DURMA

Head Quarter & Ataevler

Durmazlar has aimed continous development since 1956

Owes one of the world's most contemporary production plants in the production technology business .3 different plants oriented to different product families, 1000 dedicated employees and 150.000 m2 footprint.

In order to offer solution according to clients' needs and enriching the quantity and quality of its own patent rights; long experienced Engineering Department transformed to Durma Research & Develepment Center has opened in the year 2010. Designed and engineered with modern technics; its products are equipped with proven quality components to precisely fulfill your requirements. We serve " accuracy, speed, flexibility, durability, reliability and advanced technology" with high performance/price ratio.Worldwide Durma distributors and technical support network assures perfect support to our clients.

With its 55 years of experience, its product quality, innovative solutions Durma gives importance and cares you with proactive approach. We thank all our clients to hold us at the top segment of the world brands.

Laser Factory

Başköy Factory

Durma Plate Rolls

Reliable mechanical and hydraulics systems are designed by experienced engineers of Durma by utilising parametric 3D engineering technology as well as implementation of mechanical and kinematics analysis.

Safe and best performance electrics and electronics systems are designed by Durma Research & Development Center.After the longterm tests and evaluations machines can be manufactured in serial production.

Robust Machine Body for long life-time machines uses in the bending processes
User friendly Control Unit options
Low maintainence & Best bendng performance by strengthen Bearing System
Precise bendings by Hardened Rolls And Crowning System
Short cycle times by high Torque Drive System

HRB -4 Series

Hydraulics Plate 4-Roll Bending Machine
Accurate, ease of operate, fastest roll bendings

HRB-3 Series

Hydraulics Plate 3-Roll Bending Machine
Flexiblity of 3 roll for medium sizes by Durma technology
Prebending of both the leading and trailing edge

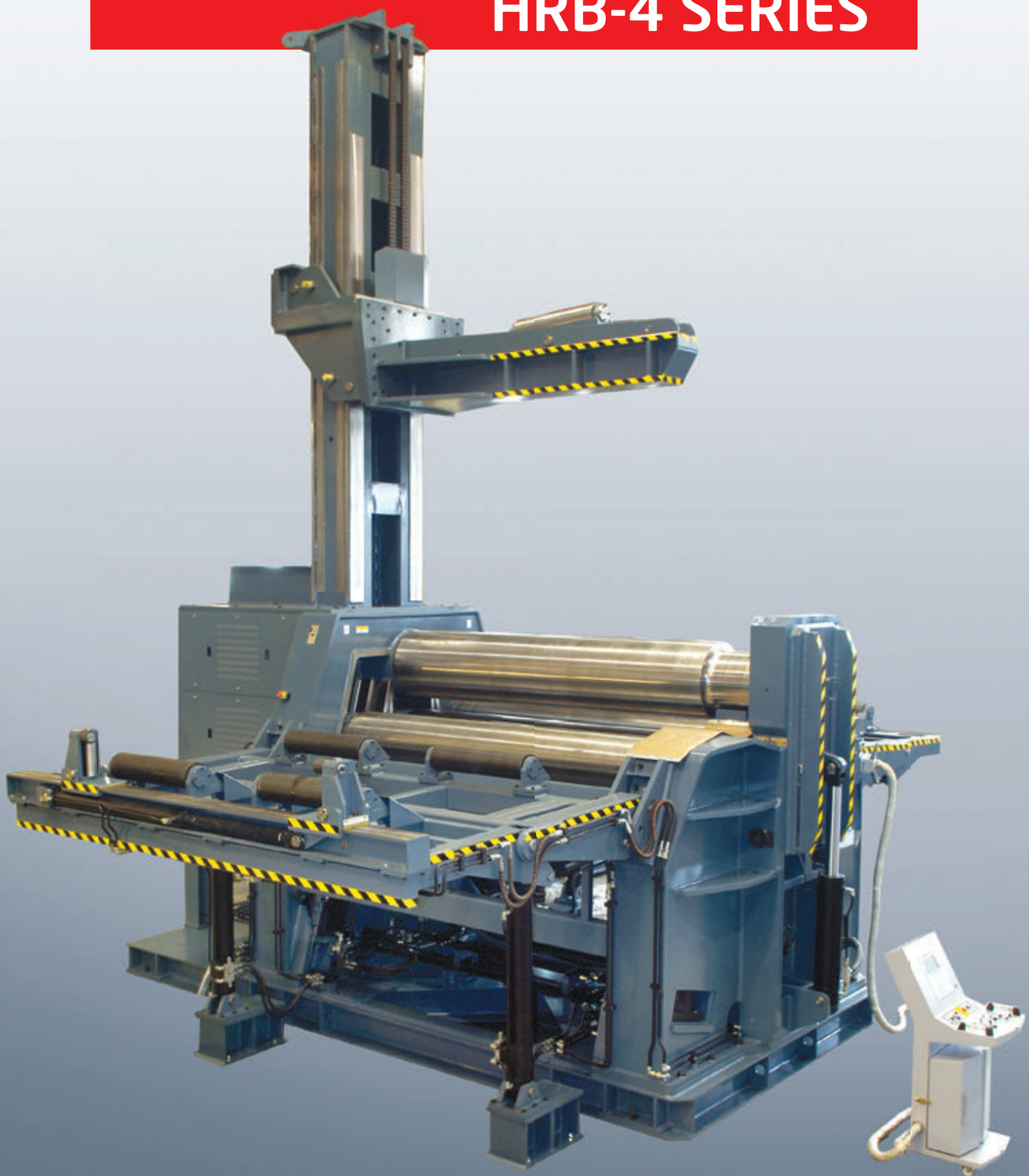
HRB-3V Series

Hydraulics Plate 3-Variable Bending Machine
Variable bottom rolls symetry opening machine is best choice for wind tower style of production

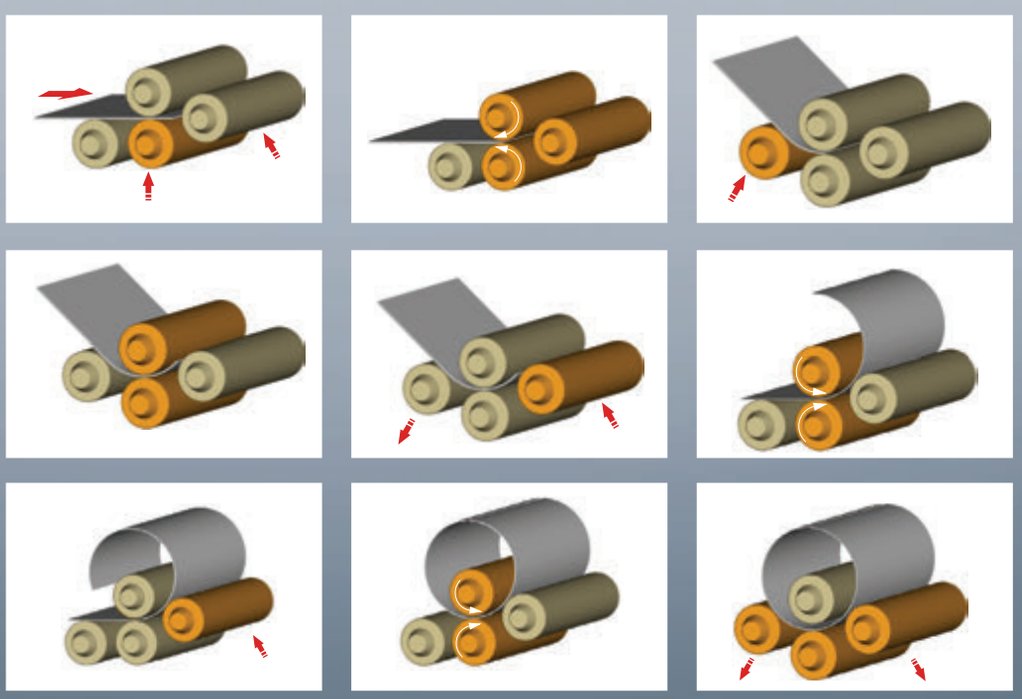
MRB Series

Motorised Plate 3-Assymetrical Bending Machine
Economical pinching for variety of Rolling process

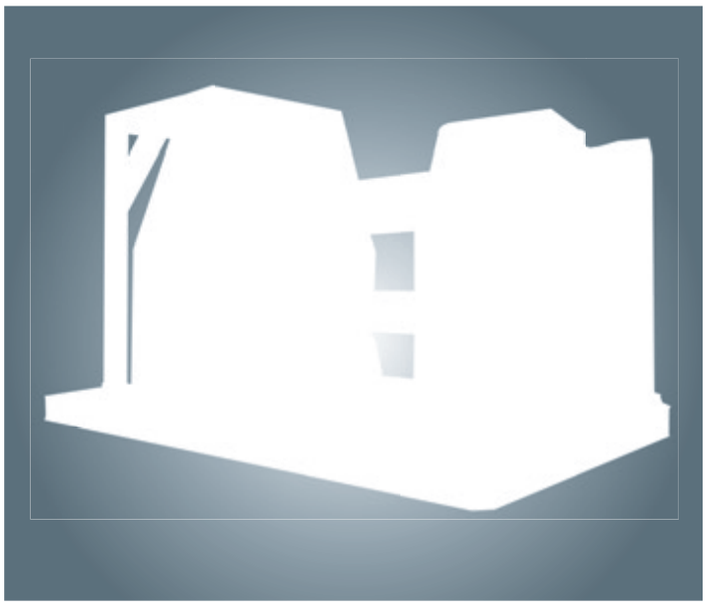
HRB-4 SERIES



- *Accurate, ease of operate, fastest roll bendings*
- *Flat zone of the sheet edges is minimised*
- *Pre-bending, conical bending and ellipse bending can be done easily*
- *Double pre-bends (both ends) in one pass*
- *Hydraulic and electrical systems have been safeguarded from overloads and require minimum maintenance. Hydraulic and electrical components are modular and designed according to world standards.*
- *The sheet is controlled by tightening of top and bottom rolls*
- *Most suitable bending operation for CNC applications.*
- *More efficient for cycle times*
- *User friendly operations without dependence to operator competence.*

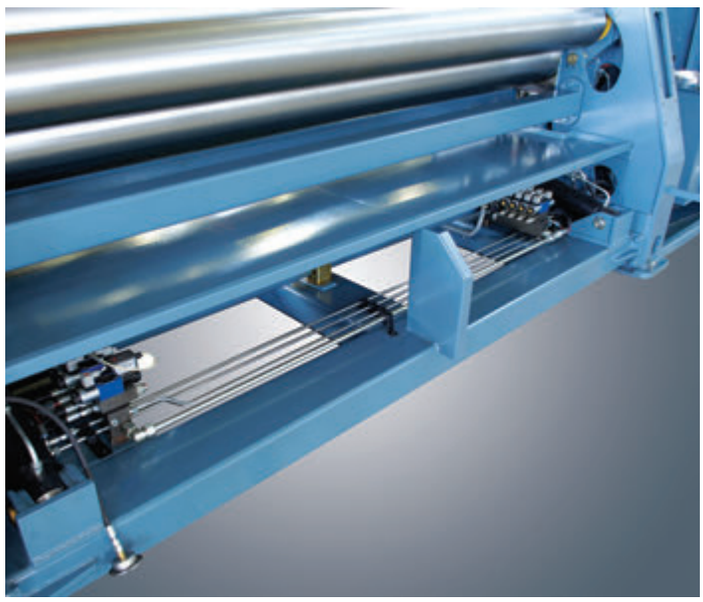


HRB-4 Series Features



Robust Machine Body

Machine body is strengthen and lowered to minimise the twists and deformation. Machine body, frame and steel bar connections are stres relieved after the welding operation.

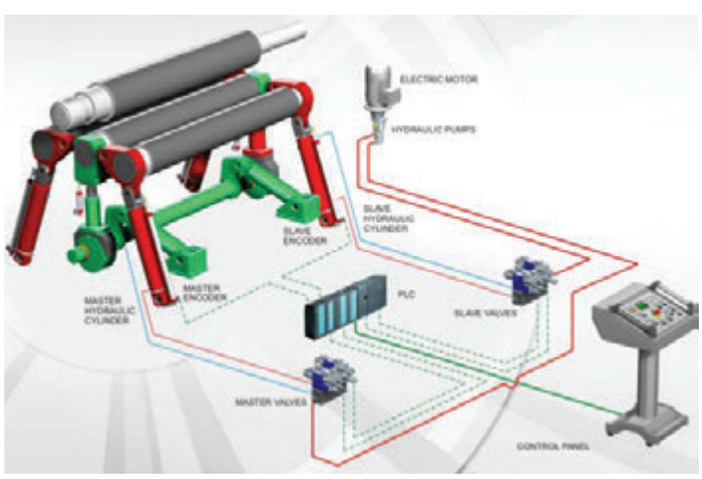


Planetary Swing Rolls System

Side rolls are guided by swing beds which allows them to act as 2 independent axes moving on curve shape orbits.Side rolls are approaches to the top roll on curve movement which allows to get perfect prebendings as well as spring back minimisation. (Rectilinear Rolls System designed for top roll dia ≥460mm)

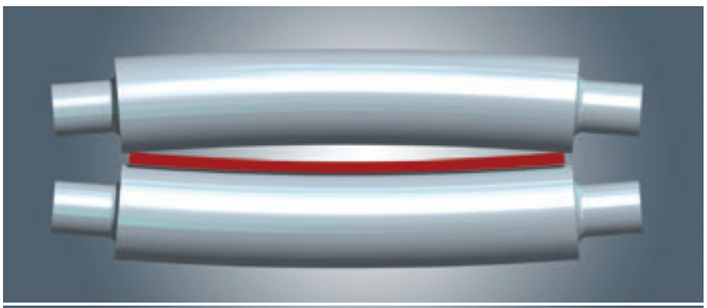
Strengthen Bearing System

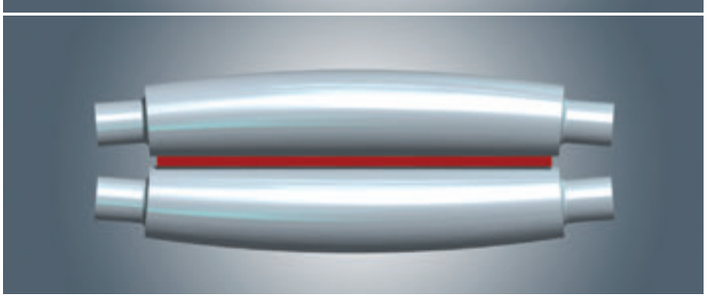
Rolls are guided with spherical roller bearings and bronze housings. Guiding system requires less lubrication and keeps it precision in long term.



Synchronized Rolls System

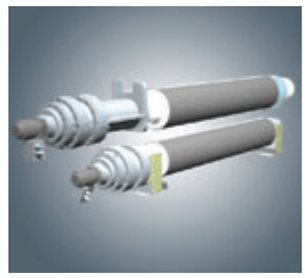
Bottom roll tightens different thickness of sheets without deformation and taking to the consideration of its paralelism by hydraulic adjustable pressure torsion bar.





Hardened Rolls And Crowning System

Highly durable carbon steel (C45) rolls are machined by CNC Lathes with high precision without creating notch effect.
Working surfaces of the rolls are induction hardened to HRC 54±2
Rolls are machined as crowning shape to compansate the deflactions on the rolls during the bending.

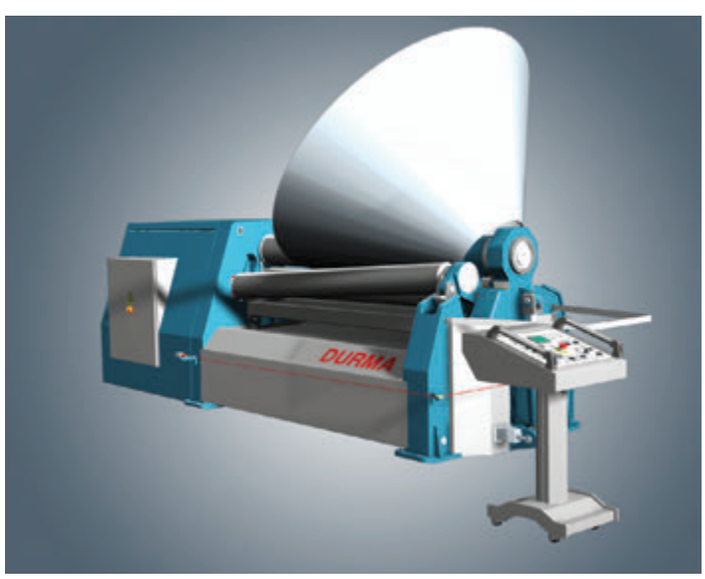


2-4 Drive
Top roll Ø 140mm - 430mm

4-4 Drive
Top roll Ø 460mm - 1070mm

High Torque Drive System

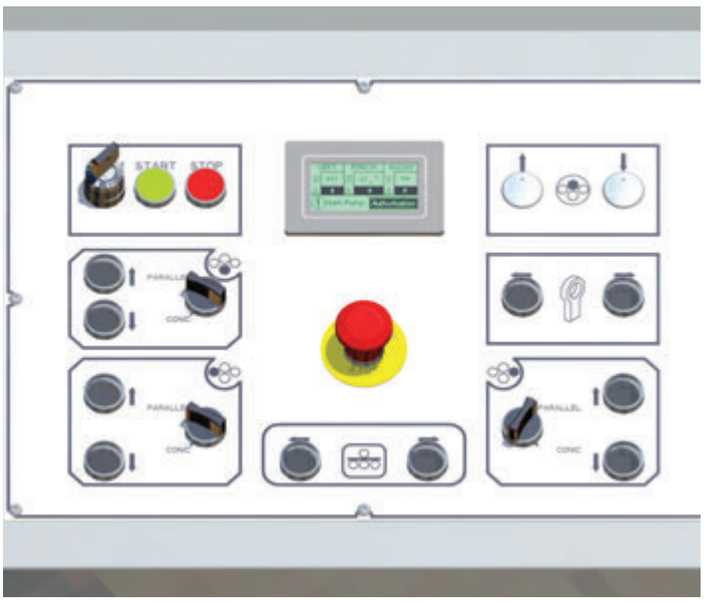
By its high torque, Durma machines bend the sheet with less steps.
Top and bottom rolls powered by planatery reducer, hydraulic motor and gear system.
Strong Hydraulic Brake system does not allow the sheet to slip back
Pressure safety valves are protecting the hydromotor and other components from overloads and peak pressures.



Conical Bending System

By strong body and angular bottom and side rolls, wide angle & small diameter conical parts are easily bend.
While machines in the market is bending conical bendings of 3 times of top roll,Durma HRB-4 machines can bend conical bending of 1.5 times easily.

Control Units



Digital readout

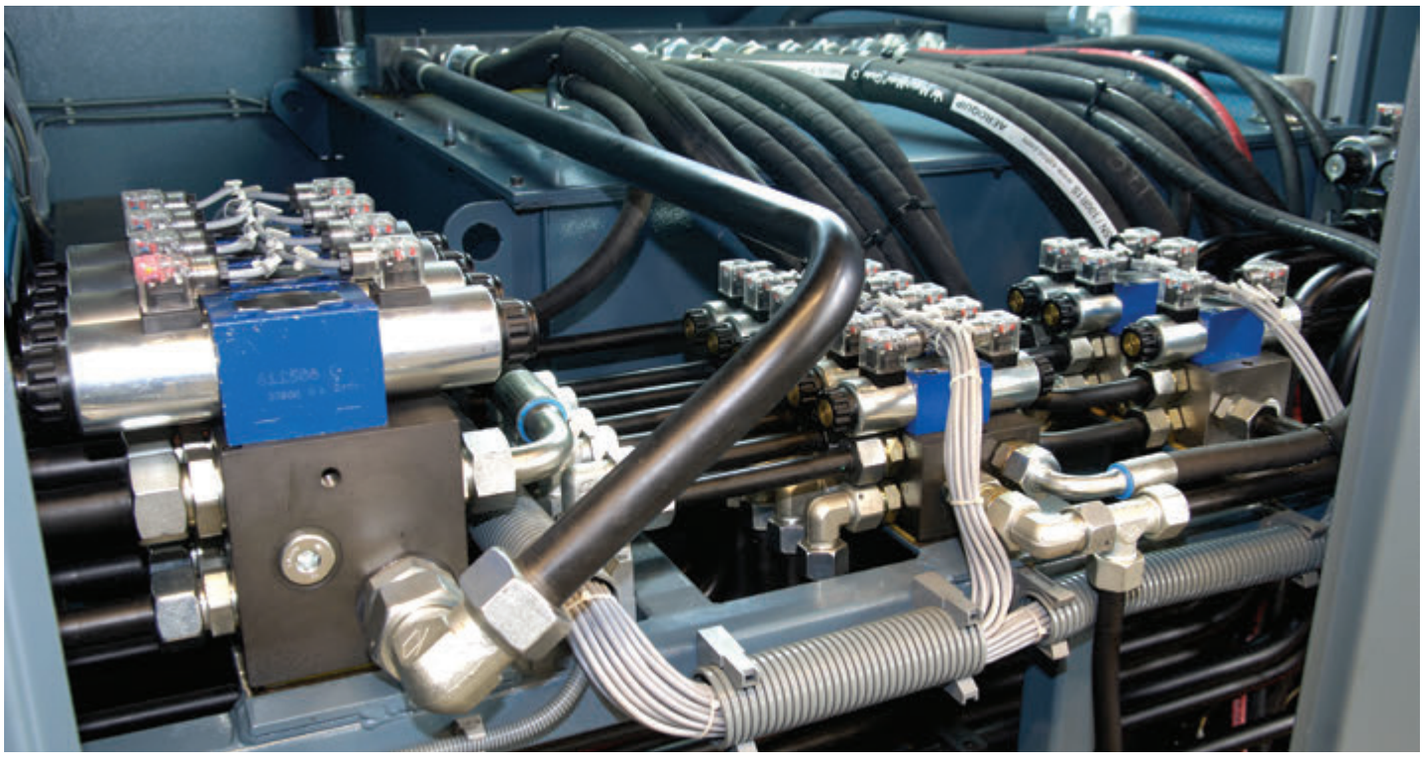
Ensures the machine's bottom and side rollers' synchronous operation.
This process is provided via the PLC with 6-axis control and touch screen operator panel. Bending up to 5 steps of the program, is ease of use and saves time.

NC Control

İn addition to the Digital readout control system, In teaching mode for the operator to bend all the steps are recorded respectively. In automatic mode all recorded movements are repeated, respectively by the machine. NC control system has the capacity to save 70 programs consisting of Max 100-steps.

CNC Control

CNC control system, in addition to the NC control system with its graphical control system allows the bending done step by step or automatically calculating the bendind steps without the need for operator skill. Due to ready bending shapes polisentrik bending and twisting like an ellipse, is also easily done

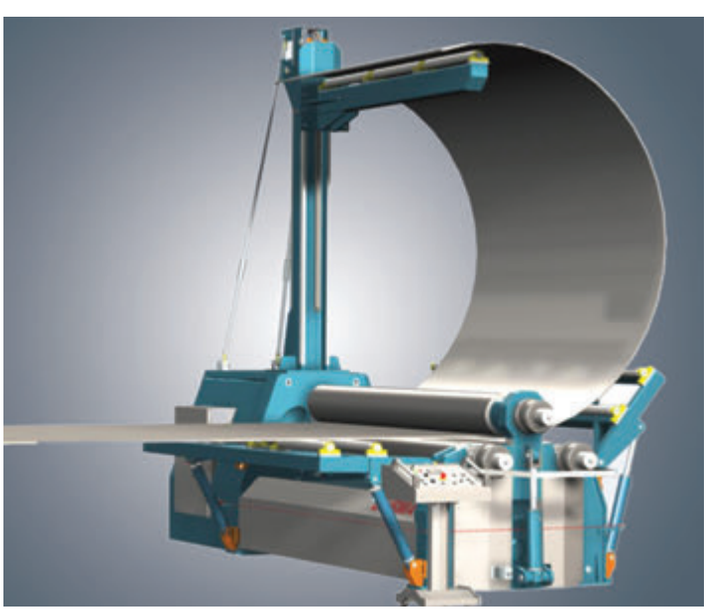


Hydraulic System

Machine movements are trigerred by hydraulic components. The precision on the all axes are acquired by world leader valves' high speed response ability. And pressure safety valves used against peak pressures and overload, provides protection for motors and other components.

Electrical and Electronic System

Electrial system designed compatible with CE safety regulations. The system consists of well known electrical components .The system is protected by current overloadings for its components', powersupplies, electronics and motors.



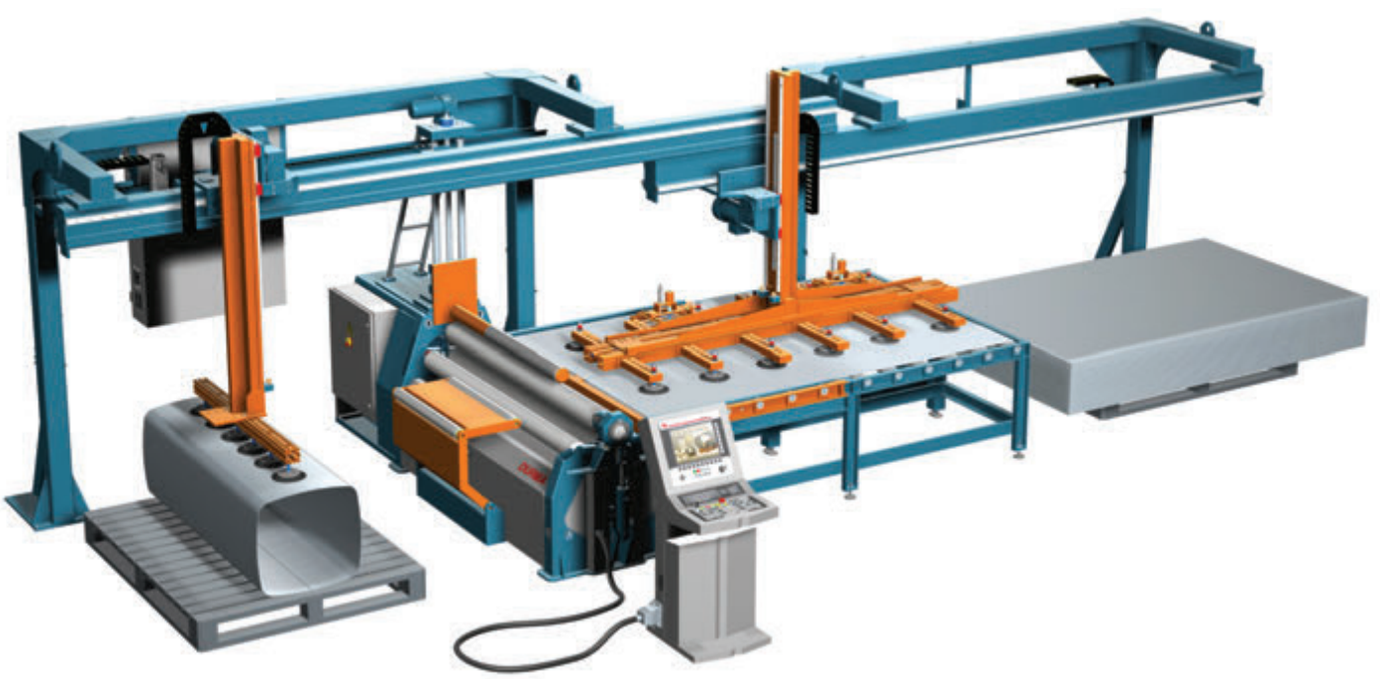
Top Support System

In large-scale bend it ensures internal support in the vertical direction.

Side Supports System

In large-scale bend, it ensures support for the machine from both sides from the bottom. The rip fence systems, hydraulically separated and controlled from the operator panel can be added to the machine as an option.

Automatic Bending Loading Unloading System



HRB-4

STANDARD EQUIPMENTS

- CE-Norm for EU
- Control unit with digital readout
- Conical bending
- Induction hardened rolls
- Side rolls positioning from electronic synchronize PLC
- Bottom roll rigid mechanic synchronized
- Stress relieved steel contruction body
- Rolls seated with bearings
- Top roll hydraulic opening device
- Bottom and top rolls hydraulic motor driven and planetary gear box
- Side rolls hydramotor, diameter 360 and above gear box plus hydramotor
- Electrical and hydraulic protection against overloads
- Hydraulic pressure adjustable bottom rools
- All axis positioning with adjustable speed at CNC machines

OPTIONAL EQUIPMENTS

- NC Control Unit
- CNC Control Unit - Color - graphic Control
- Polished Rolls
- Variable speed control
- Oil Coolant
- Side supports at both side
- Vertical support crane system (mechanical or hydraulics)
- Changeable top Roll for smaller diameters
- Longer rolls for profile bending
- Welding possibility on the machine
- Preparation for Vertical support crane system
- Material feeding table
- Special applications for Wind-tower production

HRB-4

		"Min. Int. Dia Ø Dmin"												
		Ødx1,5	Ødx3	Ødx5										
	Bending Length	Pre-Bending Capacities	Bending Capacities	Bending Capacities	Top Roll	Bottom Roll	Side Rolls	Max. Pass Through	Length	Width	Height	Working Height	Weight	Motor Power
	L(mm)	s(mm)	S(mm)	S(mm)	ød(mm)	ød(mm)	ød(mm)	A(mm)	U(mm)	G(mm)	Y(mm)	C(mm)	kg	(kW)
HRB-4 1507	1550	5	7	8	170	150	140	15	3040	970	1140	865	2600	5,5
HRB-4 2006	2050	4	6	7	170	150	140	15	3540	970	1140	865	3030	5,5
HRB-4 2008	2050	6	8	10	200	190	170	30	3830	1160	1180	840	4730	7,5
HRB-4 2010	2050	8	10	12	210	190	180	30	3830	1160	1180	835	4940	7,5
HRB-4 2013	2050	10	13	15	230	210	190	30	3830	1160	1180	825	5280	11
HRB-4 2016	2050	13	16	18	270	250	220	50	4260	1660	1590	1155	9600	15
HRB-4 2020	2050	16	20	22	300	270	220	50	4260	1660	1590	1140	10000	18,5
HRB-4 2025	2050	20	25	28	330	300	240	50	4260	1660	1590	1125	10800	22
HRB-4 2030	2050	25	30	33	360	330	270	60	4510	2060	2050	1510	15700	30
HRB-4 2035	2050	30	35	38	400	370	290	65	4510	2060	2050	1490	16800	37
HRB-4 2040	2050	35	40	44	430	400	320	70	4510	2060	2050	1475	17900	45
HRB-4 2065	2050	50	65	70	490	490	390	100	5250	2300	2600	1865	30000	60
HRB-4 2506	2550	4	6	7	200	190	170	30	4330	1160	1180	840	5240	7,5
HRB-4 2508	2550	6	8	10	210	190	180	30	4330	1160	1180	835	5500	7,5
HRB-4 2510	2550	8	10	12	230	210	190	30	4330	1160	1180	825	5920	11
HRB-4 2513	2550	10	13	15	270	250	220	50	4760	1660	1590	1155	10600	15
HRB-4 2516	2550	13	16	18	300	270	220	50	4760	1660	1590	1140	11100	18,5
HRB-4 2520	2550	16	20	22	330	300	240	50	4760	1660	1590	1125	12100	22
HRB-4 2525	2550	20	25	28	360	330	270	60	5010	2060	2050	1510	17500	22
HRB-4 3006	3100	4	6	7	210	190	180	30	4880	1160	1180	835	6200	7,5
HRB-4 3008	3100	6	8	10	230	210	190	30	4880	1160	1180	825	6700	11
HRB-4 3010	3100	8	10	12	270	250	220	50	5310	1660	1590	1155	11800	11
HRB-4 3013	3100	10	13	15	300	270	220	50	5310	1660	1590	1140	12300	15
HRB-4 3016	3100	13	16	18	330	300	240	50	5310	1660	1590	1125	13400	18,5
HRB-4 3020	3100	16	20	22	360	330	270	60	5560	2060	2050	1510	19000	22
HRB-4 3025	3100	20	25	28	400	370	290	65	5560	2060	2050	1490	20800	30
HRB-4 3030	3100	25	30	33	430	400	320	70	5560	2060	2050	1475	22600	37
HRB-4 3035	3100	30	35	38	460	460	370	90	6200	2300	2530	1875	34000	44
HRB-4 3040	3100	35	40	44	490	490	370	100	6300	2300	2600	1865	40000	52
HRB-4 3050 *	3100	40	50	55	500	500	410	100	6400	2350	2650	1840	45000	60
HRB-4 3065 *	3100	50	65	70	650	610	500	125	6350	3240	3660	2825	70000	74
HRB-4 3085 *	3100	70	85	90	760	720	600	160	7500	3600	3950	3000	90000	110
HRB-4 3160 *	3100	140	160	168	1070	1020	870	280	8500	5300	5500	4190	230000	300
HRB-4 4008	4100	6	8	10	300	270	220	50	6310	1660	1590	1140	14600	11
HRB-4 4013	4100	10	13	15	360	330	270	60	6560	2060	2050	1510	22400	18,5
HRB-4 4016	4100	13	16	18	400	370	290	65	6560	2060	2050	1490	24600	22
HRB-4 4020	4100	16	20	22	430	400	320	70	6560	2060	2050	1475	27000	30
HRB-4 4035 *	4100	30	35	38	500	500	410	100	7400	2350	2650	1840	54000	52

*For 240 N/mm² yield point material * Ø Dmin= Ødx2 (Pre Bending) ; Ødx4 (Bending) Conical bending capacity can be taken half of above values.*

HRB-3 SERIES

- *Flexible roller especially for medium thick*
- *Cost effective solutions for big diameters*
- *Wide working range*
- *Excellence of cone bends*
- *Good value for precision and reliability*
- *All 3 rolls are driven with superior roll torque and speed*

HRB-3

STANDARD EQUIPMENTS

- CE-Norm for EU
- Control unit with digital readout
- Conical bending
- Induction hardened rolls
- Side rolls positioning from electronic synchronize PLC
- Bottom roll rigid mechanic synchronized
- Stress relieved steel contruction body
- Rolls seated with bearings
- Top roll hydraulic opening device
- Top rolls hydraulic motor driven and planetary gear box
- Side rolls hydramotor, diameter 360 and above gear box plus hydramotor
- Electrical and hydraulic protection against overloads

OPTIONAL EQUIPMENTS

- Polished Rolls
- Variable speed control
- Oil Coolant
- Side supports at both side
- Vertical support crane system (mechanical or hydraulics)
- Material feeding table
- Changeable top Roll for smaller diameters
- Longer rolls for profile bending
- Welding possibility on the machine
- Preparation for Vertical support crane system

HRB-3

			Min. Int. Dia Ø Dmin									
			Ødx1,5	Ødx3								
	Bending Length	Pre-Bending Capacities	Bending Capacities	Top Roll	Side Rolls	Max. Pass Through	Length	Width	Height	Working Height	Weight	Motor Power
	L(mm)	s(mm)	S(mm)	ød(mm)	ød(mm)	A(mm)	U(mm)	G(mm)	Y(mm)	C(mm)	kg	(kW)
HRB-3 2006	2050	4	6	185	165	70	3850	1300	1150	810	2500	5.5
HRB-3 2008	2050	6	8	200	180	70	3850	1300	1150	820	3300	7.5
HRB-3 2010	2050	8	10	220	200	55	3950	1400	1150	820	4000	7.5
HRB-3 2013	2050	10	13	230	210	80	3950	1400	1500	900	4800	11
HRB-3 2016	2050	13	16	270	250	100	4150	1650	1400	980	6000	15
HRB-3 2020	2050	16	20	300	270	100	4150	1650	1400	1030	7200	18.5
HRB-3 2025	2050	20	25	330	290	100	4350	1900	1700	1075	9300	22
HRB-3 2030	2050	25	30	360	320	100	4350	1900	1700	1235	10000	30
HRB-3 2506	2550	4	6	200	180	70	3850	1300	1150	820	3800	7.5
HRB-3 2508	2550	6	8	220	200	55	4450	1400	1150	820	4500	7.5
HRB-3 2510	2550	8	10	230	210	80	4450	1400	1500	900	5500	11
HRB-3 2513	2550	10	13	270	250	100	4650	1650	1400	980	6700	15
HRB-3 2516	2550	13	16	300	270	100	4650	1650	1400	1030	8000	18.5
HRB-3 2520	2550	16	20	330	290	100	4850	1900	1700	1075	10400	22
HRB-3 2525	2550	20	25	360	320	100	4850	1900	1700	1235	11500	22
HRB-3 3006	3100	4	6	220	200	55	5000	1400	1150	820	5000	7.5
HRB-3 3008	3100	6	8	230	210	80	5000	1400	1500	900	6000	7.5
HRB-3 3010	3100	8	10	270	250	100	5200	1650	1400	980	7500	11
HRB-3 3013	3100	10	13	300	270	100	5200	1650	1400	1030	9000	15
HRB-3 3016	3100	13	16	330	290	100	5400	1900	1700	1075	11800	18.5
HRB-3 3020	3100	16	20	360	320	100	5400	1900	1700	1235	12500	22
HRB-3 3025	3100	20	25	410	380	70	6000	2100	1900	1240	17000	30
HRB-3 3030	3100	25	30	430	390	100	6000	2200	2000	1430	21000	37
HRB-3 4008	4100	6	8	300	270	100	6200	1650	1400	1030	11000	11
HRB-3 4013	4100	10	13	360	320	100	6400	1900	1700	1235	18000	18.5
HRB-3 4016	4100	13	16	410	380	70	7000	2100	1900	1240	22000	22

For 240 N/mm² yield point material
** Ø Dmin= Ødx2 (Pre Bending) ; Ødx4 (Bending)*
Conical bending capacity can be taken half of above values.

HRB-3V SERIES

3 rolls variable axis plate roll bending machines are more precise,faster, more productive and safer plate roll benders by its user friendly operations without dependence to operator competence.

They are suitable for medium and thick plate bending. Unlike the usual cylinder machines, the lower rolls move horizontally to right and left and the upper roll moves up and down.
As at 4 roll Machines steel load parallel to the floor so machine pit can be at machine working level
With the system functioning upper roller trainer can be used as a traditional press.

Forming operations and calibration of the welded tubes finishes.
The sheet is controlled by tightening of top and bottom rolls.This operation does not allow the sheet is skid and fall down.The machine can also be installed below the ground.

Please ask for detail specifications

MRB-S SERIES

MOTORISED ASSYMETRICAL 3 ROLL MACHINES

Especially for thinner sheets with small lot sizes
Easy prebending thanks to top & bottom rolls tighten the workpiece
Cost-oriented solutions for small and medium enterprises
Wide range of industrial usage

STANDARD EQUIPMENTS
CE
Conical bending
Motorised back roll
Top and bottom rolls gear driven
Pendant command panel
SAE 1050 steel rolls
Induction hardened rolls
Stress relieved steel construction
Support on 2,5 and 3 m machines
Brake system for precise bendings

OPTIONAL EQUIPMENTS
Digital readout
Motorised bottom roll tightening
Ground rolls
Roll extention for profile bending
Special rolls for profile bending

MRB-S Series	Unit	1506	2005	2006	2504	2506	2508	3004	3006
Bending length	mm	1530	2030	2030	2530	2530	2530	3030	3030
Bending capacity	mm	6	5	6	4	6	8	4	6
Pre bending	mm	4	4	5	3	4	6	2	4
Top roll Ø	mm	150	160	170	170	190	220	180	220
Motor power	kW	4	4	4	4	5,5	5,5	4	5,5
Length	mm	3100	3600	3600	4100	4250	4250	4600	4750
Height	mm	1120	1120	1120	1120	1200	1200	1120	1200
Width	mm	1020	1020	1020	1020	1150	1150	1020	1150
Weight	kg	2100	2300	2400	2700	3750	4430	4250	4920

MRB SERIES

STANDARD EQUIPMENTS
CE
Conical Bending
Bottom and back rolls manuel
Top and bottom rolls powered by electric motor,gearbox and gear drive
Pendant control panel
Cast Iron frame
Precise bending with motor brake

OPTIONAL EQUIPMENTS
Digital readout
Motorised botttom roll
Motorised back roll
Hardened rolls
Ground rolls
Extented rolls for profile bending
Special rolls for profile bending

MRB Series	Unit	1004	1204	1503	1504	2004
Bending length	mm	1030	1280	1530	1530	2030
Bending capacity	mm	4	4	3	4	4
Pre bending	mm	3	3	2	3	2.5
Top roll Ø	mm	110	120	110	130	140
Motor power	kW	2.2	2.2	2.2	2.2	2.2
Length	mm	1900	2150	2400	2400	2900
Height	mm	1120	1120	1120	1120	1120
Width	mm	940	940	940	940	940
Weight	kg	1195	1345	1388	1425	1565

MRB-E SERIES

STANDARD EQUIPMENTS

- CE
- Conical bending
- Bottom and back rolls manual
- Cast Iron frame
- SAE 1050 steel rolls
- Rode bending channels on bottom and back rolls
- Pendant foot pedal
- Emergency stop

OPTIONAL EQUIPMENTS

- Hardened rolls
- Ground rolls

MRB E Series	Unit	1001	1002	1003	1202	1203	1525	2015
Bending length	mm	1030	1030	1030	1280	1280	1530	2030
Bending capacity	mm	1	2	3	2	3	2,5	1,5
Pre bending	mm	0,8	1,2	2	1,2	2	1,5	0,8
Top roll Ø	mm	56	75	90	75	95	95	90
Motor power	kW	0,75	0,75	1,5	1,5	1,5	1,5	1,5
Length	mm	1750	1750	1750	2000	2000	2250	2750
Height	mm	1100	1135	1135	1135	1135	1135	1135
Width	mm	840	840	840	840	840	840	840
Weight	kg	280	385	440	455	555	630	680

RB SERIES

STANDARD EQUIPMENTS

- CE
- Conical bending
- Casting frame
- SAE 1050 steel rolls
- Rode bending channels on bottom and back rolls

OPTIONAL EQUIPMENTS

- Hardened rolls
- Ground rolls

RB Series	Unit	1001	1002	1003	1202	1225	1203	1525
Bending length	mm	1030	1030	1030	1280	1280	1280	1530
Bending capacity	mm	1	2	3	2	2,5	3	2,5
Pre bending	mm	0,8	1,2	2	1,2	1,5	2	1,5
Top roll Ø	mm	56	75	90	75	90	95	95
Length	mm	1500	1750	1750	2000	2000	2000	2250
Height	mm	1100	1135	1135	1135	1135	1135	1135
Width	mm	520	520	520	520	520	50	520
Weight	kg	220	370	410	430	490	515	595