

# PCD Turning Inserts



Standard/Chip breaker/Wiper

## Company Profile

ToolingBox (Beijing) Industrial Technology Co.,Ltd is a Chinese professional manufacturer for cutting tools. We supply solid&brazed CBN tools, Tipped PCD inserts and tools, carbide inserts and tools for woodworking and metalworking industries.

With over a decade of dedicated expertise, our company specializes in the research, development, production, promotion, and technical service of tungsten carbide cutting tools. Our product range includes woodworking carbide reversible knives, molding knives, circular cutters, oscillating knives, carbide thin razor blades, carbide scrapers, and more. These products find extensive applications in wood processing, paper printing, film and fiber industries, electronic battery cutting, and various other sectors. Renowned for our outstanding product quality and prompt deliveries, we have garnered recognition from numerous customers, leading to a significant domestic market share and exports to countries and regions, including Europe, the United States, Russia, Mid east, India and Southeast Asia.

Our company possesses a comprehensive set of standardized testing equipment and processes to ensure product quality. We are supported by a professional team specializing in production, technology, and sales, capable of addressing various customer-related issues. With over 100 CNC grinding machines, end mills, surface grinders, and a variety of imported inspection devices, we stand as one of the industry's largest, highest-output, most diverse, and fully-equipped enterprises in China.

We adhere to the business philosophy of "integrity in operation, superior quality, and customer-first", continuously enhancing our corporate image and product quality, reducing overall costs, shortening delivery times, and consistently improving customer satisfaction.

ToolingBox, Professional makes values!





Raw material production



Raw material inspection



Flat grinding



CNC cutting edge



CNC cutting edge



Cleaning



Inspection of the first



Inspection of the second

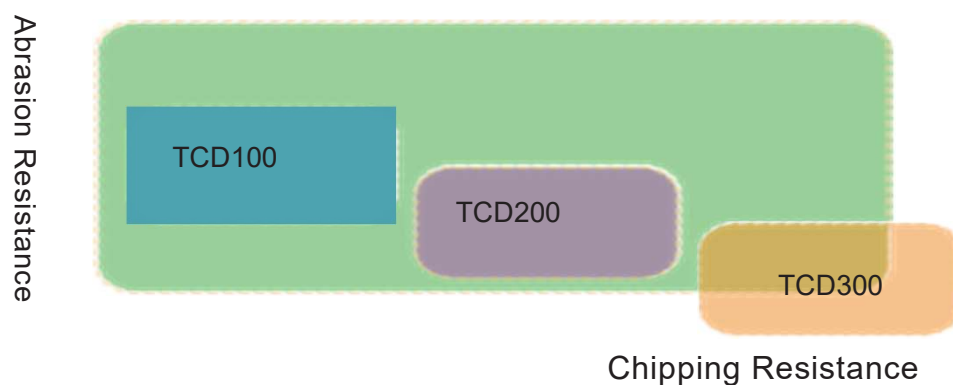
|      |       |                                  |
|------|-------|----------------------------------|
| Page | 05-06 | PCD Material Introduction        |
| Page | 07    | Cutting Direction Recommendation |
| Page | 08-09 | Rule of PCD Insert Code          |
| Page | 10-16 | PCD tipped Inserts               |
| Page | 17-19 | PCD Inserts with Cheaper breaker |
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| Page | 23    | Cutting Speed Recommendation     |
| Page | 24    | Customized PCD Inserts           |

# ToolingBox PCD Material Introduction

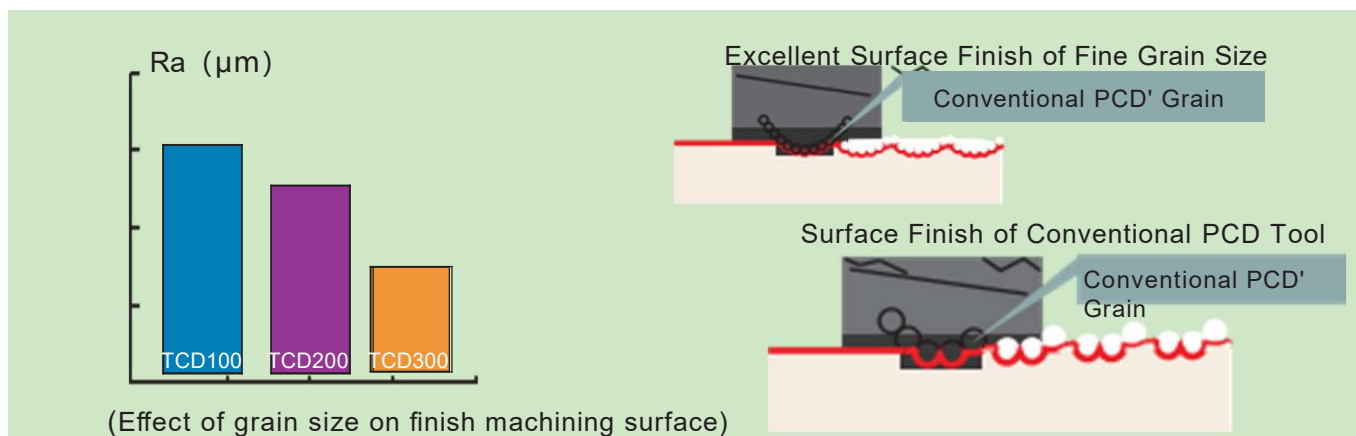
## Application Recommendation

| PCD Blank Grade | Particle Size (um) | Bond  | Characteristics                                                                                            | Application                                                                                                             |
|-----------------|--------------------|-------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| TCD100          | 10                 | metal | General PCD grade, with high impact resistance and very high wear resistance                               | suitable for aluminum alloy (Si<13%) and non-metal finishing turning, wood plank cutting off                            |
| TCD200          | 5                  | metal | General PCD grade, with high impact resistance and high wear resistance                                    | suitable for ceramic, graphite, non-metal & wood turning                                                                |
| TCD300          | 2-30               | metal | Excellent wear resistance, high thermal stability and high impact resistance through adopting mixed grains | suitable for aluminum alloy (Si>13%), MMC material (metal-matrix composite) based aluminum, sintered ceramic and rocks. |

## Micro-Structure of PCD Materials



## PCD Grain Size Affects Roughness of Workpiece's Surface





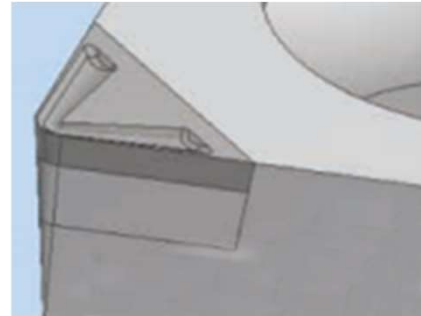
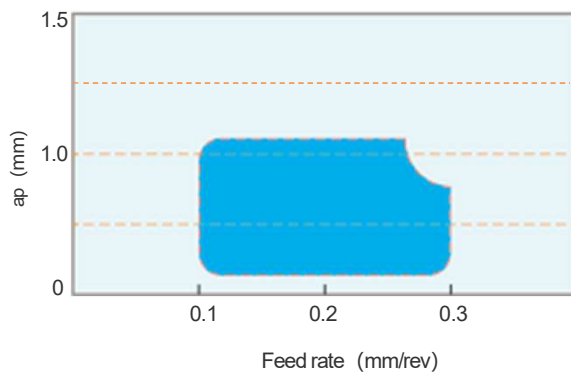
# PCD Material Introduction

## PCD Insert with chip-breaker /Wiper

### ■PCD Insert with chip-breaker

Excellent chip breaking in finishing machining

Scope of Application



Material: TCD100

Cutting conditions:  $V_c=400\text{m/min}$   $f=0.1\text{mm/rev}$   $a_p=0.2\text{mm}$

Insert type: CCGW09T308



Material: TCD200

Cutting conditions:  $V_c=400\text{m/min}$   $f=0.1\text{mm/rev}$   $a_p=0.5\text{mm}$

Insert type: CCGW09T308



### ■PCD Wiper Insert(WG)

Improve the quality of workpiece surface or processing efficiency

Effect of Wiper Insert

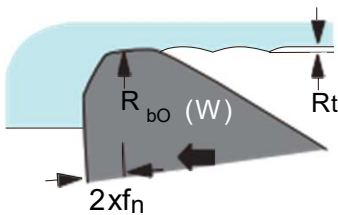
With the same  $R_t$ ,

Wiper inserts increase double feed rate( $2xf_n$ ).

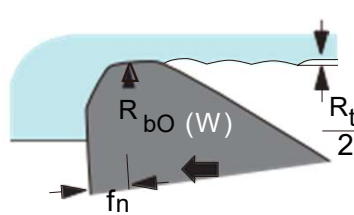
Under the same  $f_n$ ,

Wiper inserts improve the surface quality( $\frac{R_a}{2}$ ).

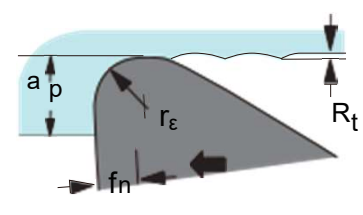
Standard corner radius



High Efficiency

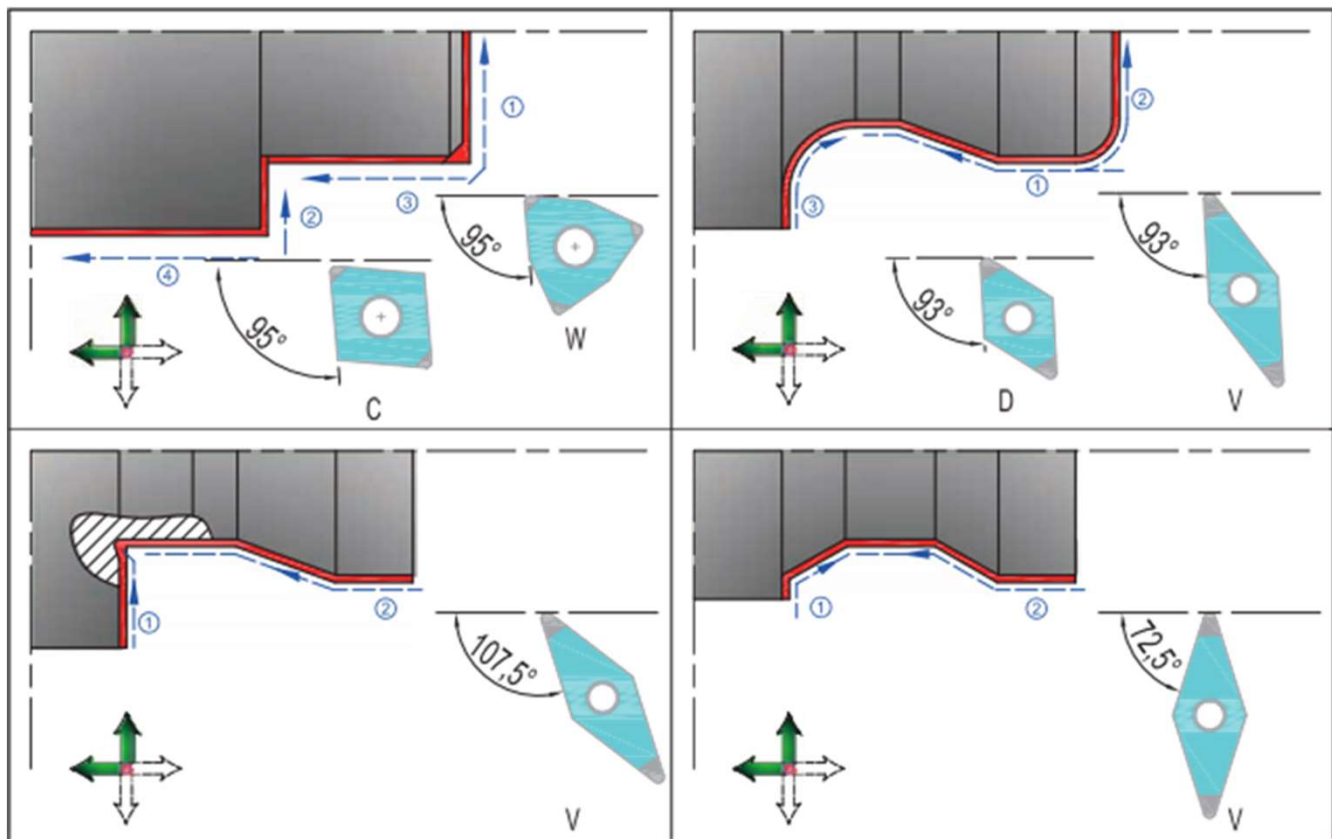


High Quality Surface

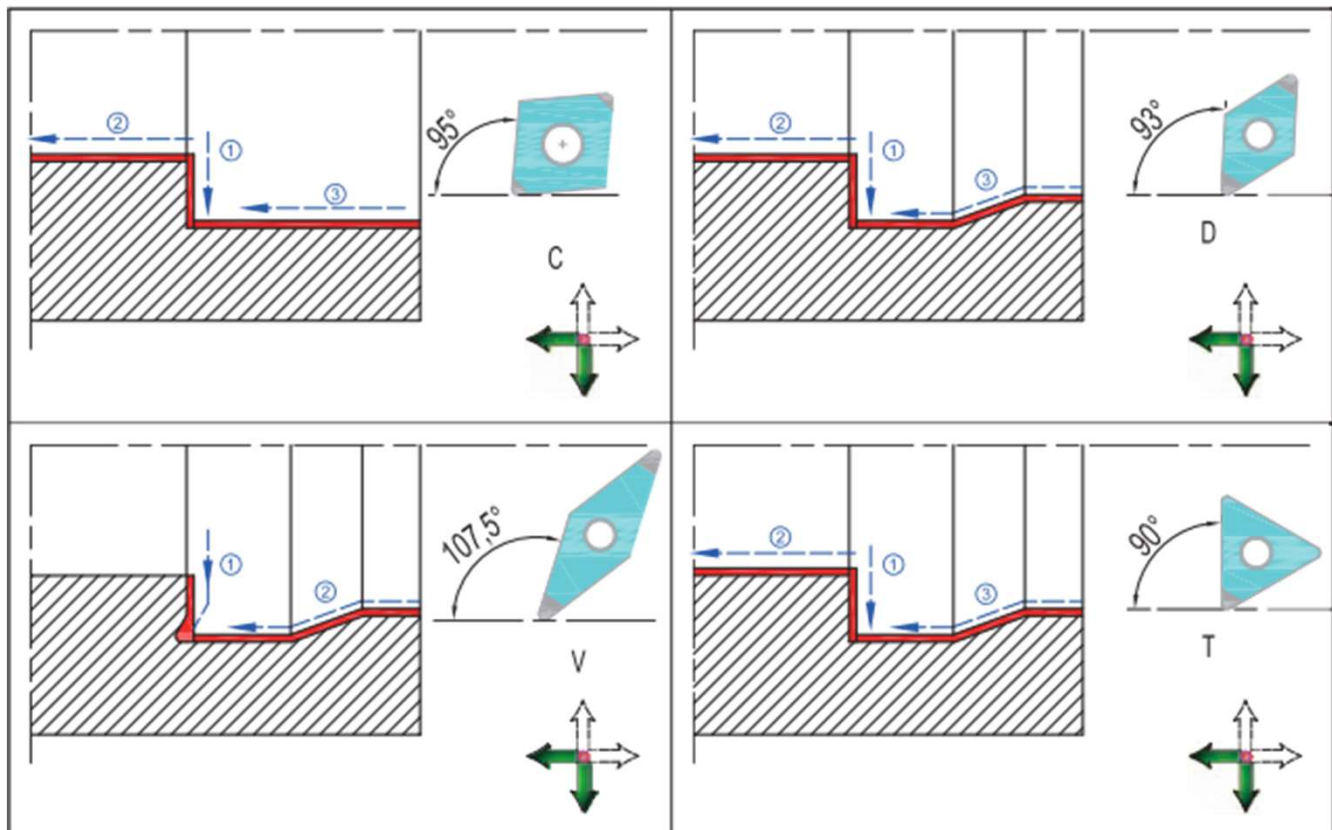


Recommended cutting direction for turning no-ferrous with PCD tools

### External machining



### Internal machining



ISO

| C | C | G | W | 12 | 04 | 08 | - | TP | N |
|---|---|---|---|----|----|----|---|----|---|
| 1 | 2 | 3 | 4 | 5  | 6  | 7  |   | 8  | 9 |

1

insert shape

A

R

B

S

C

T

D

V

W

2

clearance angle

B

N

C

P

D

4

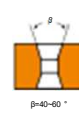
machining and fastening feature

A

N

W

B

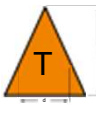
Q

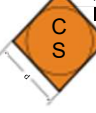
T

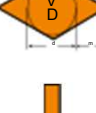
X Drawing or Precise description of indexable inserts required

3

tolerances, ISO[mm]

T

C

V

L

|   | d           | m           | s      |
|---|-------------|-------------|--------|
| A | ±0.025      | ±0.005      | ±0.025 |
| C | ±0.025      | ±0.013      | ±0.025 |
| E | ±0.025      | ±0.025      | ±0.025 |
| F | ±0.013      | ±0.005      | ±0.025 |
| G | ±0.025      | ±0.025      | ±0.130 |
| H | ±0.013      | ±0.013      | ±0.025 |
| J | ±0.05~±0.15 | ±0.005      | ±0.025 |
| K | ±0.05~±0.15 | ±0.013      | ±0.025 |
| L | ±0.05~±0.15 | ±0.025      | ±0.025 |
| M | ±0.05~±0.15 | ±0.08~±0.20 | ±0.130 |

5

insert size

| Inner circle diameter |      |         | C    | D    | R    | S    | T    | V    | W    |
|-----------------------|------|---------|------|------|------|------|------|------|------|
| IC mm                 | Code | IC inch | Code | Code | Code | Code | Code | Code | Code |
| 3.97                  | 1.2  | 5/32"   |      |      |      | 03   | 06   |      | 03   |
| 5                     |      |         |      |      |      |      | 08   |      |      |
| 5.56                  | 1.8  |         |      |      |      | 07   | 09   |      |      |
| 6                     |      |         |      | 06   |      |      |      |      |      |
| 6.35                  | 2    | 1/4"    | 06   | 07   | 06   |      | 11   | 11   | 04   |
| 8                     |      |         | 08   |      | 08   |      |      |      | 05   |
| 9.525                 | 3    | 3/8"    | 09   | 11   | 09   | 09   | 16   | 16   | 06   |
| 10                    |      |         |      |      | 10   |      |      |      |      |
| 12                    |      |         |      |      | 12   |      |      |      |      |
| 12.7                  | 4    | 1/2"    | 12   | 15   | 12   | 12   | 22   | 22   | 08   |
| 15.875                | 5    | 5/8"    | 16   |      | 15   | 15   | 27   |      | 10   |
| 16                    |      |         |      |      | 16   |      |      |      | 12   |
| 19.05                 | 6    | 3/4"    | 19   |      | 19   | 19   | 33   |      |      |
| 20                    |      |         |      |      | 20   |      |      |      |      |
| 25                    |      |         |      |      |      |      |      |      |      |
| 25.4                  | 8    | 1"      | 25   |      |      | 25   |      |      |      |
| 31.75                 | 10   | 1-1/4"  |      |      |      |      |      |      |      |



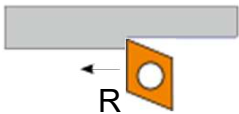
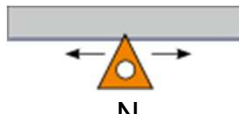
ANS

| C | C | G | W | 4 | 3 | 2 | - | TP | N |
|---|---|---|---|---|---|---|---|----|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |   | 8  | 9 |

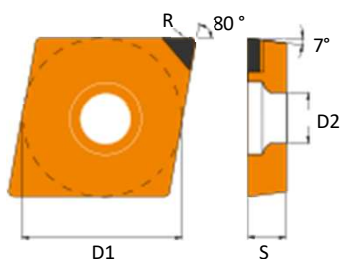
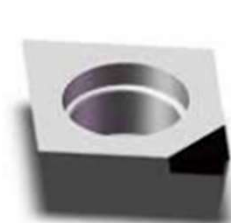
| 6<br>thickness |      |      |      |
|----------------|------|------|------|
| ISO            |      | ANSI |      |
| 01             | 1.59 | 1    | 1/16 |
| T1             | 1.98 | 1.2  | 0.75 |
| 02             | 2.38 | 1.5  | 3/32 |
| T2             | 2.78 | -    | -    |
| 03             | 3.18 | 2    | 1/8  |
| T3             | 3.97 | 2.5  | 5/32 |
| 04             | 4.76 | 3    | 3/16 |
| 05             | 5.56 | 3.5  | 7/32 |
| 06             | 6.36 | 4    | 1/4  |
| 07             | 7.94 | 5    | 5/16 |
| 09             | 9.52 | 6    | 3/8  |

| 7<br>corner radius r mm, inch    |       |      |      |
|----------------------------------|-------|------|------|
| ISO                              |       | ANSI |      |
| 01                               | r=0.1 | 0.1  | 1/25 |
| 02                               | r=0.2 | 0    | 2/25 |
| 04                               | r=0.4 | 1    | 1/64 |
| 08                               | r=0.8 | 2    | 1/32 |
| 12                               | r=1.2 | 3    | 3/64 |
| 16                               | r=1.6 | 4    | 1/16 |
| 24                               | r=2.4 | 6    | 3/32 |
| 32                               | r=3.2 | 8    | 1/8  |
| 0 from imperial units to mm      |       |      |      |
| M0 For diameters in metric units |       |      |      |

| 8<br>insert form                                                                    |                                     |
|-------------------------------------------------------------------------------------|-------------------------------------|
|    | 1N<br>pcd inserts with one corner   |
|    | CB<br>pcd inserts with chip breaker |
|  | FE<br>full edge pcd inserts         |

| 9<br>cutting direction                                                                |   |
|---------------------------------------------------------------------------------------|---|
|    | R |
|    | L |
|  | N |

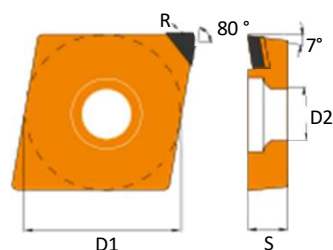
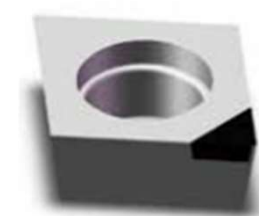
## CCG W/CC MW



| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| CCGW060204-1N | 6.35       | 2.8        | 2.38      | 0.4 |
| CCGW060208-1N |            |            |           | 0.8 |
| CCMW060202-1N | 6.35       | 2.8        | 2.38      | 0.2 |
| CCMW060204-1N |            |            |           | 0.4 |
| CCMW060208-1N |            |            |           | 0.8 |
| CCGW09T302-1N | 9.525      | 4.4        | 3.97      | 0.2 |
| CCGW09T304-1N |            |            |           | 0.4 |
| CCGW09T308-1N |            |            |           | 0.8 |

| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| CCMW09T304-1N | 9.525      | 4.4        | 3.97      | 0.4 |
| CCMW09T308-1N |            |            |           | 0.8 |
| CCGW120404-1N | 12.7       | 5.5        | 4.76      | 0.4 |
| CCGW120408-1N |            |            |           | 0.8 |
| CCGW120412-1N |            |            |           | 1.2 |
| CCMW120404-1N | 12.7       | 5.5        | 4.76      | 0.4 |
| CCMW120408-1N |            |            |           | 0.8 |
| CCMW120412-1N |            |            |           | 1.2 |

## CCG T/C CMT



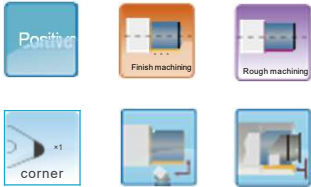
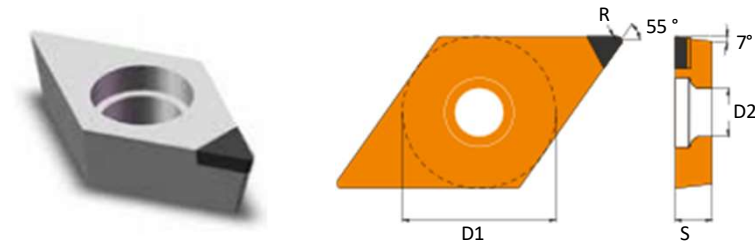
| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| CCGT060204-1N | 6.35       | 2.8        | 2.38      | 0.4 |
| CCGT060208-1N |            |            |           | 0.8 |
| CCMT060202-1N | 6.35       | 2.8        | 2.38      | 0.2 |
| CCMT060204-1N |            |            |           | 0.4 |
| CCMT060208-1N |            |            |           | 0.8 |
| CCGT09T302-1N | 9.525      | 4.4        | 3.97      | 0.2 |
| CCGT09T304-1N |            |            |           | 0.4 |
| CCGT09T308-TP |            |            |           | 0.8 |

| Designation    | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|----------------|------------|------------|-----------|-----|
| CCMT09T304-1N  | 9.525      | 4.4        | 3.97      | 0.4 |
| CCMT09T308-1N  |            |            |           | 0.8 |
| CCGT120404-1N  | 12.7       | 5.5        | 4.76      | 0.4 |
| CCGT120408-1N  |            |            |           | 0.8 |
| CCGT120412-1N  |            |            |           | 1.2 |
| CCMT120404-1N  | 12.7       | 5.5        | 4.76      | 0.4 |
| CCMT120408-1N  |            |            |           | 0.8 |
| CCMTW120412-TP |            |            |           | 1.2 |

### Order Note

- Please refer to PCD inserts code key description.
- To place an order, please refer to the designation code.
- For the item which is not on the list pls contact our sales to get the quote.

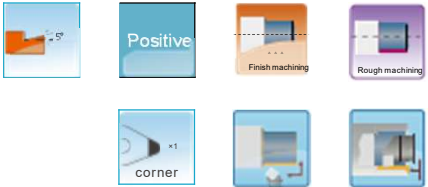
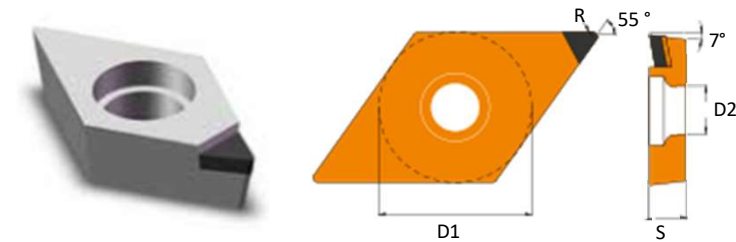
DC GW/DC MW



| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| DCGW070202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| DCGW070204-1N |         |         |        | 0.4 |
| DCGW070208-1N |         |         |        | 0.8 |
| DCMW070202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| DCMW070204-1N |         |         |        | 0.4 |
| DCMW070208-1N |         |         |        | 0.8 |

| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| DCGW11T304-1N | 9.525   | 4.4     | 3.97   | 0.4 |
| DCGW11T308-1N |         |         |        | 0.8 |
| DCGW11T312-1N |         |         |        | 1.2 |
| DCMW11T304-1N | 9.525   | 4.4     | 3.97   | 0.4 |
| DCMW11T308-1N |         |         |        | 0.8 |
| DCMW11T312-1N |         |         |        | 1.2 |

D CGT/D CMT



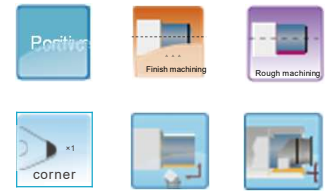
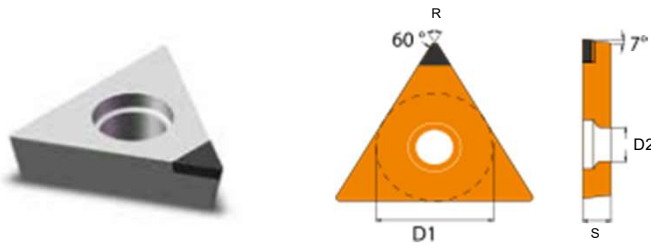
| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| DCGT070202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| DCGT070204-1N |         |         |        | 0.4 |
| DCGT070208-1N |         |         |        | 0.8 |
| DCMT070202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| DCMT070204-1N |         |         |        | 0.4 |
| DCMT070208-1N |         |         |        | 0.8 |

| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| DCGT11T304-1N | 9.525   | 4.4     | 3.97   | 0.4 |
| DCGT11T308-1N |         |         |        | 0.8 |
| DCGT11T312-1N |         |         |        | 1.2 |
| DCMT11T304-1N | 9.525   | 4.4     | 3.97   | 0.4 |
| DCMT11T308-1N |         |         |        | 0.8 |
| DCMT11T312-1N |         |         |        | 1.2 |

Order Note

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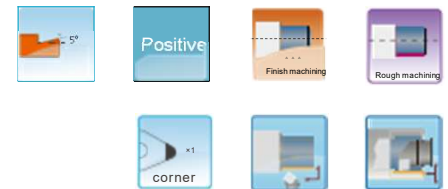
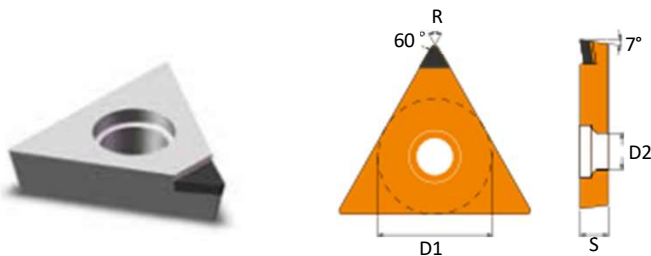
## TCG W/TCMW



| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| TCGW090204-1N | 5.56       | 2.5        | 2.38      | 0.4 |
| TCGW090208-1N |            |            |           | 0.8 |
| TCMW090204-1N | 5.56       | 2.5        | 2.38      | 0.4 |
| TCMW090208-1N |            |            |           | 0.8 |
| TCGW110204-1N | 6.35       | 2.8        | 2.38      | 0.4 |
| TCGW110208-1N |            |            |           | 0.8 |

| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| TCMW110204-1N | 6.35       | 2.8        | 2.38      | 0.4 |
| TCMW110208-1N |            |            |           | 0.8 |
| TCGW16T304-1N | 9.525      | 4.4        | 3.97      | 0.4 |
| TCGW16T308-1N |            |            |           | 0.8 |
| TCMW16T304-1N | 9.525      | 4.4        | 3.97      | 0.4 |
| TCMW16T308-1N |            |            |           | 0.8 |

## TCGT/TCMT



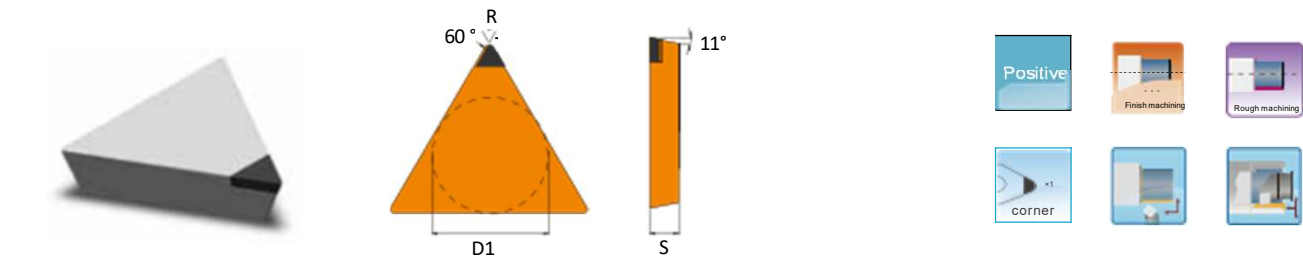
| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| TCGT090204-1N | 5.56       | 2.5        | 2.38      | 0.4 |
| TCGT090208-1N |            |            |           | 0.8 |
| TCMT090204-1N | 5.56       | 2.5        | 2.38      | 0.4 |
| TCMT090208-1N |            |            |           | 0.8 |
| TCGT110204-1N | 6.35       | 2.8        | 2.38      | 0.4 |
| TCGT110208-1N |            |            |           | 0.8 |

| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| TCMT110204-1N | 6.35       | 2.8        | 2.38      | 0.4 |
| TCMT110208-1N |            |            |           | 0.8 |
| TCGT16T304-1N | 9.525      | 4.4        | 3.97      | 0.4 |
| TCGT16T308-1N |            |            |           | 0.8 |
| TCMT16T304-1N | 9.525      | 4.4        | 3.97      | 0.4 |
| TCMT16T308-1N |            |            |           | 0.8 |

### Order Note

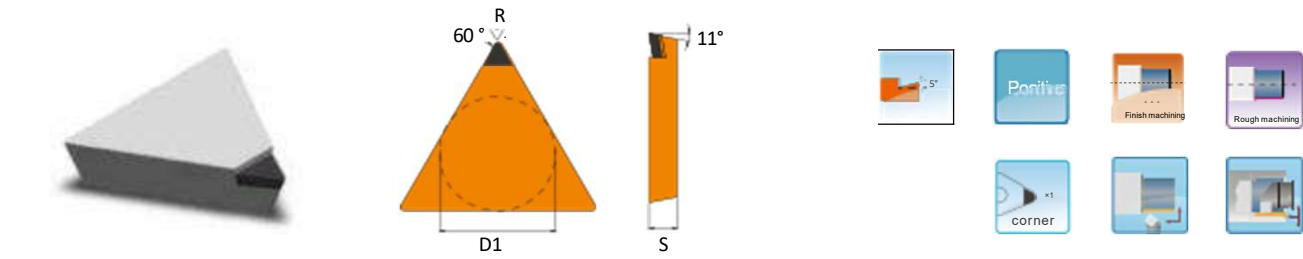
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TP GN/TP MN



| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| TPGN110302-1N | 6.35       | -          | 3.18      | 0.2 |
| TPGN110304-1N |            |            |           | 0.4 |
| TPGN110308-1N |            |            |           | 0.8 |
| TPMN110302-1N | 6.35       | -          | 3.18      | 0.2 |
| TPMN110304-1N |            |            |           | 0.4 |
| TPMN110308-1N |            |            |           | 0.8 |

TP GX/TP MX



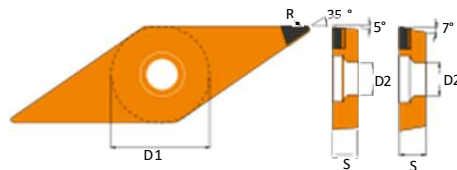
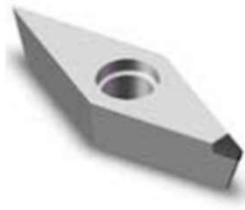
| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| TPGX110302-1N | 6.35       | -          | 3.18      | 0.2 |
| TPGX110304-1N |            |            |           | 0.4 |
| TPGX110308-1N |            |            |           | 0.8 |
| TPMX110302-1N | 6.35       | -          | 3.18      | 0.2 |
| TPMX110304-1N |            |            |           | 0.4 |
| TPMX110308-1N |            |            |           | 0.8 |

Order Note

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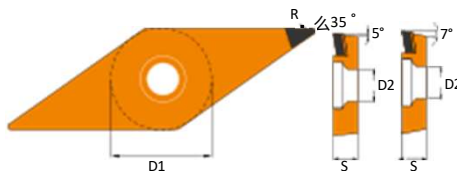
## VB GW/VC GW



| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| VBGW110302-1N | 6.35       | 2.9        | 3.18      | 0.2 |
| VBGW110304-1N |            |            |           | 0.4 |
| VBGW110308-1N |            |            |           | 0.8 |
| VBGW160404-1N | 9.525      | 4.4        | 4.76      | 0.4 |
| VBGW160408-1N |            |            |           | 0.8 |
| VBGW160412-1N |            |            |           | 1.2 |

| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| VCGW110302-1N | 6.35       | 2.9        | 3.18      | 0.2 |
| VCGW110304-1N |            |            |           | 0.4 |
| VCGW110308-1N |            |            |           | 0.8 |
| VCGW160404-1N | 9.525      | 4.4        | 4.76      | 0.4 |
| VCGW160408-1N |            |            |           | 0.8 |
| VCGW160412-1N |            |            |           | 1.2 |

## VB GT/VC GT



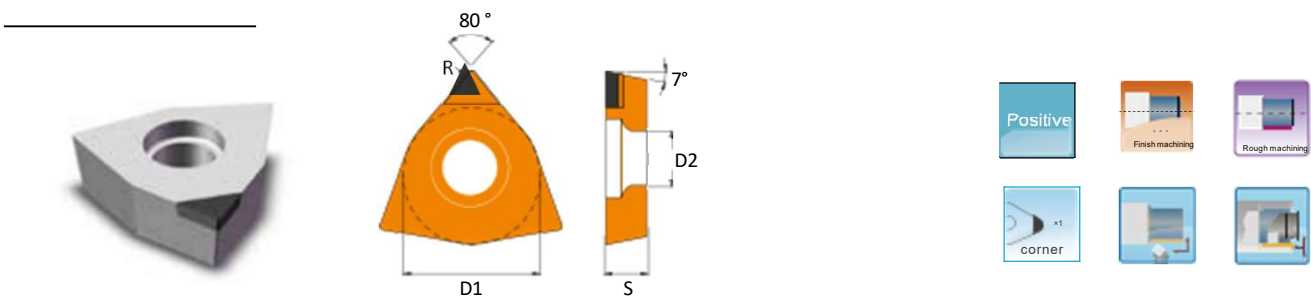
| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| VBGT110302-TP | 6.35       | 2.9        | 3.18      | 0.2 |
| VBGT110304-TP |            |            |           | 0.4 |
| VBGT110308-TP |            |            |           | 0.8 |
| VBGT160404-TP | 9.525      | 4.4        | 4.76      | 0.4 |
| VBGT160408-TP |            |            |           | 0.8 |
| VBGT160412-TP |            |            |           | 1.2 |

| Designation   | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------|------------|------------|-----------|-----|
| VCGT110302-TP | 6.35       | 2.9        | 3.18      | 0.2 |
| VCGT110304-TP |            |            |           | 0.4 |
| VCGT110308-TP |            |            |           | 0.8 |
| VCGT160404-TP | 9.525      | 4.4        | 4.76      | 0.4 |
| VCGT160408-TP |            |            |           | 0.8 |
| VCGT160412-TP |            |            |           | 1.2 |

### Order Note

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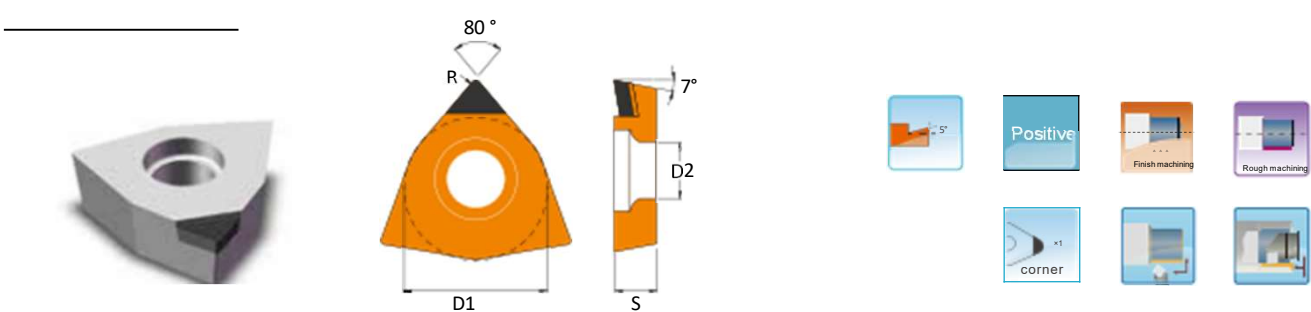
WCGW/WCMW



| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| WCGW040202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| WCGW040204-1N |         |         |        | 0.4 |
| WCGW040208-1N |         |         |        | 0.8 |
| WCMW040202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| WCMW040204-1N |         |         |        | 0.4 |
| WCMW040208-1N |         |         |        | 0.8 |

| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| WCGW06T302-1N | 9.525   | 4.4     | 3.97   | 0.2 |
| WCGW06T304-1N |         |         |        | 0.4 |
| WCGW06T308-1N |         |         |        | 0.8 |
| WCMW06T302-1N | 9.525   | 4.4     | 3.97   | 0.2 |
| WCMW06T304-1N |         |         |        | 0.4 |
| WCMW06T308-1N |         |         |        | 0.8 |

WCGT/WCMT



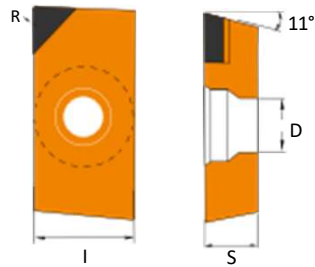
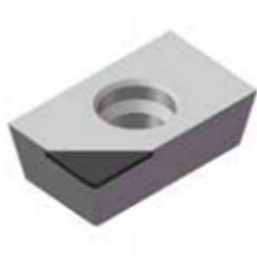
| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| WCGT040202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| WCGT040204-1N |         |         |        | 0.4 |
| WCGT040208-1N |         |         |        | 0.8 |
| WCMT040202-1N | 6.35    | 2.8     | 2.38   | 0.2 |
| WCMT040204-1N |         |         |        | 0.4 |
| WCMT040208-1N |         |         |        | 0.8 |

| Designation   | D1 [MM] | D2 [MM] | S [MM] | R   |
|---------------|---------|---------|--------|-----|
| WCGT06T302-1N | 9.525   | 4.4     | 3.97   | 0.2 |
| WCGT06T304-1N |         |         |        | 0.4 |
| WCGT06T308-1N |         |         |        | 0.8 |
| WCMT06T302-1N | 9.525   | 4.4     | 3.97   | 0.2 |
| WCMT06T304-1N |         |         |        | 0.4 |
| WCMT06T308-1N |         |         |        | 0.8 |

Order Note

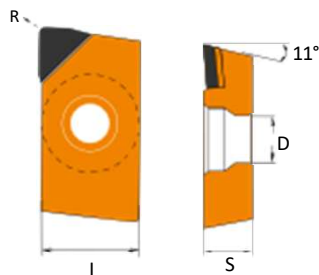
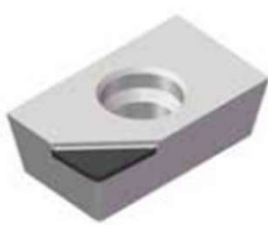
- Please refer to PCD inserts code key description.
- To place an order, please refer to the designation code.
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## APKW



| Designation   | L<br>[MM] | D<br>[MM] | S<br>[MM] | R   |
|---------------|-----------|-----------|-----------|-----|
| APKW110302-1N | 6.35      | 2.8       | 3.18      | 0.2 |
| APKW110304-1N |           |           |           | 0.4 |
| APKW110308-1N |           |           |           | 0.8 |
| APKW160302-1N | 9.525     | 4.4       | 3.18      | 0.2 |
| APKW160304-1N |           |           |           | 0.4 |
| APKW160308-TP |           |           |           | 0.8 |

## APKT

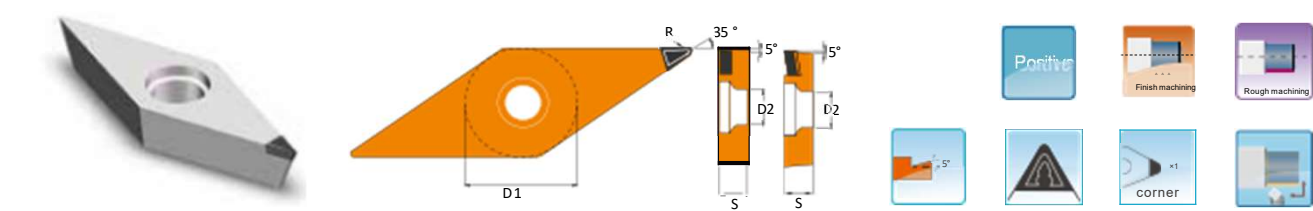


| Designation   | L<br>[MM] | D<br>[MM] | S<br>[MM] | R   |
|---------------|-----------|-----------|-----------|-----|
| APKT110302-1N | 6.35      | 2.8       | 3.18      | 0.2 |
| APKT110304-1N |           |           |           | 0.4 |
| APKT110308-1N |           |           |           | 0.8 |
| APKT160302-1N | 9.525     | 4.4       | 3.18      | 0.2 |
| APKT160304-1N |           |           |           | 0.4 |
| APKT160308-1N |           |           |           | 0.8 |

### Order Note

- Please refer to PCD inserts code key description.
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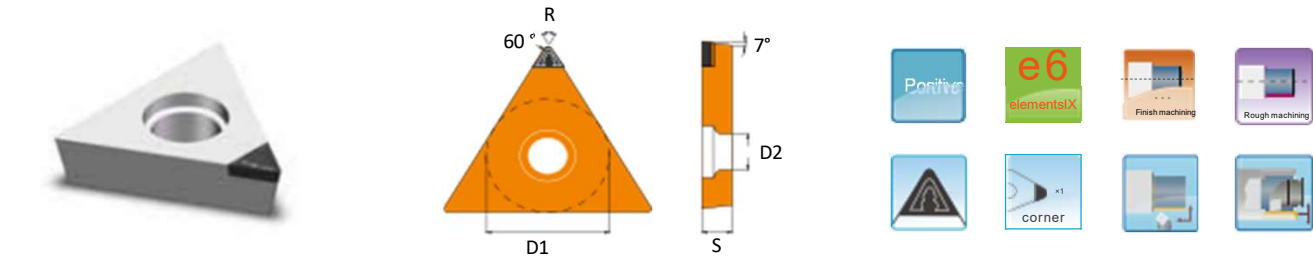
VB GW(T) / BMW(T)



| Designation      | D1 [MM] | D2 [MM] | S [MM] | R   |
|------------------|---------|---------|--------|-----|
| VBGW160404-1N-CB | 9.525   | 4.4     | 4.76   | 0.4 |
| VBGW160408-1N-CB |         |         |        | 0.8 |
| VBGW160412-1N-CB |         |         |        | 1.2 |
| VBMW160404-1N-CB | 9.525   | 4.4     | 4.76   | 0.4 |
| VBMW160408-1N-CB |         |         |        | 0.8 |
| VBMW160412-1N-CB |         |         |        | 1.2 |

| Designation      | D1 [MM] | D2 [MM] | S [MM] | R   |
|------------------|---------|---------|--------|-----|
| VBGT160404-1N-CB | 9.525   | 4.4     | 4.76   | 0.4 |
| VBGT160408-1N-CB |         |         |        | 0.8 |
| VBGT160412-1N-CB |         |         |        | 1.2 |
| VBMT160404-1N-CB | 9.525   | 4.4     | 4.76   | 0.4 |
| VBMT160408-1N-CB |         |         |        | 0.8 |
| VBMT160412-1N-CB |         |         |        | 1.2 |

TCG W / TCM W



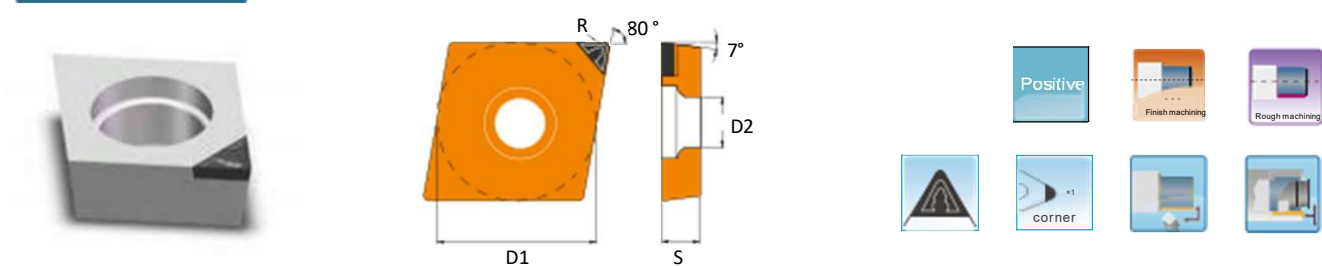
| Designation    | D1 [MM] | D2 [MM] | S [MM] | R   |
|----------------|---------|---------|--------|-----|
| TCGW090204-TPB | 5.56    | 2.5     | 2.38   | 0.4 |
| TCGW090208-TPB |         |         |        | 0.8 |
| TCMW090204-TPB | 5.56    | 2.5     | 2.38   | 0.4 |
| TCMW090208-TPB |         |         |        | 0.8 |
| TCGW110204-TPB | 6.35    | 2.8     | 2.38   | 0.4 |
| TCGW110208-TPB |         |         |        | 0.8 |

| Designation    | D1 [MM] | D2 [MM] | S [MM] | R   |
|----------------|---------|---------|--------|-----|
| TCMW110204-TPB | 6.35    | 2.8     | 2.38   | 0.4 |
| TCMW110208-TPB |         |         |        | 0.8 |
| TCGW16T304-TPB | 9.525   | 4.4     | 3.97   | 0.4 |
| TCGW16T308-TPB |         |         |        | 0.8 |
| TCMW16T304-TPB | 9.525   | 4.4     | 3.97   | 0.4 |
| TCMW16T308-TPB |         |         |        | 0.8 |

Order Note

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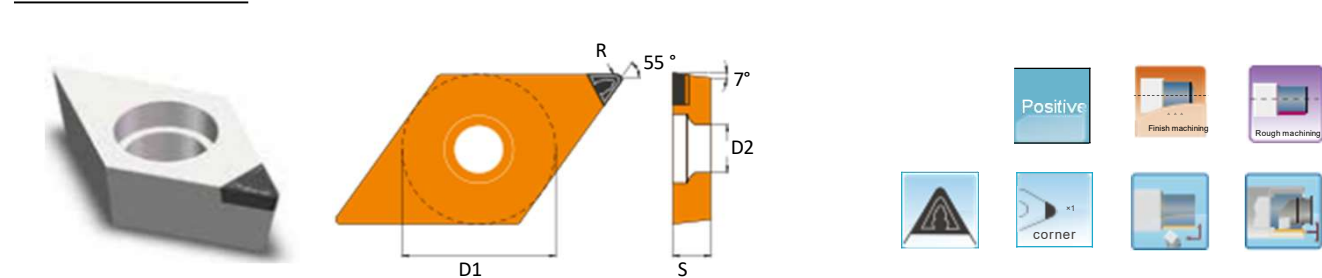
CCG W/CC MW



| Designation      | D1 [MM] | D2 [MM] | S [MM] | R   |
|------------------|---------|---------|--------|-----|
| CCGW060204-1N-CB | 6.35    | 2.8     | 2.38   | 0.4 |
| CCGW060208-1N-CB |         |         |        | 0.8 |
| CCMW060202-1N-CB | 6.35    | 2.8     | 2.38   | 0.2 |
| CCMW060204-1N-CB |         |         |        | 0.4 |
| CCMW060208-1N-CB |         |         |        | 0.8 |
| CCGW09T302-1N-CB | 9.525   | 4.4     | 3.97   | 0.2 |
| CCGW09T304-1N-CB |         |         |        | 0.4 |
| CCGW09T308-1N-CB |         |         |        | 0.8 |

| Designation      | D1 [MM] | D2 [MM] | S [MM] | R   |
|------------------|---------|---------|--------|-----|
| CCMW09T304-1N-CB | 9.525   | 4.4     | 3.97   | 0.4 |
| CCMW09T308-1N-CB |         |         |        | 0.8 |
| CCGW120404-1N-CB | 12.7    | 5.5     | 4.76   | 0.4 |
| CCGW120408-1N-CB |         |         |        | 0.8 |
| CCGW120412-1N-CB |         |         |        | 1.2 |
| CCMW120404-1N-CB | 12.7    | 5.5     | 4.76   | 0.4 |
| CCMW120408-1N-CB |         |         |        | 0.8 |
| CCMW120412-1N-CB |         |         |        | 1.2 |

DC GW/DC MW



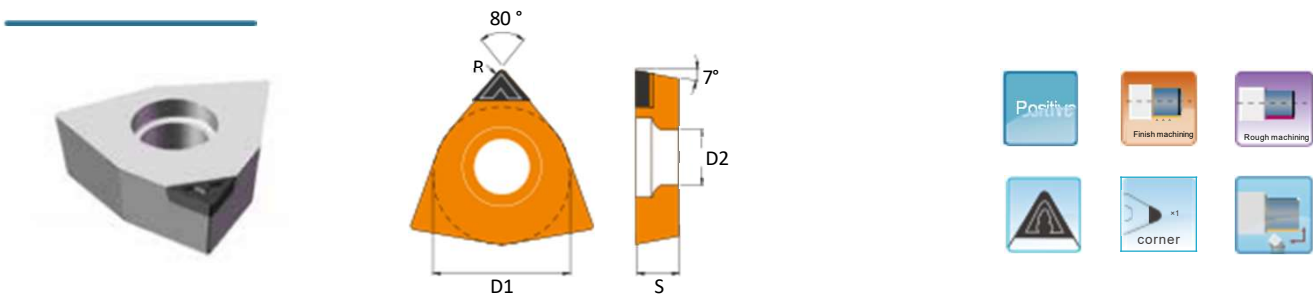
| Designation      | D1 [MM] | D2 [MM] | S [MM] | R   |
|------------------|---------|---------|--------|-----|
| DCGW070202-1N-CB | 6.35    | 2.8     | 2.38   | 0.2 |
| DCGW070204-1N-CB |         |         |        | 0.4 |
| DCGW070208-1N-CB |         |         |        | 0.8 |
| DCMW070202-1N-CB | 6.35    | 2.8     | 2.38   | 0.2 |
| DCMW070204-1N-CB |         |         |        | 0.4 |
| DCMW070208-1N-CB |         |         |        | 0.8 |

| Designation      | D1 [MM] | D2 [MM] | S [MM] | R   |
|------------------|---------|---------|--------|-----|
| DCGW11T304-1N-CB | 9.525   | 4.4     | 3.97   | 0.4 |
| DCGW11T308-1N-CB |         |         |        | 0.8 |
| DCGW11T312-1N-CB |         |         |        | 1.2 |
| DCMW11T304-1N-CB | 9.525   | 4.4     | 3.97   | 0.4 |
| DCMW11T308-1N-CB |         |         |        | 0.8 |
| DCMW11T312-1N-CB |         |         |        | 1.2 |

Order Note

- Please refer to PCD inserts code key description.
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WCGW/WCMW



| Designation       | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|-------------------|------------|------------|-----------|-----|
| WCGW040202-1N-CB  | 6.35       | 2.8        | 2.38      | 0.2 |
| WCGW040204-1N-CB  |            |            |           | 0.4 |
| WCGW040208- 1N-CB |            |            |           | 0.8 |
| WCMW040202- 1N-CB | 6.35       | 2.8        | 2.38      | 0.2 |
| WCMW040204-1N-CB  |            |            |           | 0.4 |
| WCMW040208-1N-CB  |            |            |           | 0.8 |

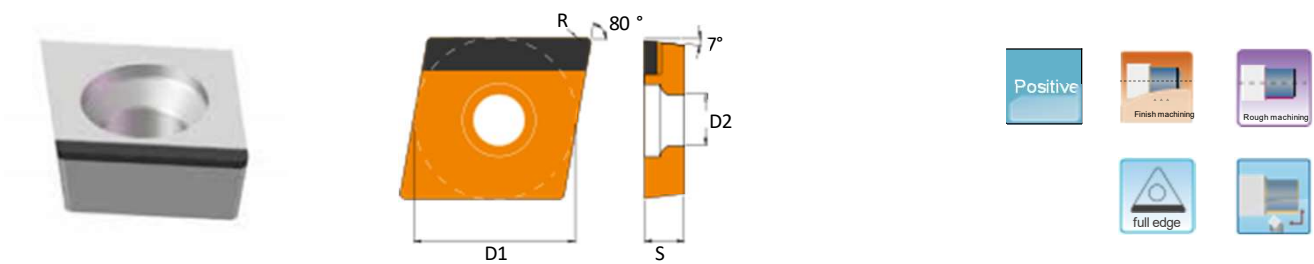
| Designation      | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|------------------|------------|------------|-----------|-----|
| WCGW06T302-1N-CB | 9.525      | 4.4        | 3.97      | 0.2 |
| WCGW06T304-1N-CB |            |            |           | 0.4 |
| WCGW06T308-1N-CB |            |            |           | 0.8 |
| WCMW06T302-1N-CB | 9.525      | 4.4        | 3.97      | 0.2 |
| WCMW06T304-1N-CB |            |            |           | 0.4 |
| WCMW06T308-1N-CB |            |            |           | 0.8 |

Order Note

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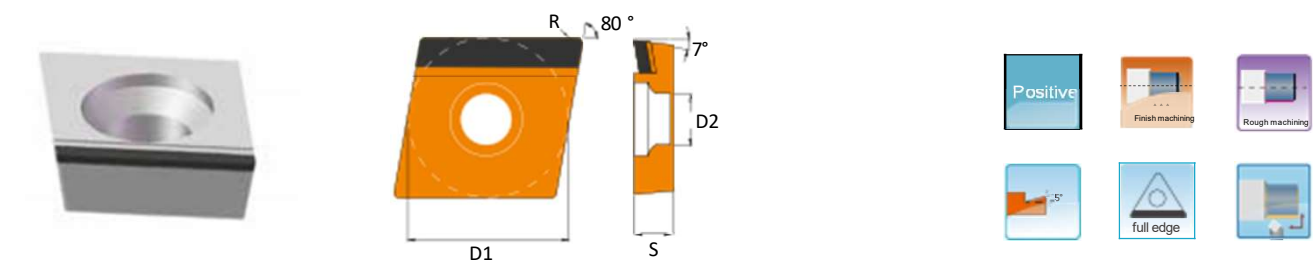


CCGW-FULL EDGE



| DesignationWW    | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|------------------|------------|------------|-----------|-----|
| CCGW060204-1N-FE | 6.35       | 2.8        | 2.38      | 0.4 |
| CCGW060208-1N-FE |            |            |           | 0.8 |
| CCGW09T308-1N-FE | 9.525      | 4.4        | 3.97      | 0.8 |
| CCGW09T312-1N-FE |            |            |           | 1.2 |
| CCGW120412-1N-FE | 12.7       | 5.5        | 4.76      | 1.2 |

CCGT-FULL EDGE

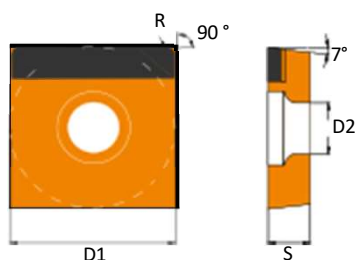
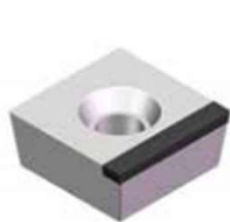


| Designation      | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|------------------|------------|------------|-----------|-----|
| CCGT060204-1N-FE | 6.35       | 2.8        | 2.38      | 0.4 |
| CCGT060208-1N-FE |            |            |           | 0.8 |
| CCGT09T308-1N-FE | 9.525      | 4.4        | 3.97      | 0.8 |
| CCGT09T312-1N-FE |            |            |           | 1.2 |
| CCGT120412-1N-FE | 12.7       | 5.5        | 4.76      | 1.2 |

Order Note

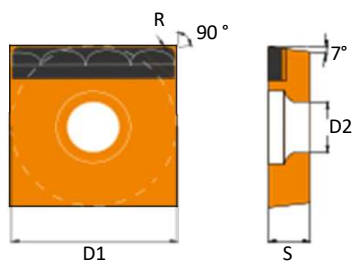
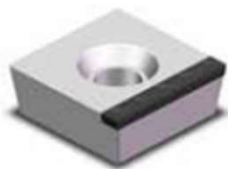
- Please refer to PCD inserts code key description.
- To place an order, please refer to the designation code.
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## SCGW-FULL EDGE



| Designation      | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|------------------|------------|------------|-----------|-----|
| SCGW09T304-1N-FE | 9.525      | 4.4        | 3.97      | 0.4 |
| SCGW09T308-1N-FE |            |            |           | 0.8 |
| SCGW120404-1N-FE | 12.7       | 5.16       | 4.76      | 0.4 |
| SCGW120408-1N-FE |            |            |           | 0.8 |
| SCGW120412-1N-FE |            |            |           | 1.2 |

## SCGW-chip breaker

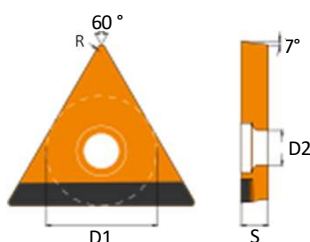
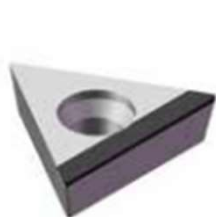


| Designation         | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|---------------------|------------|------------|-----------|-----|
| SCGW09T304-1N-FE-CB | 9.525      | 4.4        | 3.97      | 0.4 |
| SCGW09T308-1N-FE-CB |            |            |           | 0.8 |
| SCGW120404-1N-FE-CB | 12.7       | 5.16       | 4.76      | 0.4 |
| SCGW120408-1N-FE-CB |            |            |           | 0.8 |
| SCGW120412-1N-FE-CB |            |            |           | 1.2 |

### Order Note

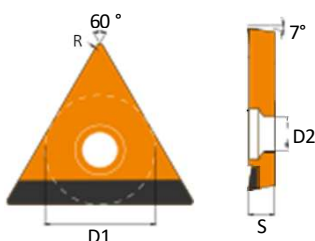
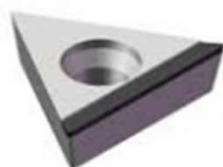
- Please refer to PCD inserts code key description.
- To place an order, please refer to the designation code.
- For the item which is not on the list pls contact our sales to get the quote.

## TCG W-FULL EDGE



| Designation      | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|------------------|------------|------------|-----------|-----|
| TCGW090202-1N-FE | 5.56       | 2.5        | 2.38      | 0.2 |
| TCGW110204-1N-FE | 6.35       | 2.8        | 2.38      | 0.4 |
| TCGW110208-1N-FE |            |            |           | 0.8 |
| TCGW16T304-1N-FE | 9.525      | 4.4        | 3.97      | 0.4 |
| TCGW16T308-1N-FE |            |            |           | 0.8 |

## TCGT-FULL EDGE



| Designation      | D1<br>[MM] | D2<br>[MM] | S<br>[MM] | R   |
|------------------|------------|------------|-----------|-----|
| TCGT090202-1N-FE | 5.56       | 2.5        | 2.38      | 0.2 |
| TCGT110204-1N-FE | 6.35       | 2.8        | 2.38      | 0.4 |
| TCGT110208-1N-FE |            |            |           | 0.8 |
| TCGT16T304-1N-FE | 9.525      | 4.4        | 3.97      | 0.4 |
| TCGT16T308-1N-FE |            |            |           | 0.8 |

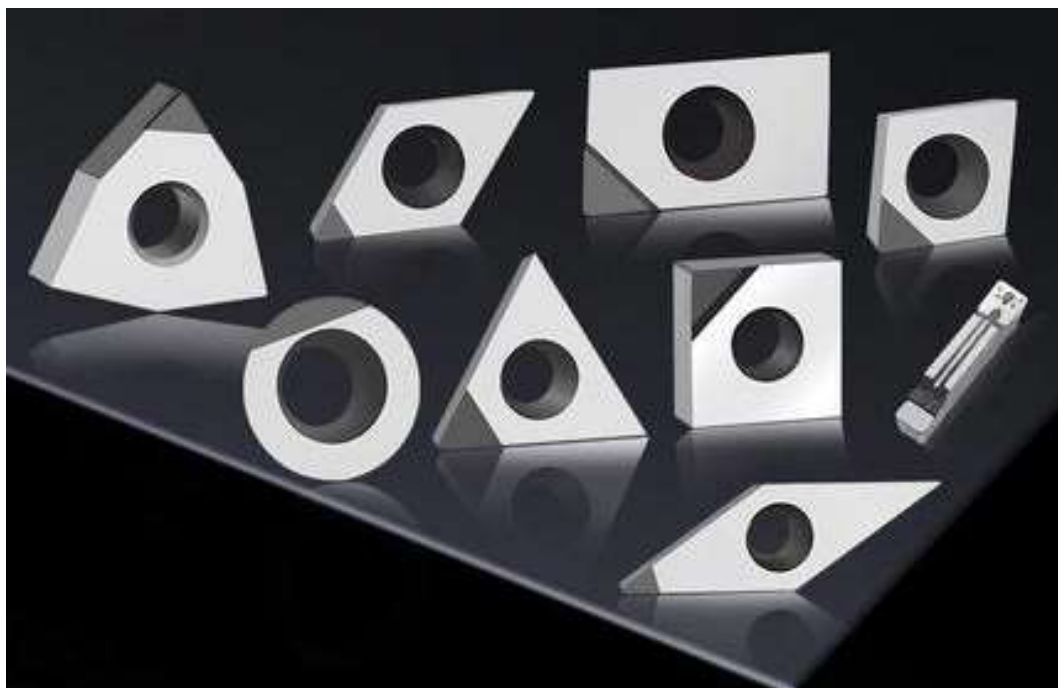
### Order Note

- Please refer to PCD inserts code key description.
- To place an order, please refer to the designation code.
- For the item which is not on the list pls contact our sales to get the quote.

| Cutting speed<br>Vc(m/min) | Workpiece/Tool Holer Diameter (mm) |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------|------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                            | 12                                 | 16   | 20   | 25   | 32   | 50   | 63   | 80   | 100  | 125  | 160  | 175  | 200  | 250  |
| 80                         | 2123                               | 1592 | 1274 | 1019 | 796  | 510  | 404  | 318  | 255  | 204  | 159  | 146  | 127  | 102  |
| 90                         | 2389                               | 1791 | 1433 | 1146 | 896  | 573  | 455  | 358  | 287  | 229  | 179  | 164  | 143  | 115  |
| 100                        | 2654                               | 1990 | 1592 | 1274 | 995  | 637  | 506  | 398  | 318  | 255  | 199  | 182  | 159  | 127  |
| 110                        | 2919                               | 2189 | 1752 | 1401 | 1095 | 701  | 556  | 438  | 350  | 280  | 219  | 200  | 175  | 140  |
| 120                        | 3185                               | 2389 | 1911 | 1529 | 1194 | 764  | 607  | 478  | 382  | 306  | 239  | 218  | 191  | 153  |
| 140                        | 3715                               | 2787 | 2229 | 1783 | 1393 | 892  | 708  | 557  | 446  | 357  | 279  | 255  | 223  | 178  |
| 160                        | 4246                               | 3185 | 2548 | 2038 | 1592 | 1019 | 809  | 637  | 510  | 408  | 318  | 291  | 255  | 204  |
| 180                        | 4777                               | 3583 | 2866 | 2293 | 1791 | 1146 | 910  | 717  | 573  | 459  | 358  | 328  | 287  | 229  |
| 200                        | 5308                               | 3981 | 3185 | 2548 | 1990 | 1274 | 1011 | 796  | 637  | 510  | 398  | 364  | 318  | 255  |
| 220                        | 5839                               | 4379 | 3503 | 2803 | 2189 | 1401 | 1112 | 876  | 701  | 561  | 438  | 400  | 350  | 280  |
| 240                        | 6369                               | 4777 | 3822 | 3057 | 2389 | 1529 | 1213 | 955  | 764  | 611  | 478  | 437  | 382  | 306  |
| 260                        | 6900                               | 5175 | 4140 | 3312 | 2588 | 1656 | 1314 | 1035 | 828  | 662  | 518  | 473  | 414  | 331  |
| 280                        | 7431                               | 5573 | 4459 | 3567 | 2787 | 1783 | 1415 | 1115 | 892  | 713  | 557  | 510  | 446  | 357  |
| 300                        |                                    | 5971 | 4777 | 3822 | 2986 | 1911 | 1517 | 1194 | 955  | 764  | 597  | 546  | 478  | 382  |
| 400                        |                                    |      |      |      |      | 2548 | 2022 | 1592 | 1274 | 1019 | 796  | 728  | 637  | 510  |
| 600                        |                                    |      |      |      |      | 3822 | 3033 | 2389 | 1911 | 1529 | 1194 | 1092 | 955  | 764  |
| 800                        |                                    |      |      |      |      | 5096 | 4044 | 3185 | 2548 | 2038 | 1592 | 1456 | 1274 | 1019 |
| 1000                       |                                    |      |      |      |      | 6369 | 5055 | 3981 | 3185 | 2548 | 1990 | 1820 | 1592 | 1274 |

Checklist for Customized PCD Turning Inserts

| Customer Basic Information                                                                                          |  |                               |                                                                                                                                 |                |                                        |
|---------------------------------------------------------------------------------------------------------------------|--|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------------|
| Company Name* :                                                                                                     |  | Contact Person's Name* :      |                                                                                                                                 | Contact Tel* : |                                        |
| Demand from End User* : _____ pcs/ order, _____ pcs/ month, _____ pcs/ year                                         |  |                               |                                                                                                                                 |                |                                        |
| Machining Information                                                                                               |  |                               |                                                                                                                                 |                |                                        |
| Workpiece Information                                                                                               |  |                               | Insert Information                                                                                                              |                |                                        |
| Drawing:      Yes                  No                                                                               |  |                               | Drawing:      Yes                  No                                                                                           |                |                                        |
| Workpiece Name* :                                                                                                   |  | Mode:                         | Insert Style* :                                                                                                                 |                | Insert Specification:<br>Holder/shank: |
| Workpiece Material* :                                                                                               |  | Material Grade:               | Tips Type* : (L)    mm ; (W)    mm; (H)    mm; (Dia   mm)                                                                       |                |                                        |
| Workpiece Hardness* :                                                                                               |  | Surface Finish<br>Required* : | Cutting Speed V (m/min) *                                                                                                       |                |                                        |
| Result Required                                                                                                     |  |                               | Feed Rate (f) * :      mm/rev                  Allowance/ Side* :      mm                                                       |                |                                        |
| Processing* :                                                                                                       |  |                               | Depth of Cut (AP1)* :      mm                  Depth of Cut (AP2)* :      mm                                                    |                |                                        |
| O End face      O Surface      O Profile                                                                            |  |                               | Cutting Type* :      Continuous<br>Medium interrupted                  Light interrupted<br>Heavy interrupted                   |                |                                        |
| Through-hole<br>Chamfer                                                                                             |  | Blind hole<br>Others          | Coolant Type* :      Dry cutting                  Air<br>Wet cutting                  Water                  Oil                |                |                                        |
| Expected Result:                                                                                                    |  |                               |                                                                                                                                 |                |                                        |
| Machine Tool Information                                                                                            |  |                               | Lead Time requested                                                                                                             |                |                                        |
| Machine Type:      M/C                  CNC lathe (horizontal)<br>Vertical lathe                  Mill-Turn-machine |  |                               | 1 week                  2 weeks                  others<br>3 weeks                  4 weeks<br>5 weeks                  6 weeks |                |                                        |
| Items marked with * required                                                                                        |  |                               |                                                                                                                                 |                |                                        |



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