MAGNETIC ROTARY CHUCKS

BRAILLON MAGNETICS invented and built the first Electro-Permanent magnetic chuck in 1963. Since then the E-P technology has evolved constantly, resulting in a range of very powerful, reliable and sturdy magnetic chucks for chip removal and cylindrical grinding operations.

THE LARGEST TOOL CLEARANCE
Using raising pole shoes, BRAILLON MAGNETICS circular chucks allow a 3 side access to the workpiece.

HIGH RELIABILITY
Thanks to a static design without any movable components, BRAILLON MAGNETICS Circular Chucks are built to last.

HIGH ACCURACY
Electro-Permanent releases increase both accuracy and safety. Once magnetised, Circular EP Chucks do not need electrical power to maintain the magnetic force. This prevents any thermal expansions due to electrical heating and ensures safety against any voltage drop.

HOMOGENEOUS CLAMPING
Magnetic force is spread all over the top plate. This prevent the workpiece from distortions due to standard mechanical jaws.

THREE DEDICATED DESIGNS

RADIAL
This magnetic pole arrangement is specially dedicated to ring-shaped workpieces. It also allows to reach the maximal magnetic flux concentration. These chucks can be fitted out with pole shoes in order to make the tool clearance bigger.

CONCENTRIC
This design is suitable for multiple workpiece arrangement, Particularly efficient with thick and medium sized workpiece.

PARALLEL
It presents the most efficient design to clamp thin and small sized workpieces. For extra-thin workpieces, a small pitch paralel Top plate design is also available. Similar to concentric design, a multiple workpiece arrrangement is possible.
**BRALLON MAGNETICS** has become a world leader in the 3 following magnetic technologies:

**COMPENSATED ELECTRO-PERMANENT (EP)**
EP technology consists in magnetizing the chuck with a single electrical pulse. The chuck is then magnetized even if a voltage drop occurs. The Compensated EP technology is a combination of Neodymium and Alnico magnets to reach the highest possible magnetic clamping force.

**FULL DEMAGNETIZATION ELECTRO-PERMANENT (EP)**
EP system based technology as well, the Full Demagnetization consists in using only Alnico Magnets. The great benefit is to reach the lowest possible residual magnetism level after demagnetization.

**ELECTRO-MAGNETIC (EM)**
The EM Technology makes the chuck magnetized until the electrical power voltage is switched off. It allows to reach both high magnetic force and economic fare.

<table>
<thead>
<tr>
<th>Type</th>
<th>Application</th>
<th>Design</th>
<th>Technology</th>
<th>Top plate Ø (mm)</th>
<th>Thickness (mm)</th>
<th>Pole pitch (mm)</th>
<th>Workpiece minimal thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPESTAR-MAX</td>
<td>TURNING</td>
<td>RADIAL</td>
<td>COMPENSATED EP</td>
<td>YES</td>
<td>300 - 3500 *</td>
<td>90 - 150</td>
<td>-</td>
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<tr>
<td>EPESTAR</td>
<td>GRINDING</td>
<td>RADIAL</td>
<td>FULL DEMAG EP</td>
<td>YES</td>
<td>250 - 3500 *</td>
<td>90 - 150</td>
<td>-</td>
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<tr>
<td>EM-STAR</td>
<td>GRINDING</td>
<td>RADIAL</td>
<td>ELECTRO-MAGNETIC</td>
<td>YES</td>
<td>250 - 3500 *</td>
<td>90 - 120</td>
<td>-</td>
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<tr>
<td>EPERING</td>
<td>GRINDING</td>
<td>CONCENTRIC</td>
<td>FULL DEMAG EP</td>
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<td>300 - 1250 *</td>
<td>100 - 120</td>
<td>11 + 5 5</td>
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<tr>
<td>EM-RING</td>
<td>GRINDING</td>
<td>CONCENTRIC</td>
<td>ELECTRO-MAGNETIC</td>
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<td>100 - 120</td>
<td>11 + 5 5</td>
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<td>EPEFINE</td>
<td>GRINDING</td>
<td>PARALELL</td>
<td>FULL DEMAG EP</td>
<td>YES</td>
<td>300 - 1250 *</td>
<td>100 - 120</td>
<td>4 + 1 2</td>
</tr>
<tr>
<td>POWERFINE</td>
<td>GRINDING</td>
<td>PARALELL</td>
<td>FULL DEMAG EP</td>
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<td>300 - 1250 *</td>
<td>90 - 100</td>
<td>7 + 4 7</td>
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<tr>
<td>EM-FINE</td>
<td>GRINDING</td>
<td>PARALELL</td>
<td>ELECTRO-MAGNETIC</td>
<td>YES</td>
<td>300 - 1250 *</td>
<td>100 - 120</td>
<td>4 + 1 2</td>
</tr>
</tbody>
</table>

* Bigger diameters on request

- Variable magnetization
- Solid block body design
- IP65 sealed
- EP operating voltage: 340VDC
- EM operating voltage: 110VDC
- Other voltage on request
- Top Plate pole separator material: Brass
- Top Plate wear distance: 8mm
- Top Plate roughness: Ra1.6
- Chuck Flatness and parallelism: 2/100/m
- Cylindrical slip ring assy
- Built in lifting holes
BRAILLON MAGNETICS propose optionnal items to match customers requirements for every rotary applications:

- Quick IP65 connector and cap
- Tailor made pole shoes
- Embedded slip ring assy
- On request Voltage
- Brass, Aluminium or Epoxy pole gaps
- T-slots machined into top plate
- T-slots into pole shoes
- Through all clamping holes
- Segmented magnetic zones
- Diameter marking onto top plate
- EP Downward force adjustment
- Centering hole in the top plate

In order to supply power to the magnetic chucks, BRAILLON MAGNETICS supplies a 3 rings cylindrical slip ring assy as a standard.

Obviously, we can also supply on request slip rings.

Standard slip ring assy’s features:

- Maximal rotary speed: 4100 RPM
- Spring loaded brush holders
- Removable Bronze-Carbon brushes
- 3 electrical contacts.
- PVC Insulation cap included
- Clamping with 3 M5 screws
- Weight 1.1Kg
BRAILLON MAGNETICS provides a wide range of Control Units for both Electro-Permanent (EP) and Electro-Magnetic (EM) chucks.

SAFETY INTERLOCKING
An interlock output is available for machine's PLC. This signal means that a good magnetization level has been reached. In the other way, machine's PLC can enable or disable the control unit through a dedicated input.

VARIABLE MAGNETIC FORCE
Thanks to an analog input, BRAILLON MAGNETICS Control Units are able to set magnetic force from null to full power with an infinite number of steps.

REMANENCE REMOVING
A true demagnetization cycle is available in order to reach an extra low level of magnetism within the workpiece. This feature is available for both Full Demagnetization Electro-Permanent (EP) and Electro-Magnetic (EM) chucks.

MULTI-CHUCKS MONITORING
One BRAILLON MAGNETICS Control Unit can magnetize and demagnetize several magnetic chucks. Different operating modes are available on request: pendulum, "all in a row" or multi zones chuck control.

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximal Number of Channels</th>
<th>Standard Input Voltage [V]</th>
<th>Universal</th>
<th>Grinding</th>
<th>Turning</th>
<th>Milling</th>
<th>QMC</th>
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<tbody>
<tr>
<td>BUR</td>
<td>0</td>
<td>200 - 400 - 415</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>BUR-FR</td>
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<td>X</td>
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<tr>
<td>BUP</td>
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<td>200 - 400 - 415</td>
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<tr>
<td>BF</td>
<td>4</td>
<td>200 - 400 - 415</td>
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<tr>
<td>BUE</td>
<td>1</td>
<td>200</td>
<td>X</td>
<td>X</td>
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<td>200 - 400 - 440</td>
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</table>

* Other Voltages on request
### Footswitch Remote Control
This makes the control unit hands free.

### QMC Euromap Interface
This provides standardized signals for Quick Mould Change Applications.

### Cooling System
Available for warm environments.

### Tropicalization
Available for extremely wet environments.

### Pendular Control
This option lets the operator control two chucks independently.

### Special Voltages
On request, from 200 to 480 VAC.

### Embedded Amp-Meter and Volt-Meter
This equipment shows real-time the amperage and voltage supplied to the magnetic chuck. Both are located on the front side of the control unit.

### Radio Remote Control
This option makes the remote pendant wireless.

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**Dimensions**

<table>
<thead>
<tr>
<th>Type</th>
<th>No of Channels</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
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<tr>
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*Note: “P” means Pendular*