

DURMA

June 2017



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NEWSLETTER

HRB-4

FULLY HYDRAULIC 4-ROLL BENDING MACHINES

The mechanical and hydraulic systems on HRB-4 machines are designed by experienced Durma engineers.

These engineers design the machines utilizing parametric 3D engineering technology (Pro/Engineer) as well as implementation of static and mechanism analysis.

All mechanical, hydraulic, and electronic systems are designed and tested by Durma electrical and mechanical engineers.

Only following lengthy tests and evaluations are the machines authorized to be manufactured in serial production.



▶ Stable and Robust Machine Body

▶ Durable Rolls and Crowning System

▶ Strengthen Guiding Systems

▶ High Torque Roll Triggering

▶ Planetary Roll Positioning



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Rolls driven system

By strong body and angular bottom and side rolls, wide angle & small diameter conical parts are easily bent. 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.



Hydraulic and Electrical System

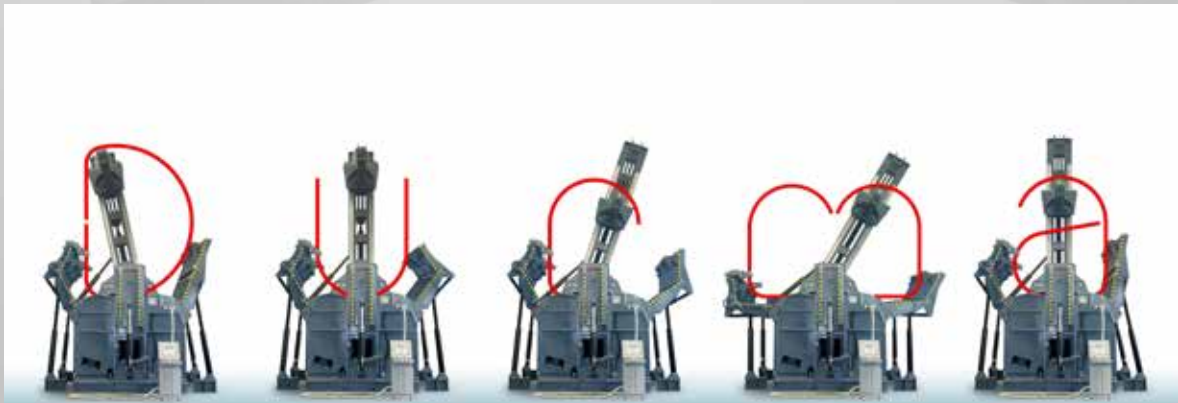
Machine movements are triggered by hydraulic components. The precision on the all axes are acquired by world leader Bosch Rexroth valves' high speed response ability. And pressure safety valves used against peak pressures and overload, provides protection for motors and other components. Electrical system designed compatible with CE safety regulations. The system consists of well known electrical components such as Siemens, Schneider, Phoenix and Opkon. The system is protected by current overloadings for its components', powersupplies, electronics and motors. PLC and NC Control Unit used from EATON. CNC Control Unit used from world leader ESA/Gv.



HRB-4 NC Control System



HRB-4 CNC Control System





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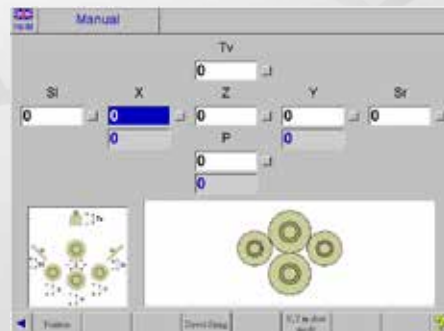


Vertical and Side Support System (OPTIONAL)

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 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 4ton to 6ton capacities. Vertical and side support system can be controlling automatically NC mod in CNC and NC machines.



Special Material Support System (OPTIONAL)

Especially the during bendings of the Large diameter and thin material ellipse, paralel 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 pricise and perfect bendings, if needed the sizes of these Support can be build according to the customers request