AP Chipbreaker
Positive Chipbreaker for Aluminum Finishing

Provides Excellent Surface Finish when Finishing Aluminum

Improved Chip Control during Aluminum Finishing Applications
Combination of Sharp Cutting Edge and DLC Coating Prevents Burrs
AP Chipbreaker
Improved Chip Control
Aluminum Finishing Applications

1
Improved Chip Control during Finishing

Optimized chipbreaker provides better chip control

**Concave Face**
Excellent chip control when finishing at large D.O.C.

**Large Rake Angle**
Sharp cutting edge suppresses cutting forces

**Curved Cutting Edge**
Curved corner edge creates better chip flow

**Optimized rake and bottom surface design**
Creates small curled chips

Chip Control Comparison (Internal Evaluation)

**External Turning**

<table>
<thead>
<tr>
<th>AP Chipbreaker (KW10)</th>
<th>Competitor A</th>
<th>Competitor B</th>
<th>Competitor C</th>
</tr>
</thead>
</table>

Cutting Conditions: $V_c = 1,310$ sfm, D.O.C. = 0.020", $f = 0.006$ ipr, Wet, CC 3251 Type
Workpiece: 6061

**Internal Turning**

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Cutting Conditions: $V_c = 1,310$ sfm, D.O.C. = 0.079", $f = 0.006$ ipr, Wet, CC 3251 Type
Workpiece: 6061

AP chipbreaker showed better chip control than competitors for both external and internal turning
2 Sharp Cutting Edge and DLC Coating Prevent Burrs

Burr Comparison when Exiting the Hole (Internal Evaluation)

- **AP Chipbreaker (PDL010)**
- **Competitor A (Carbide)**

![Burr Comparison Diagram](image)

**AP Chipbreaker (PDL010) suppressed burrs of exiting the hole**

Cutting Conditions: \(V_c = 1,310 \text{ sfm}, \text{D.O.C.} = 0.010", f = 0.005 \text{ ipr}, \text{CC 3251 Type, Wet, External Turning}

Workpiece: 5052

3 DLC Coated Grade PDL010 is Available

**Excellent Surface Finish with Aluminum Welding Resistance**

Welding Resistance Comparison (Internal Evaluation)

- **PDL Coating**
- **Competitor D**

![Welding Comparison](image)

**Achieves Long Tool Life with Hardness Close to that of Diamond**

High Hardness with Kyocera’s Proprietary Hydrogen-free DLC Coating

Coating Properties (Internal Evaluation)

![Coating Properties Graph](image)

Cutting Conditions: \(V_c = 2,630 \text{ sfm}, f_z = 0.004 \text{ ipr}, \text{D.O.C.} \times \text{a_e} = 0.118" \times 0.197", \text{Dry}

Cutter Dia. 0.984" Workpiece: 5052 Cutting Length: 187 ft
## Inserts

<table>
<thead>
<tr>
<th>Shape</th>
<th>Part Number</th>
<th>Dimensions (in)</th>
<th>Grade</th>
<th>DLC Coating</th>
<th>Carbide</th>
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<td>Thickness</td>
<td>Hole</td>
<td>Corner-R (RE)</td>
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● : Standard Item

### Applicable Chipbreaker Range

![Graph showing applicable chipbreaker range](image)

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