WORLDIA
SHAPING YOUR WORLD
WITH DIAMOND


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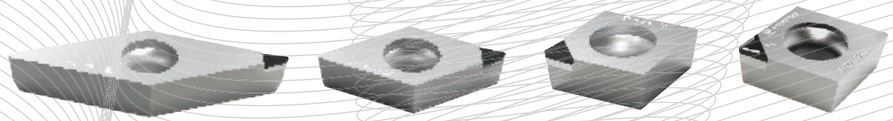
# PCD Turning Inserts

## Standard/Chip breaker/Wiper

N



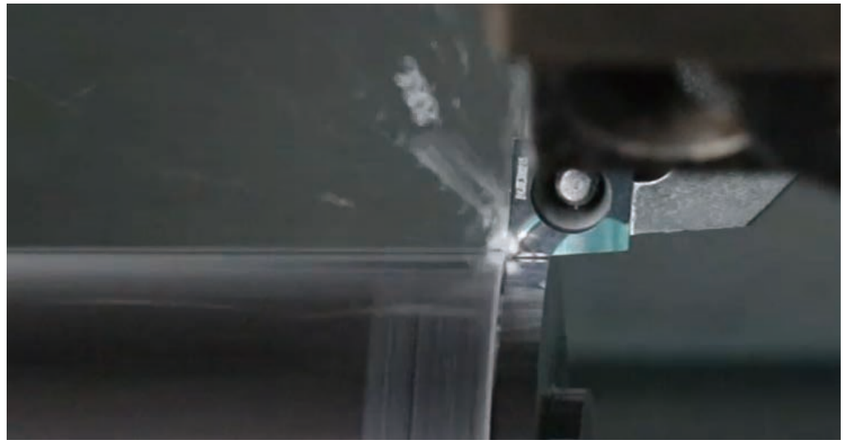
# CONTENT





## Worldia PCD Grades Introduction

Standard/Chip breaker/Wiper



**Introduction:**

Worldia’ portfolio comprise of a variety of different PCD and CVD materials that will be selected base on customer specific application requirements, according to grain size and features of material, Worldia provides you with four types of PCD grades:PD01E、PD10E、PD32E and CVDD. These grades are commonly used for non-ferrous machining applications, other successful applications include machining of wood、MDF、MMC、silicon aluminium alloys、carbide、hard rubber、graphite and so on.

**This catalogue shows examples of Worldia’s capabilities and recommendations for application-specific made-to-order inserts.**

**For on-stock standard inserts, please refer to our MANANOVA -Easy Choice -Fast Delivery PCD catalogue.**

**In order to enable us to recommend the optimum insert for your application, kindly provide us with application data as per page22 of this catalogue.**

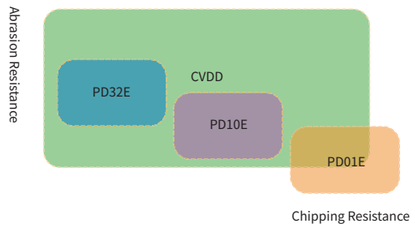
**For your convenience, please feel free to use QR code.**

# PCD Material Introduction N

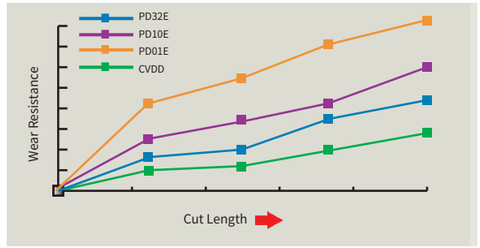
Application Recommendation

| Material | Grade size(μm) | Feature | Application |
|---|---|---|---|
| PD01E | 1 | PD01E fine grain size PCD material(1μm) is suitable for mirror finishing applications.Its high impact resistance and high abrasive resistance are comparable to coarse grain size grade of PCD . | PD01E has excellent chip resistance is suitable for the roughing and interrupt cutting aluminium alloys. This grade is also commonly used for non-ferrous finishing applications. Other successful applications include machining of wood, MDF. |
| PD10E | 10 | PD10E is the universal grade in the market. It' s the first choice for many applications where a good balance of toughness and wear resistance are required. | This grade is commonly used for non-ferrous finishing applications. Other successful applications include machining of wood, MDF.The machining of low-medium content silicon aluminium alloys, carbide, hard rubber, graphite and so on. |
| PD32E | 2~30 | PD32E has a unique combination of wear resistance, edge strength and edge quality. It contains a carefully selected mix of micron diamond (between 2 - 30 μm). The combination of these particle sizes and a specifically developed high pressure sintering process produces a structure with extreme abrasion resistance and good thermal stability. | Application areas include the machining of abrasive workpieces such as MMC, high silicon aluminium alloys as well as for the machining of carbide, hard rubber, graphite and other applications. |
| CVDD | — | CVDD is a pure carbon material without binder with extreme abrasion resistance and good thermal suitability. Due to its Perfect cutting edge suitable for applications where mirror finishes are required. | Application areas include the machining of abrasive workpieces such as MMC, high silicon aluminium alloys as well as for the machining of carbide, hard rubber,graphite and other applications. |

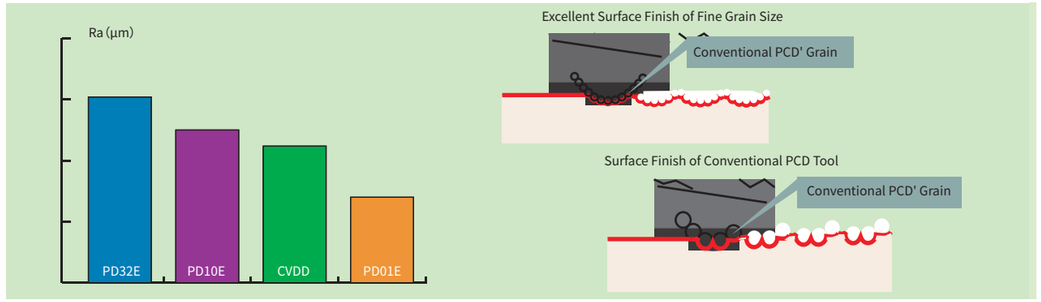
Micro-Structure of PCD Materials




Differences in Abrasive-resistance Among Various Grade of PCD Materials




PCD Grain Size Affects Roughness of Workpiece's Surface




(Effect of grain size on finish machining surface)

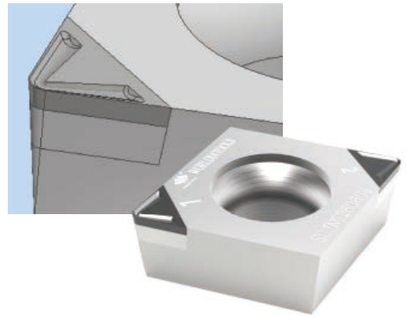


# PCD Material Introduction N

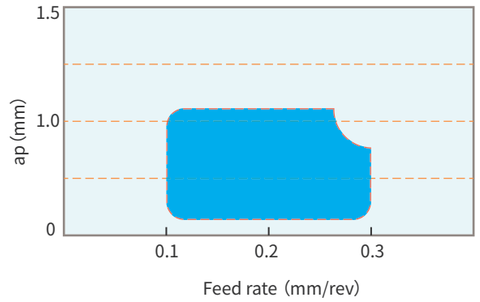
PCD Insert with chip-breaker /Wiper

## ■PCD Insert with chip-breaker(CBC1)

Excellent chip breaking in finishing machining



Scope of Application




Material：A6061

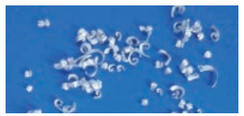
Cutting conditions：Vc=400m/min f=0.1mm/rev ap=0.2mm

Insert type：CCGW09T308

Material：A6061

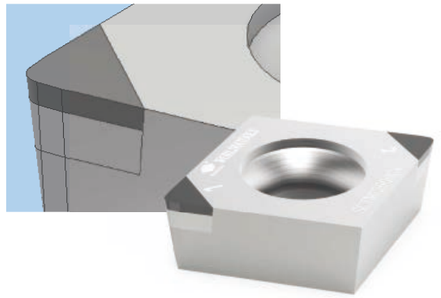
Cutting conditions：Vc=400m/min f=0.1mm/rev ap=0.5mm

Insert type：CCGW09T308



## ■PCD Wiper Insert(WG)

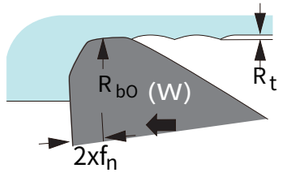
Improve the quality of workpiece surface or processing efficiency



Effect of Wiper Insert

With the same $R_t$,

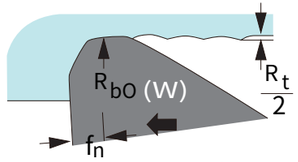
Wiper inserts increase double feed rate($2xf_n$).




High Efficiency

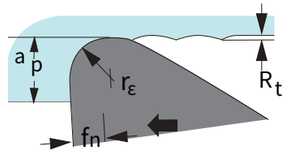
Under the same $f_n$,

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




High Quality Surface

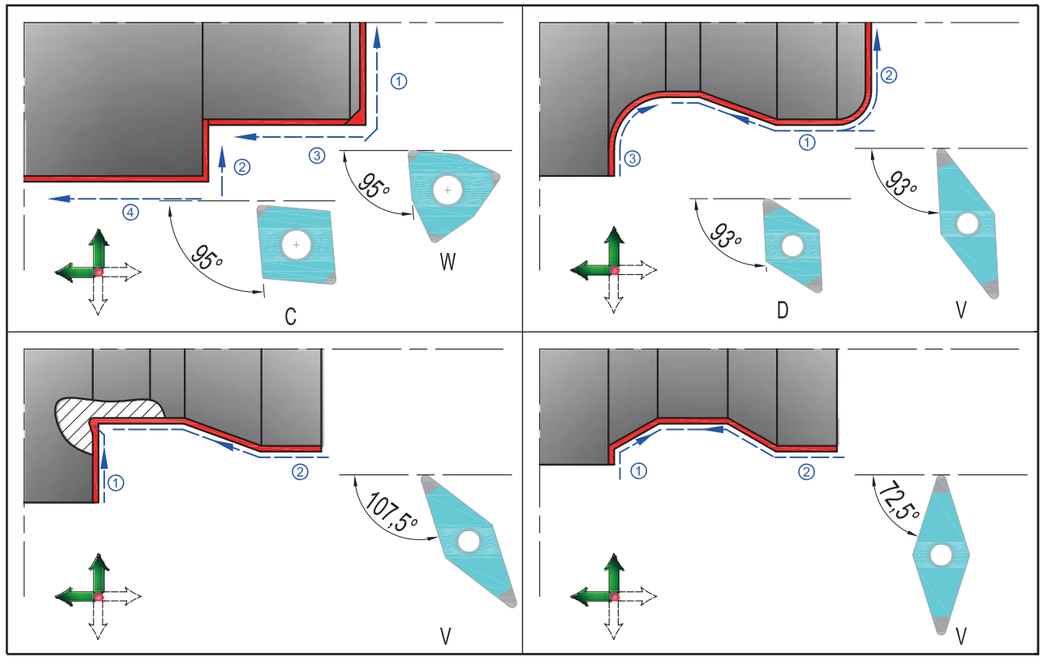
Standard corner radius



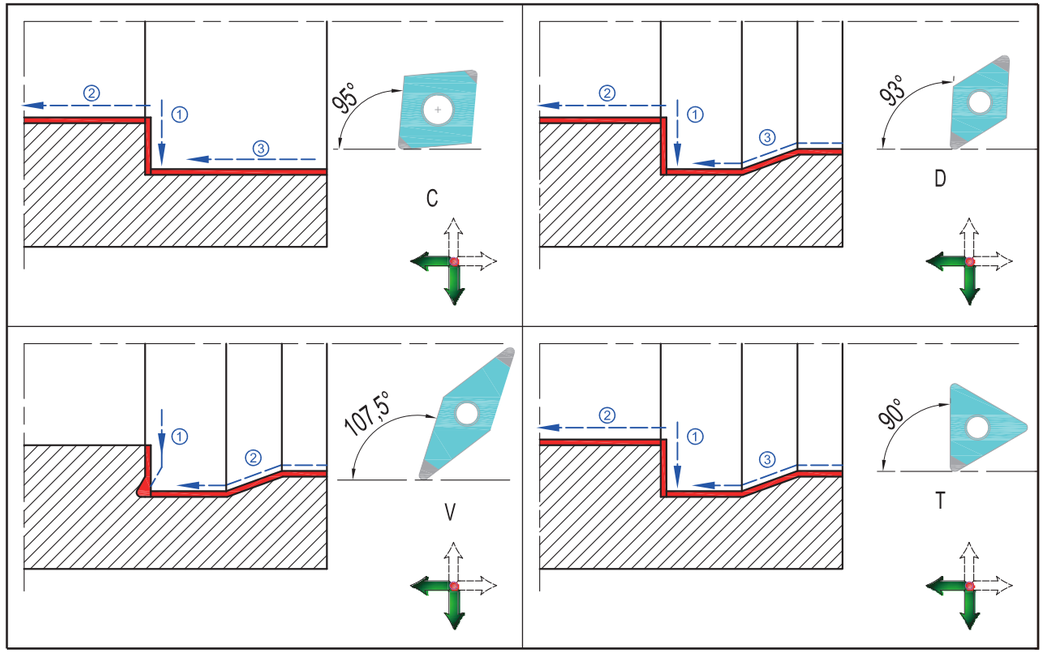
# Cutting Direction Recommendation

Recommended cutting direction for turning no-ferrous with PCD tools

■External machining




■Internal machining






# Identification Code and Package Instruction

No-ferrous

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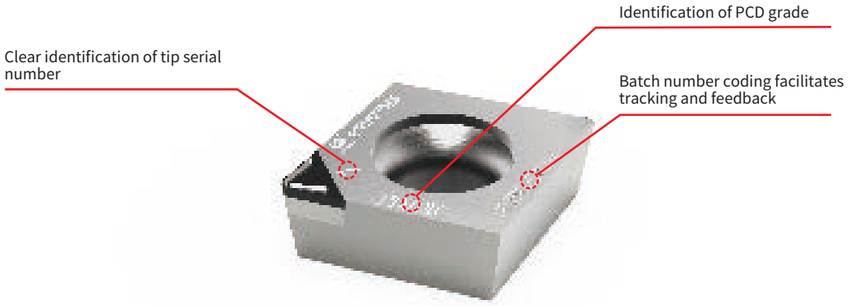
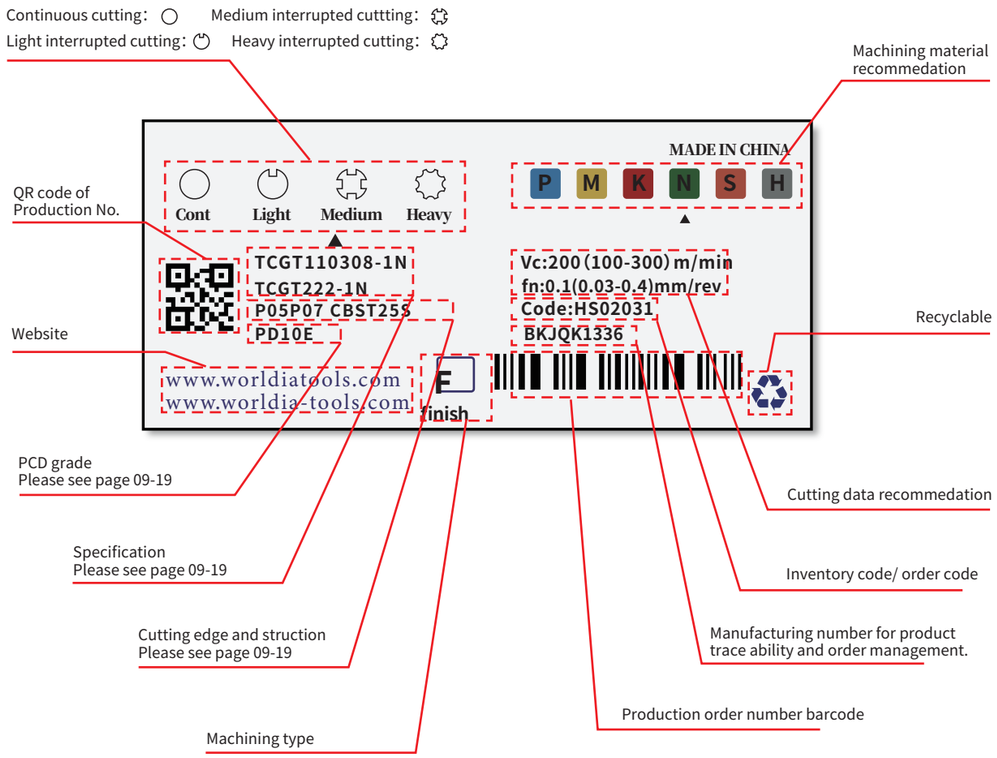
■Insert Identification

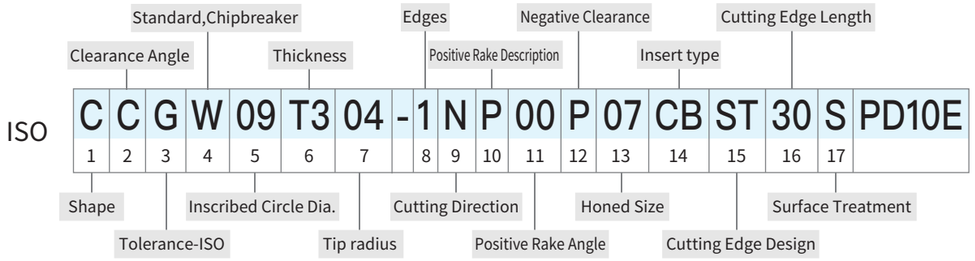



■Label Identification



# Nomenclature

## Rule of PCD Insert Code




### 1.Shape

| | | | | | |
|---|---|---|---|---|---|
| | H | Hexagon 120° | | C | Diamond 80° |
| | O | Octagonal 135° | | D | 55° |
| | P | Pentagon 108° | | E | 75° |
| | R | Round | | M | 86° |
| | | | | V | 35° |
| | | | | W | Hexagon 80° |
| | S | Square 90° | | L | Rectangular 90° |
| | T | Triangle 60° | | A | Diamond 85° |
| | | | | B | 82° |
| | | | | K | 55° |

### 2.Clearance Angle

| | | | | | |
|---|---|---|---|---|---|
| 3° | A | 20° | E | 11° | P |
| 5° | B | 25° | F | X° | O |
| 7° | C | 30° | G | | |
| 15° | D | 0° | N | | |

### 4.Standard, Chipbreaker

| | | | | | |
|---|---|---|---|---|---|
| | N | | G | | B |
| | R | | W | | H |
| | F | | T | | C |
| | A | | Q | | J |
| | M | | U | Others | X |

### 3.Tolerance-ISO

| Code | Tolerance m | Tolerance s | Tolerance IC | Code | inch m | inch ic | inch s |
|---|---|---|---|---|---|---|---|
| C | ±0.013 | ±0.025 | ±0.025 | C | ±.0005 | ±.001 | ±.001 |
| H | ±0.013 | ±0.025 | ±0.013 | H | ±.0005 | ±.0005 | ±.001 |
| E | ±0.025 | ±0.025 | ±0.025 | E | ±.001 | ±.001 | ±.001 |
| G | ±0.025 | ±0.13 | ±0.025 | G | ±.001 | ±.001 | ±.005 |
| K | ±0.013 | ±0.025 | ±0.05~±0.13 | K | ±.0005 | ±.002-.005 | ±.001 |
| M | ±0.08~±0.18 | ±0.13 | ±0.05~±0.13 | M | ±.002-.005 | ±.002-.005 | ±.005 |
| U | ±0.13~±0.38 | ±0.13 | ±0.08~±0.25 | U | ±.005-.012 | ±.005-.010 | ±.005 |

### 5.Inscribed Circle Dia.

| ISO Edge length (accoring insert shape) C | D | R | S | T | V | W | Inscribed Circle Dia. mm | ANSI Code | ANSI IC Size inch |
|---|---|---|---|---|---|---|---|---|---|
| S4 | 04 | 03 | 03 | 06 | - | 02 | 3.97 | (1.2) | 5/32 |
| 04 | 05 | 04 | 04 | 08 | 08 | S3 | 4.76 | (1.5) | 3/16 |
| 05 | 06 | 05 | 05 | 09 | 09 | 03 | 5.56 | (1.8) | 7/32 |
| - | - | 06 | - | - | - | - | 6 | - | - |
| 06 | 07 | 06 | 06 | 11 | 11 | 04 | 6.35 | 2 | 1/4 |
| 08 | 09 | 07 | 07 | 13 | 13 | 05 | 7.94 | (2.5) | 5/16 |
| - | - | 08 | - | - | - | - | 8 | - | - |
| 09 | 11 | 09 | 09 | 16 | 16 | 06 | 9.525 | 3 | 3/8 |
| - | - | 10 | - | - | - | - | 10 | - | - |
| - | - | 12 | - | - | - | - | 12 | - | - |
| 12 | 15 | 12 | 12 | 22 | 22 | 08 | 12.7 | 4 | 1/2 |
| 16 | 19 | 15 | 15 | 27 | 27 | 10 | 15.875 | 5 | 5/8 |
| - | - | 16 | - | - | - | - | 16 | - | - |
| 19 | 23 | 19 | 19 | 33 | 33 | 13 | 19.05 | 6 | 3/4 |
| - | - | 20 | - | - | - | - | 20 | - | - |
| 22 | 27 | 22 | 22 | 38 | 38 | 15 | 22.225 | 7 | 7/8 |
| - | - | 25 | - | - | - | - | 25 | - | - |
| 25 | 31 | 25 | 25 | 44 | 44 | 17 | 25.4 | 8 | 1 |
| 32 | 38 | 31 | 31 | 54 | 54 | 21 | 31.75 | 10 | 1-1/4 |
| - | - | 32 | - | - | - | - | 32 | - | - |

### 6.Thickness

| ISO Code | ISO Size mm | ANSI Code | ANSI Size inch |
|---|---|---|---|
| S | | S | |
| 01 | 1.59 | 1 | 1/16 |
| 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 | 6.35 | 4 | 1/4 |
| 07 | 7.94 | 5 | 5/16 |
| 09 | 9.525 | 6 | 3/8 |

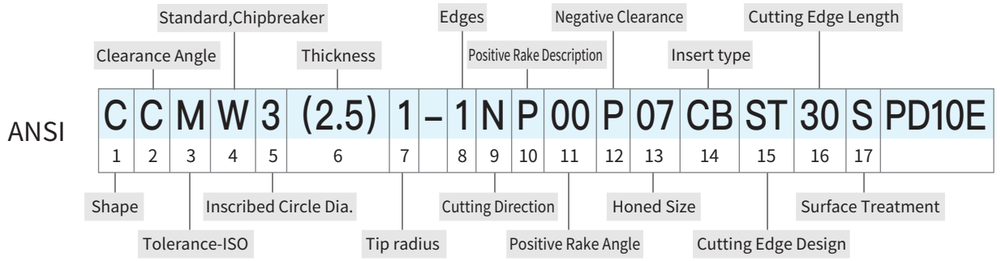
### 7.Tip radius

| ISO Code | ISO Size Rε mm | ANSI Code | ANSI Size inch |
|---|---|---|---|
| 00 | sharp | 00 | .000 |
| 003 | 0.03 | (0.1) | .001 |
| 01 | 0.1 | (0.2) | .004 |
| 02 | 0.2 | (0.5) | .008 |
| 04 | 0.4 | 1 | 1/64 |
| 08 | 0.8 | 2 | 1/32 |
| 12 | 1.2 | 3 | 3/64 |
| 16 | 1.6 | 4 | 1/16 |
| 20 | 2.0 | 5 | 5/64 |
| 24 | 2.4 | 6 | 3/32 |
| 28 | 2.8 | 7 | 7/64 |
| 32 | 3.2 | 8 | 1/8 |
| M00 | Round | | circular |



# Nomenclature

## Rule of PCD Insert Code




### 8.Edges

| Code | 1 | 2 | 3 | 4 | 6 | 8 |
|---|---|---|---|---|---|---|
| Edges | 一刃 | 二刃 | 三刃 | 四刃 | 六刃 | 八刃 |

### 9.Cutting Direction

| Code | R | L | N |
|---|---|---|---|

### 10.Positive Rake Description

| P | M |
|---|---|
| Positive Positive | Negative angle |

### 11.Positive Rake Angle

| Code | α | 00 | 03 | 05 | 10 |
|---|---|---|---|---|---|
| Size | ∘ | 0 | 3 | 5 | 10 |

### 12.Negative Clearance

| P | M |
|---|---|
| Positive Clearance | Negative Clearance |

### 13.Honed Size

| Code | 00 | 02 | 05 | 10 | 20 | 30 |
|---|---|---|---|---|---|---|

### 14.Insert type

| SF | SL | SS | CB | CS | SWW | SWU |
|---|---|---|---|---|---|---|
| Full Face | Solid Tipped Corner | Solid CBN | Standard Tipped Corners | Standard Full Edge | Solid Tipped Corners Type "W" | Solid Tipped Corners Type "U" |

### 15.Cutting Edge Design

| ST | WG | WG00 | CBC1 | —— |
|---|---|---|---|---|
| Nose Radius | Wiper | 0°Wiper | C1 Chip Breaker | —— |

### 16. Cutting Edge Length

| Code | 25 | 30 | 35 | 40 | 45 |
|---|---|---|---|---|---|
| Nose Radius | 2.8 | 3.0 | 3.5 | 4.0 | 4.5 |

### 17.Surface Treatment

| S | Uncoated |
|---|---|

# Standard PCD Turning Inserts

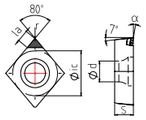
PCD Tipped for Non-ferrous

**CC** 80°Positive Screw-down

**Standard**

CC◆◆0602◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | CCGW—P00P07 | | | |
| | CCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

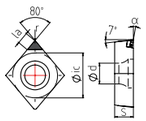
| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CCGW060202-1N | CCGW2(1.5)(0.5)-1N |  | ST25S | 1 | 6.35 | 2.8 | 2.38 | 0.2 | 2.5 |
| | CCGW060204-1N | CCGW/T2(1.5)1-1N | | | | | | | 0.4 | |
| | CCGT060202-1N | CCGT2(1.5)(0.5)-1N | | | | | | | 0.2 | |
| | CCGT060204-1N | CCGT2(1.5)1-1N | | | | | | | 0.4 | |

**CC** 80°Positive Screw-down

**Standard**

CC◆◆09T3◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | CCGW—P00P07 | | | |
| | CCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

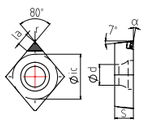
| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CCGW09T302-1N | CCGW3(2.5)(0.5)-1N |  | ST25S | 1 | 9.525 | 4.4 | 3.97 | 0.2 | 2.5 |
| | CCGW09T304-1N | CCGW3(2.5)1-1N | | | | | | | 0.4 | |
| | CCGW09T308-1N | CCGW3(2.5)2-1N | | | | | | | 0.8 | |
| | CCGT09T302-1N | CCGT3(2.5)(0.5)-1N | | | | | | | 0.2 | |
| | CCGT09T304-1N | CCGT3(2.5)1-1N | | | | | | | 0.4 | |
| | CCGT09T308-1N | CCGT3(2.5)2-1N | | | | | | | 0.8 | |

**CC** 80°Positive Screw-down

**Standard**

CC◆◆1204◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | CCGW—P00P07 | | | |
| | CCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CCGW120402-1N | CCGW43(0.5)-1N |  | ST25S | 1 | 9.525 | 4.4 | 3.97 | 0.2 | 2.5 |
| | CCGW120404-1N | CCGW431-1N | | | | | | | 0.4 | |
| | CCGW120408-1N | CCGW432-1N | | | | | | | 0.8 | |
| | CCGT120402-1N | CCGT43(0.5)-1N | | | | | | | 0.2 | |
| | CCGT120404-1N | CCGT431-1N | | | | | | | 0.4 | |
| | CCGT120408-1N | CCGT432-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request



# Standard PCD Turning Inserts

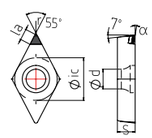
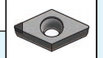
PCD Tipped for Non-ferrous

**DC** 55°Positive Screw-down

**Standard**

DC◆◆0702◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | DCGW—P00P07 | | | |
| | DCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

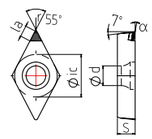
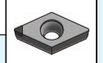
| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | DCGW070202-1N | DCGW2(1.5)(0.5)-1N |  | ST25S | 1 | 6.35 | 2.8 | 2.38 | 0.2 | 2.5 |
| | DCGW070204-1N | DCGW2(1.5)1-1N | | | | | | | 0.4 | |
| | DCGW070208-1N | DCGW2(1.5)2-1N | | | | | | | 0.8 | |
| | DCGT070202-1N | DCGT2(1.5)(0.5)-1N | | | | | | | 0.2 | |
| | DCGT070204-1N | DCGT2(1.5)1-1N | | | | | | | 0.4 | |
| | DCGT070208-1N | DCGT2(1.5)2-1N | | | | | | | 0.8 | |

**DC** 55°Positive Screw-down

**Standard**

DC◆◆11T3◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | DCGW—P00P07 | | | |
| | DCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | DCGW11T302-1N | DCGW3(2.5)(0.5)-1N |  | ST25S | 1 | 9.525 | 4.4 | 3.97 | 0.2 | 2.5 |
| | DCGW11T304-1N | DCGW3(2.5)1-1N | | | | | | | 0.4 | |
| | DCGW11T308-1N | DCGW3(2.5)2-1N | | | | | | | 0.8 | |
| | DCGT11T302-1N | DCGT3(2.5)(0.5)-1N | | | | | | | 0.2 | |
| | DCGT11T304-1N | DCGT3(2.5)1-1N | | | | | | | 0.4 | |
| | DCGT11T308-1N | DCGT3(2.5)2-1N | | | | | | | 0.8 | |

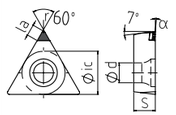
**Notes:** Inserts with more than 1 tip on customer request

# Standard PCD Turning Inserts

PCD Tipped for Non-ferrous

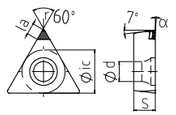
**TC** 60°Positive Screw-down **Standard** TC◆◆0802◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TCGW—P00P07 | | | |
| | TCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TCGW080202-1N | TCGW(1.5)(1.5)(0.5)-1N |  | ST25S | 1 | 4.76 | 2.4 | 2.38 | 0.2 | 2.5 |
| | TCGW080204-1N | TCGW(1.5)(1.5)1-1N | | | | | | | 0.4 | |
| | TCGW080208-1N | TCGW(1.5)(1.5)2-1N | | | | | | | 0.8 | |
| | TCGT080202-1N | TCGT(1.5)(1.5)(0.5)-1N | | | | | | | 0.2 | |
| | TCGT080204-1N | TCGT(1.5)(1.5)1-1N | | | | | | | 0.4 | |
| | TCGT080208-1N | TCGT(1.5)(1.5)2-1N | | | | | | | 0.8 | |

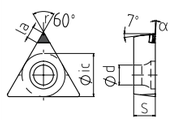
**TC** 60°Positive Screw-down **Standard** TC◆◆1103◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TCGW—P00P07 | | | |
| | TCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TCGW110302-1N | TCGW22(0.5)-1N |  | ST25S | 1 | 6.35 | 2.8 | 3.18 | 0.2 | 2.5 |
| | TCGW110304-1N | TCGW221-1N | | | | | | | 0.4 | |
| | TCGW110308-1N | TCGW222-1N | | | | | | | 0.8 | |
| | TCGT110302-1N | TCGT22(0.5)-1N | | | | | | | 0.2 | |
| | TCGT110304-1N | TCGT221-1N | | | | | | | 0.4 | |
| | TCGT110308-1N | TCGT222-1N | | | | | | | 0.8 | |

**TC** 60°Positive Screw-down **Standard** TC◆◆1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TCGW—P00P07 | | | |
| | TCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TCGW160402-1N | TCGW33(0.5)-1N |  | ST25S | 1 | 9.525 | 4.4 | 4.76 | 0.2 | 2.5 |
| | TCGW160404-1N | TCGW331-1N | | | | | | | 0.4 | |
| | TCGW160408-1N | TCGW332-1N | | | | | | | 0.8 | |
| | TCGT160402-1N | TCGT33(0.5)-1N | | | | | | | 0.2 | |
| | TCGT160404-1N | TCGT331-1N | | | | | | | 0.4 | |
| | TCGT160408-1N | TCGT332-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request



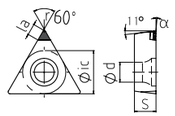
# Standard PCD Turning Inserts

PCD Tipped for Non-ferrous

WORLDIA®

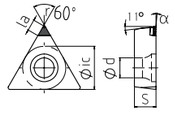
**TP** 60°Positive Screw-down **Standard** TP◆◆0802◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TPGW—P00P11 | | | |
| | TPGT—P05P11 /P10P11 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TPGW080202-1N | TPGW(1.5)(1.5)(0.5)-1N |  | ST25S | 1 | 4.76 | 2.4 | 2.38 | 0.2 | 2.5 |
| | TPGW080204-1N | TPGW(1.5)(1.5)1-1N | | | | | | | 0.4 | |
| | TPGW080208-1N | TPGW(1.5)(1.5)2-1N | | | | | | | 0.8 | |
| | TPGT080202-1N | TPGT(1.5)(1.5)(0.5)-1N | | | | | | | 0.2 | |
| | TPGT080204-1N | TPGT(1.5)(1.5)1-1N | | | | | | | 0.4 | |
| | TPGT080208-1N | TPGT(1.5)(1.5)2-1N | | | | | | | 0.8 | |

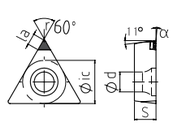
**TP** 60°Positive Screw-down **Standard** TP◆◆1103◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TPGW—P00P11 | | | |
| | TPGT—P05P11 /P10P11 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TPGW110302-1N | TPGW22(0.5)-1N |  | ST25S | 1 | 6.35 | 3.3 | 3.18 | 0.2 | 2.5 |
| | TPGW110304-1N | TPGW221-1N | | | | | | | 0.4 | |
| | TPGW110308-1N | TPGW222-1N | | | | | | | 0.8 | |
| | TPGT110302-1N | TPGT22(0.5)-1N | | | | | | | 0.2 | |
| | TPGT110304-1N | TPGT221-1N | | | | | | | 0.4 | |
| | TPGT110308-1N | TPGT222-1N | | | | | | | 0.8 | |

**TP** 60°Positive Screw-down **Standard** TP◆◆1603◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TPGW—P00P11 | | | |
| | TPGT—P05P11 /P10P11 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TPGW160302-1N | TPGW32(0.5)-1N |  | ST25S | 1 | 6.35 | 3.3 | 3.18 | 0.2 | 2.5 |
| | TPGW160304-1N | TPGW321-1N | | | | | | | 0.4 | |
| | TPGW160308-1N | TPGW322-1N | | | | | | | 0.8 | |
| | TPGT160302-1N | TPGT32(0.5)-1N | | | | | | | 0.2 | |
| | TPGT160304-1N | TPGT321-1N | | | | | | | 0.4 | |
| | TPGT160308-1N | TPGT322-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request

# Standard PCD Turning Inserts

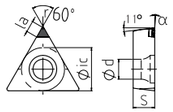
PCD Tipped for Non-ferrous

**TP** 60°Positive Screw-down

**Standard**

TP◆◆1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TPGW—P00P11 | | | |
| | TPGT—P05P11 /P10P11 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

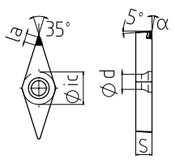
| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TPGW160402-1N | TPGW33(0.5)-1N |  | ST25S | 1 | 6.35 | 3.3 | 4.76 | 0.2 | 2.5 |
| | TPGW160404-1N | TPGW331-1N | | | | | | | 0.4 | |
| | TPGW160408-1N | TPGW332-1N | | | | | | | 0.8 | |
| | TPGT160402-1N | TPGT33(0.5)-1N | | | | | | | 0.2 | |
| | TPGT160404-1N | TPGT331-1N | | | | | | | 0.4 | |
| | TPGT160408-1N | TPGT332-1N | | | | | | | 0.8 | |

**VB** 35°Positive Screw-down

**Standard**

VB◆◆1103◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | VBGW—P00P05 | | | |
| | VBGT—P05P05 /P10P05 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

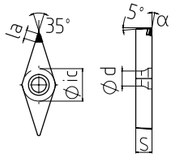
| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | VBGW110302-1N | VBGW22(0.5)-1N |  | ST30S | 1 | 6.35 | 2.8 | 3.18 | 0.2 | 3.0 |
| | VBGW110304-1N | VBGW221-1N | | | | | | | 0.4 | |
| | VBGW110308-1N | VBGW222-1N | | | | | | | 0.8 | |
| | VBGT110302-1N | VBGT22(0.5)-1N | | | | | | | 0.2 | |
| | VBGT110304-1N | VBGT221-1N | | | | | | | 0.4 | |
| | VBGT110308-1N | VBGT222-1N | | | | | | | 0.8 | |

**VB** 35°Positive Screw-down

**Standard**

VB◆◆1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | VBGW—P00P05 | | | |
| | VBGT—P05P05 /P10P05 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | VBGW160402-1N | VBGW33(0.5)-1N |  | ST30S | 1 | 9.525 | 3.3 | 4.76 | 0.2 | 3.0 |
| | VBGW160404-1N | VBGW331-1N | | | | | | | 0.4 | |
| | VBGW160408-1N | VBGW332-1N | | | | | | | 0.8 | |
| | VBGT160402-1N | VBGT33(0.5)-1N | | | | | | | 0.2 | |
| | VBGT160404-1N | VBGT331-1N | | | | | | | 0.4 | |
| | VBGT160408-1N | VBGT332-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request



# Standard PCD Turning Inserts

PCD Tipped for Non-ferrous

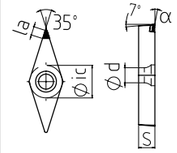
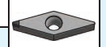
WORLDIA

**VC** 35°Positive Screw-down

**Standard**

VC◆◆1103◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | VCGW—P00P07 | | | |
| | VCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

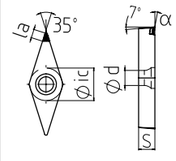
| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | VCGW110302-1N | VCGW22(0.5)-1N |  | ST30S | 1 | 6.35 | 2.8 | 3.18 | 0.2 | 3.0 |
| | VCGW110304-1N | VCGW221-1N | | | | | | | 0.4 | |
| | VCGW110308-1N | VCGW222-1N | | | | | | | 0.8 | |
| | VCGT110302-1N | VCGT22(0.5)-1N | | | | | | | 0.2 | |
| | VCGT110304-1N | VCGT221-1N | | | | | | | 0.4 | |
| | VCGT110308-1N | VCGT222-1N | | | | | | | 0.8 | |

**VC** 35°Positive Screw-down

**Standard**

VC◆◆1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | VCGW—P00P07 | | | |
| | VCGT—P05P07 /P10P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | VCGW160402-1N | VCGW33(0.5)-1N |  | ST30S | 1 | 9.525 | 4.4 | 4.76 | 0.2 | 3.0 |
| | VCGW160404-1N | VCGW331-1N | | | | | | | 0.4 | |
| | VCGW160408-1N | VCGW332-1N | | | | | | | 0.8 | |
| | VCGT160402-1N | VCGT33(0.5)-1N | | | | | | | 0.2 | |
| | VCGT160404-1N | VCGT331-1N | | | | | | | 0.4 | |
| | VCGT160408-1N | VCGT332-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request

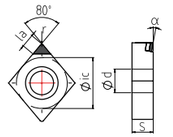
# Standard PCD Turning Inserts

PCD Tipped for Non-ferrous

## CN 80°Negative Screw-down Standard

CN◆◆1204◆◆

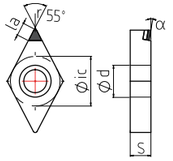
| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | CNGA—P00P00 | | | |
| | CNGM—P10P00 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CNGA120402-1N | CNGA43(0.5)-1N |  | ST25S | 1 | 12.7 | 5.16 | 4.76 | 0.2 | 2.5 |
| | CNGA120404-1N | CNGA431-1N | | | | | | | 0.4 | |
| | CNGA120408-1N | CNGA432-1N | | | | | | | 0.8 | |
| | CNGM120402-1N | CNGM43(0.5)-1N | | | | | | | 0.2 | |
| | CNGM120404-1N | CNGM431-1N | | | | | | | 0.4 | |
| | CNGM120408-1N | CNGM432-1N | | | | | | | 0.8 | |

## DN 55°Negative Screw-down Standard

DN◆◆1504◆◆

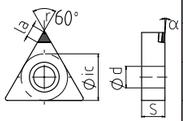
| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | DNGA—P00P00 | | | |
| | DNGM—P10P00 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | DNGA150402-1N | DNGA43(0.5)-1N |  | ST25S | 1 | 12.7 | 5.16 | 4.76 | 0.2 | 2.5 |
| | DNGA150404-1N | DNGA431-1N | | | | | | | 0.4 | |
| | DNGA150408-1N | DNGA432-1N | | | | | | | 0.8 | |
| | DNGM150402-1N | DNGM43(0.5)-1N | | | | | | | 0.2 | |
| | DNGM150404-1N | DNGM431-1N | | | | | | | 0.4 | |
| | DNGM150408-1N | DNGM432-1N | | | | | | | 0.8 | |

## TN 60°Negative Screw-down Standard

TN◆◆1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | TNGA—P00P00 | | | |
| | TNGM—P10P00 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TNGA160402-1N | TNGA33(0.5)-1N |  | ST30S | 1 | 9.525 | 3.81 | 4.76 | 0.2 | 2.5 |
| | TNGA160404-1N | TNGA331-1N | | | | | | | 0.4 | |
| | TNGA160408-1N | TNGA332-1N | | | | | | | 0.8 | |
| | TNGM160402-1N | TNGM33(0.5)-1N | | | | | | | 0.2 | |
| | TNGM160404-1N | TNGM331-1N | | | | | | | 0.4 | |
| | TNGM160408-1N | TNGM332-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request



# Standard PCD Turning Inserts

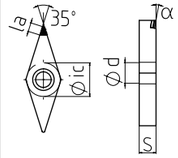
PCD Tipped for Non-ferrous

WORLDIA

## VN 35°Negative Screw-down Standard

VN◆◆1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | VNGA—P00P00 | | | |
| | VNGM—P10P00 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | VNGA160402-1N | VNGA33(0.5)-1N |  | ST30S | 1 | 9.525 | 3.81 | 4.76 | 0.2 | 3.0 |
| | VNGA160404-1N | VNGA331-1N | | | | | | | 0.4 | |
| | VNGA160408-1N | VNGA332-1N | | | | | | | 0.8 | |
| | VNGM160402-1N | VNGM33(0.5)-1N | | | | | | | 0.2 | |
| | VNGM160404-1N | VNGM331-1N | | | | | | | 0.4 | |
| | VNGM160408-1N | VNGM332-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request

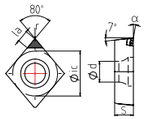
# Chip-breaker PCD Turning Inserts

PCD Tipped for Non-ferrous

## CC 80°Positive Screw-down Chip-breaker

CC◆◆0602◆◆

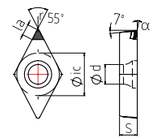
| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CCGT060202-1N | CCGT2(1.5)(0.5)-1N |  | CBC125S | 1 | 6.35 | 2.8 | 2.38 | 0.2 | 2.5 |
| | CCGT060204-1N | CCGT2(1.5)1-1N | | | | | | | 0.4 | |
| | CCGT09T302-1N | CCGT3(2.5)(0.5)-1N | | | | 9.525 | 4.4 | 3.97 | 0.2 | |
| | CCGT09T304-1N | CCGT3(2.5)1-1N | | | | | | | 0.4 | |
| | CCGT09T308-1N | CCGT3(2.5)2-1N | | | | | | | 0.8 | |

## DC 55°Positive Screw-down Chip-breaker

DC◆◆0702/11T3◆◆

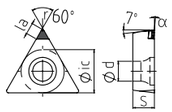
| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | DCGT070202-1N | DCGT2(1.5)(0.5)-1N |  | CBC125S | 1 | 6.35 | 2.8 | 2.38 | 0.2 | 2.5 |
| | DCGT070204-1N | DCGT2(1.5)1-1N | | | | | | | 0.4 | |
| | DCGT11T302-1N | DCGT3(2.5)(0.5)-1N | | | | 9.525 | 4.4 | 3.97 | 0.2 | |
| | DCGT11T304-1N | DCGT3(2.5)1-1N | | | | | | | 0.4 | |
| | DCGT11T308-1N | DCGT3(2.5)2-1N | | | | | | | 0.8 | |

## TC 60°Positive Screw-down Chip-breaker

TC◆◆0802/1103/1604◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TCGT080202-1N | TCGT (1.5) (1.5)(0.5)-1N |  | CBC125S | 1 | 4.76 | 2.4 | 2.38 | 0.2 | 2.5 |
| | TCGT080204-1N | TCGT (1.5) (1.5)1-1N | | | | | | | 0.4 | |
| | TCGT110302-1N | TCGT22(0.5)-1N | | | | 6.35 | 2.8 | 3.18 | 0.2 | |
| | TCGT110304-1N | TCGT221-1N | | | | | | | 0.4 | |
| | TCGT160402-1N | TCGT33(0.5)-1N | | | | 9.525 | 4.4 | 4.76 | 0.2 | |
| | TCGT160404-1N | TCGT331-1N | | | | | | | 0.4 | |
| | TCGT160408-1N | TCGT332-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request



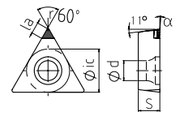
# Chip-breaker PCD Turning Inserts

PCD Tipped for Non-ferrous

## TP 60°Positive Screw-down Chip-breaker

TP◆◆0802/1103/1604◆◆

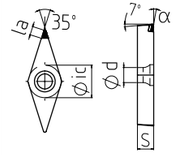
| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | TPGT080202-1N | TPGT (1.5) (1.5)(0.5)-1N |  | CBC125S | 1 | 4.76 | 2.4 | 2.38 | 0.2 | 2.5 |
| | TPGT080204-1N | TPGT (1.5) (1.5)1-1N | | | | | | | 0.4 | |
| | TPGT110302-1N | TPGT22(0.5)-1N | | | | 6.35 | 2.8 | 3.18 | 0.2 | |
| | TPGT110304-1N | TPGT221-1N | | | | | | | 0.4 | |
| | TPGT160402-1N | TPGT33(0.5)-1N | | | | 9.525 | 4.4 | 4.76 | 0.2 | |
| | TPGT160404-1N | TPGT331-1N | | | | | | | 0.4 | |
| | TPGT160408-1N | TPGT332-1N | | | | | | | 0.8 | |

## VC 35°Positive Screw-down Chip-breaker

VC◆◆0602/09T3◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P07 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | VCGT110302-1N | VCGT22(0.5)-1N |  | CBC125S | 1 | 6.35 | 3.3 | 3.18 | 0.2 | 2.5 |
| | VCGT110304-1N | VCGT221-1N | | | | | | | 0.4 | |
| | VCGT160402-1N | VCGT33(0.5)-1N | | | | 9.525 | 4.4 | 4.76 | 0.2 | |
| | VCGT160404-1N | VCGT331-1N | | | | | | | 0.4 | |
| | VCGT160408-1N | VCGT332-1N | | | | | | | 0.8 | |

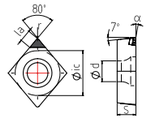
**Notes:** Inserts with more than 1 tip on customer request

# Wiper PCD Turning Inserts

PCD Tipped for Non-ferrous

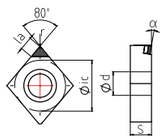
**CC** — 80°Positive Screw-down — **Wiper** — CC◆◆0602◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P00 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CCGW060202-1N | CCGW2(1.5)(0.5)-1N |  | WG25S | 1 | 6.35 | 2.8 | 2.38 | 0.2 | 2.5 |
| | CCGW060204-1N | CCGW2(1.5)1-1N | | | | | | | 0.4 | |
| | CCGW09T302-1N | CCGW3(2.5)(0.5)-1N | | | | 9.525 | 4.4 | 3.97 | 0.2 | |
| | CCGW09T304-1N | CCGW3(2.5)1-1N | | | | | | | 0.4 | |
| | CCGW09T308-1N | CCGW3(2.5)2-1N | | | | | | | 0.8 | |
| | CCGW120402-1N | CCGW43(0.5)-1N | | | | 12.7 | 5.5 | 4.76 | 0.2 | |
| | CCGW120404-1N | CCGW431-1N | | | | | | | 0.4 | |
| | CCGW120408-1N | CCGW432-1N | | | | | | | 0.8 | |

**CN** — 80°Negative Screw-down — **Wiper** — CN◆◆1204◆◆

| N | | | | |
|---|---|---|---|---|
| Tips type | CB | CB | CB | SL |
| Cutting edge | P00P00 | | | |
| Grade | PD01E | PD10E | PD32E | CVDD |

| Shape | ISO | ANSI | Tips form and size | | Tips | ic | Φd | S | rε | la |
|---|---|---|---|---|---|---|---|---|---|---|
|  | CNGA120402-1N | CNGA43(0.5)-1N |  | WG25S | 1 | 12.7 | 5.16 | 4.76 | 0.2 | 2.5 |
| | CNGA120404-1N | CNGA431-1N | | | | | | | 0.4 | |
| | CNGA120408-1N | CNGA432-1N | | | | | | | 0.8 | |

**Notes:** Inserts with more than 1 tip on customer request



# Spindle Speed Recommendation

Cutting speed——Workpiece/Tool Diameter

| Cutting speed Vc(m/min) | Workpiece/Tool 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 |

# Precautions of How to Use Turning Tools

Hazard and Countermeasure

| Products | Hazard | Countermeasure |
|---|---|---|
| All Turning Tools | Cutting tools have sharp cutting edges, which may cause injury if handled | ※Take precautions such as wearing gloves especially when handling tools and during installation |
| | Improper use of tools and application of inappropriate cutting conditions may cause the tool to break and be expelled from the machine providing risk of injury. | ※Ensure safety guards and goggles are used<br>※Use tools under recommended cutting conditions<br>※Refer to handling explanatory notes and catalogues |
| | Impact load and rapid increase of cutting resistance due to excessive wear may cause the tool to break and be expelled from the machine providing risk of injury. | ※Wear personal protective equipment when using tools, e.g. gloves and safety glasses<br>※Replace tools timely |
| | Expelled hot chips produced in cutting produces risk of injuries and burns | ※Wear personal protective equipment when using tools, e.g. gloves and safety glasses<br>※During swarf removal and machine cleaning ensure the machine is stopped and wear gloves. Please use tools under safety circumstance. |
| | Cutting tools and workpieces become extremely hot during cutting.Touching them with bare hands may cause burns | ※Wear personal protective equipment when using tools, e.g. gloves and safety glasses |
| | Sparks, hot chips and heat generation during cutting caused by tool breakage provides a risk of igniting a fire | ※Do not use in places where there is a danger of flammability or explosion<br>※Take fire prevention measures when using non-water soluble cutting tools |
| | Using machines, chucks, and tools with poor balance at high revolutionsmay cause tools to break providing risk of injuries | ※Ensure safety guards and goggles are used<br>※Be sure there is no vibration or unusual noise before starting the operation |
| | Handling machined parts with burrs using bare hands may cause injuries | ※Do not touching them with bare hands |
| Welding and Clamping Tools | If inserts and spare parts are not held securely, they may become loose and be expelled producing risk of injuries | ※Ensure inserts are brazed securely before using tools.<br>※Do not use them under conditions which produce very high temperature over melting point |
| | The inserts are in danger of damaging after several brazes | ※Use them strictly for the prescribed application |
| | Machinery or tools may break if used in applications not recommended by the manufacturer | ※Use them strictly for the prescribed application |
| | If the inserts are not securely fastened during machining, there is a risk of it becoming loose, damaged, or unusable. | ※Ensure that there are no foreign objects present before installing the inserts.<br>※Confirm stability and use only the tools prescribed application by the manufacturer. |
| | Clamping inserts and spare parts too tightly by using tools such as extension pipes may cause them to break and be expelled | ※Do not use any auxiliary tool such as extension pipes<br>※Please use the suitable wrench |
| | When applying high cutting speed, spare parts and inserts may be expelled due to centrifugal force. Pay special attention to safety | ※Use tools under recommended cutting conditions<br>※Refer to handling explanatory notes and catalogues |

NOTE: This catalogue provides essential safety precautions for the proper use of our company's products.
For further information, please refer to the guideline, catalogues or contact support team. We are not responsible for any accidents from the any unauthorized modifications.



# Questionnaire for Customized PCD Turning Inserts

Customer Basic Information

## 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: Holder/shank: |
| Workpiece Material*: | Material Grade: | ☐Tips Type*: (L) mm ; (W) mm; (H) mm; (Dia mm) |
| Workpiece Hardness*: | Surface Finish 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 |
| ☐End face ☐Surface ☐Profile | | Cutting Type*: ☐Continuous ☐Light interrupted ☐Medium interrupted ☐Heavy interrupted |
| ☐Through-hole ☐Blind hole ☐Chamfer ☐Others | | Coolant Type*: ☐Dry cutting ☐Air ☐Wet cutting ☐Water ☐Oil |
| Expected Result: | | |

| Machine Tool Information | Lead Time requested |
|---|---|
| Machine Type: ☐M/C ☐CNC lathe (horizontal) ☐Vertical lathe ☐Mill-Turn-machine | ☐1 week ☐2 weeks ☐others ☐3 weeks ☐4 weeks ☐5 weeks ☐6 weeks |
| Items marked with* required | |