For cylinder block, Hexagonal double-sided inserts with high efficiency, high precision, and low cost!
Boring Cutter

**BMR**

Inventory maintained of highly rigid 6-corner type and economical 12-corner type inserts

**High Clamping Rigidity**

High feed processing possible with improved fracture resistance.

**Double Positive Breaker**

Reduced cutting resistance. Supports open deck work. Effective finished surface due to wiper edge.

**12-Corner Type with Right Hand**

Economical 12-corner type that preserves comparable insert rigidity of the 6-corner type by securing the seating surface directly below where the cutting force is absorbed.
Body with Peripheral Cutting Edge Run-out Regulator

With peripheral cutting edge regulating function for possible use of economical M-class inserts.
* The bodies are only available by special order.

**INSERT**

<table>
<thead>
<tr>
<th>Shape</th>
<th>Order Number</th>
<th>Grade</th>
<th>Hand</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
<th>Geometry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HNMX1206EN06-R</td>
<td>MC5015</td>
<td>–</td>
<td>6</td>
<td>12.7 6.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>HNMX1206ER12-R</td>
<td>MC5015</td>
<td>R</td>
<td>12</td>
<td>12.7 6.0</td>
<td></td>
</tr>
</tbody>
</table>

**RECOMMENDED CUTTING CONDITIONS**

<table>
<thead>
<tr>
<th>Work Material</th>
<th>Tensile Strength</th>
<th>Grade</th>
<th>Cutting Speed ve (m/min)</th>
<th>Feed per Tooth fz (mm/t.)</th>
<th>Cutting depth ae (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gray Cast Iron</td>
<td>≤350MPa</td>
<td>MC5015</td>
<td>200 (150—250)</td>
<td>0.2 (0.1—0.25)</td>
<td>≤3.0</td>
</tr>
</tbody>
</table>

* With feed per cutter, settings are set small for finished surface roughness and large for ideal product life.
### APPLICATION EXAMPLES

<table>
<thead>
<tr>
<th>Cutter Body</th>
<th>BMR ø85 (7 Inserts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert (Grade)</td>
<td>HNMX1206EN06-R(MC5015)</td>
</tr>
</tbody>
</table>

#### Workpiece
- FC
- Cutting diameter: ø85
- Cutting depth: 140mm

#### Cutting Conditions
<table>
<thead>
<tr>
<th>Revolution (min⁻¹)</th>
<th>750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting Speed (m/min)</td>
<td>200</td>
</tr>
<tr>
<td>Feed (mm/t)</td>
<td>0.2</td>
</tr>
<tr>
<td>Table Feed (mm/min)</td>
<td>1050</td>
</tr>
<tr>
<td>Depth of Cut (mm)</td>
<td>2.0</td>
</tr>
<tr>
<td>Cutting mode</td>
<td>Wet</td>
</tr>
</tbody>
</table>

#### Results
- Improve machining efficiency by 2.2x and approximately 5x longer tool life, under conventional conditions.
- Stable cutting with favorable finished surface roughness and achievable cylindricity.

The above application examples are customer's application examples, so it can be different from the recommended conditions.

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For Your Safety
- Don't handle inserts and chips without gloves.
- Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage.
- Please use safety covers and wear safety glasses.
- When using compounded cutting oils, please take fire precautions.
- When attaching inserts or spare parts, please use only the correct wrench or driver.
- When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

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(Tools specifications subject to change without notice.)