meaning, that both axis of each roll are synchronized. Parallelism of MARCOVILSTÖLTING rolls is controlled and granted by an electronic system with high precision with a maximum tolerance of 0,2 mm over the parallelism. The reading of each roll axis position is made by a linear reading sensor, and that reading position is transmitted to the PLC, which is integrated in the Command Panel of the Bending Machine. Meanwhile, the PLC executes the management of the electro-valves so to ensure synchronization of the rolls axis.



INDEPENDENT ROLLS MOTORIZATION

The solution of all the rolls with independent motorization gives greater accuracy and bending control:

- 1)** Increase of traction and control of the bending operations;
- 2)** Increase of torque, providing greater efficiency in the bending process time;
- 3)** Simpler control in the conical geometries;
- 4)** Rigorous calibration of the bended parts. The lower roll is relieved and traction is made by the side rolls.

Steps for an High Precision

ROLLS TECHNOLOGY

The Rolls of MARCOVILSTÖLTING Hydraulic Bending Machines are made in special alloy steel 42CrMo4 with EC Certificate.

The Rolls can be Hardened, with the objective of:

- 1)** Elevated resistance (anti-wear);
- 2)** Preventing from scratches and deformations in the work pieces.

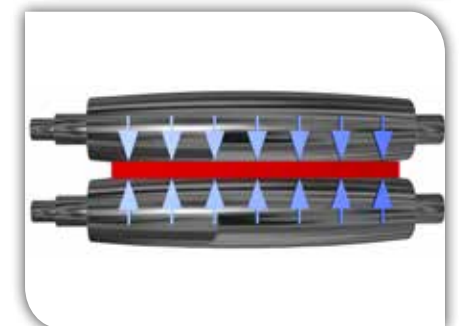
During the bending process, the top roll receives large loads, induced by the bottom and side rolls. The adequate dimensioning of the Top Roll diameter is crucial to the bending performance, as it determines:

- 1)** Minimum Diameter of Bending;
- 2)** Deflection of the Roll being pressured, which makes alignment of the work piece.

Depending on the technical specifications of the plate, MARCOVILSTÖLTING sizes the diameter of the Top Roll in order to obtain the optimal balance between minimum bending diameter and perfect alignment of bended pieces.

This way and to minimize the phenomenon of Flexion; in the top roll and in all rolls; for parameters mechanically accepted and ensuring that the bended pieces become properly aligned, MARCOVILSTÖLTING **machines the rolls with crowing**; in the center of the roll the diameter is slightly higher than in the ends; calculating for it the necessary flection for a medium thickness, not for the maximum thickness.

IMPORTANT NOTE: We can make the machining of the rolls, adequate to the customer's specifications, without any increase on the standard machine price.



LOWER ROLL STRENGTH

In order to obtain a Flat End equal to $(1,5 \text{ to } 2) \times \text{Plate thickness}$, MARCOVILSTÖLTING properly sizes the strength of the lower roll with the purpose of setting the plate position and avoid sliding during the important operation of prebending.

DROP-END SYSTEM (CLOSURE OF TOP ROLL)

- 1)** Closure system of interactive reaction with the working pressure;
- 2)** Spherical component coupled in the top roll end;
- 3)** Absorbs the axial forces.



Hydraulic Plate Roll Bending Machine

Using a powerful hydraulic system, the 4 Rolls Hydraulic Plate Bending Machine is characterized by high security and precision in the bending process. In the clamping pressure between the lower and upper roll the bending plate is backed up constantly, especially in the rather complex pre-bending operation. The symmetrical arrangement of the side rolls, make the pre-bending possible from both sides without changing the sheet. The bending operation is made by the pitching of the side rolls to create the appropriate radius.

Standards Models: Thickness capacity less than 1 mm up to 150 mm and length capacity from 500 mm up to 6.000 mm.

Standard Configuration:

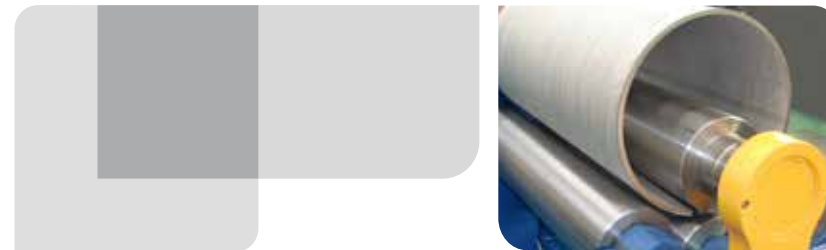
- Linear guide system for roll movement
- Solid steel construction
- Steel frames in S355JR welded and machined in CNC Mills
- Four independently driven rolls
- Rolls in 42CrMo4
- Crowning on rolls
- Rolls supported in 6 anti-wear pillow blocks
- Spherical drop end to absorb the axial forces
- Perfect electronic parallelism of the side rolls (with CNC or NC System)
- Hydraulic protection from overloads
- Cone bending operation
 - Inclination of the bottom and the side rolls
 - Cone device in hardened wear plate
- Variable speed
- Movable control panel
- Safety red cable around the machine
- Built accordingly CE safety directives
- CE Certified

Consult pages 18 to 19 for our Complements to the Standard Configuration.

4 ROLLS

MODEL: MCH - 4R

High Precision and Heavy Duty Group



MODEL: VB

High Precision and VERY Heavy Duty Group



Hydraulic Plate Roll Bending Machine

The experience has now over 100 years and all our knowledge is reflected in the latest generation of 3 Rolls Hydraulic Plate Bending Machines. The 3 Rolls Plate Bending Machine is a more economic machine when compared with the 4 Rolls Machine, but is also a capable machine to cover a big part of the demanding roll bending necessities. The pre-bending operation is made by the pressure between the side and upper roll and the symmetrical arrangement of the side rolls make the pre-bending possible from both sides without changing the sheet. The bending operation is made by the pitching of the side rolls to create the appropriate radius.

Standards Models: Thickness capacity from 2 mm up to 150 mm and length capacity from 500 mm up to 6.000 mm.

Standard Configuration:

- Linear guide system for roll movement
- Solid steel construction
- Steel frames in S355JR welded and machined in CNC Mills
- Three independently driven rolls
- Rolls in 42CrMo4
- Crowning on rolls
- Rolls supported in 4 anti-wear pillow blocks
- Spherical drop end to absorb the axial forces
- Perfect electronic parallelism of the side rolls (with NC System)
- Hydraulic protection from overloads
- Cone bending operation
 - Inclination of the side rolls
 - Cone device in hardened wear plate
- Variable speed
- Movable control panel
- Safety red cable around the machine
- Built accordingly CE safety directives
- CE Certified

Consult pages 18 to 19 for our Complements to the Standard Configuration.

MODEL: MCH-3RP

High Precision and Heavy Duty Group



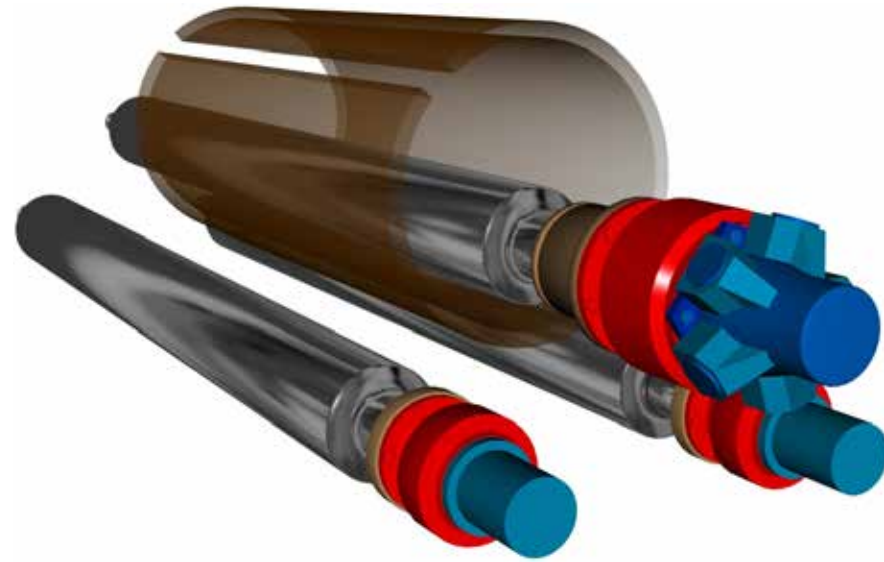
MODEL: SRAH

High Precision and VERY Heavy Duty Group



3 ROLLS

Bending
Capacities
RESUME



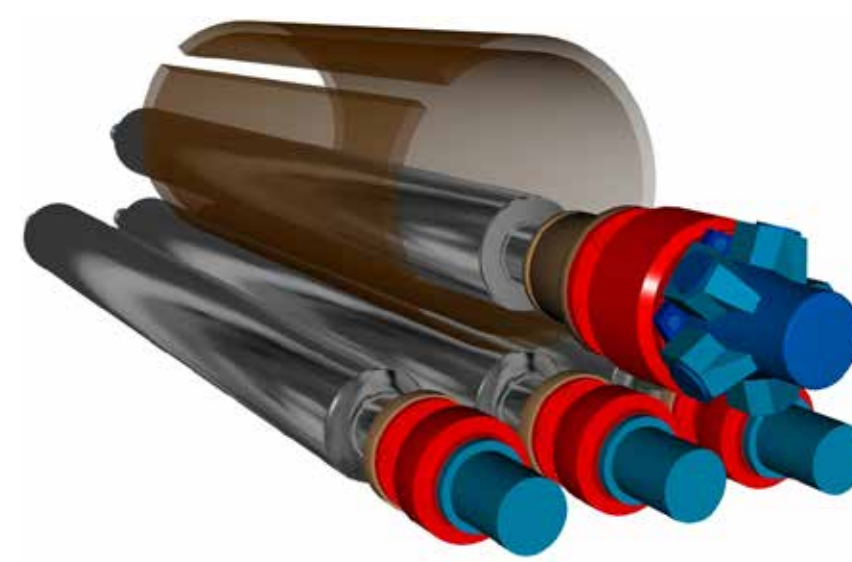
MODEL: MCH-3RP HIGH PRECISION AND HEAVY DUTY GROUP

Model	Useful Length (mm)	thickness capacities						Ø Top Roll (mm)	Ø Side Rolls (mm)	Power (kW)	Weight (Kg)	Dimensions LxWxH (mm)
		5 x Ø Top Roll		3 x Ø Top Roll		1,2 x Ø Top Roll						
		Bending (mm)	Prebending (mm)	Bending (mm)	Prebending (mm)	Bending (mm)	Prebending (mm)					
MCH 3RP 20-150	2050	8	6	□	5	6	4	150	150	4	2080	4000x10130x1003
MCH 3RP 20-180	2050	10	8	□	□	8	6	180	180	5	3050	4000x10250x1003
MCH 3RP 20-200	2050	12	10	11	□	10	8	200	200	□	3000	4000x10300x1000
MCH 3RP 20-230	2050	14	12	13	11	12	10	230	230	805	5050	4000x10450x1002
MCH 3RP 20-260	2050	20	16	18	14	16	12	260	260	1005	6000	40380x10530x1000
MCH 3RP 20-320	2050	25	20	22	18	20	16	320	320	14	□□50	40380x10000x1000
MCH 3RP 20-350	2050	30	26	28	24	26	20	350	350	1005	130000	40450x200150x1000
MCH 3RP 20-400	2050	35	30	32	28	30	26	400	400	2205	150050	40450x201250x1000
MCH 3RP 20-440	2050	45	38	41	36	38	32	440	440	2005	100840	40450x201850x1006
MCH 3RP 25-180	2550	8	6	□	5	6	4	180	180	405	3080	40500x10250x1003
MCH 3RP 25-200	2550	10	8	□	□	8	6	200	200	605	4010	40500x10300x1000
MCH 3RP 25-230	2550	12	10	11	□	10	8	230	230	□	6000	40500x10350x1002
MCH 3RP 25-260	2550	14	12	13	11	12	10	260	260	11	□□50	40880x10530x1000
MCH 3RP 25-320	2550	20	16	18	14	16	12	320	320	13	100500	40880x10000x1000
MCH 3RP 25-350	2550	25	20	22	18	20	16	350	350	1005	140000	40050x200150x1000
MCH 3RP 25-400	2550	30	26	28	24	26	20	400	400	2105	160600	40050x201250x1000
MCH 3RP 25-440	2550	35	30	32	28	30	26	440	440	28	100800	40050x201850x1006
MCH 3RP 30-200	3100	8	6	□	5	6	4	200	200	5	5080	50000x10300x1000
MCH 3RP 30-230	3100	10	8	□	□	8	6	230	230	8	□□00	50000x10350x1002
MCH 3RP 30-260	3100	12	10	11	□	10	8	260	260	1005	8020	50380x10530x1000
MCH 3RP 30-320	3100	14	12	13	11	12	10	320	320	13	110000	50380x10530x1000
MCH 3RP 30-350	3100	20	16	18	14	16	12	350	350	1505	150000	50450x200150x1000
MCH 3RP 30-400	3100	25	20	22	18	20	16	400	400	2005	180000	50450x201250x1000
MCH 3RP 30-440	3100	30	26	28	24	26	20	440	440	26	210000	50450x201850x1006

- 1) The capacities are based on mild steel with yield point 260 N/mm².
 2) Other machines lengths, thickness, very heavy duty models, customized solutions are available but not listed. Please contact us for more information.
 3) All data subject to change without prior notice.

4 ROLLS

Bending
Capacities
RESUME



MODEL: MCH-4R HIGH PRECISION AND HEAVY DUTY GROUP

Model	Useful Length (mm)	THICKNESS CAPACITIES						Ø Top Ø Bottom Roll (mm)	Ø Side Rolls (mm)	Power (kW)	Weight (Kg)	Dimensions LxWxH (mm)
		5 x Ø Top Roll		3 x Ø Top Roll		1,2 x Ø Top Roll						
		Bending (mm)	Prebending (mm)	Bending (mm)	Prebending (mm)	Bending (mm)	Prebending (mm)					
MCH 4R 20-150	2050	8	6	7	5	6	4	150	130	4,5	3.480	4.000x1.300x1.190
MCH 4R 20-180	2050	10	8	9	7	8	6	180	160	6,5	4.050	4.000x1.430x1.255
MCH 4R 20-200	2050	12	10	11	9	10	8	200	180	9	5.000	4.000x1.450x1.260
MCH 4R 20-230	2050	14	12	13	11	12	10	230	200	11	7.950	4.000x1.490x1.380
MCH 4R 20-260	2050	20	16	18	14	16	12	260	220	13	10.300	4.380x1.900x1.460
MCH 4R 20-320	2050	25	20	22	18	20	16	320	280	17,5	13.300	4.500x2.100x1.570
MCH 4R 20-350	2050	30	26	28	24	26	20	350	320	22	14.600	4.500x2.345x1.790
MCH 4R 20-400	2050	35	30	32	28	30	26	400	360	28,5	16.550	4.500x2.400x1.850
MCH 4R 20-440	2050	45	38	41	36	38	32	440	380	35	19.900	4.550x2.465x1.920
MCH 4R 25-180	2550	8	6	7	5	6	4	180	160	5,5	3.900	4.500x1.430x1.225
MCH 4R 25-200	2550	10	8	9	7	8	6	200	180	8,5	5.500	4.500x1.450x1.260
MCH 4R 25-230	2550	12	10	11	9	10	8	230	200	11	8.500	4.500x1.490x1.380
MCH 4R 25-260	2550	14	12	13	11	12	10	260	220	14	11.000	4.880x1.900x1.460
MCH 4R 25-320	2550	20	16	18	14	16	12	320	280	16,5	14.850	5.000x2.100x1.570
MCH 4R 25-350	2550	25	20	22	18	20	16	350	320	22	16.000	5.000x2.345x1.790
MCH 4R 25-400	2550	30	26	28	24	26	20	400	360	27,5	18.600	5.000x2.400x1.850
MCH 4R 25-440	2550	35	30	32	28	30	26	440	380	36	22.000	5.050x2.465x1.920
MCH 4R 30-200	3100	8	6	7	5	6	4	200	180	6,5	6.300	5.000x1.410x1.260
MCH 4R 30-230	3100	10	8	9	7	8	6	230	200	10	9.100	5.000x1.490x1.380
MCH 4R 30-260	3100	12	10	11	9	10	8	260	220	13	11.800	5.380x1.900x1.460
MCH 4R 30-320	3100	14	12	13	11	12	10	320	280	13	16.400	5.500x2.100x1.570
MCH 4R 30-350	3100	20	16	18	14	16	12	350	320	16,5	17.500	5.500x2.345x1.790
MCH 4R 30-400	3100	25	20	22	18	20	16	400	360	26,5	20.600	5.500x2.400x1.850
MCH 4R 30-440	3100	30	26	28	24	26	20	440	380	33	23.700	5.550x2.465x1.920

- 1) The capacities are based on mild steel with yield point 260 N/mm².
 2) Other machines lengths, thickness, very heavy duty models, customized solutions are available but not listed. Please contact us for more information.
 3) All data subject to change without prior notice.

Hydraulic Plate Roll Bending Machine

Hardened Rolls (50 - 55 Hrc)

Available for models:
4 Rolls (MCH-4R) and 3 Rolls (MCH-3RP)
Standard in Very Heavy Duty Models



Super Polished Rolls

Available for models:
4 Rolls (MCH-4R | VB) and 3 Rolls (MCH-3RP | SRAH)



Interchangeable Top Roll

Available for models:
4 Rolls (MCH-4R | VB) and 3 Rolls (MCH-3RP | SRAH)



Electronic Thickness Control (Soft and Small Thickness Materials)

Available for models:
4 Rolls (MCH-4R | VB)



Manual Centralized Lubrication System

Available for models:
4 Rolls (MCH-4R) and 3 Rolls (MCH-3RP)



Automatic Centralized Lubrication System

Available for models:
4 Rolls (MCH-4R) and 3 Rolls (MCH-3RP)
Standard in Very Heavy Duty Models



Complements for 4 & 3 rolls

Hydraulic Upper Support

Available for models:
4 Rolls (MCH-4R | VB) and 3 Rolls (MCH-3RP | SRAH)



Hydraulic Regular Side Support

Available for models:
4 Rolls (MCH-4R | VB) and 3 Rolls (MCH-3RP | SRAH)



Hydraulic Articulated Side Support

Available for models:
4 Rolls (MCH-4R | VB) and 3 Rolls (MCH-3RP | SRAH)



Motorized Roller Feed Tables

Available for models:
4 Rolls (MCH-4R | VB)



Automatic Ejectors

Available for models:
4 Rolls (MCH-4R | VB)



Oil Refrigerator

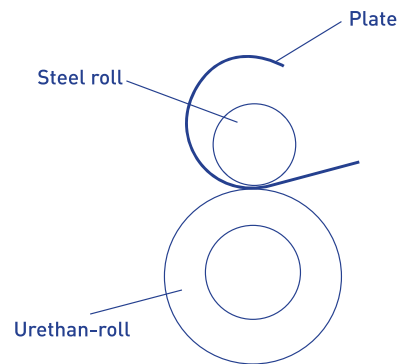
Available for models:
4 Rolls (MCH-4R | VB) and 3 Rolls (MCH-3RP | SRAH)



1) For CONTROL Systems consult pages 30 to 33.

2) For more information or other complements not listed, please contact us.

Quick Bending



Our 2 Rolls Plate Bending Machines, model BU, gives proof for years. It combines High Precision with High Capacity and Profitability. The machine has superposed bending rolls. The top roll is made out of steel, whereas the bottom roll is covered with "Urethan". By the impress of the top roll into the flexible bottom roll (Urethan Roll), plates will be bent with high precision. A perfect pre-bending of both sides of the plates will be obtained. Using an extensive range of tools solutions, different diameters can be formed.

MAIN CHARACTERISTICS:

- Production of about 4.000 pieces daily
- Simple operation
- Perfect roundness
- No damage of plates
- Prepared to bend different materials: Stainless steel, mild steel, aluminum and cooper.



STANDARD CONFIGURATION:

- Solid steel construction
- Steel frames in S355JR welded and machined in CNC Mills
- Top Roll in 42CrMo4
- Bottom Roll covered with Urethan
- Manual feeding table
- Spherical drop end to absorb the axial forces
- Fixed control panel
- Safety red cable around the machine
- Built accordingly CE safety directives
- CE Certified

COMPLEMENTS:

- Special Bending Tools:
 - Slip-on tubes
 - Flexroll
 - Special top roll
 - Device for removable top roll
- Upper support
- Side support
- CNC or NC System
- Automatic ejector
- Full Automatic Roll Bending System

QUICK BENDING MODELS RANGE



BU-U
For Cylindrical Geometries



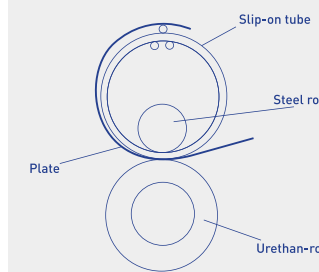
BU-UT
For Conical Geometries



BU-UA
Full Automatic Roll Bending

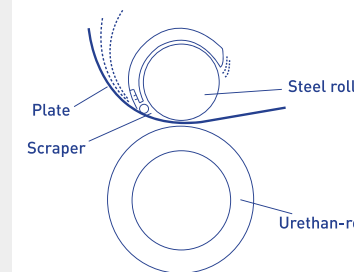
2 ROLLS

SPECIAL BENDING TOOLS



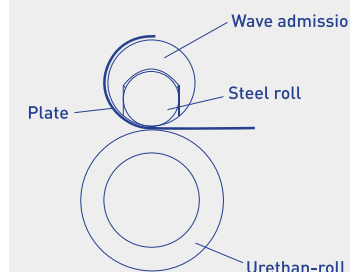
SLIP ON TUBES

The application of slips on the top roll allows the fabrication of **pipes with big diameters**. Different slips available accordingly the machine model.



FLEXROLL

Using the Flexroll System the sheet metal is first of all made into cylindrical form and as secondary operation is formed in the opposite by the scraper blade. It is therefore possible by simply changing the scraper blade position to **achieve any required pipe diameter**.



SPECIAL TOP ROLL

The special roll is a special, of the whole length, supported roll with a small inner diameter. By supporting the deformation is prevented. With the special roll it is possible to **bend cylinder with small diameter** and with great accuracy. No standard but customer specific.



DEVICE FOR REMOVABLE TOP ROLL

This device composed by top support of the top roll allows using different top roll diameters and lengths. The device is designed especially for the fabrication of **pipes with small diameters**.

BENDING CAPACITY

Model	Maximum Plate Length (mm)	Plate Thickness (mm)	Ø Bottom Roll (mm)	Ø Top Roll (mm)
BU-U 500	500	0,4 up to 2	290	100 up to 140
BU-U 750	750	0,4 up to 2	290	120 up to 140
BU-U 1100	1100	0,4 up to 2	290	130 up to 150
BU-U 1250	1250	0,4 up to 2	290	140 up to 180

1) The capacities are based on stainless steel with yield point 360 N/mm².

2) Other special versions are available but not listed. Please contact us for more information.

3) All data subject to change without prior notice.

Hydraulic Profile Roll Bending Machine

Profile Hydraulic Roll Bending Machines; model RP; for small and medium profiles.

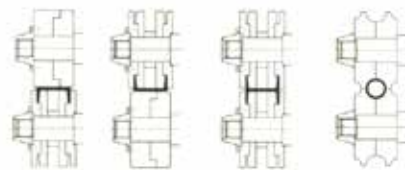


STANDARD CONFIGURATION:

- Solid steel construction
- Steel frame in S355JR welded and machined in CNC Mills
- Double Pinch
- Pyramidal design
- Three independently driven rolls (1)
- Individually adjustable side rolls for pre-bending of both edges (1)
- Adjustable hardened rolls
- Rolls shafts in 42CrMo4
- Thrust rollers on both sides
- Leg-in rollers for the side guide rollers
- Hydraulic protection from overloads
- Adjustable rolling speeds from 0/5 m/min (1)
- For vertical and horizontal operations
- Movable control panel
- Safety red cable around the machine
- Built accordingly CE safety directives
- CE Certified

(1) Not included in models RP 5 and RP 8.

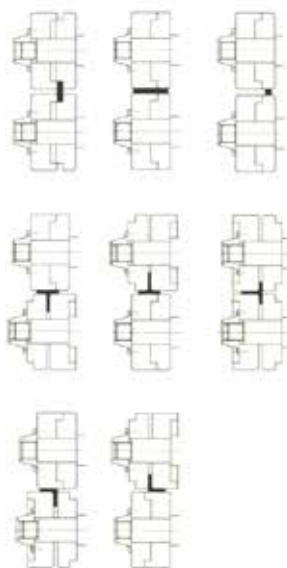
EXTRA TOOLS (Resume)



COMPLEMENTS:
















- Special Rolls for Pipes, RHS profiles, H and I profiles, and U profiles
- Push / Pull device for hard way profiles
- Spiral device
- Fast tool change Kit
- Digital Readouts
- NC System
- Manual centralized lubrication
- Automatic centralized lubrication

STANDARD TOOLS



RP Models

- 1) The capacities are based on mild steel with yield point 260 N/mm².
2) Other capacities are available but not listed. Please contact us for more information.
3) All data subject to change without prior notice.

Performance Chart	RP 5	RP 8	RP 12	RP 25	RP 45 PBMS 0-45
 min. Ø	50 x 10 500	60 x 12 600	70 x 14 700	80 x 20 800	100 x 25 1000
 min. Ø	100 x 15 500	100 x 20 500	120 x 20 600	140 x 30 700	160 x 40 800
 min. Ø	30 500	35 500	40 600	50 700	60 800
 min. Ø	40x40x2 500	60x60x4 600	70x70x5 750	80x80x6 800	90x90x6 800
 min. Ø	50 x 6 500	60 x 7 600	70 x 8 700	100 x 11 1000	120 x 13 1200
 min. Ø	45 x 5,5 500	50 x 6 600	60 x 7 700	90 x 10 1000	100 x 11 1200
 min. Ø	60 x 7 600	70 x 8 700	80 x 9 800	100 x 11 1000	120 x 13 1200
 min. Ø	50 x 6 500	60 x 6 600	70 x 9 700	90 x 11 900	120 x 11 1200
 min. Ø	40 x 5 600	45 x 5 700	50 x 6 800	70 x 9 1100	90 x 11 1200
 min. Ø	IPE 80 800	IPE 80 800	IPE 100 800	IPE 120 1000	IPE 160 1200
 min. Ø	—	—	—	—	IPE 120 2900
 min. Ø	70x40x6 800	80x45x6 800	100x50x6 1000	120x55x7 1200	140x60x7 1500
 min. Ø	60 800	65 800	80 1000	100 1200	140 1500
 min. Ø	35 500	40 500	45 600	60 800	75 1000
 min. Ø	48,3 x 2,6 700	60,3 x 2,9 700	70 x 2,9 800	88,9 x 3,2 1000	114,2 x 3,6 1200

Diameter of rolls (mm)	180	205	230	290	350
Power required for Main Engine (kW)	2,2	3	5,5	9,2	15
Power required for Hydraulic Engine (kW)	-	-	-	-	-
Speed of rotation (m/min)	5	5	0-5	0-5	0-5
Resistent torque max.	5	8	12	25	70
Machine length (mm)	1200	1250	1320	1500	2150
Machine width (mm)	750	750	1200	1400	1750
Machine height (mm)	1020	1120	1150	1220	1800
Total Weight (Kg)	480	600	1170	1900	5750-6200

Hydraulic Profile Roll Bending Machine

Profile Hydraulic Roll Bending Machines; model PBMS; for medium and high profiles.



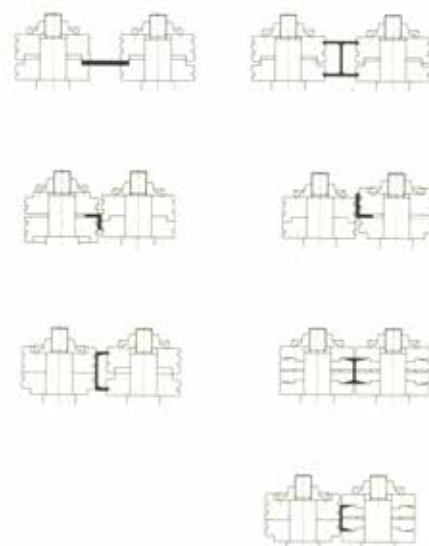
STANDARD CONFIGURATION:

- Solid steel construction
- Steel frame in S355JR welded and machined in CNC Mills
- Double Pinch
- Pyramidal design
- Three independently driven rolls
- Individually adjustable side rolls for pre-bending of both edges
- Universal adjustable hardened rolls
- Rolls shafts in 42CrMo4
- Thrust rollers on both sides hydraulic movable in 3 directions
- Hydraulic protection from overloads
- Adjustable rolling speeds from 0/5 m/min
- For horizontal operations
- Movable control panel with digital readouts
- Manual centralized lubrication
- Safety red cable around the machine
- Built accordingly CE safety directives
- CE Certified

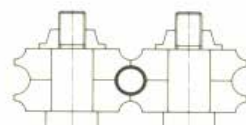
COMPLEMENTS:

- Special Rolls for Pipes, RHS profiles
- Push / Pull device for hard way profiles
- Spiral device
- Fast tool change Kit
- NC System
- Automatic centralized lubrication


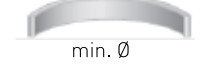

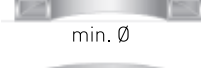
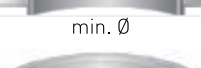
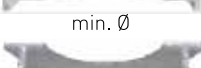
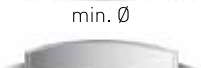






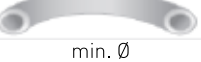

STANDARD TOOLS



EXTRA TOOLS (Resume)



PBMS Models

Performance Chart	PBMS 0-70	PBMS 1-100	PBMS 2-160	PBMS 3-250	PBMS 4-400	PBMS 5-650
 min. Ø	120 x 30 1200	140 x 30 1400	160 x 35 1600	190 x 40 2000	200 x 50 2200	250 x 60 2800
 min. Ø	200 x 45 900	220 x 50 1000	300 x 55 1200	400 x 60 1400	500 x 60 1600	600 x 70 2000
 min. Ø	70 900	80 1000	95 1200	115 1400	130 1600	150 2300
 min. Ø	100x100x7 850	120x120x8 950	140x140x8 1200	150x150x10 1400	150x150x12,5 1600	160x160x12,5 2300
 min. Ø	140 x 15 1400	140x15 1600	150x15 1800	160x20 2000	160x20 2500	200x28 2800
 min. Ø	120 x 13 1600	140 x 15 1800	140 x 15 2000	150x20 2200	150x20 2500	200x28 3000
 min. Ø	140x15 1400	150x15 1400	150x15 1600	160x20 1800	160x20 2000	200x28 2500
 min. Ø	130 x 14 1300	150 x 15 1500	180 x 16 1800	200 x 20 2000	200 x 28 2200	250 x 25 2800
 min. Ø	110 x 12 1600	130 x 12 1800	150 x 14 2200	180 x 16 2500	200 x 20 2800	200 x 28 3200
 min. Ø	IPE 240 1400	IPE 300 1800	IPE 360 2000	IPE 450 2200	IPE 500 2500	IPE 600 3500
 min. Ø	IPE 140 3600	IPE 160 4800	IPE 200 5800	IPE 240 11000	IPE 300 14000	IPE 400 19500
 min. Ø	240x85x10 1500	300x100x10 1600	400x100x14 1800	400x110x14 2000	400x110x14 2000	400x110x14 2500
 min. Ø	220x80x9 1500	280x95x10 1600	400x110x14 1800	400x110x14 2000	400x100x14 2000	400x110x14 2500
 min. Ø	85 1000	100 1200	115 1400	135 1500	150 1800	180 2500
 min. Ø	127 x 6,3 1400	139,7 x 7,1 1500	168,3 x 7,1 1800	219,1 x 7,1 2200	244,5 x 7,1 2800	298,5 x 10 3500

Diameter of rolls (mm)	450	540	630	700	800	820
Power required for Main Engine (kW)	18,5	22	30	37	45	55
Power required for Hidraulic Engine (kW)	-	-	3	4	5,5	7,5
Speed of rotation (m/min)	0-5	0-5	0-5	0-5	0-5	0 - 5
Resistent torque max.	70	100	160	250	400	650
Machine length (mm)	2150	2500	2600	3100	3600	4000
Machine width (mm)	1750	2000	2200	2600	3000	3600
Machine height (mm)	1800	1800	2000	2250	2500	2800

1) The capacities are based on mild steel with yield point 260 N/mm2.
2) Other capacities are available but not listed. Please contact us for more information.
3) All data subject to change without prior notice.

Customized Solutions

Cylindrical Bending

Full Automatic Hydraulic Plate Bending Machine



HIGHLIGHTS:

- Full automatic operations for feeding and extraction with linear guides and servo motors to obtain precise linear movements.
- Complete automatic integration with the roll bending operation.
- Code bar system to read the type of plate in the feeding trolley, with communication to the CNC System.
- Powerful MARCOVIL CNC System with multi-layers structure.
- Electronic thickness control for soft and low thickness materials to avoid the damage of the material and the lost of thickness.
- Modern connection to a better After Sales support and introduction of new programs (Consulting Service).

An innovative Spirit

Conical Bending

Full Automatic Hydraulic Plate Bending Machine



HIGHLIGHTS:

- Special Design: Rolls in conical shaping allowing the fabrication of more than one type of cones, degree of freedom.
- Special Design: Feeding table with special alignment for cone geometries.
- Full automatic operations for feeding and extraction with linear guides and servo motors to obtain precise linear movements.
- Complete automatic integration with the roll bending operation.
- Code bar system to read the type of plate in the feeding trolley, with communication to the CNC System.
- Powerful MARCOVIL CNC System with multi-layer structure.
- Electronic thickness control for soft and low thickness material to avoid the damage of the material and the lost of thickness.
- Modern connection to a better After Sales support and introduction of new programs (Consulting Service).

Customized Solutions

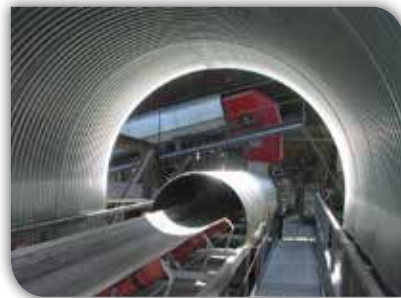
Aluminium Composite



HIGHLIGHTS:

- Rolls covered with special nylon rings allowing bending Aluminium Composite plates by their side edges.
- Very useful bending system for an easy assembly of the aluminium composite in the building facades.
- Powerful MARCOVIL CNC System.
- Electronic thickness control for soft and low thickness materials to avoid the damage of the material and the lost of thickness.

Corrugated Plate



HIGHLIGHTS:

- Rolls machined to have a perfect match with the plate geometry.
- Super polished rolls.
- Powerful MARCOVIL CNC System.
- Electronic thickness control for soft and low thickness materials to avoid the damage of the material and the lost of thickness.

An innovative Spirit

Multi-Radius Geometries



HIGHLIGHTS:

- Precision bending operation for Multi-Radius geometries.
- Articulated side support with a precise electronic control system installed in the articulations of the arm to guarantee a correct attendance along the different radius avoiding also any deformation resulting of the plate proper weight.
- Super polished rolls.
- Powerful MARCOVIL CNC System.
- Electronic thickness control for soft and low thickness materials to avoid the damage of the material and the lost of thickness.

Conical Bending



HIGHLIGHTS:

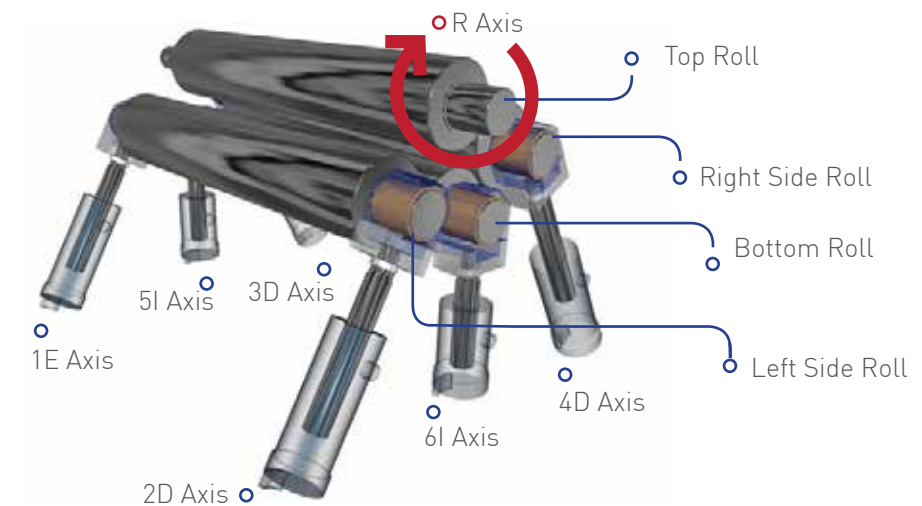
- Hydraulic plate roll bending machine specially designed to perform cones with enormous accuracy and simplicity to the operator.
- Rolls in conical shaping allowing an easy bending operation.
- Special drop end design for small cone diameters.
- Special hydraulic system for the top roll allowing the possibility to interchange the top roll accordingly others cones diameters.

The execution of bending operations in automatic mode only by entering the parameters of the plate thickness and length and final radius desired contributes to a great efficacy and production efficiency of the Roll Bending Machines. As a result of integrating in MARCOVIL a department exclusively dedicated to electronics and working side by side with the hydraulics department, MARCOVIL develops and produces the most complete CNC control for Hydraulic Bending Machines, implemented in 4 ROLLS' models. It is also applied in 2 Rolls Bending Machine, the BU model.

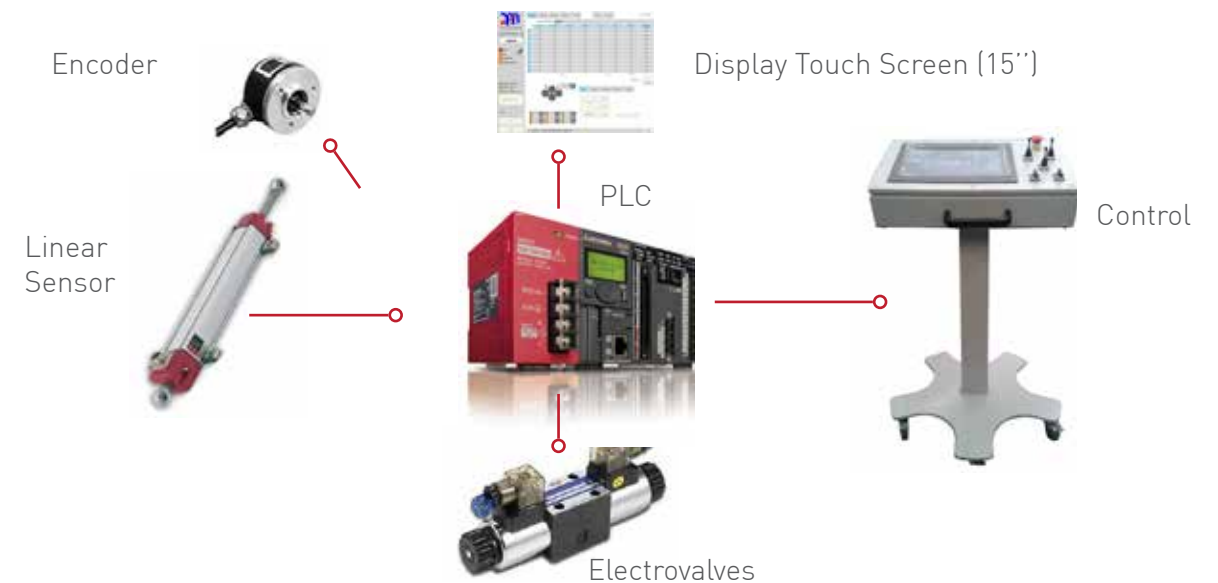
Main features of the CNC System:

- Ensures rolls parallelism **even during the rolls up and down movements.**
- Bending operation in full automatic mode, the CNC controls altogether the axes, position and rotation of all 4 rolls.
- **Automatic Mode, with the creation of direct bending programs**, the operator does not need to have a broad experience in bending. Simply enter the parameters of plate length and thickness, the desired final radius and the correction factor according to the plate type.
- **Automatic Mode, using the TEACH IN function**, to reproduce the manual bending operation previously performed.
- **World Innovation:** Through an electronic -hydraulic system perfectly integrated, control of the sheet thickness during the bending operation, with the purpose of eliminating all risks of damaging the plates of soft and low thickness material.
- Integrated Industrial PC with large processing capacity and program storage. Integrated USB input to remove and insert new programs.
- Each program allows the registration of 100 positioning steps of the rolls.
- **Language Mode**, control available in the following languages : Portuguese, Spanish, French, English, German. It's possible to incorporate other languages.

Axis Control



Architecture



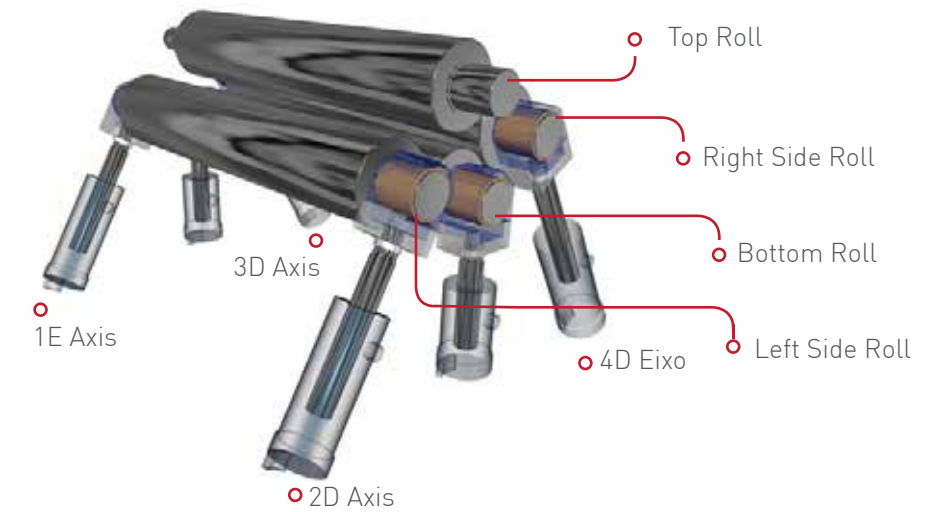
The NC System fully developed and produced by MARCOVIL is implemented in the 4 & 3 Rolls Plate Machines aiming to fill the existing space between the CNC Control, which allows performing the bending process in full automatic mode, and the Digital Read Outs, which allows the single visualization of the rolls position.

It is also applied in Profile Bending Machines; models RP and PBMS; and in the 2 Rolls Bending Machines, the BU model.

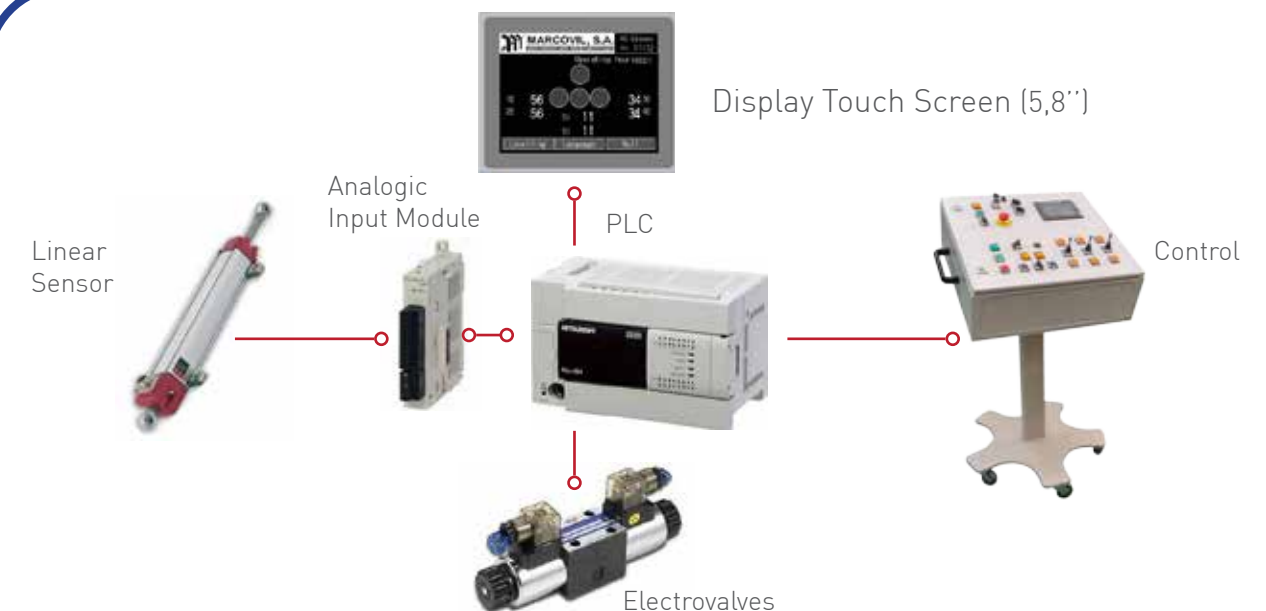
Main features of the NC System:

- Ensures parallelism of the rolls
- **TEACH IN Mode** incorporated to register the values of the side axis, the position of the rolls, on the chart with the positioning on the program.
- **Automatic Mode**, through TEACH IN function, to reproduce the manual bending operation, previously performed.
- The automatic mode controls the position of the side rolls and the rotation and the position of the bottom roll is performed manually by the operator.
- **Edit Mode**, permits the creation of programs by completing the table with the positioning of the roll .
- Possibility to enter up to 50 programs in TEACH IN Mode.
- Each program allows the registration of 30 steps of positioning the rolls.
- **Language Mode**, the control is available in the following languages : Portuguese, Spanish, French, English and German. Possibility to incorporate other languages.

Axis Control



Architecture



North & Central America

- Canada
- United States of America
- Mexico
- Guatemala

Europe

- | | |
|-------------|-----------|
| Portugal | Norway |
| Spain | Finland |
| France | Poland |
| U.K. | Hungary |
| Belgium | Bulgaria |
| Netherlands | Russia |
| Germany | Belarus |
| Denmark | Lithuania |
| Sweden | |

Middle East, Asia & Oceania

- Saudi Arabia
- Israel
- Taiwan
- South Korea
- Vietnam
- Australia

South America

- Brazil
- Argentina
- Chile

Africa

- Morocco
- Algeria
- Egypt
- Senegal
- Cape Verde
- Angola
- South Africa
- Mozambique

MARCOVIL STÖLTING

TOGETHER | your roll bending partner

THE ROLL BENDING FACTORY



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Management
System
ISO 9001:2008

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