Coated Cermet Grades for Steel Turning

T1500Z/ New T2500Z

A glossy surface finish with exceptional stability

Coated cermet series with Brilliant Coat™

New New T2500Z
A tough grade with exceptional stability

New GU Series
General-purpose positive
M-class chipbreaker
Coated Cermet Grades for Steel Turning

■ Application Range

<table>
<thead>
<tr>
<th>Cutting Speed (m/min)</th>
<th>T1500A (uncoated cermet)</th>
<th>T1500Z (coated Cermet)</th>
<th>T2500Z (coated Cermet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>200</td>
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<tr>
<td>400</td>
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Finishing
- Light/continuous
- Continuous/some interruptions
- Interrupted/heavy interruption

Roughing
- Light/continuous
- Continuous/some interruptions
- Interrupted/heavy interruption

■ Benefits of T1500Z and T2500Z

Brilliant Coat™
AIN is applied as the top coat to provide excellent lubricity and an outstanding shine

High-lubricity layer
The high-lubricity layer blocks reactions with the steel, preventing adhesion and tearing

Wear-resistant layer
A fine grained coating is used to provide resistance to chipping and improve wear resistance

Cermet substrate with high thermal conductivity
A new cermet substrate with excellent thermal conductivity is used to achieve outstanding thermal crack resistance

Work material: SCM415
Cutting conditions: 
- $v_c=100\text{m/min}$
- $f=0.15\text{mm/rev}$
- $a_p=1.00\text{mm}$
- Wet
Benefits of Brilliant Coat™ Cermet

Brilliant Coat™ is used in the PVD process
- PVD coating with excellent wear resistance and lubricity
- Suppresses reactions with the work material, achieving a beautiful finish on the machined surface

Choosing a Cermet Grade (Example)

High wear resistance and high-quality finish

<table>
<thead>
<tr>
<th>Cermet Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>T1500Z</td>
<td>General-purpose coated cermet</td>
</tr>
<tr>
<td>T2500Z</td>
<td>Tough coated cermet</td>
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</table>

Highly economical with reliable finish quality

<table>
<thead>
<tr>
<th>Cermet Grade</th>
<th>Description</th>
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<tbody>
<tr>
<td>T1500A</td>
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Chipbreaker Application Range

Negative M-class

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Negative G-class

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Positive M-class

<table>
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<tr>
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Positive G-class

<table>
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<th>Feed Rate (mm/rev)</th>
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Coated Cermet Grades for Steel Turning

T1500Z/T2500Z

Comparison of Wear Resistance for T1500Z

Excellent wear resistance for stable machining and a long tool life

![Graph showing comparison of wear resistance for T1500Z](image)

Work Material: SCM435 (continuous machining) Insert: CNMG120408N-SU (T1500Z)
Cutting Conditions: \(v_c=250\text{m/min}\), \(f=0.20\text{mm/rev}\), \(a_p=1.00\text{mm}\) Wet

Comparison of Machined Surface for T1500Z

Brilliant Coat™ prevents the white blemishes caused by tearing, giving machined surfaces a beautiful finish

![Comparison of machined surface for T1500Z](image)

Work Material: STKM13A (continuous machining) Insert: CNMG120408N-LU (T1500Z)
Cutting Conditions: \(v_c=100\text{m/min}\), \(f=0.15\text{mm/rev}\), \(a_p=1.00\text{mm}\) Wet
**Comparison of Fracture Resistance for T2500Z**
Newly developed tough substrate achieves stable machining

![Fracture Resistance Chart]

Work Material: SCM435 (interrupted machining) Insert: CNMG120408N-SU (T2500Z)
Cutting Conditions: \(v_c=260\text{m/min}\) \(f=0.23\text{mm/rev}\) \(a_p=1.50\text{mm}\) Wet

**Comparison of Wear Resistance for T2500Z**
Brilliant Coat™ suppresses wear

![Wear Resistance Chart]

Work Material: SCM435 (continuous machining) Insert: CNMG120408N-SU (T2500Z)
Cutting Conditions: \(v_c=260\text{m/min}\) \(f=0.23\text{mm/rev}\) \(a_p=1.50\text{mm}\) Wet
### Negative 80° diamond type/M-class

<table>
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<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
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### Negative 80° diamond type/G-class

<table>
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### Negative 55° diamond type/M-class

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### Negative 55° diamond type/G-class

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*Standard stocked item  Blank: Made-to-order item  Wiper: Wiper insert*
## Negative square type/M-class

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<td>⬤</td>
<td>12.7 4.76 5.16 0.4 0.8</td>
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<tr>
<td>FL</td>
<td>SNMG 120408N-FL</td>
<td>⬤</td>
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<td>SNMG 120404N-FE 120408N-FE 120412N-FE</td>
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<td>LU</td>
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<td>SU</td>
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<tr>
<td>SX</td>
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<tr>
<td>GU</td>
<td>SNMG 090308N-GU SNMG 120404N-GU 120408N-GU</td>
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<td>9.525 3.18 3.81 0.4 0.8</td>
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## Negative triangular type/M-class

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<tr>
<td>FL</td>
<td>TNMG 160408N-FL</td>
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<tr>
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## Negative triangular type/G-class

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<th>Shape</th>
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## Negative triangular type/G-class

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### Negative 35° diamond type/M-class

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### Negative trigon type/M-class

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### Negative 35° diamond type/G-class

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### Negative trigon type/G-class

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# T1500Z / T2500Z

## Positive 80° diamond type/M-class

<table>
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## Positive 80° diamond type/G-class

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A "<" next to the corner radius indicates a negative tolerance.  

| Standard stocked item | Blank: Made-to-order item | Wiper: Wiper insert |
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### Positive square type/M-class

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<th>Nose Radius</th>
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### Positive square type/G-class

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A "<" next to the corner radius indicates a negative tolerance.

- : Standard stocked item Blank: Made-to-order item
## Coated Cermet Grades for Steel Turning

**T1500Z/T2500Z**

### Positive triangular type/M-class

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### Positive triangular type SD-class

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<td>TPXG 110302R-SDW</td>
<td>3.97</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>FG</td>
<td>TPXG 110302R-SDW</td>
<td>3.97</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>FY</td>
<td>TPXG 110302R-SDW</td>
<td>3.97</td>
<td>1.59</td>
</tr>
</tbody>
</table>

### Positive triangular type S-class

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Inscribed Circle</strong></td>
</tr>
<tr>
<td>5°</td>
<td>FW</td>
<td>TPXG 060102R-FW</td>
<td>3.97</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>FG</td>
<td>TPXG 060102R-FG</td>
<td>3.97</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>FY</td>
<td>TPXG 060102R-FY</td>
<td>3.97</td>
<td>1.59</td>
</tr>
<tr>
<td>11°</td>
<td>FW</td>
<td>TPXG 110302R-SDW</td>
<td>6.35</td>
<td>3.18</td>
</tr>
<tr>
<td></td>
<td>FG</td>
<td>TPXG 110302R-SDW</td>
<td>6.35</td>
<td>3.18</td>
</tr>
<tr>
<td></td>
<td>FY</td>
<td>TPXG 110302R-SDW</td>
<td>6.35</td>
<td>3.18</td>
</tr>
</tbody>
</table>

**A "\*" next to the corner radius indicates a negative tolerance.**

- Standard stocked item
- Blank: Made-to-order item
- Wiper: Wiper insert
## Coated Cermet Grades for Steel Turning

### Positive 35° diamond type/M-class

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inscribed Circle</td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>VBMT 110302N-FB</td>
<td>5° FB</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>VBMT 110302N-LU</td>
<td>5° LU</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>VBMT 110302N-LB</td>
<td>5° LB</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>VBMT 160404N-SU</td>
<td>5° SU</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>VBMT 160404N-GU</td>
<td>5° GU</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>VCMT 080202N-FB</td>
<td>7° FB</td>
<td>4.76</td>
<td>2.38</td>
<td>2.3</td>
</tr>
<tr>
<td>VCMT 080202N-LB</td>
<td>7° LB</td>
<td>4.76</td>
<td>2.38</td>
<td>2.3</td>
</tr>
<tr>
<td>VCMT 160404N-LU</td>
<td>7° LU</td>
<td>9.525</td>
<td>4.76</td>
<td>4.4</td>
</tr>
</tbody>
</table>

### Positive trigon type/M-class

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inscribed Circle</td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>WPMT 110204N-LB</td>
<td>11° LB</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>WPMT 160308N-LB</td>
<td>11° LB</td>
<td>9.525</td>
<td>3.18</td>
<td>2.8</td>
</tr>
</tbody>
</table>

### Positive trigon type/G-class

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inscribed Circle</td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>WBGT 060102R-FW</td>
<td>5° FW</td>
<td>3.97</td>
<td>1.59</td>
<td>2.2</td>
</tr>
<tr>
<td>WBGT 080202R-FW</td>
<td>080202R-FW</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
</tbody>
</table>

### Positive square type/M-class (no hole)

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inscribed Circle</td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>11° FK</td>
<td>SPMR 090304N-FK</td>
<td>9.525</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>11° FK</td>
<td>SPMR 120304N-FK</td>
<td>9.525</td>
<td>3.18</td>
<td>2.8</td>
</tr>
</tbody>
</table>

### Positive triangular type/M-class (no hole)

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inscribed Circle</td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>TPMR 110308N-FK</td>
<td>11° FK</td>
<td>9.525</td>
<td>3.18</td>
<td>2.8</td>
</tr>
<tr>
<td>TPMR 160308N-FK</td>
<td>160308N-FK</td>
<td>9.525</td>
<td>3.18</td>
<td>2.8</td>
</tr>
</tbody>
</table>

### Positive triangular type/G-class (no hole)

<table>
<thead>
<tr>
<th>Shape</th>
<th>Relief Angle</th>
<th>Cat. No.</th>
<th>Stock</th>
<th>Dimensions (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inscribed Circle</td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Thickness</td>
<td></td>
</tr>
<tr>
<td>TPGR 110302R-W</td>
<td>11° W</td>
<td>6.35</td>
<td>3.18</td>
<td>2.8</td>
</tr>
</tbody>
</table>
Coated Cermet Grades for Steel Turning

**T1500Z/T2500Z**

For SEC-Grooving Tool (GWC Type)

### TGA Type (insert for square grooves)

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Width of Cut CW</th>
<th>Maximum Depth of Cut External Turning</th>
<th>Maximum Groove Depth CDX</th>
<th>Nose Radius RE</th>
<th>Inscribed Circle IC</th>
<th>Thickness S</th>
<th>* Group No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGA R/L3033</td>
<td>● ● 0.33</td>
<td>0.8</td>
<td>0.5</td>
<td>1.0</td>
<td>0.05</td>
<td>9.525</td>
<td>3.18</td>
</tr>
<tr>
<td>TGA R/L3050</td>
<td>● 0.50</td>
<td>1.2</td>
<td>0.8</td>
<td>1.4</td>
<td>0.05</td>
<td>9.525</td>
<td>3.18</td>
</tr>
<tr>
<td>TGA R/L3075</td>
<td>● 0.75</td>
<td>2.0</td>
<td>1.5</td>
<td>2.5</td>
<td>0.1</td>
<td>9.525</td>
<td>3.18</td>
</tr>
<tr>
<td>TGA R/L3095</td>
<td>● 0.95</td>
<td>2.5</td>
<td>2.0</td>
<td>3.0</td>
<td>0.1</td>
<td>9.525</td>
<td>3.18</td>
</tr>
<tr>
<td>TGA R/L3100</td>
<td>● 1.00</td>
<td>3.0</td>
<td>2.5</td>
<td>3.9</td>
<td>0.2</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L3125</td>
<td>● 1.25</td>
<td>3.5</td>
<td>2.5</td>
<td>3.9</td>
<td>0.2</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L3150</td>
<td>● 1.50</td>
<td>4.0</td>
<td>2.5</td>
<td>4.4</td>
<td>0.3</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L3175</td>
<td>● 1.75</td>
<td>4.5</td>
<td>2.5</td>
<td>5.4</td>
<td>0.4</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L3185</td>
<td>● 1.85</td>
<td>5.0</td>
<td>2.5</td>
<td>5.4</td>
<td>0.4</td>
<td>12.70</td>
<td>5.00</td>
</tr>
</tbody>
</table>

*Refer to the group numbers in the General Catalogue for information on the holders that can be used. Select applicable inserts for the holders by using matching group numbers.

Diagram shows right hand (R) type.

### TGA Type (insert for round grooves)

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Width of Cut CW</th>
<th>Maximum Depth of Cut External Turning</th>
<th>Maximum Groove Depth CDX</th>
<th>Nose Radius RE</th>
<th>Inscribed Circle IC</th>
<th>Thickness S</th>
<th>* Group No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGA R/L4050R</td>
<td>● 1.00</td>
<td>2.0</td>
<td>1.7</td>
<td>2.5</td>
<td>0.50</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L4075R</td>
<td>● 1.50</td>
<td>2.5</td>
<td>2.5</td>
<td>3.9</td>
<td>0.75</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L4100R</td>
<td>● 2.00</td>
<td>3.5</td>
<td>2.5</td>
<td>3.9</td>
<td>1.00</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L4125R</td>
<td>● 2.50</td>
<td>4.0</td>
<td>2.5</td>
<td>5.4</td>
<td>1.50</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L4150R</td>
<td>● 3.00</td>
<td>5.0</td>
<td>2.5</td>
<td>5.4</td>
<td>2.00</td>
<td>12.70</td>
<td>4.76</td>
</tr>
<tr>
<td>TGA R/L4200R</td>
<td>● 4.00</td>
<td>6.0</td>
<td>2.5</td>
<td>5.4</td>
<td>2.50</td>
<td>12.70</td>
<td>4.76</td>
</tr>
</tbody>
</table>

*Refer to the group numbers in the General Catalogue for information on the holders that can be used. Select applicable inserts for the holders by using matching group numbers.

Diagram shows right hand (R) type.

Refer to the General Catalogue for details on the holders of the products indicated on this page.

- ●: Standard stocked item
- Blank: Made-to-order item
### Example Use of T1500Z

<table>
<thead>
<tr>
<th>SCM415 Shaft</th>
<th>SCM420H Automotive Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outstanding wear resistance, 7.5x longer tool life</strong></td>
<td><strong>Suppresses wear, 2x longer tool life</strong></td>
</tr>
<tr>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
</tr>
<tr>
<td>No. of Workpieces (pieces/C)</td>
<td>No. of Workpieces (pieces/C)</td>
</tr>
<tr>
<td>T1500Z + SU</td>
<td>150</td>
</tr>
<tr>
<td>Conv.</td>
<td>20</td>
</tr>
<tr>
<td>Insert: TNMG160408N-SU (T1500Z)</td>
<td>Insert: TNMG160408N-LU (T1500Z)</td>
</tr>
<tr>
<td>Cutting Conditions: $v_c=220\text{m/min}$, $f=0.26$ to 0.34mm/rev, $a_p=0.20$ to 0.25mm Wet</td>
<td>Cutting Conditions: $v_c=200\text{m/min}$, $f=0.15\text{mm/rev}$, $a_p=1.00\text{mm}$ Wet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S48C Guide</th>
<th>S45C Sleeve</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Good wear resistance, 1.9x longer tool life</strong></td>
<td><strong>Suppresses wear, 2.4x longer tool life</strong></td>
</tr>
<tr>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
<tr>
<td>No. of Workpieces (pieces/C)</td>
<td>No. of Workpieces (pieces/C)</td>
</tr>
<tr>
<td>T1500Z + LU</td>
<td>9,000</td>
</tr>
<tr>
<td>Comp’s B</td>
<td>4,800</td>
</tr>
<tr>
<td>Insert: TPMT090204N-LU (T1500Z)</td>
<td>Insert: DCMT11T304N-LU (T1500Z)</td>
</tr>
<tr>
<td>Cutting Conditions: $v_c=162\text{m/min}$, $f=0.13\text{mm/rev}$, $a_p=0.55\text{mm}$ Wet</td>
<td>Cutting Conditions: $v_c=230\text{m/min}$, $f=0.10\text{mm/rev}$, $a_p=0.50\text{mm}$ Wet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S43C Lower Shaft</th>
<th>S43C Mechanical Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Good wear resistance, 2.8x longer tool life</strong></td>
<td><strong>Suppresses wear, 2.8x longer tool life</strong></td>
</tr>
<tr>
<td><img src="image5" alt="Diagram" /></td>
<td><img src="image6" alt="Diagram" /></td>
</tr>
<tr>
<td>No. of Workpieces (pieces/C)</td>
<td>No. of Workpieces (pieces/C)</td>
</tr>
<tr>
<td>T1500Z + SD</td>
<td>1,700</td>
</tr>
<tr>
<td>Conv.</td>
<td>600</td>
</tr>
<tr>
<td>Insert: CPGT080208N-SD (T1500Z)</td>
<td>Insert: VNMG160408N-FL (T1500Z)</td>
</tr>
<tr>
<td>Cutting Conditions: $v_c=140\text{m/min}$, $f=0.15\text{mm/rev}$, $a_p=0.50\text{mm}$ Wet</td>
<td>Cutting Conditions: $v_c=180\text{m/min}$, $f=0.20\text{mm/rev}$, $a_p=0.20$ to 0.90mm Wet</td>
</tr>
</tbody>
</table>
### Example Use of **T1500Z**

<table>
<thead>
<tr>
<th>SAPH440 (Press Material) Piston Part</th>
<th>SCM420H Clutch Part</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good chip control when used with the FB breaker</td>
<td>Good chip control when used with the FB breaker</td>
</tr>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>Insert: DCMT11T308N-FB (T1500Z)</td>
<td>Insert: DCMT11T304N-FB (T1500Z)</td>
</tr>
<tr>
<td>Cutting Conditions: ( v_c = 360 \text{m/min} ) ( f = 0.14 \text{mm/rev} ) ( a_p = 0.30 \text{mm (roughing)} \ 0.02 \text{mm (finish)} ) Wet</td>
<td>Cutting Conditions: ( v_c = 220 \text{m/min} ) ( f = (1)0.15/(2)0.12/(3)0.18 \text{mm/rev} ) ( a_p = 0.25 \text{mm} ) Wet</td>
</tr>
</tbody>
</table>

**S45C Hub**

Good chip control and 2x longer tool life when used with the LB breaker

![Image](image3.png)

Insert: VBMT160408N-LB (T1500Z)

Cutting Conditions: \( v_c = 240 \text{m/min} \) \( f = 0.25 \text{ to } 0.28 \text{mm/rev} \) \( a_p = 0.60 \text{mm} \) Wet

### Example Use of **T2500Z**

<table>
<thead>
<tr>
<th>Iron Sheet Automotive Parts</th>
<th>SAPH440 Automotive Parts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brilliant Coat™ suppresses wear, 2.5x longer tool life</td>
<td>Suppresses notch wear, 2x longer tool life</td>
</tr>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>Insert: DCMT11T308N-LU (T2500Z)</td>
<td>Insert: VBMT160408N-LB (T2500Z)</td>
</tr>
<tr>
<td>Cutting Conditions: ( v_c = 450 \text{m/min} ) ( f = 0.10 \text{mm/rev} ) ( a_p = 0.30 \text{ to } 0.35 \text{mm} ) Wet</td>
<td>Cutting Conditions: ( v_c = 170 \text{m/min} ) ( f = 0.16 \text{mm/rev} ) ( a_p = 0.15 \text{mm} ) Wet</td>
</tr>
</tbody>
</table>
Example Use of T2500Z

<table>
<thead>
<tr>
<th>SCM435 Bar Material</th>
<th>S45C Bolts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good wear resistance due to Brilliant Coat™, 1.9x longer tool life</td>
<td>Greater fracture resistance due to new tough substrate, 2.5x longer tool life</td>
</tr>
</tbody>
</table>

Insert: TPGT110302L-SD (T2500Z)
Cutting Conditions: $v_c=115\text{m/min}$, $f=0.07\text{mm/rev}$, $a_p=0.03\text{mm}$
Wet

Insert: TNGG160404R-FY (T2500Z)
Cutting Conditions: $v_c=150\text{m/min}$, $f=0.14\text{mm/rev}$, $a_p=0.30\text{mm}$
Wet

Recommended Cutting Conditions for T1500Z/T2500Z

<table>
<thead>
<tr>
<th>Work Material</th>
<th>Application</th>
<th>Grade</th>
<th>Cutting Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild Steel (SS400, etc.)</td>
<td>Continuous to General</td>
<td>T1500Z</td>
<td>Depth of Cut $a_p(\text{mm})$</td>
</tr>
<tr>
<td></td>
<td>Interrupted</td>
<td>T1500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td>Heavy Interrupted</td>
<td>T2500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Feed Rate $f(\text{mm/rev})$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.05-0.15-0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cutting Speed $v_c(\text{m/min})$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50-250-400</td>
</tr>
<tr>
<td>Low Carbon Steel, Low Alloy steel (S10C, SCM415, etc.)</td>
<td>Continuous to General</td>
<td>T1500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td>Interrupted</td>
<td>T1500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td>Heavy Interrupted</td>
<td>T2500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.05-0.15-0.25</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>50-200-350</td>
</tr>
<tr>
<td>High Carbon Steel, High Alloy Steel (S45C, SCM440H, etc.)</td>
<td>Continuous to General</td>
<td>T1500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td>Interrupted</td>
<td>T1500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td>Heavy Interrupted</td>
<td>T2500Z</td>
<td>0.2-1.0-2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.05-0.15-0.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50-150-280</td>
</tr>
</tbody>
</table>

< SAFETY NOTES >

- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.
- Please handle with care as this product has sharp edges.
- Improper cutting conditions or miscalculation of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.
- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

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Hardmetal Division

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