MP RAM

FLOOR TYPE HYDROSTATIC BORING MILLING MACHINES
JUARISTI founded in 1941 has been designing and manufacturing high precision boring and milling machines for over 70 years.

We have succeeded by combining our years of tradition and experience with continuous innovations and ongoing developments in the machine tool sector.

MP RAM travelling column horizontal boring-mills, are designed for the heaviest machining jobs and to guarantee maximum rigidity particularly for large workpieces.

This machine concept allows the machining of the most demanding components in a single set-up.

Precision machining in large workpieces requires an extremely responsive and robust machine with smooth movements at fine feed rates, minimal friction and with a RAM-head that stays thermally stable at high spindle speeds.

Machining with large facing cutters, powerful boring operations and deep drilling cuts, are processes that are easily performed because of the outstanding torque and power of these machines.
EXPERIENCE AND INNOVATION...

More than 40 years of experience in research and development of hydrostatic systems, continuously implementing optimal solution of accuracy, stiffness and dynamism.

...IN HYDROSTATIC MACHINES
HYDROSTATIC GUIDING

ACCURACY, SMOOTHNESS AND DURABILITY

Machine structural components done in sturdy and heavily ribbed cast iron are equipped with large hardened and ground hydrostatic guides.

The column has a strong double wall construction and is moved along the X-axis bed with a 2 motor and pinion-rack system over 2 or 4 ways.
All machine components are made of top quality materials, commercial elements are first class renowned brands.

Highly skilled and experienced personnel during the machine assembly and start up process guarantee a superb heavy duty boring machine with extraordinary smooth motion and shock absorption ability during extreme cutting conditions.

ASSEMBLY PROCESS: MP10 RAM...

...WITH 8 METER VERTICAL TRAVEL AND 125 t ROTARY TABLE
Fully enclosed RAM with hydrostatic guiding on 4 faces. RAM is done in alioed nodular casting, hardened and ground.

Spindle drive system with 2-3 ranges gear box, is maintained at constant temperature via internal recirculation of thermally controlled oil.

High torque available on the spindle thanks to the sturdy structure and oversized gears: more than 20,000 Nm.

The 3 compensation systems act simultaneously to guarantee a perfect geometry on the RAM-HEADSTOCK-COLUMN assembly.

The balance is done in real time thanks to the immediate response of all hydro-mechanical systems, compensating the bending of the RAM, rocking of the headstock and tilting of the column.

...FOR VERTICAL AND CROSS MOVEMENTS
Renowned multinational companies as well as satisfied job shops in all industrial sectors, improve their productivity with JUARISTI's machines worldwide.
APPLICATIONS

MP5 - MP7 - MP9 - MP10 RAM

CONSTRUCTION Tunel boring equipment

GAS/STEAM TURBINES External case machining

ENERGY Gas turbine

OIL & GAS Subsea

MINING EQUIPMENT frame

CEMENT/MINING EQUIPMENT Extra large gear machining
A wide range of automatic heads and accessories are available to improve machine performance and flexibility.

Maximum efficiency and minimum idle and set up time is achieved with the use of recessing tools, angular, universal, 5-axis and facing heads, rotary tables, automatic tool and head changers, workpiece measuring and tools set up probes, etc.

ATC different solutions for tool magazine and changer:
- Chain type up to 160 tools
- Robot type up to 500 tools

Several kind of probes for workpieces and tool calibration devices can be used for in-process measuring and tool wear and breakage control.
Roto-traversing tables are accessories that can be integrated on any floor type machine, improving flexibility and productivity.

Table surface dimensions range from 1000x1000 up to 5000x6000 mm and load capacity from 6000 to 150,000 kg.

Tables are supplied with 1 or 2 CNC axes, with a hydrostatic indexable and full contouring B-axis.

### TECHNICAL SPECIFICATIONS

#### SPINDLE-HEADSTOCK

<table>
<thead>
<tr>
<th>Feature</th>
<th>MP5 RAM</th>
<th>MP7 RAM</th>
<th>MP9 RAM</th>
<th>MP10 RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boring spindle diameter</td>
<td>mm</td>
<td>130-160</td>
<td>160-180-205</td>
<td>180-205-225</td>
</tr>
<tr>
<td>Tool taper</td>
<td>ISO 50</td>
<td>ISO 50</td>
<td>ISO 50/ISO 60</td>
<td>ISO 50/ISO 60</td>
</tr>
<tr>
<td>RAM cross section</td>
<td>mm</td>
<td>420x450</td>
<td>460x520</td>
<td>460x520</td>
</tr>
<tr>
<td>Max. rotation speed</td>
<td>min⁻¹</td>
<td>3500-3000</td>
<td>3000-2500-2000</td>
<td>2500-2000-1600</td>
</tr>
<tr>
<td>Spindle gear ranges</td>
<td></td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Spindle power (S1-100%)</td>
<td>kW</td>
<td>51-64</td>
<td>71-100</td>
<td>71-100</td>
</tr>
<tr>
<td>Spindle torque (S1-100%)</td>
<td>Nm</td>
<td>3200-4000</td>
<td>5000-10300</td>
<td>10000-20000</td>
</tr>
</tbody>
</table>

#### FEED RATES

<table>
<thead>
<tr>
<th>Feature</th>
<th>MP5 RAM</th>
<th>MP7 RAM</th>
<th>MP9 RAM</th>
<th>MP10 RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid feed rates X-Y-Z</td>
<td>mm/min</td>
<td>20000</td>
<td>20000-15000</td>
<td>20000-15000</td>
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</tbody>
</table>

### MACHINE MODELS

<table>
<thead>
<tr>
<th>Machine Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP5 RAM</td>
<td>X + 5000</td>
<td>Y + 4000</td>
<td>4555</td>
<td>6100</td>
</tr>
<tr>
<td>MP7 RAM</td>
<td>X + 5500</td>
<td>Y + 4000</td>
<td>5070</td>
<td>6345</td>
</tr>
<tr>
<td>MP9 RAM</td>
<td>X + 5500</td>
<td>Y + 4000</td>
<td>5070</td>
<td>6345</td>
</tr>
<tr>
<td>MP10 RAM</td>
<td>X + 7000</td>
<td>Y + 4500</td>
<td>5660</td>
<td>7245</td>
</tr>
</tbody>
</table>
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