New Products Announcement 2018
New Product Announcement – What’s New
New Product Announcement – Overview

2017 Catalog

Turning
- Universal Grade
- 1 Chipbreaker for 1 Corner Radius

Milling
- Universal Grade
- General Chipbreaker
- Shoudering, Facing, Profiling
- Positive Inserts Only

Drilling
- Universal Grade
- with General Chipbreaker

2018 Catalog

Turning
- Universal Grade + Optimized Grades
- Various Chipbreakers for Each Corner Radius

Milling
- Universal Grade + Optimized Grades
- Various Chipbreakers
- Shoudering, Facing, Profiling, High Feed
- Positive Inserts + Negative Inserts

Drilling
- Universal Drilling Grade
- 2 Chipbreakers

Parting & Groove Turn
- New Parting Line
New Product Announcement – Optimized Grades

New Product Announcement – Overview

Optimized Grades
- High Performance on specific application
- for Mass production
- YG1001, YG3000 Series, YG100, YG10...

Universal Grade
- High Versatility on various application
- Easy to manage stock
- for Small quantity batch production
- YG801 (Turning), YG602 (Milling / Drilling)
Series
- ISO Turning (Compatible Everywhere)

Grades
- 1 Universal Grade + 7 New Optimized Grades

Chipbreakers
- 3 Basic Chipbreakers + New 5 Chipbreakers
- Various Chipbreakers for each corner radius
## Turning Grade 2018

New Product Announcement – Turning

<table>
<thead>
<tr>
<th>Turning Grades</th>
<th>P Steel</th>
<th>M Stainless Steel</th>
<th>K Cast Iron</th>
<th>N Non Ferrous Metals</th>
<th>S Heat Resistant Super Alloy</th>
<th>H Hardened Materials</th>
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<tbody>
<tr>
<td></td>
<td>05</td>
<td>15</td>
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<td>DLC</td>
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<td>YG10</td>
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</table>

### YG1001
- **P01–P10**  **K10–K25**
- High Productivity Grade
- For Stable Steel and Grey Cast Iron

### YG3010
- **P05–P20**  **K15–K35**
- First Choice for Finishing Steels and Ductile Cast Iron

### YG3020
- **P15–P30**
- First Choice for Steel Application
- High Versatility

### YG3030
- **P20–P35**  **M20–M35**
- High Toughness grade
- Interrupted Steel and Stainless steel

### YG211
- **M05–M25**  **S05–S25**
- General Stainless steel and Heat Resistant Super Alloy

### YG801
- **P10–P30**
- PVD for low carbon steel
- Recommended for low cutting speed

### YG100
- **N05–N35**
- High Performance DLC grade for Aluminium

### YG10
- **N05–N35**
- Uncoated grade for Aluminium
# Turning New CVD Grades

New Product Announcement – Turning

<table>
<thead>
<tr>
<th>Target</th>
<th>K10 Grades</th>
<th>P10 Grades</th>
<th>P20 Grades</th>
<th>P30 Grades</th>
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</thead>
<tbody>
<tr>
<td>First Choice for</td>
<td>Very Stable Steel Turning Grey Cast Iron</td>
<td>Stable Steel Turning Finishing Steels Optimized Production Ductile Cast Iron</td>
<td>General Steel Application If high versatility is needed</td>
<td>Unstable / Interrupted Cut Heavy Roughing Steels Automated Production Stainless Steel</td>
</tr>
<tr>
<td>Film Structure</td>
<td>TiCN – Al₂O₃</td>
<td>TiCN – Al₂O₃</td>
<td>TiCN – Al₂O₃</td>
<td>TiCN – Al₂O₃</td>
</tr>
</tbody>
</table>

**Harder Grade**  
For Stable application

**Tougher Grade**  
For Unstable application
New CVD Grades - What is different?

New Product Announcement – Turning

**Special Process**
Special Process on the top face of insert
Smother chip flow and longer tool life

**New Al₂O₃ CVD**
Controlling the coating particles more minute and uniformly
Wear resistance is highly increasing
YG1001 on Ductile Cast Iron
New Product Announcement – Turning

Ductile Cast Iron – FCD 600 → DIN GGG 60, AISI 80/55/06

Competitor

<table>
<thead>
<tr>
<th>Designation</th>
<th>CNMG 120408</th>
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<tbody>
<tr>
<td>Chipbreaker</td>
<td>UC</td>
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<tr>
<td>Grade</td>
<td>YG1001</td>
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</table>

K15 Grade

<table>
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<tr>
<th>Vc  (Cutting Speed)</th>
<th>158 m/min 520 ft/min</th>
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<tbody>
<tr>
<td>Fn (Feed)</td>
<td>0.27 mm/rev .011 in/rev</td>
</tr>
<tr>
<td>Ap (Depth of Cut)</td>
<td>2.5 mm .098 in</td>
</tr>
</tbody>
</table>

Tool Life

7 pcs 4 pcs
New Product Announcement – Turning

**YG3010 on Low Carbon Steel**

Low Carbon Steel – S20C  →  DIN C22, AISI 1020

<table>
<thead>
<tr>
<th>Designation</th>
<th>CNMG 120408</th>
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</thead>
<tbody>
<tr>
<td>Chipbreaker</td>
<td>UG</td>
</tr>
<tr>
<td>Grade</td>
<td>YG3010</td>
</tr>
<tr>
<td></td>
<td>P15 Grade</td>
</tr>
<tr>
<td>Vc</td>
<td>188 m/min</td>
</tr>
<tr>
<td></td>
<td>620 ft/min</td>
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<tr>
<td>Fn</td>
<td>0.4 mm/rev</td>
</tr>
<tr>
<td></td>
<td>.016 in/rev</td>
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<tr>
<td>Ap</td>
<td>3 mm</td>
</tr>
<tr>
<td></td>
<td>.118 in</td>
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</table>

Tool Life  

15 pcs  
10 pcs  

Carbon Steel Flange

50%**

YG3010  

15 pcs  
10 pcs  

Competitor P15 Grade
## YG3020 on Low Alloy Steel

### New Product Announcement – Turning

<table>
<thead>
<tr>
<th>Designation</th>
<th>CNMG 120408</th>
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</thead>
<tbody>
<tr>
<td>Chipbreaker</td>
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<td>Grade</td>
<td>YG3020</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Vc (Cutting Speed)</th>
<th>350 m/min</th>
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<tr>
<td></td>
<td>1150 ft/min</td>
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<tr>
<td>Fn (Feed)</td>
<td>0.25 mm/rev</td>
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<tr>
<td></td>
<td>.010 in/rev</td>
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<tr>
<td>Ap (Depth of Cut)</td>
<td>1 mm</td>
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<tr>
<td></td>
<td>.040 in/rev</td>
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</table>

<table>
<thead>
<tr>
<th>Tool Life</th>
<th>110 pcs</th>
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<tbody>
<tr>
<td>Competitor</td>
<td>60 pcs</td>
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**Bearings for Automotive**

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## New Product Announcement – Turning

### YG3030 on Carbon Steel

#### Carbon Steel – SS41 → ASTM A283 Gr.D

<table>
<thead>
<tr>
<th>Designation</th>
<th>CNMG 120408</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chipbreaker</td>
<td>UM</td>
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<tr>
<td>Grade</td>
<td>YG3030</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vc (Cutting Speed)</th>
<th>186 m/min 610 ft/min</th>
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<tbody>
<tr>
<td>Fn (Feed)</td>
<td>0.25 mm/rev .010 in/rev</td>
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<tr>
<td>Ap (Depth of Cut)</td>
<td>2 mm .079 in</td>
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</table>

**Tool Life**

<table>
<thead>
<tr>
<th>YG3030 Grade</th>
<th>700 pcs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitor P30 Grade</td>
<td>500 pcs</td>
</tr>
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*Automatic Machine Components*
**YG211 Concept**

New Product Announcement – Turning

**YG211**

**M05-M25**

**S05-S25**

**PVD Grade for Stainless Steel and Super Alloy**

- For continuous cut and general machining
- Surface treatment prevents Built-up-edge
- Hard coating prevents rapid wear

**Stainless Steel**

- YG211
- YG3030

**Heat Resistant Super Alloy**

- YG211

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**Strategy of Stainless Steel**

New Product Announcement – Turning

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**Grades**

- **Stainless Steel**
  - **YG211**
  - **YG3030**

**YG211**
- ISO M05-M20
- PVD grade for general stainless steel application

**YG3030**
- ISO M10-M30
- CVD grade for High Productivity

---

**Chipbreakers**

<table>
<thead>
<tr>
<th>Chipbreaker</th>
<th>Finishing</th>
<th>Medium</th>
<th>Roughing</th>
</tr>
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<tbody>
<tr>
<td>-MF</td>
<td>Developing</td>
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<tr>
<td>-MM</td>
<td></td>
<td></td>
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<tr>
<td>-MR</td>
<td></td>
<td></td>
<td>Developing</td>
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# Turning New Grades for Aluminium and Non Ferrous Metals

## New Product Announcement – Turning

### Target

<table>
<thead>
<tr>
<th></th>
<th>High Performance</th>
<th>Economic</th>
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<tbody>
<tr>
<td><strong>Grades</strong></td>
<td>Aluminium Grade</td>
<td>Aluminium Grade</td>
</tr>
<tr>
<td><strong>First Choice for</strong></td>
<td>Aluminium with High Silicon</td>
<td>Aluminium with Low Silicon</td>
</tr>
<tr>
<td><strong>Coating</strong></td>
<td>DLC</td>
<td>Uncoated</td>
</tr>
</tbody>
</table>

**New**

- **YG100** N
  - N05 – N35

- **YG10** N
  - N05 – N35

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Turning New Grade **YG100** for Aluminium – What’s Different?

New Product Announcement – Turning

- **DLC Technology** for both Sharp cutting edge with High wear resistance
- **Surface Polishing** Low built-up edge
- **Glossy BLACK**
### New Product Announcement – Turning

**YG100 DLC on Aluminium with 10% Si**

#### Aluminium with 10% Silicon

<table>
<thead>
<tr>
<th>Designation</th>
<th>CCGT 09T308</th>
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<tr>
<td>Chipbreaker</td>
<td>-AL</td>
</tr>
<tr>
<td>Grade</td>
<td>YG100 (DLC Grade)</td>
</tr>
<tr>
<td>Vc (Cutting Speed)</td>
<td>500 m/min 1650 ft/min</td>
</tr>
<tr>
<td>Fn (Feed)</td>
<td>0.2 mm/rev .008 in/rev</td>
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<tr>
<td>Ap (Depth of Cut)</td>
<td>1.5 mm .060 in</td>
</tr>
</tbody>
</table>

#### Edge wear After 10 min. (less is better)

- Competitor A: 112 μm
- Competitor B: 223 μm

- Competitor A Uncoated: 78 μm
- Competitor B PVD: 223 μm

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New Turning Chipbreakers
Turning Chipbreakers Overview

New Product Announcement – Turning

**Negative Inserts**

- **Steels**
  - UR
  - UF
  - UG
  - UC

- **Stainless Steels**
  - MM

- **Cast Irons**
  - UM
  - MA

- **Non Ferrous Metals**
  - AL

**Positive Inserts**

- **Steels**
  - UF

- **Stainless Steels**
  - UF

- **Cast Irons**
  - UG

- **Non Ferrous Metals**
  - AL
Turning Chipbreakers Overview
New Product Announcement – Turning

Steels
- UC
- UM
- UL
- UF

Stainless Steels
- UC
- UM
- UL
- UF

Cast Irons
- MA
- UC
- UM
- UF

Ap
6mm
.24in
4mm
.16in
2mm
.08in
0.2mm
.008in
0.4mm
.016in
0.6mm
.024in

Fn

-UF
Finishing
-UL
Semi Finishing
-MM
Low Carbon Steel & Stainless Steel
-UM
Medium
(for Unstable Condition)
-UG
Medium
(for Stable Condition)
-UC
Semi Roughing
-UR
Roughing
PARTING & GROOVE TURN
Parting & Groove Turn – 1 Page Overview
New Product Announcement – Parting & Groove Turn

Series
- New TDX Series

Grades
- YG602G for Parting & Grooving Operation
- YG602T for Groove Turn Operation

Chipbreakers
- New 3 Chipbreakers (N Type / P Type / Y Type)
### New Product Announcement – Parting & Groove Turn

<table>
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<tr>
<th>Series</th>
<th>Width</th>
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<tr>
<td>TD. Series</td>
<td>2mm (.08in)</td>
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<td></td>
<td>3mm (.12in)</td>
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<tr>
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<td>4mm (.16in)</td>
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</table>
YG602G/T
Universal grade for Parting & Groove Turn
- Ultra Dense PVD Coating with thermal resistance & strength
- Sub-Micron substrate for demanding application
- YG602G grade for Grooving (with TDN, TDP series)
- YG602T grade for Groove Turn (with TDY series)
<table>
<thead>
<tr>
<th>Series</th>
<th>Application</th>
<th>Application Details</th>
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</thead>
<tbody>
<tr>
<td><strong>N Type (TDN)</strong></td>
<td>Parting &amp; Grooving – General Edge</td>
<td>- General Materials</td>
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<tr>
<td>with YG602G</td>
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<td>- Alloyed Steels</td>
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<tr>
<td></td>
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<td>- Cast Irons</td>
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<tr>
<td><strong>P Type (TDP)</strong></td>
<td>Parting &amp; Grooving – Positive Edge</td>
<td>- Sticky Materials</td>
</tr>
<tr>
<td>with YG602G</td>
<td></td>
<td>- Carbon Steels, Stainless Steels</td>
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<tr>
<td></td>
<td></td>
<td>- Super Alloys, Aluminium</td>
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<tr>
<td><strong>Y Type (TDY)</strong></td>
<td>General Groove Turn</td>
<td>General Groove Turn</td>
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<tr>
<td>with YG602Y</td>
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MILLING
Milling – 1 Page Overview
New Product Announcement – Milling

Series
- Shouldering, Facing, Profiling, ISO Insert
  + New High Feed

Grades
- YG602 Universal Grade
  + New 3 Optimized Grades

Chipbreakers
- 2 General Chipbreakers
  + New 3 Optimized Chipbreakers

Milling Cutters
- ODMT, RDKT, SEKT +APKT +APMT
**Milling Series Overview**

New Product Announcement – Milling

**Sholdering**

- 2 Corner Positive
  - APKT
  - APMT
  - ADKT
  - AOMT

- 3 Corner Positive
  - IS0
  - TPNK/R

**Facing**

- Octagonal Negative
  - ONMU

- Octagonal Positive
  - ODMT
  - OFER
  - OFMT

**High Feed**

- Square Negative
  - SNMX

- Square Positive
  - SEKT
  - SDKN
  - SEKN/R
  - SPKN/R

**Profiling**

- Round Positive
  - RDKT
  - RDMT
  - RPMT

**Etc**

- ISO Square
  - SPUN
  - TPUN
# New Milling Insert Series
## New Product Announcement - Milling

<table>
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<tr>
<th>Application</th>
<th>Shouldering</th>
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<td>Series</td>
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<tr>
<td>ADKT 15</td>
<td>AOMT 12</td>
<td>ONMU 08</td>
<td>SNMX 12</td>
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<th>Type</th>
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<td>-ST</td>
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<tr>
<td>for Sticky Materials</td>
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<tr>
<td>SDMW</td>
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<td>for Hard Materials</td>
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YG-1 Milling Grades
New Product Announcement – Milling

Milling Grades

<table>
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<tr>
<th></th>
<th>Steel</th>
<th>Stainless Steel</th>
<th>Cast Iron</th>
<th>Non Ferrous Metals</th>
<th>Heat Resistant Super Alloy</th>
<th>Hardened Materials</th>
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<tbody>
<tr>
<td>P</td>
<td>05</td>
<td>15</td>
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<td>35</td>
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<td>YG602</td>
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<td>602 (05-15)</td>
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<td>YG622</td>
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<td>YG712</td>
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PVD

**YG602**
P20 - P35  M20 - M30  K20 - K40  S15 - S25
Multi Purpose PVD Grade with Versatility
Sub-Micron substrate for demanding application

**YG622**
P20 - P40  K20 - K40
for High alloyed steel and Tough application
Sub-Micron substrate and Hard Coating
Excellent wear and oxidation resistance

**YG712**
P10 - P30  K10 - K30
Milling grade for medium of Steel application
High wear resistance and toughness in high speed machining

**YG500**
N05 - N35
Optimized grade for Aluminium
Sub-Micron substrate for Aluminium application
### Milling Chipbreakers

**New Product Announcement – Milling**

<table>
<thead>
<tr>
<th>Chipbreaker</th>
<th>Application</th>
<th>Series</th>
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<tbody>
<tr>
<td><strong>PMKNSH</strong></td>
<td><strong>-AL</strong></td>
<td><strong>Aluminium with YG200 New Grade</strong></td>
</tr>
<tr>
<td></td>
<td><strong>-ST</strong></td>
<td><strong>Aerospace</strong>&lt;br&gt;Sticky materials&lt;br&gt;Stainless Steel &amp; Super Alloys&lt;br&gt;Carbon Steels</td>
</tr>
<tr>
<td><strong>PMK</strong></td>
<td><strong>General</strong></td>
<td><strong>General Application</strong>&lt;br&gt;Low Alloyed Steels</td>
</tr>
<tr>
<td><strong>PMK</strong></td>
<td><strong>-TR</strong></td>
<td><strong>Mold &amp; Die</strong>&lt;br&gt;High Alloyed Steels&lt;br&gt;Cast Irons</td>
</tr>
<tr>
<td><strong>PH</strong></td>
<td><strong>..W</strong></td>
<td><strong>Hardened Materials</strong>&lt;br&gt;Cast Irons</td>
</tr>
</tbody>
</table>
# APKT Series Expansion

New Product Announcement – Milling

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<th>Chipbreaker Type</th>
<th>Corner Radius</th>
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<tr>
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<td>Super Alloy</td>
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<td>Mold &amp; Die</td>
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## RDKT Series Expansion

**New Product Announcement – Milling**

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<td>RDKW</td>
<td>05 07 08 10 12</td>
<td>Hardened Metals Cast Iron</td>
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</table>
**New Grades for Aluminium - What is different?**

New Product Announcement – Milling

**YG500 - Chrome Silver**

**CrN Coating**

Excellent *Anti-adhesion* due to low friction coefficient

**Sub-micron substrate**

High *Wear resistance* with *Toughness*
# Milling Cutter Series

New Product Announcement – Milling

<table>
<thead>
<tr>
<th>Type</th>
<th>Shouldering APKT</th>
<th>Shouldering APMT</th>
<th>Profiling RDKT(W)</th>
<th>Facing ODMT</th>
<th>Facing SEKT</th>
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Drilling – 1 Page Overview
New Product Announcement – Drilling

Series
- SPMX
- WCMX

Grades
- YG602 Universal Grade

Chipbreakers
- 1 General Chipbreakers
  + New Chipbreaker for Sticky Materials
YG-1 Drilling Grade
New Product Announcement – Drilling

Drilling Grades

<table>
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<tr>
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<th>P</th>
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<th>K</th>
<th>N</th>
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YG602

Universal grade for General Drilling Application
- Ultra Dense PVD Coating with thermal resistance & strength
- Sub-Micron substrate for demanding application
# Drilling – SPMX / WCMX Series

**New Product Announcement – Drilling**

<table>
<thead>
<tr>
<th>Chipbreaker Code</th>
<th>Insert Size</th>
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IF IT'S NOT PERFECT, IT'S NOT YG-1
WWW.YG1.KR