

## Hydraulic Plate Roll Accessories

### Electronic Thickness Control (Soft and Small Thickness Materials)

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



### Automatic Centralized Lubrication System

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



### Hydraulic Upper Support

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



### Hydraulic Regular Side Support

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



### Hydraulic Articulated Side Support

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



### Automatic Ejectors

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



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## CML USA, Inc.

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# Hydraulic Plate Roll Bending Machines



## 3-Roll MCH-3RP



## 4-Roll MCH-4R



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# Hydraulic Plate Roll Bending Machine

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

## TECHNOLOGICAL BENDING CONCEPT: LINEAR GUIDE SYSTEM

Anti-wear pillow blocks support the side and bottom rolls. Respective hydraulic cylinders support the linear movement of rolls up and down along the two frames of the rigorously constructed machine.



## ADVANTAGES OF MARCOVIL STÖLTING LINEAR GUIDE SYSTEM:



1) The strength of side rolls is transmitted directly to the hydraulic cylinder, therefore to machine frame and foundation of the machine. Direct forces over the anti-wear pillow blocks are neutralized improving and ensuring the rolls parallelism. Greater precision of the side rolls movements improve longevity of components and reduce maintenance.



2) Reduced distance between the center of side roll and center of top roll ensure flat end associated to pre-bending is consistent and minimal.



3) The axis of each side roll is controlled independently; the machine can accurately make small adjustments in the position of the roll. Cone bending applications are much easier to perform.

## ROLL PARALLELISM

For the material to be correctly aligned after bending it is extremely important side rolls and the bottom roll remain parallel during the linear movement. Both axis of each roll must be synchronized. Marcovil Stölting's precise electronics control parallelism with a tolerance of .2 millimeter. A linear sensor reads and transmits each roll axis position to the integrated PLC control. The PLC manages the electro-valves confirming synchronization of roll axis.



## INDEPENDENT ROLL MOTORIZATION

Each roll has independent motorization providing greater accuracy and bending control, benefits include:

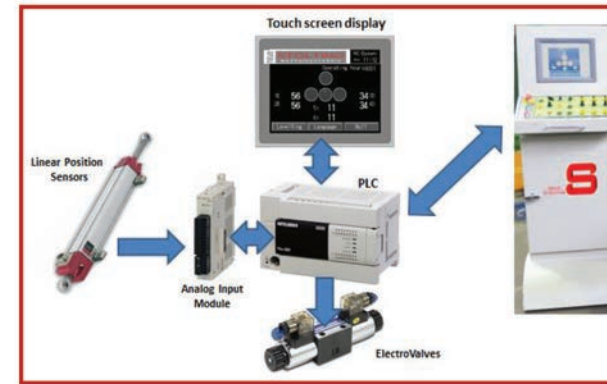
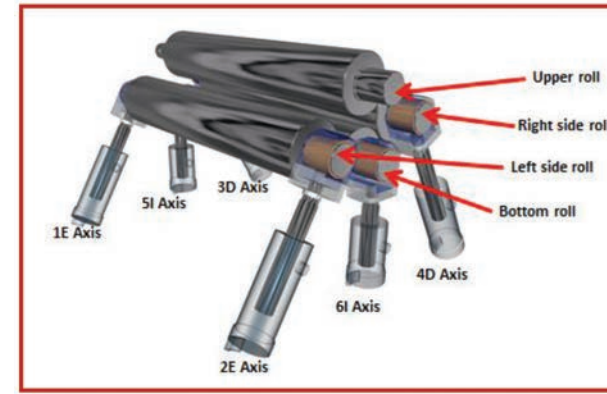
- 1) Increased traction and control during bending operations;
- 2) Increased torque improving efficiency and reducing bending time;
- 3) Simpler control in applications with conical geometry;
- 4) Rigorous calibration of the bent parts; lower roll is relieved and traction is provided from side rolls.

# Hydraulic Plate Bending Machine Available Controls

## NC CONTROL SYSTEM - STANDARD

### FEATURES:

- Maintains roll parallelism
- **TEACH IN Mode:** allows recording axis values of side rolls in the existing table of roll position
- **Automatic Mode:** reproduces previous bending operation
- Automatic mode controls position of the rolls; (6 axis). Rotation manually made by the operator.
- **Edit Mode:** create programs by filling existing table of roll position
- Stores up to 1000 programs in TEACH IN mode
- Each program stores up to 50 steps of roll positioning
- 1 rotation speed
- Optional: 2 rotation speeds with frequency inverter
- 2 speeds for up / down movement of rolls
- **Language Mode:** available in: English, German, Portuguese, Spanish, French, Russian

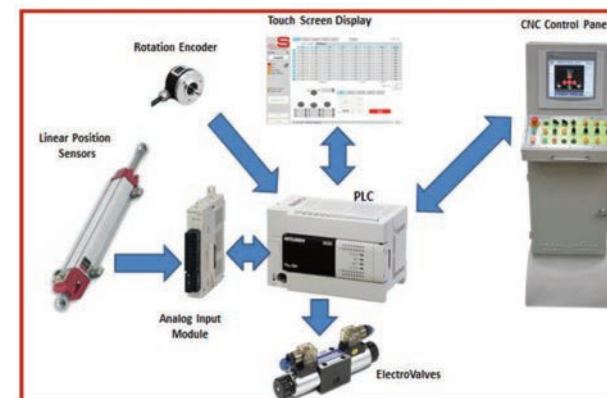
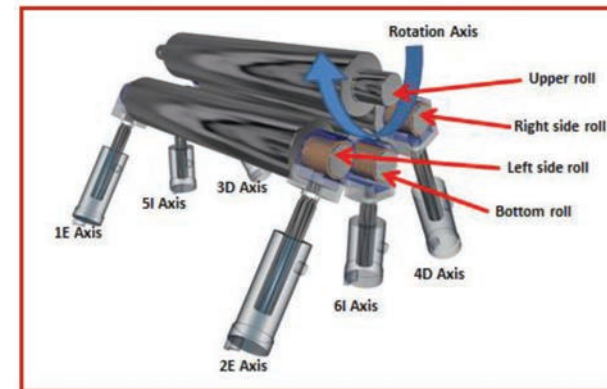


## CNC CONTROL SYSTEM - OPTIONAL

MARCOVIL STÖLTING develops and produces the most viable and complete CNC Control for Hydraulic Plate Roll Bending Machines.

### FEATURES:

- Maintains roll parallelism
- Controls all 6 axis position movement of rolls (side and bottom) as well as rotation axis for a total of 7 axis control
- **Automatic Mode, with creation of direct bending programs.** Operator enters parameters; thickness, plate length, final diameter required. The CNC control performs the necessary bending operation.
- **Automatic Mode, TEACH IN function;** reproduces previous bending operation
- **Edit Mode:** create programs by filling existing table of roll position
- Integrated industrial PC with high processing capacity and program storage. USB Door integrated, to remove and insert new programs
- Each program allows up to 80 steps of roll positioning
- Frequency inverter included
- **Language Mode:** available in: English, German, Portuguese, Spanish, French, Russian
- **World Innovation:** Electronic-Hydraulic System, control plate thickness during bending operations, reducing the risk of damage to soft materials. Greater accuracy maintaining original material thickness after bending (**OPTIONAL, NOT INCLUDED**).



### About This Brochure

We have tried to make this brochure comprehensive and factual. We reserve the right to make changes at any time without notice to prices, colors, materials, equipment, specifications, models and availability. Brochure may have been updated since the time of printing.

# Hydraulic Plate Roll Bending Machine

## High Precision

PROVEN  
TECHNOLOGICAL DESIGN  
FOR 3 & 4 ROLL PLATE  
MACHINES

GREATER  
BENDING  
CAPACITY



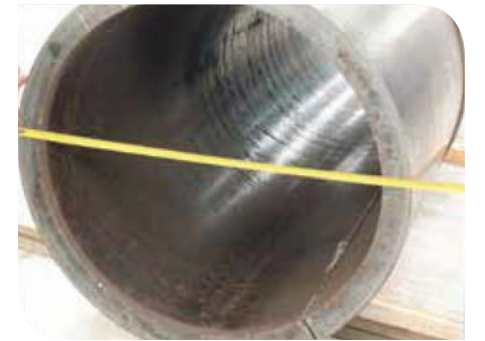
IMPROVED  
BENDING  
PERFORMANCE

✓ Minimum bending radius  
as tight as 1.2 times roll  
diameter at maximum  
thickness and length with  
proper material specifications

**+** High Precision

✓ Roundness  
✓ Alignment  
✓ Small and consistent Flat End

MARCOVIL STÖLTING



ROUNDNESS

✓ Maximum Deviation = Up to (1% - 2%) x Nominal  $\varnothing$



ALIGNMENT

✓ Uniform Longitudinal distance  
along the completed bend  
✓ Vertical Alignment between  
extremities



FLAT END

✓ Flat End = (1.5 to 2) x Plate  
Thickness

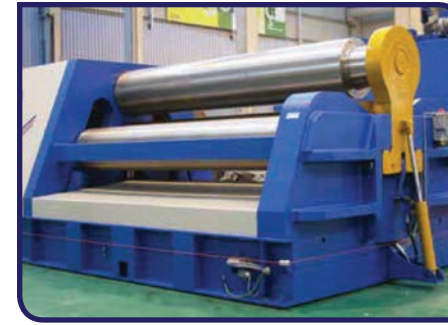
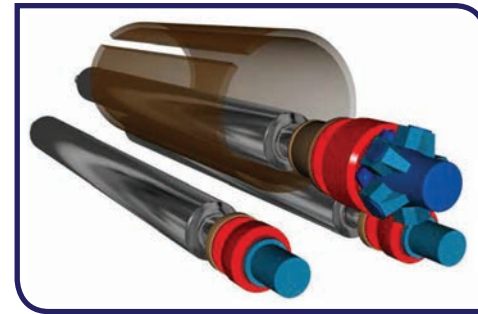
**NOTE:** Stated values based on properly  
cut certified plate material in Mild steel.



## 3-Roll Hydraulic Plate Roll Bending Machine

Standards models available with thickness capacity from .083" to 6" and length capacity from 19.5" to 236".

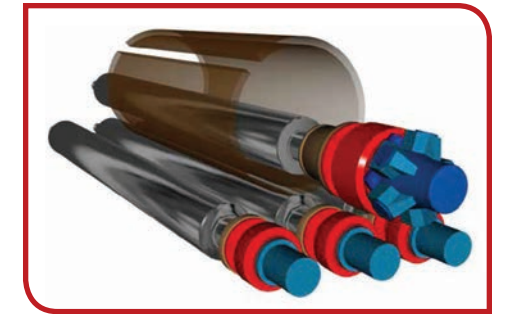
3 Roll Plate Bending Machines are capable of demanding roll bending applications. Pre-bending operation is performed applying pressure between the side and upper roll. The symmetrical arrangement of the side rolls make pre-bending possible from both sides without changing the sheet. The bending operation continues by moving the side rolls to create appropriate radius.



## 4-Roll Hydraulic Plate Roll Bending Machine

Standard models available with thickness capacity less than .039" to 6" and length capacity from 19.5" to 236".

The powerful hydraulic system on 4 Roll Plate Bending Machines offer greater precision in the bending process. Clamping pressure between lower and upper roll during bending is highly consistent when complex pre-bending operations are required. The symmetrical arrangement of the side rolls make pre-bending possible from both sides without changing the sheet. The bending operation continues by moving the side rolls to create appropriate radius.



### FEATURES

- Linear guide system for roll movement
- Solid steel construction
- Steel frames in S355JR (A572) welded and CNC machined
- All rolls independently driven
- Rolls in 42CrMo4 (ASTM 4140)
- Crowning on rolls
- Rolls supported in 4 anti-wear pillow blocks (3-Roll)  
Rolls supported in 6 anti-wear pillow blocks (4-Roll)
- Spherical drop end to absorb the axial forces
- Perfect electronic parallelism of the side rolls (with NC System - 3-Rolls)  
(with CNC or NC System - 4-Rolls)
- Hydraulic overload protection
- Cone bending operation
  - Inclination of the side rolls (3-Roll)
  - Inclination of the bottom and the side rolls (4-Roll)
  - Cone device in hardened wear plate
- Variable speed (CNC model only)
- Hardened rolls (50-55 Hrc)
- Movable control panel
- Manual central lubrication system
- Safety cable emergency stop system
- Built accordingly CE safety directives
- CE Certified

Model	Useful Length	THICKNESS CAPACITIES						Ø Top Roll	Ø Side Rolls	Power	Weight	Dimensions L x W x H		
		5 x Ø Top Roll		3 x Ø Top Roll		1.2 x Ø Top Roll								
		Bending	Prebending	Bending	Prebending	Bending	Prebending							
MCH 3RP 20-150	80.7	0.31	0.24	0.28	0.20	0.24	0.16	5.91	5.91	4.0	6336	157	44	44
MCH 3RP 20-180	80.7	0.39	0.31	0.35	0.28	0.31	0.24	7.09	7.09	5.0	7744	157	49	48
MCH 3RP 20-200	80.7	0.47	0.39	0.43	0.35	0.39	0.31	7.87	7.87	7.0	8140	157	51	51
MCH 3RP 20-230	80.7	0.55	0.47	0.51	0.43	0.47	0.39	9.06	9.06	8.5	12100	157	57	52
MCH 3RP 20-260	80.7	0.79	0.63	0.71	0.55	0.63	0.47	10.24	10.24	10.5	15180	172	60	54
MCH 3RP 20-320	80.7	0.98	0.79	0.87	0.71	0.79	0.63	12.60	12.60	14.0	20900	172	67	59
MCH 3RP 20-350	80.7	1.18	1.02	1.10	0.94	1.02	1.18	13.78	13.78	17.5	28600	175	79	67
MCH 3RP 20-400	80.7	1.38	1.18	1.26	1.10	1.18	1.02	15.75	15.75	22.5	33110	175	84	71
MCH 3RP 20-440	80.7	1.77	1.50	1.61	1.42	1.50	1.26	17.32	17.32	27.5	39248	175	86	73
MCH 3RP 25-180	100.4	0.31	0.24	0.28	0.20	0.24	0.16	7.09	7.09	4.5	8382	177	49	48
MCH 3RP 25-200	100.4	0.39	0.31	0.35	0.28	0.31	0.24	7.87	7.87	6.5	9020	177	51	51
MCH 3RP 25-230	100.4	0.47	0.39	0.43	0.35	0.39	0.31	9.06	9.06	9.0	13200	177	53	52
MCH 3RP 25-260	100.4	0.55	0.47	0.51	0.43	0.47	0.39	10.24	10.24	11.0	16610	192	60	54
MCH 3RP 25-320	100.4	0.79	0.63	0.71	0.55	0.63	0.47	12.60	12.60	13.0	23100	192	67	59
MCH 3RP 25-350	100.4	0.98	0.79	0.87	0.71	0.79	0.63	13.78	13.78	17.5	30800	195	79	67
MCH 3RP 25-400	100.4	1.18	1.02	1.10	0.94	1.02	0.79	15.75	15.75	21.5	36520	195	84	71
MCH 3RP 25-440	100.4	1.38	1.18	1.26	1.10	1.18	1.02	17.32	17.32	28.0	43560	195	86	73
MCH 3RP 30-200	122.0	0.31	0.24	0.28	0.20	0.24	0.16	7.87	7.87	5.0	12760	197	51	51
MCH 3RP 30-230	122.0	0.39	0.31	0.35	0.28	0.31	0.24	9.06	9.06	8.0	15400	197	53	52
MCH 3RP 30-260	122.0	0.47	0.39	0.43	0.35	0.39	0.31	10.24	10.24	10.5	18150	212	60	54
MCH 3RP 30-320	122.0	0.55	0.59	0.51	0.43	0.47	0.39	12.60	12.60	13.0	24200	212	60	54
MCH 3RP 30-350	122.0	0.79	0.63	0.71	0.55	0.63	0.47	13.78	13.78	15.5	33000	215	79	67
MCH 3RP 30-400	122.0	0.98	0.79	0.87	0.71	0.79	0.63	15.75	15.75	20.5	39600	215	84	71
MCH 3RP 30-440	122.0	1.18	1.02	1.10	0.94	1.02	0.79	17.32	17.32	26.0	46200	215	86	73

Capacities based on mild steel with yield point 260 N/mm<sup>2</sup>.

Model	Useful Length	THICKNESS CAPACITIES						Ø Top Roll	Ø Side Rolls	Power	Weight	Dimensions L x W x H		
		5 x Ø Top Roll		3 x Ø Top Roll		1.2 x Ø Top Roll								
		Bending	Prebending	Bending	Prebending	Bending	Prebending							
MCH 4R 20-150	80.7	0.31	0.24	0.28	0.20	0.24	0.16	5.91	5.12	4.5	7656	157	51	47
MCH 4R 20-180	80.7	0.39	0.31	0.35	0.28	0.31	0.24	7.09	6.30	6.5	8910	157	56	49
MCH 4R 20-200	80.7	0.47	0.39	0.43	0.35	0.39	0.31	7.87	7.09	9.0	11000	157	57	50
MCH 4R 20-230	80.7	0.55	0.47	0.51	0.43	0.47	0.39	9.06	7.87	11.0	17490	157	59	54
MCH 4R 20-260	80.7	0.79	0.63	0.71	0.55	0.63	0.47	10.24	8.66	13.0	22660	172	75	57
MCH 4R 20-320	80.7	0.98	0.79	0.87	0.71	0.79	0.63	12.60	11.02	17.5	29260	177	83	62
MCH 4R 20-350	80.7	1.18	1.02	1.10	0.94	1.02	1.18	13.78	12.60	22.0	32120	177	92	70
MCH 4R 20-400	80.7	1.38	1.18	1.26	1.10	1.18	1.02	15.75	14.17	28.5	36410	177	94	73
MCH 4R 20-440	80.7	1.77	1.50	1.61	1.42	1.50	1.26	17.32	17.32	35.0	43780	179	97	76
MCH 4R 25-180	100.4	0.31	0.24	0.28	0.20	0.24	0.16	7.09	6.30	5.5	8580	177	56	48
MCH 4R 25-200	100.4	0.39	0.31	0.35	0.28	0.31	0.24	7.87	7.09	8.5	12100	177	57	50
MCH 4R 25-230	100.4	0.47	0.39	0.43	0.35	0.39	0.31	9.06	7.87	11.0	18700	177	59	54
MCH 4R 25-260	100.4	0.55	0.47	0.51	0.43	0.47	0.39	10.24	8.66	14.0	24200	192	75	57
MCH 4R 25-320	100.4	0.79	0.63	0.71	0.55	0.63	0.47	12.60	12.60	16.5	32670	197	83	62
MCH 4R 25-350	100.4	0.98	0.79	0.87	0.71	0.79	0.63	13.78	12.60	22.0	35200	197	92	70
MCH 4R 25-400	100.4	1.18	1.02	1.10	0.94	1.02	0.79	15.75	14.17	27.5	40920	197	94	73
MCH 4R 25-440	100.4	1.38	1.18	1.26	1.10	1.18	1.02	17.32	14.96	36.0	48400	199	97	76
MCH 4R 30-200	122.0	0.31	0.24	0.28	0.20	0.24	0.16	7.87	7.09	6.5	13860	197	56	50
MCH 4R 30-230	122.0	0.39	0.31	0.35	0.28	0.31	0.24	9.06	7.87	10.0	20020	197	59	54
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MCH 4R 30-320	122.0	0.55	0.59	0.51	0.43	0.47	0.39	12.60	11.02	13.0	36080	217	83	62
MCH 4R 30-350	122.0	0.79	0.63	0.71	0.55	0.63	0.47	13.78	12.60	16.5	38500	217	92	70
MCH 4R 30-400	122.0	0.98	0.79	0.87	0.71	0.79	0.63	15.75	14.17	26.5	45320	217	94	73
MCH 4R 30-440	122.0	1.18	1.02	1.10	0.94	1.02	0.79	17.32	14.96	33.0	45320	217	97	76

Capacities based on mild steel with yield point 260 N/mm<sup>2</sup>.