TOOLMAKER SOLUTIONS
BZN® Compacts
VS-Series

Polycrystalline cubic boron nitride blanks and cut shapes for milling and turning tools
BZN® Compacts - VS-Series

Hyperion Materials & Technologies is pleased to introduce the all new BZN® VS-Series. This new chain of polycrystalline cubic boron nitride (PCBN) grades is a complement to the V-Series, which is widely viewed as the benchmark of hardened steel machining grades. The VS-Series offers significantly improved edge toughness while maintaining superior crater and abrasion resistance.

KEY ATTRIBUTES
- Improved toughness and chipping resistance
- Solid PCBN (no carbide support)
- Flexibility in tool design and geometry
- Because there is no carbide support, there is no coefficient of thermal expansion mismatch during tool fabrication
- Ability to handle applications with increasing interruption levels or chip loads with more consistent tool life.

PRODUCT RANGE AND AVAILABILITY

<table>
<thead>
<tr>
<th>BZN GRADE</th>
<th>FORMAT</th>
<th>Overall Thickness (mm) (Tolerance +/- 0.05 mm, Outer Diameter 54.3 mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>1</td>
</tr>
<tr>
<td>VS10</td>
<td>Rounds</td>
<td>✓</td>
</tr>
<tr>
<td>VS10</td>
<td>Cut Product</td>
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<td>VS20</td>
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<tr>
<td>VS20</td>
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<tr>
<td>VS25</td>
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<tr>
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</tr>
<tr>
<td>VS35</td>
<td>Cut Product</td>
<td>✓</td>
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</tbody>
</table>

* Additional thicknesses will be considered upon request.

BZN VS10

APPLICATIONS

BZN Grade VS10 is recommended for:
- Continuous to mild interrupted turning
- Case hardened steels
- Through hardened steels
- Hardened steel reaming.

Test Description - Interrupted Turning of AISI 8620
Vc = 200 m/min, ap = 0.15 mm, f = 0.2 mm/rev
**BZN VS20**

**APPLICATIONS**

BZN Grade VS20 is recommended for:
- Continuous to medium interrupted turning
- Hardened steel turning (wet and dry)
- Through hardened steels
- Cold work tool steels.

**Test Description - Interrupted Turning of AISI 8620**

\[ V_c = 200 \text{ m/min}, \ ap = 0.15 \text{ mm}, \ f = 0.2 \text{ mm/rev} \]

**BZN VS25**

**APPLICATIONS**

BZN Grade VS25 is recommended for:
- Continuous to heavy interrupted turning
- CV joint milling
- Sintered alloy machining
- Case hardened steels.

**Test Description - Interrupted Turning of AISI 8620**

\[ V_c = 200 \text{ m/min}, \ ap = 0.15 \text{ mm}, \ f = 0.2 \text{ mm/rev} \]

**BZN VS35**

**APPLICATIONS**

BZN Grade VS35 is recommended for:
- Medium to heavy interrupted turning
- CV joint milling
- Sintered alloy machining
- Case and through hardened steels.

**Test Description - Interrupted Turning of AISI 8620**

\[ V_c = 200 \text{ m/min}, \ ap = 0.15 \text{ mm}, \ f = 0.2 \text{ mm/rev} \]
CUTTING SERVICES
HYPERION UTILIZES THE LATEST IN EDM TECHNOLOGY

Our service shop is capable of performing precision cutting services:
- Complete your cut order in five business days or less from the day the order is received.
- Each piece is cleaned and visually inspected to ensure you receive the highest level of quality and to minimize your internal processing time.
- Precision cutting of PCBN blanks includes standard shapes, customer special shapes, through holes, tight tolerance, relief angles, and carbide chamfers.

### HYPERION NOMENCLATURE EXAMPLES

<table>
<thead>
<tr>
<th>LENGTH/ANGLE (mm/degree)</th>
<th>LEG LENGTH OR DIAMETER (mm)</th>
<th>OT</th>
<th>GRADE</th>
<th>SPECIAL*</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>ROUND</td>
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<td>58.0</td>
<td>1.6</td>
<td>6000</td>
<td>360R58.0/1.6-60</td>
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<tr>
<td>HALF ROUND</td>
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<td>2.4</td>
<td>9500</td>
<td>180P10.0/2.4-95</td>
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<tr>
<td>PARTIAL</td>
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<td>8.0</td>
<td>1.6</td>
<td>HPT130</td>
<td>90P8.0/1.6-HPT130 0.5-0.8 PCBN</td>
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<tr>
<td>RECTANGLE</td>
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<td>8.0</td>
<td>1.6</td>
<td>6000</td>
<td>10.0L8.0/1.6-60</td>
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<tr>
<td>TRIANGLE</td>
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<tr>
<td>CUSTOMER SPECIAL</td>
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<td>DXXXXXX/1.6-95 CHF</td>
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<tr>
<td>HOLE</td>
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<td>1.6</td>
<td>6000</td>
<td>360R13.0/1.6-60 HOLE 2mm</td>
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</tbody>
</table>

Standard cut product tolerance for PCBN
- Leg length = ± 0.1 mm
- Diameter = ± 0.1 mm
- Thermal zone (chip spec) = ± 0.1 mm
- Angle = ± 1° degree
- Thickness = ± 0.05 mm
* Special = if not standard layer
All dimensions in mm.

www.HyperionMT.com