

HRB

Plate Roll
Bending

Series



➤ Strong

➤ Precise

➤ Efficient

➤ Fast

➤ High
Repeatability



As a total supplier for sheet metal manufacturing with almost 70 years of experience, Durma understands and recognizes the challenges, requirements and expectations of the industry. We strive to satisfy the ever higher demands of our customers by continuously improving our products and processes while researching and implementing the latest technologies

In our three production plants with a total of 150.000 m², we dedicate 1,000 employees to delivering high quality manufacturing solutions at the best performance-to-price ratio in the market.



PRODUCTION IS MORE EFFECTIVE NOW

From the innovations developed at our Research & Development Center to the technical support given by our worldwide distributors, we all have one common mission: to be your preferred partner.

Durmazlar offers it's machines to the world markets under the Durma brand.



1

High technology,
modern production
lines



2

Top quality
components



3

High quality
machines designed
in R&D Centre

HRB-4 Series Plate Rolls

“Fast, Accurate and Easy to Operate”

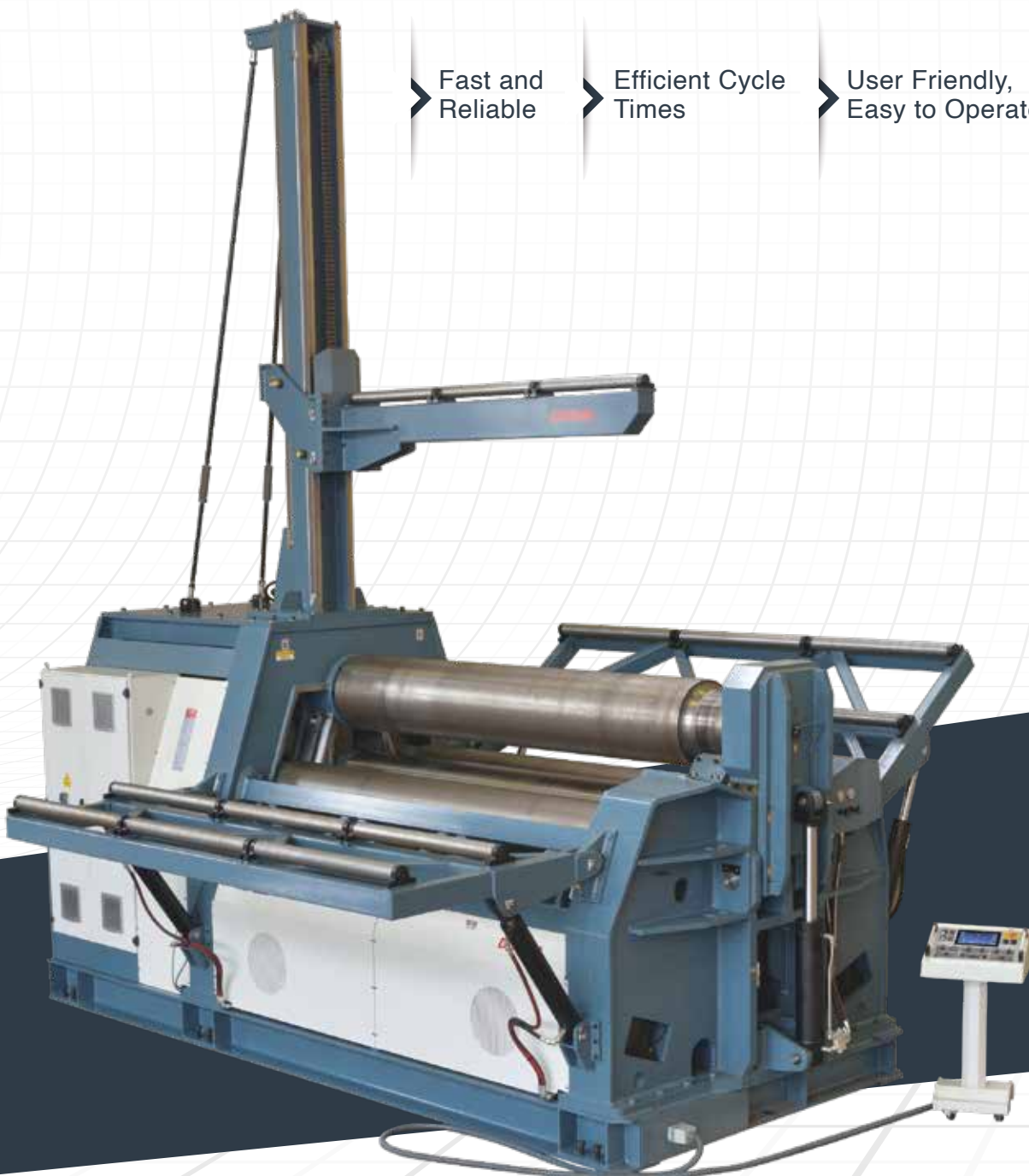
Four plate rolls are more precise, productive, versatile, faster, safer and easier to operate than three roll machines. They are less dependent on operator competence.

➤ Fast and
Reliable

➤ Efficient Cycle
Times

➤ User Friendly,
Easy to Operate

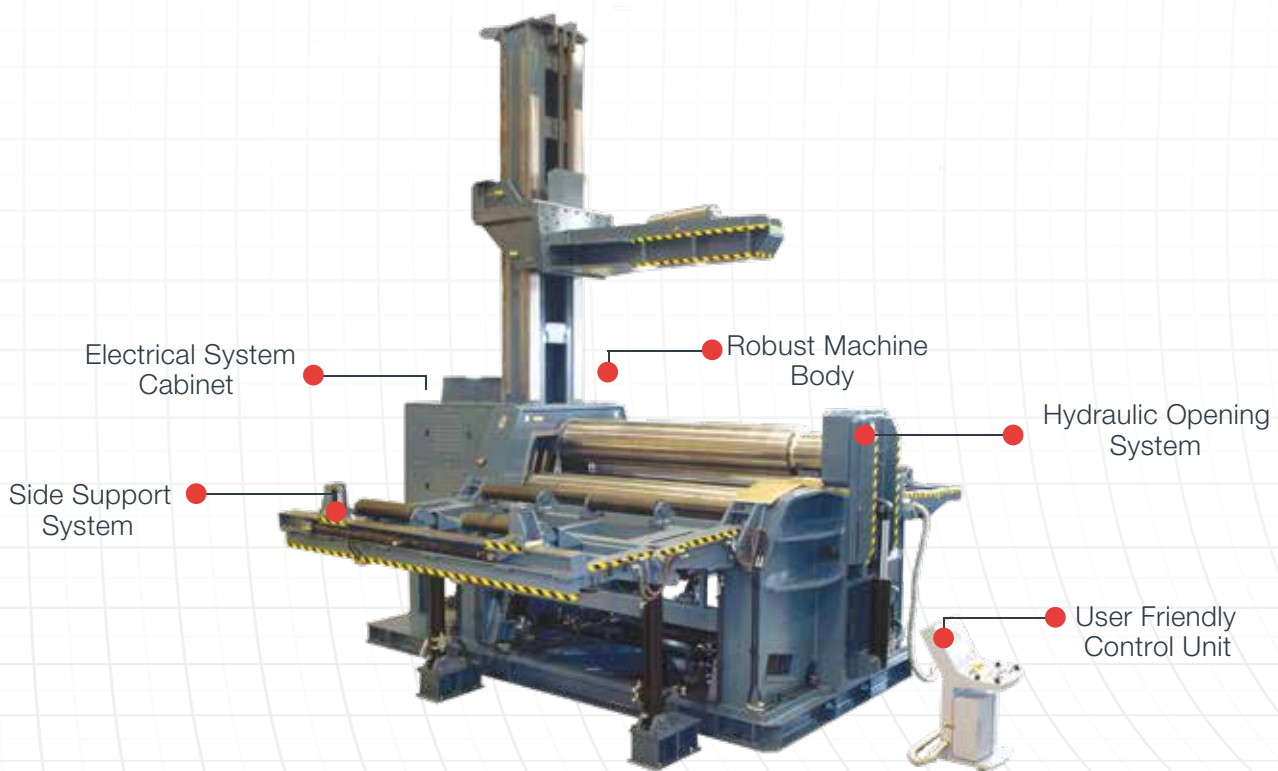
➤ Increased
Productivity



Finest Bending Performance

“Durma always strives to be your preferred partner”

Robust machine body and construction ensure long machine life and low maintenance. High torque drive system allows HRB to achieve shorter cycle times. User friendly control units makes it possible to be less dependant on operator competence.



■ General Specifications

- Up to 6000 mm Bending Lengths
- Up to 100 mm Bending Thickness
- Accurate, Easy to Operate, Fast and Reliable
- Flat zone of the part is minimized
- Pre-bending, conical bending and ellipse bending can be done easily
- Double pre-bends (both ends) in one pass
- The sheet reference is maintained by tightening of top and bottom rolls
- Most desirable bending operation for CNC applications
- More efficient for cycle times
- Hydraulic and electrical systems have been safeguarded from overloading and require minimum maintenance.
- Hydraulic and electrical components are modular and designed according to world standards

HRB Series Standard Features

■ Robust Body Structure

Machine's body is strengthened and lowered to minimise the twists and deformation. Machine body, frame and steel bar connections are stress 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 more than 460 mm).



COST DOWN
PROFIT UP

Production is *More Effective Now.*

PRODUCTION IS MORE EFFECTIVE NOW

■ Hydraulic Opening

High Torque Drive System enables Durma roller bending machines to bend metal sheets with less steps. HRB-4 machines has top and bottom rolls powered by planetary 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.



■ Automatic Loading Gripper System

Hydraulic opening drop-end for easy remove completed the bending.



HRB Series Standard Features

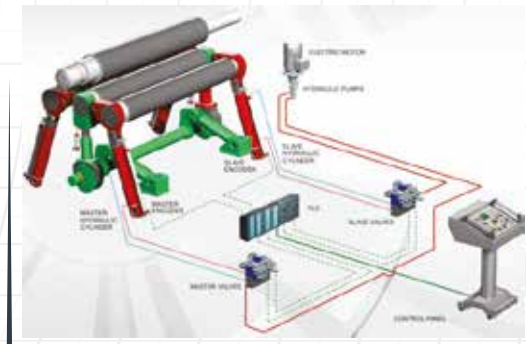
■ Conical Bending System

Strong body and angular bottom and side rolls enables to easily conical bend materials. While machine machines in the market bends conical 3 times of top roll diameter, Durma HRB machines can bend 1.5 times easily.



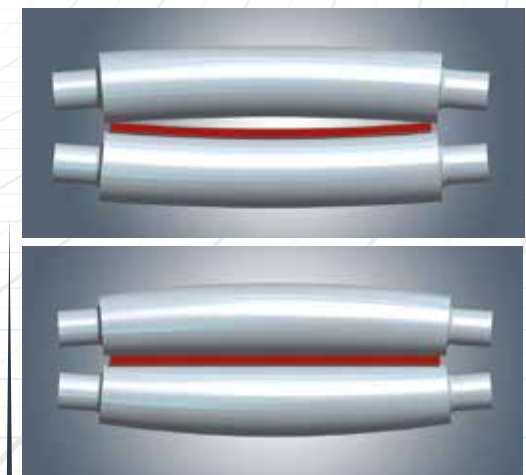
■ Synchronized Rolls System

Side rolls triggered by 4 different strong hydraulic cylinders. Synchronisation between Thanks to high precision load holding valves. Bottom roll tightens different thickness of sheets without deformation and taking to the consideration of its parallelism 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 compensate the deflections on the rolls during the bending.



■ Strengthen Bearing System

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



■ Hydraulic System

Rolls are positioned by hydraulic components. The precision of axes are maintained through the use of Bosch Rexroth valves. Pressure safety valves protect against peak pressures and overloads.



■ Electrical and Electronic System

Electrical system is designed compatible with CE safety regulations. The system consists of well known electrical components. The system is protected by current overloadings for its components, power supplies and motors.



■ User Friendly Control Unit

The standard control unit ensures that machine's bottom and side rollers operate smoothly.



User Friendly Control Unit HRB-4

HRB Series Optional Features

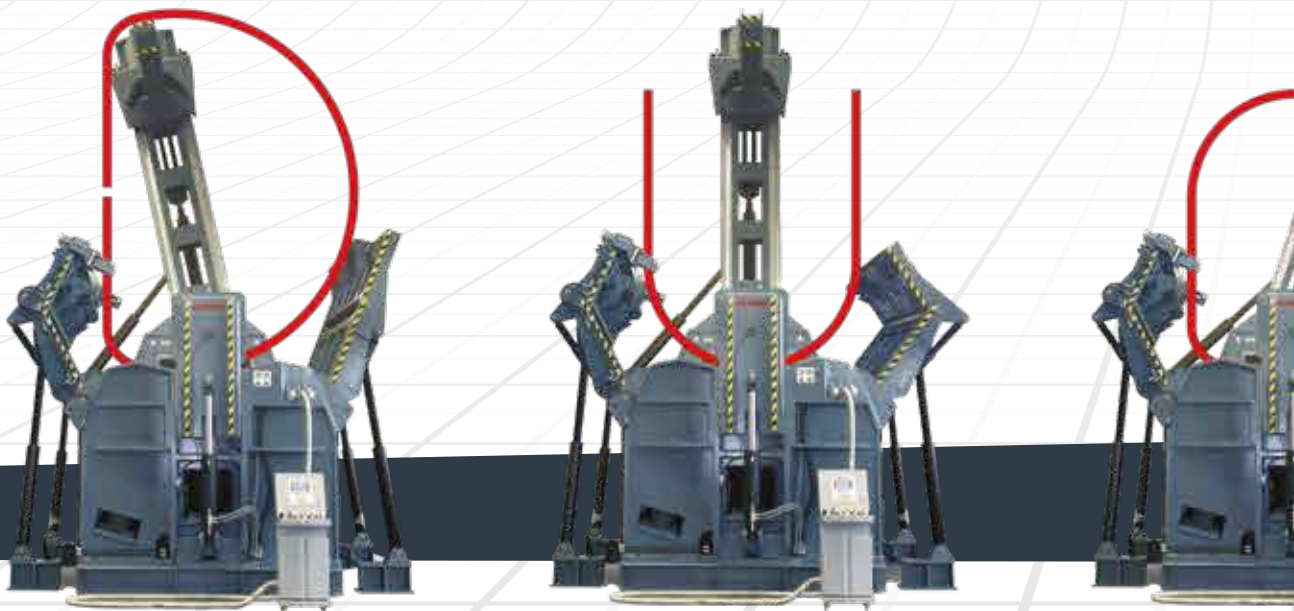
■ NC Control Unit (HRB-4)

In addition to standard user friendly control unit, all bending steps are recorded for operator in teaching mode. All recorded movements can be repeated using automatic mode. NC control system has capacity to save 70 programs up to 100 steps each.



■ CNC Control Unit (HRB-4)

CNC control unit features a graphical control system that enables the operator to realize the bending step by step or automatically calculate bending process. It includes a bending library that features polysentric and ellipse bending shapes.



■ Vertical and Side Support System

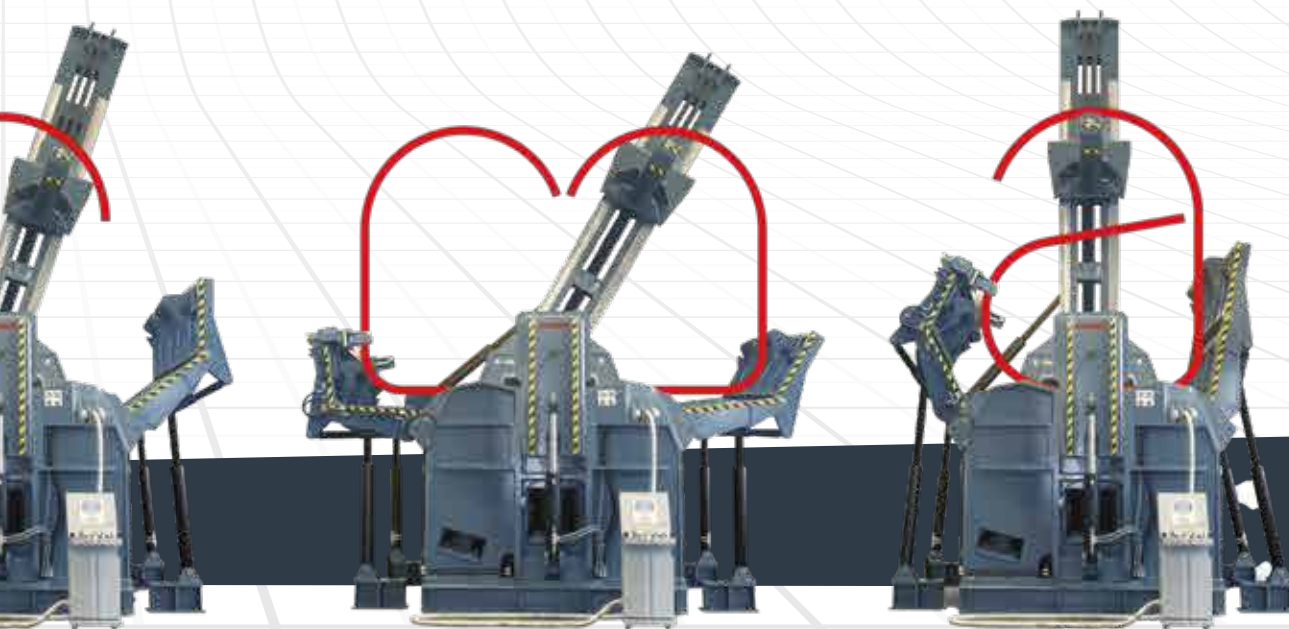
Optional hydraulic side and vertical supports the sheet's stretch and prevent deterioration of the bending form in big shaped bending.

Moveable gauges with hydraulic double cylinders are produced from St52 steel construction. Sheet is easy sliding movement on supports by support rollers which is housing by bearings.

Each support can be controlling from control panel separately. It is possible to vertical support's capacity is to provide $\varnothing 2000$ mm to $\varnothing 6000$ mm sheet and 4 ton to 6 ton capacities. Vertical and side support system can be controlling automatically NC mod in CNC and NC machines.



Especially the during bendings of the large diameter and thin material ellipse, parallel corners and polycentric shaped may effect the precisions and can cause deformation of the material, when there is not enough support from the standard sheet support systems the double knuckle side support system may interfere and provides a precise and perfect bendings, if needed the sizes of these support can be build according to the customers request.



HRB Series Optional Features

■ Special solution for corrugated sheet



■ Automatic Sheet Extraction System



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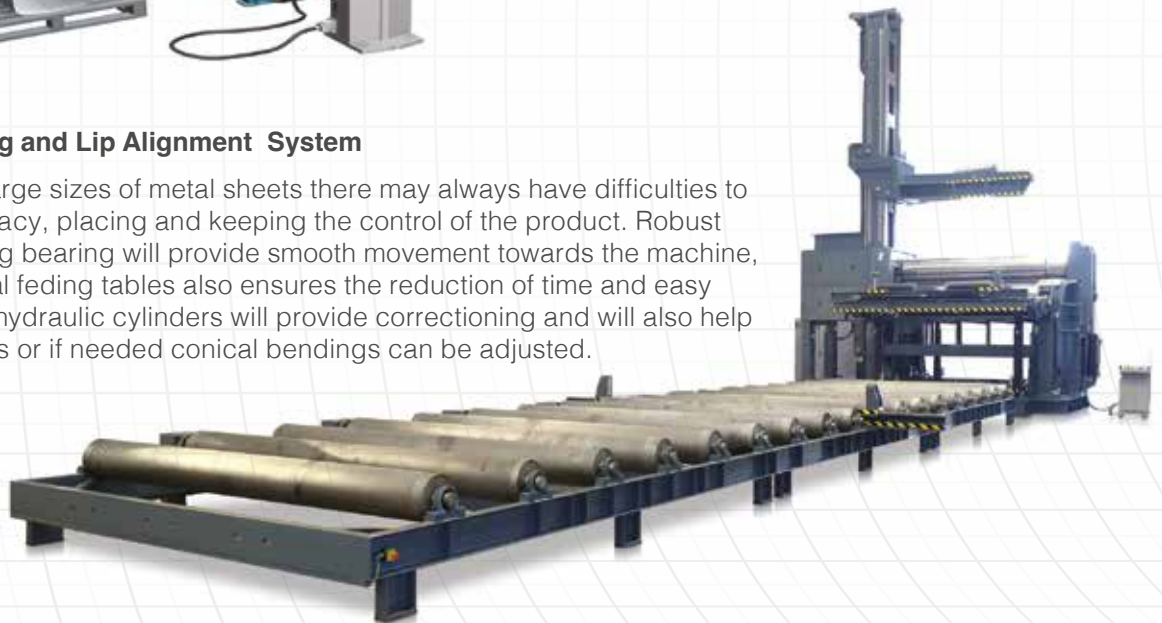
HRB Series Special Features

- Full automatic bending line with loading and unloading



- Material Feeding and Lip Alignment System

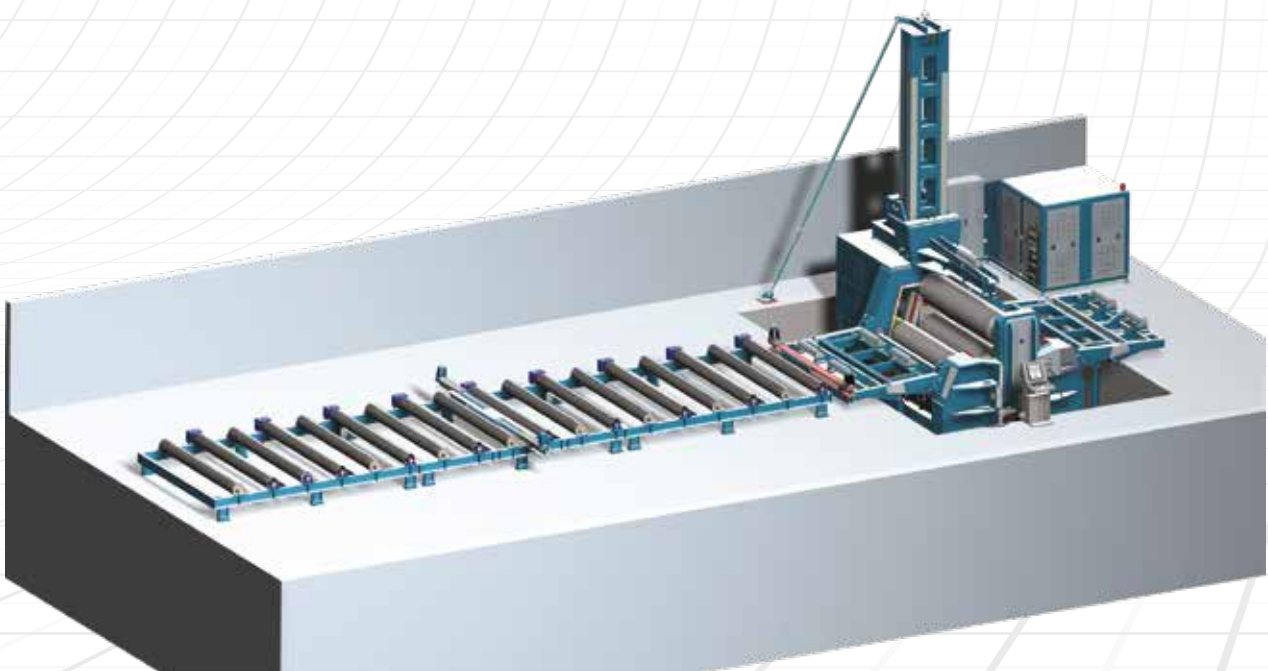
With the long and large sizes of metal sheets there may always have difficulties to providing the accuracy, placing and keeping the control of the product. Robust Bearing and housing bearing will provide smooth movement towards the machine, motorized or manual feeding tables also ensures the reduction of time and easy process. Opposite hydraulic cylinders will provide correctioning and will also help with the straightness or if needed conical bendings can be adjusted.



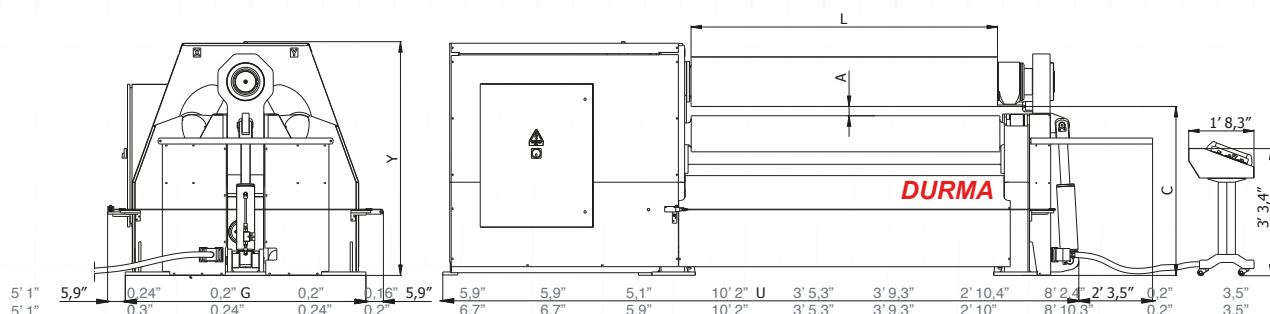
■ Anguler Material Feeding System



■ Wind tower bending line



HRB-4 Technical Specifications



HRB-4 Serie	Bending Length	Minimum inside diameter Ø Dmin				Top Roll	Bottom Roll	Side Rolls	Length	Width	Height	Working Height	Weight	Motor Power	Hydraulic Tank Capacity
		Ødx5	Ødx1,5	Ødx5	Ødx1,5										
		Bending Capacities	Bending Capacities	Pre-Bending Capacities	Pre-Bending Capacities										
	L (mm)	s (mm)	s (mm)	S (mm)	S (mm)	Ød (mm)	Ø (mm)	Ø (mm)	U (mm)	G (mm)	Y (mm)	C (mm)	(kg)	(kW)	l
HRB-4 15150	1550	6	6	5	4	150	150	130	3100	1050	1150	875	2490	5,5	90
HRB-4 20150	2050	5	4	4	3	150	150	130	3600	1050	1150	875	2800	4	90
HRB-4 20170	2050	6	5	5	4	170	170	150	3600	1050	1150	865	3100	5,5	90
HRB-4 20220	2050	10	8	8	6	220	220	180	3900	1270	1200	830	4600	11	160
HRB-4 20240	2050	13	10	10	8	240	240	190	3900	1270	1200	820	4900	11	160
HRB-4 20260	2050	16	13	13	10	260	260	230	4300	1660	1600	1160	8200	15	400
HRB-4 20320	2050	25	20	20	16	320	320	250	4300	1660	1650	1170	9500	22	400
HRB-4 20360	2050	30	25	25	20	360	360	270	4600	2060	2050	1510	14200	30	600
HRB-4 20400	2050	45	35	35	30	400	400	300	4600	2060	2050	1490	15750	37	600
HRB-4 25240	2550	10	8	8	6	240	240	190	4400	1270	1200	820	5600	11	160
HRB-4 25270	2550	15	12	12	10	270	270	230	4800	1660	1600	1155	9350	15	400
HRB-4 25300	2550	20	16	16	13	300	300	240	4800	1660	1650	1180	10200	18,5	400
HRB-4 25340	2550	25	20	20	16	340	340	260	4800	1660	1650	1160	11300	22	400
HRB-4 30240	3100	8	6	6	5	240	240	190	4950	1270	1200	820	6350	11	160
HRB-4 30270	3100	13	10	10	8	270	270	230	5350	1660	1600	1155	10300	15	400
HRB-4 30300	3100	16	14	14	12	300	300	240	5350	1660	1650	1180	11250	18,5	400
HRB-4 30360	3100	25	20	20	16	360	360	270	5650	2060	2050	1510	17200	30	600
HRB-4 30400	3100	30	25	25	20	400	400	300	5650	2060	2050	1490	19200	37	600
HRB-4 30460	3100	40	30	30	25	460	460	380	5650	2100	2380	1790	26000	45	800

Bending capacities valid for multisteps bending method.

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* On mentioned models : Ø Dmin= Ødx2 (pre bending) ; Ødx4 (bending)

The mentioned values above is only works for 240 N/mm²

Different material and widths ; can be calculated by DURMA Roll Bending Calculator

Conic bending capacities depends on the angle and half value of mentioned values above

Weight and motor powers optionally goes higher levels with additional



PLANETARY ROLLS SYSTEM
Top Roll: Ø5-29/32" to Ø18-7/64"
Drive: Top&Bottom



RECTILINEAR ROLLS SYSTEM
Top Roll: Ø18-7/64" to Ø29-59/64"
Drive: All Rolls

STANDARD & OPTIONAL EQUIPMENT

Standard Equipment

- PLC control system
- Conical bending
- Induction hardened rolls
- Stress relieved steel construction body
- High tensile carbon steel rolls
- Sealed spherical roller bearings
- Adjustable turning speed
- 2 rolls drive system (Upper roll Ø 7,87 inch - Ø 18,11 inch)
- 4 rolls drive system (Upper roll >Ø 18,11 inch)
- Fixed top roll (Upper roll Ø 7,87 inch - Ø 16,93 inch)
- Hydraulic opening cover
- Welding possibility on the machine
- Electronic synchronized rolls
- Mechanical synchronized bottom rolls
- Adjustable pinching pressure
- Overload protection
- Safety wire around the machine and emergency stop button on control panel
- Manual lubrication
- User manual
- CE

Optional Equipment

- NC Control Unit
- CNC Control Unit
- Polished rolls
- Hydraulic vertical support preparation (Full / Mechanical)
- Hydraulic vertical support
- Side support preparation (Full / Mechanical)
- Hydraulic side supports
- Hydraulic side supports with double joint
- NC included side and vertical supports
- Interchangeable top roll
- Oil cooling
- Oil heating
- Automatic centralized lubrication system
- Hydraulic roll crowning system
- Plate feeding platform with alignment unit
- Special plate support systems
- Loading, unloading systems
- Seperate power cabinet
- Special solutions for wind tower projects

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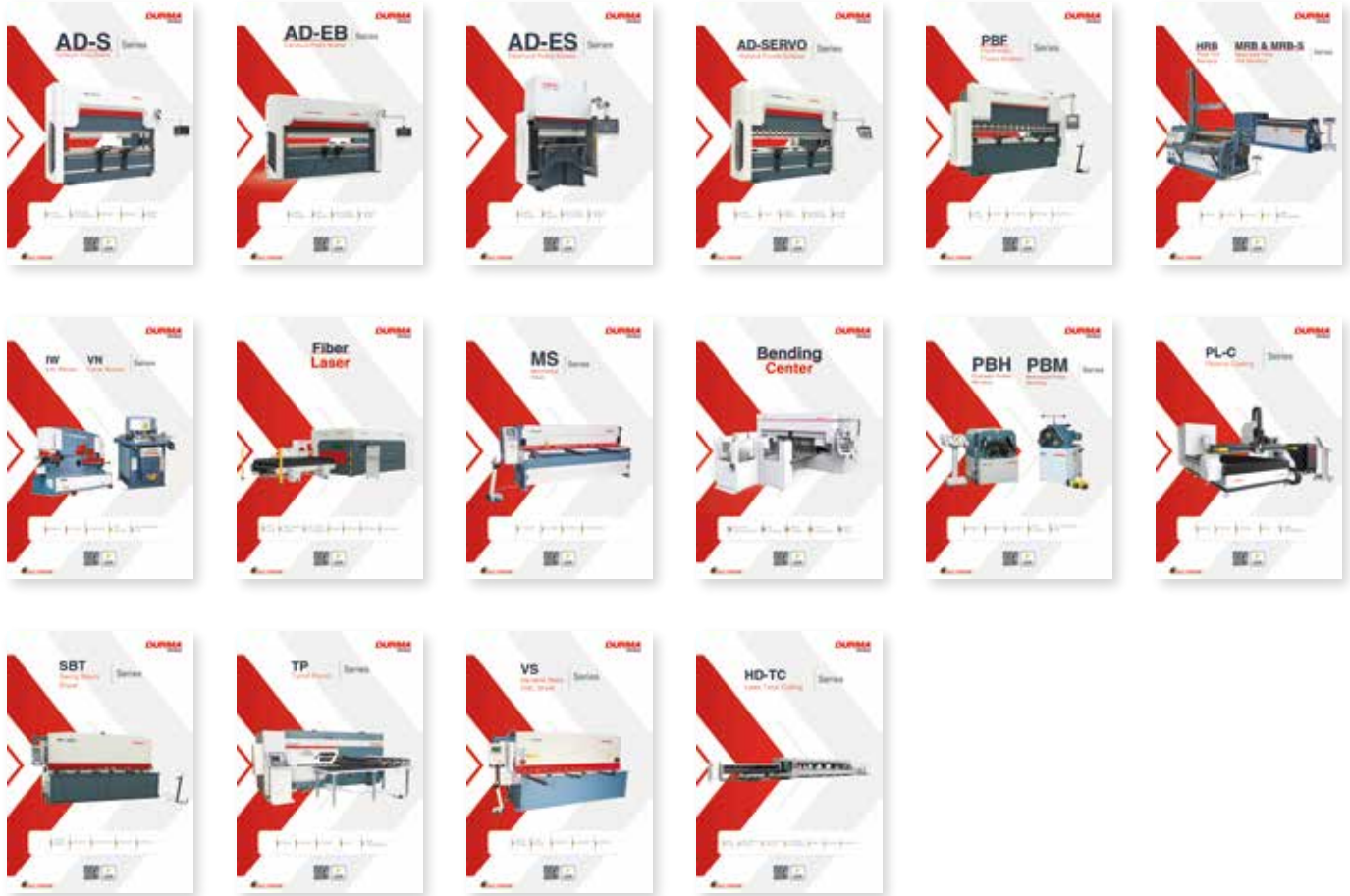
FAST ON SERVICE AND SPARE PARTS

DURMA provides the best level of service and spare parts with qualified personnel and spare parts in stock. Our experienced and professional service personnel are always ready at your service. Our professional training and application enriched courses will give you an advantage to use our machinery.



Product Groups

DURMA



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