Two grades covering all cast iron turning operations

Turning grades GC3225 and GC3210
Security and high wear resistance in cast iron

Insert grades GC3225 and GC3210 cover a broad machining range are designed to excel within their application area. Together they offer a line of high-performance grades for secure machining in any cast iron operation.

GC3225: secure turning even in the most difficult machining conditions

Cemented carbide substrate with high toughness designed to match coating for optimal performance in demanding operations.

The coating properties provide the greatest edge-line security with good wear resistance, which gives prolonged tool life under difficult to very difficult machining conditions.

<table>
<thead>
<tr>
<th>Machining conditions</th>
<th>GC3210</th>
<th>GC3225</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficult</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Optimized micro-geometry design for light cutting action, reducing cutting forces and improving tool life.

New CVD coating with columnar TiCN coating and a smooth surface layer of Al2O3.

The coating properties provide high wear resistance combined with good edge-line security, which gives prolonged tool life in good to difficult conditions.

FSMT-CVD coating (Fine Structure Medium Temperature process) with fine-grained columnar TiCN coating and a smooth surface layer of Al2O3.

GC3210: high flank wear resistance at good to average machining conditions.

Cemented carbide substrate was designed to complement the coating for optimal performance.

Benefits
- Easy to choose – these two grades cover the whole cast iron application area suitable for cemented carbide
- High edge-line security and flank wear resistance in cast iron turning

Assortment
The insert grades GC3210 and GC3225 are available in T-Max® P, T-Max®, CoroTurn® 107 and CoroTurn® 111.

For more information, see Supplement 15.2.
Performance GC3225: machining a differential case cover
In this test involving the machining of nodular cast iron, it was possible to increase tool life by 70% using GC3225 instead of a competitor grade.

<table>
<thead>
<tr>
<th>Operation</th>
<th>External axial and facing, roughing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coolant</td>
<td>Emulsion</td>
</tr>
<tr>
<td>Workpiece material</td>
<td>Cast surface, CMC09.1, (MC K3.1.C.UT), 200 HB</td>
</tr>
<tr>
<td>Insert</td>
<td>WNMA080412 (WNMA433)-KR</td>
</tr>
<tr>
<td>( v_c ) mm/min (ft/min)</td>
<td>220 (722)</td>
</tr>
<tr>
<td>( f_n ) mm/rev (inch/rev)</td>
<td>0.15–0.3 (0.006–0.012)</td>
</tr>
<tr>
<td>( a_p ) mm (inch)</td>
<td>1.5 (0.059)</td>
</tr>
<tr>
<td>Time in cut (min/component)</td>
<td>1.2</td>
</tr>
<tr>
<td>Results</td>
<td>GC3225</td>
</tr>
<tr>
<td>Tool life, pcs</td>
<td>17</td>
</tr>
<tr>
<td>Tool life increase</td>
<td>70%</td>
</tr>
<tr>
<td>Competitor</td>
<td></td>
</tr>
</tbody>
</table>

Performance GC3210: machining a hub
After switching from a competitor grade to the to GC3210, tool life was increased by 38%.

<table>
<thead>
<tr>
<th>Operation</th>
<th>External axial and facing, roughing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coolant</td>
<td>Oil</td>
</tr>
<tr>
<td>Workpiece material</td>
<td>Cast surface, CMC09.2, (MC K3.2.C.UT) 240 HB</td>
</tr>
<tr>
<td>Insert</td>
<td>CNMA160616 (CNMA544)-KR</td>
</tr>
<tr>
<td>( v_c ) mm/min (ft/min)</td>
<td>300–350 (984–1148)</td>
</tr>
<tr>
<td>( f_n ) mm/rev (inch/rev)</td>
<td>0.31 (0.012)</td>
</tr>
<tr>
<td>( a_p ) mm (inch)</td>
<td>0.3–2 (0.012–0.079)</td>
</tr>
<tr>
<td>Time in cut (min/component)</td>
<td>1</td>
</tr>
<tr>
<td>Results</td>
<td>GC3210</td>
</tr>
<tr>
<td>Tool life, pcs</td>
<td>11</td>
</tr>
<tr>
<td>Tool life increase</td>
<td>38%</td>
</tr>
<tr>
<td>Competitor</td>
<td></td>
</tr>
</tbody>
</table>